

A Companion Guide to Atlas of Remote  
Islands

# Contents

<b>1</b>	<b>Arctic Ocean</b>	<b>1</b>
1.1	Bear Island . . . . .	1
1.1.1	History . . . . .	1
1.1.2	Hydrography, geography and climate . . . . .	2
1.1.3	Flora and fauna . . . . .	3
1.1.4	Environmental concerns . . . . .	4
1.1.5	Culture . . . . .	4
1.1.6	See also . . . . .	4
1.1.7	References . . . . .	4
1.1.8	Further information and external links . . . . .	5
1.2	Lonely Island . . . . .	5
1.2.1	Geography . . . . .	5
1.2.2	History . . . . .	6
1.2.3	Climate . . . . .	6
1.2.4	See also . . . . .	6
1.2.5	Notes . . . . .	6
1.2.6	External links . . . . .	6
1.3	Rudolf Island . . . . .	7
1.3.1	See also . . . . .	7
1.3.2	References . . . . .	7
1.3.3	External links . . . . .	7
<b>2</b>	<b>Atlantic Ocean</b>	<b>8</b>
2.1	Annobón . . . . .	8
2.1.1	Name . . . . .	8
2.1.2	Geography . . . . .	9
2.1.3	History . . . . .	9
2.1.4	Flora and fauna . . . . .	9
2.1.5	Administration . . . . .	10
2.1.6	Demographics . . . . .	10
2.1.7	Language . . . . .	10
2.1.8	Economy . . . . .	10
2.1.9	Environment . . . . .	10

2.1.10	See also	11
2.1.11	Notes	11
2.1.12	References	11
2.1.13	External links	11
2.2	Ascension Island	11
2.2.1	History	12
2.2.2	Politics	14
2.2.3	Environment	15
2.2.4	Demographics	16
2.2.5	Economy	16
2.2.6	Transport	18
2.2.7	See also	18
2.2.8	Bibliography	18
2.2.9	References	18
2.2.10	External links	19
2.3	Bouvet Island	20
2.3.1	History	20
2.3.2	Geography	22
2.3.3	Climate	23
2.3.4	Nature	23
2.3.5	Politics and government	24
2.3.6	Fiction	24
2.3.7	See also	24
2.3.8	Notes	24
2.3.9	References	26
2.3.10	External links	26
2.4	Brava	26
2.4.1	History	26
2.4.2	Geography	27
2.4.3	Climate	27
2.4.4	Demographics	27
2.4.5	Economy	27
2.4.6	Attractions and amenities	27
2.4.7	Sporting teams	28
2.4.8	Infrastructure	28
2.4.9	Notable residents	28
2.4.10	References	28
2.4.11	External links	28
2.5	Saint Helena	28
2.5.1	History	29
2.5.2	Geography	32

2.5.3	Administrative divisions	32
2.5.4	Population	33
2.5.5	Politics	34
2.5.6	Human rights	34
2.5.7	Biodiversity	34
2.5.8	Economy	34
2.5.9	Transport	35
2.5.10	Media and communications	36
2.5.11	Culture and society	37
2.5.12	Namesake	38
2.5.13	See also	38
2.5.14	References	38
2.5.15	Further reading	40
2.5.16	External links	41
2.6	Southern Thule	41
2.6.1	Argentine occupation 1976–82	42
2.6.2	Aftermath	42
2.6.3	References	42
2.7	St. Kilda	42
2.7.1	Origin of names	43
2.7.2	Geography	44
2.7.3	Sheep	45
2.7.4	Wildlife	46
2.7.5	Way of life	46
2.7.6	History	48
2.7.7	Nature conservation	52
2.7.8	Architecture	52
2.7.9	Media and the arts	54
2.7.10	See also	55
2.7.11	Notes	55
2.7.12	References	59
2.7.13	Further reading	60
2.7.14	External links	60
2.8	Trindade	60
2.8.1	Geography	61
2.8.2	History	61
2.8.3	See also	62
2.8.4	References	62
2.8.5	Further reading	63
2.8.6	External links	63
2.9	Tristan da Cunha	63

2.9.1	History	63
2.9.2	Environment	65
2.9.3	Economy	66
2.9.4	Government	67
2.9.5	Demographics	67
2.9.6	Culture	68
2.9.7	Tristan da Cunha in popular culture	68
2.9.8	See also	70
2.9.9	Notes and references	70
2.9.10	Further reading	71
2.9.11	External links	71
<b>3</b>	<b>Indian Ocean</b>	<b>72</b>
3.1	Amsterdam Island	72
3.1.1	History	72
3.1.2	Environment	73
3.1.3	See also	74
3.1.4	References	74
3.1.5	Further reading	74
3.1.6	External links	74
3.2	Christmas Island	74
3.2.1	History	75
3.2.2	Refugee and immigration detention	77
3.2.3	Demographics	77
3.2.4	Government	77
3.2.5	Economy	78
3.2.6	Culture	78
3.2.7	Geography	79
3.2.8	Flora and fauna	79
3.2.9	Media	81
3.2.10	Transport	82
3.2.11	Education	82
3.2.12	See also	82
3.2.13	Notes	82
3.2.14	References	84
3.2.15	Further reading	84
3.2.16	External links	84
3.3	South Keeling Islands	85
3.3.1	Name	85
3.3.2	Geography	85
3.3.3	History	86
3.3.4	Government	89

3.3.5	Economy	89
3.3.6	Strategic importance	90
3.3.7	Communications and transport	90
3.3.8	Media	90
3.3.9	Education	91
3.3.10	Culture	91
3.3.11	Gallery	91
3.3.12	See also	91
3.3.13	References	91
3.3.14	External links	92
3.4	Possession Island	93
3.4.1	Geography	93
3.4.2	History	94
3.4.3	Gallery	94
3.4.4	See also	94
3.4.5	References	95
3.4.6	Further reading	95
3.4.7	External links	95
3.5	Diego Garcia	95
3.5.1	History	95
3.5.2	Inhabitants	99
3.5.3	Politics	99
3.5.4	Natural history	101
3.5.5	United States military activities	107
3.5.6	ETOPS emergency landing site	109
3.5.7	Space Shuttle	109
3.5.8	Cargo service	109
3.5.9	See also	110
3.5.10	References	110
3.5.11	Bibliography	113
3.5.12	Further reading	114
3.5.13	External links	114
3.6	Saint Paul Island	114
3.6.1	Description	115
3.6.2	History	115
3.6.3	Environment	116
3.6.4	See also	116
3.6.5	References	116
3.6.6	External links	117
3.7	Tromelin Island	117
3.7.1	Description	118

3.7.2	History	118
3.7.3	References	118
3.7.4	External links	119
<b>4</b>	<b>Pacific Ocean</b>	<b>120</b>
4.1	Antipodes Islands	120
4.1.1	Etymology	120
4.1.2	Geography	120
4.1.3	History	121
4.1.4	Flora and fauna	121
4.1.5	Conservation	122
4.1.6	See also	122
4.1.7	References	122
4.1.8	Further reading	122
4.1.9	External links	123
4.2	Atlasov Island	123
4.2.1	See also	123
4.2.2	References	123
4.2.3	External links	123
4.3	Banaba Island	123
4.3.1	History	124
4.3.2	Geography	124
4.3.3	Politics	124
4.3.4	Future prospects	125
4.3.5	Further information	125
4.3.6	References	125
4.3.7	External links	126
4.4	Bokak Atoll	126
4.4.1	Geography	126
4.4.2	Physical Features	126
4.4.3	Climate	127
4.4.4	Vegetation	127
4.4.5	Fauna	127
4.4.6	History	128
4.4.7	Footnotes	130
4.4.8	References	130
4.4.9	External links	131
4.5	Campbell Island	131
4.5.1	History	131
4.5.2	Climate	132
4.5.3	Flora and fauna	132
4.5.4	Research	133

4.5.5	See also	133
4.5.6	References	133
4.5.7	Gallery	134
4.5.8	External links	134
4.6	Clipperton Atoll	134
4.6.1	Environment	134
4.6.2	History	136
4.6.3	See also	138
4.6.4	Notes	138
4.6.5	References	139
4.6.6	External links	140
4.7	Cocos Island	140
4.7.1	Present status and international distinctions	141
4.7.2	Geology and landscape	141
4.7.3	Climate	142
4.7.4	Ecology	142
4.7.5	History	143
4.7.6	Piracy and hidden treasures	144
4.7.7	Habitats threatened	145
4.7.8	Cocos Island in fiction	145
4.7.9	References	145
4.7.10	External links	146
4.8	Easter Island	146
4.8.1	Name	147
4.8.2	History	147
4.8.3	Geography	151
4.8.4	Ecology	152
4.8.5	Culture	154
4.8.6	Demographics	158
4.8.7	Administration and legal status	158
4.8.8	Notable people	158
4.8.9	Transportation	159
4.8.10	See also	159
4.8.11	References	159
4.8.12	Bibliography	161
4.8.13	Further reading	161
4.8.14	External links	162
4.9	Fangataufa	162
4.9.1	Geography	162
4.9.2	History	162
4.9.3	Administration	162



4.9.4	See also	162
4.9.5	References	162
4.9.6	External links	162
4.10	Floreana Island	163
4.10.1	History	163
4.10.2	Points of interest	163
4.10.3	Gallery	164
4.10.4	References	164
4.10.5	Bibliography	164
4.10.6	External links	164
4.11	Howland Island	164
4.11.1	Flora and fauna	165
4.11.2	History	166
4.11.3	National Wildlife Refuge	168
4.11.4	Earhart Light	168
4.11.5	Image gallery	168
4.11.6	See also	168
4.11.7	References	168
4.11.8	External links	170
4.12	Iwo Jima	170
4.12.1	Name	170
4.12.2	Geographic features	171
4.12.3	History	171
4.12.4	Gallery	173
4.12.5	See also	174
4.12.6	References	174
4.12.7	External links	174
4.13	Macquarie Island	174
4.13.1	History	174
4.13.2	Geography	175
4.13.3	Climate	176
4.13.4	Flora and fauna	176
4.13.5	Gallery	177
4.13.6	See also	177
4.13.7	References	177
4.13.8	External links	178
4.14	Napuka	178
4.14.1	History	178
4.14.2	Administration	179
4.14.3	References	179
4.14.4	External links	179

4.15	Norfolk Island	179
4.15.1	History	179
4.15.2	Geography	180
4.15.3	Demographics	182
4.15.4	Culture	183
4.15.5	Government and politics	184
4.15.6	Economy and infrastructure	187
4.15.7	See also	188
4.15.8	References	188
4.15.9	Notes	188
4.15.10	Further reading	190
4.15.11	External links	190
4.16	Pagan	190
4.16.1	Geography	190
4.16.2	History	191
4.16.3	Military live-fire training range plans	191
4.16.4	References	192
4.16.5	External links	192
4.17	Pingelap	193
4.17.1	History	193
4.17.2	Climate	193
4.17.3	Color-blindness	193
4.17.4	References	194
4.18	Pitcairn Islands	194
4.18.1	History	194
4.18.2	Geography	196
4.18.3	Politics	197
4.18.4	Military	198
4.18.5	Economy	198
4.18.6	Demographics	199
4.18.7	Culture	200
4.18.8	Media and communications	200
4.18.9	Transport	201
4.18.10	Notable People	201
4.18.11	Gallery	201
4.18.12	See also	201
4.18.13	References	201
4.18.14	Further reading	203
4.18.15	External links	204
4.19	Pukapuka	204
4.19.1	European visitors	204

4.19.2	World War II	205
4.19.3	Geography	205
4.19.4	Treaty	206
4.19.5	Culture	206
4.19.6	See also	206
4.19.7	References	206
4.19.8	External links	206
4.20	Raoul Island	206
4.20.1	History	207
4.20.2	Geography	207
4.20.3	Flora and fauna	207
4.20.4	Satellite islands and rocks	208
4.20.5	2006 eruption	208
4.20.6	July 2011 7.6 Earthquake	209
4.20.7	October 2011 7.4 Earthquake	209
4.20.8	Mihai Muncus-Nagy	209
4.20.9	See also	209
4.20.10	References	209
4.20.11	Further reading	210
4.20.12	External links	210
4.21	Rapa Iti	210
4.21.1	Geography	210
4.21.2	History	210
4.21.3	Environment	211
4.21.4	Administration	211
4.21.5	References	211
4.21.6	External links	211
4.22	Robinson Crusoe	211
4.22.1	Geography	211
4.22.2	Climate	212
4.22.3	Flora and fauna	212
4.22.4	History	212
4.22.5	Society	213
4.22.6	In popular culture	213
4.22.7	See also	213
4.22.8	References	213
4.22.9	External links	214
4.23	Semisopochnoi Island	214
4.23.1	Wildlife	215
4.23.2	Geology	215
4.23.3	Easternmost North America location debate	215

4.23.4	References	215
4.23.5	External links	216
4.24	Socorro Island	216
4.24.1	Geology	216
4.24.2	History	216
4.24.3	Ecology	217
4.24.4	Visiting information	218
4.24.5	See also	218
4.24.6	Notes	218
4.24.7	References	218
4.24.8	External links	219
4.25	St George Island	219
4.25.1	Principal islands	219
4.25.2	Fur trade	219
4.25.3	Seal Island Historic District	219
4.25.4	Today	220
4.25.5	See also	220
4.25.6	References	220
4.25.7	External links	220
4.26	Takuu Atoll	220
4.26.1	Geography	220
4.26.2	Population and culture	221
4.26.3	Language	221
4.26.4	Economy	221
4.26.5	References	222
4.26.6	External links	222
4.27	Tikopia	222
4.27.1	A Polynesian outlier	222
4.27.2	Population	223
4.27.3	Field work on Tikopia by Raymond Firth	223
4.27.4	Christianity	224
4.27.5	Cyclone Zoe	224
4.27.6	See also	224
4.27.7	References	224
4.27.8	External links	224
4.27.9	Further reading	225
<b>5</b>	<b>Antarctic Ocean</b>	<b>226</b>
5.1	Deception Island	226
5.1.1	History	226
5.1.2	Geography	228
5.1.3	Environment	228

5.1.4	Gallery . . . . .	229
5.1.5	See also . . . . .	229
5.1.6	References . . . . .	229
5.1.7	Further reading . . . . .	230
5.1.8	External links . . . . .	230
5.2	Franklin Island . . . . .	230
5.2.1	See also . . . . .	230
5.2.2	References . . . . .	231
5.3	Laurie Island . . . . .	231
5.3.1	History . . . . .	231
5.3.2	Geology . . . . .	232
5.3.3	See also . . . . .	232
5.3.4	References . . . . .	232
5.3.5	External links . . . . .	233
5.4	Peter I Island . . . . .	233
5.4.1	History . . . . .	233
5.4.2	Geography . . . . .	233
5.4.3	Environment . . . . .	234
5.4.4	Politics . . . . .	234
5.4.5	See also . . . . .	235
5.4.6	References . . . . .	235
5.4.7	Bibliography . . . . .	235
<b>6</b>	<b>Text and image sources, contributors, and licenses</b>	<b>236</b>
6.1	Text . . . . .	236
6.2	Images . . . . .	250
6.3	Content license . . . . .	264

# Chapter 1

## Arctic Ocean

### 1.1 Bear Island

This article is about the Norwegian island in Svalbard. For other Norwegian Bear Islands, see Bjørnøya (disambiguation).

**Bear Island** (Norwegian: *Bjørnøya*, pronounced [ˈbjøːnøja]) is the southernmost island of the Norwegian Svalbard archipelago. The island is located in the western part of the Barents Sea, approximately halfway between Spitsbergen and the North Cape.

Bear Island was discovered by the Dutch explorers Willem Barents and Jacob van Heemskerck on June 10, 1596. It was named after a polar bear that was seen swimming nearby. The island was considered terra nullius until the Spitsbergen Treaty of 1920 placed it under Norwegian sovereignty.

Despite its remote location and barren nature, the island has seen commercial activities in past centuries, such as coal mining, fishing and whaling. However, no settlements have lasted more than a few years, and Bear Island is now uninhabited except for personnel working at the island's meteorological station *Herwichamna*. Along with the adjacent waters, it was declared a nature reserve in 2002.

#### 1.1.1 History



*Remnants of whaling station at Kvalrossbukta, Bear Island*



*Bear Island (Norway)*

Seafarers of the Viking era may have known Bear Island, but the documented history begins in 1596, when Willem Barents sighted the island on his third expedition. He named this island “Vogel Eylandt”, “Bird Island” in English.\* [1] Steven Bennet conducted further exploration in 1603 and 1604 and noted the then rich population of walrus. Starting in the early 17th century, the island was used mainly as a base for the hunting of walrus and other seal species. Eggs of seabirds were harvested from the large bird colonies until 1971.\* [2]

The Muscovy Company claimed Bear Island for the English Crown in 1609, but abandoned the site when walrus-hunting declined. A Russian settlement existed in the 18th century and its remains were later used as a basis for territorial claims by Imperial Russia in 1899 and again by the Soviet Union in 1947.\* [3]

Bear Island has never been extensively settled. The remnants of a whaling station from the early 20th century can be seen at *Kvalrossbukta* (“walrus bay”) in the south-east. From 1916 to 1925 coal was mined at a small settlement named *Tunheim* on the northeastern coast, but mining was given up as unprofitable. Due to the cold climate, the remains of the settlement, including a half-destroyed jetty and a steam locomotive, are relatively well preserved.

The strategic value of Bear Island was recognised in the late 19th century, when Imperial Russia and Imperial

Germany demonstrated their interests in the Barents Sea. The German journalist and adventurer **Theodor Lerner** visited the island in 1898 and 1899 and claimed rights of ownership. In 1899, the German fishery association *Deutsche Seefischerei-Verein* (DSV) started investigations of whaling and fishery in the Barents Sea. The DSV was secretly in contact with the German naval command and considered the possibility of an occupation of Bear Island. In reaction to these advances, the Russian Navy sent out the protected cruiser *Svetlana* to investigate, and the Russians hoisted their flag over Bear Island on July 21, 1899. Although Lerner protested the action, no violence occurred and the matter was settled diplomatically with no definitive claims of sovereignty over Bear Island by any nation.\* [1]

The whole island was privately owned by the coal mining company **Bjørnøen AS** from 1918 to 1932, when the Norwegian state took over the shares. **Bjørnøen AS** now exists as a state owned company and is jointly managed with **Kings Bay AS**, the company that runs the operations of **Ny-Ålesund** on **Spitsbergen**.\* [4] A Norwegian radio station (*Bjørnøya Radio*, callsign: *LJB*\* [5]) was established in *Herwichamna* on the north coast in 1919. It was later extended to include a meteorological station.

As the shipping routes from the Atlantic Ocean to **Murmansk** and the ports of the **White Sea** pass through the Barents Sea, the waters near Bear Island were of great strategic importance in the **Second World War** as well as the **Cold War**. Although **Svalbard** was not occupied by Germany in the **Second World War**, German forces erected several weather stations there. An automated radio station was deployed on **Bjørnøya** in 1941. German forces attacked several arctic convoys with military supplies for the **Soviet Union** in the waters surrounding Bear Island. They inflicted heavy losses upon **Convoy PQ-17** in June/July 1942 but were ineffective in the **Battle of the Barents Sea** on New Year's Eve 1942. The waters southeast of Bear Island were the scene of more naval battles in 1943. In November 1944, the **Soviet Union** proposed to annul the **Svalbard Treaty** with the intention of gaining sovereignty over Bear Island. Negotiations with **Trygve Lie** of the Norwegian government-in-exile had however not led to an agreement by the end of the **Second World War** and the **Soviet proposals** were never implemented.\* [1] The **Soviet Union** (and later, **Russia**) maintained their presence on **Spitsbergen**, however.

A small group of German soldiers was abandoned on Bear Island. They were supposed to establish and man a weather station there, but after losing radio contact in May 1945, they were isolated, and surrendered to some Norwegian seal hunters on 4 September. These were some of the last German soldiers to surrender in WW2.

In 2002 a nature reserve was established that covers all of the island, except 1.2 square kilometres (0.46 sq mi) around the meteorological station; the reserve also includes the adjacent waters to four nautical miles (7.4 kilo-

metres (4.6 mi)) from the coast.\* [6] In 2008 the decision was made to expand the reserve to 12 nautical miles (22 km) from the coast covering 177 square kilometres (68 sq mi) on land and 2,805 square kilometres (1,083 sq mi) of sea area.\* [7] Today, the island's only inhabitants are the nine\* [8] person staff of the Norwegian meteorological and radio station at *Herwichamna*. The station conducts meteorological observations and provides logistic and telecommunication services, including radio watch at **HF** channels 2182/2168 and **VHF** channels 16/12. Weather forecasts are transmitted from the station twice daily, announced on **HF** 2182/**VHF** 16. It also maintains landing platforms for use by helicopters of the **Norwegian Coast Guard**, the **Norwegian 330 Squadron**, and the **Governor of Svalbard**. The **Norwegian Polar Institute** conducts annual expeditions to Bear Island, mostly concerned with ornithological research. Several other research projects, mostly pertaining to geography and climatology, are carried out less regularly. There are very few opportunities for individual travel to **Bjørnøya**.

### 1.1.2 Hydrography, geography and climate



*Stappen bird cliff at Bear Island*

Agencies of the Norwegian government have conducted Hydrographic surveys of the waters of **Svalbard** throughout the 20th century, namely “**Norges Svalbard- og Ishav-**



*Urd, at 536 m the highest point of the island, is in Miseryfjellet, the mountainous eastern part of Bear Island.*

sundersøkelser” since 1928, its successor, the Norwegian Polar Institute since 1948, and the Norwegian Hydrographic Service since 1984.\*[9] Land surveying and mapping are the responsibilities of the Polar Institute.

Bear Island lies 235 kilometres (146 mi) south of mainland Spitsbergen and 397 kilometres (247 mi) NNW of Ingøy in mainland Norway. In the westernmost part of the Barents Sea on Spitsbergen Bank, which extends southward from Spitsbergen and Edgeøya, forming a part of the continental shelf. Water depths near the island and to the north and east do not much exceed 100 metres (328 ft), but become much greater to the south, and especially some thirty nautical miles to the west, where the continental shelf slopes into the deep water of the Norwegian Sea and Greenland Sea.

The island's outline is an irregular triangle pointing south with a greatest north-south extension of 20 kilometres (12 mi) and a greatest east-west extension of 15.5 kilometres (9.6 mi); its surface area is 178 square kilometres (69 sq mi). The southern part of Bjørnøya is mountainous, the highest top being Miseryfjellet on the southeast coast at about 536 metres (1,759 ft) above sea level. Other notable mountains are Antarcticfjellet in the southeast, and Fuglefjellet, Hambergfjellet, and Alfredfjellet in the southwest. The northern part of the island forms a lowland plain that comprises some two thirds of the surface area. The lowland is strewn with shallow freshwater lakes which cover some 19 square kilometres (7.3 sq mi) in all. Several streams flow into the sea, often as waterfalls in the steeper parts of the coast. There are no glaciers on Bear Island.

Apart from a few sandy beaches, the coast is mostly steep, with high cliffs and notable signs of erosion such as caverns and isolated rock pillars. A number of anchorages and landing points exist, as well as a small harbor at *Herwighamna* on the north coast. However, none of these are safe in all weather conditions and a ship mooring anywhere on Bear Island must therefore be prepared to weigh anchor at any time.

A branch of the North Atlantic current carries warm wa-

ter to Svalbard, creating a climate much warmer than that of other regions at similar latitude. Bear Island's climate is maritime-polar with relatively mild temperatures during the winter. January is the coldest month, with a mean temperature of  $-8.1^{\circ}\text{C}$  ( $17.4^{\circ}\text{F}$ ) (base period 1961–1990). July and August are the warmest months, with mean temperatures of  $4.4^{\circ}\text{C}$  ( $39.9^{\circ}\text{F}$ ). Temperatures have tended to be warmer the latest decades. There is not much precipitation, with an average of 371 mm (14.6 in) per year in the northern lowland area. The weather can be quite stable during the summer months, although foggy conditions are common, occurring during 20% of all days in July. Fog develops when warm air of Atlantic origin passes over cold water.

Because Bear Island lies on a boundary between cold water of polar origin and warmer Atlantic water, water temperatures within a few dozen nautical miles of the island are quite variable, sometimes reaching  $10^{\circ}\text{C}$  ( $50^{\circ}\text{F}$ ) in summer. During the winter fast ice develops on the coast, but it is rare on the open sea around Bear Island. The Barents Sea carries pack ice to Bjørnøya every winter, sometimes as early as October, but a significant amount of ice is not common before February.

The polar night lasts from 8 November until 3 February, and the period of midnight sun from 2 May until 11 August.

### 1.1.3 Flora and fauna



*Purple saxifrage is well-suited to Bjørnøya's climate.*

Bear Island was the site of a pioneering ecological study by Victor Summerhayes and Charles Elton in the early 1920s, which produced one of the first food web diagrams. There is little plant growth, consisting mostly of moss and some scurvy grass, but no trees.

The only indigenous land mammals are a few Arctic foxes. Despite its name, Bear Island is not a permanent residence of polar bears, although many arrive with the expanding pack ice in the winter. Occasionally, a bear will stay behind when the ice retreats in spring and remain through the summer months.\*[10] Moreover, the sub-population of *Ursus maritimus* polar bears found here is a genetically distinct set of polar bears associated with the



Barents Sea region.\*[11] Ringed seal and bearded seal, prey of the polar bear, live in the waters near Bjørnøya, but the formerly common walrus has nowadays become a rare guest. Bear Island's freshwater lakes are home to a population of Arctic char.

## Birds

The only land birds are snow buntings and rock ptarmigans, but the island is very rich in seabirds that nest on the southern cliffs. Other species visit the island during their seasonal migration between Svalbard's northern islands and mainland Europe.

Bear island has been identified as an Important Bird Area (IBA) by BirdLife International. It supports breeding populations of northern fulmars (50,000–60,000 pairs), purple sandpipers, red phalaropes (10 pairs), glaucous gulls (2000 pairs), black-legged kittiwakes (100,000 pairs), little auks (10,000–100,000 pairs), common guillemots (50,000 pairs), thick-billed guillemots (190,000 individuals) and black guillemots (1000 pairs). It also supports migratory populations of pink-footed geese (30,000 individuals), barnacle geese and long-tailed ducks.\*[12]

## 1.1.4 Environmental concerns

Although there are currently no industrial activities on Bjørnøya or in its immediate vicinity, pollution by toxic and radioactive substances remains a threat to the island's virtually untouched nature. Exploration in the Barents sea and the recent development of the Snøhvit gas field off the northern coast of Norway shows that the ecologically sensitive polar and subpolar sea areas of the Norwegian and Barents Sea have come into the focus of the petrol and gas industry.\*[13] The environmental organisation Bellona has criticised\*[14] the Norwegian government for licensing these activities without sufficient studies of their ecological impact. Organic toxins, specifically PCBs, have been found in high concentrations in biological samples from Bear Island, especially in Arctic char of the freshwater lake *Ellasjøen*.\*[15] The Soviet nuclear submarine *Komsomolets* sank on April 7, 1989 some 100 nautical miles (190 km) southwest of Bear Island.\*[16] Leakage of radioactive material from the reactor and nuclear warheads currently poses a problem, and severe pollution of the surrounding waters remains possible.\*[17]

## 1.1.5 Culture

### Associations

The island has a club for nude dippers ( “Bjørnøya naken-badeforening” ), with over 3,000 members.\*[8]

## Pastime

Surfing has been documented in the movie *Bjørnøya – følg drømmen* [Bear Island - follow the dream].\*[18]

## 1.1.6 See also

- *Bear Island*, a novel by Alistair Maclean which is set on Bear Island
- Bjørnøya Cgas
- List of islands of Norway

## 1.1.7 References

- [1] Arlov, Thor B. (2003). *Svalbards historie* (in Norwegian). Trondheim: Tapir Akademisk Forlag. ISBN 82-519-1851-0.
- [2] Circumpolar Seabird Working Group (2001). “Seabird harvest regimes in the circumpolar nations” (PDF). Retrieved December 20, 2007.
- [3] Meissner, Hans Otto (1963). *Unknown Europe*. trans. Florence and Isabel McHugh. London and Glasgow: Blackie & Sons. pp. 158–170.
- [4] Norwegian Ministry of Trade and Industry (2005). “The State's Ownership Report 2004” (PDF). Retrieved February 27, 2006.
- [5] “List of coastal radio stations” (PDF). World Meteorological Organisation. 2005. Retrieved October 9, 2006.
- [6] Sysselmannen på Svalbard (The Governor of Svalbard) (2005). “Forvaltningsplan for Bjørnøya 2005–2010 ( “Administrative plan for Bjørnøya 2005–2010” )” (PDF). Archived (PDF) from the original on October 29, 2005. Retrieved November 24, 2005.
- [7] “Enlarged nature reserve around Bear Island” . *Svalbardposten* (The Norway Post). December 18, 2008. Retrieved December 18, 2008.
- [8] “Badet naken på Bjørnøya ( “Swam naked on Bear island” )”. 2008.
- [9] Anon. (1990). *Den Norske Los – Farvannsbeskrivelse – Sailing Directions, Vol.7: “Arctic Pilot”* (in Norwegian and English). Norwegian Polar Research Institute and the Norwegian Hydrographic Service. ISBN 82-90653-06-9.
- [10] Årsæther, Jan (July 27, 2004). “Isbjørnfamilie fanget på Bjørnøya ( “Polar bear family trapped on Bear Island” )”. TV2 (Norway).
- [11] C. Michael Hogan (2008) *Polar Bear: Ursus maritimus*, Globaltwitcher.com, ed. Nicklas Stromberg
- [12] “Bjørnøya (Bear Island)”. *Important Bird Areas factsheet*. BirdLife International. 2013. Retrieved 2013-08-22.
- [13] Norwegian Petroleum Directorate (2005). “Barents Sea exploration celebrates 25 years” . Retrieved March 1, 2006.

- [14] Buch, Cato (2002). “Snøhvit: Reasons for Bellona's opposition” . Retrieved October 18, 2005.
- [15] Herzke, D.; Evenset A. et al. (2004). “Polybrominated diphenylethers in biota from Bjørnøya (Bear Island)” (PDF).
- [16] Montgomery, George (1995). “The Komsomolets Disaster” . Center for the Studies of Intelligence.
- [17] Gwynn, J.P.; Dowdall, M.; Lind, B. (2004). “The Radiological Environment of Svalbard” (PDF). Norwegian Radiation Protection Authority.
- [18] Jakten på den unike bølgen

### 1.1.8 Further information and external links

Publications of administrative and general interest are issued by the Governor of Svalbard . Maps, research reports, and scholarly works about Svalbard-related subjects are available from the Norwegian Polar Institute .

#### Books

- Bear Island: The story of an isolated arctic island – exploration, people, culture and nature by Dag Kjeldahl

#### General information

- Website of the meteorological station on Bear Island
- Report to the Storting (1999–2000) on Svalbard by the Norwegian Ministry of Justice and the Police – extensive report on political, administrative, economical and scientific matters relating to Svalbard

#### Time Zone

- TimeGenie.com – Central Europe Time zone. Standard Time difference compared to UTC/GMT is +1 hours

#### Maps and photos:

- Bear Island nature reserve (JPEG image) – from the Office of the Governor of Svalbard
- An interactive map of Svalbard – Bear Island included
- Detailed map northeastern part (PDF) showing the location of the meteorological station near the top
- Detailed map southern part (PDF)
- Map showing the location of Bear Island in relation to Svalbard – from the Norwegian Polar Institute

- Strategic Arctic outpost – pictorial introduction to Bear Island, from Norwegian newspaper *Aftenposten*, September 6, 2005

#### Geography, hydrography, meteorology:

- Geology of Bear Island, Norway – by Dr. Harmon D. Maher Jr., Dept of Geography and Geology, University of Nebraska at Omaha
- Svalbards geological development – By Winfried Dallmann, Norwegian Polar Institute.
- Bjørnøya and the island's meteorological station – by the Norwegian Meteorological Institute
- Monthly temperature, precipitation normals 1961–1990 – upper table: temperature (°C); lower table: precipitation (mm)
- Sea ice charts of the Bjørnøya area – updated daily on weekdays

#### History:

- “Meteorological operations in the Arctic 1940–1945” – by Franz Selinger; on World War II German Arctic meteorology services, incl. *TAAGET* station, Bjørnøya

#### Recent events:

- Two Russian vessels arrested at Bear Island for violation of fishing regulations

## 1.2 Lonely Island

**Uyedineniya Island** (also **Uedinenia**, Russian: Остров Уединения; Norwegian: *Ensomheden*) is an island located in the central part of the Kara Sea, roughly midway between Novaya Zemlya and Severnaya Zemlya. Its latitude is 77° 29' N and its longitude 82° 30' E. It is often labelled as **Einsamkeit Island** (from the German *Einsamkeit Insel*) and more rarely as **Lonely Island** or **Solitude Island** in English maps.

### 1.2.1 Geography

The island is barren and icy throughout the winter months, but some tundra vegetation grows on it in the summer. Its length is 18.5 km and its total area is 20 km<sup>2</sup>. Compared to other Arctic islands it is flat and low-lying, with some swamps and small lakes and a long spit of land on its NE side. Its highest point is only about 30 m.

Owing to its extreme northerly location the weather is bleak and severe and the sea surrounding Uedineniya is

covered with pack ice in the winter. Ice floes are commonly found even in the summer.

The nearest landmasses are the **Izvestiy TSIK Islands**, located about 150 km to the SSE, while the distance to mainland Siberia to the SSE some 280 km and to the northern tip of *Novaya Zemlya* straight west about 340 km.

Uyedineniya belongs to the **Krasnoyarsk Krai** administrative division of the **Russian Federation**.

## 1.2.2 History

The island was discovered on 26 August 1878 by Norwegian explorer Captain **Edvard Holm Johannesen** from **Tromsø**, named the island *Ensomheden*—"solitude" in Norwegian—likely due to its isolated location in the Arctic.

Soviet polar explorer Professor **Vladimir Yulyevich Vize** advanced the hypothesis that there was an extensive shallow area and perhaps more undiscovered islands near Uyedinenya. This was based on certain observations made by polar explorers:

The discovery of that solitary island called *Einsamkeit*, by Captain Johannesen... is of the greatest importance and significance, as indicating the presence of land hitherto unknown in that direction. Although it received the name it now bears from Captain Johannesen, a name signifying "lonely" or "solitary," it seems exceedingly unlikely that it will prove to be so isolated as is supposed... which would lead to the assumption that it might be the southern termination of a chain of islands eastward of *Franz-Josef Land*.

During his expedition to **Franz Josef Land** on ice-breaking steamer "**Malygin**" in 1931, Vize hoped to carry out oceanographic work in the Northern part of the Kara Sea, but his research was cut short by thick sea ice. Later expeditions and satellite pictures demonstrated that there were no other islands in the vicinity of Uedineniya.

A cervical vertebra of a plesiosaur (*Plesiosaurus latispinus*) was discovered on the island during an expedition in the 1930s. It was studied by Soviet paleontologist **A. N. Ryabinin**.

At the time of World War II, there was a small polar observatory on Uyedineniya built by the Soviet government. On September 8, 1942, the German submarine U-251 (Lt. Captain Timm) surfaced close to the island and destroyed the weather station's small building and its garrison by firing grenades against those targets. This was one of the last actions of the Kriegsmarine under Operation Wunderland.

Since May 1993, Uyedineniya has been a part of the **Great Arctic State Nature Reserve**, the largest nature reserve in Russia intended to preserve the habitat of the polar bears, pinnipeds (namely, walruses and seals), and the many kinds of birds that live on the island.

The polar observatory, which had been rebuilt during the Cold War time, was abandoned in 1996. Presently there is no human habitation in Uyedineniya.

## 1.2.3 Climate

Uyedineniya Island has a harsh arctic climate, mean temperatures never rise above freezing.

## 1.2.4 See also

- [List of islands of Russia](#)

## 1.2.5 Notes

### References

- [1] "Weather Reports —Weather Averages for Uyedineniya Island" . Retrieved April 1, 2012.
- [2] "Ujedinenija Island Climate Normals 1961-1990" . National Oceanic and Atmospheric Administration. Retrieved January 18, 2012.

### Sources

- **Rudolf Samoylovich**, *Exploration of the Polar Part of U.S.S.R. in 1934 and the Sedov expedition*.
- **Albert Hastings Markham**. *Arctic Exploration*, 1895.
- **A.N. Ryabinin**, *On new discoveries of Plesiosauria in the Soviet Arctic and of a centrum of a cervical vertebra of Plesiosaurus latispinus Owen from the Lonely island in the Kara sea (Russia)*; Problems of the Arctic **AARI**, Leningrad; 1939
- **L. Peillard**, *Geschichte des U-Bootkrieges 1939–1945*. 1970.

## 1.2.6 External links

- [Images of the abandoned weather station](#)
- [http://www.hamradio.ru/rrc/ARTICLES/li\\_e.htm](http://www.hamradio.ru/rrc/ARTICLES/li_e.htm)
- Sverdrup Expedition investigations on Uyedineniya Island: [http://www.yukoncollege.yk.ca/~{agraham/nost202/1915\\_1924.pdf](http://www.yukoncollege.yk.ca/~{agraham/nost202/1915_1924.pdf)
- On the hypothesis that there were more islands near Einsamkeit Island: <http://207.61.100.164/cantext/accounts/1895mark.html>

## 1.3 Rudolf Island



*Rudolf Island at the northern end of Franz Josef Land.*

**Prince Rudolf Land, Crown Prince Rudolf Land, Prince Rudolf Island** or **Rudolf Island** (Russian: Остров Рудольфа) is the northernmost island of the Franz Josef Archipelago, Russia. The island was named by the Austro-Hungarian North Pole Expedition in honor of Archduke Rudolf (1858–1889), Crown Prince of Austria, Hungary and Bohemia. It belongs to the Arkhangelsk Oblast administrative region of the Russian Federation.

Rudolf Island is almost completely glaciated. It is located at 81°46′02″N 58°33′36″E﻿ / ﻿81.767222°N 58.56°ECoordinates: 81°46′02″N 58°33′36″E﻿ / ﻿81.767222°N 58.56°E, very close to the limit of permanent Polar ice. Its highest point is 461 m (1,512 ft). Because of its location, the island has served as a staging area for numerous polar expeditions. During the second International Polar Year, a weather station established on the island was the northernmost scientific outpost in the world.\* [1]

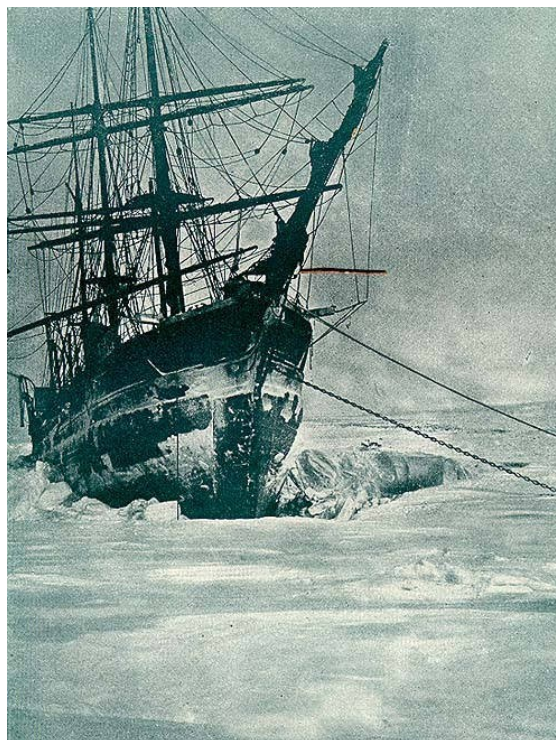
Sheltered Teplitz Bay has been used as a stopping point for northbound ships. During 1899–1900, an expedition led by Prince Luigi Amedeo, Duke of the Abruzzi stopped in the area. The Ziegler Polar Expedition of 1903–1905, led by Anthony Fiala left a large hut here.

Due to the steep terrain in Rudolf Island, the only airfield access is a small snow strip 300 m (1,000 ft) up a glacier. It was constructed in 1936 as a staging area for the world's first drift ice station, North Pole-1.\* [1]

Cape Fligely, located on Rudolf Island's northern shore, is the northernmost point of Europe and Russia.

### 1.3.1 See also

- List of islands of Russia



*Ship marooned in the ice at Teplitz Bay, 1904*

### 1.3.2 References

[1] Althoff, William F. *Drift Station: Arctic Outposts of Superpower Science*. Potomac Books Inc., Dulles, Virginia. 2007. p. 38

- Althoff, William F. *Drift Station: Arctic outposts of superpower science*. Potomac Books Inc., Dulles, Virginia. 2007.
- 
- William Barr, *The First Tourist Cruise in the Soviet Arctic*.
- Fate of two polar expeditions in Rudolf Island

### 1.3.3 External links

- Images of buildings on the island (Flickr)

# Chapter 2

# Atlantic Ocean

## 2.1 Annobón

“Annobón” redirects here. For other uses, see Annobón (disambiguation).

**Annobón Province** is a small province of Equatorial Guinea consisting of the island of **Annobón** and its associated islets in the Gulf of Guinea and South Atlantic Ocean's Cameroon Line. The provincial capital is San Antonio de Palé on the north side of the island; the other town is Mabana, formerly known as San Pedro. The roadstead is relatively safe, and some passing vessels take advantage of it in order to obtain water and fresh provisions, of which Annobon offers an abundant supply. However, there is no regular shipping service to the rest of Equatorial Guinea, and ships call as infrequently as every few months. During the 2013 census, it had 20,741 inhabitants, a significant population increase from the 5,008 registered by the 2001 census. The official language is Spanish but most of the inhabitants speak a creole form of Portuguese. The island's main industries are fishing and timbering.



Detailed map of Annobón (left)



Location of Annobón

### 2.1.1 Name

“Annobón”, also spelled **Annabon**\*[1] and **Anabon** and formerly as **Anno Bom** and **Annabona**.\*[2] derives its name from *Ano Bom* (lit. “Good Year”). It was named for the date of its discovery by the Portuguese on New Year's Day (Portuguese: *Dia do Anno Bom*) in 1473.\*[2]

During the final years of the Nguema administration, the island was called **Pigalu** and **Pagalu**, from the Portuguese *papagaio* (“parrot”).

## 2.1.2 Geography



○  
Annobón

Location of Annobón Island in the Atlantic Ocean

Annobón is an extinct volcano about 220 miles (350 km) west of Cape Lopez in Gabon and 110 miles (180 km) southwest of São Tomé Island.\*[1] The main island measures about 4 miles (6.4 km) long by 2 miles (3.2 km) wide,\*[2] with an area of about  $6\frac{3}{4}$  square miles ( $17\frac{1}{2}$  km<sup>2</sup>),\*[1] but a number of small rocky islets surround it, including Santarém to the south. Its central crater lake is named Lago A Pot and its highest peak is Quioveo, which rises 598 meters (1,962 ft). The island is characterized by a succession of lush valleys and steep mountains, covered with rich woods and luxuriant vegetation.\*[2]

Annobón is often described as being “in the Gulf of Guinea”,\*[n 1] like the neighboring islands of São Tomé and Príncipe, but the formal boundary line for the Gulf of Guinea established by the International Hydrographic Organization actually runs north of it.\*[n 2]

## 2.1.3 History

The island was discovered by the Portuguese on January 1, 1473. It was apparently uninhabited until colonized under the Portuguese from 1474, primarily by Africans from Angola via São Tomé Island.

The island was passed to Spain by the 1778 Treaty of El Pardo. The treaty granted Spain control of the Portuguese islands of Annobón and Fernando Po (now Bioko) and

the Guinea coast between the Niger and the Ogooué in exchange for Spanish acceptance of the Portuguese occupation of territories in Brazil west of the line established by the Treaty of Tordesillas. The Spanish colony thus formed would eventually be known as Spanish Guinea.

The island's populace was opposed to the arrangement and hostile toward the Spaniards. After the handover and when the Spanish flag was hoisted to affirm Spanish sovereignty, the islanders revolted against the newcomers, in part because they were considered heretical for placing dogs on their flag. (The actual design represents lions.) They expelled them according to a tradition of throwing witches to the sea.\*[4] A state of anarchy ensued, leading to an arrangement by which the island was administered by a body of five natives, each of whom held the office of governor during the period that elapsed until ten ships landed at the island.\*[2] This autonomous government continued, with the island claimed by both Spain and Portugal,\*[2] until the authority of Spain was reestablished in the latter part of the 19th century.\*[1] The island briefly became part of the Elobey, Annobón, and Corisco colony until 1909.

The British erected a fort at “St Antony” in 1801, eventually legalized through a lease from the Spanish government in 1827. The base was used by the British to repress the Atlantic slave trade.

During the final years of the administration of Francisco Macías Nguema, the first president of Equatorial Guinea, the island was called Pigalu or Pagalu. The population felt prejudice against them in Equatorial Guinea and some began advocating separatist movements. In 1993, the central government isolated the island, expelling foreigners including humanitarian organizations. The population rebelled and attacked the governor's residence. The government replied with two extrajudicial executions. International pressure eased hostilities, and political prisoners were released.\*[4]

It was mostly due to this small island that Equatorial Guinea asked for observer status just after the CPLP (the Portuguese-speaking commonwealth) was formed in 1996, which led to a visit to Equatorial Guinea, in 1998, by the Portuguese foreign minister, Jaime Gama.\*[4] Its historic, ethnographic, and religious identity is reflected in its provincial flag. In 2006, Equatorial Guinea achieved observer status with the hand of São Tomé and Príncipe, it kept lobbying to become a full member, contrary to international pressure that wanted to isolate the country due to human rights violations, becoming a full member in 2014 with very active support of Portuguese-speaking Africa, with the Portuguese language being restored as an official language.\*[5]\*[6]

## 2.1.4 Flora and fauna

Further information: São Tomé, Príncipe, and Annobón moist lowland forests

Originally, this small equatorial island 335 kilometres (208 mi) from the Gabonese coast was uninhabited and had great biological diversity. With colonization, islanders used rafts or “cayucos” (canoe-like boats), and hunted humpback whales, whale calves, and other Cetaceans with harpoons near to the island.

Today the **Ojo Blanco** (Annobón White-eye, *Zosterops griseovirescens*) and the **Monarca del Paraíso de Annobón** (Annobón Paradise-flycatcher, *Terpsiphone smithii*) are endemic passeri (songbirds), as is the São Tomé Island or Malherbi pigeon (*Columba malherbii*). There are 29 species of bird on the island as well as 2 bat species (1 endemic); reptiles (5 species endemics): 1 snake, 3 geckos, 2 scincid lizards, 3 marine turtles; river fish: 18 species (1 endemic); mosquitoes, scorpions, and huge centipedes. Introduced domestic animals include: fish, guinea fowl, rats, dogs, and cats. The island has no indigenous mammalian predators. Sharks are found in the surrounding sea.

There are 208 species of vascular plant (of which 15% are endemic) including the “point up” baobab, ceiba (used for cayuco construction), ficus, ferns and tree ferns, and great moss masses.

### 2.1.5 Administration

The capital of the province is **San Antonio de Palé** (formerly St Antony). The island has three community councils (*Consejos de Poblados*): Anganchi, Aual, and Mabana.

### 2.1.6 Demographics

The island's inhabitants are of mixed Portuguese and Angolan descent, with some Spanish admixture. The early anti-Spanish sentiment, combined with the isolation from mainland Equatorial Guinea and the proximity of São Tomé and Príncipe—which is just 175 kilometres (109 mi) from the island—has helped preserve the island's cultural ties with Portugal. Its culture is very similar to that of São Tomé and the Afro-Portuguese peoples throughout Africa.\*[4] Spanish is the official language, used mostly in administration and education, with the Portuguese creole as the main language, with non-creolized Portuguese used at church. The population is Catholic and the practiced Catholicism is that of the 16th century, distinct from contemporary Catholicism.\*[5]

The island had an estimated population of 3000 through most of the 19th century.\*[2]\*[1]

### 2.1.7 Language

The island's main language is a Portuguese creole known as the Annobonese language (Fá d'Ambô) or *Falar de Ano Bom* (Portuguese for Annobon Speech).\*[7] The Portuguese creole has vigorous use in Annobón. Spanish is not much spoken in Annobón. It is common in all domains except government and education where Spanish is used. Noncreolized Portuguese used as liturgical language by local Catholics.\*[8] In February 2012, Equatorial Guinea's foreign minister signed an agreement with the IILP (Instituto Internacional da Língua Portuguesa) on the promotion of Portuguese in Equatorial Guinea.\*[6]\*[9] The adoption of Portuguese followed the announcement on 13 July 2007 by the President of Equatorial Guinea and a 2010 Constitutional Law which established Portuguese has an official language of the Republic.\*[10]\*[11]\*[12]

The Annobonese Juan Tomás Ávila Laurel is a writer who has issued reflections on his home island. He writes in Spanish.

### 2.1.8 Economy

Annobon is of strategic importance to Equatorial Guinea as through its ownership the Equatorial Guinean government claims to extensive maritime territory to the south of its neighbour, São Tomé and Príncipe (which itself lies to the south of Equatorial Guinea's main land mass). Oil in the Gulf of Guinea represents more than 80% of Equatorial Guinea's economy, though supplies from current reserves are predicted by some sources to run out before 2020. Although no drilling is currently taking place in São Tomé, there are estimated to be 34 billion barrels ( $5.4 \times 10^9 \text{ m}^3$ ) of oil within its marine borders. Equatorial Guinea claims the right to explore for and produce hydrocarbons in a huge area of sea surrounding Annobón that stretches from 1°N to almost 5°S, and from 2°E to 7°E; an area larger than the entire land and sea borders of the rest of Equatorial Guinea.

### 2.1.9 Environment

According to many different sources,\*[13] there is evidence of large-scale dumping of toxic waste on the remote island of Annobon, at least during the 1980s and 1990s. The German edition of *Der Spiegel* on 28 August 2006 reported that the government of Equatorial Guinea sold permits to UK and US companies to bury 10 million metric tons of toxic waste and 7 million metric tons radioactive waste on the island of Annobón. Teodoro Obiang Nguema Mbasogo, president of Equatorial Guinea, supposedly receives 200 million US dollars per year for renewed permits, while the population of Annobón lives in extreme poverty. The report also showed evidence that the whole island's ecosystem is about to col-

lapse due to the massive waste dumping.

### 2.1.10 See also

- Provinces of Equatorial Guinea
- St Matthew Island, a phantom island

### 2.1.11 Notes

- [1] As, for example, by the 11th edition of the *Encyclopædia Britannica*.<sup>\*</sup>[1]
- [2] From the 1953 *Limits of Oceans and Seas*: "(34) A line running south-eastwards from Cape Palmas in Liberia to Cape Lopez [in Gabon] (0°38' S, 8°42' E)." <sup>\*</sup>[3]

### 2.1.12 References

#### Citations

- [1] EB (1911).
- [2] EB (1878).
- [3] "Gulf of Guinea" , *Limits of Oceans and Seas*, 3rd ed. (PDF), International Hydrographic Organization, 1953, retrieved 7 February 2010.
- [4] Ano Bom - A Ilha Esquecida no Meio do Atlântico
- [5] lha de Ano-Bom estabelece ligação da Guiné Equatorial à lusofonia- DW
- [6] "Assinado termo de cooperação entre IILP e Guiné Equatorial" [Protocol signed on cooperation between IILP and Guinea Equatorial] (in Portuguese). Instituto Internacional de Língua Portuguesa. 7 February 2012. Retrieved 27 March 2012.
- [7] Government official website
- [8] "Fa d' Ambu" . Ethnologue. Retrieved 15 November 2010.
- [9] "Protocolo de Cooperação entre a Guiné-Equatorial e o IILP" [Protocol on cooperation between IILP and Guinea Equatorial] (in Portuguese). CPLP. 7 February 2012. Retrieved 27 March 2012. This note contains a link to the text of the protocol in PDF format.
- [10] "Equatorial Guinea Adds Portuguese as the Country's Third Official Language" . PRNewsWire. 14 October 2011. Retrieved 15 November 2010.
- [11] "El portugués será el tercer idioma oficial de la República de Guinea Ecuatorial" (in Spanish). Gobierno de la República de Guinea Ecuatoria. Retrieved 15 November 2010.
- [12] "Proyecto de Ley Constitucional" (PDF). Gobierno de la República de Guinea Ecuatorial. 14 October 2011. Retrieved 15 November 2010.
- [13] G. Wood, "Business and politics in a criminal state: the case of Equatorial Guinea" , *African Affairs* Volume 103, Issue 413 Pp. 547-567.

### Bibliography

- "Anno Bom", *Encyclopædia Britannica*, 9th ed., Vol. II, New York: Charles Scribner's Sons, 1878, p. 72.
- "Annobon", *Encyclopædia Britannica*, 11th ed., Vol. II, Cambridge: Cambridge University Press, 1911, p. 74.

### 2.1.13 External links

- Gulf of Guinea Conservation Group
- [http://www.icex.es/staticFiles/GuineaEcuatorial\\_6814\\_.pdf](http://www.icex.es/staticFiles/GuineaEcuatorial_6814_.pdf)
- <http://www.iradier.org/colaboracion5.htm>
- Ghuty Mamae: La esencia de Annobón

Coordinates: 1°25′S 5°38′E﻿ / ﻿1.417°S 5.633°E﻿ / -1.417; 5.633

## 2.2 Ascension Island

This article is about the island in the Atlantic Ocean. For the islands in Canada, see Ascension Islands.

**Ascension Island** is an isolated volcanic island in the equatorial waters of the South Atlantic Ocean, around 1,600 kilometres (1,000 mi) from the coast of Africa and 2,250 kilometres (1,400 mi) from the coast of Brazil, which is roughly midway between the horn of South America and Africa. It is governed as part of the British Overseas Territory of Saint Helena, Ascension and Tristan da Cunha,<sup>[1]</sup> of which the main island, Saint Helena, is around 1,300 kilometres (800 mi) to the south-east. The territory also includes the "remotest populated archipelago" on Earth, the sparsely populated Tristan da Cunha archipelago, some 3,730 kilometres (2,300 mi) to the south (about thirty degrees of latitude) and about halfway to the Antarctic Circle.

The island is named after the day of its recorded discovery, Ascension Day, and is located at 7°56′S 14°22′W﻿ / ﻿7.933°S 14.367°W﻿ / -7.933; -14.367Coordinates: 7°56′S 14°22′W﻿ / ﻿7.933°S 14.367°W﻿ / -7.933; -14.367, about as far south of the equator as tropical Venezuela is to its north. It played a role as an important safe haven and coaling station to mariners and for commercial airliners during the days of international air travel by flying boats. During World War II it was an important naval and air station, especially providing anti-submarine warfare bases in the Battle of the Atlantic.<sup>[2]</sup> Ascension Island was garrisoned by the British Admiralty from 22 October 1815 to 1922.

The island is the location of RAF Ascension Island, which is a Royal Air Force station with a United States Air



Force presence, a European Space Agency rocket tracking station, an Anglo-American signals intelligence facility and the BBC World Service Atlantic Relay Station. The island was used extensively by the British military during the Falklands War. Ascension Island hosts one of five ground antennas (others are on Kwajalein Island, Diego Garcia, Colorado Springs and Hawaii) that assist in the operation of the Global Positioning System (GPS) navigational system. The U.S. National Aeronautics and Space Administration (NASA) and the U.S. Air Force operate a telescope on Ascension Island for tracking orbital debris, which are potentially hazardous to operating spacecraft and astronauts; the facility is called the John Africano NASA/AFRL Orbital Debris Observatory.” [3]

## 2.2.1 History



Location of Ascension Island in the British South Atlantic territories.

João da Nova, sailing for the Portuguese Crown, discovered the island in 1501 and named it *Ilha de Nossa Senhora da Conceição*, but the discovery was quickly forgotten. In 1503, the Portuguese navigator Afonso de Albuquerque sighted the island on Ascension Day (which fell on 21 May that year) and named it *Ilha da Ascensão* after this feast day. [4] Dry and barren, the island had little appeal for passing ships except for collecting fresh meat, and was not claimed for the Portuguese Crown. Mariners could hunt for the numerous seabirds and the enormous female green turtles that laid their eggs on the sandy beaches. The Portuguese also introduced goats as a potential source of meat for future mariners.

In February 1701, *HMS Roebuck*, commanded by William Dampier, sank in the common anchoring spot in Clarence Bay to the northwest of the island. Some sixty men survived for two months until they were rescued. Almost certainly, after a few days they found the strong water spring in the high interior of the island, in what is now called Breakneck Valley (there is a much smaller water source, lower on the mountain, which was

named Dampier's Drip by people who probably misinterpreted Dampier's story). [5]

It is possible that the island was sometimes used [6] as an open prison for criminal mariners, although there is only one documented case of such an exile, a Dutch ship's officer, Leendert Hasenbosch, set ashore at Clarence Bay as a punishment for sodomy in May 1725. British mariners found the Dutchman's tent, belongings and diary in January 1726; the man had probably died of thirst or suicide.

Organised settlement of Ascension Island began in 1815, when the British garrisoned it as a precaution after imprisoning Napoleon I on Saint Helena to the south-east. [4] On 22 October the *Cruizer* class brig-sloops *Zenobia* and *Peruvian* claimed the island for His Britannic Majesty King George III. The Royal Navy designated the island as a stone frigate, *HMS Ascension*, with the classification of "Sloop of War of the smaller class" .

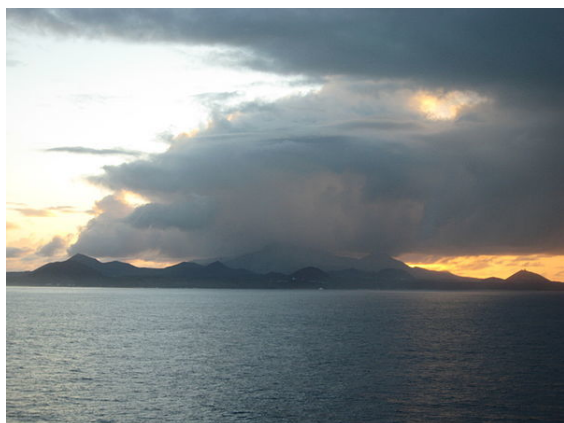


Royal Marine barracks (1830) in the former Royal Dockyard, Georgetown

The location of the island made it a useful stopping-point for ships and communications. The Royal Navy used the island as a victualling station for ships, particularly those of the West Africa Squadron working against the slave trade. [7] A garrison of Royal Marines was based at Ascension from 1823.

In 1836 the *Beagle* voyage visited Ascension. Charles Darwin described it as an arid treeless island, with nothing growing near the coast. Sparse vegetation inland supported "about six hundred sheep, many goats, a few cows & horses" , large numbers of guineafowl imported from the Cape Verde islands, rats, mice, and land crabs; he agreed with the saying attributed to the people of St Helena that "We know we live on a rock, but the poor people at Ascension live on a cinder" . He noted the care taken to sustain "houses, gardens & fields placed near the summit of the central mountain" , and cisterns at the road side to provide good drinking water. The springs were carefully managed, "so that a single drop of water may not be lost: indeed the whole island may be compared to a huge ship kept in first-rate order." In commenting on this, he noted René Primevère Lesson's remark "that the English nation alone would have thought of making the island of Ascension a productive spot; any other people would have held

it as a mere fortress in the ocean.” \* [8]



*Ascension Island viewed from the south*

In 1843, botanist and explorer Joseph Hooker visited the island. Four years later, Hooker, with much encouragement from Darwin, advised the Royal Navy that with the help of Kew Gardens, they should institute a long-term plan of shipping trees to Ascension. The planted trees would capture more rain and improve the soil, allowing the barren island to become a garden. So, from 1850 and continuing year on year, ships came each depositing a varied assortment of plants from botanical gardens in Argentina, Europe and South Africa. By the late 1870s Norfolk pines, eucalyptus, bamboo, and banana trees grew in lush profusion at the highest point of the island, Green Mountain, creating a tropical cloud forest. \* [9]

In 1899, the Eastern Telegraph Company (now part of Cable & Wireless Worldwide) installed the first underwater cable from the island, connecting the UK with its colonies in South Africa. \* [4] In 1922, letters patent made Ascension a dependency of Saint Helena. \* [4] The island was managed by the head of the Eastern Telegraph Company on the island until 1964 when the British Government appointed an Administrator to represent the Governor of Saint Helena on Ascension. \* [4]

During World War II, to supply and augment extensive amphibious aircraft antisubmarine patrol operations ongoing from the early days of the war, the United States built an airbase on Ascension Island, known as “Wideawake” , \* [4] after a nearby colony of sooty terns (locally called 'wideawake' birds because of their loud, distinctive call, which would wake people early in the morning). The airbase, which was under construction by the 38th Combat Engineer Battalion of the Army Corps of Engineers, was unexpectedly visited by two British Fairey Swordfish torpedo planes on 15 June 1942. According to one of the pilots, Peter Jinks, the planes were fired upon before being recognised as allies. The Swordfish had to land on the unfinished airstrip, thus becoming the first aircraft to land on Ascension Island proper—which had long served as an ASW base for Catalina

(PBY Catalina) flying boats. The event was later commemorated with a postage stamp 15 June 1982.

The airfield was used by the US military as a stopping point for American aircraft crossing the Atlantic Ocean on the way to theatres of operation in Europe and Africa. American bombers based at Wideawake were engaged in the Laconia incident. After the end of World War II, and American departure, the airbase fell into disuse.



*The island viewed from atop Green Mountain, looking south towards Two Boats Village and Georgetown*

The only local military action during World War II occurred on 9 December 1941. At around mid-day, the U-boat *U-124* approached Georgetown on the surface with the intention of sinking any ships at anchor or shelling the cable station. Fort Bedford, a two-gun shore battery at Cross Hill, above Georgetown, fired on the submarine. The guns scored no hits but the U-boat submerged and retreated. The battery remains largely intact to this day, together with its guns, BL 5.5 inch Mark I naval guns removed from *HMS Hood* during a refit in Malta in 1938.

With the Space Race and the Cold War, the Americans returned in 1956. \* [4] Wideawake Airfield expanded in the mid-1960s. The runway, with its strange hump, was extended, widened, and improved to allow its use by large aircraft, and later to act as an emergency runway for the Space Shuttle, although the Shuttle never had occasion to use it. \* [4] The United States Air Force uses the island as part of its Eastern Range. NASA established a tracking station on the island in 1967, which it operated for more than 20 years before closing it down in 1990. \* [4] A joint Government Communications Headquarters and National Security Agency signals intercept station was also established on Ascension during the Cold War. \* [10] \* [11] The island retains a role in space exploration: the European Space Agency now operates an Ariane monitoring facility there. \* [4] The BBC Atlantic Relay Station was installed in 1966 for short-wave broadcasts to Africa and South America.

In 1982 a British task force used Ascension Island as a staging post during the Falklands War, \* [4] though according to Matthew Parris, \* [12] "...at the start of the

Falklands conflict Washington at first refused Britain permission to use the USA-operated airfield facilities for refuelling RAF jets. Only after Mrs Thatcher intervened with Ronald Reagan did the Americans reluctantly concede.” The Royal Air Force deployed a fleet of Vulcan bombers and Victor tankers at the airfield. Vulcans launched the opening shots of the British offensive from Ascension in *Operation Black Buck*. The RAF also used the base to supply the task force. Because of the increase in air traffic during the war, Wideawake was the busiest airfield in the world for a short period. The Royal Navy's fleet stopped at Ascension for refuelling on the way. Following the war, the British retained an increased presence on the island, establishing RAF Ascension Island, and providing a refuelling stop for the regular airlink between RAF Brize Norton in Oxfordshire, and RAF Mount Pleasant in the Falkland Islands.



*Ascension Government House*



*Wideawake Airfield*

As of 2004, it was reported that the Composite Signals Organisation, an arm of GCHQ, continued to operate a signals interception facility on Ascension.\*[13] As of 2007 NASA continued to list Ascension Island as a “downrange site” used for range safety instrumentation.\*[14] In particular, the Post-Detect Telemetry System used to acquire launch vehicle telemetry includes a station on Ascension.\*[15]

In 2008 British diplomats requested sovereignty, at the United Nations Commission on the Limits of the Continental Shelf (UN CLCS), over 77,220 square miles (200,000 km<sup>2</sup>) of submarine territory around the island. This would enable exploration into new reserves of oil, gas and minerals, though none are thought to exist.\*[16]

## 2.2.2 Politics

Ascension forms part of a British overseas territory together with Saint Helena and Tristan da Cunha.\*[7] Executive authority is vested in Elizabeth II,\*[7] who is represented by the Governor of Saint Helena, Ascension and Tristan da Cunha. As the Governor resides in Jamestown, Saint Helena, an Administrator is appointed to represent the Governor on Ascension Island.

As a result of changes in the constitutional arrangements for Ascension Island, the first Island Council of seven members was elected and took office on 1 November 2002. This Council was dissolved by order of the Governor of Saint Helena on 24 October 2005, and a new election was held on 16 November 2005. 697 electors chose among ten candidates contesting the seven seats.\*[17]

Six of the seven members resigned in January 2007 in the belief that they were “assisting to legitimise a democracy that doesn't really exist on Ascension Island”.\*[18] Consequently, a general election was called, but by the close of nominations, there were only two candidates. As a result of the boycott, the election was abandoned, and the governor suspended the Island Council for 12 months. It was stated that an election would take place in April 2008 but following consultations this was extended to October.\*[19] With eight nominations the elections were duly held and seven candidates were elected to form a new Island Council, which was sworn in on 28 October.\*[20]

Ascension Island has its own local system of law, much of which is based on the laws of Saint Helena and some parts of English law with modifications.\*[7] The Island Council advises on new or revised laws. Where local legislation does not exist, Saint Helenian law may be used where appropriate and suitable for local adaptation, or specific Ascension Island law is enacted. Employment legislation is a mixture of contract law and the Workmen's Protection Ordinance, which guarantees a contract, and obliges employers to provide free accommodation, medical cover, food (or a food allowance), and travel.

The Saint Helena, Ascension and Tristan da Cunha Constitution Order 2009 was made by HM the Queen and the Privy Council on 8 July and came into operation in September 2009.\*[7] The new constitution replaced the 1988 version and among other changes limits the Governor's powers, included a Bill of Rights, established independence of the judiciary and the public service, and designated the Governor of St Helena as, concurrently, the Governor for Ascension and Tristan da Cunha. It ended the “dependency” status of Ascension and Tristan da

Cunha on Saint Helena that had been in place, for administrative convenience, since 1922.\* [21]

### 2.2.3 Environment

See also: List of mountains and hills of Saint Helena, Ascension and Tristan da Cunha

The main island has an area of approximately 88 km<sup>2</sup>.



Comfortless Cove



Lava fields

A volcanic peak rising from only 100 km (62 mi) west of the Mid-Atlantic Ridge, much of the island is a wasteland of lava flows and cinder cones; no fewer than forty-four distinct dormant craters have been identified.\* [7]

#### Flora and fauna

Main article: Ascension scrub and grasslands

**Plants** The island had its own native flora until Portuguese explorers released goats in the 1500s which ate much of it. The later introduction of rabbits, sheep, rats and donkeys, and over 200 imported species further marginalized the original flora.\* [22] By 1843 the



Black volcanic rocks

island was barren with few plants. However, due to the introduction of species by the British, Ascension Island's Green Mountain is now one of the few large-scale planned forests, and is gradually growing with each year. Its highest point is at 2,817 feet (859 m).\* [7]

The endemic flora includes plants like *Pteris adscensionis*, *Asplenium ascensionis*, *Euphorbia organoides* as well as the extinct species *Oldenlandia adscensionis*, *Sporobolus durus* and *Dryopteris ascensionis* and the *Anogramma ascensionis* (Ascension Island parsley fern). *Prosopis juliflora*, or the Mexican Thorn, is an introduced species which has thrived on the barren lava of the island; however, its spread has been destructive to other species, and current encroachment on the edges of beaches threatens those that utilize this space, such as the green turtle.\* [23]

In June 2005 the first National Park on Ascension Island, the Green Mountain National Park, was opened. Non-indigenous plants teem there, and the crown of Green Mountain is a lush halo of bamboo. Flanking one side is a large stand of tall Norfolk pine, trees planted by British mariners, which were to have been used as replacement masts for sailing ships.

**Animals** A variety of mammals have been introduced: donkey, sheep, cats and rats among others. Reptiles consist of two species of lizards. Endemic insect species include the minute, wingless Psocopteran *Trogloctes ashmolearum*, that has been found in caves and between lava blocks.\* [24] In summer, flies are known to be problematic.

The largest native land animal is the land crab *Johngarthia lagostoma* (formerly *Gecarcinus lagostoma*).\* [25] Off-shore, there is a variety of open-ocean fish, including sharks, wahoo, tuna, bonito, barracuda, marlin, blackfish and sailfish. The protected green turtle is perhaps the most notable of the endemic fauna, coming ashore to lay their eggs on the beaches from November to May.

On land are found such non-native birds such as canaries, francolins, mynas, sparrows, and waxbills. Sooty terns

or “wideawake birds” nest in great seashore lava “fairs” . Other seabirds include some types of boobies, petrels and tropicbirds (named boatswain (pronounced BO-sun) birds by the inhabitants of the island), white tern, brown noddy, black noddy and Ascension frigatebird. The Ascension crane became extinct around the beginning of the 19th century.\* [23]

Off the east coast of Ascension is the islet of Boatswain Bird Island. It is a haven for sea birds providing refuge from the rats, cats and people that came to Ascension Island from Europe and Africa. Following a successful campaign headed by the Royal Society for the Protection of Birds, the main island was in 2006 declared free of feral cats, and sea birds are now once again nesting on Ascension Island.\* [26]

From the 1970s, when records began, to 2014, green turtle nesting increased by 500 percent, resulting in some 24,000 nests being laid on the Island’s main beaches each year.\* [27]

**Important Bird Area** Ascension Island, including 14 inshore stacks and marine habitat extending out for three nautical miles from the coastline, has been identified as an Important Bird Area (IBA) by BirdLife International as a breeding site for seabirds. Birds for which the IBA is significant include red-billed tropicbirds, Ascension frigatebirds (an endemic breeder), sooty terns and black noddies.\* [28] The island was formerly home to the endemic Ascension crane, but the species has been extinct since the early 19th century.

## Climate

Ascension has a tropical desert climate (BW<sub>s</sub>, according to the Köppen climate classification, with temperatures at the coast ranging from 22–31 °C (72–88 °F), and about 5 to 6 °C (9 to 11 °F) cooler at the highest point. Rain showers may occur at any time during the year, but tend to be heavier between June and September.

## 2.2.4 Demographics

There is no indigenous population on the island, and around 880 people live there as of 2010: 696 from Saint Helena nicknamed the “Saints” \* [30] (who are British citizens), 106 British citizens from the United Kingdom, 70 US citizens and 12 of other nationalities.\* [31] RAF Ascension Island is made up of 17 staff.

There are five settlements:

- **Georgetown** (the main civilian settlement and capital of the island)
- **Two Boats** (a civilian village, with its school)
- **Cat Hill** (the United States’ main base on the island)



*Georgetown seen here is the primary settlement on the island and comprises the post office, police station, court, government house and the island’s supermarket. It also boasts the island’s port: a small pier where supplies are off-loaded and a connection exists for a pipeline hose for fuel.*

- **Traveller’s Hill** (Royal Air Force base)
- **Wideawake Airfield** (with the Royal Air Force station)

Additionally, there are some cottages on Green Mountain, occasionally occupied by visitors, and the Residency, the official residence of the Administrator.

In order to enter Ascension Island, individuals need a written permission of the Administrator. There is no permanent residence. A contract of employment is a requirement to stay on the island,\* [30] though short term visits by tourists are possible with prior approval. The British government has asserted that there is no “right of abode” on Ascension Island.\* [32] As the local newspaper *The Islander* reported at the time,\* [33]\* [34] it is an issue that was disputed by some former Council members and some of the long-time expatriate employees.

## Society and culture

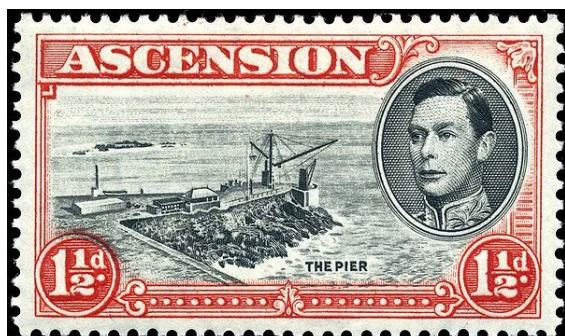
See also: *Scouting and Guiding on Saint Helena, Ascension and Tristan da Cunha*

There are Scouting and Guiding groups on Saint Helena and Ascension Island. Scouting was established on Ascension Island in November 1973,\* [35] having been established on St Helena island in 1912.

Two Boats School is the only school on the island and provides education to all resident children aged 3½–16.

## 2.2.5 Economy

The main economic activity on the island is centred on the military bases at Wideawake Airfield, and the BBC



View of "The Pier" , 1938.



Sand trap

World Service's Atlantic Relay station. The Ministry of Defence estate and facilities are managed by the infrastructure support provider Interserve Defence. Serco runs the airport services and Sodexo provides catering and domestic facilities. A former feature of Ascension was a 70,000 tonne tanker permanently moored offshore that was operated by Maersk as a bulk fuel facility. In December 2002, this was replaced by an on-shore Petroleum Supply Depot under military management, with fuel still being delivered by a chartered tanker; the Maersk Rapier, which operates on an MOD resupply contract for both Ascension and the Falkland Islands every two months. Fuel for the island is transferred via a floating hose, which is connected to the on-shore depot at the islands pier head and to the ship, once it is anchored off Georgetown.

The main export items are Ascension Island postage stamps, first issued in 1922, and, since 2010, commemorative coins (which are legal tender but non-circulating) and commercial fishing licences for long-line tuna fishing vessels operating to ICCAT quotas.

A secondary export is the international internet domain code .ac, which small UK educational colleges and science museums are favouring due to its similarity to .ac.uk, the domain code reserved for well established UK educational institutions. In December 2013, Pirate Bay (one of the most well-known file piracy websites in the world) moved to .ac following the seizure of their .sx website.

### Tourism and related industries

Until 2002, tourism was virtually non-existent because of the inaccessibility of the island to transport, the absence of guest accommodation and the need for a sponsor. Limited air travel has, however, been made available in recent years to the public by the RAF, and the Georgetown Obsidian Hotel and a number of guest cottages have been opened. All visitors are required to obtain an entry permit before travelling. Sport fishing is the main attraction for many of the visitors. The island also boasts what is sometimes called the worst golf course in the world.\*[36] That course, on the outskirts of Georgetown, has since been replaced with a similar one located between the settlements of Two Boats village and Georgetown; the course has 18

holes and the greens are in fact 'browns', a reference to the sand and oil mix used to make them. The rest of the course is made up of volcanic ash and rocks.

### Communications

See also: Communications in Saint Helena, Ascension and Tristan da Cunha

The island hosts many communications and relay stations, exploiting the island's strategic position in the middle of the Atlantic Ocean. Both the BBC and Cable & Wireless Worldwide have communications posts there. The European Space Agency (ESA) also has a tracking station on the island that tracks the Ariane 5 and the Soyuz rockets shortly after they take off from Kourou in French Guiana.

Ascension has one local radio station and one relayed from St. Helena. It also receives broadcasts from the British Forces Broadcasting Service and television services for the US military.\*[7]

Ascension Island has the international calling code +247 and, from 1 June 2015 has 5 digit numbers (the old 4 digit number prefixed by the digit 6 - scroll down to page 4 of the itu document referred to). \*[37]

The island provided a base for a NASA communications dish during the space race in the mid-1900s. The island was chosen due to its central location in the Atlantic. Sites were chosen due to their proximity to orbital paths - generally along the equator.

### Banking and currency

The Bank of St. Helena has a branch on the island. This bank holds an account with Lloyds Bank in the United Kingdom for the purposes of conducting money transfers with the rest of the world.\*[38] The currency on Ascension Island is the Saint Helena pound. Tristan da Cunha however uses the pound sterling rather than the Saint Helena pound. The coins of the Saint Helena pound specify

that they are for use on both Saint Helena and Ascension Island, but with no mention of Tristan da Cunha. For more information on currency in the wider region, see Pound sterling in the South Atlantic and the Antarctic.

## 2.2.6 Transport



*Ascension Island*

In 2003 the British and US governments signed the Wideawake agreement designed to allow a limited number of non-scheduled civilian aircraft to land on Ascension Island, under responsibility of the British government.\*[39]\*[40] The island has a regular airlink with the United Kingdom and the Falkland Islands, with twice weekly flights from the RAF Ascension Island to the UK (RAF Brize Norton) and to the Falkland Islands (RAF Mount Pleasant). These are by an Airbus A330 aircraft operated by AirTanker Services on behalf of the Ministry of Defence (United Kingdom) although a limited number of commercial passenger tickets are available. All visitors to Ascension Island need the Administrator's written permission before travelling.\*[41] The United States maintains a weekly flight between the island and Patrick Air Force Base in Florida for the use of its personnel only.

The RMS *Saint Helena* visits Ascension Island approximately once a month linking the island to St Helena and Cape Town. The US military service their base and facilities with a regular supply ship (*MV Ascension*) and air transport.

There is no taxi service on the island and most visitors requiring transport rent a car. There are around 40 kilometres (25 mi) of roads on the island, all of which are surfaced.\*[7] Some sections of the surfacing was done using surplus tarmac from construction of the airstrip.\*[30] Traffic drives on the left.\*[30]

## 2.2.7 See also

- Outline of Ascension Island
- Index of Ascension Island-related articles
- Diocese of St Helena

- Diego Garcia
- Saint Helena
- Tristan da Cunha
- List of islands named after calendar entries

## 2.2.8 Bibliography

- Duff Hart-Davis, *Ascension, the story of a South Atlantic island*, p. 15
- Correspondent's diary: Ascension Island | The Economist
- Official Ascension Island Government site
- – Global Volcanism Program: Ascension Island
- Sanders, Sarah, *Important Bird Areas in the United Kingdom Overseas Territories; priority sites for conservation* (RSPB, 2006)
- Stonehouse, Bernard. (1960). *Wideawake Island. The Story of the BOU Centenary Expedition to Ascension*. Hutchinson: London

## 2.2.9 References

- [1] The St Helena, Ascension and Tristan da Cunha Constitution Order 2009, see “EXPLANATORY NOTE”
- [2] Victory at Sea (Series title), *Volume-10 “Beneath the Southern Cross”* 1952 production of NBC, (Disc 2 of DVD collection reproduction ca. 2007-2008)
- [3] <http://orbitaldebris.jsc.nasa.gov/newsletter/pdfs/ODQNv19i3.pdf>
- [4] “Ascension History” . *mysterra.org*. Mysterra Magazine. Retrieved 3 January 2011.
- [5] see Duff Hart-Davis, *Ascension, the story of a South Atlantic island*.
- [6] see Carl Friedrich Behrens, *Reise durch die Sued-Laender und um die Welt* (1737), p.250, who wrote that various criminal mariners had been exiled to the island; also in Alex Ritsema *A Dutch Castaway on Ascension Island in 1725* (2010), p.26 and pp.115-117.
- [7] “Saint Helena, Ascension, and Tristan da Cunha” . *The World Factbook*. Central Intelligence Agency. Archived from the original on 28 December 2010. Retrieved 3 January 2011.
- [8] Keynes 2001, pp. 431–432
- [9] “Charles Darwin's ecological experiment on Ascension isle” . *BBC News*. 1 September 2010. Archived from the original on 1 September 2010. Retrieved 1 September 2010.  
The parable of Green Mountain: Ascension Island, ecosystem construction and ecological fitting, David M. Wilkinson, *Journal of Biogeography*, 22 December 2003 doi:10.1046/j.0305-0270.2003.01010.x

- [10] Aldrich, Richard (2010). *GCHQ : The Uncensored Story of Britain's Most Secret Intelligence Agency*. London: HarperPress. ISBN 9780007357123.
- [11] Bamford, James (2008). *Body Of Secrets*. New York: Random House. p. 168. ISBN 9781407009209.
- [12] Parris, Matthew (27 February 2010). "Think of Hong Kong. Give the Falklands back" . *The Times* (London).
- [13] "Settlers wanted for a quiet life. No rush" . *The Telegraph*. 5 April 2004. Retrieved 4 March 2013.
- [14] "NASA Range Safety Program – 2007 Annual Report" (PDF). NASA. p. 60.
- [15] "NASA Range Safety Program – 2007 Annual Report" (PDF). NASA. p. 62.
- [16] Lewis, Paul; Paul Lewis (28 August 2008). "Ascension Island. Barren, 4,044 miles (6,508 km) from Land's End, but ours says the FO" . *The Guardian* (London: Guardian Newspapers). p. 1. Archived from the original on 31 August 2008. Retrieved 28 August 2008.
- [17] Juanita Brock, Ascension: Ascension Island Votes for Councillors
- [18] Road Repairs – Ascension Island News
- [19] Ascension Island Council
- [20] See <http://www.the-islander.org.ac/>
- [21] The Met Office Weather Report - Ascension Island News
- [22] native flora
- [23] ProcPt5b
- [24] Lienhard, 1996, Psocoptères nouveaux ou peu connus de quelques îles atlantiques (Canaries, Madère, Açores, Ascension) et de l'Afrique du Nord (Insecta: Psocoptera), Boletim do Museu Municipal do Funchal (Historia Natural) 48(267)
- [25] Richard G. Hartnoll, Annette C. Broderick, Brendan J. Godley & Kate E. Saunders (2009). "Population structure of the land crab *Johngarthia lagostoma* on Ascension Island" (PDF). *Journal of Crustacean Biology* **29** (1): 57–61. doi:10.1651/08-2992.1.
- [26] Cat eradication from Ascension Island
- [27] "Scientists: Number of Green Turtles Increases More than 500%" . August 2, 2014.
- [28] "Ascension Island: mainland and stacks" . *Important Bird Areas factsheet*. BirdLife International. 2012. Retrieved 2012-10-25.
- [29] "Ascension Island Climate Information" . May 2012.
- [30] "Ascension Population" . *mysterra.org*. Mysterra Magazine. Retrieved 3 January 2011.
- [31] "About Ascension" .
- [32] "CONSTITUTION OF ST HELENA, ASCENSION AND TRISTAN DA CUNHA DRAFT FOR PUBLIC CONSULTATION OF 25 June 2008" . Retrieved 3 June 2009.
- [33] "FOREIGN AFFAIRS COMMITTEE —SELECT COMMITTEE ANNOUNCEMENT (4 July 2008)". Retrieved 3 June 2009.
- [34] "Letter's To FCO From Cyril Leo" . Retrieved 3 June 2009.
- [35] The Ascension Island Newspaper November 1998
- [36] MSN Travel
- [37] [https://www.itu.int/dms\\_pub/itu-t/oth/02/02/T02020000AF0003PDFE.pdf](https://www.itu.int/dms_pub/itu-t/oth/02/02/T02020000AF0003PDFE.pdf)
- [38] the Bank of St. Helena
- [39] "AGREEMENT BETWEEN THE GOVERNMENT OF THE UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND AND THE GOVERNMENT OF THE UNITED STATES OF AMERICA CONCERNING THE USE OF WIDEAWAKE AIRFIELD ON ASCENSION ISLAND BY CIVIL AIRCRAFT NOT ENGAGED IN SCHEDULED INTERNATIONAL AIR SERVICES." 1 October 2003. United Nations Treaty Collection, Volume 2270, I-40420. Retrieved 10 August 2010.
- [40] "Information for Aviators" Ascension Island Government. Retrieved 10 August 2010.
- [41] "GUIDANCE NOTES: APPLICATION FOR AN ASCENSION ISLAND ENTRY PERMIT" Ascension Island Travel Agency. Retrieved 10 August 2010.
- Keynes, Richard (2001), *Charles Darwin's Beagle Diary*, Cambridge University Press, archived from the original on 18 September 2010, retrieved 19 September 2010

### 2.2.10 External links

- Ascension Island Government
- Ascension Island Newsletter
- Ascension Conservation
- Rocket launches from Ascension
- Detailed description of the BBC Atlantic Relay Station
- CIA World Factbook entry about Saint Helena, Ascension, and Tristan da Cunha
- Live Web Cam of Ascension
- Colonial History of Ascension Island
- Google Satellite View



- Ascension Island at Britlink – British Islands & Territories
- Army Ornithological Society Ascension Island Research
- Ascension Island & St Helena community website
- James Rogers and Luis Simón.
- Isla Ascensión o Ascension island(Spanish)
- The Status and Location of the Military Installations of the Member States of the European Union and Their Potential Role for the European Security and Defence Policy (ESDP). Brussels: European Parliament, 2009. 25 pp.
- Amateur Radio Ascension Island

## 2.3 Bouvet Island

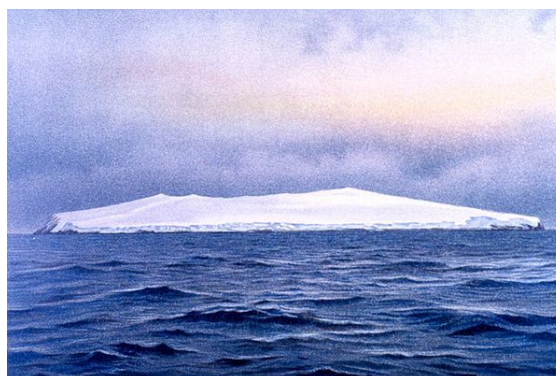
**Bouvet Island** (Norwegian: **Bouvetøya**,<sup>[1]</sup> previously spelled **Bouvet-øya**<sup>[2]</sup>) is an uninhabited subantarctic volcanic island and dependency of Norway located in the South Atlantic Ocean at 54°25.8′S 3°22.8′E / 54.4300°S 3.3800°ECoordinates: 54°25.8′S 3°22.8′E / 54.4300°S 3.3800°E. It lies at the southern end of the Mid-Atlantic Ridge and is the most remote island in the world, approximately 2,600 kilometres (1,600 mi) south-southwest of the coast of South Africa and approximately 1,700 kilometres (1,100 mi) north of the Princess Astrid Coast of Queen Maud Land, Antarctica.

The island has an area of 49 square kilometres (19 sq mi), of which 93 percent is covered by a glacier. The centre of the island is an ice-filled crater of an inactive volcano. Some skerries and one smaller island, Larsøya, lie along the coast. Nyrøysa, created by a rock slide in the late 1950s, is the only easy place to land and is the location of a weather station.

The island was first spotted on 1 January 1739 by Jean-Baptiste Charles Bouvet de Lozier, whom it was later named for. He recorded inaccurate coordinates and the island was not sighted again until 1808, when the British whaler captain James Lindsay named it **Lindsay Island**.<sup>[3]</sup> The first claim of landing, although disputed, was by Benjamin Morrell. In 1825, the island was claimed for the British Crown by George Norris, who named it **Liverpool Island**. He also reported Thompson Island as nearby, although this was later shown to be a phantom island. The first *Norvegia* expedition landed on the island in 1927 and claimed it for Norway. At this time the island was named *Bouvetøya*, or “Bouvet Island” in Norwegian.<sup>[4]</sup> After a dispute with the United Kingdom, it was declared a Norwegian dependency in 1930. It became a nature reserve in 1971.

### 2.3.1 History

#### Discovery and early sightings



*Southeast coast of Bouvet Island in 1898*

The island was discovered on 1 January 1739 by Jean-Baptiste Charles Bouvet de Lozier, commander of the French ships *Aigle* and *Marie*.<sup>[5]</sup> This was the first time that land had been spotted south of the 50th parallel south. Bouvet, who was searching for a presumed large southern continent, spotted the island through the fog and named the cape he saw *Cap de la Circoncision*. He was not able to land and did not circumnavigate his discovery, thus not clarifying if it was an island or part of a continent.<sup>[6]</sup> His plotting of its position was inaccurate<sup>[7]</sup> leading several expeditions to fail to find the island again.<sup>[8]</sup> James Cook's second voyage set off from Cape Verde on November 22, 1772 to find Cape Circoncision, but was unable to find the cape.<sup>[9]</sup>

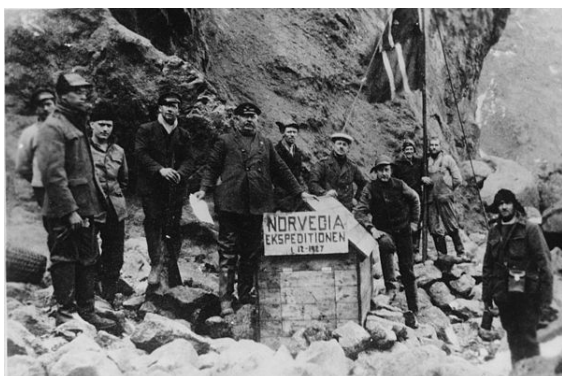
The next expedition to spot the island was in 1808 by James Lindsay, captain of the Samuel Enderby & Sons' (SE&S) whaler *Snow Swan*.<sup>[10]</sup> They reached the island and recorded its position, though they were unable to land.<sup>[11]</sup><sup>[12]</sup> Lindsay could confirm that the “cape” was indeed an island.<sup>[6]</sup> The next expedition to arrive at the island was American Benjamin Morrell and his seal hunting ship *Wasp*. Morrell, by his own account, found the island without difficulty (with “improbable ease”, in the words of historian William Mills)<sup>[11]</sup> before landing and hunting 196 seals.<sup>[6]</sup> In his subsequent lengthy description, Morrell does not mention the island's most obvious physical feature, its permanent ice cover.<sup>[13]</sup> This has caused some commentators to doubt whether he actually visited the island.<sup>[11]</sup><sup>[14]</sup>

On 10 December 1825, SE&S's George Norris, master of the *Sprightly*, landed on the island,<sup>[6]</sup> named it Liverpool Island and claimed it for the British Crown and George IV on 16 December.<sup>[15]</sup> The next expedition to spot the island was Joseph Fuller and his ship *Francis Alyn* in 1893, but he was not able to land on the island. German Carl Chun's *Valdivia* expedition arrived at the island in 1898. They were not able to land, but dredged the seabed for geological samples.<sup>[16]</sup> They were also

the first to accurately fix the island's position.\*[15]

Norris also spotted a second island in 1825, which he named **Thompson Island**, which he placed 72 kilometres (45 mi) north-northeast of Liverpool Island. Thompson Island was also reported in 1893 by Fuller, but in 1898 Chun did not report seeing such an island, nor has anyone since.\*[16] However, Thompson Island continued to appear on maps as late as 1943.\*[17] A 1967 paper suggested that the island might have disappeared in an undetected volcanic eruption, but in 1997 it was discovered that the ocean is more than 2,400 metres (7,900 ft) deep in the area.\*[18]

### Norwegian annexation



*The annexation of the island on December 1, 1927.*



*The first hut, built on Kapp Circoncision, in 1929.*

In 1927, the First *Norvegia* Expedition – led by **Harald Horntvedt** and financed by **Lars Christensen** – was the first to make an extended stay on the island. Observations and surveying were conducted on the islands and oceanographic measurements performed in the sea around it. At Ny Sandefjord, a small hut was erected and, on 1 December, the **Norwegian flag** was hoisted and the island claimed for Norway. The annexation was established by a royal decree on 23 January 1928.\*[15] The claim was initially protested by the United Kingdom, on the basis of Norris's landing and annexation. However, the British position was weakened by Norris's sighting of two islands and the uncertainty as to whether he had been on Thompson or Liverpool (i.e. Bouvet) Island. Norris's

positioning deviating from the correct location combined with the island's lack of a natural harbour and small size made the UK accept the Norwegian claim.\*[19] This resulted in diplomatic negotiations between the two countries, and in November 1929, Britain renounced its claim to the island.\*[15]

The Second *Norvegia* Expedition arrived in 1928 with the intent of establishing a manned meteorological radio station, but a suitable location could not be found.\*[15] By then both the flagpole and hut from the previous year had been washed away. The Third *Norvegia* Expedition, led by **Hjalmar Riiser-Larsen**, arrived the following year and built a new hut at **Kapp Circoncision** and on **Larsøya**. The expedition carried out aerial photography of the island and was the first Antarctic expedition to use aircraft.\*[20] The *Dependency Act*, passed by the Parliament of Norway on 27 February 1930, established Bouvet Island as a dependency, along with **Peter I Island** and **Queen Maud Land**.\*[2] The eared seal was protected on and around the island in 1929 and in 1935 all seals around the island were protected.\*[21]

### Recent history

In 1955, the South African frigate *Transvaal* visited the island.\*[22] **Nyrøysa**, a rock-strewn ice-free area, the largest such on Bouvet, was created sometime between 1955 and 1958, probably by a landslide.\*[23] A scientific landing in 1978 measured the underground temperature at 25 °C (77 °F).\*[24] The island was visited by the British naval ship **HMS Protector** in 1964. In addition to scientific surveys,\*[16] a life raft was found at Nyrøysa, although no people were found.\*[24] The entire island and its territorial waters were protected as a nature reserve on 17 December 1971.\*[1]

Since the 1970s, the island has been frequently visited by Norwegian Antarctic expeditions. In 1977, an automated weather station was constructed, and for two months in 1978 and 1979 a manned weather station was operated.\*[20] The **Vela Incident** took place on 22 September 1979 in the sea between Bouvetøya and Prince Edward Islands when the American **Vela Hotel** satellite registered an unexplained double flash, variously interpreted as a nuclear test, meteor, or instrumentation glitch.\*[24]\*[25]\*[26]\*[27]

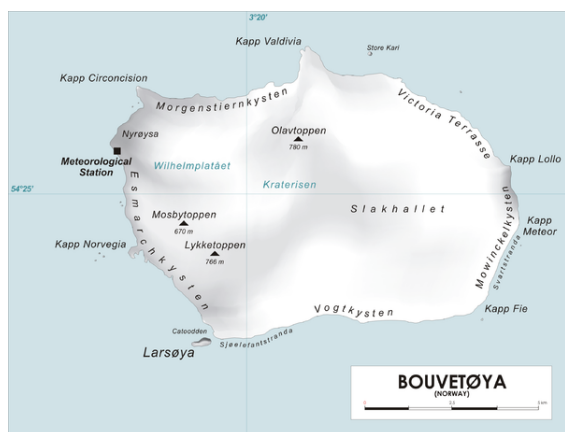
In March 1985, a Norwegian expedition experienced sufficiently clear weather to allow the entire island to be photographed from the air, resulting in the first accurate map of the whole island, 247 years after its discovery.\*[28] In the mid-1980s, Bouvetøya, Jan Mayen, and Svalbard were considered as locations for the new Norwegian International Ship Register, but the flag of convenience registry was ultimately established in Bergen, Norway in 1987.\*[29] Several amateur radio DX-peditions have been conducted to the island.\*[30]\*[31] The Norwegian Polar Institute established a 36-square-metre (390 sq ft)

research station, made of shipping containers, at Nyrøysa in 1996. On 23 February 2006, the island experienced a magnitude 6.2 earthquake whose epicentre was about 100 km (62 mi) away\* [32] (originally reported as magnitude 5.5), weakening the station's foundation and causing it to be blown to sea in a winter storm.\* [33] In 2007, the island was added to Norway's tentative list of nominations as a **World Heritage Site** as part of the transnational nomination of the Mid-Atlantic Ridge.\* [34] A new research station was sent from Tromsø in Norway, via Cape Town, to Bouvet in 2014. The new station is designed to house six people for periods of two to four months.\* [35]

Krill fishing in the Southern Ocean is subject to the Convention for the Conservation of Antarctic Marine Living Resources, which defines maximum catch quotas for a sustainable exploitation of Antarctic krill.\* [36] Surveys conducted in 2000 showed high concentration of krill around Bouvetøya. In 2004, Aker BioMarine was awarded a concession to fish krill, and additional quotas were awarded from 2008 for a total catch of 620,000 tonnes (610,000 long tons; 680,000 short tons).\* [37] There is a controversy as to whether the fisheries are sustainable, particularly in relation to krill being important food for whales.\* [38] In 2009, Norway filed with the UN Commission on the Limits of the Continental Shelf to extend the outer limit of the continental shelf past 200 nautical miles (230 mi; 370 km) surrounding the island.\* [39]

The *Hanse Explorer* expedition ship visited Bouvet Island on 20 and 21 February 2012 as part of «Expédition pour le Futur». The expedition's goal was to land and summit the highest point on the island. The first four climbers (Aaron Halstead, Will Allen, Bruno Rodi and Jason Rodi) were the first humans to climb the highest peak. A time capsule containing the top visions of the future for 2062 was left behind. The next morning, Aaron Halstead led five other climbers (Sarto Blouin, Seth Sherman, Chakib Bouayed, Cindy Sampson, and Akos Hivekovics) to the top.\* [40]

## 2.3.2 Geography



Bouvet Island



Glacier on Bouvet Island's west coast

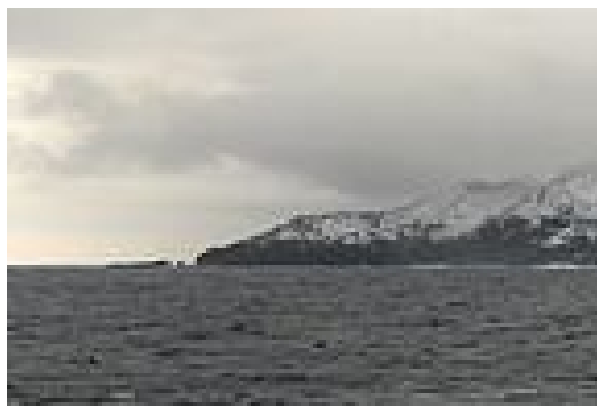
Bouvetøya is a volcanic island constituting the top of a volcano located as the southern end of the Mid-Atlantic Ridge in the South Atlantic Ocean. The island measures 9.5 by 7 kilometres (5.9 by 4.3 mi) and covers an area of 49 square kilometres (19 sq mi),\* [21] including a number of small rocks and skerries and one sizable island, Larsøya.\* [41] It is located in the Subantarctic, south of the Antarctic Convergence,\* [42] which, by some definitions, would place the island in the Southern Ocean.\* [43] Bouvet Island is the most remote island in the world.\* [44] The closest land is Queen Maud Land of Antarctica, which is 1,700 kilometres (1,100 mi) to the south,\* [8] and Gough Island, 1,600 kilometres (990 mi) to the north.\* [45] The closest inhabited location is Cape Agulhas, South Africa, 2,200 kilometres (1,400 mi) to the northeast.\* [21]

Nyrøysa is a 2 by 0.5 kilometres (1.2 by 0.3 mi) terrace located on the north-west coast of the island. Created by a rock slide sometime between 1955 and 1957, it is the island's easiest access point.\* [28] It is the site of the weather station.\* [46] The north-west corner is the peninsula of Kapp Circoncision.\* [47] From there, east to Kapp Valdivia, the coast is known as Morgenstiernekysten.\* [48] Store Kari is an islet located 1.2 kilometres (0.75 mi) east of the cape.\* [49] From Kapp Valdivia, southeast to Kapp Lollo, on the east side of the island, the coast is known as Victoria Terrasse.\* [50] From there to Kapp Fie at the southeastern corner, the coast is known as Mowinkelkysten. Svartstranda is a section of black sand which runs 1.8 kilometres (1.1 mi) along the section from Kapp Meteor, south to Kapp Fie.\* [51] After rounding Kapp Fie, the coast along the south side is known as Vogtkysten.\* [52] The westernmost part of it is the 300 metres (980 ft) long shore of Sjøelefantstranda.\* [53] Off Catoadden, on the south-western corner, lies Larsøya, the only island of any size off Bouvetøya.\* [41] The western coast from Catoadden north to Nyrøysa, is known as Es-marchkysten. Midway up the coast lies Norvegiadden (Kapp Norvegia)\* [54] and 0.5 kilometres (0.31 mi) off it the skerries of Benskjera.\* [55]

93 percent of the island is covered by glaciers, giving it a domed shape.\* [28] The summit region of the island is Wilhelmsplatået, slightly to the west of the is-

land's center.\* [16] The plateau is 3.5 kilometres (2.2 mi) across\* [56] and surrounded by several peaks.\* [16] The tallest is Olavtoppen, 780 metres (2,560 ft) above mean sea level (AMSL),\* [28] followed by Lykketoppen (766 metres or 2,513 feet AMSL)\* [57] and Mosbytoppane (670 metres or 2,200 feet AMSL).\* [58] Below Wilhelm-platået is the main caldera responsible for creating the island.\* [16] The last eruption took place 2000 BC, producing a lava flow at Kapp Meteor.\* [56] The volcano is presumed to be in a declining state.\* [16] The temperature 30 centimetres (12 in) below the surface is 25 °C (77 °F).\* [28]

The island's total coastline is 29.6 kilometres (18.4 mi).\* [59] Landing on the island is very difficult, as it normally experiences high seas and features a steep coast.\* [28] During the winter, it is surrounded by pack ice.\* [21] The Bouvet Triple Junction is located 275 kilometres (171 mi) west of Bouvet Island. It is a triple junction between the South American Plate, the African Plate and the Antarctic Plate, and of the Mid-Atlantic Ridge, the Southwest Indian Ridge and the American–Antarctic Ridge.\* [60]



The west coast of Bouvet Island.

### 2.3.3 Climate

The island is located south of the Antarctic Convergence, giving it a marine Antarctic climate dominated by heavy clouds and fog. It experiences a mean temperature of −1 °C (30 °F),\* [28] with January average of 1 °C (34 °F) and September average of −3 °C (27 °F).\* [45] The monthly high mean temperatures fluctuate little through the year.\* [61] The peak temperature of 14 °C (57 °F) was recorded in March 1980, caused by intense sun radiation. Spot temperatures as high as 20 °C (68 °F) have been recorded in sunny weather on rock faces.\* [28] The island predominantly experiences a weak west wind.\* [45]



NASA image of Bouvet Island from space.

### 2.3.4 Nature

The harsh climate and ice-bound terrain limits vegetation to fungi (ascomycetes including lichens) and non-vascular plants (mosses and liverworts). The flora is representative for the maritime Antarctic and is phytogeographically similar to the South Sandwich Islands and South Shetland Islands. Vegetation is limited because of the ice cover, although snow algae are recorded. The remaining vegetation is located in snow-free areas such as nunatak ridges and other parts of the summit plateau, the coastal cliffs, capes and beaches. At Nyrøysa, five species of moss, six ascomycetes (including five lichens), and twenty algae have been recorded. Most snow-free areas are so steep and subject to frequent avalanches that only crustose lichens and algal formations are sustainable. There are six endemic ascomycetes, three of which are lichenized.\* [46]

The island has been designated as an Important Bird Area by BirdLife International because of its importance as a breeding ground for seabirds. In 1978–79 there were an estimated 117,000 breeding penguins on the island, consisting of macaroni penguin and, to a lesser extent, chinstrap penguin and Adélie penguin, although these were only estimated to be 62,000 in 1989–90. Nyrøysa is the most important colony for penguins, supplemented by Posadowskybreen, Kapp Circoncision, Norvegiaodden and across from Larsøya. Southern fulmar is by far the most common non-penguin bird with 100,000 individuals. Other breeding seabirds consist of Cape petrel, Antarctic prion, Wilson's storm petrel, black-bellied storm petrel, subantarctic skua, southern giant petrel, snow petrel, slender-billed prion and Antarctic tern. Kelp gull is thought to have bred on the island earlier. Non-breeding birds which can be found on the island include the king penguin, wandering albatross, black-browed albatross, Campbell albatross, Atlantic yellow-nosed albatross, sooty albatross, light-mantled albatross, northern giant petrel, Antarctic petrel, blue petrel, soft-plumaged petrel, Kerguelen petrel, white-headed petrel, fairy prion, white-chinned petrel, great shearwater, common diving

petrel, south polar skua and parasitic jaeger.\*[46]

The only non-bird vertebrates on the island are seals, specifically the southern elephant seal and Antarctic fur seal, which both breed on the island. In 1998–99, there were 88 elephant seal pups and 13,000 fur seal pups at Nyrøysa. Humpback whale and killer whale are seen in the surrounding waters.\*[46]

### 2.3.5 Politics and government

Bouvetøya is one of three dependencies of Norway.\*[62] Unlike Peter I Island and Queen Maud Land, which are subject to the Antarctic Treaty System,\*[63] Bouvetøya is not disputed.\*[59] The dependency status entails that the island is not part of the Kingdom of Norway, but is still under Norwegian sovereignty. Specifically, this implies that the island can be ceded without violating the first article of the Constitution of Norway.\*[62] Norwegian administration of the island is handled by the Polar Affairs Department of the Ministry of Justice and the Police, located in Oslo.\*[64]

The annexation of the island is regulated by the Dependency Act of 24 March 1933. It establishes that Norwegian criminal law, private law and procedural law apply to the island, in addition to other laws that explicitly state they are valid on the island. It further establishes that all land belongs to the state, and prohibits the storage and detonation of nuclear products.\*[2] Bouvet Island has been designated with the ISO 3166-2 code BV\*[65] and was subsequently awarded the country code top-level domain .bv on 21 August 1997.\*[66] The domain is managed by Norid but is not in use.\*[67] The exclusive economic zone surrounding the island covers an area of 441,163 square kilometres (170,334 sq mi).\*[68]

### 2.3.6 Fiction

- The island figures prominently in the book *A Grue of Ice* (1962, published in the US as *The Disappearing Island*), an adventure novel based on Tristan da Cunha, Bouvet, and the mythical Thompson Island, by Geoffrey Jenkins.\*[69]
- Bouvet is the setting of the 2004 movie *Alien vs. Predator*, in which it is referred to using its Norwegian name “Bouvetøya”\*[70] even though in the unrated edition of the film, a satellite focuses in on the island which is geographically situated in the approximate location of Peter I Island.
- Bouvet features in the novel *Warhead* (2005) by Andy Remic.
- Bouvet features in the novel *Batmans Schönheit* (2010) by Heinrich Steinfest.

### 2.3.7 See also

- List of islands of Norway
- List of Antarctic and subantarctic islands

### 2.3.8 Notes

- [1] “Forskrift om fredning av Bouvetøya med tilliggende territorialfarvann som naturreservat” (in Norwegian). Lovdata. Archived from the original on 9 May 2012. Retrieved 9 May 2012.
- [2] “Lov om Bouvet-øya, Peter I’s øy og Dronning Maud Land m.m. (bilandsloven)” (in Norwegian). Lovdata. Archived from the original on 29 August 2011. Retrieved 29 August 2011.
- [3] Mills, W.J. (2003). *Exploring Polar Frontiers: A Historical Encyclopedia* **1**. ABC-CLIO. p. 96. ISBN 9781576074220. Retrieved 7 June 2015.
- [4] “An abandoned lifeboat at world’s end | A Blast From The Past” . allkindsofhistory.wordpress.com. Retrieved 7 June 2015.
- [5] Mills (2003): 96
- [6] Barr (1987): 62
- [7] Mill (1905): 47
- [8] Barr (1987): 58
- [9] Hough (1994): 248
- [10] Burney (1817): 35
- [11] Mills (2003): 434–35
- [12] McGonigal (2003): 135
- [13] Mill (1905): 106–107
- [14] Simpson-Housley (1992): 60
- [15] Barr (1987): 63
- [16] P. E. Baker (1967). “Historical and Geological Notes on Bouvetøya” . *British Antarctic Survey Bulletin* (13): 71–84. Archived from the original (PDF) on 8 May 2012. Retrieved 8 May 2012.
- [17] A. R. H. and N. A. M. (1943). “Review: A New Chart of the Antarctic” . *The Geographical Journal* **102** (1): 29–34. doi:10.2307/1789367. JSTOR 1789367.
- [18] “Thompson Island” . Global Volcanism Program. Archived from the original on 8 May 2012. Retrieved 8 May 2012.
- [19] Kyvik (2008): 52
- [20] Barr (1987): 64
- [21] “Bouvetøya” . Norwegian Polar Institute. Archived from the original on 8 May 2012. Retrieved 8 May 2012.

- [22] “South African expedition to Bouvetøya, 1955” . *Polar Record* **8** (54): 256–258. September 1956. doi:10.1017/S003224740004907X.
- [23] <http://www.birdlife.org/datazone/userfiles/file/IBAs/AfricaCntryPDFs/Bouvet.pdf>
- [24] Rubin (2005): 155
- [25] Hersh (1991): 271
- [26] Rhodes (2011): 164–169
- [27] Weiss, Leonard (2011). “Israel’ s 1979 Nuclear Test and the U.S. Cover-Up” (PDF). *Middle East Policy* **18** (4).
- [28] Barr (1987): 59
- [29] Kyvik (2008): 189
- [30] “Bouvet Island 1990” . NØHR. 19 December 2007. Archived from the original on 12 January 2008. Retrieved 12 January 2008.
- [31] “DXpedition to Bouvet/3Y0E” . NØHR. 19 December 2007. Archived from the original on 9 May 2012. Retrieved 9 May 2012.
- [32] “NEIC: Earthquake Search Results” . USGS. Retrieved 19 August 2012.
- [33] Jaklin, Patrick (20 July 2010). “Norsk feltstasjon tatt av naturkreftene ved Antarktis” . Norwegian Polar Institute. Archived from the original on 9 May 2012. Retrieved 9 May 2012.
- [34] “Islands of Jan Mayen and Bouvet as parts of a serial transnational nomination of the Mid-Atlantic Ridge system” . UNESCO. Archived from the original on 9 May 2012. Retrieved 9 May 2012.
- [35] Molde, Eivind (7 February 2014). “Ny “ekstremstasjon” på Bouvetøya” . *NRK* (in Norwegian). Retrieved 11 February 2014.
- [36] Schiermeier, Quirin (2 September 2010). “Ecologists fear Antarctic krill crisis” . *Nature* **467** (15): 15. doi:10.1038/467015a. Retrieved 9 December 2011.
- [37] Molde, Eivind (2 March 2008). “Satsar på krill – eit nytt oljeeventyr” . *Norwegian Broadcasting Corporation* (in Norwegian). Archived from the original on 9 May 2012. Retrieved 9 May 2012.
- [38] Haram, Øyvind Andre (5 November 2007). “Norge tek maten frå kvalen” . *Norwegian Broadcasting Corporation* (in Norwegian). Archived from the original on 9 May 2012. Retrieved 9 May 2012.
- [39] Cordero-Moss, Giuditta. “The Law applicable to the Continental Shelf and in the Exclusive Economic Zone” (PDF). University of Oslo. Archived from the original on 9 May 2012. Retrieved 9 May 2012.
- [40] “Making history summiting of the most remote land on earth” . EXPEDITION POUR LE FUTUR. 4 March 2012.
- [41] “Larsøya” . Norwegian Polar Institute. Archived from the original on 8 May 2012. Retrieved 8 May 2012.
- [42] “Antarctic Convergence” . Geographic Names Information System. Archived from the original on 10 May 2012. Retrieved 10 May 2012.
- [43] “The Antarctic convergence” . United Nations Environment Programme/GRID-Arendal. 25 February 2012. Archived from the original on 10 May 2012. Retrieved 10 May 2012.
- [44] “Volcanology Highlights” . Global Volcanism Program. Archived from the original on 11 May 2012. Retrieved 11 May 2012.
- [45] “Bouvetøya” . Norwegian Polar Institute. Archived from the original on 10 May 2012. Retrieved 10 May 2012.
- [46] Hyser, Onno. “Bouvetøya” (PDF). BirdLife International. Archived from the original on 11 May 2012. Retrieved 11 May 2012.
- [47] “Kapp Circoncision” . Norwegian Polar Institute. Archived from the original on 11 May 2012. Retrieved 11 May 2012.
- [48] “Kapp Valdivia” . Norwegian Polar Institute. Archived from the original on 11 May 2012. Retrieved 11 May 2012.
- [49] “Store-Kari” . Norwegian Polar Institute. Archived from the original on 11 May 2012. Retrieved 11 May 2012.
- [50] “Kapp Lollo” . Norwegian Polar Institute. Archived from the original on 11 May 2012. Retrieved 11 May 2012.
- [51] “Svartstranda” . Norwegian Polar Institute. Archived from the original on 11 May 2012. Retrieved 11 May 2012.
- [52] “Vogtkysten” . Norwegian Polar Institute. Archived from the original on 11 May 2012. Retrieved 11 May 2012.
- [53] “Sjøelefantstranda” . Norwegian Polar Institute. Archived from the original on 11 May 2012. Retrieved 11 May 2012.
- [54] “Norvegiaodden” . Norwegian Polar Institute. Archived from the original on 11 May 2012. Retrieved 11 May 2012.
- [55] “Bennskjæra” . Norwegian Polar Institute. Archived from the original on 11 May 2012. Retrieved 11 May 2012.
- [56] “Bouvet” . Global Volcanism Program. Archived from the original on 10 May 2012. Retrieved 10 May 2012.
- [57] “Lykke Peak” . Geographic Names Information System. Archived from the original on 12 May 2012. Retrieved 12 May 2012.
- [58] “Mosby Peak” . Geographic Names Information System. Archived from the original on 12 May 2012. Retrieved 12 May 2012.
- [59] “Bouvet Island” . *The World Factbook*. Central Intelligence Agency. Retrieved 9 May 2012.

- [60] Mitchell, Neil C.; Livermore, Roy A.; Fabretti, Paola; Carrara, Gabriela (2000). “The Bouvet triple junction, 20 to 10 Ma, and extensive transtensional deformation adjacent to the Bouvet and Conrad transforms” (PDF). *Journal of Geophysical Research* **105** (B4): 8279–8296. Bibcode:2000JGR...105.8279M. doi:10.1029/1999JB900399. Archived from the original on 11 May 2012. Retrieved 11 May 2012.
- [61] “Monthly Averages for Bouvet Island” . Climate Zone. Retrieved 1 January 2011.
- [62] Gisle (1999): 38
- [63] Barr (1987): 65
- [64] “Polar Affairs Department” . Norwegian Ministry of the Environment. Archived from the original on 29 August 2011. Retrieved 29 August 2011.
- [65] Takle, Mona Takle; Vassenden, Kåre (March 1998). “Country classifications in migration statistics – present situation and proposals for a Eurostat standard” (PDF). United Nations Statistical Commission and United Nations Economic Commission for Europe.
- [66] “Delegation Record for .BV” . Internet Assigned Numbers Authority. 13 November 2009. Archived from the original on 13 August 2010. Retrieved 5 September 2010.
- [67] “The .bv and .sj top level domains” . Norid. 3 August 2010. Archived from the original on 5 October 2010. Retrieved 5 September 2010.
- [68] “EEZ Waters Of Bouvet Isl. (Norway)”. University of British Columbia. Archived from the original on 9 May 2012. Retrieved 9 May 2012.
- [69] Jenkins, Geoffrey. 1962. *A Grue of Ice* London: Collins. 320pp.
- [70] “AVP: Alien vs. Predator (2004) - IMDb” . imdb.com. Retrieved 7 June 2015.

### 2.3.9 References

- Barr, Susan (1987). *Norway's Polar Territories*. Oslo: Aschehoug. ISBN 82-03-15689-4.
- Burney, James (1817). *A Chronological History of the Discoveries in the South Sea Or Pacific Ocean V*.
- Hersh, Seymour (1991). *The Samson option: Israel's Nuclear Arsenal and American Foreign Policy*. Random House. ISBN 0-394-57006-5.
- Hough, Richard (1994). *Captain James Cook*. Hodder and Stoughton. ISBN 0-340-82556-1.
- Kyvik, Helga, ed. (2008). *Norge i Antarktis* (in Norwegian). Oslo: Schibsted Forlag. ISBN 82-516-2589-0.
- Gisle, Jon, ed. (1999). *Jusleksikon* (in Norwegian). Kunnskapsforlaget. ISBN 8257308625.

- McGonigal, David (2003). *Antarctica*. London: Frances Lincoln. ISBN 978-0-7112-2980-8.
- Mill, Hugh Robert (1905). *The Siege of the South Pole*. London: Alston Rivers.
- Mills, William James (2003). *Exploring Polar Frontiers: a historical encyclopedia, Volume 1*. ABC-CLIO. ISBN 1576074226.
- Rhodes, Richard (2011). *Twilight of the Bombs: Recent Challenges, New Dangers, and the Prospects for a World Without Nuclear Weapons*. Random House. ISBN 0-307-38741-0.
- Rubin, Jeff (2005). *Antarctica*. Lonely Planet. ISBN 1-74059-094-5.
- Simpson-Housley, Paul (1992). *Antarctica: Exploration, Perception and Metaphor*. New York: Routledge. ISBN 978-0-415-08225-9.

### 2.3.10 External links

- The Most Remote Island in the World *Sometimes Interesting*. 11 Nov 2012

## 2.4 Brava

For other uses, see Brava.

**Brava** (Portuguese for “wild” ) is an island in Cape Verde. It is the smallest inhabited island, but at the same time the greenest, of Cape Verde, in the Sotavento group. First settled in the 1540s, its population grew after Mount Fogo on neighbouring Fogo erupted in 1675. Its main industry was long whaling, but the island is now primarily agricultural.

### 2.4.1 History

Brava was discovered in 1462 by the Portuguese and the first settlement was founded in 1573. The slave trade was common in Cidade Velha. In 1680, the inhabitants fled from the nearby larger island of Fogo after its volcano erupted and lava began to flow and to devastate that island. In the 17th and the 18th centuries, pirates raided the bays of the island and continued until the 19th century when whaling was common from the ships of Europe and North America.

Emigration began as American whaleships sailed people from Brava to the northeastern part of North America, especially along the Eastern Seaboard. Most of the immigrants from Brava settled in Boston, Massachusetts, Providence, Rhode Island and New Bedford, Massachusetts.

## 2.4.2 Geography



*The uninhabited islets Ilhéus Secos or Ilhéus do Rombo with parts of the town of Nova Sintra.*

Practically the whole island is a stratovolcano. It lies in the lee of the enormous Fogo volcano. Volcanic activity on the island has been mainly located along three lines, which all intersect at the crest of ground that forms the highest part of the island. Brava has no documented historical eruptions, but its youthful volcanic morphology and the fact that earthquake swarms still occur indicate the potential for future eruptions.

North of Brava are two small islands with 4 islets, 3 of them are west of Ilhéu de Cima. The islands are Ilhéu Grande.

The island's main town is Vila Nova Sintra. The island has elementary and secondary schools, churches, and a square (*praça*) in honour of the famous musician Eugénio Tavares.

All of the five villages lie north of the mountaintop, which has four main roads including Furna - Vila Nova Sintra and Fajã de Agua and south to Nossa Senhora do Monte and slightly south of the mountaintop. The two large islands north of Brava are uninhabited. The mountain valleys dominate the south, the east and the west. The north has a few valleys.

Precipitation arrives from the trade wind clouds. The island is covered with a leeward cloud so that evaporation is reduced and the vegetation is more abundant. Key inhabited places include the village of Vila Nova Sintra. The village of Furna has a commercial port.

## 2.4.3 Climate

Being highly mountainous this island has quite diverse climate. Brava island has moderate tropical climate (As according to Köppen–Geiger climate classification system) along the coast and semi-arid mild tropical climate *Bsh* with very balanced temperatures year round in the interior. The average annual temperature on the coast is



*Nova Sintra.*

about 23–23–25 °C (73–77 °F), decreasing to some 17–20 °C (63–68 °F) in the mountains. There can be remarkably cool weather with warmer wet season starting in June and ending in November with colder dry season starting in December and ending in May.

## 2.4.4 Demographics

### Population

As of 1832, the population was estimated at 8,000.\*[1]

## 2.4.5 Economy

The main economy of the island is agricultural, related to irrigation and fishing (the island's main production). Trading and private households depend on income from Cape Verdean residents from North America. Brava never had a lot of tourism. Tourism slowly boomed. The island is unsuitable for beach tourism because the steep shoreline allows few beaches.

## 2.4.6 Attractions and amenities

- Nova Sintra, a town with a museum, traditional Portuguese architecture, several churches and shops.



- Fajã de Agua, a small harbour on the West coast with a natural swimming pool.
- Nossa Senhora do Monte, a village in the mountains with a pilgrimage church.
- Cova Rodela, a village in the mountains with a dragon tree in its main street.

### 2.4.7 Sporting teams

Main article: Brava Island League

- Académica
- Benfica
- Corôa
- Morabeza
- No Pintcha
- Sporting

### 2.4.8 Infrastructure



“Aluguer” bus in the village Nossa Senhora do Monte.

The airport, inaugurated in 1992, was closed because of the strong winds. The airline service ended in 2004.

Until recently, there was a daily ferry (an ex-fishing boat) connecting Brava and Fogo. However, since January 2011, Brava can now be reached from Praia (and Fogo) almost exclusively via the passenger/cargo ferry, the Kriola. The Kriola is the first of Cabo Verde Fast Ferry's fleet of inter-island catamarans and connects the Sotavento islands of Santiago, Fogo, and Brava. The Kriola typically leaves Furna, its home port, at 7:30 AM on days of operation and returns between 9:30 and 11 PM, depending on the day. The route is typically BRAVA-FOGO-SANTIAGO-FOGO-BRAVA, but at least one day a week it makes a BRAVA-FOGO-BRAVA run.

Travel time between Brava and Fogo is approximately 0:40 and approximately 3:30 between Fogo and Santiago (Praia).

The main harbour of Brava is Furna, on the east coast of the island. Buses and taxis are common, especially when the Kriola arrives in port.

On Brava you can reach the villages by “Aluguer” bus. There is no fixed schedule, as the aluguers wait until enough passengers have come before leaving. A few taxis are available as well.

### 2.4.9 Notable residents

Brava's most famous son is the musician Eugénio Tavares; he used the traditional morna and wrote in Cape Verdean Creole. A statue dedicated to Eugénio Tavares is in the main square of Vila Nova Sintra, surrounded by a garden with trees, sunflowers, flowers, grass and other types of plants. Other notable persons include Hermano da Pina and Armando da Pina who live on the Eastern Seaboard and whose parents were from Brava, and Sandra Orlando (née Fernandez das Neves).

- Eugénio Tavares – writer and composer
- Vinny deMacedo - Massachusetts State Representative & State Senate Candidate was born in Brava

### 2.4.10 References

- [1] Roberts, Edmund (1837). *Embassy to the Eastern Courts of Cochin-China, Siam, and Muscat*. New York: Harper & Brothers. p. 17.
- [2] Source: Statoids
- [3] Source: Instituto Nacional de Estatísticas.
- [4] Portal do Instituto Nacional de Estatística: INE - CENSO 2010.

### 2.4.11 External links

- Brava News - News directly from Brava
- Brava island - caboverde.com
- Brava, Cape Verde Islands - University of Massachusetts

## 2.5 Saint Helena

This article is about the British Overseas Territory. For other uses, see Saint Helena (disambiguation).

**Saint Helena** (/ˌseɪnt həˈliːnə/ *SAYNT-hə-LEE-nə*) is a tropical island of volcanic origin in the South Atlantic Ocean, 4,000 kilometres (2,500 mi) east of Rio de Janeiro and 1,950 kilometres (1,210 mi) west of the southern coast of Africa. It is part of the British Overseas Territory of Saint Helena, Ascension and Tristan da Cunha,<sup>[3]</sup> which also includes Ascension Island and the islands of Tristan da Cunha. Saint Helena measures about 16 by 8 kilometres (10 by 5 mi) and has a population of 4,255 (2008 census).<sup>[2]</sup> It was named after Saint Helena of Constantinople.

The island was uninhabited when discovered by the Portuguese in 1502. One of the most remote islands in the world, it was for centuries an important stopover for ships sailing to Europe from Asia and South Africa. Napoleon was imprisoned there in exile by the British, as were Dinuzulu kaCetshwayo (for leading a Zulu army against British rule) and more than 5,000 Boers taken prisoner during the Second Boer War.

Between 1791 and 1833, Saint Helena became the site of a series of experiments in conservation, reforestation and attempts to boost rainfall artificially.<sup>[4]</sup> This environmental intervention was closely linked to the conceptualization of the processes of environmental change and helped establish the roots of environmentalism.<sup>[4]</sup>

Saint Helena is Britain's second oldest remaining Overseas Territory, after Bermuda.

### 2.5.1 History

Main article: History of Saint Helena

#### Early history (1502–1658)

Most historical accounts state that the island was discovered on 21 May 1502 by the Galician navigator João da Nova sailing at the service of Portugal, and that he named it “Santa Helena” after Helena of Constantinople. Another theory holds that the island found by da Nova was actually Tristan da Cunha, 2,430 kilometres (1,510 mi) to the south,<sup>[5]</sup> and that Saint Helena was discovered by some of the ships attached to the squadron of Estêvão da Gama expedition on 30 July 1503 (as reported in the account of clerk Thomé Lopes).<sup>[6]</sup><sup>[7]</sup><sup>[8]</sup>

The Portuguese found the island uninhabited, with an abundance of trees and fresh water. They imported livestock, fruit trees and vegetables, and built a chapel and one or two houses. Though they formed no permanent settlement, the island was an important rendezvous point and source of food for ships travelling from Asia to Europe, and frequently sick mariners were left on the island to recover, before taking passage on the next ship to call on the island.<sup>[9]</sup>

Englishman Sir Francis Drake probably located the is-

land on the final leg of his circumnavigation of the world (1577–1580).<sup>[10]</sup> Further visits by other English explorers followed, and, once Saint Helena’s location was more widely known, English ships of war began to lie in wait in the area to attack Portuguese India carracks on their way home. In developing their Far East trade, the Dutch also began to frequent the island. The Portuguese and Spanish soon gave up regularly calling at the island, partly because they used ports along the West African coast, but also because of attacks on their shipping, the desecration of their chapel and religious icons, destruction of their livestock and destruction of plantations by Dutch and English sailors.

The Dutch Republic formally made claim to Saint Helena in 1633, although there is no evidence that they ever occupied, colonised or fortified it. By 1651, the Dutch had mainly abandoned the island in favour of their colony at the Cape of Good Hope.

#### East India Company (1658–1815)



A View of the Town and Island of St Helena in the Atlantic Ocean belonging to the English East India Company, engraving, c. 1790.

In 1657, Oliver Cromwell<sup>[11]</sup> granted the English East India Company a charter to govern Saint Helena and the following year the company decided to fortify the island and colonise it with planters. The first governor, Captain John Dutton, arrived in 1659, making Saint Helena one of Britain's oldest colonies outside North America and the Caribbean. A fort and houses were built. After the Restoration of the English monarchy in 1660, the East India Company received a royal charter giving it the sole right to fortify and colonise the island. The fort was renamed James Fort and the town Jamestown, in honour of the Duke of York, later James II of England.

Between January and May 1673, the Dutch East India Company forcibly took the island, before English reinforcements restored English East India Company control. The company experienced difficulty attracting new immigrants, and sentiments of unrest and rebellion fomented among the inhabitants. Ecological problems, including deforestation, soil erosion, vermin and drought,

led Governor Isaac Pyke to suggest in 1715 that the population be moved to **Mauritius**, but this was not acted upon and the company continued to subsidise the community because of the island's strategic location. A census in 1723 recorded 1,110 people, including 610 slaves.

18th century governors tried to tackle the island's problems by implementing tree plantation, improving fortifications, eliminating corruption, building a hospital, tackling the neglect of crops and livestock, controlling the consumption of alcohol and introducing legal reforms. From about 1770, the island enjoyed a lengthy period of prosperity. Captain **James Cook** visited the island in 1775 on the final leg of his second circumnavigation of the world. **St. James' Church** was erected in Jamestown in 1774 and in 1791–92 **Plantation House** was built, and has since been the official residence of the Governor.

On leaving the University of Oxford, in 1676, **Edmond Halley** visited Saint Helena and set up an astronomical observatory with a 7.3-metre-long (24 ft) aerial telescope with the intention of studying stars from the Southern Hemisphere.\*[12] The site of this telescope is near **Saint Mathew's Church** in Hutt's Gate, in the **Longwood** district. The 680-metre (2,230 ft) high hill there is named for him and is called **Halley's Mount**.

Throughout this period, Saint Helena was an important port of call of the **East India Company**. **East Indiamen** would stop there on the return leg of their voyages to **British India** and **China**. At Saint Helena ships could replenish supplies of water and provisions, and during war time, form convoys that would sail under the protection of vessels of the **Royal Navy**. Captain **James Cook's** vessel **HMS Endeavour** anchored and resupplied off the coast of St Helena in May 1771, on her return from the European discovery of the east coast of **Australia** and rediscovery of **New Zealand**.\*[13]

The importation of slaves was made illegal in 1792. Governor **Robert Patton** (1802–1807) recommended that the company import Chinese labour to supplement the rural workforce. The **coolie** labourers arrived in 1810, and their numbers reached 600 by 1818. Many were allowed to stay, and their descendents became integrated into the population. An 1814 census recorded 3,507 people on the island.

### British rule (1815–1821) and Napoleon's exile

See also: [Napoleon § Exile on Saint Helena](#)

In 1815, the British government selected Saint Helena as the place of detention of **Napoleon Bonaparte**. He was taken to the island in October 1815, staying at the **Briars pavilion** on the grounds of the **Balcombe** family's home until his permanent home, **Longwood House**, was completed; he died there on 5 May 1821. During this period, Saint Helena remained in the **East India Company's** pos-



*Napoleon at Saint Helena*



*Longwood House, site of Napoleon's captivity*

session, but the British government met additional costs arising from guarding Napoleon. The island was strongly garrisoned with British troops, and naval ships circled the island.

The 1817 census recorded 821 white inhabitants, a garrison of 820 men on the **East India Company's** payroll, 1,475 men from the King's troops (infantry, engineers etc.) and 352 people as their families, 618 Chinese indentured labourers, 24 **lascars**, 500 free blacks and 1,540 slaves; in total, 6,150 people on the island. In addition, the British government had sent a naval squadron under the command of a rear-admiral and consisting of a couple of men o'war and several smaller vessels. These were not counted in the Census, as most of them lived on their ships. Concerning the slaves, Governor **Hudson Lowe** initiated their emancipation in 1818: from Christmas of that year, every newborn child was considered a free person (though his parents remained slaves until their death).

### British East India Company (1821–1834)

After Napoleon's death, the thousands of temporary visitors were soon withdrawn and the **East India Company** resumed full control of Saint Helena. Between 1815 and 1830, the EIC made available to the government of the island the packet schooner *St Helena*, which made multiple trips per year between the island and the Cape carrying passengers both ways, and supplies of wine and provi-

sions back to the island.

Owing to Napoleon's praise of Saint Helena's coffee during his exile on the island, the product enjoyed a brief popularity in Paris in the years after his death.

The importation of slaves to St Helena was banned in 1792. The phased emancipation of over 800 resident slaves did not take place until 1827, which still was some six years before the British Parliament passed legislation to ban slavery in the colonies.\* [14]

### Crown colony (1834–1981)

Under the provisions of the 1833 India Act, control of Saint Helena was passed from the East India Company to the British Crown, becoming a crown colony.\* [1] Subsequent administrative cost-cutting triggered the start of a long-term population decline whereby those who could afford to do so tended to leave the island for better opportunities elsewhere. The latter half of the 19th century saw the advent of steam ships not reliant on trade winds, as well as the diversion of Far East trade away from the traditional South Atlantic shipping lanes to a route via the Red Sea (which, prior to the building of the Suez Canal, involved a short overland section). These factors contributed to a decline in the number of ships calling at the island from 1,100 in 1855 to only 288 in 1889.

In 1840, a British naval station established to suppress the African slave trade was based on the island, and between 1840 and 1849 over 15,000 freed slaves, known as "Liberated Africans", were landed there.

In 1858, the French emperor Napoleon III successfully gained the possession, in the name of the French government, of Longwood House and the lands around it, last residence of Napoleon I (who died there in 1821). It is still French property, administered by a French representative and under the authority of the French Ministry of Foreign Affairs.

On 11 April 1898 American Joshua Slocum, on his famous and epic solo round the world voyage arrived at Jamestown. He departed on 20 April 1898 for the final leg of his circumnavigation having been extended hospitality from the governor, his Excellency Sir R A Standale, presented two lectures on his voyage and been invited to Longwood by the French Consular agent.

In 1900 and 1901, over 6,000 Boer prisoners were held on the island, and the population reached its all-time high of 9,850 in 1901.

A local industry manufacturing fibre from New Zealand flax was successfully reestablished in 1907 and generated considerable income during the First World War. Ascension Island was made a dependency of Saint Helena in 1922, and Tristan da Cunha followed in 1938. During the Second World War, the United States built Wideawake airport on Ascension in 1942, but no military use was made of Saint Helena.

During this period, the island enjoyed increased revenues through the sale of flax, with prices peaking in 1951. However, the industry declined because of transportation costs and competition from synthetic fibres. The decision by the British Post Office to use synthetic fibres for its mailbags was a further blow, contributing to the closure of the island's flax mills in 1965.

From 1958, the Union Castle shipping line gradually reduced its service calls to the island. Curnow Shipping, based in Avonmouth, replaced the Union-Castle Line mailship service in 1977, using the RMS (Royal Mail Ship) *St Helena*.

### 1981 to present



*Saint Helena seen from space (photo is oriented with south-east towards the top)*

The British Nationality Act 1981 reclassified Saint Helena and the other Crown colonies as British Dependent Territories. The islanders lost their right of abode in Britain. For the next 20 years, many could find only low-paid work with the island government, and the only available employment outside Saint Helena was on the Falkland Islands and Ascension Island. The Development and Economic Planning Department, which still operates, was formed in 1988 to contribute to raising the living standards of the people of Saint Helena.

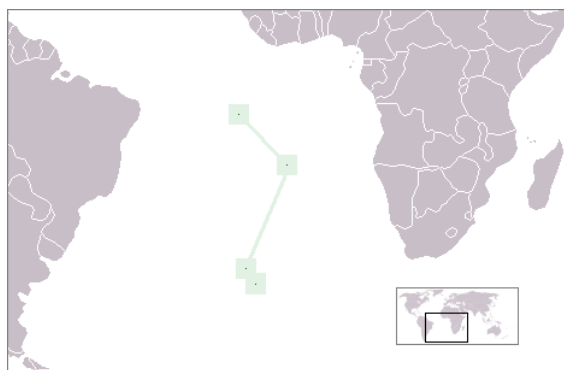
In 1989, Prince Andrew launched the replacement RMS *St Helena* to serve the island; the vessel was specially built for the Cardiff–Cape Town route and features a mixed cargo/passenger layout.

The Saint Helena Constitution took effect in 1989 and provided that the island would be governed by a Governor and Commander-in-Chief, and an elected Executive and Legislative Council. In 2002, the British Overseas Territories Act 2002 granted full British citizenship to the islanders, and renamed the Dependent Territories (including Saint Helena) the British Overseas Territories. In 2009, Saint Helena and its two territories received equal status under a new constitution, and the British Overseas Territory was renamed Saint Helena, Ascension and Tris-

tan da Cunha.

The UK government has invested £250 million in the construction of the island's airport. Expected to be fully operational early 2016, it is expected to help the island towards self-sufficiency and encourage economic development, reducing dependence on British government aid. The airport is also expected to kick start the tourism industry, with up to 30,000 visitors expected annually. \* [15] As of August, 2015 ticketing was postponed until an airline could be firmly designated. \* [16]

## 2.5.2 Geography



Positions (north to south) of Ascension Island, Saint Helena, and Tristan da Cunha in the South Atlantic Ocean

Main article: [Geography of Saint Helena](#)

Located in the South Atlantic Ocean on the Mid-Atlantic Ridge, more than 2,000 kilometres (1,200 mi) from the nearest major landmass, Saint Helena is one of the most remote places in the world. The nearest port on the continent is Namibe in southern Angola, and the nearest international airport the Quatro de Fevereiro Airport of Angola's capital Luanda; connections to Cape Town in South Africa are used for most shipping needs, such as the mail boat that serves the island, the RMS St Helena. The island is associated with two other isolated islands in the southern Atlantic, also British territories: Ascension Island about 1,300 kilometres (810 mi) due northwest in more equatorial waters and Tristan da Cunha, which is well outside the tropics 2,430 kilometres (1,510 mi) to the south. The island is situated in the Western Hemisphere and has the same longitude as Cornwall in the United Kingdom. Despite its remote location, it is classified as being in West Africa by the United Nations.

The island of Saint Helena has a total area of 122 km<sup>2</sup> (47 sq mi), and is composed largely of rugged terrain of volcanic origin (the last volcanic eruptions occurred about 7 million years ago). \* [17] Coastal areas are covered in volcanic rock and warmer and drier than the centre. The highest point of the island is Diana's Peak at 818 m (2,684 ft). In 1996 it became the island's first national park. Much of the island is covered by New Zealand

flax, a legacy of former industry, but there are some original trees augmented by plantations, including those of the Millennium Forest project which was established in 2002 to replant part of the lost Great Wood and is now managed by the Saint Helena National Trust. When the island was discovered, it was covered with unique indigenous vegetation, including a remarkable cabbage tree species. The island's hinterland must have been a dense tropical forest but the coastal areas were probably also quite green. The modern landscape is very different, with widespread bare rock in the lower areas, although inland it is green, mainly due to introduced vegetation. There are no native land mammals, but cattle, cats, dogs, donkeys, goats, mice, rabbits, rats and sheep have been introduced, and native species have been adversely affected as a result. The dramatic change in landscape must be attributed to these introductions. As a result, the string tree (*Acalypha rubrinervis*) and the St Helena olive (*Nesiota elliptica*) are now extinct, and many of the other endemic plants are threatened with extinction.

There are several rocks and islets off the coast, including: Castle Rock, Speery Island, the Needle, Lower Black Rock, Upper Black Rock (South), Bird Island (Southwest), Black Rock, Thompson's Valley Island, Peaked Island, Egg Island, Lady's Chair, Lighter Rock (West), Long Ledge (Northwest), Shore Island, George Island, Rough Rock Island, Flat Rock (East), the Buoys, Sandy Bay Island, the Chimney, White Bird Island and Frightus Rock (Southeast), all of which are within one kilometre (0.62 miles) of the shore.

The national bird of Saint Helena is the Saint Helena plover, known locally as the wirebird. It appears on the coat of arms of Saint Helena and on the flag. \* [18] \* [19]

## Climate

See also: [Jamestown, Saint Helena § Climate](#)

The climate of Saint Helena is tropical, marine and mild, tempered by the Benguela Current and trade winds that blow almost continuously. \* [20] \* [21] The climate varies noticeably across the island. Temperatures in Jamestown, on the north leeward shore, range between 21–28 °C (70–82 °F) in the summer (January to April) and 17–24 °C (63–75 °F) during the remainder of the year. The temperatures in the central areas are, on average, 5–6 °C (9.0–10.8 °F) lower. \* [21] Jamestown also has a very low annual rainfall, while 750–1,000 mm (30–39 in) falls per year on the higher ground and the south coast, where it is also noticeably cloudier. \* [22] There are weather recording stations in the Longwood and Blue Hill districts.

## 2.5.3 Administrative divisions

See also: [Category:Parishes of Saint Helena](#)



*Districts of Saint Helena*

Saint Helena is divided into eight districts,<sup>\*</sup> [23] each with a community centre. The districts also serve as statistical subdivisions. The island is a single electoral area and elects twelve representatives to the Legislative Council<sup>\*</sup> [24] of fifteen.

## 2.5.4 Population

### Demographics

Main article: [Demographics of Saint Helena](#)

Saint Helena was first settled by the English in 1659, and



*Jamestown, from above*

the island has a population of about 4,250 inhabitants, mainly descended from people from Britain – settlers ( “planters” ) and soldiers – and slaves who were brought there from the beginning of settlement – initially from Africa (the Cape Verde Islands, Gold Coast and west coast of Africa are mentioned in early records), then India and Madagascar. Eventually the planters felt there were too many slaves and no more were imported after 1792.

In 1840, St Helena became a provisioning station for the British West Africa Squadron,<sup>\*</sup> [20] preventing slavery to Brazil (mainly), and many thousands of slaves were freed on the island. These were all African, and about 500

stayed while the rest were sent on to the West Indies and Cape Town, and eventually to Sierra Leone.

Imported Chinese labourers arrived in 1810, reaching a peak of 618 in 1818, after which numbers were reduced. Only a few older men remained after the British Crown took over the government of the island from the East India Company in 1834. The majority were sent back to China, although records in the Cape suggest that they never got any farther than Cape Town. There were also a very few Indian lascars who worked under the harbour master.



*Jamestown, the capital of Saint Helena*

The citizens of Saint Helena hold British Overseas Territories citizenship. On 21 May 2002, full British citizenship was restored by the British Overseas Territories Act 2002.<sup>\*</sup> [26] See also British nationality law.

During periods of unemployment, there has been a long pattern of emigration from the island since the post-Napoleonic period. The majority of “Saints” emigrated to the UK, South Africa and in the early years, Australia. The population has steadily declined since the late 1980s and has dropped from 5,157 at the 1998 census to 4,255 in 2008. In the past emigration was characterised by young unaccompanied persons leaving to work on long-term contracts on Ascension and the Falkland Islands, but since “Saints” were re-awarded UK citizenship in 2002, emigration to the UK by a wider range of wage-earners has accelerated due to the prospect of higher wages and better progression prospects.

### Religion

See also: [Category:Religion in Saint Helena](#)

Most residents belong to the Anglican Communion and are members of the Diocese of St Helena, which has its own bishop and includes Ascension Island. The 150th anniversary of the diocese was celebrated in June 2009. Other Christian denominations on the island include: Roman Catholic (since 1852), Salvation Army (since 1884), Baptist (since 1845) and, in more recent times, Seventh-day Adventist (since 1949), New Apostolic and Jehovah's Witnesses (of which one in 35 residents is a member, the highest ratio of any country).<sup>\*</sup> [27] The Baha'i Faith has also been represented on the island

since 1954.\*[28] The Catholics are pastorally served by the Mission *sui iuris* of Saint Helena, Ascension and Tristan da Cunha, whose office of ecclesiastical superior is vested in the Apostolic Prefecture of the Falkland Islands.

### 2.5.5 Politics

Main article: Politics of Saint Helena

Executive authority in Saint Helena is vested in Queen Elizabeth II and is exercised on her behalf by the Governor of Saint Helena. The Governor is appointed by the Queen on the advice of the British government. Defence and Foreign Affairs remain the responsibility of the United Kingdom.

There are fifteen seats in the Legislative Council of Saint Helena, a unicameral legislature, in addition to a Speaker and a Deputy Speaker. Twelve of the fifteen members are elected in elections held every four years. The three *ex officio* members are the Chief Secretary, Financial Secretary and Attorney General. The Executive Council is presided over by the Governor, and consists of three *ex officio* officers and five elected members of the Legislative Council appointed by the Governor. There is no elected Chief Minister, and the Governor acts as the head of government. In January 2013 it was proposed that the Executive Council would be led by a “Chief Councillor” who would be elected by the members of the Legislative Council and would nominate the other members of the Executive Council. These proposals were put to a referendum on 23 March 2013 where they were defeated by 158 votes to 42 on a 10% turnout.\*[29]

Both Ascension Island and Tristan da Cunha have an Administrator appointed to represent the Governor of Saint Helena.

One commentator has observed that, notwithstanding the high unemployment resulting from the loss of full passports during 1981–2002, the level of loyalty to the British monarchy by the St Helena population is probably not exceeded in any other part of the world.\*[30] King George VI is the only reigning monarch to have visited the island. This was in 1947 when the King, accompanied by Queen Elizabeth (later the Queen Mother), Princess Elizabeth (later Queen Elizabeth II) and Princess Margaret were travelling to South Africa. Prince Philip arrived at St Helena in 1957 and then his son Prince Andrew visited as a member of the armed forces in 1984 and his sister the Princess Royal arrived in 2002.

### 2.5.6 Human rights

In 2012, the government of St. Helena funded the creation of the St. Helena Human Rights Action Plan 2012–2015.\*[31] Work is being done under this action plan, including publishing awareness-raising articles in local

newspapers, providing support for members of the public with human rights queries, and extending several UN Conventions on human rights to St. Helena.\*[32]

Legislation to set up an Equality and Human Rights Commission was passed by Legislative Council on July 2015.\*[33] This has not yet commenced operation.\*[34]

### Child abuse scandal

Main article: St Helena child abuse scandal

In recent years, there have been reports of child abuse in St Helena. Britain’s Foreign and Commonwealth Office (FCO) has been accused of lying to the United Nations about child abuse in St Helena to cover up allegations,\*[35] including cases of a police officer having raped a four-year-old girl and of a police officer having mutilated a two-year-old.\*[35]\*[36]\*[37]\*[38]

The British government admits it made an “erroneous” report to the United Nations when it denied that child abuse was rife in St Helena.\*[35]

### 2.5.7 Biodiversity

Main article: Wildlife of Saint Helena, Ascension and Tristan da Cunha

See also: List of birds of Saint Helena, List of mammals of Saint Helena and Flora of Saint Helena

St Helena has long been known for its high proportion of endemic birds and vascular plants. The highland areas contain most of the 400 endemic species recognised to date. Much of the island has been identified by BirdLife International as being important for bird conservation, especially the endemic Saint Helena plover or wirebird, and for seabirds breeding on the offshore islets and stacks, in the north-east and the south-west Important Bird Areas.\*[39] On the basis of these endemics and an exceptional range of habitats, Saint Helena is on the United Kingdom's tentative list for future UNESCO World Heritage Sites.\*[40]

St Helena's biodiversity, however, also includes marine vertebrates, invertebrates (freshwater, terrestrial and marine), fungi (including lichen-forming species), non-vascular plants, seaweeds and other biological groups. To date, very little is known about these, although more than 200 lichen-forming fungi have been recorded, including 9 endemics,\*[41] suggesting that many significant discoveries remain to be made.

### 2.5.8 Economy

Main article: Economy of Saint Helena

*Note: Some of the data in this section has been sourced from the Government of St Helena Sustainable Development Plan.\* [42]*

The island had a monocrop economy until 1966, based on the cultivation and processing of *New Zealand flax* for rope and string. St Helena's economy is now weak, and is almost entirely sustained by aid from the British government. The public sector dominates the economy, accounting for about 50% of *gross domestic product*. Inflation was running at 4% in 2005. There have been increases in the cost of fuel, power and all imported goods.

The tourist industry is heavily based on the promotion of *Napoleon's imprisonment*. A golf course also exists and the possibility for sportfishing tourism is great. Three hotels operate on the island but the arrival of tourists is directly linked to the arrival and departure schedule of the *RMS St Helena*. Some 3,200 short-term visitors arrived on the island in 2013.

Saint Helena produces what is said to be the most expensive coffee in the world. It also produces and exports *Tungi Spirit*, made from the fruit of the prickly or cactus pears, *Opuntia ficus-indica* ("Tungi" is the local St Helenian name for the plant). Ascension Island, Tristan da Cunha and Saint Helena all issue their own postage stamps which provide a significant income.

### Economic statistics

Quoted at constant 2002 prices, GDP fell from £12 million in 1999-2000 to £11 million in 2005-06. Imports are mainly from the UK and South Africa and amounted to £6.4 million in 2004-05 (quoted on an FOB basis). Exports are much smaller, amounting to £0.2 million in 2004-05. Exports are mainly fish and coffee; Philatelic sales were £0.06 million in 2004-05. The limited number of visiting tourists spent about £0.4 million in 2004-05, representing a contribution to GDP of 3%.

Public expenditure rose from £10 million in 2001-02 to £12 million in 2005-06 to £28m in 2012-13. The contribution of UK budgetary aid to total SHG government expenditure rose from £4.6 million in to £6.4 million to £12.1 million over the same period. Wages and salaries represent about 38% of recurrent expenditure.

Unemployment levels are low (31 individuals in 2013, compared to 50 in 2004 and 342 in 1998). Employment is dominated by the public sector, the number of government positions has fallen from 1,142 in 2006 to just over 800 in 2013. St Helena's private sector employs approximately 45% of the employed labour force and is largely dominated by small and micro businesses with 218 private businesses employing 886 in 2004.

Household survey results suggest the percentage of households spending less than £20 per week on a per capita basis fell from 27% to 8% between 2000 and 2004, implying a decline in income poverty. Nevertheless, 22% of

the population claimed social security benefit in 2006/7, most of them aged over 60, a sector that represents 20% of the population.

### Banking and currency

In 1821, Saul Solomon issued a 70,560 copper tokens worth a halfpenny each *Payable at St Helena by Solomon, Dickson and Taylor* – presumably London partners – that circulated alongside the East India Company's local coinage until the Crown took over the island in 1836. The coin remains readily available to collectors.

Today Saint Helena has its own currency, the *Saint Helena pound*, which is at parity with the pound sterling. The government of Saint Helena produces its own coinage and banknotes. The Bank of Saint Helena was established on Saint Helena and Ascension Island in 2004. It has branches in Jamestown on Saint Helena, and Georgetown, Ascension Island and it took over the business of the St. Helena government savings bank and Ascension Island Savings Bank.\* [43]

For more information on currency in the wider region, see the *Sterling Currency in the South Atlantic and the Antarctic*.

## 2.5.9 Transport

Main article: *Transport on Saint Helena*

Saint Helena is one of the most remote islands in the



*RMS St Helena in James Bay.*

world, has one commercial airport, and travel to the island is by ship only. A large military airfield is located on Ascension Island, with two Friday flights to *RAF Brize Norton*, England (as from September 2010). These RAF flights offer a limited number of seats to civilians.

### Sea

The ship *RMS Saint Helena* runs between St Helena and Cape Town, also visiting Ascension Island and Walvis Bay, and occasionally voyaging north to Tenerife and





Looking back at the island from the RMS St Helena.

Portland, UK. It berths in James Bay, St Helena approximately thirty times per year.\* [44] The RMS *Saint Helena* was due for decommissioning in 2010. However, its service life has been extended indefinitely until the airstrip is completed.\* [45]

### Air

After a long period of rumour and consultation, the British government announced plans to construct an airport in Saint Helena in March 2005. The airport was expected to be completed by 2010. However an approved bidder, the Italian firm *Impregilo*, was not chosen until 2008, and then the project was put on hold in November 2008, allegedly due to new financial pressures brought on by the *Financial crisis of 2007–2010*. By January 2009, construction had not commenced and no final contracts had been signed. Governor Andrew Gurr departed for London in an attempt to speed up the process and solve the problems.

On 22 July 2010, the British government agreed to help pay for the new airstrip using taxpayer money.\* [46] In November 2011 a new deal between the British government and South African company Basil Read was signed and the airport was scheduled to open in February 2016, with flights to and from South Africa and the UK.\* [47] South African airline Comair became in March 2015 the preferred bidder to provide weekly air service between the island and Johannesburg, starting from 2016.\* [48]

The first aircraft, a *Beechcraft King Air 200*, landed at the new airport on 15 September 2015, prior to conducting a series of calibration flights.\* [49]

### Local

A minibus offers a basic service to carry people around Saint Helena, with most services designed to take people into Jamestown for a few hours on weekdays to conduct their business. Car hire is available for visitors.

## 2.5.10 Media and communications

See also: *Communications in Saint Helena*

### Radio

*Radio St Helena*, which started operations on Christmas Day 1967, provided a local radio service that had a range of about 100 km (62 mi) from the island, and also broadcast internationally on shortwave radio (11092.5 kHz) on one day a year. The station presented news, features and music in collaboration with its sister newspaper, the *St Helena Herald*. It closed on 25 December 2012 to make way for a new three-channel FM service, also funded by St. Helena Government and run by the South Atlantic Media Services (formerly St. Helena Broadcasting (Guarantee) Corporation).\* [50]

*Saint FM*\* [51] provided a local radio service for the island which was also available on internet radio\* [52] and relayed in Ascension Island. The station was not government funded. It was launched in January 2005 and closed on 21 December 2012. It broadcast news, features and music in collaboration with its sister newspaper, the *St Helena Independent* (which continues).

*Saint FM Community Radio* took over the radio channels vacated by Saint FM and launched on 10 March 2013.\* [53] The station operates as a limited-by-guarantee company owned by its members\* [54] and is registered as a fund-raising Association. Membership is open to everyone, and grants access to a live audio stream.

Occasional *amateur radio* operations also occur on the island. The ITU prefix used is ZD7.\* [55]

### Online

*St Helena Online*\* [56] is a not-for-profit internet news service run from the UK by a former print and BBC journalist, working in partnership with Saint FM and the *St Helena Independent*.

### Television

*Sure South Atlantic Ltd* (“*Sure*”) offers television for the island via 17 analogue terrestrial UHF channels, offering a mix of British, US, and South African programming. The channels are from DSTV and include Mnet, SuperSport and BBC channels. The feed signal, from MultiChoice DStv in South Africa, is received by a satellite dish at Bryant's Beacon from Intelsat 7 in the  $K_u$  band.\* [57]

The St Helena Broadcasting Corporation was due to broadcast television in 2014 on channel 1.

## Telecommunications

SURE provide the telecommunications service in the territory through a digital copper-based telephone network including ADSL-broadband service. In August 2011 the first fibre-optic link has been installed on the island, which connects the television receive antennas at Bryant's Beacon to the Cable & Wireless Technical Centre in the Briars.

A satellite ground station with a 7.6-metre (25 ft) satellite dish installed in 1989\*[58] at The Briars is the only international connection providing satellite links through Intelsat 707 to Ascension island and the United Kingdom.\*[59] Since all international telephone and internet communications are relying on this single satellite link both internet and telephone service are subject to sun outages.

Saint Helena has the international calling code +290 which, since 2006, Tristan da Cunha shares. Saint Helena telephone numbers changed from 4 to 5 digits on 1 October 2013 by being prefixed with the digit "2" , i.e. 2xxxx, with the range 5xxxx being reserved for mobile numbering, and 8xxx being used for Tristan da Cunha numbers (these still shown as 4 digits).\*[60]

Mobile telephony is due to start operating on the island by late 2015.\*[61]

## Internet

Saint Helena has a 10/3.6 Mbit/s\*[59] internet link via Intelsat 707 provided by SURE. Serving a population of more than 4,000, this single satellite link is considered inadequate in terms of bandwidth.

ADSL-broadband service is provided with maximum speeds of up to 1536 KBit/s downstream and 512 KBit/s upstream offered on contract levels from lite £16 per month to gold+ at £190 per month.\*[62] There are a few public WiFi hotspots in Jamestown, which are also being operated by SURE (formerly Cable & Wireless).\*[63]

The South Atlantic Express, a 10,000 km (6,214 mi) submarine communications cable connecting Africa to South America, run by the undersea fibre optic provider eFive, will pass St Helena relatively closely. There were no plans to land the cable and install a landing station ashore, which could supply St Helena's population with sufficient bandwidth to fully leverage the benefits of today's Information Society. In January 2012, a group of supporters petitioned the UK government to meet the cost of landing the cable at St Helena.\*[64] On 6 October 2012, eFive agreed to reroute the cable through St. Helena after a successful lobbying campaign by A Human Right, a San Francisco-based NGA working on initiatives to ensure all people are connected to the Internet. Islanders have sought the assistance of the UK Department for International Development and Foreign

and Commonwealth Office in funding the £10m required to bridge the connection from a local junction box on the cable to the island. The UK Government have announced that a review of the island's economy would be required before such funding would be agreed to.\*[65]

## Local newspapers

The island has two local newspapers, both of which are available on the Internet. The *St Helena Independent*\*[66] has been published since November 2005. *The Sentinel* newspaper was introduced in 2012.\*[67]

## 2.5.11 Culture and society

See also: Public holidays in Saint Helena, Ascension and Tristan da Cunha

## Education

Education is free and compulsory between the ages of 5 and 16\*[68] There are three primary schools – Harford Primary School, Pilling Primary School and St Paul's Primary School – for pupils from the age of 4 to 11 years and one secondary school – Prince Andrew School – for 11–18 year olds. At the beginning of the academic year 2009-10 there were 230 primary school pupils and 286 secondary school pupils enrolled\*[69]

The Education and Employment Directorate also offers tailor-made programmes for special needs pupils and life-long learning opportunities developed by the Adult and Vocational Education Service. The directorate provides evening classes for a variety of subjects and encourages distance learning or online correspondence courses. There is also provision of a public library (the oldest in the Southern Hemisphere\*[70])and a mobile library service which operates in the rural areas on a weekly basis.\*[71]

The UK national curriculum is adapted for local use.\*[71] A range of qualifications are offered – from GCSE, A/S and A2, to Level 3 Diplomas and VRQ qualifications.\*[72]

### A/S & A2 and Level 3 Diploma

- Business Studies
- English
- English Literature
- Geography
- ICT
- Psychology
- Maths
- Accountancy

## VRQ

- Building and Construction
- Automotive Studies

Some of the courses are offered by distance learning, others by the island's Adult and Vocational Centre. There is no tertiary education institution in Saint Helena. However, a number of scholarships are offered for students to study abroad.\*[71]

## Sport

Sports played on the island include football, cricket, volleyball, tennis, golf, motocross, shooting sports and yachting. Saint Helena has sent teams to a number of Commonwealth Games. Saint Helena is a member of the International Island Games Association.\*[73] The Saint Helena cricket team made its debut in international cricket in Division Three of the African region of the World Cricket League in 2011.

The Governor's Cup is a yacht race between Cape Town and Saint Helena island, held every two years in December/January; the most recent event was in December 2010. In Jamestown a timed run takes place up Jacob's Ladder every year, with people coming from all over the world to take part.

## Scouting

Main article: Scouting and Guiding on Saint Helena, Ascension and Tristan da Cunha

There are scouting and guiding groups on Saint Helena and Ascension Island. Scouting was established on Saint Helena island in 1912.\*[74] Lord and Lady Baden-Powell visited the Scouts on Saint Helena on the return from their 1937 tour of Africa. The visit is described in Lord Baden-Powell's book entitled *African Adventures*.\*[75]

## 2.5.12 Namesake

St Helena, the suburb of Melbourne, Victoria, Australia was named after the island.

## 2.5.13 See also

- List of islands
- Manatee of Helena
- Outline of Saint Helena
- Saint Helena Police Service

## 2.5.14 References

- [1] The St Helena, Ascension and Tristan da Cunha Constitution Order 2009 "...the transfer of rule of the island to His Majesty's Government on 22 April 1834 under the Government of India Act 1833, now called the Saint Helena Act 1833" (Schedule Preamble)
- [2] "PROVISIONAL RESULTS – POPULATION CENSUS 2008" (PDF). Retrieved 2013-08-14.
- [3] "Constitution of St. Helena, Ascension and Tristan da Cunha" . UK Archives. 2009. Retrieved 21 July 2012.
- [4] Richard Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860* (Cambridge: Cambridge University Press, 1995), pp. 309-379
- [5] article: Tristan da Cunha (distance)
- [6] A. H. Schulenburg, 'The discovery of St Helena: the search continues'. Wirebird: The Journal of the Friends of St Helena, Issue 24 (Spring 2002), pp. 13–19.
- [7] Duarte Leite, *História dos Descobrimentos*, Vol. II (Lisbon: Edições Cosmos, 1960), 206.
- [8] de Montalbodo, Paesi Nuovamente Retovati & Nuovo Mondo da Alberico Vesputio Fiorentino Intitulato (Venice: 1507)
- [9] Knowlson, James R. (1968), "A Note on Bishop Godwin's "Man in the Moone:" The East Indies Trade Route and a 'Language' of Musical Notes" , *Modern Philology* **65** (4): 357–91, doi:10.1086/390001, JSTOR 435786
- [10] *Drake and St Helena*, privately published by Robin Castell in 2005
- [11] "Historical Chronology" . St. Helena Foundation. Retrieved 21 July 2012.
- [12] Gazetteer – p. 7. MONUMENTS IN FRANCE – page 338 Archived 23 April 2014 at the Wayback Machine
- [13] Beaglehole, J.C., ed. (1968). *The Journals of Captain James Cook on His Voyages of Discovery, vol. 1: The Voyage of the Endeavour 1768–1771*. Cambridge University Press. p. 468. OCLC 223185477.
- [14] New research published on <http://sthelena.uk.net>; shortened extract published in the St Helena Independent on 3 June 2011.
- [15] *England's St Helena exiles welcome island airport project*, BBC News Online, 21 April 2012, retrieved 21 February 2012
- [16] Remote Atlantic runway to open up Napoleon's hidden island
- [17] Natural History of Saint Helena Archived 8 November 2012 at the Wayback Machine
- [18] *Bird Watching*, St Helena Tourism, archived from the original on 17 September 2010, retrieved 17 January 2011

- [19] *Our Flag*, Moonbeams Limited, retrieved 11 November 2014
- [20] “St. Helena, Ascension, and Tristan da Cunha” , *CIA World Factbook* (Central Intelligence Agency), retrieved 21 July 2012
- [21] About St Helena, *St Helena News Media Services* Archived 20 March 2012 at the *Wayback Machine*
- [22] BBC Weather Centre Archived 9 February 2011 at the *Wayback Machine*
- [23] St Helena Independent, 3 October 2008 page 2
- [24] “Constitution” . *St Helena*.
- [25] St Helena
- [26] St Helena celebrates the restoration of full citizenship, *Telegraph*, 22 May 2002
- [27] *2014 Yearbook of Jehovah's Witnesses*. Watch Tower Bible and Tract Society of Pennsylvania. p. 184.
- [28] <http://www.sthelenabahai.org/history.htm>
- [29] “CONSTITUTIONAL POLL – RESULTS” . *The Islander*. 25 March 2013. Retrieved 14 August 2013.
- [30] Smallman, David L., Quincentenary, a Story of St Helena, 1502–2002; Jackson, E. L. St Helena: The Historic Island, Ward, Lock & Co, London, 1903
- [31] <http://humanrightssthelena.burghouse.com/actionplan2012.pdf>
- [32] <http://humanrightssthelena.org/>
- [33] <http://humanrightssthelena.org>
- [34] <http://sainthelenaisland.info/humanrights.htm>
- [35] " 'Violent and brutal' : UK Foreign Office admits cover-up in St Helena child abuse scandal” . *rt.com*. Retrieved 19 January 2015.
- [36] “St Helena child abuse: Foreign Office 'was warned British island couldn't cope 12 years ago'”. *Telegraph*. 2015. Retrieved 19 January 2015.
- [37] “St Helena child abuse: 'a lot of dark things do happen on this island'”. *Telegraph*. Retrieved 19 January 2015.
- [38] “St Helena child abuse: how did sex abusers get away with it for so long?”. *Telegraph*. Retrieved 19 January 2015.
- [39] “Important Bird Areas” , *BirdLife data zone* (BirdLife International), 2012, retrieved 9 November 2012
- [40] “Tentative Lists: St. Helena” . UNESCO. 2012-01-27. Retrieved 21 July 2012.
- [41] Aptroot, A. “Lichens of St Helena and Ascension Island” . *Botanical Journal of the Linnean Society*, 158: 147-171, 2008
- [42] News.co.sh Archived 18 February 2012 at the *Wayback Machine*
- [43] *About Us: History of the Bank of St. Helena*, Bank of St. Helena, archived from the original on 7 February 2012, retrieved 21 July 2012
- [44] “RMS St. Helena Schedule & Fares” . RMS St. Helena. Archived from the original on 20 February 2012. Retrieved 21 July 2012.
- [45] Gavin Bell (7 October 2011). “RMS St. Helena: A Final Sailing from British Shores” . *The Telegraph*. Retrieved 21 July 2012.
- [46] Daniel McElroy & Christopher Hope (2012-07-22). “Britain to pay for St. Helena airstrip backed by Lord Ashcroft” . *The Telegraph*. Retrieved 21 July 2012.
- [47] “Remote UK island colony of St Helena to get airport” . BBC News. 3 November 2011. Retrieved 21 July 2012.
- [48] ""
- [49] “HISTORY MADE AS FIRST EVER PLANE LANDS AT ST HELENA” . Retrieved 16 September 2015.
- [50] Simon Pipe (2012-06-14). “Media saga takes new twist as Mike plans more radio stations” . St. Helena Online. Retrieved 21 July 2012.
- [51] “Saint FM Homepage” . Saint FM. Retrieved 21 July 2012.
- [52] “Saint FM Live Stream” . Saint FM. Archived from the original on 7 June 2012. Retrieved 21 July 2012.
- [53] “About Saint FM” . *Saint FM*. Saint FM Community Radio. Retrieved 18 April 2015.
- [54] Moonbeams Limited. “Saint Helena Island Info: All about St. Helena • Saint FM Community Radio” . *sainthelenaisland.info*.
- [55] <http://sainthelenaisland.info/hamradio.htm>
- [56] “Saint Helena Online” . Retrieved 21 July 2012.
- [57] “Public Information on the Television Delivery on the KU-BAND” (PDF). Cable and Wireless. Archived from the original (PDF) on 2010-06-30. Retrieved 21 July 2012.
- [58] "*Cable & Wireless Carries out Major Mechanical Maintenance*" The St Helena Independent Volume 1, Issue 37 Friday 21 July 2006, p. 8 Archived 10 May 2013 at the *Wayback Machine*
- [59] [http://liveweb.archive.org/http://www.cwi.sh/our\\_network.html/](http://liveweb.archive.org/http://www.cwi.sh/our_network.html/)
- [60] [www.itu.int](http://www.itu.int)
- [61] “RMS St Helena to make last voyage” . *Independent Online*.
- [62] <http://www.sure.co.sh/downloads/BroadbandPackages.pdf>
- [63] “WiFi” . Web.archive.org. 2010-06-30. Archived from the original on 2010-06-30. Retrieved 2012-12-06.

- [64] Christian von der Ropp. "Connect St Helena" . Connectsthelena.org. Retrieved 2012-12-06.
- [65] Dave Lee (3 January 2013). "Island community St Helena renews plea for internet cash from UK" . *BBC News Online*. Retrieved 2 January 2013.
- [66] "St Helena Independent" . Saint.fm. 2015-04-17. Retrieved 2015-04-18.
- [67] "SHBC The Sentinel" . St Helena Broadcasting (Guarantee) Corporation, LTD. Retrieved 2013-08-18.
- [68] Government of St Helena. "Education Ordinance 2009" (PDF). Government of St Helena. Retrieved 30 April 2013.
- [69] Government of St Helena. "Number of schools, enrolment and teachers:by category of school" (PDF). Government of St Helena. Retrieved 30 April 2013.
- [70] Saint Connect. "Community" . Saint Connect. Retrieved 30 April 2013.
- [71] Government of St Helena. "Education and Employment Directorate" . St Helena Government. Archived from the original on 30 December 2012. Retrieved 30 April 2013.
- [72] Prince Andrew School. "Sixth Form" . Prince Andrew School. Archived from the original on 28 October 2013. Retrieved 30 April 2013.
- [73] Island Games St Helena profile
- [74] ScoutBaseUK A Scouting Timeline Archived 23 April 2014 at the Wayback Machine
- [75] "A Baden-Powell Bibliography" . July 2007. Archived from the original on 11 Sep 2012. Retrieved 2009-07-07.
- Clements, B.; "*St Helena:South Atlantic Fortress; Fort*, (Fortress Study Group), 2007 (35), pp. 75–90
  - Crallan, Hugh, *Island of St Helena, Listing and Preservation of Buildings of Architectural and Historic Interest*, 1974
  - Cross, Tony *St Helena including Ascension Island and Tristan Da Cunha* ISBN 0-7153-8075-3
  - Dampier, William, *Piracy, Turtles & Flying Foxes*, 2007, Penguin Books, 2007, pp 99–104, ISBN 0-14-102541-7
  - Darwin, Charles, *Geological Observations on the Volcanic Islands*, Chapter 4, Smith, Elder & Co., London, 1844.
  - Denholm, Ken, *South Atlantic Haven, a Maritime History for the Island of St Helena*, published and printed by the Education Department of the Government of St Helena
  - Duncan, Francis, *A Description of the Island Of St Helena Containing Observations on its Singular Structure and Formation and an Account of its Climate, Natural History, and Inhabitants*, London, Printed For R Phillips, 6 Bridge Street, Blackfriars, 1805
  - Eriksen, Ronnie, *St Helena Lifeline*, Mallet & Bell Publications, Norfolk, 1994, ISBN 0-620-15055-6
  - Evans, Dorothy, *Schooling in the South Atlantic Islands 1661–1992*, Anthony Nelson, 1994, ISBN 0-904614-51-4
  - George, Barbara B. *St Helena —the Chinese Connection* (2002) ISBN 0189948922
  - Gosse, Philip *Saint Helena, 1502–1938* ISBN 0-904614-39-5
  - Hakluyt, *The Principal Navigations Voyages Traffiques & Discoveries of the English Nation, from the Prosperous Voyage of M. Thomas Candish esquire into the South Sea, and so around about the circumference of the whole earth, begun in the yere 1586, and finished 1588, 1598–1600, Volume XI.*
  - Hibbert, Edward, *St Helena Postal History and Stamps*, Robson Lowe Limited, London, 1979
  - Hearl, Trevor W., *St Helena Britannica: Studies in South Atlantic Island History* (ed. A.H. Schulenburg), Friends of St Helena, London, 2013
  - Holmes, Rachel, *Scanty Particulars: The Scandalous Life and Astonishing Secret of James Barry, Queen Victoria's Most Eminent Military Doctor*, Viking Press, 2002, ISBN 0-375-50555-63
  - Jackson, E. L. *St Helena: The Historic Island*, Ward, Lock & Co, London, 1903

### 2.5.15 Further reading

- Aptroot, Andre. *Lichens of St Helena*, Pisces Publications, Newbury, UK, 2012, ISBN 9781874357537
- Brooke, T. H., *A History of the Island of St Helena from its Discovery by the Portuguese to the Year 1806*, Printed for Black, Parry and Kingsbury, London, 1808
- Bruce, I. T., *Thomas Buce: St Helena Postmaster and Stamp Designer*, Thirty years of St Helena, Ascension and Tristan Philately, pp 7–10, 2006, ISBN 1-890454-37-0
- Cannan, Edward *Churches of the South Atlantic Islands 1502–1991* ISBN 0-904614-48-4
- Chaplin, Arnold, *A St Helena's Who's Who or a Directory of the Island During the Captivity of Napoleon*, published by the author in 1914. This has recently been republished under the title *Napoleon's Captivity on St Helena 1815–1821*, Savannah Paperback Classics, 2002, ISBN 1-902366-12-3

- Janisch, Hudson Ralph, *Extracts from the St Helena Records*, Printed and Published at the “Guardian” Office by Benjamin Grant, St Helena, 1885
- Kitching, G. C., *A Handbook of St Helena Including a short History of the island Under the Crown*
- Lambdon, Phil. *Flowering plants and ferns of St Helena*, Pisces Publications, Newbury, UK, 2012, ISBN 9781874357520
- Melliss, John C. M., *St Helena: A Physical, Historical and Topographical Description of the Island Including Geology, Fauna, Flora and Meteorology*, L. Reeve & Co, London, 1875
- Schulenburg, A. H., 'St Helena Historiography, Philately, and the “Castella” Controversy', *South Atlantic Chronicle: The Journal of the St Helena, Ascension and Tristan da Cunha Philatelic Society*, Vol.XXIII, No.3, pp. 3–6, 1999
- Schulenburg, A.H., "'Island of the Blessed': Eden, Arcadia and the Picturesque in the Textualizing of St Helena', *Journal of Historical Geography*, Vol.29, No.4 (2003), pp. 535–53
- Schulenburg, A.H., 'St Helena: British Local History in the Context of Empire', *The Local Historian*, Vol.28, No.2 (1998), pp. 108–122
- Shine, Ian, *Serendipity in St Helena, a Genetical and Medical Study of an isolated Community*, Pergamon Press, Oxford, 1970 ISBN 0-08-012794-0
- Smallman, David L., *Quincentenary, a Story of St Helena, 1502–2002* ISBN 1-872229-47-6
- Van Linschoten, Iohn Huighen, *His Discours of Voyages into ye Easte & West Indies*, Wolfe, London, 1598
- Weider, Ben & Hapgood, David *The Murder of Napoleon* (1999) ISBN 1-58348-150-8
- Wigginton, Martin. *Mosses and liverworts of St Helena*, Pisces Publications, Newbury, UK, 2012, ISBN 9781874357-51-3

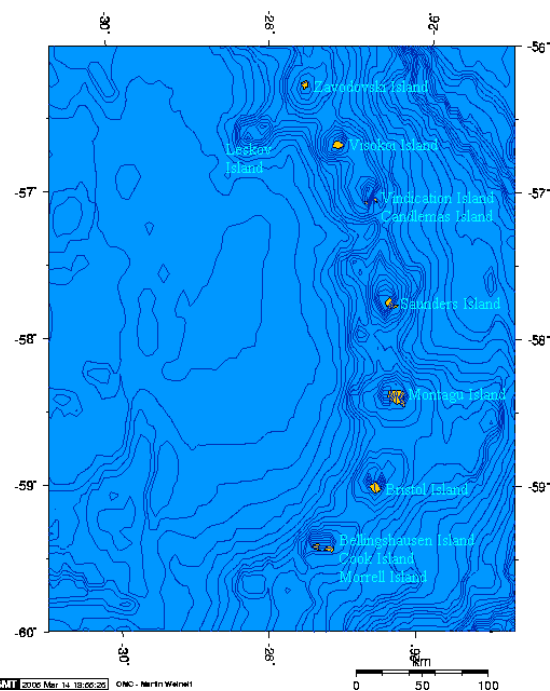
### 2.5.16 External links

- The Official Government Website of Saint Helena
- Radio Saint FM (live broadcasting from Saint Helena)
- Friends of St Helena – supporting St Helena and providing information about the island since 1988
- The Saint Helena Virtual Library and Archive
- Saint Helena Island Information website

- Wikimedia Atlas of Saint Helena
- Saint Helena Travel Guide from Travellerspoint.
- The Official Website for St Helena Tourism
- St Helena Community website
- Webcam showing Jamestown
- The first website on St Helena —since 1995
- The St Helena Institute – Dedicated to St Helena and Dependencies research since 1997
- BBC News: Life on one of the world's most remote islands
- St Helena Association (UK)
- Saint Helena at DMOZ
- Main sites, habitations and occupants of the island during Napoleon's captivity
- South Atlantic news, in association with the Saint Helena Independent
- Seale, Robert F. (1834) *The geognosy of the island St. Helena, illustrated in a series of views, plans and sections*. London: Achermann and Co. - digital facsimile from the Linda Hall Library

Coordinates: 15°57′S 005°43′W﻿ / ﻿15.950°S 5.717°W﻿ / -15.950; -5.717

## 2.6 Southern Thule



South Sandwich Islands

**Southern Thule** is a collection of the three southernmost islands in the South Sandwich Islands: Bellingshausen, Cook, and Thule (Morrell). The Southern Thule territory is claimed by Argentina and the United Kingdom. The island group is barren, windswept, bitterly cold, and uninhabited. It has an extensive exclusive economic zone rich in marine living resources managed as part of the SGSSI fisheries. The Admiralty's *Antarctic Pilot* says that Southern Thule is part of an old sunken volcano, and is covered with ash and penguin guano. There are seals, petrels, and a bank of kelp just offshore, especially around a small inlet on Morrell called Ferguson Bay.

The island group was first sighted in 1775 by the expedition of James Cook, who named it Southern Thule because it seemed to lie at very much the extreme end of the world (see Ultima Thule). It was further explored in 1820 by Bellingshausen who established that it consisted of three separate islands.

### 2.6.1 Argentine occupation 1976–82

In November 1976, a party from the Argentine Air Force landed on Thule, and, without informing the British Government, constructed a small military base complete with barracks and a concrete helicopter landing pad. They set up a weather station, a radio station, and a flagpole from which the Argentine flag flew. All this was done at the direction of the Argentine Government in order to back up their territorial claim to the South Sandwich Islands. The base was named Corbeta Uruguay.

In December 1976 the British discovered what had happened. The Argentine action became the subject of official British protests, the first of them on 19 January 1977. In November 1977, under the name Operation Journeyman, then Prime Minister James Callaghan sent a naval taskforce consisting of the nuclear-powered submarine *HMS Dreadnought*, two frigates, and two support vessels, in order to deter any threat to the Falklands, but ruled out using direct force to end the occupation of Southern Thule. [1] [2]

Arrangements to legitimise the station were discussed in 1978 but failed. More than a year went by before word of the occupation of Southern Thule leaked out to the public. Callaghan ruled out sending in the Royal Marines to end the occupation, preferring diplomacy.

The Argentine presence remained on Southern Thule until six days after the Falklands War had ended. On 20 June 1982, several British warships landed Royal Marines and the Argentine garrison, outnumbered and outgunned, surrendered and handed over their weapons.

### 2.6.2 Aftermath

After the surrender, Southern Thule was left deserted, but six months later, a passing British warship noticed that

the Union Flag had been taken down from the flagpole at the deserted base and the flag of Argentina run up in its place. When word of this reached London, the military was ordered to destroy all buildings on Southern Thule, leaving *Corbeta Uruguay* unfit for prolonged habitation. By Christmas 1982, the barrack block, mess room, and meteorological station were reduced to a pile of concrete rubble, leaving only a small hut stocked with emergency supplies and the flagpole, which was last seen flying the Union Flag.

### 2.6.3 References

- [1] Ben Fenton (1 June 2005) "Secret Falklands task force revealed", *Daily Telegraph*
- [2] BBC News: Secret Falklands fleet revealed

### Bibliography

- Simon Winchester, *Outposts: Journeys to the Surviving Relics of the British Empire*, Harper Perennial, 2004 (originally published in 1987).

## 2.7 St. Kilda

Coordinates: 57°49′N 8°35′W / 57.817°N 8.583°W



Overview of Village Bay

**St Kilda** (Scottish Gaelic: *Hiort*) is an isolated archipelago 64 kilometres (40 mi) west-northwest of North Uist in the North Atlantic Ocean. It contains the westernmost islands of the Outer Hebrides of Scotland. [6] The largest island is Hirta, whose sea cliffs are the highest in the United Kingdom; three other islands (Dùn, Soay and Boreray) were also used for grazing and seabird hunting. The islands are administratively a part of the Comhairle nan Eilean Siar local authority area. [7]

The origin of the name *St Kilda* is a matter of conjecture. The islands' human heritage includes numerous unique architectural features from the historic and prehistoric periods, although the earliest written records of island life date from the Late Middle Ages. The medieval village on

Hirta was rebuilt in the 19th century, but illnesses brought by increased external contacts through tourism, and the upheaval of the First World War contributed to the island's evacuation in 1930.\*[8] The story of St Kilda has attracted artistic interpretations, including Michael Powell's film *The Edge of the World* and an opera.\*[9]

St Kilda may have been permanently inhabited for at least two millennia, the population probably never exceeding 180 (and certainly no more than 100 after 1851). The entire remaining population was evacuated from Hirta (the only inhabited island) in 1930. Currently, the only year-round residents are military personnel; a variety of conservation workers, volunteers and scientists spend time there in the summer months.\*[3]\*[10]

The entire archipelago is owned by the National Trust for Scotland.\*[11] It became one of Scotland's six World Heritage Sites in 1986 and is one of the few in the world to hold joint status for its natural and cultural qualities.\*[12] Parties of volunteers work on the islands in the summer to restore the many ruined buildings that the native St Kildans left behind. They share the island with a small military base established in 1957.\*[13]

Two different early sheep types have survived on these remote islands, the Soay, a Neolithic type, and the Boreray, an Iron Age type. The islands are a breeding ground for many important seabird species including northern gannets, Atlantic puffins, and northern fulmars. The St Kilda wren and St Kilda field mouse are endemic subspecies.\*[3]

### 2.7.1 Origin of names



*The Street in 1886*

Various theories have been proposed for the word Kilda's origin, which dates from the late 16th century. No saint is known by the name.\*[14] Haswell-Smith (2004) notes that the full name *St Kilda* first appears on a Dutch map dated 1666, and that it may have been derived from Norse *sunt kelda* ("sweet wellwater") or from a mistaken Dutch assumption that the spring *Tobar Childa* was dedicated to a saint. (*Tobar Childa* is a tautological placename, consisting of the Gaelic and Norse words for *well*, i.e., "well well").\*[3] Martin Martin, who visited in 1697,

believed that the name "is taken from one Kilder, who lived here; and from him the large well Toubir-Kilda has also its name".\*[15]\*[16]



1580 Carte of Scotlande showing Hyrth (i.e. Hirta) at left and Skaldar (Haskeir) to the north east

Maclean (1972) similarly suggests it may come from a corruption of the Old Norse name for the spring on Hirta, *Childa*, and states that a 1588 map identifies the archipelago as *Kilda*. He also speculates that it may refer to the *Culdees*, anchorites who may have brought Christianity to the island, or be a corruption of the Gaelic name for the main island of the group, since the islanders tended to pronounce *r* as *l*, and thus habitually referred to the island as *Hilta*.\*[17] Steel (1988) adds weight to the idea, noting that the islanders pronounced the *H* with a "somewhat guttural quality", making the sound they used for *Hirta* "almost" *Kilta*.\*[18] Similarly, St Kilda speakers interviewed by the School of Scottish Studies in the 1960s show individual speakers using t-initial forms, leniting to /h/, e.g. *ann an t-Hirte* ([ˈaŋˠəŋˠ ˈtʰiːrʲfʲɛ]) and *gu Hirte* ([kə ˈhirʲfʲɛ]).\*[19]

Maclean (1972) further suggests that the Dutch may have simply made a cartographical error, and confused Hirta with *Skildar*, the old name for *Haskeir* island much nearer the main Outer Hebrides archipelago.\*[17]\*[20] Quine (2000) hypothesises that the name is derived from a series of cartographical errors, starting with the use of the Old Icelandic *Skildir* ("shields") and appearing as *Skildar* on a map by Nicholas de Nicolay (1583). This, so the hypothesis goes, was transcribed in error by Lucas J. Waghenaer in his 1592 charts without the trailing *r* and with a period after the *S*, creating *S.Kilda*. This was in turn assumed to stand for a saint by others, creating the form that has been used for several centuries, *St Kilda*.\*[21]\*[22]\*[23]

The origin of *Hirta*, which long pre-dates *St Kilda*, is similarly open to interpretation. Martin (1703) avers that "Hirta is taken from the Irish *Ier*, which in that language signifies west".\*[15] Maclean offers several options, including an (unspecified)\*[24] Celtic word meaning "gloom" or "death", or the Scots Gaelic *h-lar-Tìr* ("westland"). Drawing on an Icelandic saga describing





The Village Street showing restoration work

an early 13th-century voyage to Ireland that mentions a visit to the islands of “Hirtir”, he speculates that the shape of Hirta resembles a stag, (*Hirtir* meaning “stags” in Norse). [17] Steel (1998) quotes the view of Reverend Neil Mackenzie, who lived there from 1829 to 1844, that the name is derived from the Gaelic *Ì Àrd* (“high island”), and a further possibility that it is from the Norse *Hirt* (“shepherd”). [25] In a similar vein, Murray (1966) speculates that the Norse *Hirðö*, pronounced ‘Hirtha’ (“herd island”), may be the origin. [26] All the names of and on the islands are fully discussed by Coates (1990). [27]

2.7.2 Geography



The St Kilda archipelago

The islands are composed of Tertiary igneous formations of granites and gabbro, heavily weathered by the elements. The archipelago represents the remnants of a long-extinct ring volcano rising from a seabed plateau approximately 40 metres (130 ft) below sea level. [28]

At 670 hectares (1,700 acres) in extent, Hirta is the largest island in the group and comprises more than 78% of the land area of the archipelago. Next in size are Soay (En-

glish: “sheep island”) at 99 hectares (240 acres) and Boreray ('the fortified isle'), which measures 86 hectares (210 acres). [3] [29] Soay is 0.5 kilometres (0.31 mi) north-west of Hirta, Boreray 6 kilometres (4 mi) to the northeast. Smaller islets and stacks in the group include Stac an Armin ('warrior's stack'), Stac Lee ('grey stack') and Stac Levenish ('stream' or 'torrent'). [17] [30] The island of Dùn ('fort'), which protects Village Bay from the prevailing southwesterly winds, was at one time joined to Hirta by a natural arch. MacLean (1972) suggests that the arch was broken when struck by a galleon fleeing the defeat of the Spanish Armada, but other sources, such as Mitchell (1992) and Fleming (2005), provide the more credible (if less romantic) explanation that the arch was simply swept away by one of the many fierce storms that batter the islands every winter. [31] [32]



Hirta and Dùn

The highest point in the archipelago, Conachair ('the beacon') at 430 metres (1,410 ft), is on Hirta, immediately north of the village. In the southeast is Oiseval ('east fell'), which reaches 290 metres (950 ft), and Mullach Mòr ('big hill summit') 361 metres (1,185 ft) is due west of Conachair. Ruival ('red fell') 137 metres (449 ft) and Mullach Bi ('pillar summit') 358 metres (1,175 ft) dominate the western cliffs. Boreray reaches 384 metres (1,260 ft) and Soay 378 metres (1,240 ft). [3] The extraordinary Stac an Armin reaches 196 metres (643 ft), and Stac Lee, 172 metres (564 ft), making them the highest sea stacks in Britain. [33] [34]

In modern times, St Kilda's only settlement was at Village Bay (Scottish Gaelic: *Bàgh a' Bhaile* or *Loch Hiort*) on Hirta. Gleann Mòr on the north coast of Hirta and Boreray also contain the remains of earlier habitations. [35] The sea approach to Hirta into Village Bay suggests a small settlement flanked by high rolling hills in a semicir-

cle behind it. This is misleading.\*[36] The whole north face of Conachair is a vertical cliff up to 427 metres (1,401 ft) high,\*[37] falling sheer into the sea and constituting the highest sea cliff in the UK.\*[38]

The archipelago is the site of many of the most spectacular sea cliffs in the British Isles. Baxter and Crumley (1988) suggest that St Kilda: "...is a mad, imperfect God's hoard of all unnecessary lavish landscape luxuries he ever devised in his madness. These he has scattered at random in Atlantic isolation 100 miles from the corrupting influences of the mainland, 40 miles west of the west-most Western Isles. He has kept for himself only the best pieces and woven around them a plot as evidence of his madness."\*[39]



*Cliff face silhouette on Stac Levenish*

Although 64 kilometres (40 mi) from the nearest land, St Kilda is visible from as far as the summit ridges of the Skye Cuillin, some 129 kilometres (80 mi) distant.\*[40] The climate is oceanic with high rainfall, 1,400 millimetres (55 in), and high humidity. Temperatures are generally cool, averaging 5.6 °C (42.1 °F) in January and 11.8 °C (53.2 °F) in July. The prevailing winds, especially strong in winter, are southerly and southwesterly. Wind speeds average 13 kilometres per hour (8.1 mph) approximately 85 percent of the time and more than 24 kilometres per hour (15 mph) more than 30 percent of the time. Gale force winds occur less than 2 percent of the time in any one year, but gusts of 185 kilometres per hour (115 mph) and more occur regularly on the high tops, and speeds of 209 kilometres per hour (130 mph) have occasionally been recorded near sea level.\*[41] The tidal range is 2.9 metres (9.5 ft), and ocean swells of 5 metres (16

ft) frequently occur, which can make landings difficult or impossible at any time of year.\*[4]\*[42] The oceanic location protects the islands from snow, which lies for only about a dozen days per year.\*[41]

The archipelago's remote location and oceanic climate are matched in the UK only by a few smaller outlying islands such as the Flannan Isles, North Rona, Sula Sgeir, and the Bishop's Isles at the southern edge of the Outer Hebrides. Administratively, St Kilda was part of the parish of Harris in the traditional county of Inverness-shire.\*[43] Today it is incorporated in the Comhairle nan Eilean Siar (Western Isles) unitary authority.

### 2.7.3 Sheep



*Soay ram on Hirta*

On the inaccessible island of Soay are sheep of a unique type, which lived as feral animals and belonged to the owner of the islands, not to the islanders. These Soay sheep are believed to be remnants of the earliest sheep kept in Europe in the Neolithic Era, and are small, short-tailed, usually brown with white bellies, and have naturally moulting fleeces. About 200 Soay sheep remain on Soay itself, and soon after the evacuation a second feral population of them was established on Hirta, which at that time had no sheep; these now number between 600 and 1,700.\*[37] A few Soays have been exported to form breeding populations in other parts of the world, where they are valued for their hardiness, small size and unusual appearance.\*[44] On Hirta and Soay, the sheep prefer the *Plantago* pastures, which grow well in locations exposed to sea spray and include red fescue (*Festuca rubra*), sea plantain (*Plantago maritima*) and sea pink (*Armeria maritima*).\*[41]

The St Kildans kept up to 2,000 of a different type of sheep on the islands of Hirta and Boreray. These were a Hebridean variety of the Scottish Dunface, a primitive sheep probably similar to those kept throughout Britain during the Iron Age. At the time of the evacuation all the islanders' sheep were removed from Hirta, but those on Boreray were left to become feral, and these are now regarded as a breed in their own right, the Boreray. The Boreray is one of the rarest British sheep, and is one

of the few remaining descendants of the Dunface (although some Scottish Blackface blood was introduced in the nineteenth century).<sup>[45]</sup>

## 2.7.4 Wildlife

See also: Flora and fauna of the Outer Hebrides

St Kilda is a breeding ground for many important seabird



*Soay shrouded in mist*

species. One of the world's largest colony of northern gannets, totalling 30,000 pairs, amount to 24 percent of the global population. There are 49,000 breeding pairs of Leach's petrels, up to 90 percent of the European population; 136,000 pairs of Atlantic puffins, about 30 percent of the UK total breeding population, and 67,000 northern fulmar pairs, about 13 percent of the UK total.<sup>[46]</sup> Dùn is home to the largest colony of fulmars in Britain. Prior to 1828, St Kilda was their only UK breeding ground, but they have since spread and established colonies elsewhere, such as Fowlsheugh.<sup>[47]</sup> The last great auk (*Pinguinus impennis*) seen in Britain was killed on Stac an Armin in July 1840.<sup>[3]</sup> Unusual behaviour by St Kilda's bonxies was recorded in 2007 during research into recent falls in the Leach's petrel population. Using night vision gear, ecologists observed the skuas hunting petrels at night, a remarkable strategy for a seabird.<sup>[48]</sup>

Two wild animal taxa are unique to St Kilda: the St Kilda wren (*Troglodytes troglodytes hirtensis*), which is a subspecies of the Eurasian wren, and a subspecies of wood mouse known as the St Kilda field mouse (*Apodemus sylvaticus hirtensis*). A third taxon endemic to St Kilda, a subspecies of house mouse known as the St Kilda house mouse (*Mus musculus muralis*), vanished completely after the departure of human inhabitants, as it was strictly associated with settlements and buildings.<sup>[3]</sup> It had a number of traits in common with a sub-species (*Mus musculus mykinessiensis*) found on Mykines island in the Faroe Islands.<sup>[49]</sup> The grey seal (*Halichoerus grypus*) now breeds on Hirta but did not do so before the 1930 evacuation.<sup>[41]</sup>

The St Kilda Dandelion (*Taraxacum pankhurstianum*) is

an endemic species of dandelion, identified in 2012.<sup>[50]</sup>

The archipelago's isolation has resulted in a lack of biodiversity. The most successful colonists with nearly two hundred species are the flies followed by beetles with approximately 140 species. There are no bees on the islands so the flies are probably important pollinators of plants. One beetle, the rare and endangered weevil, *Ceutorhynchus insularis*, is known from only Dùn and the Westmann Islands, an archipelago off the south-west coast of Iceland.<sup>[51]</sup> Less than one hundred species of butterfly and moth occur, compared to 367 recorded on the Western Isles. red admiral (*Vanessa atalanta*) and painted lady (*Vanessa cardui*) are two of only seven species of butterflies, both well known and common migrants. Common summer moths are the antler (*Cerapteryx graminis*), dark arches (*Apamea monoglypha*) and the migrant silver Y (*Autographa gamma*). One unusual moth recorded is the least carpet (*Idaea rusticata*), an occasional migrant, and in the UK, usually recorded in the south-east of England.<sup>[51]</sup><sup>[52]</sup> On 4 September 2014 a rare vagrant oleander hawk-moth (*Daphnis nerii*) was recorded.<sup>[53]</sup> Oleander is not found in the UK every year, and the larva have never been recorded in the Britain.<sup>[54]</sup>

Plant life is heavily influenced by the salt spray, strong winds and acidic peaty soils. No trees grow on the archipelago, although there are more than 130 different flowering plants, 162 species of fungi and 160 bryophytes. Several rarities exist amongst the 194 lichen species. Kelp thrives in the surrounding seas, which contain a diversity of unusual marine invertebrates.<sup>[3]</sup><sup>[4]</sup>

The beach at Village Bay is unusual in that its short stretch of summer sand recedes in winter, exposing the large boulders on which it rests. A survey of the beach in 1953 found only a single resident species, the crustacean isopod *Eurydice pulchra*.<sup>[55]</sup>

## 2.7.5 Way of life



*St Kildans paid some of their rent by collecting seabirds; roping pegs – one of which can be seen in this photo – enabled them to abseil down to the nests.*

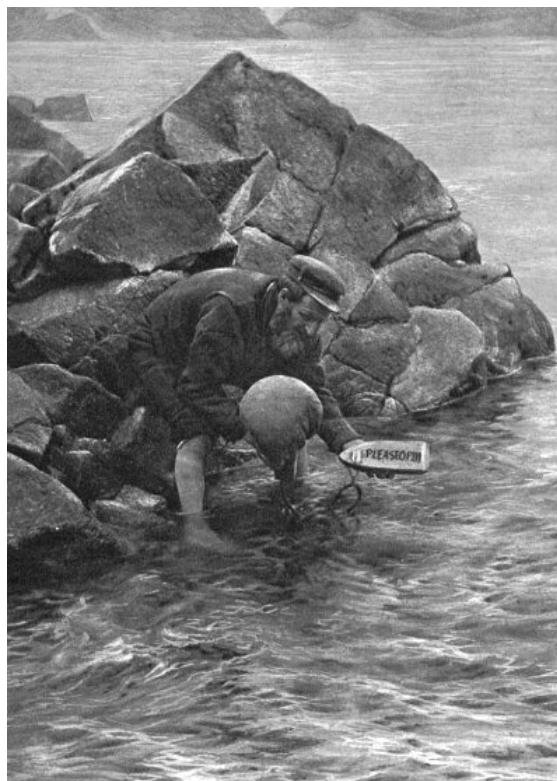
Most modern commentators feel that the predominant

theme of life on St Kilda was isolation. When **Martin Martin** visited the islands in 1697, \* [15] the only means of making the journey was by open boat, which could take several days and nights of rowing and sailing across the ocean and was next to impossible in autumn and winter. In all seasons, waves up to 12 metres (39 ft) high lash the beach of Village Bay, and even on calmer days landing on the slippery rocks can be hazardous.

Separated by distance and weather, the natives knew little of mainland and international politics. After the **Battle of Culloden** in 1746, it was rumoured that **Prince Charles Edward Stuart** and some of his senior **Jacobite** aides had escaped to St Kilda. An expedition was launched, and in due course British soldiers were ferried ashore to Hirta. They found a deserted village, as the St Kildans, fearing pirates, had fled to caves to the west. When the St Kildans were persuaded to come down, the soldiers discovered that the isolated natives knew nothing of the prince and had never heard of **King George II** either. \* [56]

Even in the late 19th century, the islanders could communicate with the rest of the world only by lighting a bonfire on the summit of **Conachair** and hoping a passing ship might see it, or by using the “**St Kilda mailboat**” . This was the invention of **John Sands**, who visited in 1877. During his stay, a shipwreck left nine Austrian sailors marooned there, and by February supplies were running low. Sands attached a message to a lifebuoy salvaged from the *Peti Dubrovacki* and threw it into the sea. \* [57] Nine days later it was picked up in Birsay, Orkney, and a rescue was arranged. The St Kildans, building on this idea, would fashion a piece of wood into the shape of a boat, attach it to a bladder made of sheepskin, and place in it a small bottle or tin containing a message. Launched when the wind came from the north-west, two-thirds of the messages were later found on the west coast of Scotland or, less conveniently, in Norway. \* [58] \* [59]

Another significant feature of St Kildan life was the diet. The islanders kept sheep and a few cattle and were able to grow a limited amount of food crops such as **barley** and **potatoes** on the better-drained land in Village Bay; in many ways the islands can be seen as a large mixed farm. **Samuel Johnson** reported that in the 18th century sheep's milk was made “into small cheeses” by the St Kildans. \* [60] They generally eschewed fishing because of the heavy seas and unpredictable weather. \* [61] The mainstay of their food supplies was the profusion of island birds, especially **gannet** and **fulmar**. These they harvested as eggs and young birds and ate both fresh and cured. Adult puffins were also caught by the use of **fowling rods**. \* [37] This feature of island life came at a price. When **Henry Brougham** visited in 1799 he noted that “the air is infected by a stench almost insupportable – a compound of rotten fish, filth of all sorts and stinking seafowl” . \* [62] An excavation of the *Taigh an t-Sithiche* (the “house of the faeries” – see below) in 1877 by Sands unearthed the remains of gannet, sheep, cattle and limpets amidst various stone tools. The building is



Launching the “*St Kilda mailboat*”

between 1,700 and 2,500 years old, which suggests that the St Kildan diet had changed little over the millennia. Indeed, the tools were recognised by the St Kildans, who could put names to them as similar devices were still in use. \* [63]

These fowling activities involved considerable skills in climbing, especially on the precipitous sea stacks. An important island tradition involved the ‘**Mistress Stone**’, a door-shaped opening in the rocks north-west of Ruival over-hanging a gully. Young men of the island had to undertake a ritual there to prove themselves on the crags and worthy of taking a wife. **Martin Martin** wrote:



*The Mistress Stone*

In the face of the rock, south from the town, is the famous stone, known by the name

of the mistress-stone; it resembles a door exactly; and is in the very front of this rock, which is twenty or thirty fathom [120 to 180 feet (37 to 55 m)] perpendicular in height, the figure of it being discernible about the distance of a mile; upon the lintel of this door, every bachelor-wooer is by an ancient custom obliged in honour to give a specimen of his affection for the love of his mistress, and it is thus; he is to stand on his left foot, having the one half of his sole over the rock, and then he draws the right foot further out to the left, and in this posture bowing, he puts both his fists further out to the right foot; and then after he has performed this, he has acquired no small reputation, being always after it accounted worthy of the finest mistress in the world: they firmly believe that this achievement is always attended with the desired success. This being the custom of the place, one of the inhabitants very gravely desired me to let him know the time limited by me for trying of this piece of gallantry before I design' d to leave the place, that he might attend me; I told him this performance would have a quite contrary effect upon me, by robbing me both of my life and mistress at the same moment.

—Martin Martin \* [15]



*Atlantic puffin (Fratercula arctica). Seabirds were the mainstay of the St Kildan diet.*

Another important aspect of St Kildan life was the daily 'Parliament'. This was a meeting held in the street every morning after prayers and attended by all the adult males during the course of which they would decide upon the day's activities. No one led the meeting, and all men had the right to speak. According to Steel (1988), "Discussion frequently spread discord, but never in recorded history were feuds so bitter as to bring about a permanent division in the community". \* [64] This notion of a free society influenced Enric Miralles' vision for the new Scottish Parliament Building, opened in October 2004. \* [65]

Whatever the privations, the St Kildans were fortunate in some respects, for their isolation spared them some of the evils of life elsewhere. Martin noted in 1697 that the citizens seemed "happier than the generality of mankind as being almost the only people in the world who feel the sweetness of true liberty" , \* [15] and in the 19th century their health and well being was contrasted favourably with conditions elsewhere in the Hebrides. \* [66] Theirs was not a utopian society; the islanders had ingenious wooden locks for their property, and financial penalties were exacted for misdemeanours. \* [67] Nonetheless, no resident St Kildan is known to have fought in a war, and in four centuries of history, no serious crime committed by an islander was recorded there. \* [68] \* [69]

## 2.7.6 History



*A cleit above Village Bay*

### Prehistory

It has been known for some time that St Kilda was continuously inhabited for two millennia or more, from the Bronze Age to the 20th century. \* [70] Recently, the first direct evidence of earlier Neolithic settlement emerged—shards of pottery of the Hebridean ware style, found to the east of the village. The subsequent discovery of a quarry for stone tools on Mullach Sgar above Village Bay led to finds of numerous stone hoe-blades, grinders and Skaill knives \* [71] in the Village Bay *cleitean*—unique stone storage buildings (see below). These tools are also probably of Neolithic origin. \* [72]

### 14th to 17th century

The first written record of St Kilda may date from 1202 when an Icelandic cleric wrote of taking shelter on "the islands that are called Hirtir" . \* [73] Early reports mentioned finds of brooches, an iron sword and Danish coins, and the enduring Norse place names indicate a sustained Viking presence on Hirta, but the visible evidence has been lost. \* [74] The first English language reference is

from the late 14th century, when **John of Fordun** mentioned 'the isle of Irte, which is agreed to be under the Circius and on the margins of the world'.<sup>[75]</sup> The islands were historically part of the domain of the **MacLeods of Harris**, whose steward was responsible for the collection of rents in kind and other duties. The first detailed report of a visit to the islands dates from 1549, when **Donald Munro** suggested that: "The inhabitants thereof ar simple poor people, scarce learnit in aney religion, but M' Cloyd of Herryay, his steward, or he quhom he deputs in sic office, sailes anes in the zear ther at midsummer, with some chaplaine to baptize bairnes ther."<sup>[76]</sup>

Despite the chaplain's best efforts, the islanders' isolation and dependence on the bounty of the natural world meant their philosophy bore as much relationship to **Druidism** as it did to **Christianity**<sup>[37]</sup> until the arrival of Rev. John MacDonald in 1822. Macauley (1764) reported the existence of five druidic altars, including a large circle of stones fixed perpendicularly in the ground near the Stallir House on Boreray.<sup>[77]</sup>

Coll MacDonald of Colonsay raided Hirta in 1615, removing 30 sheep and a quantity of barley.<sup>[78]</sup> Thereafter, the islands developed a reputation for abundance. At the time of Martin's visit in 1697 the population was 180 and the steward travelled with a "company" of up to 60 persons to which he "elected the most 'meagre' among his friends in the neighbouring islands, to that number and took them periodically to St. Kilda to enjoy the nourishing and plentiful, if primitive, fare of the island, and so be restored to their wonted health and strength."<sup>[15]</sup>

## Religion

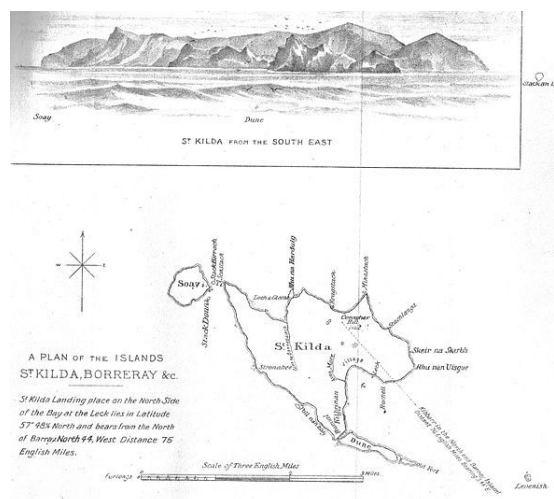
Main article: Religion in the Outer Hebrides

Visiting ships in the 18th century brought cholera and



The schoolroom (on the right hand side of the photo) was built as an annexe to the church in 1884.

smallpox.<sup>[3]</sup> In 1727, the loss of life was so high that too few residents remained to man the boats, and new families were brought in from **Harris** to replace them.<sup>[80]</sup> By 1758 the population had risen to 88 and reached just under 100 by the end of the century. This figure remained fairly constant from the 18th century until 1851, when 36



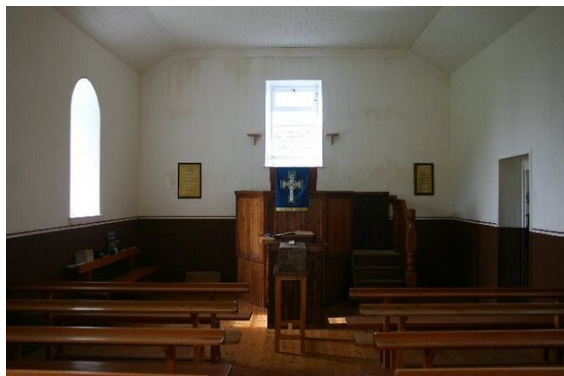
A map and sea level view of St. Kilda and Soay in 1888<sup>[79]</sup>

islanders emigrated to Australia on board the *Priscilla*, a loss from which the island never fully recovered. The emigration was in part a response to the laird's closure of the church and manse for several years during the **Disruption** that created the **Free Church of Scotland**.<sup>[81]</sup><sup>[82]</sup>

A missionary called Alexander Buchan went to St Kilda in 1705, but despite his long stay, the idea of organised religion did not take hold. This changed when Rev. **John MacDonald**, the "Apostle of the North", arrived in 1822. He set about his mission with zeal, preaching 13 lengthy sermons during his first 11 days. He returned regularly and raised funds on behalf of the St Kildans, although privately he was appalled by their lack of religious knowledge. The islanders took to him with enthusiasm and wept when he left for the last time eight years later. His successor, who arrived on 3 July 1830, was Rev. Neil Mackenzie, a resident **Church of Scotland** minister who greatly improved the conditions of the inhabitants. He reorganised island agriculture, was instrumental in the rebuilding of the village (see below) and supervised the building of a new church and manse. With help from the Gaelic School Society, MacKenzie and his wife introduced formal education to Hirta, beginning a daily school to teach reading, writing and arithmetic and a **Sunday school** for religious education.<sup>[83]</sup>

Mackenzie left in 1844,<sup>[84]</sup> and although he had achieved a great deal, the weakness of the St Kildans' dependence on external authority was exposed in 1865 with the arrival of Rev. John Mackay. Despite their fondness for Mackenzie, who stayed in the **Church of Scotland**, the St Kildans "came out" in favour of the new **Free Church** during the **Disruption**. Mackay, the new **Free Church** minister, placed an uncommon emphasis on religious observance. He introduced a routine of three two-to-three-hour services on Sunday at which attendance was effectively compulsory. One visitor noted in 1875 that: "The Sabbath was a day of intolerable gloom. At the clink

of the bell the whole flock hurry to Church with sorrowful looks and eyes bent upon the ground. It is considered sinful to look to the right or to the left.” \* [85]



*The interior of the church at Oiseabhal, St Kilda*

Time spent in religious gatherings interfered seriously with the practical routines of the island. Old ladies and children who made noise in church were lectured at length and warned of dire punishments in the afterworld. During a period of food shortages on the island, a relief vessel arrived on a Saturday, but the minister said that the islanders had to spend the day preparing for church on the Sabbath, and it was Monday before supplies were landed. Children were forbidden to play games and required to carry a Bible wherever they went. Mackay remained minister on St Kilda for 24 years. \* [86]

### Tourism in the 19th century

During the 19th century, steamers began to visit Hirta, enabling the islanders to earn money from the sale of tweeds and birds' eggs but at the expense of their self-esteem as the tourists regarded them as curiosities. \* [87] The boats brought other previously unknown diseases, especially *tetanus infantum*, which resulted in infant mortality rates as high as 80 percent during the late 19th century. \* [37] The *cnatan na gall* or boat-cough, an illness that struck after the arrival of a ship to Hirta, became a regular feature of life. \* [57] \* [62]

By the turn of the 20th century, formal schooling had again become a feature of the islands, and in 1906 the church was extended to make a schoolhouse. The children all now learned English and their native Gaelic. Improved midwifery skills, denied to the island by Reverend Mackay, reduced the problems of childhood tetanus. From the 1880s, trawlers fishing the north Atlantic made regular visits, bringing additional trade. Talk of an evacuation occurred in 1875 during MacKay's period of tenure, but despite occasional food shortages and a flu epidemic in 1913, the population was stable at between 75 and 80, and no obvious sign existed that within a few years the millennia-old occupation of the island was to end. \* [88] \* [89] \* [90]

### First World War



*The 4-inch QF gun on Hirta looking towards Dùn*

Early in World War I the Royal Navy erected a signal station on Hirta, and daily communications with the mainland were established for the first time in St Kilda's history. In a belated response, the German submarine SM U-90 \* [91] arrived in Village Bay on the morning of 15 May 1918 and, after issuing a warning, started shelling the island. Seventy-two shells were fired, and the wireless station was destroyed. The manse, church and jetty storehouse were damaged, but no loss of life occurred. \* [92] One eyewitness recalled: “It wasn't what you would call a bad submarine because it could have blown every house down because they were all in a row there. He only wanted Admiralty property. One lamb was killed... all the cattle ran from one side of the island to the other when they heard the shots.” \* [93]

As a result of this attack, a 4-inch Mark III QF gun was erected on a promontory overlooking Village Bay, but it never saw military use. Of greater long-term significance to the islanders were the introduction of regular contact with the outside world and the slow development of a money-based economy. This made life easier for the St Kildans but also made them less self-reliant. Both were factors in the evacuation of the island little more than a decade later. \* [94]

### Evacuation

Numerous factors led to the evacuation of St Kilda. The islands' inhabitants had existed for centuries in relative isolation until tourism and the presence of the military in World War I induced the islanders to seek alternatives to privations they routinely suffered. The changes made to the island by visitors in the nineteenth century disconnected the islanders from the way of life that had allowed their forebears to survive in this unique environment. \* [95] Despite construction of a small jetty in 1902, the islands remained at the weather's mercy. \* [96]

After World War I most of the young men left the island, and the population fell from 73 in 1920 to 37 in 1928. \* [37] After the death of four men from influenza in



*Boreray, Stac Lee, and Stac an Armin (left) from the heights of Conachair*

1926 there was a succession of crop failures in the 1920s. Investigations by Aberdeen University into the soil where crops had been grown have shown that there had been contamination by lead and other pollutants, caused by the use of seabird carcasses and peat ash in the manure used on the village fields. This occurred over a lengthy period of time as manuring practices became more intensive and may have been a factor in the evacuation.\*[97]\*[98] The last straw came with the death of a young woman, Mary Gillies. Gillies fell ill with appendicitis in January 1930, and was taken to the mainland for treatment. She later died in hospital. For many years it was assumed that she had died of appendicitis, but her son Norman John Gillies discovered in 1991 that she had in fact died of pneumonia, having given birth to a daughter who also died.\*[99] On 29 August 1930, the remaining 36 inhabitants were removed to Morvern on the Scottish mainland at their own request.

The morning of the evacuation promised a perfect day. The sun rose out of a calm and sparkling sea and warmed the impassive cliffs of Oiseval. The sky was hopelessly blue and the sight of Hirta, green and pleasant as the island of so many careless dreams, made parting all the more difficult. Observing tradition the islanders left an open Bible and a small pile of oats in each house, locked all the doors and at 7 am boarded the *Harebell*. Although exhausted by the strain and hard work of the last few days, they were reported to have stayed cheerful throughout the operation. But as the long antler of Dun fell back onto the horizon and the familiar outline of the island grew faint, the severing of an ancient tie became a reality and the St Kildans gave way to tears.\*[100]

The islands were purchased in 1931 by Lord Dumfries (later 5th Marquess of Bute), from Sir Reginald MacLeod. For the next 26 years the island experi-

enced quietude, save for the occasional summer visit from tourists or a returning St Kildan family.\*[101]\*[102]

### Later military events



*The tracking tower on Mullach Sgar*

The islands took no active part in World War II, during which they were completely abandoned,\*[103] but three aircraft crash sites remain from that period. A Beaufighter LX798 based at Port Ellen on Islay crashed into Conachair within 100 metres (328 ft) of the summit on the night of 3–4 June 1943. A year later, just before midnight on 7 June 1944, the day after D-Day, a Sunderland flying boat ML858 was wrecked at the head of Gleann Mòr. A small plaque in the kirk is dedicated to those who died in this accident.\*[104]\*[105] A Wellington bomber crashed on the south coast of Soay in 1942 or 1943. Not until 1978 was any formal attempt made to investigate the wreck, and its identity has not been absolutely determined. Amongst the wreckage, a Royal Canadian Air Force cap badge was discovered, which suggests it may have been HX448 of 7 OTU which went missing on a navigation exercise on 28 September 1942. Alternatively, it has been suggested that the Wellington is LA995 of 303 FTU which was lost on 23 February 1943.\*[105]\*[106]\*[107]

In 1955 the British government decided to incorporate St Kilda into a missile tracking range based in Benbecula, where test firings and flights are carried out. Thus in 1957 St Kilda became permanently inhabited once again. A variety of military buildings and masts have since been erected, including a canteen (which is not open to the public), the 'Puff Inn'.\*[108] The Ministry of Defence (MOD) leases St Kilda from the National Trust for Scotland for a nominal fee.\*[109] The main island of Hirta is still occupied year-round by a small number of civilians employed by defence contractor QinetiQ working in the military base on a monthly rotation.\*[10]\*[110] In 2009 the MOD announced that it was considering closing down its missile testing ranges in the Western Isles, potentially leaving the Hirta base unmanned.\*[111]



### 2.7.7 Nature conservation

On his death on 14 August 1956, the Marquess of Bute's will bequeathed the archipelago to the National Trust for Scotland provided they accepted the offer within six months. After much soul-searching, the Executive Committee agreed to do so in January 1957. The slow renovation and conservation of the village began, much of it undertaken by summer volunteer work parties.\*[112] In addition, scientific research began on the feral Soay sheep population and other aspects of the natural environment. In 1957 the area was designated a national nature reserve.\*[113]

In 1986 the islands became the first place in Scotland to be inscribed as a UNESCO World Heritage Site, for its terrestrial natural features.\*[114] In 2004, the WHS was extended to include a large amount of the surrounding marine features as well as the islands themselves.\*[115]\*[116] In 2005 St Kilda became one of only two dozen global locations to be awarded mixed World Heritage Status for both 'natural' and 'cultural' significance. The islands share this honour with internationally important sites such as Machu Picchu in Peru, Mount Athos in Greece and the Ukhahlamba/Drakensberg Park in South Africa.\*[117]

The St Kilda World Heritage Site covers a total area of 24,201.4 hectares (59,803 acres) including the land and sea contained within a square with the coordinates 57°54'36"N / 08°42'W, 57°46'N / 08°42'W, 57°46'N / 08°25' 42"W, 57°54'36"N / 08°25'42"W.\*[4] The land area is 854.6 hectares (2,112 acres).\*[42]

St Kilda is a Scheduled Ancient Monument, a National Scenic Area, a Site of Special Scientific Interest, and a European Union Special Protection Area.\*[118] Visiting yachts may find shelter in Village Bay, but those wishing to land are told to contact the National Trust for Scotland in advance. Concern exists about the introduction of non-native animal and plant species into such a fragile environment.\*[3]

St Kilda's marine environment of underwater caves, arches and chasms offers a challenging but superlative diving experience.\*[119] Such is the power of the North Atlantic swell that the effects of the waves can be detected 70 metres (230 ft) below sea level.\*[120] In 2008 the National Trust for Scotland received the support of Scotland's Minister for Environment, Michael Russell for their plan to ensure no rats come ashore from the *Spinningdale*, a UK-registered/Spanish-owned fishing vessel grounded on Hirta. There was concern that bird life on the island could be seriously affected.\*[121]\*[122] Fortunately, potential contaminants from the vessel including fuel, oils, bait and stores were successfully removed by Dutch salvage company Mammoet before the bird breeding season in early April.\*[123]

### 2.7.8 Architecture

#### Prehistoric buildings



*Ruins in Gleann Mòr*

The oldest structures on St Kilda are the most enigmatic. Large sheepfolds lie inland from the existing village at *An Lag Bho'n Tuath* (English: the hollow in the north) and contain curious 'boat-shaped' stone rings, or 'settings'. Soil samples suggest a date of 1850 BC, but they are unique to St Kilda, and their purpose is unknown. In Gleann Mòr, (north-west of Village Bay beyond Hirta's central ridge), there are 20 'horned structures', essentially ruined buildings with a main court measuring about 3 by 3 metres (10 by 10 ft), two or more smaller cells and a forecourt formed by two curved or horn-shaped walls. Again, nothing like them exists anywhere else in Britain or Europe, and their original use is unknown.\*[124]\*[125] Also in Gleann Mòr is *Taigh na Banaghaisgeich*, the 'Amazon's House'. As Martin (1703) reported, many St Kilda tales are told about this female warrior.

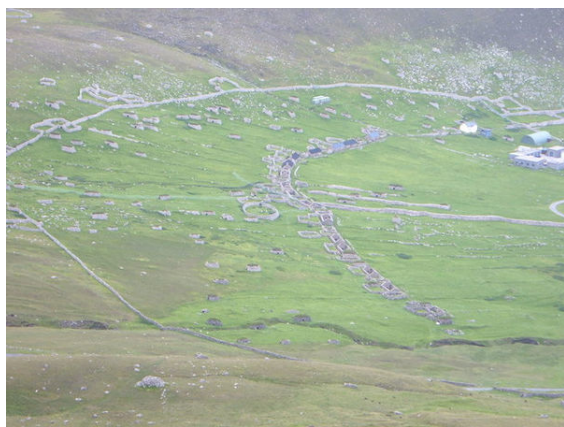
This Amazon is famous in their traditions: her house or dairy of stone is yet extant; some of the inhabitants dwell in it all summer, though it be some hundred years old; the whole is built of stone, without any wood, lime, earth, or mortar to cement it, and is built in form of a circle pyramid-wise towards the top, having a vent in it, the fire being always in the centre of the floor; the stones are long and thin, which supplies the defect of wood; the body of this house contains not above nine persons sitting; there are three beds or low vaults that go off the side of the wall, a pillar betwixt each bed, which contains five men apiece; at the entry to one of these low vaults is a stone standing upon one end fixed; upon this they say she ordinarily laid her helmet; there are two stones on the other side, upon which she is reported to have laid her sword: she is said to have been much addicted to hunting, and that in her time all the

space betwixt this isle and that of Harries, was one continued tract of dry land.\*[15]

Similar stories of a female warrior who hunted the now submerged land between the Outer Hebrides and St Kilda are reported from Harris.\*[126] The structure's forecourt is akin to the other 'horned structures' in the immediate area, but like Martin's "Amazon" its original purpose is the stuff of legend rather than archaeological fact.

Much more is known of the hundreds of unique *cleitean* that decorate the archipelago. These dome-shaped structures are constructed of flat boulders with a cap of turf on the top. This enables the wind to pass through the cavities in the wall but keeps the rain out. They were used for storing peat, nets, grain, preserved flesh and eggs, manure, and hay, and as a shelter for lambs in winter. The date of origin of this St Kildan invention is unknown, but they were in continuous use from prehistoric times until the 1930 evacuation. More than 1,200 ruined or intact *cleitean* remain on Hirta and a further 170 on the neighbouring islands.\*[127]\*[128] House no. 16 in the modern village has an early Christian stone cross built into the front wall, which may date from the 7th century.\*[129]

### Medieval village



*The Village. The Head Wall surrounds the site, with Tobar Childa top left, the 19th century Street at centre and the new military base to the right.*

A medieval village lay near Tobar Childa, about 350 metres (1,150 ft) from the shore, at the foot of the slopes of Conachair. The oldest building is an underground passage with two small annexes called *Taigh an t-Sithiche* (house of the faeries) which dates to between 500 BC and 300 AD. The St Kildans believed it was a house or hiding place, although a more recent theory suggests that it was an ice house.\*[130]

Extensive ruins of field walls and *cleitean* and the remnants of a medieval 'house' with a beehive-shaped annexe remain. Nearby is the 'Bull's House', a roofless rectangular structure in which the island's bull was kept

during winter. Tobar Childa itself is supplied by two springs that lie just outside the Head Wall that was constructed around the Village to prevent sheep and cattle gaining access to the cultivated areas within its boundary.\*[131] There were 25 to 30 houses altogether. Most were **blackhouses** of typical Hebridean design, but some older buildings were made of corbelled stone and turfed rather than thatched. The turf was used to prevent ingress of wind and rain, and the older "beehive" buildings resembled green hillocks rather than dwellings.\*[132]

### Recent structures

The Head Wall was built in 1834 when the medieval village was abandoned and a new one planned between Tobar Childa and the sea some 700 feet (200 m) down the slope. This came about as the result of a visit by Sir Thomas Dyke Ackland, the MP for Devon. Appalled by the primitive conditions, he made a donation that led to the construction of a completely new settlement of 30 new **blackhouses**. These houses were made of dry stone, had thick walls and were roofed with turf. Each typically had only one tiny window and a small aperture for letting out smoke from the peat fire that burnt in the middle of the room. As a result, the interiors were blackened by soot. The cattle occupied one end of the house in winter, and once a year the straw from the floor was stripped out and spread on the ground.\*[133] Several of the new dwellings were damaged by a severe gale in October 1860, and repairs were sufficient only to make them suitable for use as byres. According to Alasdair MacGregor's analysis of the settlement, the sixteen modern, zinc-roofed cottages amidst the black houses and new Factor's house seen in most photographs of the natives were constructed around 1862.\*[134]



*The Feather Store, where fulmar and gannet feathers were kept, and sold to pay the rent*

One of the more poignant ruins on Hirta is the site of 'Lady Grange's House'. Lady Grange had been married to the Jacobite sympathiser James Erskine of Grange for 25 years when he decided that she might have overheard too many of his treasonable plottings. He had her kidnapped and secretly confined in Edinburgh for six months. From

there she was sent to the **Monach Isles**, where she lived in isolation for two years. She was then taken to Hirta from 1734 to 1740, which she described as “a vile nasty, stinking poor isle”. After a failed rescue attempt, she was removed by Erskine to the **Isle of Skye**, where she died. The 'house' is a large cleit in the Village meadows.\*[135]\*[136]\*[137]\*[138]

Boswell and Johnson discussed the subject during their 1773 tour of the Hebrides. Boswell wrote: “After dinner to-day, we talked of the extraordinary fact of Lady Grange’s being sent to St Kilda, and confined there for several years, without any means of relief. Dr Johnson said, if M’ Leod would let it be known that he had such a place for naughty ladies, he might make it a very profitable island.”\*[139]



This 'International Sea & Airport Lounge' is situated adjacent to the helipad and landing craft slipway.

In the 1860s unsuccessful attempts were made to improve the landing area by blasting rocks. A small jetty was erected in 1877, but it was washed away in a storm two years later. In 1883 representations to the **Napier Commission** suggested the building of a replacement, but it was 1901 before the **Congested Districts Board** provided an engineer to enable one to be completed the following year. Nearby on the shore line are some huge boulders which were known throughout the **Highlands and Islands** in the 19th century as *Doirneagan Hirt*, Hirta's pebbles.\*[140]

At one time, three churches stood on Hirta. Christ Church, in the site of the graveyard at the centre of the village, was in use in 1697 and was the largest, but this thatched-roof structure was too small to hold the entire population, and most of the congregation had to gather in the churchyard during services. St Brendan's Church lay over a kilometre away on the slopes of Ruival, and St Columba's at the west end of the village street, but little is left of these buildings. A new kirk and manse were erected at the east end of the village in 1830 and a Factor's house in 1860.\*[141]\*[142]



Dùn from Ruival with *Stac Levenish* in the background at left

### Buildings on other islands

Dùn means “fort”, and there is but a single ruined wall of a structure said to have been built in the far-distant past by the **Fir Bolg**.\*[143] The only “habitation” is *Sean Taigh* (old house), a natural cavern sometimes used as a shelter by the St Kildans when they were tending the sheep or catching birds.

Soay has a primitive hut known as *Taigh Dugan* (Dugan's house). This is little more than an excavated hole under a huge stone with two rude walls on the sides. The story of its creation relates to two sheep-stealing brothers from Lewis who came to St Kilda only to cause further trouble. Dugan was exiled to Soay, where he died; the other, called Fearchar Mòr, was sent to *Stac an Armin*, where he found life so intolerable he cast himself into the sea.

Boreray boasts the *Cleitean MacPhàidein*, a “cleit village” of three small bothies used on a regular basis during fowling expeditions. Here too are the ruins of *Taigh Stallar* (the steward's house), which was similar to the Amazon's house in *Gleann Mòr* although somewhat larger, and which had six bed spaces. The local tradition was that it was built by the “Man of the Rocks”, who led a rebellion against the landlord's steward.\*[144] It may be an example of an **Iron Age wheelhouse** and the associated remains of an agricultural field system were discovered in 2011.\*[145]\*[146]\*[147] As a result of a smallpox outbreak on Hirta in 1724, three men and eight boys were marooned on Boreray until the following May.\*[148] No fewer than 78 storage *cleitean* exist on *Stac an Armin* and a small bothy. A small bothy exists on the precipitous *Stac Lee* too, also used by fowlers.\*[149]

### 2.7.9 Media and the arts

The steamship company running a service between Glasgow and St Kilda commissioned a short (18-minute) silent movie, *St Kilda, Britain's Loneliest Isle*. Released in 1928, it shows some scenes in the lives of the island's inhabitants.\*[150] In 1937, after reading of the St Kilda evacuation, Michael Powell made the film *The Edge of*



*Stac an Armin with Boreray to the left and Stac Lee beyond at right*

*the World* about the dangers of island depopulation. It was shot on Foula, one of the Shetland Islands.\*[151] The writer Dorothy Dunnnett wrote a short story, “The Proving Climb”, set on St Kilda; it was published in 1973 in the anthology *Scottish Short Stories*.\*[152]

In 1982, the noted Scottish filmmaker and theatre director Bill Bryden made the Channel 4-funded film *Ill Fares The Land* about the last years of St Kilda. It is not currently on commercial release.\*[153]

The fictional island of Laerg, which features in the 1962 novel *Atlantic Fury* by Hammond Innes, is closely based on Hirta.

The Scottish folk rock band Runrig recorded a song called “Edge of the World” on the album *The Big Wheel*, which dwells on the islanders' isolated existence.\*[154] The folk music singer/song-writer Brian McNeill wrote about one of St. Kilda's prodigal sons, a restless fellow named Ewan Gillies, who left St. Kilda to seek his fortune by prospecting for gold first in Australia and later California. The song recounts fortunes won and lost, his return to the island, and concludes with his inability to stay. Entitled “Ewan and the Gold”, it was published on the album *Back O' The North Wind* in 1991 and is the subject of McNeill's audio-visual presentation about the Scottish diaspora.\*[155]\*[156]

In a 2005 poll of *Radio Times* readers, St Kilda was named as the ninth greatest natural wonder in the British Isles.\*[157] In 2007 an opera in Scots Gaelic called *St Kilda: A European Opera* about the story of the islands received funding from the Scottish Government. It was performed simultaneously at six venues in Austria, Belgium, France, Germany and Scotland over the summer solstice of 2007. As part of its legacy, the production left a year-long time lapse camera on Hirta.\*[158] *Britain's Lost World*, a three-part BBC documentary series about St Kilda began broadcasting on 19 June 2008.\*[159]

Stamps were issued by the Post Office depicting St. Kilda in 1986 and 2004.\*[160] St Kilda was also com-

memorated on a new series of banknotes issued by the Clydesdale Bank in 2009; an image based on a historical photograph of residents appeared on the reverse of an issue of £5 notes.\*[161]

In 2006, the documentary film “On the Edge of the World” by director Sylvestre Sbillé was released. The film depicts the history of the life on the isle and follows UNESCO volunteers, working on St Kilda.

In 2009 *Pròiseact nan Ealan*, the Gaelic Arts Agency, announced plans to commemorate the evacuation on 29 August, (the 79th anniversary) including an exhibition in Kelvingrove Art Gallery. Comhairle nan Eilean Siar are planning a feasibility study for a new visitor centre to tell the story of St Kilda, although they have specifically ruled out using Hirta as a location.\*[111]

### 2.7.10 See also

- Mingulay – the “near St Kilda”
- John Sands, a Scottish journalist mockingly described by his enemies as “the MP for St Kilda”
- Scarp – a Hebridean island which had a “parliament” similar to St Kilda's
- North Rona - most remote island in the UK
- World Heritage Sites in Scotland
- List of outlying islands of Scotland

### 2.7.11 Notes

- [1] General Register Office for Scotland (28 November 2003). “Occasional Paper No 10: Statistics for Inhabited Islands” (PDF). Retrieved 25 July 2007.
- [2] *Get-a-map* “NF095995” Ordnance Survey. Retrieved 28 December 2007.
- [3] Haswell-Smith, Hamish (2004). *The Scottish Islands*. Edinburgh: Canongate. pp. 314–26. ISBN 978-1-84195-454-7.
- [4] “Protected Areas and World Heritage—St Kilda”. United Nations Environment Programme: World Conservation Monitoring Centre. Retrieved 18 March 2007. Archived 5 December 2008 at the Wayback Machine
- [5] Mac an Tàilleir, Iain (2003) *Ainmean-àite/Placenames*. (pdf) Pàrlamaid na h-Alba. Retrieved 26 August 2012.
- [6] Excluding the isolated pinnacle Rockall, the status of which is a matter of international dispute. See, for example, MacDonald, Fraser (2006) “The last outpost of Empire: Rockall and the Cold War” *Journal of Historical Geography*. 32 pages 627–647. Retrieved 1 August 2007
- [7] Steel (1988) page 254.

- [8] See especially Maclean (1977), Steel (1988), Fleming (2005).
- [9] McMillan, Joyce (3 March 2007) “St Kilda the Opera brings out the bully-boys” . Edinburgh. *The Scotsman*. Retrieved 3 March 2007.
- [10] “The new residents of St Kilda archipelago” . (29 August 2010). BBC News. Retrieved 29 August 2010.
- [11] National Trust for Scotland. Guide. <http://www.kilda.org.uk/weekildaguide/guide17.htm>
- [12] “World Heritage: United Kingdom of Great Britain and Northern Ireland” . UNESCO. Retrieved 3 January 2007.
- [13] Steel (1988) page 273.
- [14] Buchanan (1983) Pages 2–6.
- [15] Martin, Martin (1703).
- [16] *Tobar Childa* and *Toubir-Kilda* are one and the same.
- [17] Maclean (1977) page 33.
- [18] Steel (1988) page 27.
- [19] Bruford, A. (ed.) *Tocher* Vol 36–37 (1982) School of Scottish Studies
- [20] Fleming (2005) page 27. Maclean does not state which island caused the confusion, but Fleming equates 'Skildir' with Haskeir.
- [21] Quine (2000) page 21.
- [22] de Nicolay, Nicholas (1583) *Vraye & exacte description Hydrographique des costes maritimes d'Escosse & des Isles Orchades Hebrides avec partie d'Angleterre & d'Irlande servant a la navigation*. Edinburgh. National Library of Scotland. Retrieved 22 December 2007.
- [23] However, Martin (1703) states: “all seamen call it St. Kilda; and in sea maps St. Kilder, particularly in a Dutch sea map from Ireland to Zeland, published at Amsterdam by Peter Goas in the year, 1663” . This is nearly a century after the publication of Waghenauer's charts, but it is unclear whether his misspelling led to a common spoken usage or the spoken version has a quite different origin. In a later passage concerning the traditions relating to the Flannan Isles, Martin adds “It is absolutely unlawful to call the island of St Kilda (which lies thirty leagues southward) by its proper Irish name Hirt, but only the high country” . This refers to the St Kildan's habit of referring to Hirta as 'the high country' and Boreray as 'the north country'. See Fleming (2005).
- [24] Haswell-Smith (2004) suggests this may be *Ei hirt* – dangerous or deathlike.
- [25] Steel (1988) pages 26–27.
- [26] Murray, W.H. (1966) *The Hebrides*. London. Heinemann, pages 196, 236.
- [27] Coates, Richard (1990).
- [28] “Knowledge of the marine environment” (PDF) Scottish Natural Heritage. Retrieved 2 January 2007.
- [29] “World Heritage Sites Protected Areas Programme – St Kilda” . United Nations Environment Programme. Archived from the original (PDF) on 18 July 2008. Retrieved 5 January 2008.
- [30] Quine (2000) pages 99, 109, 111, 125, 137, 145.
- [31] Maclean (1977) page 18.
- [32] Fleming (2005) page 64.
- [33] “Dual World Heritage Status For Unique Scottish Islands” . National Trust for Scotland. Retrieved 6 January 2007.
- [34] The heights are from Haswell-Smith (2004), although the National Trust website states 191 metres (627 ft) and 165 metres (541 ft) respectively.
- [35] Maclean (1977) page 19.
- [36] Baxter and Crumley (1988) page 87. “Village Bay and its hills... a stupendous sham, a masterly St Kildan deception.”
- [37] Keay, J. & Keay, J. (1994) *Collins Encyclopaedia of Scotland*. London. HarperCollins. Pages 840–2.
- [38] This is noted by several authorities including Steel (1988), p. 27, although Keay (1994) erroneously states they are the “highest in Europe” . Croaghnaun on Achill Island is considerably higher at 668 metres (2,192 ft); see for example “Geographical Facts and Figures” . Wesleyjohnston.com. Retrieved on 9 September 2007.
- [39] Baxter and Crumley (1988) page 7. The lower case pronouns for the deity are in the original text.
- [40] Murray (1966) page 163.
- [41] Fraser Darling, F. and Boyd, J.M. (1969) *Natural History in the Highlands and Islands*. London. Bloomsbury.
- [42] “St Kilda World Heritage Site Management Plan 2003 – 2008” (PDF) National Trust for Scotland. Retrieved 24 January 2007.
- [43] Steel (1988) page 199.
- [44] “Soays of America” [soaysofamerica.org](http://soaysofamerica.org) Retrieved 24 December 2007.
- [45] “Sheep” . *Rare Breeds Watchlist*. Rare Breeds Survival Trust. Retrieved 10 July 2008.
- [46] Benvie, Neil (2000) *Scotland's Wildlife*. London. Aurum Press.
- [47] Fisher, James & Waterston, George (Nov. 1941) *The Breeding Distribution, History and Population of The Fulmar (Fulmarus glacialis) in the British Isles*. Edinburgh. *The Journal of Animal Ecology*, Vol. 10, No. 2 pp. 204–272. Retrieved 24 March 2007.
- [48] McKenzie, Steven “Bird night attacks may be unique” (5 November 2007) BBC News. Retrieved on 6 November 2007.
- [49] “The mammals on Mykines” [Heima.olivant.fo](http://Heima.olivant.fo). Retrieved 22 May 2007.

- [50] Royal Botanical Garden Edinburgh. “New Dandelion Found” . Retrieved 29 June 2012.
- [51] Love, John (2007). “Tèarmann Nàdair Nàiseanta St Kilda National Nature Reserve A world apart” (PDF). *Scottish Natural Heritage*. Scottish Natural Heritage. p. 48. Retrieved 13 September 2014.
- [52] Kimber, Ian. “1699 Least Carpet *Idaea rusticata*”. *UKmoths*. Retrieved 13 September 2014.
- [53] “Flight Arrivals” . *Atropos*. Retrieved 13 September 2014.
- [54] Kimber, Ian. “1985 Oleander Hawk-moth *Daphnis nerii*”. *UKmoths*. Retrieved 13 September 2014.
- [55] Gauld, R. Bagenal, T.E. and Connell, J.H. (1953) “The marine fauna and flora of St. Kilda, 1952” . *Scottish Naturalist* **65** pp 29–49, quoted in Darling and Boyd (1969) page 184.
- [56] Steel (1988) page 32.
- [57] “Life in St. Kilda” , an account by J. Sands in Chambers’ s *Journal of Popular Literature, Science and Art*, 1877. Retrieved 1 April 2007.
- [58] Maclean (1977) pages 136–8.
- [59] “St Kilda mailboat” Glasgow Digital Library. Retrieved 4 March 2008.
- [60] Johnson, Samuel (1775) *A Journey to the Western Islands of Scotland*. Republished, Chapman & Dodd, London, 1924. Page 121.
- [61] The St Kildans fished from the rocks and even organised fishing trips from their boat(s) from time to time, but this was an occasional event, sometimes undertaken to pay rent, rather than a crucial aspect of day-to-day island life. See Maclean (1977) pp 102–03, who also quotes J. MacCulloch’s 1824 *Description of the Western Islands of Scotland* as stating “The neglect of fishing proceeds from the wealth of the inhabitants. They possess already as much food as they can consume, and are under no temptation to augment it by another perilous and laborious employment” .
- [62] Cooper, Derek (1979) *Road to the Isles: Travellers in the Hebrides 1770–1914*. London. Routledge & Kegan Paul.
- [63] Maclean (1977) page 26.
- [64] Steel (1988) pages 44–6
- [65] Balfour, Alan, and McCrone, David (2005) *Creating a Scottish Parliament*” Edinburgh. StudioLR. ISBN 0-9550016-0-9. Retrieved 4 January 2008. Miralles wrote:  
 “Late XIX St Kilda Parliament  
 To Remember this is not an archaic activity  
 My generation (myself) has experienced that emotion  
 Consider how different movements exist in present times  
 Architecture should be able to talk about this.”
- [66] See for example Steel (1988) page 71 quoting Macauley in 1756, MacCulloch in 1819 and Ross in 1887.
- [67] Fleming (2005) pages 107 and 110.
- [68] Steel (1988) pages 33–4.
- [69] A 19th-century commentator wrote: “If St Kilda is not the Eutopia so long sought, where will it be found? Where is the land which has neither arms, money, care, physic, politics, nor taxes? That land is St Kilda” . Maclean, Lachlan (1838) *Sketches on the Island of St Kilda*. McPhun.
- [70] St Kilda: Revised Nomination of St Kilda for inclusion in the World Heritage Site List (January 2003) (pdf) National Trust for Scotland. Retrieved 21 March 2007.
- [71] A flaked stone with a sharp edge used for cutting. This neolithic tool is named after Skaill Bay, the location of World Heritage Site Skara Brae in Orkney. See “Skaill knife” National Museums Scotland. Retrieved 27 February 2015.
- [72] Fleming (2005) pages 37–56.
- [73] Fleming (2005) page 27 quoting Taylor, A.B. (1968) “The Norsemen in St Kilda” . *Saga book of the Viking Society*. **17**. 116–43.
- [74] Fleming (2005) page 63.
- [75] Maclean (1972) page 34 quoting John of Fordun’s *Scotichronicon* of c. 1380.
- [76] Monro (1549) “Hirta” No. 158. English translation from *Lowland Scots*: “The inhabitants are simple poor people, hardly educated in any religion, but the steward of MacLeod of Harris, or his deputy, sails there once a year at midsummer with a chaplain to baptise the children” .
- [77] Macauley, Rev Kenneth (1764) *History of St Kilda*. London
- [78] Fleming (2005) page 28.
- [79] Harvie-Brown, J.A. and Buckley, T. E. (1888) Facing P. XXIV.
- [80] This is the date provided by Quine (2000) for the marooning of the group on Stac an Armin, (see ‘Buildings on other islands’ above), although Steel (1988) states that the outbreak took place in 1724.
- [81] Maclean (1977) page 125.
- [82] Fleming (2005) page 32.
- [83] Maclean (1977) pages 115–6.
- [84] Maclean (1977) page 116. No new minister was appointed for a decade and as a result the school closed on the MacKenzie’s departure.
- [85] John Sands, quoted in Maclean (1977) page 117.
- [86] Maclean (1977) pages 116–9.

- [87] It is also clear that the St Kildans were not as naïve as they sometimes appeared. “For example, when they boarded a yacht they would pretend they thought all the polished brass was gold, and that the owner must be enormously wealthy”. Rev Neil MacKenzie, quoted by Fleming (2005) page 8.
- [88] Steel (1988) pages 150–5.
- [89] Maclean (1977) page 140.
- [90] Fleming (2005) page 165.
- [91] in German
- [92] Steel (1988) page 167.
- [93] Neil Gilles, quoted in Steel (1988) page 167.
- [94] Steel (1988) page 168.
- [95] The Evacuation [kilda.org.uk](http://kilda.org.uk) Accessed 2 December 2008
- [96] Even in the 21st century this is a problem. The National Trust reported in 2006 that it was cancelling 2007 work parties as “adverse weather conditions resulted in our supplies failing to reach St Kilda and our next opportunity to get supplies out is May 2007.” “Work party information” National Trust for Scotland. Retrieved 18 March 2007.
- [97] “Poison in Paradise” National Trust for Scotland. Retrieved 20 June 2008.
- [98] Meharga, Andrew. A *et al.* (September 2006) “Ancient manuring practices pollute arable soils at the St Kilda World Heritage Site, Scottish North Atlantic” *Chemosphere* **64**, Issue 11. Pages 1818–1828. Retrieved 20 June 2008.
- [99] Rix, Juliet (24 March 2012) “St Kilda: On the street where we lived”. London. *The Guardian*. Retrieved 28 March 2012.
- [100] Maclean (1977) page 142.
- [101] Thompson, Francis (1970) *St Kilda and other Hebridean Outliers*. David & Charles. ISBN 0-7153-4885-X
- [102] Steel (1988) pages 229–32.
- [103] Steel (1988) page 234.
- [104] Quine (2000) page 90.
- [105] Earl, David W, and Dobson, Peter “Scottish Island Air Crashes” [wanadoo.co.uk](http://wanadoo.co.uk). Retrieved 27 June 2008. Archived 19 February 2012 at the [Wayback Machine](http://Wayback Machine)
- [106] Steel (1988) page 236.
- [107] Barry, John C. (1980) “Wartime Wrecks on St. Kilda” *After the Battle*. **30** p. 28.
- [108] “Puff Inn statement”. Provided by QinetiQ, approved by the MOD and published by the National Trust for Scotland. Retrieved 18 October 2012.
- [109] Steel (1988) pages 238–55.
- [110] “Advice for visitors” (2004) National Trust for Scotland. Retrieved 18 March 2007. This notes that the name 'Puff Inn' is misleading in that it is not open to the public.
- [111] Ross, John (31 July 2009). “Historic evacuation of islands will be commemorated on St Kilda Day”. Edinburgh: The Scotsman. Retrieved 10 August 2009.
- [112] Steel (1988) pages 256–7.
- [113] “Scotland's National Nature Reserves—St Kilda” National Trust for Scotland. Retrieved 16 March 2007.
- [114] “Scotland's National Nature Reserves —News and Events” (9 December 2004) National Trust for Scotland. Retrieved 17 March 2007.
- [115] *Marine Environment gains World Heritage Protection* (2 July 2004) The National Trust for Scotland. Retrieved 4 December 2008.
- [116] “World Heritage Sites in Scotland” (21 July 2007) Scottish Parliament Information Centre. Research Note RN 01/73. Retrieved 3 January 2007.
- [117] “Dual World Heritage Status For Unique Scottish Islands” (14 July 2005) National Trust for Scotland. Retrieved 6 January 2007.
- [118] “St Kilda National Nature Reserve” National Trust for Scotland. Retrieved 16 March 2007.
- [119] Booth, Richard “St Kilda: The Holy Grail of UK Diving?” (July 2005) BSAC Travel Club. Retrieved 18 March 2007.
- [120] McKirdy, Alan Gordon, John & Crofts, Roger (2007) *Land of Mountain and Flood: The Geology and Landforms of Scotland*. Edinburgh. Birlinn. Page 220.
- [121] Escobales, Roxanne (5 February 2008). “Trawler rats threaten St Kilda seabirds”. London: Guardian Newspapers. Retrieved 30 June 2010.
- [122] “Rats probe under way on St Kilda” BBC. Retrieved 10 February 2008.
- [123] Gaston, Jack (29 May 2008). “Early bird saves UK heritage site”. *Lloyd's List Daily Commercial News* (Informa Australia Pty Ltd). p. 22.
- [124] Quine (2000) page 91–2.
- [125] It is possible they are Pictish structures dating from 400 to 900 AD. Fleming (2005) page 23.
- [126] Maclean (1977) pages 27–8.
- [127] Maclean (1977) pages 65–6.
- [128] Quine (2000) page 32.
- [129] Quine (2000) page 51.
- [130] Quine (2000) pages 52–3.
- [131] Quine (2000) page 30.
- [132] Maclean (1977) page 66.

- [133] Steel (1988) pages 72–3.
- [134] MacGregor (1969) page 129.
- [135] Quine (2000) page 48.
- [136] Steel (1988) pages 31–2.
- [137] Keay & Keay (1994) page 358.
- [138] “St Kilda: Fascinating Facts” National Trust for Scotland. Retrieved 19 August 2007.
- [139] Boswell, James (1785) *Journal of a Tour to the Hebrides with Samuel Johnson, LL.D.*
- [140] Quine (2000) pages 29–30.
- [141] Maclean (1977) page 31.
- [142] Quine (2000) page 37.
- [143] Maclean (1977) page 29.
- [144] Maclean (1977) page 28.
- [145] Fleming (2005) page 58.
- [146] “Evidence of Ancient Settlement Found on Boreray” . (16 June 2011) RCHAMS. Retrieved 19 June 2011.
- [147] “Prehistoric finds on remote St Kilda's Boreray isle” . (17 June 2011) BBC News. Retrieved 19 June 2011.
- [148] Maclean (1977) pages 48–9
- [149] Quine (2000) pages 142 and 146.
- [150] “St. Kilda – Britain's Loneliest Isle (1923/28)” www.screenonline.org.uk. Retrieved 16 August 2010.
- [151] *The Edge of the World* movie IMDb. Retrieved 25 May 2007.
- [152] Scottish Arts Council (1973). *Scottish Short Stories*. Collins. ISBN 0-00-221851-8.
- [153] “Ill Fares The Land” BFI. 1 March 2008.
- [154] “Edge of the World” lyric Radianc.org. Retrieved 25 May 2007. Archived 19 February 2012 at the Wayback Machine
- [155] “Ewan and the Gold” . www.dickgaughan.co.uk. Retrieved 2 February 2010.
- [156] *Back O' The North Wind*. www.brianmcneill.co.uk. Retrieved 2 February 2010.
- [157] “Caves win 'natural wonder' vote” (2 August 2005) BBC News. Retrieved 25 May 2007.
- [158] McKenzie, Steven (23 June 2007). “Opera celebrates St Kilda history” BBC Scotland. Retrieved 27 February 2015.
- [159] “Britain's Lost World” BBC. Retrieved 20 June 2008.
- [160] “St. Kilda (1986, 2004)” Heindorffhus. Retrieved 8 December 2008.
- [161] “Banknote Design Features : Clydesdale Bank World Heritage Series” . The Committee of Scottish Clearing Bankers. Retrieved 29 August 2010.

## 2.7.12 References

- Baxter, Colin and Crumley, Jim (1998) *St Kilda: A portrait of Britain's remotest island landscape*, Biggar, Colin Baxter Photography ISBN 0-948661-03-8
- Buchanan, Margaret (1983) *St Kilda: a Photographic Album*, W. Blackwood, ISBN 0-85158-162-5
- Coates, Richard (1990) *The Place-names of St Kilda*, Lampeter, Edwin Mellen Press
- Fraser Darling, F., and Boyd, J.M. (1969) *Natural History in the Highlands and Islands*, London, Bloomsbury ISBN 1-870630-98-X
- Fleming, Andrew (2005) *St. Kilda and the Wider World: Tales of an Iconic Island*, Windgather Press ISBN 1-905119-00-3
- Harvie-Brown, J.A. and Buckley, T. E. (1888), *A Vertebrate Fauna of the Outer Hebrides*. Pub. David Douglas., Edinburgh.
- Haswell-Smith, Hamish (2004). *The Scottish Islands*. Edinburgh: Canongate. ISBN 978-1-84195-454-7.
- Keay, J., and Keay, J. (1994) *Collins Encyclopedia of Scotland*, London, HarperCollins ISBN 0-00-255082-2
- Maclean, Charles (1977) *Island on the Edge of the World: the Story of St. Kilda*, Edinburgh, Canongate ISBN 0-903937-41-7
- MacGregor, Alasdair Alpin (1969) *The Farthest Hebrides*, London, Michael Joseph Ltd. ISBN 0-7181-0691-1
- Martin, Martin (1703) "A Voyage to St. Kilda" in *A Description of The Western Islands of Scotland*, Appin Regiment/Appin Historical Society. Retrieved 3 March 2007
- Monroe, Sir Donald (1549) *Description of the Western Isles of Scotland*. William Auld. Edinburgh - 1774 edition.
- Murray, W.H. (1966) *The Hebrides*, London, Heinemann
- Quine, David (2000) *St Kilda*, Grantown-on-Spey, Colin Baxter Island Guides ISBN 1-84107-008-4
- Steel, Tom (1988) *The Life and Death of St. Kilda*, London, Fontana ISBN 0-00-637340-2
- Williamson, Kenneth; & Boyd, J. Morton. (1960). *St Kilda Summer*, London, Hutchinson



### 2.7.13 Further reading

- Atkinson, Robert *Island going to the remoter isles, chiefly uninhabited, off the north-west corner of Scotland*, William Collins, 1949. (Reprinted Birlinn, 1995 ISBN 1-874744-31-9)
- Charnley, Bob *Last Greetings of St. Kilda*, Richard Stenlake, 1989 ISBN 1-872074-02-2
- Coates, Richard *The Place-Names of St. Kilda*, Edwin Mellen Press, 1990 ISBN 0-88946-077-9
- Crichton, Torcuil (26 June 2005) “The Last of the St Kildans” . Glasgow. *Sunday Herald*. A report of a surviving St Kildan re-visiting the islands.
- Gilbert, O. *The Lichen Hunters*. St Kilda: Lichens at the Edge of the World, The Book Guild Ltd., England, 2004 ISBN 1-85776-930-9
- Gillies, Donald John, and Randall, John (Editor) *The Truth about St Kilda. An Islander's Memoir*, John Donald, Edinburgh, 2010 ISBN 978-1-906566-07-4
- Harden, Jill and Lelong, Olivia “Winds of Change, the Living Landscapes of Hirta, St Kilda” , Edinburgh, Society of Antiquaries of Scotland 2011 ISBN 978-0-903903-29-5
- Harman, Mary *An Isle Called Hirte: History and Culture of St. Kilda to 1930*, MacLean Press, 1996 ISBN 1-899272-03-8
- Kearton, Richard *With Nature and a Camera*, Cassell and Company, London, 1898
- Macaulay, Kenneth (1764), *The History of St Kilda*, T Becket and P A De Hondt, London (Google books)
- Macauley, Margaret (2009) *The Prisoner of St Kilda: The true story of the unfortunate Lady Grange*, Edinburgh, Luath ISBN 978-1-906817-02-2
- McCutcheon, Campbell *St. Kilda: a Journey to the End of the World*, Tempus, 2002 ISBN 0-7524-2380-0
- Stell, Geoffrey P., and Mary Harman *Buildings of St Kilda*, RCAHMS, 1988 ISBN 0-11-493391-X

#### Fiction

- Altenberg, Karin (2011) *Island of Wings*, Penguin, ISBN 978-0-14-312066-7

### 2.7.14 External links

- 1930 – evacuation of St Kilda (29 August 1930) National Library of Scotland reprint of report from *The Times*. London. Retrieved 28 December 2007.
- Digitised manuscript map of St Kilda drawn by the Scottish civil engineer Robert Stevenson in approximately 1818
- Archive films about St Kilda from the Scottish Screen Archive at National Library of Scotland
- abandonedcommunities.co.uk Retrieved 28 December 2007.
- Revised nomination of St Kilda for inclusion on the World Heritage Site List (January 2003) (pdf) Retrieved 28 December 2007. Includes a detailed map.
- “Revised Nomination of St Kilda for inclusion in the World Heritage Site List” . (12 May 2003) The Scottish Executive. Retrieved 28 December 2007.
- “St Kilda – Death of an Island Republic” Utopia Britannica: British Utopian Experiments 1325 – 1945. Retrieved 28 December 2007.
- “St Kilda” National Trust for Scotland. Retrieved 28 December 2007.
- Protected Planet Factsheet about St Kilda
- *The cleitean of the St Kilda Archipelago*. An architectural and historical account by Christian Lassure. Retrieved 28 December 2007.
- St Kilda (Hirta) National Nature Reserve, United Kingdom
- Abandonment of St Kilda recalled BBC News 28 August 2009
- St Kilda: A Wildlife Mystery
- St. Kilda, Its People and Birds (1908) - extract
- St Kilda: Britain's Loneliest Isle (1928)
- Obituary of Norman John Gillies, the last voice of St Kilda, died on 29 September 2013, aged 88. The Economist.

## 2.8 Trindade

Not to be confused with Trinidad (disambiguation).

**Trindade and Martim Vaz** (Portuguese: *Trindade e Martim Vaz*, pronounced: [tɾĩˈdadʒi i mɐɾˈtʃi ˈvas]) is an archipelago located about 1,200 kilometers (740 mi) east of Vitória in the Southern Atlantic Ocean, belonging to the State of Espírito Santo, Southeast Brazil. The

archipelago has a total area of 10.4 km<sup>2</sup> (4.0 sq mi) and a population of 32 (Brazilian Navy personnel). The archipelago consists of five islands and several rocks and stacks; Trindade is the largest island, with an area of 10.1 km<sup>2</sup> (3.9 sq mi); about 49 km (30 miles) east of it are the tiny Martim Vaz islets, with a total area of 0.3 km<sup>2</sup> (30 hectares).

The islands are of volcanic origin and have rugged terrain. They are largely barren, except for the southern part of Trindade. They were discovered in 1502 by Portuguese explorer Estêvão da Gama and stayed Portuguese until they became part of Brazil at its independence. From 1890 to 1896, Trindade was occupied by the United Kingdom until an agreement with Brazil was reached. During the period of British occupation, Trindade was known as “South Trinidad.”

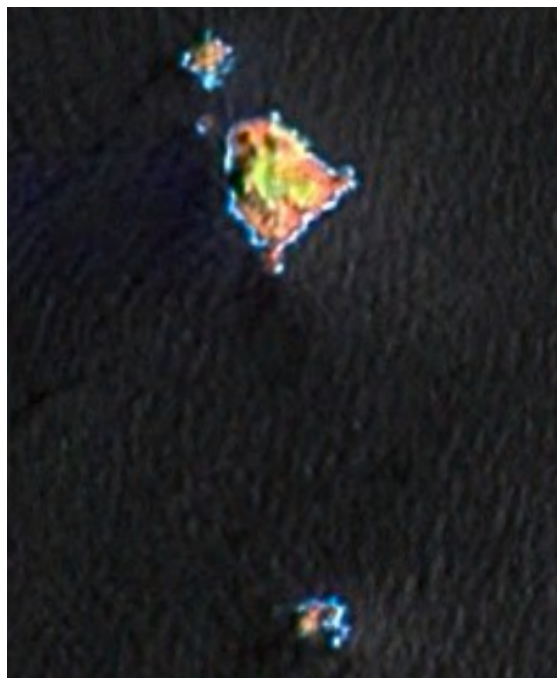
### 2.8.1 Geography

The individual islands with their respective locations are given in the following:

- **Ilha da Trindade** (Portuguese for “Trinity Island”) (20°31′30″S 29°19′30″W / 20.52500°S 29.32500°W)
- **Ilhas de Martim Vaz** (20°30′00″S 28°51′00″W / 20.50000°S 28.85000°W)
  - **Ilha do Norte** (“North Island”), 300 meters north-northwest of Ilha da Racha, 75 meters high. (20°30′00″S 28°51′00″W / 20.50000°S 28.85000°W)
  - **Ilha da Racha** (“Crack Island”) or **Ilha Martim Vaz**, the largest, 175 meters high near the northwest end. The shores are strewn with boulders. (20°30′18″S 29°20′42″W / 20.50500°S 29.34500°W)
  - **Rochedo da Agulha** (“Needle Rock”), a flat circular rock 200 meters northwest of Ilha da Racha, is 60 meters high.
  - **Ilha do Sul** (“South Island”), 1,600 meters south of Ilha da Racha, is a rocky pinnacle. Ilha do Sul is the easternmost point of Brazil. (20°31′00″S 28°51′00″W / 20.51667°S 28.85000°W)

#### Trindade

The small island of **Trindade**, with an area of 10.3 km<sup>2</sup>, lies at the eastern end of an E-W-trending chain of submarine volcanoes and guyots extending about 1,000 km (620 mi) from the continental shelf off the Brazilian coast. The island lies more than halfway between Brazil and the Mid-Atlantic Ridge near the eastern end of the submarine Vitória-Trindade Ridge.



NASA satellite imagery of Martim Vaz Islands in pseudo-color.

Trindade is a mountainous, desiccated volcanic island with numerous phonolitic lava domes and steep-sided volcanic plugs. The highest summit is Pico Desejado, near the center, 620 meters high. Nearby to the northwest are Pico da Trindade (590 m) and Pico Bonifácio (570 m). Pico Monumento, a remarkable peak in the form of a slightly inclined cylinder, rises from the west coast to 270 m. The youngest volcanism, at Vulcão do Paredão (217 m) on the southeast tip of the island, constructed a pyroclastic cone with lava flows that are no older than the Holocene (Almeida, 1961). Remnants of the crater of the 200 m high cinder cone are still preserved. Lava flows traveled from the cone to the north, where they formed an irregular shoreline and offshore islands. Smaller volcanic centers of the latest volcanic stage are found in the Morro Vermelho (515 m) area in the south-central part of the island.

There is a small settlement in the north on the shore of a cove called Enseada dos Portugueses, supporting a garrison of the Brazilian Navy, 32 strong.

The archipelago is the main nesting site of the green sea turtle in Brazil. There are also large numbers of breeding seabirds, including the endemic subspecies of the Great frigatebird (*Fregata minor nicolli*) and Lesser frigatebird (*F. ariel trinitatis*), and it is only Atlantic breeding site for the Trindade petrel.\* [2]

### 2.8.2 History

### 16th to 18th century

The Trindade and Martim Vaz Islands were discovered in 1502 by Portuguese navigators led by Estêvão da Gama, and, along with Brazil, became part of the Portuguese Empire.

Many visitors have been to Martim Vaz, the most famous of whom was the English astronomer Edmund Halley, who took possession of the island on behalf of the British Monarchy in 1700.

*HMS Rattlesnake*, a 198-ton, 12-gun cutter-rigged sloop, was wrecked on Trindade on 21 October 1781, shortly after Commander Philippe d'Auvergne had taken over command. *Rattlesnake* had been ordered to survey the island to ascertain whether it would make a useful base for outward-bound Indiamen. She anchored, but that evening the wind increased and by seven o' clock she was dragging. Two hours later the first cable parted and Commander d' Auvergne club-hauled his way out, setting main and fore sails, and using the remaining anchor cable as a spring. This successfully put *Rattlesnake's* head to seaward. The remaining cable was then cut, and the sloop wore round and stood out to sea. However the ground now shallowed quite rapidly and suddenly *Rattlesnake* struck a submerged rock. She started filling with water, so, in order to preserve the lives of the crew, d'Auvergne ran her ashore. The crew lived on the tiny island for three months until *HMS Bristol* and a convoy of Indiamen, which fortuitously called there, rescued them in late December.

Captain La Pérouse stopped there at the outset of his 1785 voyage to the Pacific.

### 19th to 20th century

In 1889, Edward Frederick Knight went treasure hunting on the island. Not surprisingly, he was unsuccessful but he wrote an interesting and detailed description of the island and his expedition.

In 1893 the American James Harden-Hickey claimed the island and declared himself as James I, Prince of Trinidad.\*[3]\*[4]\*[5] According to James Harden-Hickey's plans, Trinidad, after being recognized as an independent country, would become a military dictatorship and have him as dictator.\*[6] He designed postage stamps, a national flag, and a coat of arms; established a chivalric order, the "Cross of Trinidad"; bought a schooner to transport colonists; appointed M. le Comte de la Boissiere as Secretary of State; opened a consular office at 217 West 36th Street in New York; and even issued government bonds to finance construction of infrastructure on the island. Despite his plans, his idea was ridiculed or ignored by the world.\*[7]\*[8]\*[9]\*[10]\*[11]\*[12]

In July 1895, the British again tried to take possession

of this strategic position in the Atlantic.\*[6] The British planned to use the island as a cable station.\*[6] However, Brazilian diplomatic efforts, along with Portuguese support, reinstated Trindade Island to Brazilian sovereignty.

In order to clearly demonstrate sovereignty over the island, now part of the State of Espírito Santo and the municipality of Vitória, a landmark was built on January 24, 1897. Nowadays, Brazilian presence is marked by a permanent Brazilian Navy base on the main island.

In July 1910 the ship *Terra Nova* carrying the last expedition of Captain Scott to the Antarctic arrived to the island, at the time uninhabited. Some members of the Scott's expedition explored the island with scientific purposes, and a vivid description of it is included in *The Worst Journey in the World*, by Apsley Cherry-Garrard, one of the members of the expedition.

In August 1914 the Imperial German Navy established a supply base for its warships off Trindade. On September 14, 1914 the Royal Navy auxiliary cruiser *HMS Carmania* fought the German Navy's SMS *Cap Trafalgar* off Trindade in the Battle of Trindade. *Carmania* sank *Cap Trafalgar*, but sustained severe damage herself.

### 2.8.3 See also

- Trindade hotspot

### 2.8.4 References

- [1] Ilha da Trindade - Infográficos e mapas Folha de S.Paulo. Retrieved on 6 June 2009.
- [2] Fund, W. 2014. Trindade-Martin Vaz Islands tropical forests
- [3] "To Be Prince of Trinidad: He Is Baron Harden-Hickey", *New York Tribune*, November 5, 1893, p 1
- [4] Bryk, William, "News & Columns", *New York Press*, v 15 no 50 (December 10, 2002)
- [5] "Principality of Trinidad: John H. Flagler's Son-in-Law Is Its Sovereign, Self-Proclaimed as James I", *New York Times*, June 10, 1894, p 23
- [6] Bryk (2002)
- [7] "Trinidad's Prince Awake: An Appeal to Washington Against Brazil and Great Britain", *New York Times*, August 1, 1895, p 1
- [8] "Grand Chancellor of Trinidad: Significant Phases in the Ascent of Male Comte de la Boissiere to His Elevated Diplomatic Post", *New York Times*, August 2, 1895, p 9
- [9] "Trinidad's Case in Washington: Courteously, the Chancellor Would Permit Britain's Cable Station and Use It, but There Is Graver Trouble", *New York Times*, August 7, 1895, p 1

- [10] “Trinidad's Diplomat in Action: M. de la Boissiere Asks that His Sovereign's Land Be Recognized as a Neutral Principality” , *New York Times*, August 9, 1895, p 5
- [11] “Trinidad's Prince at Work: Grand Chancellor de la Boissiere Tells How the War Between Great Britain and Brazil Will Be Averted” , *New York Times*, Jan 24, 1896, p 9
- [12] Flags of the World - Trindade and Martins Vaz Islands (Brazil) (*sic*)

### 2.8.5 Further reading

- Alves, RJV; da Silva, NG; Aguirre-Muñoz, A (2011). “Return of endemic plant populations on Trindade Island, Brazil, with comments on the fauna” (PDF). In Veitch, CR; Clout, MN; Towns, DR. *Island invasives: eradication and management : proceedings of the International Conference on Island Invasives*. Gland, Switzerland: IUCN. pp. 259–263. OCLC 770307954.
- Olson, Storrs L. (1981). “Natural history of vertebrates on the Brazilian islands of the mid South Atlantic” . *National Geography Society Research Reports* **13**: 481–492.

### 2.8.6 External links

- TRINDADE(Spanish)

## 2.9 Tristan da Cunha

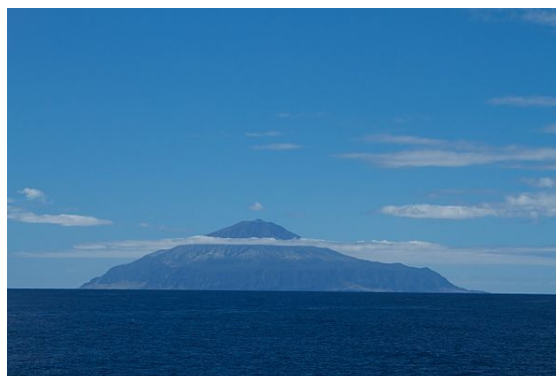
This article is about the South Atlantic island group. For the Portuguese explorer, see *Tristão da Cunha*.

**Tristan da Cunha** /ˈtrɪstən də ˈkuːnjə/, colloquially **Tristan**, is both a remote group of volcanic islands in the south Atlantic Ocean and the main island of that group. It is the most remote inhabited archipelago in the world, lying 2,000 kilometres (1,200 mi) from the nearest inhabited land, *Saint Helena*,<sup>[3]</sup> 2,400 kilometres (1,500 mi) from the nearest continental land, South Africa,<sup>[4]</sup> and 3,360 kilometres (2,090 mi) from South America. The territory consists of the main island, also named Tristan da Cunha, which has a north–south length of 11.27 kilometres (7.00 mi) and has an area of 98 square kilometres (38 sq mi), along with the smaller, uninhabited *Nightingale Islands* and the wildlife reserves of *Inaccessible* and *Gough Islands*.

Tristan da Cunha is part of the British overseas territory of *Saint Helena, Ascension and Tristan da Cunha*.<sup>[5]</sup> This includes *Saint Helena* and equatorial *Ascension Island* some 3,730 kilometres (2,318 mi) to the north of Tristan. The island has a population of 301 as of September 2015.<sup>[2]</sup>

### 2.9.1 History

Main article: *History of Tristan da Cunha*



*Tristan da Cunha*

#### Discovery

The islands were first sighted in 1506 by Portuguese explorer *Tristão da Cunha*; rough seas prevented a landing. He named the main island after himself, *Ilha de Tristão da Cunha*, which was anglicised from its earliest mention on British Admiralty charts to *Tristan da Cunha Island*.

In 1643, the crew of *Heemstede*, captained by Claes Gerritsz Bierenbroodspot, made the first recorded landing.

The first survey of the archipelago was made by the French corvette *Heure du Berger* in 1767.

#### 19th century

The first permanent settler was Jonathan Lambert, from Salem, Massachusetts, United States, who arrived at the islands in December 1810 with two other men.<sup>[6]</sup> Lambert publicly declared the islands his property and named them the *Islands of Refreshment*. After being joined by an Andrew Millet, three of the four men died in 1812; however, the survivor among the original three permanent settlers, Thomas Currie (or Tommaso Corri) remained as a farmer on the island.

In 1816, the United Kingdom annexed the islands, ruling them from the *Cape Colony* in South Africa. This is reported to have primarily been a measure to ensure that the French would be unable to use the islands as a base for a rescue operation to free Napoleon Bonaparte from his prison on *Saint Helena*.<sup>[7]</sup> The occupation also prevented the United States from using Tristan da Cunha as a cruiser base, as it had during the War of 1812.<sup>[6]</sup>

On the fifteenth of July, the snow-clad mountains of Tristan da Cunha appeared, lighted by a brilliant morning-sun, and towering to a height estimated at between nine and ten thousand feet.”<sup>[7]</sup>

Edmund Roberts, *Embassy to the Eastern Courts of Cochin-China, Siam, and Muscat*, 1837 **21st century**

The islands were occupied by a garrison of British Marines and a civilian population was gradually built up. Whalers also set up on the islands as a base for operations in the Southern Atlantic. However, the opening of the Suez Canal in 1869, together with the gradual move from sailing ships to coal-fired steam ships, increased the isolation of the islands, as they were no longer needed as a stopping port or for shelter for journeys from Europe to the Far East.\*[6]

In 1867, Prince Alfred, Duke of Edinburgh and second son of Queen Victoria, visited the islands. The main settlement, Edinburgh of the Seven Seas, was named in honour of his visit. Lewis Carroll's youngest brother, the Rev. Edwin Heron Dodgson, served as an Anglican missionary and school teacher in Tristan da Cunha in the 1880s.\*[6]

## 20th century

From December 1937 to March 1938 a Norwegian party made the first ever scientific expedition to Tristan da Cunha. During their stay, the expeditionary party carried out observations and made recordings of the topography of the island, its people and how they lived and worked and the flora and fauna that inhabited the island.\*[8]

On 12 January 1938 by Letters Patent the islands were declared a dependency of Saint Helena. Prior to roughly this period, passing ships stopped irregularly at the island for a period of mere hours.\*[9]

During World War II, the islands were used as a top secret Royal Navy weather and radio station codenamed *HMS Atlantic Isle*, to monitor Nazi U-boats (which were required to maintain radio contact) and shipping movements in the South Atlantic Ocean. The first Administrator, Surgeon Lieutenant Commander E.J.S. Woolley, was appointed by the British government during this time.

The Duke of Edinburgh, the husband of Queen Elizabeth II, visited the islands in 1957 as part of a world tour on board the royal yacht *Britannia*.

In 1958 as part of an experiment, Operation Argus, the United States Navy detonated an atomic bomb 160 kilometres (100 mi) high in the upper atmosphere\*[10] about 175 kilometres (109 mi) southeast of the main island.

The 1961 eruption of Queen Mary's Peak forced the evacuation of the entire population\*[11] via Cape Town to England. The following year a Royal Society expedition went to the islands to assess the damage, and reported that the settlement of Edinburgh of the Seven Seas had been only marginally affected. Most families returned in 1963.



*Tristan da Cunha on 6 February 2013, as seen from the International Space Station*

On 23 May 2001, the islands experienced an extratropical cyclone that generated winds up to 190 kilometres per hour (120 mph). A number of structures were severely damaged and a large number of cattle were killed, prompting emergency aid, provided by the British government.\*[12]

In 2005, the islands were given a United Kingdom post code (TDCU 1ZZ) to make it easier for the residents to order goods online.

On 4 December 2007 an outbreak of an acute virus-induced flu was reported. This outbreak was compounded by Tristan's lack of suitable and sufficient medical supplies.\*[13]

On 13 February 2008, fire destroyed the fishing factory and the four generators that supplied power to the island. On 14 March 2008, new generators were installed and uninterrupted power was restored. This fire was devastating to the island because fishing is a mainstay of the economy. While a new factory was being planned and built, *M/V Kelso* came to the island and acted as a factory ship, with island fishermen based on board for stints normally of one week. The new facility was ready in July 2009, for the start of the 2009–10 fishing season.

The St Helena, Ascension and Tristan da Cunha Constitution Order 2009 ended the “dependency status” of Ascension and Tristan da Cunha.

On 16 March 2011, the freighter *MS Oliva* ran aground on Nightingale Island, spilling tons of heavy fuel oil into the ocean, leaving an oil slick threatening the island's population of rockhopper penguins.\*[14] Nightingale Island has no fresh water, so the penguins were transported to Tristan da Cunha for cleaning.\*[15]

On November 2011, the sailing boat *Puma's Mar Mostro* participant in Volvo Ocean Race arrived to the island after her mast broke in the first leg from Alicante and Cape Town. This event made the island, its inhabitants and lifestyle known worldwide thanks to the media reports.

## Solar eclipse

A total solar eclipse will pass over the island on 5 December 2048. The island is to be on the centre line for nearly three and a half minutes of totality.\* [16]

## 2.9.2 Environment

### Geography

Main article: [Geography of Tristan da Cunha](#)

Tristan da Cunha is thought to have been formed by a



Map of Tristan da Cunha group (including Gough Island).

long-lived centre of upwelling mantle called the Tristan hotspot. Tristan da Cunha is the main island of the Tristan da Cunha archipelago, which consists of the following islands:

- Tristan da Cunha, the main island and largest, area: 98 square kilometres (37.8 sq mi),\* [17] (37°6′44″S 12°16′56″W / 37.11222°S 12.28222°W)
- Inaccessible Island, area: 14 square kilometres (5.4 sq mi)
- Nightingale Islands, area: 3.4 square kilometres (1.3 sq mi)
  - Nightingale Island, area: 3.2 square kilometres (1.2 sq mi)
  - Middle Island, area: 0.1 square kilometres (24.7 acres)
  - Stoltenhoff Island, area: 0.1 square kilometres (24.7 acres)
- Gough Island (*Diego Alvarez*), area: 68 square kilometres (26.3 sq mi)\* [18]

Inaccessible Island and the Nightingale Islands are 35 kilometres (21.7 mi) SW by W and SSW of the main

island respectively, whereas Gough Island is 395 kilometres (245.4 mi) SSE.

The main island is generally mountainous. The only flat area is on the north-west coast, which is the location of the only settlement, [Edinburgh of the Seven Seas](#). The highest point is a volcano called [Queen Mary's Peak](#) 2,062 metres (6,765.1 ft), which is covered by snow in winter. The other islands of the group are uninhabited, except for a weather station with a staff of six on Gough Island, which has been operated by [South Africa](#) since 1956 (since 1963 at its present location at Transvaal Bay on the south-east coast).

### Climate

The archipelago has a wet oceanic climate with pleasant temperatures but consistent moderate to heavy rainfall and very limited sunshine, due to the persistent westerly winds. The number of rainy days is comparable to the [Aleutian Islands](#) at a much higher latitude in the northern hemisphere, while sunshine hours are comparable to Juneau, Alaska, 20° farther from the equator. Frost is unknown below elevations of 500 metres (1,600 ft) and summer temperatures are similarly mild, never reaching 25 °C (77 °F).

### Flora and fauna



Gough Island, Tristan da Cunha

Many of the flora and fauna have a broad circumpolar distribution in the South Atlantic and South Pacific Oceans. Thus many of the species that occur in Tristan da Cunha appear as far away as [New Zealand](#). For example, the plant species *Nertera depressa* was first collected in Tristan da Cunha,\* [21] but has since been recorded in occurrence as far distant as [New Zealand](#).\* [22]

Tristan is primarily known for its wildlife. The island has been identified as an [Important Bird Area](#) by [BirdLife International](#) because there are 13 known species of breeding seabirds on the island and two species of resident

land birds.\* [23] The seabirds include northern rockhopper penguins, Atlantic yellow-nosed albatrosses, sooty albatrosses, Atlantic petrels, great-winged petrels, soft-plumaged petrels, broad-billed prions, grey petrels, great shearwaters, sooty shearwaters, Tristan skuas, Antarctic terns and brown noddies. Tristan and Gough Islands are the only known breeding sites in the world for the Atlantic petrel (*Pterodroma incerta*; IUCN status EN). Inaccessible Island is also the only known breeding ground of the Spectacled Petrel (*Procellaria conspicillata*; IUCN Vulnerable). The Tristan albatross (IUCN status CR) is known to breed only on Gough and Inaccessible Islands: all nest on Gough except for one or two pairs who nest on Inaccessible Island.

The endemic Tristan thrush or starchy occurs on all of the northern islands and each has its own subspecies, with Tristan birds being slightly smaller and duller than those on Nightingale and Inaccessible. The endemic Inaccessible Island rail, the smallest extant flightless bird in the world, is found only on Inaccessible Island. In 1956 eight Gough moorhens were released at Sandy Point on Tristan, and have subsequently colonised the island.

Various species of whales and dolphins can be seen around Tristan from time to time with increasing sighting rate.\* [17]

### 2.9.3 Economy

Main article: [Outline of Tristan da Cunha](#)

The island's unique social and economic organization has evolved over the years, but is based on the principles set out by William Glass in 1817 when he established a settlement based on equality. All Tristan families are farmers, owning their own stock and/or fishing. All land is communally owned. All households have plots of land at The Patches on which they grow potatoes. Livestock numbers are strictly controlled to conserve pasture and to prevent better-off families from accumulating wealth. Unless it votes for a change in its law, no outsiders are allowed to buy land or settle on Tristan; theoretically the whole island would have to be put up for sale.\* [24] All people – including children and pensioners – are involved in farming, while adults additionally have salaried jobs working either for the Government, or, a small number in domestic service, and many of the men are involved in the fishing industry, going to sea in good weather. The nominal fishing season lasts 90 days; however during the 2013 fishing season – 1 July through 30 September – there were only 10 days suitable for fishing.

Valuable foreign earnings come from the royalties from the commercial crawfish or Tristan rock lobster (*Jasus*) industry and the sale of postage stamps and coins, especially to collectors worldwide. Limited revenue from tourism includes providing accommodation, guides and sales of handicrafts and souvenirs to visitors and by mail

order. It is the income from foreign revenue earners that enables Tristan to run Government services, especially health and education.

The 1961 volcanic eruption destroyed the Tristan da Cunha canned crawfish factory, which was rebuilt a short time later. The crawfish catchers and processors work for the South African company Ovenstone, which has an exclusive contract to sell crawfish to the United States and Japan. Even though Tristan da Cunha is a UK overseas territory, it is not permitted direct access to European Union markets. Recent economic conditions have meant that the islanders have had to draw from their reserves. The islands' financial problems may cause delays in updating communication equipment and improving education on the island. The fire of 13 February 2008 (see [History](#)) resulted in major temporary economic disruption.

Although Tristan da Cunha is part of the same overseas territory as Saint Helena, it does not use the local Saint Helena pound. Instead, the island uses the United Kingdom issue of the pound sterling. The Bank of Saint Helena was established on Saint Helena and Ascension Island in 2004. This bank does not have a physical presence on Tristan da Cunha, but residents of Tristan are entitled to its services.\* [25] There are occasionally commemorative coins minted for the island.\* [26]

The island is located in the South Atlantic Anomaly, an area of the Earth with an abnormally weak magnetic field. On 14 November 2008 a geomagnetic observatory was inaugurated on the island as part of a joint venture between the Danish Meteorological Institute and DTU Space.\* [27]

### Transport



*Edinburgh of the Seven Seas, Tristan da Cunha*

The remote location of the islands makes transport to the outside world difficult. Lacking an airport, the islands can be reached only by sea. Fishing boats from South Africa service the islands eight or nine times a year. The RMS *Saint Helena* used to connect the main island to St He-

lena and South Africa once each year during its January voyage, but has done so only twice in the last few years, in 2006 and 2011.\*[28] There is no direct service to Ascension Island and the United Kingdom, without flying from Cape Town to London or travelling on the RMS *St Helena* from Cape Town to St Helena. The March voyage of the RMS *St Helena* goes to Ascension and Portland from St Helena. The harbour at Edinburgh of the Seven Seas is called Calshot Harbour, named after the place in Hampshire where the islanders temporarily stayed during the volcanic eruption.\*[29]

## Communications

**Telecommunications** Although Tristan da Cunha shares the +290 code with St Helena, residents have access to the Foreign and Commonwealth Office Telecommunications Network, provided by Global Crossing.\*[30] This uses a London 020 numbering range, meaning that numbers are accessed via the UK telephone numbering plan.\*[31] From 1998 to 2006, internet was available in Tristan da Cunha but its expensive cost made it almost unaffordable for the local population, who primarily only used it to send email.\*[32] The connection was also extremely unreliable, connecting through a 64 kbit/s satellite phone connection provided by Inmarsat. From 2006, a very-small-aperture terminal provides 3072 kbit/s of publicly-accessible bandwidth via an internet cafe.\*[33]

## 2.9.4 Government

Executive authority is vested in the Queen, who is represented in the territory by the Governor of Saint Helena.\*[34] As the Governor resides permanently in Saint Helena, an Administrator is appointed to represent the Governor in the islands. The Administrator is a career civil servant in the Foreign Office and is selected by London. Since 1998, each Administrator has served a single, three-year term (which begins in September, upon arrival of the supply ship from Cape Town.) The Administrator acts as the local head of government, and takes advice from the Tristan da Cunha Island Council. Alex Mitham was appointed Tristan da Cunha's 22nd Administrator and arrived, with his wife Hasene, to take over from Sean Burns in September 2013. The Island Council is made up of eight elected and three appointed members, who serve a 3-year term which begins in February (or March).

**Chief Islander:** From amongst the 8 elected councillors, the one receiving the most votes is named "Chief Islander" and serves as Acting Administrator when that official is off the island: Ian Lavarello was elected, unopposed, for a second consecutive 3-year term in February 2013. As "Chief Islander" he lit the island's beacon celebrating the Queen's Diamond Jubilee in 2012.\*[35]

The Administrator and Island Council work from the

**Government Building**, which is the only two-storey building on the island: the lower floor houses the Police Department. It is sometimes referred to as "Whitehall" or the "H'admin Building" and contains the Administrator's Office, Treasury Department, Administration Offices and the Council Chamber where Island Council meetings are held.

There are no political parties or trade unions on Tristan. Policing in Tristan da Cunha is undertaken by one full-time police officer and three special constables.

Tristan da Cunha has some of its own legislation, but the law of Saint Helena applies generally (to the extent that it is not inconsistent with local law, insofar as it is suitable for local circumstances and subject to such modifications as local circumstances make necessary).

## 2.9.5 Demographics



*Housing in Tristan da Cunha*

The islands have a population of 297.\*[36] The main settlement is Edinburgh of the Seven Seas (known locally as "The Settlement"). The only religion is Christianity, with denominations of Anglican and Roman Catholic. The current population is thought to have descended from 15 ancestors, eight males and seven females, who arrived on the island at various times between 1816 and 1908. The male founders originated from Scotland, England, The Netherlands, the United States and Italy, belonging to 3 Y-haplogroups: I (M170), R-SRY10831.2 and R (M207) (xSRY10831.2)\*[37] and share just eight surnames: Glass, Green, Hagan, Lavarello, Patterson, Repetto, Rogers, and Swain.\*[n 1]\*[28]\*[28] There are 80 families on the island. Tristan da Cunha's isolation has led to an unusual, patois-like dialect of English described by the writer Simon Winchester as "a sonorous amalgam of Home Counties lockjaw and nineteenth century idiom, Afrikaans slang and Italian."\*[38] Bill Bryson documents some examples of the island's dialect in his book, *The Mother Tongue*.



## Education

Education is fairly rudimentary; children leave school at age 16, and although they can take GCSEs a year later, few do.\*[39]\*[40] The school on the island is St Mary's School, which serves children from ages 4 to 16. It opened in 1975 and has five classrooms, a kitchen, a stage, a computer room, and a craft and science room.\*[41]

The Tristan Song Project was a collaboration between St Mary's School and amateur composers in England, led by music teacher Tony Triggs. It began in 2010 and involved St Mary's pupils writing poems and Tony Triggs providing musical settings by himself and his pupils.\*[42] A desktop publication entitled *Rockhopper Penguins and Other Songs* (2010) embraced most of the songs completed that year and funded a consignment of guitars to the School.\*[43] In February 2013 the Tristan Post Office issued a set of four Song Project stamps featuring island musical instruments and lyrics from Song Project songs about Tristan's volcano and wildlife. In 2014 the Project broadened its scope and continues as the International Song Project.

## Health

There are instances of health problems attributed to endogamy, including glaucoma. In addition, there is a very high incidence of asthma among the population and research by Dr. Noe Zamel of the University of Toronto has led to discoveries about the genetic nature of the disease.\*[44] Three of the original settlers of the island were asthma sufferers.\*[45]

Healthcare is funded by the government, undertaken by one resident doctor from South Africa and five nurses. Surgery or facilities for complex childbirth are therefore limited, and emergencies can necessitate communicating with passing fishing vessels so the injured person can be ferried to Cape Town. As of late 2007, IBM and Beacon Equity Partners, co-operating with Medweb, the University of Pittsburgh Medical Center and the island's government on "Project Tristan", has supplied the island's doctor with access to long distance tele-medical help, making it possible to send EKG and X-ray pictures to doctors in other countries for instant consultation. This system has been limited owing to the poor reliability of Internet connections and an absence of qualified technicians on the island to service fibre optic links between the hospital and Internet centre at the administration buildings.

## 2.9.6 Culture

## Media

Local television began in 1984 using taped programming on Tuesday, Thursday and Sunday evenings.\*[46] Live television did not arrive on the island until 2001, with the introduction of the British Forces Broadcasting Service's BFBS 1 and 2 channels, which were replaced by BBC One and Two in 2013.

## Holidays

According to the island's January 2014 newsletter, the summer season gets underway with Sheep Shearing Day held on a Saturday in mid-December. Almost the entire population gathers on the far end of Patches Plain where the sheep pens are sited. Hand-clippers are used in the shearing and the wool is later carded, spun and hand-knitted into garments, some of which are sold under the name "37 Degrees South Knitwear Range".

There is an annual break from government and factory work which begins before Christmas and lasts for 3 weeks. Break-Up Day is usually marked with parties at various work "departments". Break-Up includes the Island Store, which means that families must be organized to have a full larder of provisions during the period. In 2013, the Island Store closed a week earlier than usual to conduct a comprehensive inventory, and all purchases had to be made by Friday 13 December as the shop did not open again until a month later.\*[47]

The January 2014 *New Year Message* from Administrator Alex Mitham announced that, in 2013, the Island Council recognized there was no national holiday that specifically celebrates Tristan's heritage and culture, 'So I am pleased to announce that the Council have agreed that a new national holiday called **Longboat Day** that will be instated in 2015, and the traditional longboats race brought back. There was no immediate indication of which date would be selected for the new holiday.\*[48]

## 2.9.7 Tristan da Cunha in popular culture

### Film

- 37°4 S, a short film about two teenagers who live on the island.\*[49]

### Literature

- Edgar Allan Poe's *The Narrative of Arthur Gordon Pym of Nantucket* (1838), Chapter 15, has a detailed history and description.
- In Jules Verne's novel *In Search of the Castaways*, one of the chapters is set on Tristan da Cunha, and a brief history of the island is mentioned. The island also appears several times in Verne's novel *The*

*Sphinx of the Ice Fields* (1897), which he wrote as an unauthorized sequel to Poe's *The Narrative of Arthur Gordon Pym of Nantucket*. The 1899 English translation by Mrs. Cashel Hoey is called *An Antarctic Mystery*.

- The South African poet Roy Campbell wrote an elegiac poem dedicated to the isle of Tristan de Cunha in 1927.
- Tristan da Cunha is the site of a top-secret nuclear disarmament conference in Fletcher Knebel's 1968 political thriller *Vanished* which was adapted into a 1971 two-part NBC made-for-TV movie starring Richard Widmark.
- Hervé Bazin's novel *Les Bienheureux de la Désolation* (1970) describes the 1961 forced exile of the population to England, and their subsequent return.
- In Primo Levi's *The Periodic Table* (1975) one of the fictional short stories, "Mercurio", is set on Tristan da Cunha, named "Desolation Island".
- In Patrick O'Brian's *The Thirteen-Gun Salute* (1991) the ship Dianne is nearly wrecked on Inaccessible Island.
- Robert A. Heinlein's book *Tramp Royale* (about a world trip in 1953–54, unpublished until 1992) devoted an entire chapter to his (almost) visit to Tristan da Cunha. He talked to islanders but could not go ashore owing to the uncertain weather.
- Zinnie Harris's play *Further Than the Furthest Thing* (2000) is inspired by events on the island, notably the 1961 volcanic eruption and evacuation of the islanders.
- Raoul Schrott's novel *Tristan da Cunha oder die Hälfte der Erde* (2003) is almost entirely set on Tristan da Cunha and Gough islands, and chronicles the history of the archipelago.

### Non-fiction

- Frank T. Bullen provides details of visiting the island in the 1870s in his book *The Cruise of the Cachalot* first published in 1898.
- Raymond Rallier du Baty describes the people and the island ca 1908 in his book *15 000 Miles in a Ketch* (1915)
- In *Shackleton's Last Voyage* by Captain Frank Wild (1923), several chapters (with photographs) are dedicated to island during the Shackleton–Rowett Expedition in May 1922.
- An account by Rose Annie Rogers, an American missionary's wife about life on the island, called *The Lonely Island* was published in 1927



Painting by Rose Annie Rogers of *Atlantisia rogersi*, the world's smallest flightless bird, which is found only on Inaccessible Island

- Katherine Mary Barrow *Three Years in Tristan Da Cunha* published in 1910 is a 'simple and true description of daily life among a very small community cut off from the rest of the world.' based on entries to her diaries and letters written during the period to her sister.
- In Wim Wenders *Wings of Desire* a dying man recollecting the things that have apparently meant most to him mentions "Tristan da Cunha"
- Simon Winchester's, *Outposts: Journeys to the Surviving Relics of the British Empire*, (1985, reprinted in 2003), devotes a chapter to the island which he visited in the mid-1980s. In the foreword to the reprint, the author states that he has been banned from Tristan da Cunha because of his writing about the war-time romance of a local woman. He published a longer account of his banishment in *Latham's Quarterly*.
- In 2005, the first book about the island written by an Islander, Rockhopper Copper, was published. It was written by Conrad Glass, Tristan da Cunha's long-time Police and Conservation officer.\* [50]

## Music

- The DJ ATB recorded a number “Tristan Da Cunha”, inspired by the island, in the music album “Trilogy” .
- The Norwegian experimental musician Deathprod released the album “Imaginary Songs from Tristan da Cunha” in 1996 on dBUT records. In 2004 it was re-released as part of the Deathprod box set on the label Rune Grammofon.

## 2.9.8 See also

- Outline of Tristan da Cunha

## 2.9.9 Notes and references

### Notes

- [1] As such the traditional forefathers before migration were Scottish; Dutch; Irish; Italian (prob. Ligurian); Scottish; Italian (prob. Ligurian); English; and English.

### References

- [1] Crawford, Allan (1982). *Tristan da Cunha and the Roaring Forties*. Charles Skilton. p. 20. Retrieved 13 August 2013.
- [2] “Tristan da Cunha Family News” . Retrieved 21 September 2015.
- [3] Winkler, Sarah. “Where is the Most Remote Spot on Earth? Tristan da Cunha: The World’s Most Remote Inhabited Island” . *How Stuff Works*.
- [4] “About.com: Geography” . Geography.about.com. 2 November 2009. Retrieved 18 April 2010.
- [5] “The St Helena, Ascension and Tristan da Cunha Constitution Order 2009” . Opsi.gov.uk. Explanatory Note. Retrieved 18 April 2010.
- [6] Mackay, Margaret (1963). *Angry Island: The Story of Tristan da Cunha, 1506–1963*. London: Arthur Barker. p. 30.
- [7] Roberts, Edmund (1837). *Embassy to the Eastern Courts of Cochin-China, Siam, and Muscat*. New York: Harper & Brothers. p. 33.
- [8] “Results of the Norwegian Scientific Expedition to Tristan da Cunha, 1937-1938” . *OUR Heritage*. University of Otago. Retrieved 3 June 2015.
- [9] “Royal Gifts Gladden 172 On Lonely Atlantic Island” . *The New York Times*. 24 March 1935. second news section, p. N4.
- [10] “Operation Argus” . Retrieved 14 August 2015.
- [11] “Global Volcanism Program - Tristan da Cunha” . Retrieved 14 August 2015.
- [12] Barwick, Sandra (7 June 2001). “120 mph storm devastates Tristan da Cunha” . *The Daily Telegraph* (London).
- [13] “Remote virus-hit island seeks aid” . BBC News. 4 December 2007.
- [14] “MS Oliva runs aground on Nightingale Island” . The Tristan da Cunha Website. Retrieved 23 March 2011.
- [15] “Oil-soaked rockhopper penguins in rehabilitation” . BBC News.
- [16] “Total Solar Eclipse of 2048 December 05” . Eclipse.gsfc.nasa.gov. Retrieved 11 January 2014.
- [17] Tristan da Cunha Government and the Tristan da Cunha Association. “Cetacea: Whales and Dolphins around the Tristan da Cunha Islands” . Retrieved 1 June 2013.
- [18] “Gough Island” . South African National Antarctic Programme. Retrieved 25 October 2012.
- [19] “South Africa: Tristan Da Cunha” . March 2012.
- [20] “Tristan Da Cunha Climate Guide to the Average Weather & Temperatures with Graphs Elucidating Sunshine and Rainfall Data & Information about Wind Speeds & Humidity” . March 2012.
- [21] Linnean Society of London (1906). *The journal of the Linnean Society of London* (Academic Press for the Linnean Society of London) **37**. Missing or empty title= (help)
- [22] Hogan, C. Michael (2009). Stromberg, N., ed. “Crown Fern: *Blechnum discolor*” . Globaltwitcher.com.
- [23] “Tristan da Cunha” . *Important Bird Areas*. BirdLife International. 2012. Retrieved 4 November 2012.
- [24] Tristan da Cunha Government and the Tristan da Cunha Association (June 2005). “Economy of Tristan da Cunha” . Tristan da Cunha Government and the Tristan da Cunha Association.
- [25] “The Bank of Saint Helena” . Sainthelenabank.com. Retrieved 18 April 2010.
- [26] Tristan da Cunha Government and the Tristan da Cunha Association. “Coins” . Tristan da Cunha Government and the Tristan da Cunha Association.
- [27] “Danish researchers build magnetic observatory in the middle of the Atlantic Ocean” . <http://www.space.dtu.dk>. Retrieved 14 August 2015.
- [28] “Howstuffworks” . Howstuffworks. Retrieved 18 April 2010.
- [29] “Tristan da Cunha's Calshot Harbour” . Retrieved 14 August 2015.
- [30] “Global Crossing extends FCO network to Tristan da Cunha” . Retrieved 14 August 2015.
- [31] Tristan Da Cunha Contact Information

- [32] “Monsignor McPartland Returns from Tristan da Cunha” . *Tristan da Cunha News*. Retrieved 14 August 2015.
- [33] “Tristan da Cunha Communications News” . Retrieved 14 August 2015.
- [34] “Saint Helena Dependencies” . Statoids.com. Retrieved 18 April 2010.
- [35] “Thank you one and all: the people who helped make the Jubilee happen” . *Daily Telegraph*. 10 June 2012.
- [36] “UK | The quiet life: Tristan da Cunha” . BBC News. 6 December 2007. Retrieved 18 April 2014.
- [37] Genealogy and genes: tracing the founding fathers of Tristan da Cunha, *European Journal of Human Genetics*
- [38] Winchester, Simon (2003) [originally published 1985]. *Outposts: Journeys to the Surviving Relics of the British Empire*. p. 87.
- [39] Crossan, Rob (11 November 2002). “Return to the Last Outpost” . *Telegraph Magazine*.
- [40] admin (1 January 2007). “CNN Traveler: A long way from anywhere” . Cntraveller.com. Retrieved 18 April 2010.
- [41] Tristan da Cunha Government and the Tristan da Cunha Association. “Tristan School” . Tristan da Cunha Government and the Tristan da Cunha Association. Retrieved 21 June 2009.
- [42] Music Teacher Magazine
- [43] SARTMA 19 June 2011
- [44] “Worldwide search for asthma clue” . *BBC News*. 9 December 2008. Retrieved 15 March 2012.
- [45] “Asthma amongst Tristan da Cunha islanders” . Retrieved 14 August 2015.
- [46] Winchester, Simon (2003) [originally published 1985]. *Outposts: Journeys to the Surviving Relics of the British Empire*. p. 85.
- [47] “2013/14 Tristan da Cunha Summer Holiday Christmas and New Years News” . Retrieved 29 January 2014.
- [48] “2014 New Year Message from Administrator Alex Mitham” . Retrieved 29 January 2014.
- [49] “37°4 S (2013)”. IMDb. Retrieved 24 March 2015.
- [50] Tristan Times (14 March 2005). “Tristan : Rockhopper Copper set to Hit Bookshelves” . *Tristan Times*. Retrieved 5 April 2014.

## 2.9.10 Further reading

### Guides

- *A Short Guide to Tristan da Cunha* by James Glass and Anne Green, Tristan Chief Islanders (2005, Whitby Press, 12 pages).

- *Field Guides to the Animals and Plants of Tristan da Cunha and Gough Island* Edited by Peter Ryan (2007, RSPB Publication, 168 pages).

- *Gough Island: A Natural History* by Christine Hanel, Steven Chown and Kevin Gaston (2005, Sun Press, 169 pages).

### Culture

- *Tristan da Cunha: History, People, Language* by Daniel Schreier and Karen Lavarello-Schreier (2003, Battlebridge, 88 pages).

- *Rockhopper Copper: The life and times of the people of the most remote inhabited island on Earth* by Conrad Glass MBE, Tristan Police Officer (2005, Polperro Heritage Press, 176 pages).

- *Recipes from Tristan da Cunha* by Dawn Repetto, Tristan Tourism Co-ordinator (2010, Tristan Books, 32 pages).

- *Corporal Glass's Island: The Story of Tristan da Cunha* by Nancy Hosegood (1966, Farrar, Straus, Giroux, 192 pages, with several pages of photographs).

- *Three Years in Tristan da Cunha* by Katherine Mary Barrow (1910, Skeffington & Son, 200 pages, with 37 photographs).

## 2.9.11 External links

- Tristan da Cunha
- *Tristan Times*
- TRISTAN DA CUNHA (Spanish)

### Videos of the island

- Return to Trista da Cunha, Global Nomad, National Geographic (2012).

- A Day on Tristan da Cunha, Global Nomad, National Geographic (2011).

- Tristan da Cunha: The story of Asthma Island, part 1 and part 2, BBC Four (2008).

- Tristan da Cunha: Life on the island in 1963 (1963).

- Tristan da Cunha: Life of an islander in 1963 (1963).

Coordinates: 37°07′S 12°17′W﻿ / ﻿37.117°S 12.283°W﻿ / -37.117; -12.283

# Chapter 3

## Indian Ocean

### 3.1 Amsterdam Island

For the Amsterdam Island in the Svalbard archipelago, see *Amsterdamøya*.



Amsterdam

Location of Île Amsterdam in the Indian Ocean

**Île Amsterdam** (French pronunciation: [ilɑmstɛʁ'dɑm], also known as **Amsterdam Island**, **New Amsterdam**, or **Nouvelle Amsterdam**, is an island named after the ship *Nieuw Amsterdam*, in turn named after the Dutch settlement of *New Amsterdam* that later became *New York City* in the *United States*. It lies in the southern Indian Ocean. It is part of the *French Southern and Antarctic Lands* and, together with neighbouring *Île Saint-Paul* 85 km (53 mi) to the south, forms one of the five districts of the territory. Its base, the *Martin-de-Viviès research station*, first called *Camp Heurtin*, then *La Roche Godon*, and the only settlement on the island, is the capital of the territory and is home to about 30 non-permanent inhabitants involved in biological, meteorological and geomagnetic studies.

#### 3.1.1 History

#### Discovery

The island was discovered by the *Basque Spanish explorer Juan Sebastián Elcano* on 18 March 1522, in the course of his voyage of global circumnavigation. However, he did not name the island. Having found the island unnamed, Dutch captain *Anthonie van Diemen* named it *Nieuw Amsterdam* after his ship on 17 June 1633.\* [1] The first recorded landing was made in December 1696 by Dutchman *Willem de Vlamingh*.\* [2]

#### 18th century

French Captain *Pierre François Péron* says he was marooned from 1792 to 1795 on the island. Peron's *Memoires*, in which he describes his experiences, were published in a limited edition which is an expensive collectors' item.\* [3]\* [4]\* [5] There was confusion in the early days between Amsterdam and *Saint Paul Islands*.

#### 19th century

In autumn 1833 the British ship *Lady Munro* was wrecked at the island and 21 survivors were picked up two weeks later by a sealing vessel.\* [6]

In January 1871 an attempt to settle the island was made by a party led by *Heurtin*, a French resident of *Réunion Island*. After seven months there, their attempts to raise cattle and grow crops were unfruitful and they returned to *Réunion*, abandoning the cattle on the island.\* [7]

The islands of *Île Amsterdam* and *Île Saint-Paul* were first claimed by *Martin Dupeyrat* for France in 1843. However, the governor of *Réunion* refused to ratify the act of possession and France took formal control only in October 1892.\* [1]

#### 20th century

The islands were attached to *Madagascar* in 1924 and became a *French colony*. The first French base on Amsterdam was established in 1949, and was originally called *Camp Heurtin*. The *Global Atmosphere Watch* still maintains a presence on Amsterdam.

### Territorial claims

Amsterdam island, along with Saint Paul Island, is considered by some Mauritian parties as a national territory. The question of Mauritian sovereignty over the two islands was raised in 2007 by the leader of the opposition, Paul Raymond Berenger. This new claim could be raised in discussions with France, along with a claim to Tromelin Island which has been officially maintained for a long time..

### Amateur radio

In the past there were frequent amateur radio operations from Amsterdam Island between 1987 and 1998. There was even a resident radio amateur operator in the 1950s using callsign FB8ZZ.\* [8]

As of January 2014, Clublog listed Amsterdam and St Paul Islands as the seventh most-wanted DXCC entity.\* [9] On January 25, 2014 a DX-pedition landed on Amsterdam Island using M/V *Braveheart* and began amateur radio operations from two separate locations using callsign FT5ZM. The DX-pedition remained active until February 12, 2014 and achieved over 170,000 two-way contacts with amateur radio stations worldwide.

## 3.1.2 Environment

### Geography

The volcanic island is a potentially active volcano which last erupted in 1792. It has an area of 55 km<sup>2</sup> (21 sq mi), measuring about 10 km (6.2 mi) on its longest side, and reaches as high as 867 m (2,844 ft) at the Mont de la Dives. The high central area of the island, at an elevation of over 500 metres (1,600 ft), containing its peaks and caldera, is known as the Plateau des Tourbières (in English the *Plateau of Bogs*). The cliffs that characterise the western coastline of the island, rising to over 700 metres (2,300 ft), are known as the Falaises d'Entrecasteaux after 18th-century French navigator Bruni d'Entrecasteaux.\* [10]

### Climate

Île Amsterdam has a mild, oceanic climate, with a mean annual temperature of 13 °C (55.4 °F), rainfall of 1,100 mm (43.3 in), persistent westerly winds and high levels of humidity.\* [11]

### Flora and fauna

Further information: Amsterdam and Saint-Paul Islands temperate grasslands



*Phylica arborea* grove

**Vegetation** *Phylica arborea* trees occur on Amsterdam which, though the trees are also found on Tristan da Cunha and Gough Island, is the only place where they formed a low forest. It was called the *Grand Bois* ( “Great Forest” ) which covered the lowlands of the island until forest fires set by sealers cleared much of it in 1825. Only eight fragments remain.\* [13]

**Birds** The island is home to the endemic Amsterdam albatross, which breeds only on the Plateau des Tourbières. Other rare species are the great skua, Antarctic tern and western rockhopper penguin. The Amsterdam duck is now extinct, as are the local breeding populations of several petrels.\* [14] The common waxbill has been introduced.\* [15] Both the Plateau des Tourbières and Falaises d'Entrecasteaux have been identified as Important Bird Areas by BirdLife International, the latter for its large breeding colony of Indian yellow-nosed albatrosses.\* [10]

**Mammals** There are no native land mammals. Subantarctic fur seals and southern elephant seals breed on the island. Introduced mammals include the house mouse and brown rat. Feral cats are present.\* [15]

A distinct breed of wild cattle, Amsterdam Island cattle, also inhabited the island from 1871 to 2010. They originated from the introduction of five animals by Heurtin during his brief attempt at settlement of the island in 1871,\* [15] and by 1988 had increased to an estimated 2,000. Following recognition that the cattle were damaging the island ecosystems, a fence was built restricting them to the northern part of the island.\* [14] In 2007 it was decided to eradicate the population of cattle entirely,

resulting in the slaughter of the cattle between 2008 and 2010.\*[16]

### 3.1.3 See also

- List of volcanoes in French Southern and Antarctic Lands
- French overseas departments and territories
- Administrative divisions of France
- List of French islands in the Indian and Pacific oceans

### 3.1.4 References

- [1] [http://www.btinternet.com/~{ }sa\\_sa/amsterdam/amsterdam\\_history\\_early.html](http://www.btinternet.com/~{ }sa_sa/amsterdam/amsterdam_history_early.html) Archived October 23, 2012 at the Wayback Machine
- [2] Het Scheepvaartmuseum - Maritieme Kalender Archived March 26, 2014 at the Wayback Machine
- [3] Statewide County HI Archives: News, *USGenWeb Archives* Archived November 25, 2012 at the Wayback Machine
- [4] *Forum Rare Books*: In the news, Antiquariaat Forum Archived May 9, 2013 at the Wayback Machine
- [5] Péron (captain) (1824). *Mémoires du capitaine Péron sur ses voyages aux côtes d'Afrique, en Arabie, à l'île d'Amsterdam, aux îles d'Anjouan et de Mayotte, aux côtes nord-ouest de l'Amérique, aux îles Sandwich, à la Chine, etc.* Brissot-Thivars.
- [6] *Chronological List of Antarctic Expeditions and Related Historical Events*. Cambridge University Press. 1989. ISBN 978-0-521-30903-5.
- [7] Carroll, Paul (2003-06-29). "Amsterdam/St Paul: Discovery and early history" . *The South Atlantic and Subantarctic Islands*. Archived from the original on 2012-10-23. Retrieved 2011-04-25.
- [8] R. M. Holoch (2012-09-16). "FT5/Z – Amsterdam / St. Paul Islands and a Special Appeal" . Archived from the original on 2014-03-03.
- [9] Clublog Most wanted list, updated Monthly Archived October 31, 2013 at the Wayback Machine
- [10] BirdLife International. (2012). Important Bird Areas factsheet: Falaises d'Entrecasteaux. Downloaded from <http://www.birdlife.org> on 2012-01-08. Archived 10 July 2007 at WebCite
- [11] Ile Amsterdam Archived November 19, 2012 at the Wayback Machine
- [12] "Climate Normals for Martin de Vivies 1961-1990" . National Oceanic and Atmospheric Administration. Retrieved February 28, 2013.

- [13] "Grand Bois, Amsterdam Island" . Wondermondo. Archived from the original on 2014-03-22.
- [14] Micol, T.; & Jouventin, P. (1995). Restoration of Amsterdam Island, South Indian Ocean, following control of feral cattle. *Biological Conservation* **73**(3): 199-206. Restoration of Amsterdam Island, South Indian Ocean, following control of feral cattle Archived February 1, 2014 at the Wayback Machine
- [15] Amsterdam Island - Introduced fauna Archived May 11, 2013 at the Wayback Machine
- [16] Sophie Lautier: "Sur l'île Amsterdam, chlorophylle et miaulements" .

### 3.1.5 Further reading

- Pierre François Péron, *Mémoires du Capitaine Péron, sur ses Voyages aux Côtes d'Afrique, en Arabie, à l'Île d'Amsterdam, aux Îles d'Anjouan et de Mayotte, aux Côtes Nord-Oeust de l'Amérique, aux Îles Sandwich, à la Chine, etc.*, Paris 1824
- Cleef, Alfred van (2004). *The Lost Island*. Macmillan. ISBN 978-0-8050-7225-9.

### 3.1.6 External links

- photos of Ile Amsterdam and St.Paul (French site)
- Ile Amsterdam visit (photos from a tourist's recent visit)
- French Colonies—Saint-Paul & Amsterdam Islands, *Discover France*
- French Southern and Antarctic Lands at the CIA World Factbook
- "South Atlantic & Subantarctic Islands site, Amsterdam Island page" . Archived from the original on 2010-01-17.

Coordinates: 37°49′33″S 77°33′17″E﻿ / ﻿37.82583°S 77.55472°E﻿ /

## 3.2 Christmas Island

This article is about the Australian territory in the Indian Ocean. For other uses, see [Christmas Island \(disambiguation\)](#). For the island forming part of Kiribati in the central Pacific Ocean, see [Kiritimati](#).

Coordinates: 10°29′S 105°38′E﻿ / ﻿10.483°S 105.633°E﻿ /

The **Territory of Christmas Island** is a territory of Australia in the Indian Ocean, composed of one island. It

has a population of 2,072 residents who live in a number of “settlement areas” on the northern tip of the island: Flying Fish Cove (also known as Kampong), Silver City, Poon Saan, and Drumsite. The majority of the population are Chinese Australian. It was named “Christmas Island” because it was discovered on Christmas Day (25 December 1643).

The island's geographic isolation and history of minimal human disturbance has led to a high level of endemism among its flora and fauna, which is of interest to scientists and naturalists.\*[2] 63% of its 135 square kilometres (52 sq mi) is an Australian national park. There exist large areas of primary monsoonal forest.

Phosphate, deposited originally as guano, has been mined on the island for many years.



*Poon Saan in the evening*

### 3.2.1 History

#### First visit by Europeans

Captain William Mynors of the *Royal Mary*, an English East India Company vessel, named the island when he sailed past it on Christmas Day, in 1643.\*[3] The island was included on English and Dutch navigation charts as early as the beginning of the 17th century, but it was not until 1666 that a map published by Dutch cartographer Pieter Goos included the island. Goos labelled the island “Mony”, the meaning of which is unclear.\*[4] English navigator William Dampier, aboard the English ship *Cygnet*, made the earliest recorded visit to the sea around the island in March 1688. He found it uninhabited.\*[5] Dampier gave an account of the visit which can be found in his *Voyages*.\*[6] Dampier was trying to reach Cocos from New Holland. His ship was pulled off course in an easterly direction, arriving at Christmas Island twenty-eight days later. Dampier landed at the Dales (on the west coast). Two of his crewmen became the first Europeans to set foot on Christmas Island.

Daniel Beeckman made the next recorded visit, chronicled in his 1718 book, *A Voyage to and from the Island of Borneo, in the East-Indies*.

#### Exploration and annexation

The first attempt at exploring the island was in 1857 by the crew of the *Amethyst*. They tried to reach the summit of the island, but found the cliffs impassable.

During the 1872–76 *Challenger* expedition to Indonesia, naturalist John Murray carried out extensive surveys.\*[7]

In 1887, Captain John Maclear of HMS *Flying Fish*, having discovered an anchorage in a bay that he named “Flying Fish Cove”, landed a party and made a small collection of the flora and fauna. In the next year, Pelham Aldrich, on board HMS *Egeria*, visited it for ten days,



*Poon Saan shops*

accompanied by J. J. Lister, who gathered a larger biological and mineralogical collection.

Among the rocks then obtained and submitted to Murray for examination were many of nearly pure phosphate of lime; this discovery led to annexation of the island by the British Crown on 6 June 1888.\*[7]

#### Settlement and exploitation

Soon afterwards, a small settlement was established in Flying Fish Cove by G. Clunies Ross, the owner of the Cocos (Keeling) Islands (some 900 kilometres (560 mi) to the south west) to collect timber and supplies for the growing industry on Cocos.

Phosphate mining began in the 1890s using indentured workers from Singapore, Malaya and China. John Davis Murray, a mechanical engineer and recent graduate of Purdue University, was sent to supervise the operation on behalf of the Phosphate Mining and Shipping Company. Murray was known as the “King of Christmas Island” until 1910, when he married and settled in London.\*[8]

The island was administered jointly by the British Phosphate commissioners and district officers from the United





Enlargeable relief map of Christmas Island

Kingdom Colonial Office through the Straits Settlements, and later the Crown Colony of Singapore. Hunt (2011) provides a detailed history of Chinese indentured labour on the island during those years. In 1922, scientists attempted unsuccessfully to view a solar eclipse from the island to test Einstein's Theory of Relativity.\*[9]

### Japanese invasion

Main article: Battle of Christmas Island

From the outbreak of the South-East Asian theatre of World War II in December 1941, Christmas Island was a target for Japanese occupation because of its rich phosphate deposits.\*[10] A naval gun was installed under a British officer and four NCOs and 27 Indian soldiers.\*[10] The first attack was carried out on 20 January 1942, by the Japanese submarine *I-59*, which torpedoed a Norwegian freighter, the *Eidsvold*.\*[11] The vessel drifted and eventually sank off West White Beach. Most of the European and Asian staff and their families were evacuated to Perth. In late February and early March 1942, there were two aerial bombing raids. Shelling from a Japanese naval group on 7 March led the district officer to hoist the white flag.\*[10] But after the Japanese naval group sailed away, the British officer raised the Union flag once more.\*[10] During the night of 10–11 March, a mutiny of the Indian troops, abetted by Sikh policemen, led to the murder of the five British soldiers and the imprisonment of the remaining 21 Europeans.\*[10] At dawn on 31 March 1942, a dozen Japanese bombers launched the attack, destroying the radio station. The same day, a Japanese fleet of nine vessels arrived, and the island was surrendered. About 850 men of the 21st and 24th special base forces and 102nd Construction Unit came ashore at Flying Fish Cove and occupied the island.\*[10] They rounded up the workforce, most of whom had fled to the

jungle. Sabotaged equipment was repaired and preparations were made to resume the mining and export of phosphate. Only 20 men from the 21st Special Base Force were left as a garrison.\*[10]

Isolated acts of sabotage and the torpedoing of the *Nissei Maru* at the wharf on 17 November 1942,\*[12] meant that only small amounts of phosphate were exported to Japan during the occupation. In November 1943, over 60% of the island's population was evacuated to Surabayan prison camps, leaving a total population of just under 500 Chinese and Malays and 15 Japanese to survive as best they could. In October 1945, *HMS Rother* re-occupied Christmas Island.\*[13]\*[14]\*[15]\*[16]

After the war, seven mutineers were traced and prosecuted by the Military Court in Singapore. In 1947, five of them were sentenced to death; however, following representations made by the newly independent government of India, their sentences were reduced to penal servitude for life.\*[10]

### Transfer to Australia

At Australia's request, the United Kingdom transferred sovereignty to Australia, with a M\$20 million payment from the Australian government to Singapore as compensation for the loss of earnings from the phosphate revenue.\*[17]

The United Kingdom's Christmas Island Act was given royal assent on 14 May 1958, enabling Britain to transfer authority over Christmas Island from Singapore to Australia by an order-in-council.\*[18]

Australia's Christmas Island Act was passed in September 1958 and the island was officially placed under the authority of the Commonwealth of Australia on 1 October 1958.\*[19]

Under Commonwealth Cabinet Decision 1573 of 9 September 1958, D. E. Nickels was appointed the first official representative of the new territory.\*[20] In a media statement on 5 August 1960, the minister for territories, Paul Hasluck, said, among other things, that, "His extensive knowledge of the Malay language and the customs of the Asian people... has proved invaluable in the inauguration of Australian administration... During his two years on the island he had faced unavoidable difficulties... and constantly sought to advance the island's interests." John William Stokes succeeded him and served from 1 October 1960, to 12 June 1966. On his departure he was lauded by all sectors of the island community. In 1968, the official secretary was re-titled an administrator and, since 1997, Christmas Island and the Cocos (Keeling) Islands together are called the Australian Indian Ocean Territories and share a single administrator resident on Christmas Island. Recollections of the island's history and lifestyle, and lists and timetables of the island's leaders and events since its settlement are at the World States-

men site\* [21] and in Neale (1988), Bosman (1993), Hunt (2011) and Stokes (2012).

The settlement of Silver City was built in the 1970s, with aluminium-clad houses that were supposed to be cyclone-proof.\* [22]

The 2004 Indian Ocean earthquake and tsunami centred off the western shore of Sumatra in Indonesia, resulted in no reported casualties, but some swimmers were swept some 150 metres (490 ft) out to sea for a time before being swept back in.\* [23]

### 3.2.2 Refugee and immigration detention

See also: Christmas Island Immigration Reception and Processing Centre

From the late 1980s and early 1990s, boats carrying asylum seekers, mainly departing from Indonesia, began landing on the island. In 2001, Christmas Island was the site of the *Tampa* controversy, in which the Australian government stopped a Norwegian ship, *MV Tampa*, from disembarking 438 rescued asylum-seekers. The ensuing standoff and the associated political reactions in Australia were a major issue in the 2001 Australian federal election.\* [24]

Another boatload of asylum seekers was taken from Christmas Island to Papua New Guinea for processing after it was claimed that many of the adult asylum seekers threw their children into the water, apparently in protest at being turned away. These claims were later found to be untrue by a senate select committee. This became known as the "Children Overboard Affair". Of 433 refugees aboard the *Tampa*, 150 were accepted by New Zealand, including 36 unaccompanied boys.\* [25]

The former Howard government later secured the passage of legislation through the Australian Parliament that excised Christmas Island from Australia's migration zone, meaning that asylum seekers arriving on Christmas Island could not automatically apply to the Australian government for refugee status. This allowed the Royal Australian Navy to relocate them to other countries (Papua New Guinea's Manus Island and Nauru) as part of the so-called "Pacific Solution". In 2006, an immigration detention centre, containing approximately 800 beds, was constructed on the island for the Department of Immigration and Multicultural Affairs (DIMA). Originally estimated to cost A\$210 million, the final cost was over \$400 million.\* [26]

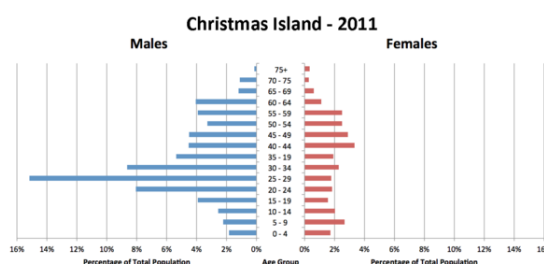
In 2007, the Rudd government announced plans to decommission Manus Island Regional Processing Centre and Nauru detention centre; processing would then occur on Christmas Island itself.\* [27]

In December 2010, 48 asylum-seekers died just off the coast of the island in what became known as the

Christmas Island boat disaster when the boat they were on hit rocks off Flying Fish Cove, and then smashed against nearby cliffs.\* [28]\* [29]

In June 2013, a surge of asylum-seekers resulted in the island's five detention facilities exceeding their designed capacity. Regular operating capacity is 1,094 people, with a "contingency capacity" of 2,724. After the interception of four boats in six days, carrying 350 people, the Immigration Department said there were 2,960 "irregular maritime arrivals" being held.\* [30]

### 3.2.3 Demographics



*Christmas Island's population pyramid, from a census in 2011, showing a large proportion of males over females.*

As of the 2011 Australian census, the estimated resident population is 2,072. This does not include the highly variable population at the Immigration Detention Centre.

The ethnic composition is 70% Chinese, 10% European, and 20% Malay. A 2011 report by the Australian government estimated that religions practised on Christmas Island include Buddhism 75%, Christianity 12%, Islam 10%, and other 3%.\* [31] The cuisine of Christmas Island is mostly flown or shipped in.

### 3.2.4 Government

Christmas Island is a non-self-governing territory of Australia, currently administered by the Department of Regional Australia, Regional Development and Local Government. Administration was carried out by the Attorney-General's Department\* [32] until 14 September 2010,\* [33] and prior to this by the Department of Transport and Regional Services before 29 November 2007.\* [34] The legal system is under the authority of the Governor-General of Australia and Australian law. An administrator appointed by the Governor-General represents the monarch and Australia.

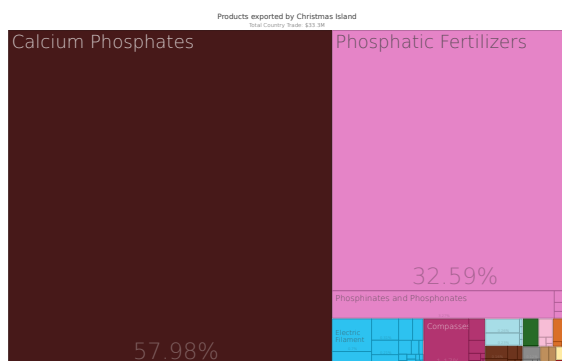
The Australian government provides services through the Christmas Island Administration and the Department of Regional Australia, Regional Development and Local Government. Under the federal government's Territories Law Reform Act 1992, which came into force on 1 July 1992, Western Australian laws are applied to Christmas

Island “so far as they are capable of applying in the territory”;<sup>\*</sup>[35] non-application or partial application of such laws is at the discretion of the federal government. The act also gives Western Australian courts judicial power over Christmas Island. Christmas Island remains constitutionally distinct from Western Australia, however; the power of the state to legislate for the territory is delegated by the federal government. The kind of services typically provided by a state government elsewhere in Australia are provided by departments of the Western Australian government, and by contractors, with the costs met by the federal government. A unicameral **Shire of Christmas Island** with nine seats provides local government services and is elected by popular vote to serve four-year terms. Elections are held every two years, with four or five of the members standing for election.

Christmas Island residents who are Australian citizens also vote in federal elections. Christmas Island residents are represented in the House of Representatives through the **Northern Territory Division of Lingiari** and in the Senate by Northern Territory senators.

In early 1986, the Christmas Island Assembly held a design competition for an island flag; the winning design was adopted as the informal flag of the territory for over a decade, and in 2002 it was made the official flag of Christmas Island.

### 3.2.5 Economy



*A representation of Christmas Island's exports in 2012.*

Phosphate mining had been the only significant economic activity, but in December 1987 the Australian government closed the mine. In 1991, the mine was reopened by a consortium which included many of the former mine workers as shareholders. With the support of the government, the \$34 million **Christmas Island Casino and Resort** opened in 1993, but was closed in 1998. As of 2011, the resort has re-opened without the casino.

The Australian government in 2001 agreed to support the creation of a commercial spaceport on the island, however this has not yet been constructed, and appears that it will not proceed in the future. The Howard government built

a temporary immigration detention centre on the island in 2001 and planned to replace it with a larger, modern facility located at North West Point until Howard's defeat in the 2007 elections.

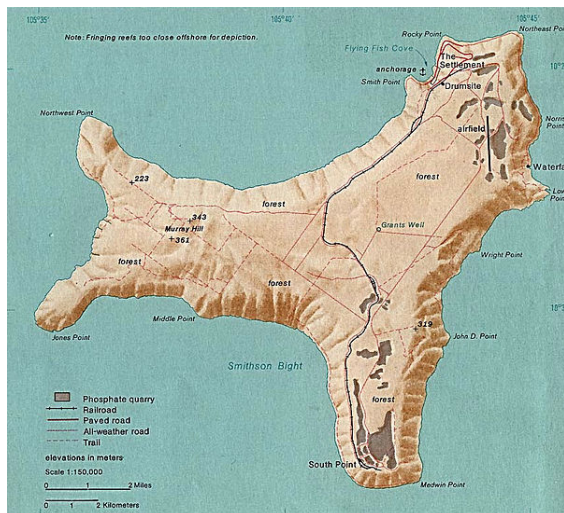
### 3.2.6 Culture

The culture of Christmas Island is unique, for people of many different ethnicities inhabit the area. The majority of residents are **Chinese**, but Europeans and **Malays** reside there as well. The main languages of Christmas Island are English and Chinese. Dress is usually modest, and tourists should keep a wrap, such as a sarong or pareo, on hand to cover shorts, bathing suits, and tank tops. It is common to remove shoes when entering a house and to also avoid touching anyone's head.

Religious beliefs are diverse, but people are very tolerant of each other's religions. The religions practised include **Buddhism**, **Taoism**, **Confucianism**, **Islam**, and **Christianity**. There is a Mosque located in Flying Fish Cove. With all of these religions, there are many religious festivals, such as **Spring Festival**, **Hari Raya**, **Christmas** and **Easter**.<sup>\*</sup>[36] Additionally, there is a Bahá'í centre located on the island<sup>\*</sup>[37]

### Attractions

Christmas Island is well known for its biological diversity. There are many rare species of animals and plants on the island, making nature-walking a popular activity. Along with the diversity of species, many different types of caves exist, such as plateau caves, coastal caves, raised coastal caves and alcoves, sea caves, fissure caves, collapse caves and basalt caves; most of these are located near the sea and have been formed by the action of water. Altogether, there are 42 caves on the island, with Lost Lake Cave, Daniel Roux Cave and Full Frontal Cave being the most well-known. The many freshwater springs include Hosnies Spring Ramsar, which also has a mangrove stand. The Dales is a rainforest in the western part of the island and consists of seven deep valleys, all of which were formed by spring streams. Hugh's Dale waterfall is part of this area and is a popular attraction. The annual breeding migration of the red crabs is a popular event. Fishing is another common activity. There are many distinctive species of fish in the oceans surrounding Christmas Island. Snorkeling and swimming in the ocean are two other activities that are extremely popular. Walking trails are also very popular, for there are many beautiful trails surrounded by extravagant flora and fauna. Sixty-three percent of the island is national park making it one of the main attractions to experience when visiting.



*Christmas Island*

### 3.2.7 Geography

Located at  $10^{\circ}30'S$   $105^{\circ}40'E$  /  $10.500^{\circ}S$   $105.667^{\circ}E$ , the island is about 19 kilometres (12 mi) in greatest length and 14.5 km (9.0 mi) in extreme breadth. The total land area is 135 square kilometres (52 sq mi), with 138.9 km (86.3 mi) of coastline. The island is the flat summit of a submarine mountain more than 4,500 metres (14,800 ft) high,\* [38] the depth of the platform from which it rises being about 4,200 m (13,780 ft) and its height above the sea being upwards of 300 m (984 ft).\* [39] The mountain was originally a volcano, and some basalt is exposed in places such as The Dales and Dolly Beach, but most of the surface rock is limestone accumulated from the growth of coral. The summit of this mountain peak is formed of a succession of tertiary limestones ranging in age from the Eocene (or Oligocene) up to recent reef deposits, with intercalations in the older beds of volcanic rocks.\* [40]

Steep cliffs along much of the coast rise abruptly to a central plateau. Elevation ranges from sea level to 361 m (1,184 ft) at Murray Hill. The island is mainly tropical rainforest, of which 63% is national park land.

The narrow fringing reef surrounding the island can be a maritime hazard.

Christmas Island is located 2,600 kilometres (1,600 mi) northwest of Perth, Western Australia, 500 km (310 mi) south of Indonesia, 975 km (606 mi) ENE of the Cocos (Keeling) Islands, and 2,748 km (1,708 mi) west of Darwin, Northern Territory. Its closest point to the Australian mainland is 1,560 km from the town of Exmouth, Western Australia.

### Climate

Because Christmas Island is located toward the southern edge of the equatorial region, temperatures have little variation throughout the months. The highest tempera-

ture is usually around  $29^{\circ}C$  ( $84^{\circ}F$ ) and takes place in March and April, while the lowest temperature is  $23^{\circ}C$  ( $73^{\circ}F$ ) and occurs in August. There is a dry period from July to November; during this season there are extensive dry periods with occasional showers. The wet season is between November and May, which includes monsoons. The monsoons that take place are downpours of rain at unsystematic parts of the day. Tropical cyclones may also occur in the wet season, bringing very solid winds, rain and enormous seas. These tropical cyclones only happen occasionally, for most of the time during the wet season is damp, subside weather.

### 3.2.8 Flora and fauna

See also: *Birds of Christmas Island*

Christmas Island was uninhabited until the late 19th



*Coconut crab*

century, allowing many species to evolve without human interference. Two-thirds of the island has been declared a National Park, which is managed by the Australian Department of Environment and Heritage through Parks Australia.

### Flora

The dense rainforest has grown in the deep soils of the plateau and on the terraces. The forests are dominated



*Christmas Island red crab*



*Brown booby*



*Red-footed boobies*



*Common noddy*

branches in the humid atmosphere beneath the canopy. The 135 plant species include at least 18 that are found nowhere else.

Christmas Island's endemic plants include the trees *Arenga listeri*, *Pandanus elatus* and *Dendrocnide peltata* var. *murrayana*; the shrubs *Abutilon listeri*, *Colubrina pedunculata*, *Grewia insularis* and *Pandanus christmatensis*; the vines *Hoya aldrichii* and *Zehneria alba*; the herbs *Asystasia alba*, *Dicliptera maclearii* and *Peperomia rossii*; the grass *Ischaemum nativitatis*; the fern *Asplenium listeri*; and the orchids *Brachypeza archytas*, *Flickingeria nativitatis*, *Phreatia listeri* and *Zeuxine exilis*.\* [42]

### Fauna

Two species of native rats, the Maclear's and bulldog rats, have become extinct since the island was settled. The Javan rusa is an introduced species here. The endemic Christmas Island shrew has not been seen since the mid-1980s and may be already extinct, while the Christmas Island pipistrelle (a small bat) is critically endangered and possibly also extinct.\* [43]

The land crabs and seabirds are the most noticeable fauna on the island. Christmas Island has been identified by BirdLife International as both an Endemic Bird Area and an Important Bird Area because it supports five endemic species and five subspecies as well as over 1% of the world populations of five other seabirds.\* [44]

Twenty terrestrial and intertidal species of crab have been described here, of which thirteen are regarded as true land crabs, being only dependent on the ocean for larval development. Robber crabs, known elsewhere as coconut crabs, also exist in large numbers on the island. The annual red crab mass migration (around 100 million animals) to the sea to spawn has been called one of the wonders of the natural world.\* [45] This takes place each year around November – after the start of the wet season and in synchronisation with the cycle of the moon. Once at

by 25 tree species. Ferns, orchids and vines grow on the

the ocean, the mothers release the embryos where they can survive and grow until they are able to live on land.

The island is a focal point for seabirds of various species. Eight species or subspecies of seabirds nest on it. The most numerous is the red-footed booby, which nests in colonies, using trees on many parts of the shore terrace. The widespread brown booby nests on the ground near the edge of the seacliff and inland cliffs. Abbott's booby (listed as endangered) nests on tall emergent trees of the western, northern and southern plateau rainforest, the only remaining nesting habitat for this bird in the world. Another endangered and endemic bird, the Christmas frigatebird, has nesting areas on the northeastern shore terraces. The more widespread great frigatebirds nest in semi-deciduous trees on the shore terrace, with the greatest concentrations being in the North West and South Point areas. The common noddy and two species of bosun or tropicbirds, with their brilliant gold or silver plumage and distinctive streamer tail feathers, also nest on the island.

Of the ten native land birds and shorebirds, seven are endemic species or subspecies. This includes the Christmas thrush and the Christmas imperial pigeon. Some 86 migrant bird species have been recorded as visitors to the island.

Six species of butterfly are known to occur on Christmas Island. These are the Christmas swallowtail (*Papilio memnon*), striped albatross (*Appias olferna*), Christmas emperor (*Polyura andrewsi*), king cerulean (*Jamides bochus*), lesser grass-blue (*Zizina otis*), and Papuan grass-yellow (*Eurema blanda*).<sup>[46]</sup>

### 3.2.9 Media

Christmas Island has access to a range of modern communication services.

Radio broadcasts from Australia include ABC Radio National, ABC Kimberley, Triple J and Red FM. All services are provided by satellite links from the mainland. Broadband internet became available to subscribers in urban areas in mid-2005 through the local internet service provider, CIIA (formerly dotCX).

Christmas Island, due to its close proximity to Australia's northern neighbours, falls within many of the more interesting satellite footprints throughout the region. This results in ideal conditions for receiving various Asian broadcasts, which locals sometimes prefer to the Western Australian-provided content. Additionally, ionospheric conditions usually bode well for many of the more terrestrial radio transmissions – HF through VHF and sometimes into UHF. The island plays home to a small array of radio equipment that spans a good chunk of the usable spectrum. A variety of government owned and operated antenna systems are employed on the island to take advantage of this.

### Television

Free-to-air digital television stations from Australia are broadcast in the same time zone as Perth, and are broadcast from three separate locations:

<sup>[47]</sup>

Cable television from Australia, Malaysia, Singapore and the United States commenced in January 2013.

### Telecommunications

Telephone services are provided by Telstra and are a part of the Australian network with the same prefix as Western Australia, South Australia and the Northern Territory (08). A GSM mobile telephone system replaced the old analogue network in February 2005.

### Postage stamps

Main article: Postage stamps and postal history of Christmas Island

A postal agency was opened on the island in 1901 and



Postage stamp with portrait of Queen Elizabeth II, 1958

sold stamps of the Strait Settlements.<sup>[48]</sup>

After the Japanese occupation (1942–45), postage stamps of the British Military Administration in Malaya were in use, then stamps of Singapore.<sup>[49]</sup>

In 1958, the island received its own postage stamps after being put under Australian custody. It had a large philatelic and postal independence, managed first by the Phosphate Commission (1958–1969) and then by the is-

land's administration (1969–93).\*[48] This ended on 2 March 1993 when *Australia Post* became the island's postal operator; stamps of Christmas Island may be used in Australia and Australian stamps may be used on the island.\*[49]

### 3.2.10 Transport

A container port exists at Flying Fish Cove with an uncompleted alternative container-unloading point to the east of the island at Norris Point, intended for use during the December-to-March “swell season” of rough seas.

An 18-km standard gauge railway from Flying Fish Cove to the phosphate mine was constructed in 1914. It was closed in December 1987, when the Australian government closed the mine, and since has been recovered as scrap, leaving only earthworks in places.

There are two weekly flights provided by Virgin Australia Regional Airlines into Christmas Island Airport from Perth, Western Australia, and ad hoc charter flight from/to Jakarta organised by the Christmas Island Travel Exchange.

There is a recreation centre at Phosphate Hill operated by South Australian-based CASA Leisure Pty Ltd. There is also a taxi service. The road network covers most of the island and is generally good quality, although four-wheel drive vehicles are needed to access some of the more distant parts of the rainforest or the more isolated beaches, which are only accessible by rough dirt roads.

### 3.2.11 Education

The island-operated crèche is located in the Recreation Centre.\*[50] Christmas Island District High School, catering to students in grades P-12, is run by the Western Australian Education Department. There are no universities on Christmas Island.

The island has one public library.\*[51]

### 3.2.12 See also

- Outline of Christmas Island
- Index of Christmas Island-related articles
- List of islands named after calendar entries
- .cx
- 
- 

### 3.2.13 Notes

- [1] Australian Bureau of Statistics (31 October 2012). “Christmas Island” . *2011 Census QuickStats*. Retrieved 30 July 2013.
- [2] “Save Christmas Island – Introduction” . The Wilderness Society. 19 September 2002. Archived from the original on 9 June 2007. Retrieved 14 April 2007.
- [3] “Department of the Environment, Water, Heritage and the Arts – Christmas Island History” . Australian Government. 8 July 2008. Retrieved 26 April 2009.
- [4] “Digital Collections – Maps – Goos, Pieter, ca. 1616–1675. Paskaerte Zynde t'Oosterdeel Van Oost Indien (cartographic material) : met alle de Eylanden deer ontrent gelegen van C. Comorin tot aen Japan” . National Library of Australia. Retrieved 26 April 2009.
- [5] Carney, Gerard (2006). *The constitutional systems of the Australian states and territories*. Cambridge University Press. p. 477. ISBN 0-521-86305-8. The uninhabited island was named on Christmas Day, 1643, by Captain William Mynors as he sailed past, leaving to William Dampier the honour of first landing ashore in 1688.
- [6] Dampier, Captain William (1703). *A New Voyage Round The World*. The Crown in St Paul's Church-yard, London, England: James Knapton. pp. Contemporary full panelled calf with raised bands to spine and crimson morocco title labels; crimson sprinkled edges; 8vo.
- [7] “History” . Christmas Island Tourism Association. Retrieved January 2014.
- [8] Walsh, William (1913). *A Handy Book of Curious Information*. London: Lippincott. p. 447.
- [9] John Hunt. **Eclipse on Christmas Island**. newspaper article in 'The Canberra Times', 5 September 2012.
- [10] L, Klemen (1999–2000). “The Mystery of Christmas Island, March 1942” . *Forgotten Campaign: The Dutch East Indies Campaign 1941–1942*.
- [11] L, Klemen (1999–2000). “Allied Merchant Ship Losses in the Pacific and Southeast Asia” . *Forgotten Campaign: The Dutch East Indies Campaign 1941–1942*.
- [12] Cressman, Robert J. “The Official Chronology of the U.S. Navy in World War II Chapter IV: 1942” . *Hyperwar!*.
- [13] Public Record Office, England War Office and Colonial Office Correspondence/Straits Settlements.
- [14] J. Pettigrew. “Christmas Island in World War II” . Australian Territories January 1962.
- [15] Interviews conducted by J G Hunt with Island residents, 1973–77.
- [16] Correspondence J G Hunt with former Island residents, 1973–79.
- [17] Department of External Affairs in Australia. (1957, May 16): Report from the Australian High Commission in Singapore to the Department of External Affairs in Australia. Singapore: National Archives of Singapore. (Microfilm: NAB 447)

- [18] "All set for transfer. (1958, May 16)". The Straits Times, p. 2.
- [19] "Kerr, A. (2009). A federation in these seas: An account of the acquisition by Australia of its external territories, with selected documents." . Barton, A.C.T.: Attorney General's Dept, p. 329. (Call no.: R 325.394 KER).
- [20] "Mr D. E. Nickels and Mrs Nickels interviewed by Jan Adams in the Christmas Island life story oral history project" . National Library of Australia.
- [21] "Christmas Island" . World Statesmen.
- [22] Island Life – Christmas Island – About
- [23] Main article: Countries affected by the 2004 Indian Ocean earthquake
- [24] Fowler, Connie (2003). "Karsten Klepsuik, John Howard and the Tampa Crisis: Good Luck or Good Management?". *Nordic Notes* 7. Celsius Centre for Scandinavian Studies (Flinders University). ISSN 1442-5165. Retrieved 19 July 2013.
- [25] Bilby, Lynley (13 February 2013). "Doomed asylum seekers' boat not being tracked by Customs: minister" . *New Zealand Herald*. Retrieved 31 March 2013.
- [26] "Detention on Christmas Island" . Amnesty International. 10 March 2009. Archived from the original on 17 August 2010. Retrieved 26 April 2009.
- [27] "Savings for Labor's Better Priorities: Close Nauru and Manus Island detention centres" (RTF download). *Public release of costing*. electioncostings.gov.au. 15 November 2007. Retrieved 19 July 2013.
- [28] Needham, Kirsty; Stevenson, Andrew; Allard, Tom (16 December 2010). "Doomed asylum seekers' boat not being tracked by Customs: minister" . *The Sydney Morning Herald*. Retrieved 16 December 2010.
- [29] "Leaders pay tribute to asylum shipwreck victims" . ABC. ABC/AAP. 9 February 2011.
- [30] Rintoul, Stuart (19 July 2013). "Pre-election surge pushes island centres far beyond capacity" . *The Australian*. Retrieved 20 June 2013.
- [31] Parliament of Australia
- [32] First Assistant Secretary, Territories Division (30 January 2008). "Territories of Australia" . Attorney-General's Department. Archived from the original on 12 November 2009. Retrieved 7 February 2008. The Federal Government, through the Attorney-General's Department administers Ashmore and Cartier Islands, Christmas Island, the Cocos (Keeling) Islands, the Coral Sea Islands, Jervis Bay, and Norfolk Island as Territories.
- [33] First Assistant Secretary, Access to Justice Division (2 February 2011). "Territories of Australia" . Attorney-General's Department. Archived from the original on 14 August 2011. Retrieved 28 August 2011. Under the Administrative Arrangements Order made on 14 September 2010, responsibility for services to Territories was transferred to the Department of Regional Australia, Regional Development and Local Government.
- [34] Department of Infrastructure, Transport, Regional Development and Local Government. "Territories of Australia" . Archived from the original on 16 December 2007. Retrieved 7 February 2008. As part of the Machinery of Government Changes following the Federal Election on 29 November 2007, administrative responsibility for Territories has been transferred to the Attorney General's Department.
- [35] Territories Law Reform Act 1992
- [36] *Destination Specialist: South Pacific including Micronesia*. Institute of Certified Travel Agents. 2001.
- [37] Christmas Island Tourism - Culture. Christmas.net.au. Retrieved on 2014-05-25.
- [38] "Submission on Development Potential No. 37" (PDF). Northern Australia Land and Water Taskforce. 16 August 2007. Retrieved 26 April 2009.
- [39] "Christmas island" . *World Factbook*. CIA. 23 April 2009. Retrieved 26 April 2009.
- [40] II.—A MONOGRAPH OF CHRISTMAS ISLAND (INDIAN OCEAN:PHYSICAL FEATURES AND GEOLOGY). By C. W. ANDREWS. With descriptions of the fauna and flora by numerous contributors. 8vo ; pp. xiii, 337, 22 plates, 1 map, text illustrated.(London : printed by order of the Trustees of the British Museum, 1900.)
- [41] "Climate statistics for Christmas Island" . Bureau of Meteorology. Retrieved 21 September 2011.
- [42] Christmas Island National Park: Flora.
- [43] "Parks Australia" .
- [44] BirdLife International. (2011). Important Bird Areas factsheet: Christmas Island. Downloaded from <http://www.birdlife.org> on 23 December 2011.
- [45] "Geoscience Australia on Christmas Island" .
- [46] Braby, Michael F. (2008). *The Complete Field Guide to Butterflies of Australia*. CSIRO Publishing. ISBN 0 643 09027 4.
- [47] "List of licensed broadcasting transmitters" . ACMA. Retrieved 28 December 2013.
- [48] Richard Breckon, "Christmas Island's Stamps and Postal History: 50 Years of Australian Administration", *Gibbons Stamp Monthly*, October 2008, pp. 81–85.
- [49] *Commonwealth Stamp Catalogue Australia*, Stanley Gibbons, 4th edition, 2007, pp. 104–112.
- [50] "Recreation Centre" .
- [51] "Public library" .



### 3.2.14 References

- “Flora: Endemic plants” . *Parks and Reserves: Christmas Island National Park*. Australia Government – Dept of Sustainability, Environment, Water, Population and Communities. 21 November 2012. Retrieved 25 December 2012.
- This article incorporates public domain material from websites or documents of the CIA World Factbook.
- L, Klemen (1999–2000). “Forgotten Campaign: The Dutch East Indies Campaign 1941–1942” .

### 3.2.15 Further reading

- Adams, Jan; Neale, Marg (1993). *Christmas Island – The Early Years – 1888–1958*. Bruce Neale. ISBN 0-646-14894-X. 96 pages, including many b&w photographs.
- Allen, Gerald R.; Steene, Roger C. (1998). *Fishes of Christmas Island* (1 ed.). Christmas Island Natural History Association. ISBN 0-9591210-1-3. 197 pages including many photographs and plates.
- Allen, Gerald R.; Steene, Roger C.; Orchard, Max (2007). *Fishes of Christmas Island* (2 ed.). Christmas Island Natural History Association. ISBN 978-0-9591210-8-7
- Andrews, Charles W. (1899). “A Description of Christmas Island (Indian Ocean)”. *Geographical Journal* **13** (1): 17–35. doi:10.2307/1774789
- Andrews, Charles W. (1900). “A Monograph of Christmas Island” . London
- Anonymous, 1984, Christmas Island, Indian Ocean – a Unique Island. Published by a committee of present and former employees of the phosphate mining company. 60 pages including colour photographs.
- Ayris, Cyril (1993). *Tai Ko Seng – Gordon Bennett of Christmas Island*. Gordon Bennett Educational Foundation. ISBN 0-646-15483-4. 263 pages including photographs.
- Bosman, D, ed. (1993). *Christmas Island Police – 1958–1983*. D Bosman. 112 pages including many photographs.
- “CIA World Factbook” . Central Intelligence Agency. 2002
- Gray, H.S. (1981). *Christmas Island Naturally*. H.S. Gray. ISBN 0-9594105-0-3. 133 pages including many colour photographs.

- Hicks, John; Rumpff, Holger; Yorkston, Hugh (1984). *Christmas Crabs*. Christmas Island Natural History Association. ISBN 0-9591210-0-5. 76 pages including colour photographs.
- Hunt, John (2011). *Suffering Through Strength: The Men who Made Christmas Island*. ISBN 9780646550114
- *The Indian Ocean: a select bibliography*. National Library of Australia. 1979. ISBN 0-642-99150-2
- Neale, Margaret (1988). *We were the Christmas Islanders*. Bruce Neale. ISBN 0-7316-4158-2. 207 pages including many b&w photographs.
- Orchard, Max (2012). *Crabs of Christmas Island*. Christmas Island Natural History Association. ISBN 9780646576428 288 pages pictorial illustration of crabs.
- Stokes, Tony (2012). *Whatever Will Be, I'll See: Growing Up in the 1940s, 50s and 60s in the Northern Territory, Christmas and the Cocos (Keeling) Islands, New South Wales and the Australian Capital Territory*. ISBN 9780646575643. 238 pages.
- Wharton, W. J. L. (1888). “Account of Christmas Island, Indian Ocean” . *Proceedings of the Royal Geographical Society and Monthly Record of Geography* **10** (10): 613–624. doi:10.2307/1800848
- Waters, Les (1992). “The Union of Christmas Island Workers” (2 ed.). St Leonards, NSW: Allen & Unwin. 170 pages including b&w photographs.

### 3.2.16 External links

- Christmas Island Shire – official government website
- Christmas Island Tourism Association – official tourism website
- Christmas Island National Park – official website Christmas Island National Park
- *Christmas Island Act 1958*
- Christmas Island at DMOZ
- Christmas Island entry at *The World Factbook*
- Christmas Island Travel Guide from Unearth Travel a creative commons travel wiki
- “Australia Puts Its Refugee Problem on a Remote Island, Behind Razor Wire” – *New York Times*, 5 November 2009

### 3.3 South Keeling Islands

“Cocos Islands” redirects here. It is not to be confused with **Cocos Island** or **Coco Islands**.



Cocos

Location of the Cocos Islands in the Indian Ocean.

The **Territory of the Cocos (Keeling) Islands**, also called **Cocos Islands** /ˈkɒskəs/ and **Keeling Islands**, is a territory of Australia, located in the Indian Ocean, southwest of Christmas Island and approximately midway between Australia and Sri Lanka.

The territory consists of two atolls and 27 coral islands, of which two, West Island and Home Island, are inhabited with a total population of approximately 600.

#### 3.3.1 Name

The islands have been called the *Cocos Islands* (from 1622), the *Keeling Islands* (from 1703), the *Cocos–Keeling Islands* (since James Horsburgh in 1805) and the *Keeling–Cocos Islands* (19th century).<sup>[2]</sup> *Cocos* refers to the abundant coconut trees, while *Keeling* is William Keeling, reputedly the first European to sight the islands, in 1609.<sup>[2]</sup> James Clark Ross, who sailed there in the *Borneo* in 1825, called the group the *Borneo Coral Isles*, restricting *Keeling* to North Keeling, and calling South Keeling “the Cocos properly so called”.<sup>[3]</sup><sup>[4]</sup> The form *Cocos (Keeling) Islands*, attested from 1916,<sup>[5]</sup> was made official by the Cocos (Keeling) Islands Act 1955.<sup>[2]</sup>

#### 3.3.2 Geography

The Cocos (Keeling) Islands consist of two flat, low-lying coral atolls with an area of 14.2 square kilometres (5.5 sq mi), 26 kilometres (16 mi) of coastline, a highest elevation of 5 metres (16 ft) and thickly covered with coconut palms and other vegetation. The climate is pleasant, moderated by the southeast **trade winds** for about nine months of the year and with moderate rainfall. **Tropical cyclones** may occur in the early months of the year.

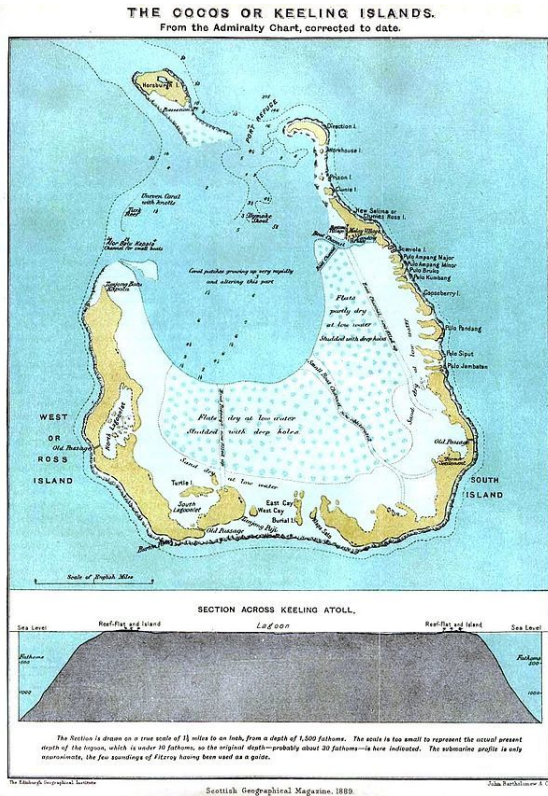
**North Keeling Island** is an atoll consisting of just one C-shaped island, a nearly closed atoll ring with a small opening into the lagoon, about 50 metres (160 ft) wide, on the east side. The island measures 1.1 square kilometres (270 acres) in land area and is uninhabited. The lagoon is about 0.5 square kilometres (120 acres). North Keeling Island and the surrounding sea to 1.5 km (0.93 mi) from shore form the **Pulu Keeling National Park**, established on 12 December 1995. It is home to the only surviving population of the endemic, and endangered, **Cocos Buff-banded Rail**.

**South Keeling Islands** is an atoll consisting of 24 individual islets forming an incomplete atoll ring, with a total land area of 13.1 square kilometres (5.1 sq mi). Only Home Island and West Island are populated. The Cocos Malays maintain weekend shacks, referred to as pondoks, on most of the larger islands.

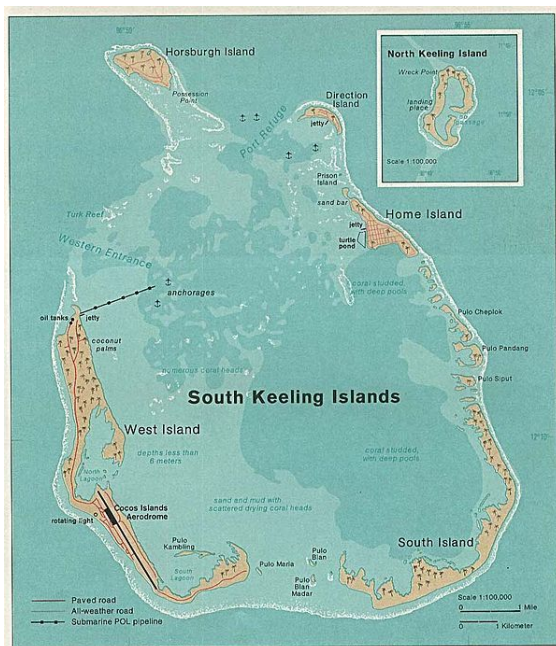


*Cocos (Keeling) Islands.*

There are no rivers or lakes on either atoll. Fresh water resources are limited to water lenses on the larger islands, underground accumulations of rainwater lying above the seawater. These lenses are accessed through shallow bores or wells.



1889 map of South Keeling Islands.



1976 map of South Keeling Islands.

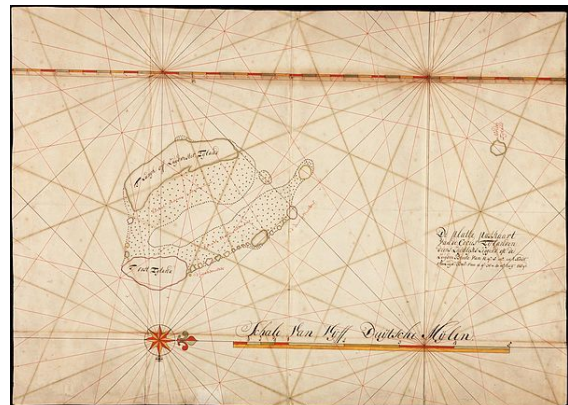
**Flora and fauna**

Main articles: Flora of the Cocos (Keeling) Islands and Fauna of the Cocos (Keeling) Islands

**Demographics**

In 2010, the population of the islands is estimated at just over 600. [1] The population on the two inhabited islands generally is split between the ethnic Europeans on West Island (estimated population 100) and the ethnic Malays on Home Island (estimated population 500). A Cocos dialect of Malay and English are the main languages spoken, and 60% of Cocos Islanders are Sunni Muslim, the other 40% are Christian.

**3.3.3 History**



Historic compass chart of the Cocos islands [6]

In 1609, Captain William Keeling was the first European to see the islands, while serving in the East India Company, [7] but they remained uninhabited until the 19th century.

In 1814, a Scottish merchant seaman named Captain John Clunies-Ross stopped briefly at the islands on a trip to India, nailing up a Union Jack and planning to return and settle on the islands with his family in the future. [7]

However, a wealthy Englishman named Alexander Hare had similar plans, and hired a captain – coincidentally, Clunies-Ross' brother – to bring him and a harem of forty Malay women to the islands, where he hoped to set up his own private residence. [7] Hare had previously served as governor of Maluka, a colony in Borneo, and found that “he could not confine himself to the tame life that prosy civilisation affords” . [7]

When Clunies-Ross returned two years later with his wife, children and mother-in-law, and found Hare already established on the island and living with a private harem, a feud grew instantly between the two men. [7] Clunies-Ross' eight sailors “began at once the invasion of the new kingdom to take possession of it, women and all” . [7] [8]

After some time, Hare's women began deserting him, and instead finding themselves mates amongst Clunies-Ross' sailors. [9] Disheartened, Hare left the island. He died in Bencoolen in 1834. [10]

Clunies-Ross' workers were paid in a currency called the **Cocos rupee**, a currency John Clunies-Ross minted himself that could only be redeemed at the company store.\* [11]



1840 chart of the Cocos (Keeling) Islands



A landing party from the *German Navy cruiser Emden* leaves Cocos (Keeling) Islands via this jetty on Direction Island.

On 1 April 1836, HMS *Beagle* under Captain Robert FitzRoy arrived to take soundings to establish the profile of the atoll as part of the survey expedition of the *Beagle*. To the young naturalist Charles Darwin, who was on the ship, the results supported a theory he had developed of how atolls formed, which he later published as *The Structure and Distribution of Coral Reefs*. He studied the natural history of the islands and collected specimens.\* [12] Darwin's assistant Syms Covington noted that “an Englishman [he was in fact Scottish] and HIS family, with

about sixty or seventy mulattos from the Cape of Good Hope, live on one of the islands. Captain Ross, the governor, is now absent at the Cape.”

### Annexation by the British Empire

The islands were annexed by the British Empire in 1857. This annexation was carried out by Captain Stephen Grenville Fremantle in command of HMS *Juno*. Fremantle claimed the islands for the British Empire and appointed Ross II as Superintendent.\* [13] In 1867, their administration was placed under the Straits Settlements, which included Penang, Malacca and Singapore. Queen Victoria granted the islands in perpetuity to the Clunies-Ross family in 1886. The Cocos Islands under the Clunies-Ross family have been cited as an example of a 19th-century micronation.

In 1901 a telegraph cable station was established on Direction Island. Undersea cables went to Rodrigues, Mauritius, Batavia, Java and Fremantle, Western Australia. In 1910 a wireless station was established to communicate with passing ships. The cable station ceased operation in 1966.\* [14]

### World War I

Main article: Battle of Cocos

On the morning of 9 November 1914, the islands became the site of the **Battle of Cocos**, one of the first naval battles of **World War I**. A landing party from the German cruiser SMS *Emden* captured and disabled the wireless and cable communications station on Direction Island, but not before the station was able to transmit a distress call. An Allied troop convoy was passing nearby, and the Australian cruiser HMAS *Sydney* was detached from the convoy escort to investigate.

*Sydney* spotted the island and *Emden* at 09:15, with both ships preparing for combat. At 11:20, the heavily damaged *Emden* beached herself on North Keeling Island. The Australian warship broke to pursue *Emden*'s supporting collier, which scuttled herself, then returned to North Keeling Island at 16:00. At this point, *Emden*'s battle ensign was still flying: usually a sign that a ship intends to continue fighting. After no response to instructions to lower the ensign, two salvos were shot into the beached cruiser, after which the Germans lowered the flag and raised a white sheet. *Sydney* had orders to ascertain the status of the transmission station, but returned the next day to provide medical assistance to the Germans.

134 personnel aboard *Emden* were killed, and 69 were wounded, compared to only 4 killed and 16 wounded aboard *Sydney*. The German survivors were taken aboard the Australian cruiser, which caught up to the troop convoy in Colombo on 15 November, then transported to

Malta and handed over the prisoners to the British Army. An additional 50 German personnel from the shore party, unable to be recovered before *Sydney* arrived, commandeered a schooner and escaped from Direction Island, eventually arriving in Constantinople. *Emden* was the last active Central Powers warship in the Indian or Pacific Ocean, which meant troopships from Australia and New Zealand could sail without naval escort, and Allied ships could be deployed elsewhere.

## World War II

During World War II, the cable station was once again a vital link. The Cocos were valuable for direction finding by the Y service, the world-wide intelligence system used during the war.\*[15]

Allied planners noted that the islands might be seized as an airfield for German planes and as a base for commerce raiders operating in the Indian Ocean. Following Japan's entry into the war, Japanese forces occupied neighbouring islands. To avoid drawing their attention to the Cocos cable station and its islands' garrison, the seaplane anchorage between Direction and Horsburgh islands was not used. Radio transmitters were also kept silent, except in emergencies.

After the Fall of Singapore in 1942, the islands were administered from Ceylon (Sri Lanka), and West and Direction Islands were placed under Allied military administration. The islands' garrison initially consisted of a platoon from the British Army's King's African Rifles, located on Horsburgh Island, with two 6-inch (152.4 mm) guns to cover the anchorage. The local inhabitants all lived on Home Island. Despite the importance of the islands as a communication centre, the Japanese made no attempt either to raid or to occupy them and contented themselves with sending over a reconnaissance aircraft about once a month.

On the night of 8–9 May 1942, 15 members of the garrison, from the Ceylon Defence Force, mutinied under the leadership of Gratien Fernando. The mutineers were said to have been provoked by the attitude of their British officers and were also supposedly inspired by anti-imperialist beliefs. They attempted to take control of the gun battery on the islands. The Cocos Islands Mutiny was crushed, but the mutineers killed one non-mutinous soldier and wounded one officer. Seven of the mutineers were sentenced to death at a trial that was later alleged to have been improperly conducted. Four of the sentences were commuted, but three men were executed, including Fernando. These were to be the only British Commonwealth soldiers executed for mutiny during the Second World War.\*[16]

On 25 December 1942, the Japanese submarine *I-166* bombarded the islands but caused no damage.\*[17]

Later in the war, two airstrips were built, and three bomber squadrons were moved to the islands to con-

duct raids against Japanese targets in South East Asia and to provide support during the planned reinvansion of Malaya and reconquest of Singapore. The first aircraft to arrive were Supermarine Spitfire Mk VIII's of No. 136 Squadron RAF.\*[18] They included some Liberator bombers from No. 321 (Netherlands) Squadron RAF (members of exiled Dutch forces serving with the Royal Air Force), which were also stationed on the islands. When in July 1945 No. 99 and No. 356 RAF squadrons arrived on West Island, they brought with them a daily newspaper called *Atoll* which contained news of what was happening in the outside world. Run by airmen in their off-duty hours, it achieved fame when dropped by Liberator bombers on POW camps over the heads of the Japanese guards. In 1946, the administration of the islands reverted to Singapore and it became part of the Colony of Singapore.\*[19]

## Transfer to Australia

On 23 November 1955, the islands were transferred to Australian control under the *Cocos (Keeling) Islands Act 1955* (an Australian Act) pursuant to the *Cocos Islands Act, 1955* (a UK Act).\*[20] Mr. H. J. Hull was appointed the first Official Representative (now Administrator) of the new Territory. He had been a Lieutenant-Commander in the Royal Australian Navy and was released for the purpose. Under Commonwealth Cabinet Decision 1573 of 9 September 1958, Mr. Hull's appointment was terminated and John William Stokes was appointed on secondment from the Northern Territory Police. A media release at the end of October 1958 by the Minister for Territories, Mr. Hasluck, commended Mr. Hull's three years of service on Cocos.

Stokes served in the position from 31 October 1958 to 30 September 1960. His son's boyhood memories and photos of the Islands have been published.\*[21] C. I. Buffett MBE from Norfolk Island succeeded him and served from 28 July 1960 to 30 June 1966, and later acted as Administrator back on Cocos and on Norfolk Island. In 1974, Ken Mullen wrote a small book\*[22] about his time with wife and son from 1964 to 1966 working at the Cable Station on Direction Island.

In the 1970s, the Australian government's dissatisfaction with the Clunies-Ross feudal style of rule of the island increased. In 1978, Australia forced the family to sell the islands for the sum of A\$6,250,000, using the threat of compulsory acquisition. By agreement, the family retained ownership of Oceania House, their home on the island. However, in 1983, the Australian government reneged on this agreement, and told John Clunies-Ross that he should leave the Cocos. The following year the High Court of Australia ruled that resumption of Oceania House was unlawful, but the Australian government ordered that no government business was to be granted to Clunies-Ross's shipping company, an action that contributed to his bankruptcy. John Clunies-Ross now lives

in Perth, Western Australia. However, some members of the Clunies-Ross family still live on the Cocos.

Extensive preparations were undertaken by the government of Australia to prepare the Cocos Malays to vote in their referendum of self-determination. Discussions began in 1982, with an aim of holding the referendum, under United Nations supervision, in mid-1983. Under guidelines developed by the UN Decolonization Committee, residents were to be offered three choices: full independence, free association, or integration with Australia. The latter was preferred by both the islanders and the Australian government. However, a change in government in Canberra following the March 1983 Australian elections delayed the vote by one year. While the Home Island Council stated a preference for a traditional communal consensus “vote”, the UN insisted on a secret ballot. The referendum was held on 6 April 1984, with all 261 eligible islanders participating, including the Clunies-Ross family: 229 voted for integration, 21 for Free Association, nine for independence, and two failed to indicate a preference.\*[23]

### 3.3.4 Government

The capital of the Territory of Cocos (Keeling) Islands is West Island while the largest settlement is the village of Bantam (Home Island). Governance of the islands is based on the *Cocos (Keeling) Islands Act 1955*\*[24]\*[25] and depends heavily on the laws of Australia. The islands are administered from Canberra by the *Attorney-General's Department*\*[26] (before 29 November 2007\*[27] administration was carried out by the *Department of Transport and Regional Services*), through a non-resident Administrator appointed by the Governor-General.

The current Administrator is Barry Haase, who was appointed on 5 October 2014 and is also the Administrator of Christmas Island. These two Territories comprise Australia's Indian Ocean Territories. The Australian Government provides Commonwealth-level government services through the Christmas Island Administration and the *Department of Infrastructure and Regional Development*\*[28] As per the *Federal Government's Territories Law Reform Act 1992*, which came into force on 1 July 1992, Western Australian laws are applied to the Cocos Islands, “so far as they are capable of applying in the Territory.”;\*[29] non-application or partial application of such laws is at the discretion of the federal government. The Act also gives Western Australian courts judicial power over the islands. The Cocos Islands remain constitutionally distinct from Western Australia, however; the power of the state to legislate for the territory is power delegated by the federal government. The kind of services typically provided by a state government elsewhere in Australia are provided by departments of the Western Australian Government, and by contractors, with the costs met by the federal government.

There also exists a unicameral *Cocos (Keeling) Islands Shire Council* with seven seats. A full term lasts four years, though elections are held every two years; approximately half the members retire each two years. Federally, Cocos (Keeling) Islanders form the electorate of *Lingiari* with Christmas Island and outback Northern Territory.

### Defence and law enforcement

Defence is the responsibility of the *Australian Defence Force*. There are no active military installations or defence personnel on the islands. The Administrator may request the assistance of the Australian Defence Force if required.

Civilian law enforcement and community policing is provided by the *Australian Federal Police*. The normal deployment to the island is one *sergeant* and one *constable*. These are augmented by two locally engaged *Special Members* who have police powers.

### Courts

See also: *Supreme Court of Cocos (Keeling) Island*

Since 1992, court services have been provided by the *Western Australian Department of the Attorney-General* under a service delivery arrangement with the Australian Government. Western Australian Court Services provide Magistrates Court, District Court, Supreme Court, Family Court, Children's Court, Coroner's Court and Registry for births, deaths and marriages and change of name services. Magistrates and judges from Western Australia convene a circuit court as required.

### Health care

Home Island and West Island have medical clinics providing basic health services, but serious medical conditions and injuries cannot be treated on the island and patients are sent to Perth for treatment.

### 3.3.5 Economy

There is a small and growing tourist industry focused on water-based or nature activities.

Small local gardens and fishing contribute to the food supply, but most food and most other necessities must be imported from Australia or elsewhere.

The *Cocos Islands Cooperative Society Ltd.* employs construction workers, stevedores, and lighterage worker operations. Tourism employs others. The unemployment rate was 6.7% in 2011.\*[30]

### 3.3.6 Strategic importance

The Cocos Islands are geostrategically important because of their proximity to Indian Ocean and South China Sea shipping lanes.\*[31] The United States Armed Forces have planned to construct airbases on the Cocos Islands, capable of supporting drone-based espionage and surveillance over the South China Sea.\*[32] Euronews described the plan as providing Australian support for increased American presence in Southeast Asia, but likely to upset Chinese officials.\*[33] James Cogan has written for the *World Socialist Web Site* that airbase construction at Cocos is one component of Obama's "pivot" towards Asia, facilitating control of the sea lanes between the Indian and Pacific Oceans and potentially allowing US forces to enforce a blockade against China.\*[31] After plans to construct airbases were leaked to the *Washington Post*, the then Australian defence minister Stephen Smith stated that the Australian government views "Cocos as being potentially a long-term strategic location, but that is down the track."\*[34]

### 3.3.7 Communications and transport

#### Transport

The Cocos (Keeling) Islands have fifteen kilometres of highway.

There is one paved airport on the West Island. A tourist bus operates on Home Island.

The only airport is Cocos (Keeling) Islands Airport with a single 2,441 m (8,009 ft) paved runway. Virgin Australia operates scheduled jet services from Perth Airport via Christmas Island. After 1952, the airport at Cocos Islands was a stop for airline flights between Australia and South Africa, and Qantas and South African Airways stopped there to refuel. The arrival of long range jet aircraft ended this need in 1967.

An interisland ferry, the *Cahaya Baru*, connects West, Home and Direction Islands.

There is a lagoon anchorage between Horsburgh and Direction islands for larger vessels, while yachts have a dedicated anchorage area in the southern lee of Direction Island. There are no major seaports on the islands.

#### Communications

The islands are connected within Australia's telecommunication system (with number range +61 8 9162 xxxx). Public phones are located on both West Island and Home Island. A reasonably reliable GSM mobile phone network (number range +61 406 xxx), run by CiiA (Christmas Island Internet Association), operates on Cocos (Keeling) Islands. SIM cards (full size) and recharge cards can be purchased from the Telecentre on West Island to access

this service.

Australia Post provides mail services with the postcode 6799. There are post offices on West Island and Home Island. Standard letters and express post items are sent by air twice weekly, but all other mail is sent by sea and can take up to two months for delivery.

#### Internet

.cc is the Internet country code top-level domain (ccTLD) for Cocos (Keeling) Islands. It is administered by VeriSign through a subsidiary company eNIC, which promotes it for international registration as "the next .com"; .cc was originally assigned in October 1997 to eNIC Corporation of Seattle WA by the IANA. The Turkish Republic of Northern Cyprus also uses the .cc domain, along with .nc.tr.

Internet access on Cocos is provided by CiiA (Christmas Island Internet Association), and is supplied via satellite ground station on West Island, and distributed via a wireless PPPoE-based WAN on both inhabited islands. Casual internet access is available at the Telecentre on West Island, and the Indian Ocean Group Training office on Home Island.

The National Broadband Network announced in early 2012 that it would extend service to Cocos in 2015 via high speed satellite link.\*[35]

### 3.3.8 Media

The Cocos (Keeling) Islands have access to a range of modern communication services. Digital television stations are broadcast from Western Australia via satellite. A local radio station, 6CKI – Voice of the Cocos (Keeling) Islands, is staffed by community volunteers and provides some local content.

#### Television

**Australian** The Cocos (Keeling) Islands receives a range of digital channels from Western Australia via satellite and is broadcast from the Airport Building on the West Island on the following VHF frequencies:

- ABC6
- SBS7
- WAW8
- WOW10
- WDW11

\*[36]

**Malaysian** From 2013 onwards, Cocos Island will receive four Malaysian channels via satellite:

- TV3
- ntv7
- 8TV
- TV9

### 3.3.9 Education

There is a school in the archipelago, **Cocos Islands District High School**, with campuses located on West Island (Kindergarten to Year 10), and the other on Home Island (Kindergarten to Year 6). CIDHS is part of the Western Australia education School instruction is in English on both campuses, with Cocos Malay teacher aides assisting the younger children in Kindergarten, Pre-Preparatory and early Primary with the English curriculum on the Home Island Campus. The Home Language of Cocos Malay is valued whilst students engage in learning English.

### 3.3.10 Culture

Main article: **Culture of the Cocos (Keeling) Islands**

### 3.3.11 Gallery

- Sunset over the islands.
- Palm trees on the islands.
- Queen Elizabeth and Prince Philip arrive at the Cocos Islands, April 1954.
- Aerial view of Cocos (Keeling) Islands Airport (ICAO code: YPCC).
- Home Island.
- Prince Philip waves goodbye as he and Queen Elizabeth, accompanied by John Clunies Ross, return to their ship from Home Island (1954).
- Queen Elizabeth at a garden party held in her honour at Home Island.
- Compass stand from the bridge of *HMAS Sydney*, which destroyed the SMS *Emden*, installed at Port Macquarie, New South Wales, in 1929.
- A broadside view of the wrecked German raider *Emden* after her encounter with *HMAS Sydney* near Cocos Island. Seamen, shortly to be rescued by the Sydney, crowd together on the clear end of the vessel. In the foreground, several crew members look on from the *Sydney*'s foredeck.

- The last bombing raid of World War II by 99, 356 and 321 Squadrons is cancelled, 15 August 1945.\*[1]

1. ^ Maj-General J. T. Durrant (SA Air Force, Commanding Officer, Cocos Islands), watched by Wing Commander “Sandy” Webster (Commanding Officer, 99 Squadron), Squadron Leader Les Evans (Acting Commanding Officer, 356 Squadron) and Lieutenant Commander W. van Prooijen (Commanding Officer, 321 Squadron).

### 3.3.12 See also

- 
- **Index of Cocos (Keeling) Islands-related articles**
- 
- 
- **Banknotes of the Cocos (Keeling) Islands**
- **Cocos Malays**
- **King of the Cocos (Keeling) Islands**
- **Pearl Islands** (*Isla de Cocos*, Panama; *Cocos Island*, Costa Rica).

### 3.3.13 References

- [1] “Cocos (Keeling) Islands” . *The World Factbook*. CIA. Retrieved 27 January 2012.
- [2] Woodroffe, C.D.; Berry, P.F. (February 1994). *Scientific Studies in the Cocos (Keeling) Islands: An Introduction*. Atoll Research Bulletin **399**. Washington DC: National Museum of Natural History. pp. 1–2.
- [3] Horsburgh, James (1841). “Islands to the Southward and South-eastward of Java; The Keeling or Cocos Islands” . *The India directory, or, Directions for sailing to and from the East Indies, China, Australia, and the interjacent ports of Africa and South America: comp. chiefly from original journals of the honourable company's ships, and from observations and remarks, resulting from the experience of twenty-one years in the navigation of those seas*. Vol.1 (5th ed.). London: W.H. Allen and Co. pp. 141–2.
- [4] Ross, J. C. (May 1835). “The Cocos' Isles” . *The Metropolitan*. Peck and Newton. p. 220.
- [5] Weber, Max Carl Wilhelm; Weber, Lieven Ferdinand de Beaufort, Max Wilhelm Carl (1916). *The Fishes of the Indo-australian Archipelago*. Brill Archive. p. 286. Retrieved 26 August 2015.
- [6] Nationaal Archief, The Hague, archive 4.VEL inventorynumber 338, <http://www.gahetna.nl/en/collectie/archief/inventaris/index/eaidid/4.VEL/inventarisnr/338/level/file>



- [7] Joshua Slocum, "Sailing Alone Around the World" , p. 212
- [8] *Some Account of the Keeling Isles* (October 1830) Gleanings in Science, pp.293–301
- [9] The Clunies-Ross Chronicle
- [10] Morning Post (London) 20 March 1835
- [11] End of a kingdom
- [12] Keynes, Richard (2001), *Charles Darwin's Beagle Diary*, Cambridge University Press, pp. 413–418
- [13] "The Cocos Islands" . *The Chambers's Journal* **76**: 187–190. 1899.
- [14] <https://www.cocoskeelingislands.com.au/home-2/history/money-22>
- [15] McKay, S. 2012. *The Secret Listeners*. Aurum Press Ltd. ISBN 978 1 78131 079 3
- [16] Cruise, Noel (2002). *The Cocos Islands Mutiny*. Fremantle: Fremantle Arts Centre Press. p. 248. ISBN 1-86368-310-0.
- [17] Combinedfleet.com
- [18] Fail, J.E.H. "FORWARD STRATEGIC AIR BASE COCOS ISLAND" . [www.rquirk.com](http://www.rquirk.com). Retrieved 13 February 2013.
- [19] Colony of Singapore. Government Gazette. (1946, April 1). The Singapore Colony Order in Council, 1946 (G.N. 2, pp. 2–3). Singapore: [s.n.]. Call no.: RCLOS 959.57 SGG; White paper on Malaya (1946, January 26). The Straits Times, p. 2. Retrieved from NewspaperSG; Tan, K. Y. L. (Ed.). (1999). The Singapore legal system (pp. 232–233). Singapore: Singapore University Press. Call no.: RSING 349.5957 SIN.
- [20] "Cocos (Keeling) Islands" . *Parliamentary Debates (Hansard)*. House of Commons. 28 June 1977. Archived from the original on 11 May 2011.
- [21] Stokes, Tony (2012). *Whatever Will Be, I'll See: Growing Up in the 1940s, 50s and 60s in the Northern Territory, Christmas and the Cocos (Keeling) Islands, New South Wales and the Australian Capital Territory*. Tony Stokes. p. 238. ISBN 9780646575643.
- [22] Cocos Keeling, the islands time forgot (1974). Ken Mullen. published by Angus & Robertson, Sydney. 122 pages.
- [23] Kenneth Chen, "Pacific Island Development Plan: Cocos (Keeling) Islands- The Political Evolution of a Small Island Territory in the Indian Ocean" (1987): Mr Chen was Administrator, Cocos Islands, from December 1983 – November 1985.
- [24] WebLaw – full resource metadata display
- [25] ComLaw Act Compilations – Cocos (Keeling) Islands Act 1955 (34)
- [26] First Assistant Secretary, Territories Division (30 January 2008). "Territories of Australia" . Attorney-General's Department. Archived from the original on 6 February 2008. Retrieved 7 February 2008. The Federal Government, through the Attorney-General's Department administers Ashmore and Cartier Islands, Christmas Island, the Cocos (Keeling) Islands, the Coral Sea Islands, Jervis Bay, and Norfolk Island as Territories.
- [27] Department of Infrastructure, Transport, Regional Development and Local Government. "Territories of Australia" . Archived from the original on 16 December 2007. Retrieved 7 February 2008. As part of the Machinery of Government Changes following the Federal Election on 29 November 2007, administrative responsibility for Territories has been transferred to the Attorney General's Department.
- [28] "Commonwealth of Australia Administrative Arrangements Order made on 18 September 2013" (PDF). Australian Government Department of the Prime Minister and Cabinet. 18 September 2013.
- [29] Territories Law Reform Act 1992
- [30] ABS 2011
- [31] Cogan, James, "US Marines begin operations in northern Australia." *World Socialist Web Site*, 14 April 2012.
- [32] Whitlock, Craig, "U.S., Australia to broaden military ties amid Pentagon pivot to SE Asia", *The Washington Post*, 26 March 2012.
- [33] Grubel, James, "Australia open to US spy flights from Indian Ocean." Euronews, 28 March 2012. Archived May 27, 2012 at the Wayback Machine
- [34] McGuirk, Rod, "Australia to Welcome 250 US Marines next Month, Plays down Proposal for Indian Ocean Air Base." *Associated Press*, 27 March 2012.
- [35] Kidman, Alex, "NBN To Launch Satellites in 2015." *Gizmodo*, 8 February 2012.
- [36] "List of licensed broadcasting transmitters" . ACMA. Retrieved 28 December 2013.
- This article incorporates public domain material from the CIA World Factbook document "2003 edition" .
  - [books.google.co.uk/books?isbn...](https://books.google.co.uk/books?isbn...)

### 3.3.14 External links

- Shire of Cocos (Keeling) Islands homepage
- Areas of individual islets
- Atoll Research Bulletin vol. 403
- Cocos (Keeling) Islands Tourism website

- Noel Cruzs, *The Cocos Islands mutiny*, reviewed by Peter Stanley (Principal Historian, Australian War Memorial).
- The man who lost a “coral kingdom”
- Amateur Radio DX Pediton to Cocos (Keeling) Islands VK9EC

Coordinates: 12°07'S 96°54'E / 12.117°S 96.900°E



Map of the Crozet Islands

### 3.4 Possession Island



Crozet

Location of Crozet Islands in the Indian Ocean

The **Crozet Islands** (French: *Îles Crozet*; or, officially, *Archipel Crozet*) are a sub-antarctic archipelago of small islands in the southern Indian Ocean. They form one of the five administrative districts of the French Southern and Antarctic Lands.

#### 3.4.1 Geography

Not including minor islets or rock reefs etc., the Crozet group consists of six islands. From west to east:

\* (1) Group of two major islands (Grande Île—Big Island, and Petite Île—Little Island) and about 20 pinnacle rocks.

The Eastern and Western Groups are 94.5 kilometres (58.7 mi) apart (from Île des Pingouins to Île de la Possession)

The Crozet Islands are uninhabited, except for the research station Alfred Faure (Port Alfred) on the East side of Île de la Possession, which has been continuously

manned since 1963. Previous scientific stations included La Grande Manchotière and La Petite Manchotière.

#### Geology

Analysis of magnetic anomalies on the sea floor indicates that the Crozet Plateau formed some 50 million years ago. The islands are of volcanic origin, and basalt. Rock samples indicate volcanic origins going back to at least 8.8 million years.

#### Climate



Crozet Islands causing a Von Karman Vortex street to form under low clouds.

The Crozet islands have a tundra climate (Köppen climate classification, ET), with monthly temperature averaging 2.9 °C (37 °F) and 7.9 °C (46 °F) in winter and summer respectively.\* [1] Precipitation is high, with over 2,000 mm (78.7 in) per year. It rains on average 300 days a year, and winds exceeding 100 km/h (60 mph) occur on 100 days a year. The temperatures may rise to 18 °C (64.4 °F) in summer and rarely go below −5 °C (23 °F) even in winter.

## Flora and fauna

The islands are part of the **Southern Indian Ocean Islands tundra ecoregion** that includes several subantarctic islands. In this cold climate plant life is mainly limited to grasses, mosses and lichens, while the main animals are insects along with large populations of seabirds, seals and penguins.\* [1]

The Crozet Islands are home to four species of penguins. Most abundant are the macaroni penguin, of which some 2 million pairs breed on the islands, and the king penguin. The eastern rockhopper penguin also can be found, and there is a small colony of gentoo penguins. There is also an endemic subspecies of the duck Eaton's pintail. Other birds include black-faced sheathbills, petrels, and albatross, including the wandering albatross.

Mammals living on the Crozet Islands include fur seals, and southern elephant seals. Killer whales have been observed preying upon the seals. The transient killer whales of the Crozet Islands are famous for intentionally beaching (and later un-stranding) themselves while actively hunting the islands' breeding seal population. This is a very rare behaviour, most often seen in the Patagonia region of Argentina, and is thought to be a learned skill passed down through generations of individual orca families.

The Crozet Islands have been a nature reserve since 1938. Introduction of foreign species (mice, rats, and subsequently cats for pest control) has caused severe damage to the original ecosystem. The pigs that had been introduced on Île des Cochons and the goats brought to Île de la Possession—both as a food resource—have been exterminated.

Another on-going concern is overfishing of the Patagonian Toothfish and the Albatross population is monitored. The waters of the Crozet Islands are patrolled by the French government.

## 3.4.2 History

The Crozet Islands were first discovered on 24 January 1772 by the expedition of Marc-Joseph Marion du Fresne, a French explorer. His second-in-command Jules (Julien-Marie) Crozet landed on Île de la Possession, claiming the archipelago for France.\* [4] Marion du Fresne named the islands after Crozet, having already named Marion Island after himself.

In the early 19th century, the islands were often visited by sealers, to the extent that the seals had been nearly exterminated by 1835. Subsequently, whaling was the main activity around the islands, especially by the whalers from Massachusetts. In 1841 there were a dozen whaleships around the islands. Within a couple of years this had increased to twenty from the United States alone. Such exploitation was short-lived, and the islands were rarely

visited for the rest of the century.

Shipwrecks occurred frequently at the Crozet Islands. The British sealer, *Princess of Wales*, sank in 1821, and the survivors spent two years on the islands. The *Strathmore* was wrecked in 1875. In 1887, the French *Tamaris* was wrecked and her crew stranded on Île des Cochons. They tied a note to the leg of an albatross, which was found seven months later in Fremantle, but the crew was never recovered. Because shipwrecks around the islands were so common, for some time the Royal Navy dispatched a ship every few years to look for stranded survivors.

France originally administered the islands as a dependency of Madagascar, but they became part of the French Southern Territories in 1955. In 1938, the Crozet Islands were declared a nature reserve. In 1961, a first research station was set up, but it was not until 1963 that the permanent station Alfred Faure opened at Port Alfred on Île de la Possession (both named after the first leader of the station). The station is staffed by 18 to 30 people (depending on the season) and does meteorological, biological, and geological research, maintains a seismograph and a geomagnetic observatory (IAGA code: CZT).

A 2012 French film, *Les Saveurs du Palais*, begins and ends with scenes in the Crozet Islands. The film's protagonist, a grandmotherly chef from the Périgord region of France who signed on as cook for the research station, had once been the personal chef to President Mitterrand.

## 3.4.3 Gallery

- The *Marion Dufresne* off the “port” of Crozet. East Island in the background.
- One of the penguin colonies of the islands
- The Eastern Group

## 3.4.4 See also

- Administrative divisions of France
- French overseas departments and territories
- Islands controlled by France in the Indian and Pacific oceans
- Kerguelen Islands
- List of Antarctic and sub-Antarctic islands
- List of volcanoes in French Southern and Antarctic Lands
- Prince Edward Islands

### 3.4.5 References

- [1] “Southern Indian Ocean Islands tundra” . *Terrestrial Ecoregions*. World Wildlife Fund. Retrieved 2012-01-10.
- [2] “Moyennes 1981/2010: France (Terres Australes)” (in French). Météoclimat. Retrieved June 14, 2015.
- [3] “STATION Alfred Faure” (in French). Météoclimat. Retrieved June 14, 2015.
- [4] “TAAF” . Taaf.fr. Retrieved 2012-01-10.

### 3.4.6 Further reading

- LeMasurier, W. E.; Thomson, J. W., eds. (1990). *Volcanoes of the Antarctic Plate and Southern Oceans*. American Geophysical Union. ISBN 0-87590-172-7.
- Church, Ian (1985). *Survival on the Crozet Islands: The Wreck of the Strathmore in 1875*. Waikanae, New Zealand: Heritage Press. ISBN 0-908708-02-5.

### 3.4.7 External links

- South Atlantic & Subantarctic Islands site, Crozet Islands page
- Further information
- Further information
- TAAF

## 3.5 Diego Garcia

For other uses, see Diego Garcia (disambiguation).

**Diego Garcia** is an atoll located south of the equator in



*This 1982 photo shows an unpaved road made of crushed coral common throughout the island and the officers' dining area at the Diego Garcia Naval Support Facility.*

the central Indian Ocean. Diego Garcia is the largest of

the 60 small islands comprising the Chagos Archipelago. Diego Garcia was settled by the French in the 1790s and was transferred to British rule after the Napoleonic Wars. It was one of the “Dependencies” of the British Colony of Mauritius until it was detached for inclusion in the newly created British Indian Ocean Territory (BIOT) in 1965. Between 1968 and 1973, the population of the BIOT was removed to Mauritius and The Seychelles, following which the United States built a large naval and military base on Diego Garcia, which has been in continuous operation ever since. As of March 2015, Diego Garcia is the only inhabited island of the BIOT; the population is composed of military personnel and supporting contractors.

The atoll is located 3,535 km (2,197 mi) east of Tanzania's coast, 1,796 km (1,116 mi) south-southwest of the southern tip of India (at Kanyakumari) and 4,723 km (2,935 mi) west-northwest of the west coast of Australia (at Cape Range National Park, Western Australia). Diego Garcia lies at the southernmost tip of the Chagos-Laccadive Ridge, a vast submarine mountain range,\*[2] top of coral reefs, atolls, and islands comprising Lakshadweep, The Maldives, and the Chagos Archipelago. Local time is UTC+06:00 year-round (DST is not observed).\*[3]

The sovereignty of the Chagos Archipelago, including Diego Garcia, is disputed between the United Kingdom and Mauritius. In addition, the status of the former inhabitants is contested.

### 3.5.1 History

#### Pre-discovery



*Coconut plantation, East Point (former main settlement)*

According to Southern Maldivian oral tradition, traders and fishermen were occasionally lost at sea and got stranded in one of the islands of the Chagos. Eventually they were rescued and brought back home. However, the different atolls of the Chagos have no individual names

in the Maldivian oral tradition.\* [4]

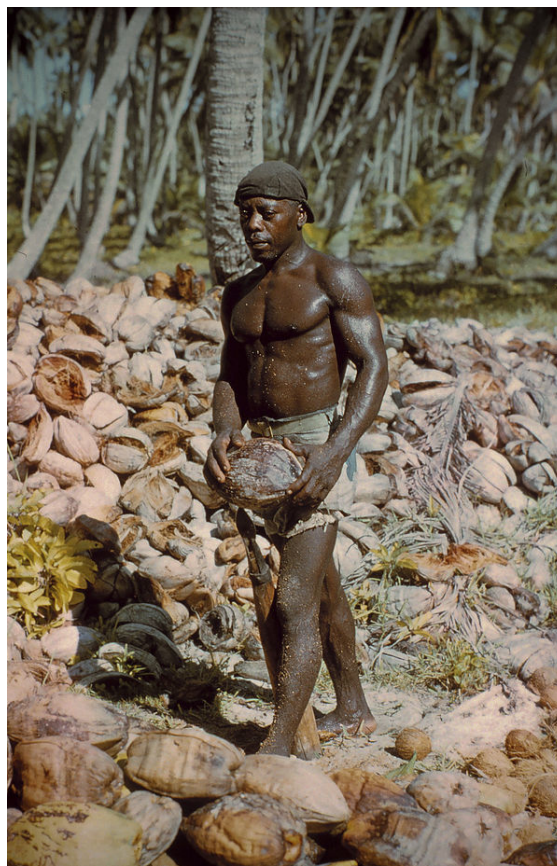
Nothing is known of pre-European contact history of Diego Garcia. Speculations include visits during the Austronesian diaspora around 700 AD, as some say the old Maldivian name for the islands originated from Malagasy. It is also suggested that the Arabs, who reached Lakshadweep and Maldives around 900 AD, may have visited the Chagos.

### European discovery

The uninhabited islands are asserted to have been discovered by the Portuguese navigator, explorer and diplomat Pedro Mascarenhas in 1512, first named as *Dom Garcia*, in honour of his patron, Dom Garcia de Noronha\* [5]\* [6] when he was detached from the Portuguese India Armadas\* [7] during his voyage of 1512–1513, but there is little corroborative evidence for this. Another Portuguese expedition with Spanish explorer of Portuguese origin, Diego García de Moguer,\* [8] rediscovered the island in 1544 and named it after himself. Garcia de Moguer died the same year on the return trip to Portugal in the Indian Ocean, off the South African coast. The misnomer “Diego” could have been made unwittingly by the British ever since, as they copied the Portuguese maps. It is assumed that the island was named after one of its first two discoverers—the one by the name of Garcia, the other with name Diego. Also, a cacography of the saying *Deo Gracias* (“Thank God”) is eligible for the attribution of the atoll. Although the Cantino planisphere (1504) and the Ruysch map (1507) clearly delineate the Maldive Islands, giving them the same names, they do not show any islands to the south which can be identified as the Chagos archipelago.

The Sebastian Cabot map (Antwerp 1544) shows a number of islands to the south which may be the Mascarene Islands. The first map which identifies and names “*Los Chagos*” (in about the right position) is that of Pierre Desceliers (Dieppe 1550), although Diego Garcia is not named. An island called “Don Garcia” appears on the *Theatrum Orbis Terrarum* of Abraham Ortelius (Antwerp 1570), together with “*Dos Compagnos*”, slightly to the north. It may be the case that “Don Garcia” was named after Garcia de Noronha, although there no evidence exists to support this. The island is also labeled “Don Garcia” on Mercator’s *Nova et Aucta Orbis Terrae Descriptio ad Usum Navigatium Emendate* (Duisburg 1569). However, on the *Vera Totius Expeditionis Nauticae Description* of Jodocus Hondius (London 1589), “Don Garcia” mysteriously changes its name to “*I. de Dio Gratia*”, while the “*I. de Chagos*” appears close by.

The first map to delineate the island under its present name, Diego Garcia, is the *World Map* of Edward Wright (London 1599), possibly as a result of misreading Dio (or simply “D.”) as Diego, and Gratia as Garcia. The *Nova Totius Terrarum Orbis Geographica* of Henricus Hondius



*A Chagossian photographed by a U.S. National Geodetic Survey team in 1969*

(Antwerp 1630) repeats Wright’s use of the name, which is then proliferated on all subsequent Dutch maps of the period, and to the present day.

### Settlement of the island

Diego Garcia and the rest of the Chagos islands were uninhabited until the late 18th century. In 1778, the French Governor of Mauritius granted Monsieur Dupuit de la Faye the island of Diego Garcia, and there is evidence of temporary French visits to collect coconuts and fish.\* [9] Several Frenchmen living in “a dozen huts” abandoned Diego Garcia when the British East India Company attempted to establish a settlement there in April 1786.\* [9] The supplies of the 275 settlers were overwhelmed by 250 survivors of the wreck of the British East Indian Ship *ATLAS* in May, and the colony failed in October.\* [10] Following the departure of the British, the French colony of Mauritius began marooning lepers on Diego Garcia,\* [10] and in 1793, the French established a coconut plantation using slave labour, which also exported cordage made from coconut fiber, and sea cucumbers, known as a delicacy in the orient.\* [11]

Diego Garcia became a colony of the United Kingdom after the Napoleonic wars as part of the Treaty of Paris (1814), and from 1814 to 1965, it was administered from

Mauritius.\*[12] On Diego Garcia, the main plantations were located at East Point, the main settlement on the eastern rim of the atoll; Minni Minni, 4.5 kilometres (2.8 mi) north of East Point; and Pointe Marianne, on the western rim, all located on the lagoon side of the atoll rim. The workers lived at these locations, and at villages scattered around the island.

From 1881 until 1888, Diego Garcia was the location of two coaling stations for steamships crossing the Indian Ocean.\*[13]

In 1882 the French-financed, Mauritian-based Société Huilière de Diego et de Peros (the “Oilmaking Company of Diego and Peros”), consolidated all the plantations in the Chagos under its control.\*[13]

### 20th century



*Barachois Maurice, Diego Garcia*



*Catalina wreck on the beach*

In 1914, the island was visited by the German light cruiser SMS *Emden* halfway through its commerce raiding cruise during the first months of World War I.\*[14]

In 1942, the British opened RAF Station Diego Garcia and established an advanced flying boat unit at the East Point Plantation, staffed and equipped by No 205 and No 240 Squadrons, then stationed on Ceylon. Both Catalina and Sunderland aircraft were flown during the course of World War II in search of Japanese and German submarines and surface raiders. At Cannon Point, six naval

guns were installed by a Royal Marines detachment. In February 1942, the mission was to protect the small Royal Navy base and Royal Air Force station located on the island from Japanese attack. They were later manned by Mauritian and Indian Coastal Artillery troops.\*[15] Following the conclusion of hostilities, the station was closed on 30 April 1946.\*[16]

In 1962, the Chagos Agalega Company of the British colony of Seychelles purchased the Société Huilière de Diego et Peros and moved company headquarters to Seychelles.\*[17]

In the early 1960s, the UK was withdrawing its military presence from the Indian Ocean, not including the airfield at RAF Station Gan RAF Gan to the north of Diego Garcia in the Maldives (which remained open until 1976), and agreed to permit the United States to establish a Naval Communication Station on one of its island territories there. The United States requested an unpopulated island belonging to the UK to avoid political difficulties with newly independent countries, and ultimately the UK and United States agreed that Diego Garcia was a suitable location.\*[18]

### Purchase by the United Kingdom



*An unpaved road in Diego Garcia in the eastern restricted zone, home to the former plantations*

To accomplish the UK/United States mutual defense strategy, in November 1965, the UK purchased the

Chagos Archipelago, which includes Diego Garcia, from the then self-governing colony of Mauritius for £3 million to create the **British Indian Ocean Territory (BIOT)**, with the intent of ultimately closing the plantations to provide the uninhabited British territory from which the United States would conduct its military activities in the region.\* [18]

In April 1966, the British government bought the entire assets of the Chagos Agalega Company in the BIOT for £600,000 and administered them as a government enterprise while awaiting United States funding of the proposed facilities, with an interim objective of paying for the administrative expenses of the new territory.\* [17] However, the plantations, both under their previous private ownership and under government administration, proved consistently unprofitable due to the introduction of new oils and lubricants in the international marketplace, and the establishment of vast coconut plantations in the East Indies and the Philippines.\* [19]

On 30 December 1966, the United States and the UK executed an agreement through an Exchange of Notes which permits the United States to use the BIOT for defense purposes for 50 years (through December 2016), followed by a 20-year optional extension (to 2036) to which both parties must agree by December 2014.\* [20] No monetary payment was made from the United States to the UK as part of this agreement or any subsequent amendment. Rather, the United Kingdom received a US\$14-million discount from the United States on the acquisition of submarine-launched ballistic missile system Polaris missiles per a now-declassified addendum to the 1966 agreement.\* [21]

### Arrival of the U.S. Navy

To the United States, Diego Garcia was a prime territory for setting up a foreign military base. According to Stuart Barber —a civilian working for the U.S. Navy at The Pentagon —Diego Garcia was located far away from any potential threats, it was low in a native population and it was an island that was not sought after by other countries as it lacked economic interest. To Barber, Diego Garcia and other acquired islands would play a key role in maintaining U.S. dominance. Here Barber designed the strategic island concept, where the U.S. would obtain as many less populated islands as possible for military purposes. According to Barber, this was the only way to ensure security for a foreign base. Diego Garcia is often referred to as “Fantasy Island” for its remoteness.

The key component in obtaining Diego Garcia was the lack of native persons on the island. Prior to setting up a military base, the United States Government was informed by the British Government - the “owners” of Diego Garcia - that Diego Garcia had a population of only hundreds. This was in fact proved false; the Chagossians numbered up to 2,000. Regardless of population num-

bers, the Chagossians simply had to go. In 1968, the first tactics were implemented to decrease the population of Diego Garcia. Those that left - either for vacation or medical purposes - were not allowed to return and those who stayed could obtain only restricted food and medical supplies. This tactic was in hope that those that stayed would leave willingly.\* [22] One of the more gruesome tactics utilized was that of the killings of Chagossian pets. Dogs were carried into sheds where they were gassed in front of their owners.\* [22]

In March 1971, United States Naval construction battalions, (*Seabees*), arrived on Diego Garcia to begin the construction of the communications station and an airfield.\* [23] To satisfy the terms of an agreement between the UK and the United States for an uninhabited island, the plantation on Diego Garcia was closed in October of that year.\* [24] The plantation workers and their families were relocated to the plantations on Peros Bahnos and Salomon atolls to the northwest. The by-then-independent Mauritian government refused to accept the islanders without payment, and in 1974, the UK gave the Mauritian government an additional £650,000 to resettle the islanders.\* [25] Those who still remained on the island of Diego Garcia between 1971 and 1973 were forced on to cargo ships that were heading to Mauritius and the Seychelles.

By 1973, construction of the Naval Communications Station (NAVCOMMSTA) was completed.\* [26] In the early 1970s, setbacks to United States military capabilities in the region including the fall of Saigon, victory of the Khmer Rouge in Cambodia, the closure of the Peshawar Air Station listening post in Pakistan and Kagnev Station in Eritrea, the Mayaguez incident, and the build-up of Soviet naval presence in Aden and a Soviet airbase at Berbera, Somalia, caused the United States to request, and the UK to approve, permission to build a fleet anchorage and enlarged airfield on Diego Garcia,\* [27] and the Seabees doubled the number of workers constructing these facilities.\* [27]

Following the fall of the Shah of Iran and the Iran Hostage Crisis in 1979–1980, the West became concerned with ensuring the flow of oil from the Persian Gulf through the Strait of Hormuz, and the United States received permission for a \$400-million expansion of the military facilities on Diego Garcia consisting of two parallel 12,000-foot-long (3,700 m) runways, expansive parking aprons for heavy bombers, 20 new anchorages in the lagoon, a deep-water pier, port facilities for the largest naval vessels in the American or British fleet, aircraft hangars, maintenance buildings and an air terminal, a 1,340,000 barrels (213,000 m<sup>3</sup>) fuel storage area, and billeting and messing facilities for thousands of sailors and support personnel.\* [27]

### Chagos Marine Protected Area

On 1 April 2010, the Chagos Marine Protected Area (MPA) was declared to cover the waters around the Chagos Archipelago. However, Mauritius objected, stating this was contrary to its legal rights, and on 18 March 2015, the Permanent Court of Arbitration ruled that the Chagos Marine Protected Area was illegal under the United Nations Convention on the Law of the Sea as Mauritius had legally binding rights to fish in the waters surrounding the Chagos Archipelago, to an eventual return of the Chagos Archipelago, and to the preservation of any minerals or oil discovered in or near the Chagos Archipelago prior to its return.\*[28]\*[29]

### 3.5.2 Inhabitants

Diego Garcia had no permanent inhabitants when discovered by the Spanish explorer Diego García de Moguer in the 16th century, then in the service of Portugal, and this remained the case until it was settled as a French colony in 1793.\*[13]

#### French settlement

Main article: Chagossians

Most inhabitants of Diego Garcia through the period 1793–1971 were plantation workers, but also included Franco-Mauritian managers, Indo-Mauritian administrators, Mauritian and Seychellois contract employees, and in the late 19th century, Chinese and Somali employees.

A distinct Creole culture called the Ilois, which means “islanders” in French Creole, evolved from these workers. The Ilois, now called Chagos Islanders or Chagossians since the late-1990s, were descended primarily from slaves brought to the island from Madagascar by the French between 1793 and 1810, and Malay slaves from the slave market on Pulo Nyas, an island off the northwest coast of Sumatra, from around 1820 until the slave trade ended following the Slavery Abolition Act of 1833.\*[30] The Ilois also evolved a French-based Creole dialect now called Chagossian Creole.

Throughout their recorded history, the plantations of the Chagos Archipelago had a population of approximately 1,000 individuals, about two-thirds of whom lived on Diego Garcia. A peak population of 1,142 on all islands was recorded in 1953.\*[31]

The primary industry throughout the island's colonial period consisted of coconut plantations producing copra and/or coconut oil,\*[13] until closure of the plantations and relocation of the inhabitants in October 1971. For a brief period in the 1880s, it served as a coaling station for steamships transiting the Indian Ocean from the Suez Canal to Australia.\*[32]

### Deportation of 1971

Main article: Depopulation of Diego Garcia

All the inhabitants of Diego Garcia were relocated to other islands in the Chagos Archipelago or to Mauritius or Seychelles by 1971 to satisfy the requirements of a UK/United States Exchange of Notes signed in 1966 to depopulate the island when the United States constructed a base upon it.\*[33] No current agreement exists on how many of the evacuees met the criteria to be an Ilois, and thus be an indigenous person at the time of their removal, but the UK and Mauritian governments agreed in 1972 that 426 families,\*[34] numbering 1,151 individuals,\*[25] were due compensation payments as exiled Ilois. The total number of people certified as Ilois by the Mauritian Government's Ilois Trust Fund Board in 1982 was 1,579.\*[35] Five and ten years after the last deportations, the Chagossians received a small amount of compensation from the British, totaling \$6,000 per person; some Chagossians received nothing. This relocation decision remains in litigation as of 2010.\*[36]\*[37] Today, Chagossians remain highly impoverished and are living as “marginalized” outsiders on the island of Mauritius and the Seychelles.

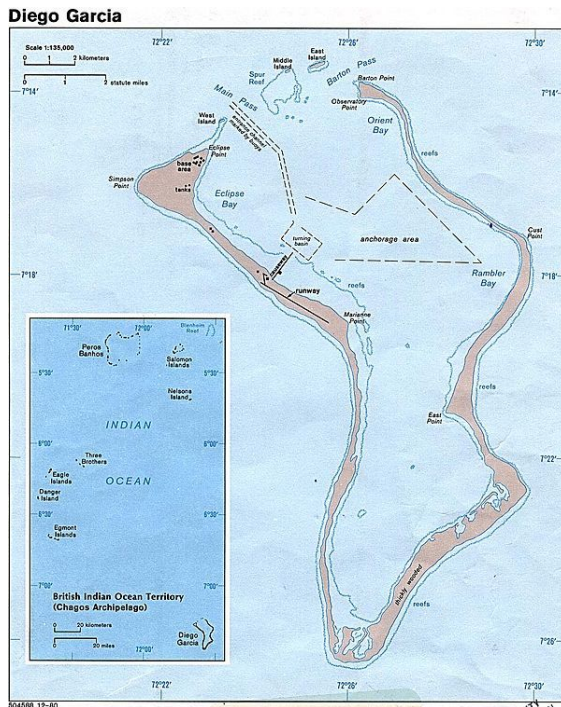
#### After 1971

Between 1971 and 2001, the only residents on Diego Garcia were UK and United States military personnel and civilian employees of those countries. These included contract employees from the Philippines and Mauritius, including some Ilois.\*[38] During combat operations from the atoll against Afghanistan (2001–2006) and Iraq (2003–2006), a number of allied militaries were based on the island including Australian,\*[39] Japanese, and the Republic of Korea.\*[40] According to David Vine, “Today, at any given time, 3,000 to 5,000 U.S. troops and civilian support staff live on the island.”\*[41] The inhabitants today do not rely on the island and the surrounding waters for sustenance. Although some recreational fishing for consumption is permitted, all other food is shipped in by sea or air.\*[42]

### 3.5.3 Politics

Diego Garcia is the largest and only inhabited island in the British Indian Ocean Territory, an overseas territory of the United Kingdom, usually abbreviated as “BIOT”. The Government of the BIOT consists of a commissioner appointed by the Queen. The commissioner is assisted by an administrator and small staff, and is based in London and is resident in the Foreign and Commonwealth Office. Originally colonized by the French, Diego Garcia was ceded, along with the rest of the Chagos Archipelago, to the United Kingdom in the Treaty of Paris (1814) at





A detailed map of Diego Garcia

the conclusion of a portion of the Napoleonic Wars.\* [13] Diego Garcia and the Chagos Archipelago were administered by the colonial government on the island of Mauritius until 1965, when the United Kingdom purchased them from the self-governing government of Mauritius for £3 million, and declared them to be a separate British Overseas Territory.\* [43] The BIOT administration was moved to Seychelles following the independence of Mauritius in 1968 until the independence of Seychelles in 1976,\* [12] and to a desk in the Foreign and Commonwealth Office in London since.\* [44]

### Military administration

UK represents the territory internationally. A local government as normally envisioned does not exist.\* [45] Rather, the administration is represented in the territory by the officer commanding British Forces on Diego Garcia, the “Brit rep”. Laws and regulations are promulgated by the commissioner and enforced in the BIOT by Brit rep.

Of major concern to the BIOT administration is the relationship with the United States military forces resident on Diego Garcia. An annual meeting called “The Pol-Mil Talks” (for “political-military”) of all concerned is held at the Foreign and Commonwealth Office in London to resolve pertinent issues. These resolutions are formalized by an “Exchange of Notes”, or, since 2001, an “Exchange of Letters”.\* [24]

Neither the US nor the UK recognises Diego Garcia as being subject to the African Nuclear Weapons

Free Zone Treaty, which lists BIOT as covered by the treaty.\* [46] [47] It is not publicly known whether nuclear weapons have ever been stored on the island.\* [48]

### Transnational political issues

There are two transnational political issues which affect Diego Garcia and the BIOT, through the British government.

- First, the island nation of Mauritius claims the Chagos Archipelago (which is coterminous with the BIOT), including Diego Garcia. A subsidiary issue is the Mauritian opposition to the UK Government's declaration of 1 April 2010 that the BIOT is a marine protected area with fishing and extractive industry (including oil and gas exploration) prohibited.\* [49]
- Second, the issue of compensation and repatriation of the former inhabitants, exiled since 1973, continues in litigation and as of August 2010 had been submitted to the European Court of Human Rights by a group of former residents.\* [50] Some groups allege that Diego Garcia and its territorial waters out to 3 nautical miles (6 km) have been restricted from public access without permission of the BIOT Government since 1971.

### Prison site allegations

In 2015, U.S. Secretary of State Colin Powell's former chief of staff, Lawrence Wilkerson, said Diego Garcia was used by the CIA for “nefarious activities”. He said that he had heard from three U.S. intelligence sources that Diego Garcia was used as “a transit site where people were temporarily housed, let us say, and interrogated from time to time” and that “What I heard was more along the lines of using it as a transit location when perhaps other places were full or other places were deemed too dangerous or insecure, or unavailable at the moment”.\* [51] [52]

In June 2004, the British Foreign Secretary Jack Straw stated that United States authorities had repeatedly assured him that no detainees had passed in transit through Diego Garcia or were disembarked there.\* [53]

Diego Garcia was first rumoured to have been one of the locations of the CIA's black sites in 2005.\* [54] Khalid Sheikh Mohammed is one of the “high-value detainees” suspected to have been held in Diego Garcia.\* [55] In October 2007, the Foreign Affairs Select Committee of the British Parliament announced that it would launch an investigation of continued allegations of a prison camp on Diego Garcia, which it claimed were twice confirmed by comments made by retired United States Army General Barry McCaffrey.\* [56] On 31 July 2008, an unnamed

former White House official alleged that the United States had imprisoned and interrogated at least one suspect on Diego Garcia during 2002 and possibly 2003.\*[57]

Manfred Nowak, one of five of the United Nations Special Rapporteur on torture, says that credible evidence exists supporting allegations that ships serving as black sites have used Diego Garcia as a base.\*[58] The human rights group Reprieve alleges that United States-operated ships moored outside the territorial waters of Diego Garcia were used to incarcerate and torture detainees.\*[59]

On December 9, 2014, the United States Senate Intelligence Committee published a 600-page unclassified summary of its 6,700 page secret report on the CIA's abuse of its secret prisoners.\*[60] David Jones, writing in *The Daily Mail*, expressed surprise that Diego Garcia went entirely unmentioned on every page of the unclassified summary, and speculated that pressure from UK security agencies caused the portions of the report that covered CIA prisoner facilities on the island to remain classified.

### Rendition flight refuelling admission

Several groups claim that the military base on Diego Garcia has been used by the United States government for transport of prisoners involved in the controversial extraordinary rendition program, an allegation formally reported to the Council of Europe in June 2007.\*[61] On 21 February 2008, British Foreign Secretary David Miliband admitted that two United States extraordinary rendition flights refuelled on Diego Garcia in 2002. No reference was made to whether prisoners were on board the aircraft at the time.\*[62]

### WikiLeaks CableGate disclosures (2010)

According to Wikileaks CableGate documents (reference ID "09LONDON1156"), in a calculated move planned in 2009, the UK proposed that the BIOT become a "marine reserve" with the aim of preventing the former inhabitants from returning to their lands. A summary of the diplomatic cable is as follows:\*[63]

HMG would like to establish a "marine park" or "reserve" providing comprehensive environmental protection to the reefs and waters of the British Indian Ocean Territory (BIOT), a senior Foreign and Commonwealth Office (FCO) official informed Polcouns on May 12. The official insisted that the establishment of a marine park—the world's largest—would in no way impinge on USG use of the BIOT, including Diego Garcia, for military purposes. He agreed that the UK and United States should carefully negotiate the details of the marine reserve to assure that United States

interests were safeguarded and the strategic value of BIOT was upheld. He said that the BIOT's former inhabitants would find it difficult, if not impossible, to pursue their claim for resettlement on the islands if the entire Chagos Archipelago were a marine reserve.

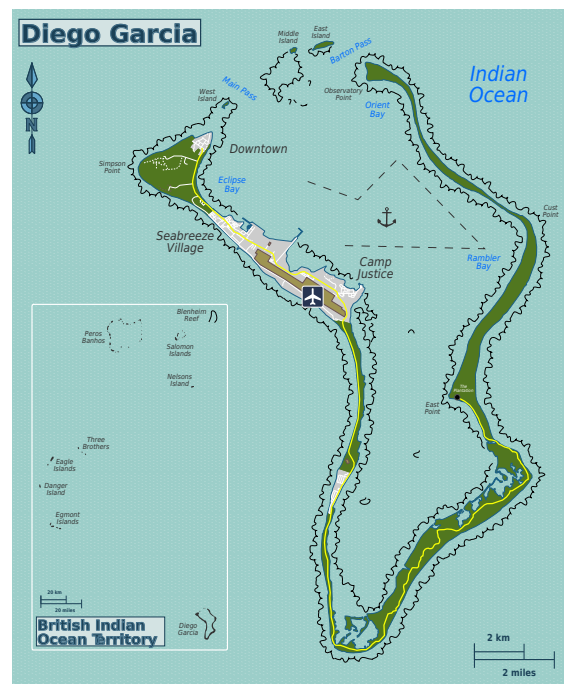
Additionally, Diego Garcia was used as a storage section for U.S. cluster bombs as a way of avoiding UK parliamentary oversight.\*[64]

### 3.5.4 Natural history

There are no endemic species of plants, birds, amphibians, reptiles, mollusks, crustaceans, or mammals on Diego Garcia or in the surrounding waters. There are several endemic fish and aquatic invertebrates. All plants, wildlife, and aquatic species are protected to one degree or another. In addition, much of the lagoon waters are protected wetlands as a designated Ramsar site, and large parts of the island are nature preserves.\*[65]

In 2004, the UK applied for, and received, Ramsar Site wetlands conservation status for the lagoon and other waters of Diego Garcia.\*[66]

### Geography



*A location map of Diego Garcia*

Diego Garcia is the largest land mass in the Chagos Archipelago (which includes Peros Banhos, the Salomon Islands, the Three Brothers, the Egmont Islands and the Great Chagos Bank), being an atoll occupying approximately 174 square kilometres (67 sq mi), of which 27.19

square kilometres (10 sq mi) is dry land.\* [67] The continuous portion of the atoll rim stretches 64 kilometres (40 mi) from one end to the other, enclosing a lagoon 21 kilometres (13 mi) long and up to 11 kilometres (7 mi) wide, with a 6-kilometre (4 mi) pass opening at the north. There are three small islands located in the pass.\* [68]

The island consists of the largest continuous dryland rim of all atolls in the world. The dryland rim varies in width from a few hundred metres to 2.4 km. Typical of coral atolls, it has a maximum elevation on some dunes on the ocean side of the rim of nine metres (30 ft) above mean low water. The rim nearly encloses a lagoon about 19 kilometres (12 mi) long and up to 8 kilometres (5.0 mi) wide. The atoll forms a nearly complete rim of land around a lagoon, enclosing 90 percent of its perimeter, with an opening only in the north. The main island is the largest of about 60 islands which form the Chagos Archipelago. Besides the main island, there are three small islets at the mouth of the lagoon: *West Island* (3.4 hectares; 8.4 acres); *Middle Island* (6 hectares; 15 acres); and *East Island* (11.75 hectares; 29.0 acres). A fourth island, *Anniversary Island* one km (1,100 yards) southwest of Middle Island, appears as just a sand bar on satellite images. Both Middle Island and Anniversary Island are part of the *Spur Reef* complex.\* [68]

The total area of the atoll is approximately 170 square kilometres (65.6 sq mi). The lagoon area is approximately 120 square kilometres (46.3 sq mi) with depths ranging down to about 25 m (82 ft). The total land area (excluding peripheral reefs) is approximately 30 square kilometres (12 sq mi). The coral reef surrounding the seaward side of the atoll is generally broad, flat, and shallow at about 1 m (3.3 ft) below mean sea level in most locations and varying from 100 to 200 m (330 to 660 ft) in width. This fringing seaward reef shelf comprises an area of approximately 35.2 square kilometres (14 sq mi). At the outer edge of the reef shelf, the bottom slopes very steeply into deep water, at some locations dropping to more than 450 metres (1,500 ft) within 1 km (0.62 mi) of the shore.\* [68]

In the lagoon, numerous coral heads present hazards to navigation. The shallow reef shelf surrounding the island on the ocean side offers no ocean-side anchorage. The channel and anchorage areas in the northern half of the lagoon are dredged, along with the pre-1971 ship turning basin. Significant salt-water wetlands called *barachois* exist in the southern half of the lagoon. These are small lagoons off of the main lagoon, filled with seawater at high tide and dry at low tide. Scientific expeditions in 1996 and 2006 described the lagoon and surrounding waters of Diego Garcia, along with the rest of the Chagos Archipelago, as “exceptionally unpolluted” and “pristine”.\* [69]

Diego Garcia is frequently subject to earthquakes caused by tectonic plate movement along the *Carlsberg Ridge* located just to the west of the island. One was recorded

in 1812; one measuring 7.6 on the Richter Scale hit on November 30, 1983, at 21:46 local time and lasted 142 seconds, resulting in a small tsunami which raised wave height in the lagoon to 1.5 metres (4.9 feet), and another on December 2, 2002, an earthquake measuring 4.6 on the Richter Scale struck the island at 12:21 a.m.\* [70]

In December 2004, a tsunami generated near Indonesia caused minor shoreline erosion on Barton Point (the northeast point of the atoll of Diego Garcia).\* [71]

### Oceanography

Diego Garcia lies within the influence of the South Equatorial current year-round. The surface currents of the Indian Ocean also have a monsoonal regime associated with the Asian Monsoonal wind regime. Sea surface temperatures are in the range of 80–84 °F (27–29 °C) year-round.\* [72]

### Fresh water supply

Diego Garcia is the above-water rim of a coral atoll composed of Holocene coral rubble and sand to the depth of about 36 metres (118 feet), overlaying Pleistocene limestone deposited at the then-sea level on top of a seamount rising approximately 1,800 metres (5,900 feet) from the floor of the Indian Ocean. The Holocene sediments are porous and completely saturated with sea water. Any rain falling on the above-water rim quickly percolates through the surface sand and encounters the salt water underneath. Diego Garcia is of sufficient width to minimise tidal fluctuations in the aquifer, and the rainfall (in excess of 102.5 inches/260 cm per year on average)\* [73] is sufficient in amount and periodicity for the fresh water to form a series of convex, fresh-water, Ghyben-Herzberg lenses floating on the heavier salt water in the saturated sediments.\* [74]\* [75]

The horizontal structure of each lens is influenced by variations in the type and porosity of the sub-surface deposits, which on Diego Garcia are minor. At depth, the lens is globular; near the surface it generally conforms to the shape of the island.\* [76] When a Ghyben-Herzberg lens is fully formed, its floating nature will push a freshwater head above mean sea level, and if the island is wide enough, the depth of the lens below mean sea level will be 40 times the height of the water table above sea level. On Diego Garcia this equates to a maximum depth of 20 metres. However, the actual size and depth of each lens is dependent on the width and shape of the island at that point, the permeability of the aquifer, and the equilibrium between recharging rainfall and losses to evaporation to the atmosphere, transpiration by plants, tidal advection, and human use.

In the plantation period, shallow wells, supplemented by rainwater collected in cisterns, provided sufficient water for the pastoral life style of the small population. On

Diego Garcia today, the military base uses over 100 shallow “horizontal” wells to produce over 560,000 liters per day from the “Cantonment” lens on the northwest arm of the island—sufficient water for western-style usage for a population of 3,500. It is estimated that this 3.7 km<sup>2</sup> lens holds 19 million m<sup>3</sup> of fresh water and has an average daily recharge from rainfall of over 10,000 m<sup>3</sup>, of which 40% remains in the lens and 60% is lost through evapotranspiration.\* [77]

Extracting fresh water from a lens for human consumption requires careful calculation of the sustainable yield of the lens by season because each lens is susceptible to corruption by salt-water intrusion caused by overuse or drought. In addition, overwash by tsunamis and tropical storms has corrupted lenses in the Maldives and several Pacific islands. Vertical wells can cause salt upconing into the lens, and over-extraction will reduce fresh water pressure resulting in lateral intrusion by seawater. Because the porosity of the surface soil results in virtually zero runoff, lenses are easily polluted by fecal waste, burials, and chemical spills. Corruption of a lens can take years to “flush out” and reform, depending on the ratio of recharge to losses.\* [74]

There are a few natural depressions on the atoll rim that capture the abundant rainfall to form areas of fresh-water wetlands.\* [78] Two are of significance to island wildlife and to recharge their respective fresh-water lenses. One of these is centered on the northwest point of the atoll, another is found near the Point Marianne Cemetery on the southeast end of the airfield. Other, smaller freshwater wetlands are found along the east side of the runway, and in the vicinity of the receiver antenna field on the northwest arm of the atoll.\* [79]

There are also several man-made fresh-water ponds resulting from excavations made during construction of the airfield and road on the western half of the atoll rim. These fill from rainfall and from extending into the Ghyben-Herzberg lenses found on this island.\* [80]

### Climate



*Eclipse Point*

All precipitation falls as rain, characterised by air-mass type showers. Annual rainfall averages 2,213 millimetres (87.1 in), with the heaviest precipitation from May to December. February is the driest month with 18 millimetres (0.71 in) of rain, and August the wettest month, averaging 298 millimetres (11.7 in) of rain.\* [81]

The surrounding sea surface temperature is the primary climatic control and temperatures are generally uniform throughout the year, with an average maximum of 30 °C (86 °F) by day during March and April, and 29 °C (84 °F) in July through September. Diurnal variation is approximately 3–4 °C (5.4–7.2 °F), falling to the low 27 °C (81 °F) by night.\* [81] Humidity is high throughout the year. The almost constant breeze keeps conditions reasonably comfortable.

From December through March, winds are generally westerly at approximately 6 knots (11 km/h). During April and May, winds are light and variable, ultimately backing to an east-southeasterly direction. From June through September, the influence of the Southeast trades is felt, with speeds of 10–15 knots. During October and November, winds again go through a period of light and variable conditions veering to a westerly direction with the onset of summer in the Southern Hemisphere.\* [81]

Thunderstorm activity is generally noticed during the afternoon and evenings during the summer months (December through March) and when the Intertropical Convergence Zone is in the vicinity of the island.\* [81]

Diego Garcia is at minimum risk from tropical cyclones due to its proximity to the equator where the coriolis parameter required to organize circulation of the upper atmosphere is minimal. Low-intensity storms have hit the island, including one in 1901, which blew over 1,500 coconut trees;\* [82] one on September 16, 1944,\* [83] which caused the wreck of a Royal Air Force PBY Catalina; one in September 1990 which demolished the tent city then being constructed for United States Air Force bomber crews during Operation Desert Storm;\* [70] and one on July 22, 2007, when winds exceeded 60 knots (110 km/h) and over 250 millimetres (9.8 in) of rain fell in 24 hours.\* [70]



*Sunset at Cannon Point*

The island was somewhat affected by the tsunami caused by the 2004 Indian Ocean earthquake. Service personnel on the western arm of the island reported only a minor increase in wave activity. The island was protected to a large degree by its favourable ocean topography. About 80 km (50 mi) east of the atoll lies the 650 km (400-mile) long Chagos Trench, an underwater canyon plunging more than 4,900 m (16,100 ft). The depth of the trench and its grade to the atoll's slope and shelf shore makes it more difficult for substantial tsunami waves to build before passing the atoll from the east. In addition, near shore coral reefs and an algal platform may have dissipated much of the waves' impact.\*[84]\*[85] A biological survey conducted in early 2005 indicated erosional effects of the tsunami wave on Diego Garcia and other islands of the Chagos Archipelago. One 200-to-300-metre (220 to 330 yd) stretch of shoreline was found to have been breached by the tsunami wave, representing approximately 10 percent of the eastern arm. A biological survey by the Chagos Conservation Trust reported that the resulting inundation additionally washed away shoreline shrubs and small to medium-size coconut palms.\*[85]

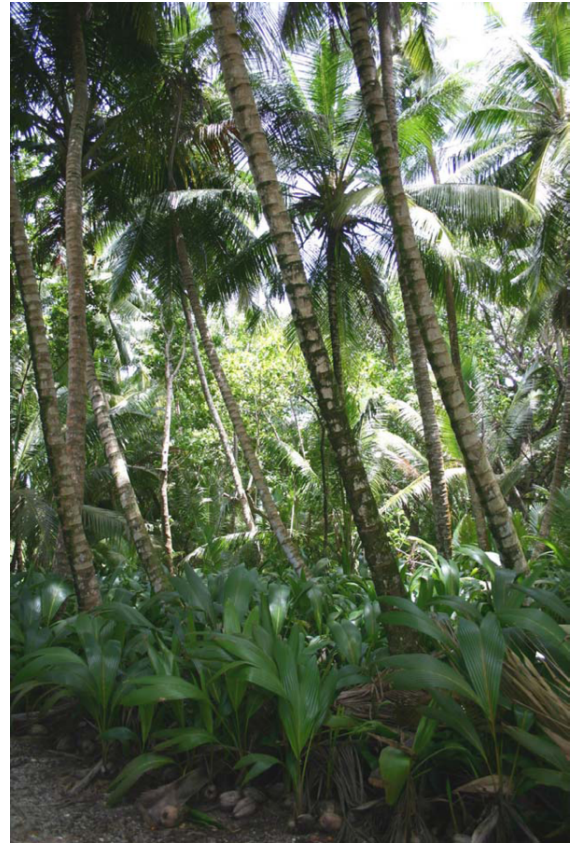
### Vegetation



*A mixed-species freshwater wetland on Diego Garcia*

The first botanical observations of the island were made by Hume in 1883, when the coconut plantations had been in operation for a full century. Subsequent studies and collections during the plantation era were made in 1885, 1905, 1939, and 1967.\*[88] Thus, very little of the nature of the pre-contact vegetation is known.

The 1967 survey, published by the Smithsonian\*[89] is used as the most authoritative baseline for more recent research. These studies indicate the vegetation of the island may be changing rapidly. For example, J. M. W. Topp collected data annually between 1993 and 2003 and found that on the average three new plant species arrived each year, mainly on Diego Garcia. His research added fully a third more species to Stoddart.\*[90] Topp and Martin Hamilton of Kew Gardens compiled the most recent checklist of vegetation in 2009, which can be found at this footnote.\*[91]



*An impenetrable forest of coconuts on Diego Garcia*

In 1967, Stoddart described the land area of Diego Garcia as having a littoral hedge of *Scaevola taccada*, while inland, *Cocos nucifera* (coconut) was the most dominant tree, covering most of the island. The substory was either managed and park-like, with understory less than 0.5 metres in height, or consisted of what he called “Cocos Bon-Dieu” – an intermediate story of juvenile trees and a luxuriant ground layer of self-sown seedlings – causing those areas to be relatively impenetrable.\*[92]

There are also areas of remnant tropical hardwood forest at the sites of the plantation-era villages, as well as *Casuarina equisetifolia* (iron wood pines) woodlands.\*[78]

In 1997, the United States Navy contracted a vegetation survey that identified about 280 species of terrestrial vascular plants on Diego Garcia.\*[93] None of these was endemic, and another survey in 2005 identified just 36 species as “native”, meaning arriving without the assistance of humans, and found elsewhere in the world.\*[94] No terrestrial plant species are of any conservation-related concern at present.\*[95]

Of the 36 native vascular plants on Diego Garcia, there are 12 trees, five shrubs, seven dicotyledon herbs, three grasses, four vines, and five ferns.\*[96]

The 12 tree species are: *Barringtonia asiatica* (fish-poison tree), *Calophyllum inophyllum* (Alexandrian lau-



A *Hernandia*-dominated forest on Diego Garcia

rel), *Cocos nucifera*, *Cordia subcordata*, *Guettarda speciosa*, *Intsia bijuga*, *Hernandia sonora*, *Morinda citrifolia*, *Neisosperma oppositifolium*,\* [97] *Pisonia grandis*, *Terminalia catappa*, and *Heliotropium foertherianum*. Another three tree species are common, and may be native, but they may also have been introduced by humans: *Casuarina equisetifolia*, *Hibiscus tiliaceus*, and *Pipturus argenteus*.

The five native shrubs are: *Caesalpinia bonduc*, *Pemphis acidula*, *Premna serratifolia*, *Scaevola taccada* (often mispronounced “Scaveola” ), and *Suriana maritima*.



A *Premna*-dominated scrub land on Diego Garcia

There are also 134 species of plants classified as “weedy” or “naturalised alien species” , being those unintentionally introduced by man, or intentionally introduced as ornamentals or crop plants which have now “gone native” , including 32 new species recorded since 1995, indicating a very rapid rate of introduction.\* [98] The remainder of the species list consists of cultivated food or ornamental species, grown in restricted environments such as a planter's pot.\* [99]

In 2004, there were ten recognised plant communities on the atoll rim.\* [68]

1. *Calophyllum* Forest, dominated by *Calophyllum inophyllum*, with trunks that can grow in excess of 2 metres in diameter. This forest often contains other species such as *Hernandia sonora*, *Cocos nucifera*



A freshwater marsh composed entirely of cattails located on the eastern edge of the bomber ramp on Diego Garcia



A typical oceanside littoral hedge with *Casuarina fringe*

and *Guettarda speciosa* with a *Premna obtusifolia* edge. When found on the beaches, *Calophyllum* often extends over the lagoon water and supports nesting red-footed boobies, as does *Barringtonia asiatica*. Found mostly on the eastern arm of the atoll.

2. Cocos Forest, essentially monotypic ( “Cocos bon Dieu” ), with the understory consisting of Cocos seedlings.
3. Cocos-Hernandia Forest, dominated by two canopy species—*Cocos nucifera* and *Hernandia sonora*.
4. Cocos-Guettarda Forest, dominated by the canopy

species *Cocos nucifera* and *Guettarda speciosa*. The understory consists of a mix of *Neisosperma oppositifolium*, with *Scaevola taccada* and *Tournefortia argentea* on the beach edge.

5. Hernandia Forest, dominated at the canopy level by *Hernandia sonora*. The most representative areas of this forest type are on the eastern, undeveloped part of the atoll. *Calophyllum inophyllum* and *Cocos nucifera* are often present. Understory species in this forest are often *Morinda citrifolia*, *Cocos* seedlings and *Asplenium nidus* (bird's nest fern), and occasionally, *Neisosperma oppositifolium* and *Guettarda speciosa*.
6. Premna shrubland, occurring generally between marshy areas and forested areas. The most conspicuous vegetation is primarily *Premna obtusifolia*, with *Casuarina equisetifolia* and *Scaevola taccada* on the margins. The dense groundcover consists of species such as *Fimbristylis cymosa*, *Ipomoea pes-caprae* (beach morning glory) and *Triumfetta procumbens*. Premna shrubland appears mostly adjacent to the developed areas of the atoll, particularly in the well fields.
7. Littoral Scrub lines almost the entire seashore and lagoon shore of the island. It is dominated by *Scaevola taccada*, but it also contains scattered coconut trees, *Guettarda speciosa* and *Pisonia grandis*. On the seaward side, it also contains *Tournefortia argentea* and *Suriana maritima*. On the lagoon side, it may also contain *Lepturus repens*, *Triumfetta procumbens* and *Cyperus ligularis*. There are also large pockets of *Barringtonia asiatica* on the eastern edge of the lagoon.
8. Maintained areas of grass and sedges routinely mowed. Aerial photographs of the island clearly display large areas of grasslands and park-like savanna upon which the United States military has constructed large outdoor facilities such as antenna fields and the airport.\*[100]
9. Mixed Native Forest, with no dominant canopy species.
10. Marshes divided into three different types: cattail (*Typha domingensis*), wetland, and mixed species. Cattail marshes contained almost entirely cattails. These areas are often man-made reservoirs or drainages that have been almost entirely monotypic. Wetlands were based upon vegetation that occurred in the area with fresh water. Mixed species marshes were highly variable and usually had no standing water.

### Wildlife

All the terrestrial and aquatic fauna of Diego Garcia are protected, with the exception of certain game fish, rats



Coconut crabs are protected on Diego Garcia.

and cats; hefty fines are levied against violators.\*[101]

**Crustaceans** The island is a haven for several types of crustacean; “warrior crabs” (*Cardisoma carnifex*) overrun the jungle at night. The extremely large 4-kilogram (8.8 lb) coconut crab or robber crab (*Birgus latro*) is found here in large numbers. Because of the protections provided the species on this atoll, and the isolation of the east rim of the atoll, the species is recorded in greater densities there than anywhere else in its range (339 crabs/ha).\*[102]

**Mammals** There are no native mammal species on Diego Garcia, and no record of bats.\*[103] Other than rats (*Rattus rattus*), all “wild” mammal species are feral descendants of domesticated species. During the plantation era, Diego Garcia was home to large herds of Sicilian donkeys (*Equus asinus*), dozens of horses (*Equus caballus*), hundreds of dogs (*Canis familiaris*) and house cats (*Felis catus*). In 1971, the BIOT Commissioner ordered the extermination of feral dogs following the departure of the last plantation workers, and the program continued through 1975, when the last feral dog was observed and shot.\*[104] Donkeys, which numbered over 400 in 1972, were down to just 20 individuals in 2005.\*[105] The last horse was observed in 1995,\*[105] and by 2005, just two cats were thought to have survived an island-wide eradication program.

**Native birds** The total bird list for the Chagos Archipelago, including Diego Garcia, consists of 91 species, with large breeding populations of 16 species. Although there are no endemic birds, there are internationally important seabird colonies. Diego Garcia's seabird community includes thriving populations of species which are rapidly declining in other parts of the Indian Ocean. Large nesting colonies of brown noddies (*Anous stolidus*), bridled terns (*Sterna anaethetus*), the lesser noddy (*Anous tenuirostris*), red-footed booby



Several pairs of red-tailed tropicbird nest near the cantonment area.

(*Sula sula*) and lesser frigate Birds (*Fregata ariel*), exist on Diego Garcia. Other nesting native birds include red-tailed tropicbirds (*Phaethon rubricauda*), wedgetailed shearwaters (*Puffinus pacificus*), Audubon's shearwater (*Puffinus iherminieri*), black-naped terns (*Sterna sumatrana*), white (or fairy) terns (*Gygis alba*), striated herons (*Butorides striatus*), and white-breasted waterhens (*Amaurornis phoenicurus*).<sup>[106]</sup> The 680-hectare Barton Point Nature Reserve was identified as an Important Bird Area for its large breeding colony of red-footed boobies.<sup>[107]</sup>

**Introduced birds** The island hosts introduced bird species from many regions, including cattle egrets (*Bubulcus ibis*), Indian barred ground dove, also called the zebra dove (*Geopelia striata*), turtle dove (*Nesoenas picturata*), Indian mynah (*Acridotheres tristis*), Madagascar fody (*Foudia madagascariensis*), and chickens (*Gallus gallus*).<sup>[108]</sup>

#### Terrestrial reptiles and fresh water amphibians

There are currently three lizards and one toad known to inhabit Diego Garcia, and possibly one snake. All are believed to have been introduced by human activity. The house gecko (*Hemidactylus frenatus*), the mourning gecko (*Lepidodactylus lugubris*), the garden lizard (an agamid) (*Calotes versicolor*) and the cane toad (*Bufo marinus*).<sup>[109]</sup> There may also be a viable population of a type of blind snake from the family Typhlopidae, probably the brahminy blind snake (*Ramphotyphlops braminus*). This snake feeds on the larvae, eggs and pupae of ants and termites, and is about the size of a large earthworm.

**Sea turtles** Diego Garcia provides suitable foraging and nesting habitat for both the hawksbill turtle (*Eretmochelys imbricata*) and the green turtle (*Chelonia mydas*). Juvenile hawksbills are quite common in the lagoon and at Barachois Sylvane (also known as Turtle Cove) in the southern part of the lagoon. Adult hawksbills and greens are common in the surrounding seas and nest regularly on the ocean-side beaches of the atoll. Hawksbills have been observed nesting during June and July, and from November to March. Greens are have been observed nesting in every month; the average female lays three clutches per season, each having an average clutch size of 113 eggs. Diurnal nesting is common in both species. It is estimated that 300–700 hawksbills and 400–800 greens nest in the Chagos.<sup>[110]</sup>

**Endangered species** There are four reptiles and six cetaceans that are endangered and may or may not be found on or around Diego Garcia.<sup>[111]</sup> Hawksbill turtle (*Eretmochelys imbricata*) – **known**; leatherback turtle (*Dermodochelys coriacea*) – **possible**; green turtle (*Chelonia mydas*) – **known**; olive ridley turtle (*Lepidochelys oliveacea*) – **possible**; sperm whale (*Physeter macrocephalus*) – **possible**; sei whale (*Balaeonoptera borealis*) – **possible**; finback whale (*Balaeonoptera physalus*) – **possible**; Bryde's whale (*Balaeonoptera edeni*) – **possible**; blue whale (*Balaeonoptera musculus*) – **possible**; humpback whale (*Megaptera novaeangliae*) – **possible**.

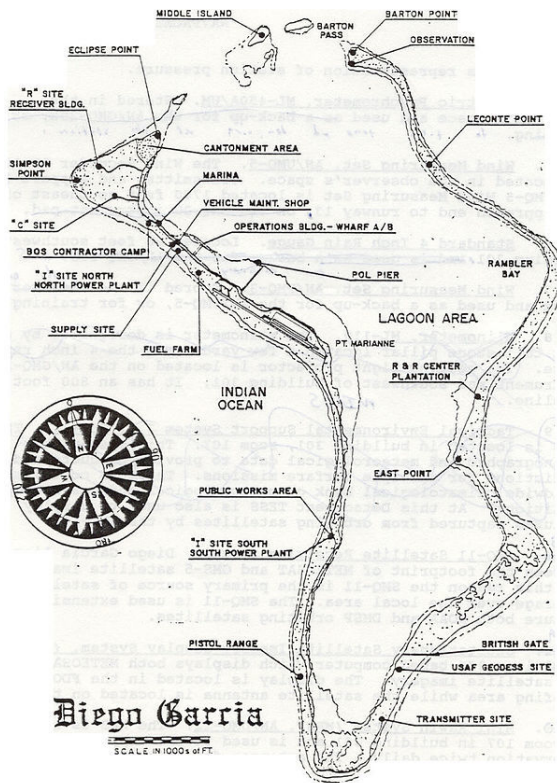
### 3.5.5 United States military activities

During the Cold War era, following the British withdrawal from East of Suez, the United States was keen to establish a military base in the Indian Ocean to counter Soviet influence in the region and protect the searoutes for oil transportation from the Middle East. The United States saw the atoll as the “Malta of the Indian Ocean” equidistant from all points.<sup>[112]</sup> The value has been proven many times, with the island providing a “unsinkable aircraft carrier” for the United States during the Iranian revolution, the Iraqi invasion of Kuwait, Operation Enduring Freedom, and Operation Iraqi Freedom. In the contemporary era, the atoll continues to play a key role in America’s approach to the Indian Ocean as a flexible forward hub that can facilitate a range of regional strategies.<sup>[113]</sup><sup>[114]</sup>

The United States military facilities on Diego Garcia have been known informally as Camp Justice<sup>[115]</sup><sup>[116]</sup><sup>[117]</sup> and, after renaming in July 2006, as Camp Thunder Cove.<sup>[118]</sup> Formally, the base is known as Naval Support Facility Diego Garcia (the U.S. activity) or Permanent Joint Operating Base (PJOB) Diego Garcia (the UK's term).<sup>[119]</sup>

United States military activities in Diego Garcia have caused friction between India and the United States in





A map of military installations on Diego Garcia in 2002

the past.\* [120] Various political parties in India repeatedly called for the military base to be dismantled, as they saw the United States naval presence in Diego Garcia as a hindrance to peace in the Indian Ocean.\* [121] In recent years, relations between India and the United States have improved dramatically. Diego Garcia was the site of several naval exercises between the United States and Indian navies held between 2001 and 2004.\* [122]\* [123]

### Naval Support Facility Diego Garcia



B-1B Lancer bombers on Diego Garcia in November 2001 during the Afghanistan bombing campaign

Naval Support Facility Diego Garcia provides Base Operating Services to tenant commands located on the island.

The command's mission is "To provide logistic support to operational forces forward deployed to the Indian Ocean and Persian Gulf AORs in support of national policy objectives." \* [124]

### United States Air Force units based on Diego Garcia

- 36 MSG, Pacific Air Force
- Det 1, 715th AMOG, Air Mobility Command
- AFSPC Det 2, 22nd Space Operations Squadron, a GPS control facility, Air Force Space Command
- AFSPC Det 2, 18th Space Surveillance Squadron a GEODSS facility, Air Force Space Command

### United States pre-positioned vessels



Camp Justice on Diego Garcia

The atoll shelters the ships of the United States Marine Pre-positioning Squadron Two. These ships carry equipment and supplies to support a major armed force with tanks, armored personnel carriers, munitions, fuel, spare parts and even a mobile field hospital. This equipment was used during the Persian Gulf War, when the squadron transported equipment to Saudi Arabia.

The ship composition of MPSRON TWO is dynamic. During August 2010 it was composed of the following:

- MV Capt. Steven L. Bennett (T-AK-4296)

- *USNS SGT William R. Button (T-AK-3012)*,\*[125]
- *MV SSG Edward A. Carter, Jr. (T-AK-4544)*,\*[126]
- *MV Maj. Bernard F. Fisher (T-AK-4396)*
- *USNS Lawrence H. Gianella (T-AOT-1125)*
- *USNS SGT Matej Kocak (T-AK-3005)*,\*[127]
- *USNS 1st LT Baldomero Lopez (T-AK-3010)*,\*[128]
- *MV LTC John U. D. Page*\*[129]
- *USNS GYSGT Fred W. Stockham (T-AK-3017)*

Five of these vessels carry supplies for the US Marine Corps sufficient to support a Marine Air-Ground Task Force for 30 days: USNS *Button*, USNS *Kocak*, USNS *Lopez*, USNS *Stockham*, and USNS *Fisher*.

Prior to 2001, COMPSRON 2 consisted of up to 20 ships, including four Combat Force Ships which provided rapid-response delivery of equipment to ground troops in the United States Army. Three are Lighter aboard ships (LASH) which carry barges called Lighters that contain Army ammunition to be ferried ashore: *MV American Cormorant*, *SS Green Harbour*, (LASH), *SS Green Valley*, (LASH), *MV Jeb Stuart*, (LASH). There were Logistics Vessels to service the rapid delivery requirements of the United States Air Force, United States Navy and Defense Logistics Agency. These included container ships for Air Force munitions, missiles and spare parts; a 500-bed hospital ship, and floating storage and offloading units assigned to Military Sealift Command supporting the Defense Logistics Agency, and an offshore petroleum discharge system (OPDS) tanker. Examples of ships are *MV Buffalo Soldier*, *MV Green Ridge*, pre-position tanker USNS *Henry J. Kaiser*, and tanker USNS *Potomac* (T-AO-181).

#### HF global station

Main article: High Frequency Global Communications System

The United States Air Force operates a High Frequency Global Communications System transceiver site located on the south end of the atoll near the GEODSS station. The transceiver is operated remotely from Joint Base Andrews and locally maintained by NCTS FE personnel.

#### Naval Computer and Telecommunications Station Far East Detachment Diego Garcia

Naval Computer and Telecommunications Station Far East Detachment Diego Garcia operates a detachment in Diego Garcia. This detachment provides base telephone communications, provides base network services

(Local Network Services Center), pier connectivity services, an AN/GSC-39C SHF satellite terminal, operates the Hydroacoustic Data Acquisition System, and performs on-site maintenance for the remotely operated Air Force HF-GCS terminal.

#### Naval Security Group Detachment Diego Garcia

Naval Security Group detachment Diego Garcia was disestablished on September 30, 2005.\*[130] Remaining essential operations were transferred to a contractor. The large AN/AX-16 High Frequency Radio direction finding Circularly Disposed Antenna Array has been demolished, but the four satellite antenna radomes around the site remain as of 2010.

#### 3.5.6 ETOPS emergency landing site

Diego Garcia may be identified as an ETOPS (Extended Range Twin Engine Operations) emergency landing site (en route alternate) for flight planning purposes of commercial airliners. This allows twin-engine commercial aircraft (such as the Airbus A330, Boeing 767 or Boeing 777) to make theoretical nonstop flights between city pairs such as Perth and Dubai (9,013.61 km or 5,600.80 mi), Hong Kong and Johannesburg (10,658 km or 6,623 mi) or Singapore and São Paulo (15,985.41 km or 9,932.87 mi), all while maintaining a suitable diversion airport within 180 minutes' flying time with one engine inoperable.\*[131]

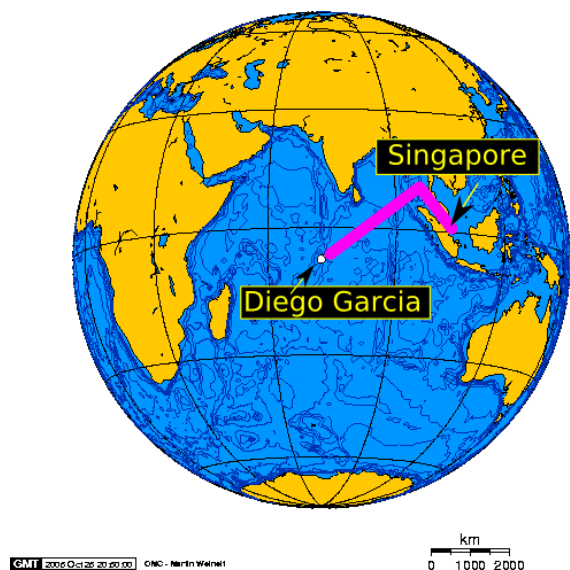
#### 3.5.7 Space Shuttle

The island was one of 33 emergency landing sites worldwide for the NASA Space Shuttle.\*[132] None of these facilities were ever used throughout the life of the shuttle program.

#### 3.5.8 Cargo service

All consumable food and equipment are brought to Diego Garcia by sea or air, and all non-biodegradable waste is shipped off the island as well. From 1971 to 1973, United States Navy LSTs provided this service. Beginning in 1973, civilian ships were contracted to provide these services. From 2004 to 2009, the U.S.-flagged container ship *MV Baffin Strait*, often referred to as the "DGAR shuttle," delivered 250 containers every month from Singapore to Diego Garcia.\*[133] The ship delivered more than 200,000 tons of cargo to the island each year."\*[133] On the return trip to Singapore, it carried recyclable metals.\*[134]

In 2004, TransAtlantic Lines outbid Sealift Incorporated for the transport contract between Singapore and Diego Garcia.\*[135] The route had previously been serviced



From 2004 to 2009, *MV Baffin Strait* transited between Singapore and Diego Garcia once a month.

by Sealift Inc.'s *MV Sagamore*, manned by members of American Maritime Officers and Seafarers' International Union.\*[135] TransAtlantic Lines reportedly won the contract by approximately 10 percent, representing a price difference of about US\$2.7 million.\*[135] The *Baffin Straits* charter ran from January 10, 2005, to September 30, 2008, at a daily rate of US\$12,550.

### 3.5.9 See also

- James Horsburgh
- Robert Moresby
- *Stealing a Nation*

### 3.5.10 References

- [1] "Country Profile: British Indian Ocean Territory (British Overseas Territory)". [fco.gov.uk](http://fco.gov.uk). 2012-04-12. Retrieved 2012-06-21.
- [2] World Wildlife Fund (2001). "Maldives-Lakshadweep-Chagos Archipelago tropical moist forests". *Wild-World Ecoregion Profile*. National Geographic Society. Archived from the original on 2010-03-08. Retrieved 2012-06-21.
- [3] "World Time Chart" (PDF). US Navy. Retrieved 2012-08-07.
- [4] Xavier Romero-Frias, *The Maldivian Islanders, A Study of the Popular Culture of an Ancient Ocean Kingdom*. Barcelona 1999, ISBN 84-7254-801-5. Chapter 1 "A Seafaring Nation", page 19
- [5] Josmael Bardour. "PORTUGAL MARÍTIMO: Abril 2011". [jmbd1945.blogspot.pt](http://jmbd1945.blogspot.pt).

- [6] "The Diego Garcia Test Question". [zianet.com](http://zianet.com).
- [7] "History of Diego Garcia Atoll, Indian Ocean". [zianet.com](http://zianet.com).
- [8] Informações históricas sobre São Paulo no século da sua fundação, Edith Porchat, Page 61
- [9] Edis (2004), p. 29.
- [10] Edis (2004), p. 32.
- [11] Edis (2004), p. 33.
- [12] Edis (2004), p. 80.
- [13] D. R. Stoddart (1971): "Settlement and development of Diego Garcia". In: Stoddart & Taylor (1971), pp. 209–218.
- [14] *Helmuth von Mucke 'The Emden'*. 1916. p. 130. Retrieved 2012-06-21.
- [15] Edis (2004), p. 73.
- [16] Edis (2004), p. 70.
- [17] Edis (2004), p. 82.
- [18] Sand (2009), p. 3.
- [19] "England and Wales High Court of Justice, Queens Bench Division Appendix, Paragraph 267–277". [hmcourts-service.gov.uk](http://hmcourts-service.gov.uk). 2011-04-01. Retrieved 2012-06-21.
- [20] Sand (2009), p. 72.
- [21] Sand (2009), pp. 6–8.
- [22] <http://www.washingtonpost.com/wp-dyn/content/article/2007/01/01/AR2007010100698.html>
- [23] Ted Morris. "Personal Accounts of Landing on Diego Garcia, 1971". [Zianet.com](http://Zianet.com). Retrieved 2012-06-21.
- [24] Sand (2009), p. 24.
- [25] Sand (2009), p. 25.
- [26] Edis (2004), p. 88.
- [27] Edis (2004), p. 90.
- [28] Owen Bowcott, Sam Jones (19 March 2015). "UN ruling raises hope of return for exiled Chagos islanders". *The Guardian*. Retrieved 29 March 2015.
- [29] "Chagos Marine Protected Area Arbitration (Mauritius v. United Kingdom) (Press Release and Summary of Award)". Permanent Court of Arbitration. 19 March 2015. Retrieved 29 March 2015.
- [30] "Slavery in the Chagos Archipelago" (PDF). Retrieved 2012-06-21.
- [31] African Research Group (2000). *Health & Mortality in the Chagos Islands* (PDF). Research and Analytical Papers. Foreign and Commonwealth Office. Retrieved September 27, 2011.
- [32] Edis (2004), pp. 49–54.

- [33] “England and Wales High Court of Justice, Queens Bench Division Appendix, Paragraph 396” . Hmcourts-service.gov.uk. 2011-04-01. Retrieved 2012-06-21.
- [34] “England and Wales High Court of Justice, Queens Bench Division Appendix, Paragraph 417” . Hmcourts-service.gov.uk. 2011-04-01. Retrieved 2012-06-21.
- [35] “Paragraph 629” . Uniset.ca. Retrieved 2012-06-21.
- [36] “European Union - EEAS (European External Action Service)”. *europa.eu*.
- [37] Owen Bowcott (September 27, 2010). “Chagos Islands exiles amazed by speed of Foreign Office's opposition to seabed claim by Maldives” . *The Guardian*. Retrieved September 27, 2011.
- [38] Ted A. Morris, Jr. “See email claims from John Bridiane” . Zianet.com. Retrieved 2012-06-21.
- [39] <http://gc.nautilus.org/Nautilus/australia/afghanistan/adf-in-afghanistan-history>
- [40] John Pike (2002-02-03). “Air Force looking into salvaging parts of B-1B bomber that crashed off” . *Globalsecurity.org*. Retrieved 2012-06-21.
- [41] David Vine, (2009) *Island of Shame: The Secret History of the U.S. Military Base on Diego Garcia*, Princeton: Princeton University Press. p. 6.
- [42] Sheppard & Spalding (2003), p. 28.
- [43] Edis (2004), p. 84.
- [44] Edis (2004), p. 89.
- [45] CIA World Factbook, accessed 23 August 2010.
- [46] “Nuclear-Weapon-Free Zones At a Glance” . Arms Control Association. Archived from the original on 9 August 2006. Retrieved 28 July 2006.
- [47] Sand, Peter H. (29 January 2009), “Diego Garcia: British–American Legal Black Hole in the Indian Ocean?”, *Journal of Environmental Law* (Oxford Journals) **21** (1): 113–137, doi:10.1093/jel/eqn034, retrieved 2009-08-18
- [48] Noel Stott (2011). “The Treaty of Pelindaba: towards the full implementation of the African NWFZ Treaty” (PDF). *Disarmament Forum* (United Nations Institute for Disarmament Research): 20–21. Retrieved 28 February 2015.
- [49] Mauritius to reiterate its conditions for renewed talks with UK on Chagos at [afriqueavenir.org](http://afriqueavenir.org)
- [50] Catherine Philp (March 6, 2010). “Chagossians fight for a home in paradise” . *The Sunday Times*. Retrieved August 23, 2010.
- [51] Ian Cobain (30 January 2015). “CIA interrogated suspects on Diego Garcia, says Colin Powell aide” . *The Guardian*. Retrieved 27 February 2015.
- [52] “Terror suspects were interrogated on Diego Garcia, US official admits” . *Daily Telegraph*. Press Association. 30 January 2015. Retrieved 27 February 2015.
- [53] “Written Answers to Questions 21 June 2004” (– \*Scholar search). *Hansard House of Commons Daily Debates* (UK Parliament) **422** (part 605). Retrieved 2008-02-21.
- [54] Lynda Hurst (July 2, 2005). “Island paradise or torture chamber?”. *The Toronto Star*. Retrieved October 14, 2007.
- [55] Andrew Selsky (March 16, 2006). “Detainee transcripts reveal more questions” . Associated Press. Retrieved October 14, 2007.
- [56] Ian Cobain; Richard Norton-Taylor (2007-10-19). “Claims of secret CIA jail for terror suspects on British island to be investigated” . *The Guardian* (London). Retrieved 2007-10-21.
- [57] Zagorin, Adam (2008-07-31). “Source: US Used UK Isle for Interrogations” . *Time*. Retrieved 2010-05-01.
- [58] Cobain, Ian; Richard Norton-Taylor (19 October 2007). “Claims of secret CIA jail for terror suspects on British island to be investigated” . *The Guardian*.
- [59] Jamie Doward (2008-03-02). “British island 'used by US for rendition'”. *The Observer* (London). Retrieved 2008-03-27.
- [60] David Jones (2014-12-20). “Is this speck in the Indian Ocean Britain's Guantanamo? Chilling questions raised over secretive island as more disturbing allegations emerge over UK's role in CIA torture” . *Daily Mail*. Archived from the original on 2014-12-20. Given the weight of evidence proving that Diego Garcia was —at the very least —a key staging post in the U.S. rendition and torture programme, it had been widely expected to feature in the dossier, thus exposing Britain’s involvement beyond doubt. That the island was not mentioned once in almost 500 heavily redacted pages has merely heightened suspicion of an MI6-orchestrated cover-up.
- [61] Dick Marty, Switzerland, ALDE (June 7, 2007). “Secret detentions and illegal transfers of detainees involving Council of Europe member states: second report” (PDF). Section 70; page 13. Committee on Legal Affairs and Human Rights. Retrieved February 21, 2008.
- [62] Staff writers (February 21, 2008). “UK apology over rendition flights” . *BBC News*. Retrieved February 21, 2008.
- [63] “WikiLeaks, a forgotten people, and the record-breaking marine reserve, Posted by Sean Carey – 8 December 2010” . *Newstatesman.com*. Retrieved 2012-06-21.
- [64] “Cable Viewer” . *Wikileaks.ch*. Retrieved 2012-06-21.
- [65] Sheppard & Spalding (2003), chapter 6.
- [66] “Information Sheet on Ramsar Wetlands: Chagos Banks” (PDF). United Kingdom Overseas Territories Conservation Forum. November 13, 2004. Retrieved September 27, 2011.
- [67] Natural Resources Management Plan (2005), paragraph 2.4.1.

- [68] Natural Resources Management Plan (2005), paragraph 2.5.1.
- [69] “Science of the Chagos – Chagos Conservation Trust” at the Wayback Machine (archived June 16, 2009)
- [70] “Important Dates of the Provisional People's Democratic Republic of Diego Garcia” . August 29, 2011. Retrieved September 27, 2011.
- [71] Chagos News, No. 25, p. 2
- [72] Local Area Forecaster's Handbook (2002), p. 13.
- [73] Natural Resources Management Plan (2005), paragraph 2.5.2.
- [74] “Salt Water vs. Fresh Water – Ghyben-Herzberg Lens” . Geography.about.com. 2012-04-09. Retrieved 2012-06-21.
- [75] Urish (1974), p. 27.
- [76] Urish (1974), p. 28.
- [77] Charles D. Hunt “Hydrogeology of Diego Garcia” . In: Vacher & Quinn (1997), pp. 909–929. doi:10.1016/S0070-4571(04)80054-2.
- [78] D. R. Stoddart (1971): “Land vegetation of Diego Garcia” . In: Stoddart & Taylor (1971), pp. 127–142.
- [79] Natural Resources Management Plan (2005), paragraph 3.3.2.1.
- [80] Stephen W. Surface and Edward F.C. Lau, “Fresh Water Supply System Developed on Diego Garcia” , The Naval Civil Engineer, Winter 1985
- [81] Local Area Forecaster's Handbook (2002), p. 14.
- [82] Edis (2004), p. 71.
- [83] Ted Morris (2002-09-19). “Diego Garcia – The PBY Catalina” . Zianet.com. Retrieved 2012-06-21.
- [84] “Diego Garcia Navy base reports no damage from quake, tsunamis” . Leo Shane III, *Stars and Stripes*. 28 December 2004. URL accessed 1 June 2006.
- [85] Sheppard, Charles (April 2005). “The Tsunami, Shore Erosion and Corals in the Chagos Islands” (PDF). *Chagos News* (Chagos Conservation Trust) **25**: 2–7. ISSN 1355-6746. Retrieved 2008-02-21.
- [86] “Average Conditions Maldives” . BBC Weather. May 2011. Retrieved December 10, 2009.
- [87] Climatological Information for Male, Maldives, accessed 24 April 2012.
- [88] Natural Resources Management Plan (2005), Appendix E1, p. 1.
- [89] Stoddart & Taylor (1971)
- [90] Topp (1988), p. 2.
- [91] Hamilton & Topp (2009)
- [92] F. R. Fosberg & A. A. Bullock (1971): “List of Diego Garcia vascular plants” . In: Stoddart & Taylor (1971), pp. 143–160.
- [93] Sheppard & Seaward (1999), p. 225.
- [94] Natural Resources Management Plan (2005), Appendix E2, paragraph E2-2.
- [95] Sheppard & Spalding (2003), p. 40.
- [96] Natural Resources Management Plan (2005), Appendix E1, p. 4-3.
- [97] “*Neisosperma oppositifolium* (Lam.) Fosberg & Sachet” . *Germplasm Resources Information Network*. United States Department of Agriculture. Retrieved September 27, 2011.
- [98] Natural Resources Management Plan (2005), Appendix E1, p. 4-5.
- [99] Natural Resources Management Plan (2005), Appendix E1, p. 4-6.
- [100] President for Life. “Aerial Photographs of Diego Garcia” . Zianet.com. Retrieved 2012-06-21.
- [101] Natural Resources Management Plan (2005), Appendix B.
- [102] Natural Resources Management Plan (2005), Appendix G, p. G-7.
- [103] D. R. Stoddart (1971): “Terrestrial fauna of Diego Garcia and other Chagos atolls” . In: Stoddart & Taylor (1971), pp. 163–170.
- [104] Bruner, Phillip, Avifaunal and Feral Mammal Survey of Diego Garcia, Chagos Archipelago, British Indian Ocean Territory, 17 October 1995, p. 3-23.
- [105] Natural Resources Management Plan (2005), Appendix G, p. 4.27.
- [106] Natural Resources Management Plan (2005), paragraph 4.2.2.1.1.
- [107] “Barton Point Nature Reserve” . *Important Bird Areas factsheet*. BirdLife International. 2012. Retrieved 2012-10-21.
- [108] Natural Resources Management Plan (2005), paragraph 4.2.2.1.3.
- [109] Natural Resources Management Plan (2005), paragraph 4.2.2.6.
- [110] Natural Resources Management Plan (2005), Appendix K, pp. K-2–K-3.
- [111] Natural Resources Management Plan (2005), paragraph 4.4.
- [112] Ladwig, Erickson and Mikolay (2014), pp. 138–42.
- [113] Walter C. Ladwig III “A Neo-Nixon Doctrine for the Indian Ocean: Helping States Help Themselves” (PDF). *Strategic Analysis* **36** (3). May 2012.

- [114] James R. Holmes & Toshi Yoshihara “An Ocean Too Far: Offshore Balancing in the Indian Ocean” . *Asian Security* 8 (1). March 2012.
- [115] Jeffrey Fretland (December 4, 2003). “Liberty Hall One Step Closer to a Cool Summer” . United States Navy. Retrieved October 14, 2007.
- [116] Jeremy L. Wood (December 30, 2002). “Comedian Visits Troops on Remote Isle” . United States Navy. Retrieved October 14, 2007.
- [117] “United States Navy Diego Garcia Support Facility” . United States Navy. Retrieved October 14, 2007.
- [118] Jason Smith (July 26, 2006). "'Camp Justice' Becomes 'Thunder Cove': Airmen of 40th Air Expeditionary Group give tent city a new name” . United States Department of Defense. Retrieved October 14, 2007.
- [119] Ladwig, Erickson and Mikolay (2014), pp. 141–3.
- [120] Ladwig, Erickson and Mikolay (2014), pp. 155.
- [121] Yechury, Sitaram (July 1, 2001). “Access to Indian Military Bases: Making India an Appendage to US” . *People's Democracy* (The Communist Party of India (Marxist)) **XXV** (26). Retrieved March 27, 2008.
- [122] Ladwig, Erickson and Mikolay (2014), pp. 156.
- [123] “Mauritius may relent on US base in Diego Garcia” . *Asia Africa Intelligence Wire*. April 13, 2002.
- [124] About Navy Support Facility Diego Garcia retrieved 11 November 2011.
- [125] “USNS SGT WILLIAM R. BUTTON (T-AK 3012)”. *Ship Inventory*. Military Sealift Command. January 16, 2009. Retrieved September 27, 2011.
- [126] “MV SSG EDWARD A. CARTER, JR. (T-AK 4544)”. *Ship Inventory*. Military Sealift Command. August 25, 2006. Retrieved September 27, 2011.
- [127] “USNS SGT MATEJ KOCAK (T-AK 3005)”. *Ship Inventory*. Military Sealift Command. January 16, 2009. Retrieved September 27, 2011.
- [128] “USNS 1ST LT BALDOMERO LOPEZ (T-AK 3010)”. *Ship Inventory*. Military Sealift Command. October 24, 2006. Retrieved September 27, 2011.
- [129] “MV LTC JOHN U. D. PAGE (T-AK 4543)”. *Ship Inventory*. Military Sealift Command. April 25, 2008. Retrieved September 27, 2011.
- [130] OPNAVNOTE 5450 dated 6 September 2005.
- [131] <http://www.boeing.com/commercial/airports/faqs/etopsersenroutealt.pdf>
- [132] John Pike (April 27, 2004). “Space Shuttle Landing Sites” . GlobalSecurity.org. Retrieved February 20, 2008.
- [133] “Change at the helm for MSC's Diego Garcia office” . Msc.navy.mil. 2007-11-08. Retrieved 2012-06-21.
- [134] Commander, Navy Installations Command (CNIC) (2007). “2006 Pollution Prevention and Solid Waste Success Stories” (PDF). US Department of the Navy. Retrieved March 18, 2008.
- [135] American Maritime Officers (November 2004). “Non-union operator wins charter held by Sagamore” . *AMO Currents*. Retrieved September 26, 2007.

### 3.5.11 Bibliography

- Edis, Richard (2004). *Peak of Limuria: the Story of Diego Garcia and the Chagos Archipelago*. Chippenham, UK: Antony Rowe Ltd.
- Hamilton, Martin, & John Topp (August 19, 2009). “British Indian Ocean Territory Plant Species Checklist” (PDF). Royal Botanic Gardens, Kew & Chagos Conservation Trust. Retrieved September 27, 2011.
- Ladwig III, Walter C., Andrew S. Erickson, and Justin D. Mikolay (2014). *Diego Garcia and American Security in the Indian Ocean*, (PDF). in Carnes Lord and Andrew Erickson Rebalancing US Forces: Basing and Forward Presence in the Asia Pacific. Annapolis, MD: Naval Institute Press.
- *Local Area Forecaster's Handbook for Diego Garcia* (doc). Naval Meteorology and Oceanography Command – NAVCENTMETOCDETDGINST. April 5, 2002. 3140.2.
- *Diego Garcia Integrated Natural Resources Management Plan*. US Naval Support Facility Diego Garcia. September 2005.
- Sand, Peter H. (2009). *United States and Britain in Diego Garcia – the Future of a Controversial Base*. New York: Palgrave MacMillan. ISBN 978-0-230-61709-4.
- Sheppard, Charles R. C., & M. R. D. Seaward, ed. (1999). *Ecology of the Chagos Archipelago*. Linnean Society Occasional Publications **2**. Westbury for the Linnean Society of London. ISBN 978-1-84103-003-6.
- Sheppard, Charles & Mark Spalding (2003). *Chagos Conservation Management Plan* (PDF). London: British Indian Ocean Territory Administration, Foreign and Commonwealth Office.
- Stoddart, D. R., & J. D. Taylor, ed. (1971). *Geography and ecology of Diego Garcia Atoll, Chagos Archipelago* (PDF). Atoll Research Bulletin **149**. Washington, DC: Smithsonian Institution.
- Topp, J. M. W. (1988). *An Annotated Check List of the Flora of Diego Garcia, British Ocean Territory* (PDF). Atoll Research Bulletin **313**. Washington D.C.: Smithsonian Institution.

- Urish, Daniel (1974). “Fresh water on the coral atoll island” (PDF). *The Military Engineer* **429**: 25–27.
- Vacher, H. Leonard, & Terrench Quinn (ed.). *Geology and Hydrogeology of Carbonate Islands*. Developments in Sedimentology **54**. Elsevier. ISBN 978-0-444-81520-0.

### 3.5.12 Further reading

- Hutson, A. M. (1975). *Observations on the Birds of Diego Garcia, Chagos Archipelago, with Notes on Other Vertebrates* (PDF). Atoll Research Bulletin **175**. Washington D.C.: Smithsonian Institution.
- Ladwig III, Walter C., Andrew S. Erickson, and Justin D. Mikolay, “Diego Garcia and American Security in the Indian Ocean,” in Carnes Lord and Andrew Erickson *Rebalancing US Forces: Basing and Forward Presence in the Asia Pacific* Annapolis, MD: Naval Institute Press, 2014, pp. 131–180.
- Ladwig III, Walter C., “A Neo-Nixon Doctrine for the Indian Ocean: Helping States Help Themselves” (PDF). *Strategic Analysis* **36** (3). May 2012.
- Urish, Daniel W., *Coral, Copra, and Concrete: An Illustrated Memoir of Diego Garcia Atoll* (2015).
- US Naval Support Facility Diego Garcia “Integrated Natural Resources Management Plan,” September 2005.
- Winchester, Simon, *Outposts: Journeys to the Surviving Relics of the British Empire* (2004).
- Pilger, John, “Freedom Next Time (2007).
- Diego Garcia Online: Information for locals of Diego Garcia.
- *The Island* is a jazz opera commissioned and broadcast in the 1960s on radio themed on events in Garcia Diego written by William Russo, words Adrian Mitchell performed by the Russo Orchestra sung by Cleo Lane and Denis Quilley
- Maritime Prepositioning Ship Squadron Two, Diego Garcia (Official Site)
- Naval Support Facility, Diego Garcia (Official Site)
- A Return from Exile in Sight? The Chagossians & their Struggle from the *Northwestern Journal of International Human Rights*
- UK MOD website on Permanent Joint Operating Base Diego Garcia.
- Diego Garcia Timeline of Diego Garican History, 1770–2008, posted the History Commons
- US/UK BIOT defence agreements, 1966–1982, U.S. court filing
- James Rogers and Luis Simón. The Status and Location of the Military Installations of the Member States of the European Union and Their Potential Role for the European Security and Defence Policy (ESDP). Brussels: European Parliament, 2009. 25 pp.

### 3.5.13 External links

- Chagos Islands Indigenous Population Support Internet Site
- BBC News Exiles lose appeal over benefits 02/11/07
- The Chagos Conservation Trust
- The Chagos Environmental Network
- CIA World Factbook: British Indian Ocean Territory
- A Black and Disgraceful Site by Jonathan Freedland in *The New York Review of Books*
- Erickson, Andrew S., Walter C. Ladwig III and Justin D. Mikolay, “Diego Garcia and the United States' Emerging Indian Ocean Strategy,” *Asian Security*, Vol. 6, No. 3 (Autumn 2010), pp. 214–237.
- Diego Garcia “Camp Justice” , GlobalSecurity.org

## 3.6 Saint Paul Island

Not to be confused with Saint Paul Island, Alaska, St. Paul Island, Nova Scotia, or the former name for Nuns' Island, or St Paul's Island, Malta.



○ Saint-Paul

Location of Île Saint-Paul in the Indian Ocean.

**Île Saint-Paul (Saint Paul Island)** is an island forming part of the French Southern and Antarctic Lands (*Terres australes et antarctiques françaises*, TAAF) in the Indian Ocean, with an area of 6 square kilometres (2.3 sq mi). The island is located about 85 km (53 mi) southwest of the larger Île Amsterdam, and 3,000 km (1,900 mi) southeast of Réunion. It is an important breeding site for seabirds. A scientific research cabin on the island is used for scientific or ecological short campaigns, but there is no permanent population. It is under the authority of a senior administrator on Réunion.

### 3.6.1 Description

Île Saint-Paul is triangular in shape, and measures no more than 3 mi (4.8 km) at its widest. It is the top of an active volcano, the volcano last erupted in 1793 (from its SW Flank), and is rocky with steep cliffs on the east side. The thin stretch of rock that used to close off the crater collapsed in 1780, admitting the sea through a 100 m (330 ft) channel; the entrance is only a few meters deep, thus allowing only very small ships or boats to enter the crater. The interior basin, 1 km (0.62 mi) wide and 50 m (160 ft) deep, is surrounded by steep walls up to 270 m (890 ft) high. There are active thermal springs.

### 3.6.2 History

#### Early sightings

Île Saint-Paul was first discovered in 1559 by the Portuguese. The island was mapped, described in detail and painted by members of the crew of the *Nau São Paulo*, among them the Father Manuel Álvares and the chemist Henrique Dias (Álvares and Dias calculated the correct latitude 38° South in the same moment of discovery). The ship was commanded by Rui Melo da Câmara and was part of the Portuguese India Armada commanded by Jorge de Sousa. The *Nau São Paulo*, who also carried women and had sailed from Europe and had scale in Brazil, would be the protagonist of a dramatic and moving story of survival after sinking south of Sumatra.

The next confirmed sighting was made by Dutchman *Harwick Claesz de Hillegom* on 19 April 1618.\*[1] There were further sightings of the island through the 17th century. One of the first detailed descriptions of it, and possibly the first landing, was made in December 1696 by Willem de Vlamingh.\*[1]\*[2]

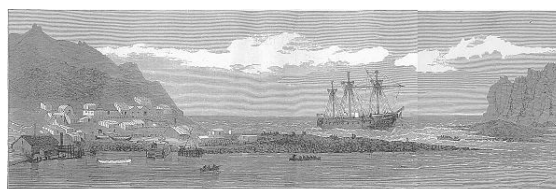
#### 19th century

During sailing ship days captains would occasionally use the island as a check on their navigation before heading

north. Saint-Paul was occasionally visited by explorers, fishermen, and seal hunters in the 18th and 19th centuries, among which was the American sealer *General Gates*, which called at the island in April 1819. George William Robinson, an American sealer, was left on the island to hunt seals, and stayed there for 23 months until the *General Gates* returned for him in March 1821. Robinson subsequently returned to Saint-Paul in 1826 to gather sealskin, sailing from Hobart aboard his own vessel, the schooner *Hunter*.

France's claim to the island dates from 1843, when a group of fishermen from Réunion, interested in setting up a fishery on Saint-Paul, pushed the Governor of Réunion to take possession of both Saint-Paul and Amsterdam Island. This was performed by means of an official decree dated 8 June 1843, and on 1 July, Martin Dupeyrat, commanding the ship *L'Olympe*, landed on Amsterdam Island and then on Saint-Paul on 3 July, and hoisted the tricolor. The only surviving evidence of this claim is an inscribed rock situated on the edge of Saint-Paul's crater lake, inscribed "Pellefournier Emile Mazarin de Noyarez, Grenoble, Canton de Sassenage, Département de l'Isère, 1844". All fishery operations were, however, abandoned in 1853, when the French government renounced its possession of the two islands.\*[3]

The first good map of the island was not drawn up until 1857, when the Austrian frigate *Novara* landed a team which studied the flora, fauna, and geology from November to December.\*[4]



*HMS Megaera at St Paul Island.*

In 1871, a British troop transport, *HMS Megaera*, was wrecked on the island. Most of the 400 persons on board had to remain upwards of three months before being taken off. A short, impressionistic account of the two French residents encountered by the shipwrecked crew appears in Judith Schalansky's *Atlas of Remote Islands* (2010).\*[5]

In September 1874, a French astronomical mission conveyed by the sailing ship *La Dive* spent just over three months on Saint-Paul to observe the transit of Venus; geologist Charles Vélain took the opportunity to make a significant geological survey of the island.

In 1889, Charles Lightoller, who was later to become famous as the Second Officer of the RMS *Titanic*, was shipwrecked here for eight days when the sailing barque *Holt Hill* ran aground. He describes the shipwreck and the island in his autobiography, *Titanic and Other Ships*. Lightoller speculated that pirates may have used the is-



land and their treasure could be buried in its caves.\* [6]

In 1892, the crew of the French sloop *Bourdonnais*, followed by the ship *L'Eure* in 1893, took possession of Saint-Paul and Amsterdam Island in the name of the French government.

### 20th century

In 1928, the Compagnie Générale des Îles Kerguelen recruited René Bossière and several Bretons and Madagascans to establish a spiny lobster cannery on Saint-Paul, “La Langouste Française”. In March 1930, at the end of the second season, most of the employees left, but seven of them stayed on the island to guard the installations, supposedly for just a few months. But the promised relief arrived much too late. When the ship finally came, in December 1930, five people had died, mostly from lack of food and scurvy: Paule Brunou (a child born on the island who died two months after her birth), Emmanuel Puloc'h, François Ramamonzi, Victor Brunou, and Pierre Quillivic. Only three survivors were rescued. This event has since come to be known as *Les Oubliés de Saint-Paul* (“the forgotten ones of St. Paul”).\* [7]\* [8]

A few years later in 1938, the crew of a French fishing boat were stranded on the island. Distress calls sent by the crew over short-wave radio were fortuitously received 11,000 miles away in the United States. The message was relayed to the Navy and the French consul in San Francisco, while 12-year-old Neil Taylor, an amateur radio operator in California, made contact with the stranded crew and assured them that help was on the way.\* [9]

There is a fictionalized description of the island in Robert Stone's novel *Outerbridge Reach* (1998).

### 3.6.3 Environment

See also: Amsterdam and Saint-Paul Islands temperate grasslands

The island has a cool oceanic climate and the slopes of the volcano are covered in grass. It is a breeding site for subantarctic fur seals, southern elephant seals and rockhopper penguins. It was also the breeding site for an endemic flightless duck & several kinds of petrel before the introduction of exotic predators and herbivores, including black rats, house mice, European rabbits, pigs and goats during the 19th century or earlier. The pigs and goats have since disappeared or been eradicated. Black rats were eradicated in January 1997 following an aerial drop of 13.5 tonnes of brodifacoum anticoagulant poison baits over the island.\* [10]

### Important Bird Area

The island, with the adjacent islet of La Roche Quille, has been identified as an Important Bird Area (IBA) by BirdLife International because it supports several breeding seabirds. The island's subtropical location gives it an avifauna distinct from that of subantarctic islands and contains several breeding species which are rare in the region. Saint Paul's seabirds nested mainly on La Roche Quille until rat eradication allowed some species, notably Macgillivray's prions (a subspecies of Salvin's prion) and great-winged petrels, to recolonise the main island.\* [10] Other species include a colony of some 9000 pairs of northern rockhopper penguins, about 20 pairs of sooty albatrosses, a few pairs of Indian yellow-nosed albatrosses, and small numbers of Australasian gannets, fairy prions, little and flesh-footed shearwaters, Wilson's storm petrels and sooty terns.\* [11]

### 3.6.4 See also

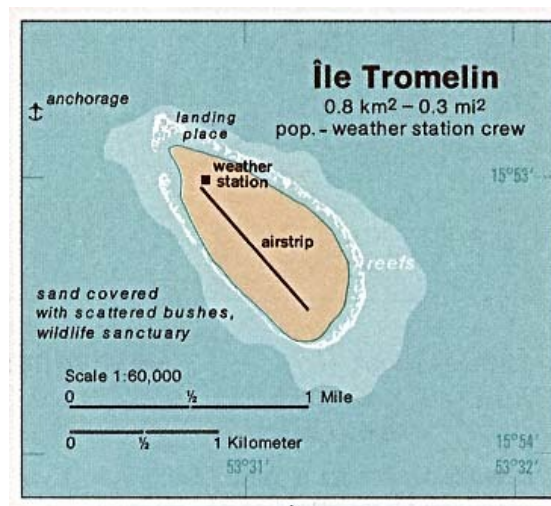
- List of volcanoes in French Southern and Antarctic Lands
- Administrative divisions of France
- French overseas departments and territories
- Islands controlled by France in the Indian and Pacific oceans
- List of Antarctic and subantarctic islands
- Temperate grasslands, savannas, and shrublands

### 3.6.5 References

#### Notes

- [1] “Early History of Amsterdam and St Paul Islands, South Indian Ocean”. Btinternet.com. 2003-06-29. Archived from the original on 2012-10-23. Retrieved 2012-07-26.
- [2] “Het Scheepvaartmuseum - Maritieme Kalender”. Hetscheepvaartmuseum.nl. Archived from the original on 2014-03-26. Retrieved 2012-07-26.
- [3] Reppe, Xavier (1957). *Aurore sur l'Antarctique*. Nouvelles Éditions Latines. p. 32.
- [4] Vélain, Charles (1878). *Description géologique de la presque île d'Aden, de l'île de la Réunion, des îles Saint-Paul et Amsterdam*. A. Hennuyer. p. 232.
- [5] Schalansky, Judith (2010). *Atlas of Remote Islands*. New York, NY: Penguin. p. 54. ISBN 978-0-14-311820-6.
- [6] Lightoller, C.H. (1935). “Titanic and other ships”. I. Nicholson and Watson. Archived from the original on 2013-05-08.
- [7] *Les oubliés de l'île Saint-Paul*, by Daniel Floch. 1982.

- [8] “St. Paul and Amsterdam Islands: A History of Two Islands.”. Discoverfrance.net. Archived from the original on 2007-10-03.
- [9] “Full text of “Calling CQ - Adventures of Short-Wave Radio Operators””. Archive.org. Archived from the original on 2012-11-10. Retrieved 2012-07-26.
- [10] Micol & Jouventin (2002).
- [11] BirdLife International. (2012). Important Bird Areas factsheet: Île Saint Paul. Downloaded from <http://www.birdlife.org> on 2012-01-08. Archived 10 July 2007 at WebCite



### Sources

- LeMasurier, W. E.; Thomson, J. W. (eds.) (1990). *Volcanoes of the Antarctic Plate and Southern Oceans*. American Geophysical Union. p. 512 pp. ISBN 978-0-87590-172-5.
- Micol, T.; & Jouventin, P. (2002). “Eradication of rats and rabbits from Saint-Paul Island, French Southern Territories”, in *Turning the tide: the eradication of invasive species: proceedings of the International Conference on Eradication of Island Invasives*, ed. Veitch, C.R.; & Clout, M.N. Gland, Switzerland: IUCN. pp. 199–205. ISBN 978-2-8317-0682-5.

Map of Tromelin Island.



Satellite image of Tromelin Island.

### 3.6.6 External links

- This article incorporates text from a publication now in the public domain: Chisholm, Hugh, ed. (1911). *Encyclopædia Britannica* (11th ed.). Cambridge University Press.
- Pictures of Île Saint-Paul
- Antipodes of the USA
- Isla de Saint Paul (español)

Coordinates: 38°43′48″S 77°31′20″E﻿ / ﻿38.73000°S 77.52222°E﻿ / -38.73000; 77.52222

## 3.7 Tromelin Island

Coordinates: 15°53′32″S 54°31′29″E﻿ / ﻿15.89222°S 54.52472°E﻿ / -15.89222; 54.52472



Tromelin

Location of Tromelin Island in the Indian Ocean.

**Tromelin Island** (/ˌtrɒsmlɪn ˈaɪlənd/; French: *Île Tromelin*, pronounced: [il tʁɔmlɛ̃]) is a low, flat, island in the Indian Ocean, about 450 kilometres (280 mi) east

of Madagascar. It is administered as a French overseas territory. Mauritius claims sovereignty over Tromelin island, France and Mauritius reached an agreement for the co-management of the island without prejudice to the respective positions of the two Governments on the issue of sovereignty.\*[1] Tromelin has a weather station and is a nesting site for boobies and green sea turtles.

### 3.7.1 Description

Very much like a large sandbank and only 7 metres (23 ft) high at its highest point, Tromelin is about 1,700 metres (1.1 mi) long and 700 metres (0.43 mi) wide, with an area of 80 ha (200 acres), covered in scrub dominated by octopus bush\*[2] and surrounded by coral reefs. There are no harbours or anchorages, so that access by sea is difficult. A 1,200-metre (3,900 ft) airstrip provides the island's link with the outside world.

#### Important Bird Area

The island has been identified as an Important Bird Area (IBA) by BirdLife International because of its significance as a seabird breeding site. Both masked (with up to 250 pairs) and red-footed boobies (up to 180 pairs) nesting there. Sulidae populations have seriously declined in the western Indian Ocean with those on Tromelin among the healthiest remaining. The island's masked boobies are of the western Indian Ocean subspecies (*Sula dactylatra melanops*), of which Tromelin is a stronghold. The red-footed boobies constitute the only polymorphic population in the region, indicating its biogeographical isolation. Both great and lesser frigatebirds used to nest on the island but have subsequently become extinct as breeders, though they continue to use the island for roosting. There are no resident landbirds.\*[2]

### 3.7.2 History



The island was first recorded by a French navigator, Jean Marie Briand de la Feuillée, in 1722 and initially named *Île des Sables*.\*[3]

In 1761 the French ship *Utile*, carrying slaves from Madagascar to Mauritius, ran onto the reefs of the is-

land. The crew reached Madagascar in a raft, abandoning some 60 slaves on the desert island. Fifteen years later in 1776, Bernard Boudin de Tromelin (from whom the island takes its name), captain of the French warship *La Dauphine*, visited the island and rescued the survivors—seven women and an eight-month-old child.\*[4]

French claims date back to 1810.\*[5] However, from the 19th century until the 1950s, Tromelin was a dependency of the British colony of Mauritius. In 1954, by an agreement between the British and the French, France constructed a meteorological station and a landing strip on the island.\*[6] It is a matter of dispute whether the agreement transferred sovereignty of Tromelin from one to the other, and Mauritius claims the island as part of its territory on the grounds that sovereignty was not transferred to France and the island was thus part of the colony of Mauritius at the time of independence.\*[7] Indeed, as early as 1959, even before independence, Mauritius informed the World Meteorological Organization that it considered Tromelin to be part of its territory.\*[8] France and Mauritius reached a co-management treaty in 2010.\*[9]

Tromelin has an Exclusive Economic Zone (EEZ) of 280,000 square kilometres (110,000 sq mi), contiguous with that of Réunion. The island's weather station, which warns of cyclones, is still operated by France and is staffed by meteorologists from Réunion.

#### Amateur Radio

The first amateur radio operation from Tromelin Island took place in 1954, by Marc FB8BK/T. A major operation took place in 2000 by a 4-man team who made 50,000 contacts with the callsign FR/F6KDF/T. Authorization was not given again until 2014, so by August 2014, Clublog listed Tromelin Island as the eighth most-wanted DXCC entity.\*[10] A DX-pedition consisting of seven French radio amateurs arrived and operated from Tromelin Island from October 30 to November 10, 2014 using call sign FT4TA.,\*[11] making 71,465 contacts.

### 3.7.3 References

- [1] “CHAGOS ARCHIPELAGO AND TROMELIN ISLAND – MAURITIUS SOVEREIGNTY” (PDF). National Assembly (Mauritius). Retrieved 6 September 2015.
- [2] BirdLife International. (2012). Important Bird Areas factsheet: Tromelin. Downloaded from <http://www.birdlife.org> on 2012-01-07.
- [3] <http://ifm.free.fr/htmlpages/pdf/2007/477-4-esclaves.pdf>
- [4] Marriner, N.; Guérout, M.; Romon, T. (2010). “The Forgotten Slaves of Tromelin (Indian Ocean): New Geographical Data” . *Journal of Archaeological Science* 37 (6): 1293–1304. doi:10.1016/j.jas.2009.12.032.

- [5]
- [6] Charney, Jonathan I.; Colson, David A.; Alexander, Lewis M. (2005). *International Maritime Boundaries*. p. 3463. ISBN 9004144617.
- [7] Forbes, Vivian Louis (1995). *The maritime boundaries of the Indian Ocean region*. Singapore University Press. p. 110. ISBN 9971691892.
- [8] Rumley, Dennis; Chaturvedi, Sanjay; Sakhuja, Vijay (2010). *Fisheries Exploitation in the Indian Ocean: Threats and Opportunities*. p. 123. ISBN 9789812309860.
- [9] “Tromelin : La Réunion, spectatrice et spoliée” . Lequotidien.re.
- [10] DXCC Most Wanted List
- [11] Tromelin DxPediton - Oct 30th to Nov 10th 2014

### 3.7.4 External links

- The shipwrecked memory of the L'Utile slaves
- “Shipwrecked and abandoned: the story of the slave Crusoes” by John Lichfield, *The Independent* 5 February 2007

# Chapter 4

## Pacific Ocean

### 4.1 Antipodes Islands

The **Antipodes Islands** (from Greek *αντίποδες* - *antipodes*\*[2]) are inhospitable volcanic islands in subantarctic waters to the south of —and territorially part of —New Zealand. They lie 860 kilometres (534 mi) to the southeast of Stewart Island/Rakiura.

The island group consists of one main island, Antipodes Island, of 20 km<sup>2</sup> (7.7 sq mi) area, Bollons Island to the north, and numerous small islets and stacks.

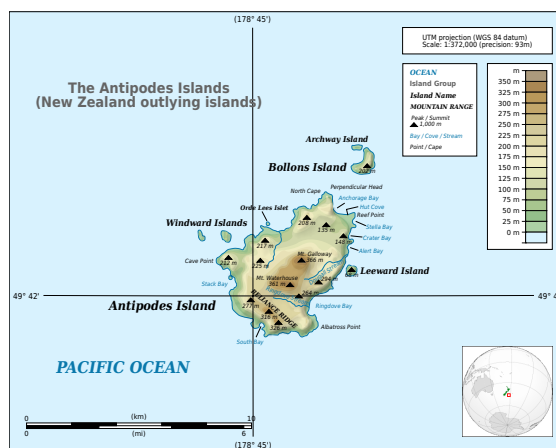
Ecologically, the islands are part of the Antipodes Subantarctic Islands tundra ecoregion. The islands are inscribed on the UNESCO World Heritage List, together with other subantarctic New Zealand islands. The island group is a nature reserve and there is no general public access.

#### 4.1.1 Etymology

The island group was originally called the “Penantipodes” meaning “next to the antipodes”, because it lies near to the antipodes of London. Over time the name has been shortened to “Antipodes” leaving some to suppose its European discoverers had not realised its global location.\*[3] This misapprehension persists. In fact, the island's antipodes are situated on the territory of the French village Gatteville-le-Phare, near Cherbourg.\*[4]

#### 4.1.2 Geography

The volcanic Antipodes Islands lie 860 kilometres southwest of Stewart Island/Rakiura. They consist of a main island (Antipodes Island), area 20 km<sup>2</sup> (7.7 sq mi), surrounded by a series of small offshore islands and rocks. These islands include Bollons Island, at 2 km<sup>2</sup> (0.77 sq mi) the second largest in the group, 1200 metres to the northeast of the main island's North Cape, and the nearby smaller Archway Island; Leeward Island, situated just off the centre of the main island's east coast (to which it is connected by a rocky bar at low tide); the two Windward Islands, situated 800 metres apart, the easternmost of which is 600 metres to the immediate north of Cave Point, the main island's westernmost point; and the tiny



Topographical map of Antipodes Islands

Orde Lees Islet, located close to the main island's north-western shore. Numerous small islets and stacks further surround the coast of the main island.

The islands are steep, and cliffs and rocky reefs line the majority of the coasts. The highest point, in the north of the main island, is Mount Galloway, at 366 m (1,201 ft), which also forms part of the group's most recently active volcano.\*[5] Mount Waterhouse, to Galloway's southwest, also reaches over 360 metres. Several other heights on the main island reach above 200 metres, as does the highest point of Bollons Island. A ridge of peaks, the Reliance Ridge, runs along the main island's south east. Several small streams run from the slopes of the main island's peaks, with the largest of these being the Dougall Stream, which runs northeast from the eastern slopes of Mount Waterhouse to reach the east coast not far from its closest point to Leeward Island. The Ringdove Stream runs east along the northern flanks of the Reliance Ridge to reach the large, rocky Ringdove Bay in the southeast of the main island. A further prominent stream runs southwest from the northwestern slopes of Mount Waterhouse to reach Stack Bay to the south of the Cave Point Peninsula, and a fourth runs north from the slopes of Mount Galloway, reaching the sea to the west of North Cape, close to Reef Point.

### 4.1.3 History

#### Prehistory

There is no archaeological evidence of human visitation prior to European discovery of the islands. Descriptions\* [6] of a shard of early Polynesian pottery having been discovered 76 cm (2 ft 6 in) below the surface on the main island in 1886, and housed in the collections of the Museum of New Zealand Te Papa Tongarewa, are unsubstantiated. The Museum has not been able to locate such a shard in its collection, and the original reference to the object in the Museum's collection documentation indicates no reference to Polynesian influences.\* [7]

#### Sealing

The island group was first charted in 1800 by Captain Henry Waterhouse of the British ship *HMS Reliance*. In 1803 Waterhouse's brother-in-law George Bass applied to Governor Philip Gidley King of New South Wales for a fishing monopoly from a line bisecting southern New Zealand from Dusky Sound to the Otago Harbour to cover all the lands and seas to the south, including the Antipodes Islands, probably because he knew the latter were home to large populations of fur seals. Bass sailed from Sydney to the south that year and was never heard of again but his information led to a sealing boom at the islands in 1805 to 1807.

At one time eighty men were present; there was a battle between American and British-led gangs and a single cargo of more than 80,000 skins—one of the greatest ever shipped from Australasia—was on-sold in Canton for one pound sterling a skin, a multimillion-dollar return in modern terms. Prominent Sydney merchants such as Simeon Lord, Henry Kable and James Underwood were engaged in the trade as well as the Americans Daniel Whitney and Owen Folger Smith. William W. Stewart, who claimed to have charted Stewart Island, and probably William Tucker who started the retail trade in preserved Maori heads, were present during the boom. After 1807, sealing was occasional and cargoes small, no doubt because the animals had been all but exterminated.

#### Shipwrecks

A much later attempt to establish cattle on the islands was short-lived (as were the cattle). When the ship *Spirit of the Dawn* (with a crew of 16) foundered off the main island's coast in 1893, the eleven surviving crew spent nearly three months living as castaways on the island, living on raw muttonbirds, mussels and roots for 87 days before gaining the attention of the government steamer *Hinemoa* by a flag made from their sail.

A well-supplied castaway depot\* [8] was available on the other end of the island, but the survivors' weak condition



*Castaway hut at the northern end of Antipodes island, 2009*



*South Bay - site of the landing of the Spirit of the Dawn survivors and the loss of the Totorore*

and the island's mountainous terrain prevented them from searching for depots.

The depot was found and used by the crew of the French barque *President Felix Faure*, wrecked in Anchorage bay in 1908, who were stranded for sixty days until rescued by *HMS Pegasus*.\* [9]

The last wreck at the Antipodes was the yacht *Totorore* with the loss of two lives, Gerry Clark and Roger Sale, in June 1999.\* [10]

### 4.1.4 Flora and fauna

The flora of the islands has been recorded in detail, and includes megaherbs. The islands are also home to numerous bird species including the endemic Antipodes snipe and Antipodes parakeet, as well as several albatrosses, petrels and penguins, including half of the world population of erect-crested penguins. Antipodes Island has introduced house mice.



*Penguin colony (mixed species) in Anchorage Bay, Antipodes Island*

### Important Bird Area

The Antipodes group has been identified as an Important Bird Area (IBA) by BirdLife International because of its significance as a breeding site for several species of seabirds. The seabirds are southern rockhopper and erect-crested penguins, Antipodean, black-browed, light-mantled and white-capped albatrosses, and northern giant, grey and white-chinned petrels.\* [11]

### 4.1.5 Conservation

As with many other islands, introduced rodents have caused problems by preying on the indigenous wildlife. A “Million Dollar Mouse” campaign was launched in 2012 to raise funds for an eradication programme.\* [12]

### 4.1.6 See also

- Composite Antarctic Gazetteer
- List of Antarctic and subantarctic islands
- List of islands of New Zealand
- New Zealand Subantarctic Islands
- Territorial claims in Antarctica

### 4.1.7 References

- [1] Final counts – census night and census usually resident populations, and occupied dwellings - Area outside territorial authority, 2006 Census, Statistics New Zealand. Retrieved 26 August 2010.
- [2] Antipodes, Liddell and Scott, “A Greek-English Lexicon”, at Perseus.
- [3] “Antipodes Islands: New Zealand's subantarctic islands”. *New Zealand Department of Conservation*. Retrieved January 6, 2011.

- [4] “Antipodes Islands”. *Twelve Mile Circle*. Retrieved January 6, 2011.
- [5] “Antipodes Island”. *Global Volcanism Program*. Smithsonian Institution.
- [6] “NGA-IWI-O-AOTEA”. *Te Ao Hou - The Maori Magazine (1967)*. Retrieved July 9, 2012.
- [7] “Captain FAIRCHILD to the SECRETARY, Marine Department, Wellington”. *Appendix to the Journals of the House of Representatives, 1886 Session I, H-24 Page 6*. Retrieved July 9, 2012.
- [8] Items from the 1880s depot recovered in 1947 and now in the collection of the Museum of New Zealand Te Papa Tongarewa
- [9] “Castaways rescued”. *Evening Post (New Zealand)*. 16 May 1908. p. 6.
- [10] Imber, Michael J.; Scofield, R. Paul; Goodwin, Anthea; & Tennyson, Alan J.D. (2000). “Obituary – Gerald Stanley (Gerry) Clark (1927-1999).” (PDF). *Notornis* **49** (1): 55–58.
- [11] BirdLife International. (2012). Important Bird Areas factsheet: Antipodes Islands. Downloaded from <http://www.birdlife.org> on 2012-01-27.
- [12] “Department of Conservation selling access to rare species”. *Stuff.co.nz*. 10 June 2012. Retrieved 14 June 2012.

### 4.1.8 Further reading

- *Wise's New Zealand Guide* (4th ed.) (1969). Dunedin: H. Wise & Co. (N.Z.) Ltd.
- “NGA-IWI-O-AOTEA”. No. 59 (June 1967). *Te Ao Hou - The Maori Magazine*, pp. 43.
- Godley, E.J. *The Botany of Antipodes Island*. New Zealand Journal of Botany, 1989, Vol. 27: 531-563
- Entwisle, Peter (2005). *Taka, A Vignette Life of William Tucker 1784–1817*. Dunedin: Port Daniel Press. ISBN 0-473-10098-3.
- Taylor, Rowley, (2006) *Straight Through from London, the Antipodes and Bounty Islands, New Zealand*. Christchurch: Heritage Expeditions New Zealand Ltd. ISBN 0-473-10650-7.
- Marris, J.W.M. 2000: The beetle (Coleoptera) fauna of the Antipodes Islands, with comments on the impact of mice; and an annotated checklist of the insect and arachnid fauna. *Journal of the Royal Society of New Zealand*, **30**: 169-195. ISSN: 0303-6758 doi:10.1080/03014223.2000.9517616 PDF
- Warham, J.; Johns, P.M. 1975: The University of Canterbury Antipodes Island Expedition 1969. *Journal of the Royal Society of New Zealand*, **5**(2): 103-131. ISSN: 0303-6758 Google books

### 4.1.9 External links

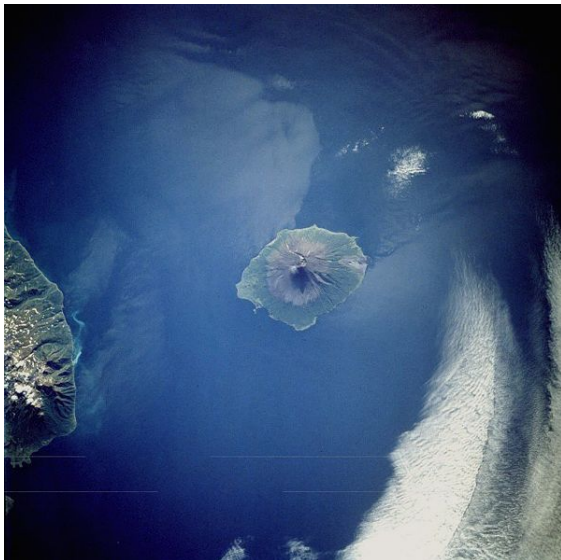
- Antipodes Islands at the Department of Conservation
- Million Dollar Mouse campaign

## 4.2 Atlasov Island

For the shield volcano situated in Kamchatka, see Atlasova.

**Atlasov Island**, known in Russian as **Ostrov Atlasova** (Остров Атласова), or in Japanese as **Araido** (阿頼度島), is the northernmost island and volcano and also the highest volcano of the Kuril islands, part of the Sakhalin Oblast in Russia. The Russian name is sometimes rendered in English as **Atlasova Island**. Other names for the island include **Uyakhuzhach**, **Oyakoba** and **Alaid**, the name of the volcano on the island.

The island is named after **Vladimir Atlasov**, a 17th-century Russian explorer who incorporated the nearby **Kamchatka Peninsula** into Russia. It is essentially the cone of a submarine volcano called Vulkan Alaid protruding above the Sea of Okhotsk to a height of 2,339 metres (7,674 feet). The island has an area of 119 square kilometres (46 square miles), but is currently uninhabited. Numerous pyroclastic cones dot the lower flanks of basaltic to basaltic andesite volcano, particularly on the NW and SE sides, including an offshore cone formed during the 1933–34 eruption.\* [2]



*Atlasov Island from space, September 1992*

Its near perfect shape gave rise to many legends about the volcano among the peoples of the region, such as the Itelmens and Kuril Ainu. The Russian scientist Stepan Krasheninnikov was told the story that it was once a

mountain in Kamchatka, but the neighbouring mountains became jealous of its beauty and exiled it to the sea, leaving behind **Kurile Lake** in southern Kamchatka. Geographically, this story is not without evidence, as after the last Ice Age most of the icecaps melted, raising the world's water level, and possibly submerging a landbridge to the volcano. Following the transfer of the **Kuril Islands** to Japan by the **Treaty of St Petersburg, 1875**, Oyakoba as it is called by the Japanese, became the northernmost island of the empire and subject of much aesthetic praise, described in haiku, ukiyo-e, etc. Ito Osamu (1926) described it as more exquisitely shaped than Mount Fuji.

Administratively this island belongs to the Sakhalin Oblast of the Russian Federation.

### 4.2.1 See also

- List of islands of Russia
- List of volcanoes in Russia
- List of ultras of Northeast Asia

### 4.2.2 References

- [1] “Russia: Kamchatka and the Russian Pacific Islands Ultra-Prominence Page” Peaklist.org. Listed here as “Alaid V.” . Retrieved 2011-11-27.
- [2] “Alaid” . *Global Volcanism Program*. Smithsonian Institution.

### 4.2.3 External links

- The Russian Kuril Islands Expedition to Atlasov
- Sakhalin Oblast
- “Vulkan Alaid, Russia” on Peakbagger

## 4.3 Banaba Island

“Banaba” redirects here. For other uses, see Banaba (disambiguation).

Main article: Kiribati

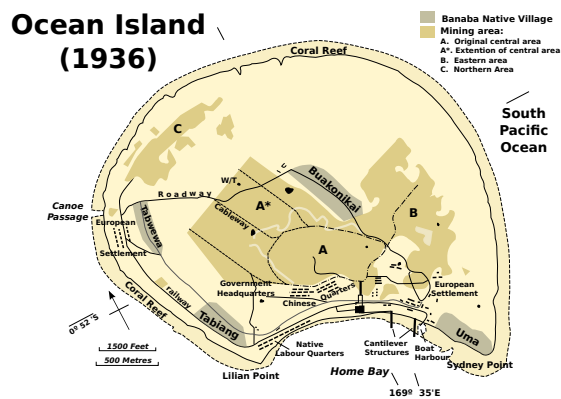
**Banaba Island**\* [1] (/bəˈnɑːbə/; also **Ocean Island**), an island in the Pacific Ocean, is a solitary raised coral island west of the Gilbert Island chain and 185 miles (298 km) east of Nauru. It is part of the Republic of Kiribati. It has an area of 6.0 km<sup>2</sup>,\* [2] and the highest point on the island is also the highest point in Kiribati, at 81 metres (266 ft) high.\* [3] Along with Nauru and Makatea (French Polynesia), it is one of the important elevated phosphate-rich islands of the Pacific.\* [4]



### 4.3.1 History

According to “*Te Rii Ni Banaba—The Backbone of Banaba*” by Raobeia Ken Sigrah, Banaban oral history supports the claim that the people of the Te Aka clan, which originated in Melanesia, were the original inhabitants of Banaba (Ocean Island), having arrived before the arrival of later migrations from the East Indies and Kiribati. The name **Banaba** in local tongue, Gilbertese, is correctly spelled *Bwanaba*, but the Constitution of 12 July 1979 writes *Banaba*, meaning “hollow land”.

Sigrah makes the controversial (and politically loaded) assertion that Banabans are ethnically distinct from other I-Kiribati. [5] The Banabans were assimilated only through forced migrations and the impact of the discovery of phosphate in 1900. There used to be four villages on the island - Ooma (Uma), Tabiang, Tapiwa (Tabwewa), and Buakonikai. The local capital was Tabiang, now called Antereen.



Map of Banaba at the time of phosphate mining

The first European sighting of Banaba occurred on 3 January 1801. Captain Jared Gardner in the American vessel *Diana* sighted the island. Then in 1804, Captain John Mertho of the convict transport and merchant ship *Ocean* sighted the island and named it after his vessel.

Banaba is prone to drought, as it is a high island with no natural streams and no water lens. A three-year drought starting in 1873 killed over three quarters of the population and wiped out almost all the trees; many of those who survived left the island on passing ships to escape the drought, and only some were able to return, often years later. [3]

Phosphate rock-mining (for fertiliser) from 1900 to 1979 stripped away 90% of the island's surface, the same process which occurred on Nauru from 1907 to the 1980s. [6] [7] Japanese forces occupied the island from 26 August 1942 until the end of World War II in 1945. [8] The British authorities relocated most of the population to Rabi Island, Fiji after 1945, with subsequent waves of migration in 1977 and 1981-1983. Some have subsequently returned, following the end of mining

in 1979; approximately 300 were living on the island in 2001. The population of Banaba in the 2010 census was 295. [3] Globally, there are an estimated 6000 individuals of Banaban descent. [9] On Rabi Island the names of settlements are the same authentic four names from Banaba Island.

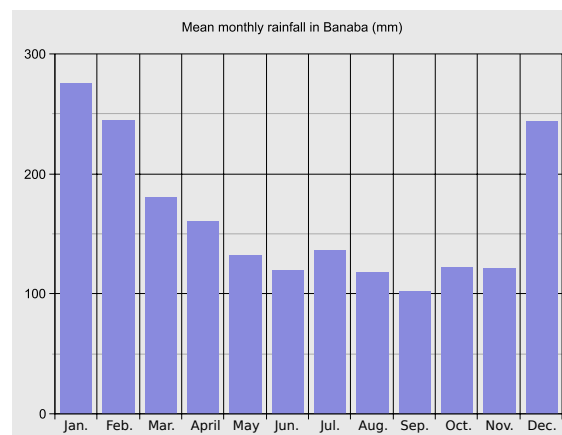
Ocean Island Post Office opened on 1 January 1911 and was renamed Banaba around 1979. [10]

### 4.3.2 Geography

The woodland of Banaba is now limited to the coastal area and is made up mostly of mangoes, flame trees, guavas, tapioca and common Kiribati shrubs such as the saltbush. Having been mined for over 80 years, the centre of the island has no soil and is uninhabitable. [3]

The villages of Tabiang (Antereen), Buakonikai (‘Te Aonoanne’) and Tabwewa are now unoccupied. Banaba had three inhabited villages in the 2010 census; Tabwewa, Antereen (also called Tabiang) and Umwa. [3]

### Climate



Mean monthly rainfall derived from data in the period 1951-1980

Banaba Island features a tropical rainforest climate, under Köppen's climate classification. Winds between north-east and south-east bring rainfall with large annual and seasonal variability. The period of lowest mean monthly rainfall starts in May and lasts until November. From December until April the monthly rainfall is on average higher than 120 mm. [11]

### 4.3.3 Politics

Main article: Rabi Council of Leaders

Banaba Island is a political anomaly. Despite being part of Kiribati, its municipal administration is by the Rabi

Council of Leaders and Elders, which is based on Rabi Island, in Fiji.

On 19 December 2005, Teitirake Corrie, the Rabi Island Council's representative to the Parliament of Kiribati, said that the Rabi Council was considering giving the right to remine Banaba Island to the government of Fiji. This followed the disappointment of the Rabi Islanders at the refusal of the Kiribati Parliament to grant a portion of the A\$614 million trust fund from phosphate proceeds to elderly Rabi islanders. Corrie asserted that Banaba is the property of their descendants who live on Rabi, not of the Kiribati government, asserting that, "The trust fund also belongs to us even though we do not live in Kiribati". He condemned the Kiribati government's policy of not paying the islanders.

On 23 December, Reteta Rimon, Kiribati's High Commissioner to Fiji, clarified that Rabi Islanders were, in fact, entitled to Kiribati government benefits - but only if they returned to Kiribati. She called for negotiations between the Rabi Council of Leaders and the Kiribati government.

On 1 January 2006, Corrie called for Banaba to secede from Kiribati and join Fiji. Kiribati was using Banaban phosphate money for its own enrichment, he said; of the five thousand Banabans in Fiji, there were fewer than one hundred aged seventy or more who would be claiming pensions.

#### 4.3.4 Future prospects

The stated wish of the Kiribati government to reopen mining on Banaba is strongly opposed by many in the Banaban diaspora.

Some of the leaders of the displaced Banaban community in Fiji have called for Banaba to be granted independence. One reason given for the maintenance of a community on Banaba, at a monthly cost of F\$12,000, is that if the island were to become uninhabited, the Kiribati government might take over the administration of the island, and integrate it with the rest of the country. Kiribati is believed to be anxious to retain Banaba, in the hope of remaining it in the future. Additionally, along with Kiritimati, it is not a low-lying coral atoll and less susceptible to rising sea levels.

#### 4.3.5 Further information

- Correspondent. (1913, 5 June). Modern buccaneers in the West Pacific. *New Age*, pp. 136–140 (Online). Available: <http://dl.lib.brown.edu/pdfs/1140814207532014.pdf> (accessed 12 June 2015).
- *Treasure Islands: The Trials of the Ocean Islanders* by Pearl Binder (published by Blond & Briggs in 1977), an emotional account of the Banaban's troubles.\* [12]

- *Go Tell It to the Judge*, a TV documentary by the BBC on the court case brought by the Banabans in London. It was first broadcast on January 6, 1977, shortly after judgement was reached.\* [13]
- An account of the Banaban's struggle with the British Phosphate Commission and the British government, as of 1985, can be found in the book *On Fiji Islands* by Canadian author Ronald Wright. This also contains descriptions of Rabi Island, to which the majority of Banabans were removed after World War II.\* [14]

#### 4.3.6 References

- [1] The correct spelling and etymology in Gilbertese should be *Bwanaba* but the Constitution of Kiribati writes *Banaba*. Because of the spelling in English or French, the name was very often written *Paanapa* or *Paanopa*, as it was in 1901 Act.
- [2] Dahl, Arthur (July 12, 1988). "Islands of Kiribati". *Island Directory*. UN System-Wide Earthwatch Web Site. Retrieved April 14, 2012.
- [3] "19. Banaba" (PDF). *Office of Te Beretitenti - Republic of Kiribati Island Report Series*. 2012. Retrieved 28 April 2015.
- [4] C.Michael Hogan. 2011. *Phosphate*. Encyclopedia of Earth. Topic ed. Andy Jorgensen. Ed.-in-Chief C.J.Cleveland. National Council for Science and the Environment. Washington DC
- [5] Sigrah, Raobeia Ken, and Stacey M. King (2001). *Te rii ni Banaba*. Institute of Pacific Studies, University of the South Pacific, Suva, Fiji. ISBN 982-02-0322-8.
- [6] Maslyn Williams & Barrie Macdonald (1985). *The Phosphateers*. Melbourne University Press. ISBN 0-522-84302-6.
- [7] Ellis, Albert F. (1935). *Ocean Island and Nauru; Their Story*. Sydney, Australia: Angus and Robertson, limited. OCLC 3444055.
- [8] Takizawa, Akira; Alsleben, Allan (1999–2000). "Japanese garrisons on the by-passed Pacific Islands 1944-1945". *Forgotten Campaign: The Dutch East Indies Campaign 1941-1942*.
- [9] Fiji Times, 27 December 2005
- [10] Premier Postal History. "Post Office List". Premier Postal Auctions. Retrieved 5 July 2013.
- [11] Burgess, S.M., *The climate and weather of Western Kiribati*, NZ Meteorological Service, Misc. Publ. 188(7), 1987, Wellington.
- [12] Wright, Ronald (1986). *On Fiji Islands*, New York: Penguin, p. 116.
- [13] Wright, Ronald (1986). *On Fiji Islands*, New York: Penguin, p. 152.
- [14] Wright, Ronald (1986). *On Fiji Islands*, New York: Penguin, pp. 115-154.

### 4.3.7 External links

- [Banaba](#) a semi-official resource on Banaba, covering history of Banabans and Banaba island, as well as recent news
- [Banaba \(Ocean\) Island during WW2](#) Great history here
- [Jane Resture](#) has an informative Banaba site
- [High resolution satellite image on Google Maps](#)
- [Alternative free satellite image](#)

## 4.4 Bokak Atoll

**Bokak Atoll** (Marshallese: **Bokaak** or **Bok-ak**, [pʰʌŋʷqak]<sup>[1]</sup>) or **Taongi Atoll** is an uninhabited coral atoll in the Ratak Chain of the Marshall Islands, located in the North Pacific Ocean at  $14^{\circ}32'N$   $169^{\circ}00'E$  /  $14.533^{\circ}N$   $169.000^{\circ}E$ . Due to its relative isolation from the main islands in the group, Bokak has an undisturbed flora and fauna that has been allowed to exist in a pristine condition.

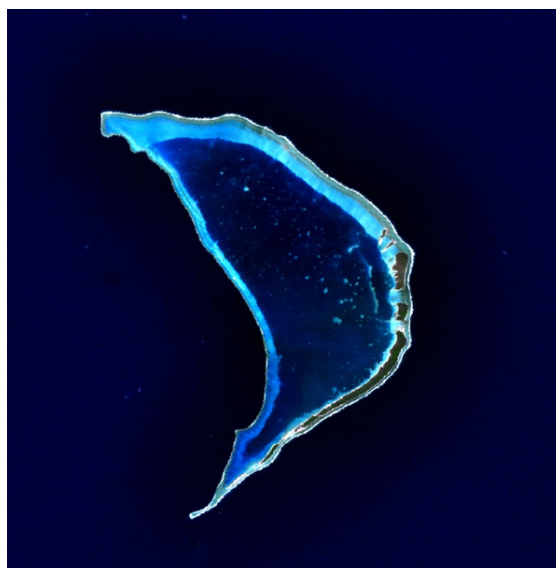
### 4.4.1 Geography

It is located 685 km (426 mi) north of **Majuro Atoll**, the capital of the Marshall Islands, and 280 km (170 mi) northeast of **Bikar Atoll**, the closest atoll, making it the most northerly and most isolated atoll of the country. **Wake Island** is 560 km (350 mi) north-northwest. The land area is 3.2 km<sup>2</sup> (1.2 sq mi), and the lagoon measures 78 km<sup>2</sup> (30 sq mi). It consists of 36 islets. The total area is 129 km<sup>2</sup> (50 sq mi) (including reef flat).<sup>[2]</sup>

### 4.4.2 Physical Features

The atoll is roughly crescent-shaped, measuring about 18 km (11 mi) by 9 km (5.6 mi), and oriented in a north-south direction. The atoll reef is unbroken except for a 20 m (66 ft) wide channel in the west. Ten islets lie on the eastern and southeastern reef. The more important named islets, from north to south, are North Island, Kamwome, Bwdije, Sibylla, Bokak, and Bwokwla. Sibylla is the largest, measuring approximately 7.2 km (4.5 mi) in length and up to 305 m (334 yd) in width. Kamwome Islet to the north-east of Sibylla is the second largest, while Bokak (Taongi), after which the atoll is named, lies to the south of Sibylla.<sup>[3]</sup>

Based on the results of drilling operations on **Enewetak** (Eniwetok) Atoll, in the nearby Ralik Chain of the Marshall Islands, Bokak may include as much as 1,400 m (4,600 ft) of reef material atop a basalt rock base. As



*Bokak Atoll - NASA NLT Landsat 7 (Visible Color) Satellite Image*

most local coral growth stops at about 45 m (148 ft) below the ocean surface, such a massive stony coral base suggests a gradual isostatic subsidence of the underlying extinct volcano,<sup>[4]</sup> which itself rises 3,000 m (9,800 ft) from the surrounding ocean floor. Shallow water fossils taken from just above Enewetak's basalt base are dated to about 55mya.<sup>[5]</sup>



*Bokak's perched lagoon sits 3 feet (0.91 m) above the mean tide level, resulting in an unusually calm surface.*

High boulder and sand ridges indicate a history of severe storms and are a feature of the islets. Inland on the wider islets are sand and rubble flats, while back from the lagoon sides are low sand and gravel ridges. Soils are mostly very immature, a mixture of coarser coral sand and gravel of various textures with very little humus accumulation. The lagoon is shallow, probably not exceeding 30 metres (98 ft) depth, and has many coral heads and patch reefs, some reaching the surface.<sup>[6]</sup>

The lagoon water level is up to 1 metre (3.3 ft) higher than the surrounding ocean due to an influx of wind-

driven waters over the windward ocean reef and the presence of only one narrow reef passage on the leeward side. Water cascades over the coral-covered rim and flats of the sloping leeward reef. A massive algal ridge lines the outer edge of the windward reef, while the south and west reefs are coral-covered narrow flats where landings can be made in quiet weather. A very small algal rim, 100–150 mm (4–6 in) high, on lagoon shores of the westernmost islets, on east-facing lagoon reef-fronts and on the windward edges of coral patches in the lagoon, may be a feature unique to Taongi. This rim is maintained by the constant flow of water over the reef flat.\*[7]

### 4.4.3 Climate

Bokak is the driest of the Marshall Islands atolls, having a semi-arid character. Mean annual temperature is approximately 28 °C (82 °F). Mean annual rainfall is less than 1,000 mm (39 in), and falls primarily during the late summer. Prevailing winds are north to north-easterlies.\*[8]

### 4.4.4 Vegetation



Lagoon shoreline at Sibylla Island, with coral rubble beach and edge of Naupaka shrubland.

Bokak supports just nine plant species. All are native to the Marshall Islands and entirely undisturbed by introduced species. A combination of insufficient rainfall, excellent drainage, and high temperatures lead to an arid environment in which a freshwater Ghyben-Herzberg lens cannot form, and coconut palm is unable to grow.\*[9] The most common formation is a low, sparse scrub forest of tree heliotrope (*Heliotropium foertherianum*), 2–6 m (6 ft 7 in–19 ft 8 in) tall, with occasional taller trees. The understory typically comprises beach maupaka (*Scaevola taccada*), or sparse endemic bunchgrass, ‘ihi (*Portulaca molokiniensis*), ‘ilima (*Sida fallax*), or alena (*Boerhavia herbstii*), the latter being more abundant on broken coral gravel. A small stand of *Pisonia grandis* is found on Kamwome Islet and in another very small stand on Sibylla.\*[10]

Pure stands of very dense beach naupaka shrubland, sometimes with tree heliotrope, are predominant and cover 50–75% of southern, and nearly 100% of northeastern Sibylla. *Heliotropium*, *Scaevola*, and *Sida* dominated shrublands and the sandy bunchgrass savanna (*Lepturus* spp.) represent the finest examples of such vegetation in the Marshalls and probably the entire Pacific region.\*[11]

The aquatic vegetation of the shallow edges of the lagoon consists of sparse coralline algae, encrusting fragments of coral, shell etc., and patches of green seaweed.\*[12]

### 4.4.5 Fauna



Female frigatebird on Sibylla Island.

The atoll supports a large population of sea and shore-birds, with up to 26 species present. Species breeding during 1988 included the brown booby, red-footed booby, great frigatebird, red-tailed tropicbird, sooty tern, white tern, brown noddy, and possibly the reef heron. Migratory birds present included the bristle-thighed curlew, turnstone, wandering tattler, golden plover, and the sanderling. The densest bird populations are on three islets to the north of Sibylla: North (Kita), Kamwome and an unnamed islet. Bokak is the only known breeding ground of Christmas shearwater and possibly Bulwer's petrel.\*[13]

Terrestrial species includes the Polynesian rat on Sibylla. The more aggressive black rat appears to be absent, despite wrecked fishing vessels on the eastern and north eastern reefs.\*[14]\*[15] The snake-eyed skink and large hermit crabs are common.\*[16]

In general, the aquatic fauna population is healthy, but of low diversity, possibly due to the atoll's isolation. Researchers have not seen any marine turtles, but Polynesian custom regarding harvesting assumed their presence.\*[17] Examples of the giant clam family Tridacnidae are very abundant, except for the largest giant clam *T. gigas*. Smaller bivalves were present, but few Mollusks. The reef fish are primarily emperor breams, parrotfish, and red snappers. Also present are moray



*Red-footed booby on Sibylla Island*



*Grey reef shark near western pass*

eel and grey reef shark. Approximately 100 stony coral species and two soft coral species are present.\*[18]

## 4.4.6 History

### Prehistory

Although humans migrated to the Marshall Islands about 2000 years ago,\*[19] there appear to be no traditional Marshallese artifacts present that would indicate any long term settlement. The harsh, desiccated climate, lack of potable water, and poverty of the soils indicate that the atoll will probably remain uninhabited. The atoll has traditionally been used for hunting and gathering, particularly seabirds, by inhabitants of other atolls in the northern Ratak chain.\*[20] Along with the other uninhabited northern Ratak atolls of Bikar and Toke, Bokak was traditionally the hereditary property of the Ratak atoll chain Iroji Lablab. The exploitation of abundant sea turtles, birds, and eggs was regulated by custom, and overseen by the Iroji.\*[21]

### 16th to 19th century

The first European to record discovering Bokak was Toribio Alonso de Salazar, a Spanish explorer, on August 22, 1526, who commanded *Loaisa expedition* after the death of Loaisa and Elcano.\*[22] It was charted as *San Bartolome*. It was explored by Spanish naval officer Fernando Quintano in 1795.\*[23] A number of other Western ships recorded landfall on or passage by Bokak over the following three hundred years, but no attempt at settlement or establishment of food animals was noted, likely due to the arid conditions, and more fertile atolls nearby.\*[24]

The Marshall Islands were added to the protectorate of German New Guinea in 1906. Using the justification that uninhabited atolls were unclaimed, the Germans seized Bokak as government property, despite the protests of the Iroji. As Japan's economic vigor expanded under the Meiji Emperor, the German administration noted Marshallese complaints of Japanese bird poaching, more from the view of protecting German sovereignty, rather than the interests of the islanders.\*[25]

### 20th century to Present

In 1914, the Empire of Japan occupied the Marshall Islands, and transferred German government properties to their own, including Bokak. Like the Germans before them, the Japanese colonial administration did not attempt to exploit the atoll, and the Northern Radak Marshallese continued to hunt and fish unmolested.\*[26]

As a part of the 1940s Japanese militarization of the Marshall Islands, a small seaplane and communication outpost was established on Sibylla Island. During the early stages of the World War II, USN submarines operating in the area would periodically note patrols by Japanese aircraft.\*[27] In March, 1943, the 20 man garrison was removed to Wake Island because of the lack of food and their general inability to sustain themselves on Bokak.\*[28] Air elements of the USAAF, USN, and USMC bombed the (abandoned) facility on April 23, 1944.\*[29]

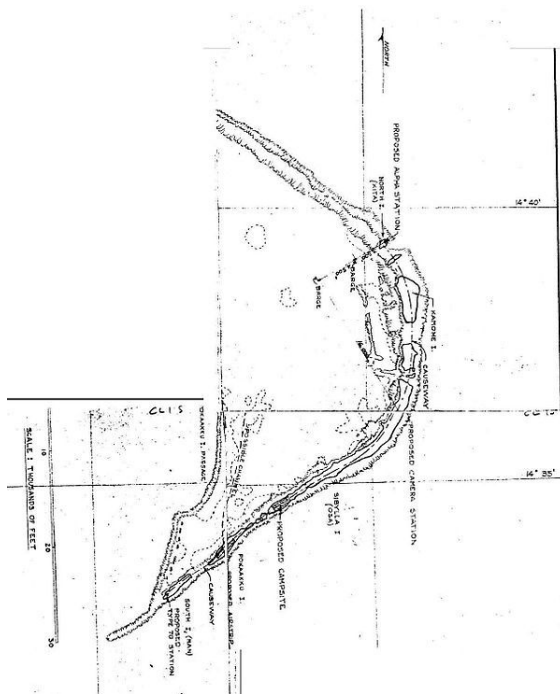
The Marshall Islands as a whole were transferred to American administration in the wake of battles with Japanese forces in 1944. In September, 1945, as a part of the post-war repatriation of Japanese from their former Pacific possessions, a landing party was dispatched on LCI(L) 601 from Kwajalein to Bokak Atoll, and in conjunction with a PBM Mariner searched for potential survivors. Two days of search failed to turn up any survivors, human remains, or graves.\*[30]

While en route from the US to Asia in April, 1953, LST 1138, later commissioned as USS *Steuben County*, dropped anchor at Bokak to search for rumored Japanese stragglers. The landing party noted the remains of the wartime outpost, but found no signs of any current occu-



Corroded skeleton of IIN landing craft, Sibylla Island, 1953.

pants.\*[31]



Nuclear test site master plan, from a declassified 1957 LASL document.

In 1954, the experience of large scale fallout from the Castle Bravo nuclear test on Bikini Atoll led to a pre-planned aerial survey of atolls adjacent to the subsequent Castle Romeo test, timed at one and four hours after the shot. The aircraft were equipped with gamma radiation detectors designed to measure ground contamination from altitudes of 61–152 m (200–500 ft). An overflight of Sibylla Island measured 1.0 mrem/hr (10  $\mu$ Gy) an hour after the shot, dropping to 0.4 mrem/hr (4  $\mu$ Gy) three hours later.\*[32] In 1957, Bokak was surveyed as a site for nuclear weapons testing as a part of Operation Hardtack, but due the number of improvements required to develop it, was passed over in favor of reusing the Bikini, Enewetak, and Nevada test sites.\*[33] The atoll came un-

der renewed consideration for use during Operation Dominic, but by that time the potential for political fallout from nuclear testing within a United Nations Trust Territory was deemed too great.\*[34]

The atoll played a part in the disappearance of several men from Maui, Hawaii. On February 11, 1979, Scott Moorman and four companions set sail from Hana harbor in a 17-foot Boston Whaler, and went missing in subsequent high seas. The boat and buried remains of Mr. Moorman were discovered 3,760 km (2,340 mi) away on Bokak in 1988.\*[35]



V73T on Sibylla Island.

In 1988, the US firm Admiralty Pacific proposed to use the Bokak lagoon as a dump for millions of tons of solid waste. The proposal involved shipping 3.5 million tons of waste the first year and up to 25 million tons and 30 ships after five years.\*[36]

In August, 2003, two ham radio enthusiasts from Texas camped on Sibylla Island for 76 hours to inaugurate the first Taongi ham station, call sign V73T, and assigned the IOTA\*[37] reference number OC-263. The station transmitted from coordinates 14°36.574'N 168°59.977'E / 14.609567°N 168.999617°E.\*[38]\*[39]

The Dominion of Melchizedek, an unrecognized micronation, claims sovereignty over Bokak, based on a 45-year lease allegedly granted by the Iroji Lablab.\*[40] The rights conveyed to DOM can not be greater than the traditional leader possessed themselves. As such they are still subject to the Government of the Marshall Islands and are not independent.

Currently, historic remains include an abandoned camp/homestead, several wrecked ships and the remnant of the former World War Two Japanese communication outpost.\* [41]

#### 4.4.7 Footnotes

- [1] Marshallese-English Dictionary - Place Name Index
- [2] Marshall Islands Atoll Information, Bokak (Taongi) Atoll
- [3] UNEP 2008 World Database on Protected Areas
- [4] Geoscience Research Institute
- [5] Atoll Research Bulletin No. 260
- [6] UNEP
- [7] Ibid
- [8] Ibid
- [9] Atoll Research Bulletin No. 113
- [10] UNEP
- [11] Ibid
- [12] Ibid
- [13] Ibid
- [14] Atoll Research Bulletin No. 446
- [15] Alele Museum
- [16] UNEP
- [17] Atoll Research Bulletin No. 419.
- [18] Marshall Islands Atoll Information, Bokak (Taongi) Atoll.
- [19] University of California, Berkeley
- [20] UNEP
- [21] Atoll Research Bulletin No. 11
- [22] Brand, Donald D. *The Pacific Basin: A History of its Geographical Explorations* The American Geographical Society, New York, 1967, p.39.
- [23] Espinosa y Tello, Josef *Memorias sobre las observaciones astronomicas hechas por los navegantes españoles en distintos lugares del globo* t.II, Madrid, 1809, p.8
- [24] Ships visiting the Marshall Islands
- [25] Atoll Research Bulletin 11
- [26] Atoll Research Bulletin 11
- [27] U.S.S. Wahoo - Report Of First War Patrol
- [28] Report of Surrender and Occupation of Japan, Office of the CNO
- [29] CINCPAC Press Release No. 374, APRIL 25, 1944
- [30] Report of Surrender and Occupation of Japan

- [31] C.D. Pardee
- [32] Department of Health, Safety, and Security , DOE
- [33] U.S. Dept. of Energy OPENnet
- [34] U.S. Dept. of Energy OPENnet
- [35] Anniversary of Hana's Sarah Joe remembered
- [36] Seattle Post-Intelligencer
- [37] IOTA: Islands On The Air Contests
- [38] TDXS Member DXpeditions
- [39] CTDXCC Austin Summerfest 2004
- [40] Cyberfraud: The fictitious “Dominion of Melchizedek
- [41] UNEP

#### 4.4.8 References

- “Marshall Islands Atoll Information, Bokak (Taongi) Atoll” . Institute of Land, Water and Society, Charles Sturt University. 1998-05-01.
- “2008 World Database on Protected Areas” . United Nations Environment Programme (UNEP), World Conservation Monitoring Centre. 2008-01-01.
- “Coral Reef Growth” . Geoscience Research Institute. 1979-01-01.
- “Atoll Research Bulletin No. 260” . 1983. hdl:10088/5039.
- “Atoll Research Bulletin No. 113, Terrestrial Sediments and Soils of the Northern Marshall Islands, pg. 47” . Smithsonian National Museum of Natural History. 1965-12-31. hdl:10088/4842.
- “Distribution of Rat Species (*Rattus* Spp.) On The Atolls Of The Marshall Islands: Past and Present Dispersal” (PDF). Atoll Research Bulletin No. 446. 1997-10-01.
- Spennemann, D.H.R. (1991). *The grounding of the Kinsho Mau No8 Potential impact of shipborne rats on the avifauna of Bokak Atoll*. Majuro Atoll, RMI: Alele Museum.
- “Atoll Research Bulletin No. 419, Description of Reefs and Corals for the 1988 Protected Area Survey of the Northern Marshall Islands, p. 33” . Smithsonian National Museum of Natural History. 1994-08-01.
- Patrick V. Kirch. “Introduction to Pacific Islands Archaeology” . Archaeological Research Facility, University of California, Berkeley, CA, USA. Retrieved 2010-06-04.

- “Atoll Research Bulletin No. 11, Land Tenure in the Marshall Islands” . Smithsonian National Museum of Natural History. 1952-09-01. hdl:10088/5075.
- “Ships visiting the Marshall Islands (until 1885): Bokak (Taongi) Atoll” . Digital Micronesia. Retrieved 2009-03-13.
- “U.S.S. Wahoo - Report Of First War Patrol” . Bryan MacKinnon. Retrieved 2009-03-14.
- “Report of Surrender and Occupation of Japan, Part V, Surrender and Development of Outlying Japanese-held Islands in the Pacific Ocean Areas, Search of Taongi Atoll, p. 205” . Office of the CNO, Navy Department. 1946-05-09.
- “CINCPAC Press Release No. 374, APRIL 25, 1944” . CINCPAC, Navy Department. 1944-04-25.
- “LST 1138 aka USS STEUBEN COUNTY, Years 1952-1955” . C.D. Pardee. 2007-07-11.
- “Reports On Evacuation Of Natives And Surveys Of Several Marshall Island Atolls” (PDF). Department of Health, Safety, and Security , DOE. 1954-05-24.
- “Memo To Graves, et al, Subject: Proposal On Taongi” . U.S. Dept. of Energy OPENnet. 1957-01-16.
- “MCHRON-13 - Summaries Of TWX's, Letters, Notes, Trip Reports, Notes From AFSWC History Office, Conrad-Ogle Files, etc, Dated From December 1961” . U.S. Dept. of Energy OPENnet. 1961-12-31.
- “Anniversary of Hana’ s Sarah Joe remembered” . Maui News. 2009-02-11.
- “Looking For A Distant Landfill? This One Could Make A Big Splash” . Seattle Post-Intelligencer. 1988-06-17.
- “Islands On The Air Programme Information” . Radio Society of Great Britain. Retrieved 2009-06-10. The IOTA contest features amateur radio operations from unusual and rare island groups.
- “TDXS Member DXpeditions” . The Texas DX Society. Retrieved 2009-03-15.
- Ken Harker WM5R. “Austin Summerfest 2004” . Central Texas DX and Contest Club. Retrieved 2009-06-08.
- “Cyberfraud: The fictitious “Dominion of Melchizedek” . Asia Pacific Media Services Limited. Retrieved 2009-03-13.

#### 4.4.9 External links

- UNEP Protected Areas Program Profile
- Atoll Research Bulletin Archive Home Page
- U.S. Dept. of Energy OPENnet advanced search page, (search full text field on string “Taongi” ).
- Plants in the Marshall Islands, A Photo Essay
- Additional papers from DG406, Theories of Governance, Pacific Studies Program, PIAS-DG, University of the South Pacific, Suva, Fiji
- Lost Fishermen still cast shadow... (photos)
- Phantoms, A True Story
- A Taongi visitor's photolog

## 4.5 Campbell Island

For other uses, see Campbell Island (disambiguation).

**Campbell Island** (Motu Ihupuku) is an uninhabited subantarctic island of New Zealand, and the main island of the Campbell Island group. It covers 112.68 square kilometres (43.51 sq mi) of the group's 113.31 km<sup>2</sup> (43.75 sq mi), and is surrounded by numerous stacks, rocks and islets like Dent Island, Folly Island (or Folly Islands), Isle de Jeanette-Marie, and Jacquemart Island, the latter being the southernmost extremity of New Zealand. The island is mountainous, rising to over 500 metres (1,640 ft) in the south. A long fjord, Perseverance Harbour, nearly bisects it, opening out to sea on the east coast.

Campbell Island is a UNESCO World Heritage Site.

### 4.5.1 History



*Meteorological station at Beeman Cove (unmanned/automatic since 1995)*

Campbell Island was discovered in 1810 by Captain Frederick Hasselborough of the sealing brig *Perseverance*, which was owned by shipowner Robert Campbell's



Sydney-based company Campbell & Co. (whence the island's name).\*[1] Captain Hasselborough was drowned on 4 November 1810 in Perseverance Harbour.

The island became a seal hunting base, and the seal population was almost totally eradicated. The first sealing boom was over by the mid-teens of the 19th century. The second was a brief revival in the 1820s. The whaling boom extended here in the 1830s and '40s. In 1874, the island was visited by a French scientific expedition intending to view the transit of Venus. Much of the island's topography is named after aspects of, or people connected with, the expedition. In the late 19th century, the island became a pastoral lease. Sheep farming was undertaken from 1896 until the lease, with the sheep and a small herd of cattle, was abandoned in 1931 as a casualty of the Great Depression.\*[2]

In 1907, a group of scientists spent eight days on the island group surveying. The 1907 Sub-Antarctic Islands Scientific Expedition conducted a magnetic survey and also took botanical, zoological and geological specimens.

During World War II, a coastwatching station was operative at Tucker Cove at the north shore of Perseverance Harbour as part of the Cape Expedition program. After the war, the facilities were used as a meteorological station until 1958, when a new one was established at Bee-man Cove, just a few hundred metres further east.

A notable incident occurred in April 1992. A group of meteorological staff (New Zealand) were swimming when one of them was attacked and partly eaten by a great white shark. Jacinda Amey, one of the workers, swam back to rescue him while the shark was still in the area. She towed him to the shore where first aid was applied. He was rescued by a helicopter flying from Taupo which was guided by a twin engine plane with Sat Nav, which was (and still is) the longest ever single engine helicopter rescue in the world. The victim survived and Amey was awarded the New Zealand Cross – New Zealand's highest bravery medal for civilians. The station was manned permanently until 1995 when a fully automatic station was established. Today, human presence is limited to periodic visits by research and conservation expeditions.

An amateur radio DXpedition organised by the Hellenic Amateur Radio Association of Australia visited Campbell Island during November–December 2012. The team consisted of ten amateur radio operators from around the world, a NZ Department of Conservation Officer and the ships crew of six including the captain on the sailing vessel "Evohe". The ZL9HR DXpedition team made 42,922 on air contacts during an eight (8) day operating period.

### The legend of *The Lady of the Heather*

*The Lady of the Heather* is the title of a romantic novel by Will Lawson. The novel is a mixture of facts and fiction elaborating on the incidents surrounding Captain Hassel-

burg's death on Campbell Island. The story is about a daughter of Bonnie Prince Charlie, exiled to Campbell Island after she is suspected of treachery to the Jacobite cause.\*[3] Her character was inspired by Elizabeth Farr. Farr was probably what would now be called a "ship girl", but the presence of a European woman at this remote place, and her death, gave rise to *The Lady of the Heather* story.\*[4]

The accident happened when William Tucker was present on the *Aurora*. Tucker was another unusual character in the sealing era who became the source of a legend and a novel.\*[5] The remoteness and striking appearance of the sealing grounds, whether on mainland New Zealand or the subantarctic islands, and the sealing era's early place in Australasia's European history, supply the elements for romance and legend which are generally absent in the area's colonial history.

## 4.5.2 Climate

Campbell Island has a maritime tundra climate with consistently cool, cloudy, wet and windy weather. Under the Köppen climate classification it has a Subpolar oceanic climate (*Cfc*). The island receives only 647 hours of bright sunshine annually and it can expect less than an hour's sunshine on 215 days (59%) of the year. The peaks of the island are frequently obscured by cloud. It has an annual rainfall of 1,329 millimetres (52.3 in), with rain, mainly light showers or drizzle, falling on an average of 325 days a year. It is a windy place, with gusts of over 96 kilometres per hour (50 kn; 60 mph) occurring on at least 100 days each year. Variations in daily and annual temperatures are small with a mean annual temperature of 7 °C (44.6 °F), rarely rising above 12.1 °C (53.8 °F). The warmest temperature ever recorded was 21.2 °C (70.2 °F) and the coldest was −7.9 °C (17.8 °F).\*[6]

## 4.5.3 Flora and fauna

### Coleoptera

- Carabidae
  - *Kenodactylus audouini*
  - *Ooapterus clivinooides*
  - *Ooapterus marrineri* [endemic]
  - ?*Laemostenus complanatus* [introduced, established?]

### Important Bird Area

The island is part of the Campbell Island group Important Bird Area (IBA), identified as such by BirdLife International because of its significance as a breeding site

for several species of seabirds as well as the endemic Campbell teal and Campbell snipe.\*[8]

### Remotest tree

The world's most remote tree is believed to be on Campbell Island, a solitary 100-year-old Sitka spruce. The nearest tree is over 222 km away on the Auckland Islands.\*[9]\*[10]\*[11]

### Conservation

In 1954, the island was gazetted as a nature reserve. Feral Campbell Island cattle were eliminated by about 1984 and feral Campbell Island sheep were culled during the 1970s and 1980s, with their eventual extermination in 1992. In 2001, brown rats (Norway rats) were eradicated from the island nearly 200 years after their introduction. This was the world's largest rat eradication programme. The island's rat-free status was confirmed in 2003.\*[6] Since the eradication, vegetation and invertebrates have been recovering, seabirds have been returning and the Campbell teal, the world's rarest duck, has been reintroduced.\*[12] Other native landbirds include the New Zealand pipit and the Campbell snipe, a race or species of the *Coenocorypha* snipes discovered only in 1997. The snipe had survived on Jacquemart Island and began recolonising the main island after the rats had been removed.

Marine mammals have shown gradual recovery in the past decades. Sea lions and southern elephant seals have begun to re-colonize the island.\*[13] Some southern right whales still come into bays in the winter to winter or calve most notably at Northwest Bay and Perseverance Harbour, but in much smaller number than in the Auckland Islands.\*[14] Historically, fin whales used to inhabit close to shore.\*[15]

The area is one of five subantarctic island groups designated as a World Heritage Site by UNESCO.\*[16]

### 4.5.4 Research

To mark the 200th anniversary of its discovery, the Campbell Island Bicentennial Expedition (CIBE) was undertaken from December 2010 to February 2011. The research expedition was the largest multidisciplinary expedition to the island in over 20 years, and aimed to document the island's human history, assess recovery of the island's flora and invertebrate fauna since the removal of sheep and the world's largest rat eradication programme, study the island's plentiful but little understood streams and characterise the unusual stream fauna, and reconstruct past environmental conditions and deduce long term climate change from tarn sediment cores.

The expedition was run by the 50 Degrees South Trust, a

charitable organisation established to further research and education on New Zealand's Subantarctic Islands, and to support the preservation and management of these World Heritage ecosystems. The expedition and the programme outputs can be followed at the CIBE website.

### 4.5.5 See also

- Campbell teal
- Megaherbs
- Campbell Island group
- New Zealand subantarctic islands
- List of Antarctic and subantarctic islands
- Rat Island, where rats have also been eradicated

### 4.5.6 References

- [1] The Antarctic Dictionary
- [2] Ian S. Kerr, Campbell Island, a History, Wellington: A.H. & A.W. Reed, 1976.
- [3] "Tekeli-li" or Hollow Earth Lives: A Bibliography of Antarctic Fiction
- [4] Lawson, Will, *The Lady of the Heather*, Angus and Robertson Ltd., Sydney & London 1945 (First Edition Oswald-Sealy (NZ) Ltd, )
- [5] Peter Entwisle, *Taka: a Vignette Life of William Tucker 1784-1817*, Dunedin: Port Daniel Press, 2005, ISBN 0-473-10098-3, pp.73-75.
- [6] NZ Govt report on eradication of Norway rats
- [7] "NIWA National Climate Database" .
- [8] BirdLife International. (2012). Important Bird Areas factsheet: Campbell Island (and outliers). Downloaded from <http://www.birdlife.org> on 2012-01-22.
- [9] *Guinness Book of World Records*. Guinness World Records Limited. 2013. p. 41. ISBN 9781904994862.
- [10] The Lone Tree of Campbell Island – Sub-Antarctic Science. Subantarcticsscience.wordpress.com (2012-04-13). Retrieved on 2013-08-02.
- [11] Blog and News from. the Centre for Science Communication (2012-02-15). Retrieved on 2013-08-02.
- [12] "DOC's work with subantarctic teal - Recent conservation efforts" . Department of Conservation.
- [13] Antonvanhelden (2012). "Our Far South" . Museum of New Zealand Te Papa Tongarewa. Retrieved 2015-01-05.
- [14] Stewart R., Todd B. (2001). "A note on observations of southern right whales at Campbell Island, New Zealand" (PDF). *Journals of Cetacean Research Management Special Issue 2 (2001)*: 117–120. Retrieved 2014-07-09.

[15] Gaskin, D.e. (1968). "The New Zealand Cetacea(pdf), Fisheries Research Bulletin No.1(New Series)" (PDF). New Zealand Marine Department. p. 24.

[16] New Zealand Sub-Antarctic Islands - UNESCO World Heritage Centre

### 4.5.7 Gallery

- Vagrant adolescent male elephant seal *Mirounga leonina* resting in the tussock grasses
- New Zealand sea lions disporting themselves among the tussock grass
- Campbell Island landscape (taken during an unusually warm and dry late summer)
- Southern royal albatross, *Diomedea epomophora* with chick on mound nest on Campbell Island
- Campbell Island landscape with a megaherb community in the foreground
- Southern royal albatross in flight
- Pair of southern royal albatrosses
- SW Bay
- Six Foot Lake

### 4.5.8 External links

- Topographic map, Campbell Island, NZMS 272/3, Edition 1, 1986.
- Long description of Campbell Island and especially its history
- Landcare Research - Campbell Island
- Campbell Island Bicentennial Expedition
- Campbell Island Freshwater Invertebrate Identification Keys

Coordinates: 52°32.4′S 169°8.7′E﻿ / ﻿52.5400°S 169.1450°E﻿ / -52.5400; 169.1450

## 4.6 Clipperton Atoll



Clipperton

Location of Clipperton Island in the Pacific Ocean

**Clipperton Island** (French: *Île de Clipperton* or *Île de la Passion*, Spanish: *Isla de la Pasión*) is an uninhabited 6 km<sup>2</sup> (2.3 sq mi) coral atoll in the eastern Pacific Ocean, 1,080 km (671 mi) south-west of Mexico, 2,424 km (1,506 mi) west of Nicaragua, 2,545 km (1,581 mi) west of Costa Rica and 2,260 km (1,404 mi) north-west of the Galápagos Islands, Ecuador, at 10°18′N 109°13′W / 10.300°N 109.217°W. It is an overseas minor territory of France under direct authority of the Minister of Overseas France.\*[1]

It is low-lying and largely barren, save for scattered grasses and a few clumps of coconut palms. A small volcanic outcrop rising to 29 m (95 ft) on its south-east side is referred to as "Clipperton Rock".\*[2] The atoll has been occupied at various times by guano miners, would-be settlers or military personnel, mostly from Mexico, which claimed it until international arbitration awarded it to France in 1931.

Clipperton has had no permanent inhabitants since 1945. It is visited on occasion by fishermen, French Navy patrols, scientific researchers, film crews, and shipwreck survivors. It has been a popular site for transmissions by ham radio operators.\*[3]

### 4.6.1 Environment

#### Location, lagoon and climate

Clipperton is about 945 km (587 mi; 510 nmi) south-east of Socorro Island in the Revillagigedo Archipelago, the nearest land. Its ring-shaped atoll completely encloses

a stagnant freshwater lagoon, and is 12 km (7.5 mi) in circumference. The rim averages 150 m (490 ft) in width, reaching 400 m (1,300 ft) in the west and narrows to 45 m (148 ft) in the north-east, where sea waves occasionally spill over into the lagoon. Land elevations average 2 m (6.6 ft), though Clipperton Rock, a barren 29 m (95 ft) volcanic outcrop in the south-east, is considerably higher and is the highest point. The surrounding reef is exposed at low tide.\* [4]

The lagoon is devoid of fish, and contains some deep basins with depths of 43 and 22 m (141 and 72 ft), including a spot known as *Trou-Sans-Fond*, or “the bottomless hole”, with acidic water at its base. The water is described as being almost fresh at the surface, and highly eutrophic. Seaweed beds cover approximately 45 percent of the lagoon's surface.\* [4]



Coconut palms on Clipperton. The lagoon is visible beyond the trees.



Location of Clipperton Island

While some sources have rated the lagoon water as non-potable,\* [5] testimony from the crew of the tuna clipper M/V *Monarch*, stranded for 23 days in 1962 after their boat sank, indicates otherwise. Their report reveals that the lagoon water, while not tasting very good, was drinkable, though “muddy and dirty”. Several of the castaways drank it, with no apparent ill effects.\* [6]

Survivors of an ill-fated Mexican military colony in 1917 (see below) indicated that they were dependent upon rain for their water supply, catching it in old boats they used for this purpose.\* [7] Aside from the lagoon and water caught from rain, no other freshwater sources are known to exist.

It has a tropical oceanic climate, with average temperatures of 20–32 °C (68–90 °F). The rainy season occurs from May to October, when it is subject to tropical storms and hurricanes. Surrounding ocean waters are warm, pushed by equatorial and counter-equatorial currents. It has no known natural resources, its guano having been depleted early in the 20th century. Although 115 species of fish have been identified in nearby waters the only economic activity in the area is tuna fishing.

## Flora and fauna

When Snodgrass and Heller visited in 1898, they reported that “no land plant is native to the island”.\* [8] Historical accounts from 1711, 1825 and 1839 show a low grassy or suffrutescent (partially woody) flora (Sachet, 1962). Coconut palms were introduced in the 1890s and a few still survive. Introduction of pigs by guano miners at the beginning of the 20th century reduced the crab population, which in turn allowed grassland to gradually cover about 80 percent of the land surface (Sachet, 1962). The elimination of these pigs in 1958 —as the result of a personal project by Kenneth E. Stager,\* [9]—has caused most of this vegetation to disappear as millions of crabs (*Gecarcinus planatus*)\* [10] have returned. The result is virtually a sandy desert, with only 674 palms counted by Christian Jost during the “Passion 2001” French mission, and five islets in the lagoon with grass that the terrestrial crabs cannot reach.

During Sachet's visit in 1958, the vegetation was found to consist of a sparse cover of spiny grass and low thickets, a creeping plant (*Ipomoea* sp.), and stands of coconut palm. This low-lying herbaceous flora seems to be pioneer in nature, and most of it is believed to be composed of recently introduced species. Sachet suspected that *Heliotropium curassavicum* and possibly *Portulaca oleracea* were native (Sachet 1962).

On the north-west side the most abundant species are *Cenchrus echinatus*, *Sida rhombifolia*, and *Corchorus aestuans*. These plants compose a shrub cover up to 30 cm in height and are intermixed with *Eclipta*, *Phyllanthus*, and *Solanum*, as well as a taller plant, *Brassica juncea*. A unique feature is the vegetation is arranged in parallel rows of species. Dense rows of taller species alternate with lower, more open vegetation. This was assumed to be a result of the phosphate mining method of trench-digging.\* [4]

The only land animals known to exist are bright-orange crabs, birds, lizards and rats, the last of which seem

to have arrived from recently wrecked ships.\*[11] Bird species include white terns, masked boobies, sooty terns, brown boobies, brown noddies, black noddies, greater frigates, coots, martins, cuckoos and yellow warblers. Ducks have been reported in the lagoon.\*[4] The island has been identified as an Important Bird Area by BirdLife International because of the large breeding colony of masked boobies, with 110,000 individual birds recorded.\*[12] The lagoon harbours millions of isopods, which swimmers claim can deliver a painful sting.\*[13]

A recent report (2006) by the NOAA's Southwest Fisheries Science Center in La Jolla, California, USA indicates that the increased rat presence has led to a decline in both crab and bird populations, causing a corresponding increase in both vegetation and coconut palms. This report urgently recommended eradication of rats so that vegetation might be reduced and the island might return to its “pre-human” state.\*[11]

## 4.6.2 History

### Discovery and early claims

The name *Île de la Passion* (English: Passion Island) was officially given to Clipperton in 1711 by French discoverers Martin de Chassiron and Michel Du Bocage, commanding the French ships *La Princesse* and *La Découverte*. They drew up the first map and annexed the island to France. The first scientific expedition took place in 1725 under Frenchman M. Bocage, who lived on the island for several months. In 1858 France formally laid claim.

The name comes from John Clipperton, an English pirate and privateer who fought the Spanish during the early 18th century, and who is said to have passed by the island. Some sources say he used it as a base for his raids on shipping, but there is no documentary evidence.\*[14]

Other claimants included the United States, whose American Guano Mining Company claimed it under the Guano Islands Act of 1856; Mexico also claimed it due to activities undertaken there as early as 1848–1849. On 17 November 1858 Emperor Napoleon III annexed it as part of the French colony of Tahiti. This did not settle the ownership question. On 24 November 1897, French naval authorities found three Americans working for the American Guano Company, who had raised the American flag. U.S. authorities denounced their act, assuring the French that they did not intend to assert American sovereignty.\*[15]

Mexico reasserted its claim late in the 19th century, and on 13 December 1897 sent the gunboat *La Democrata* to occupy and annex it. A colony was established, and a series of military governors was posted, the last one being Ramón Arnaud (1906–1916). France insisted on its ownership, and a lengthy diplomatic correspondence between the two nations led to the conclusion of a treaty on March

2, 1909, to seek the arbitration of King Victor Emmanuel III of Italy, with each nation promising to abide by his determination.\*[16] His decision would not be rendered until 1931.

### Guano mining and the tragedy of 1917



*Mexican survivors from Clipperton Island, 1917*

The British Pacific Island Company acquired the rights to guano deposits in 1906 and built a mining settlement in conjunction with the Mexican government. That same year, a lighthouse was erected under the orders of President Porfirio Díaz. By 1914 around 100 people—men, women, and children—were living there, resupplied every two months by a ship from Acapulco. With the escalation of fighting in the Mexican Revolution, the regular resupply visits ceased and the inhabitants were left to their own devices.\*[17]

By 1917 all but one of the male inhabitants had died. Many had perished from scurvy, while others (including Captain Arnaud) died during an attempt to sail after a passing ship to fetch help. Lighthouse keeper Victoriano Álvarez was the last man on the island, together with 15 women and children.\*[18] Álvarez proclaimed himself “king” and began an orgy of rape and murder, before being killed by Tirza Rendon, who was the recipient of his unwanted attention.\*[17] Almost immediately after Álvarez's death four women and seven children, the last survivors, were picked up by the US Navy gunship *Yorktown* on 18 July 1917.\*[17] No more attempts were made to colonize it, though it was briefly occupied during the 1930s and 1940s.

The tragic tale of the Mexican colony has been the subject of several novels, including Ivo Mansmann's *Clipperton, Schicksale auf einer vergessenen Insel* ( “Clipperton, Destinies on a Forgotten Island” ) in German,\*[19] Colombian writer Laura Restrepo's *La Isla de la Pasión* ( “Passion Island” ) in Spanish,\*[20] and Ana Garcia Bergua's *Isla de Bobos* ( “Booby Island” ), also in Spanish.\*[21]\*[22]

### Final arbitration of ownership

Mexico and France signed a *compromis* in 1909, agreeing to submit the dispute over sovereignty over Clipperton Island to binding arbitration by King Victor Emanuel of Italy. In 1931 Victor Emanuel issued his arbitral decision in the *Clipperton Island Case*, declaring Clipperton to be a French possession.\*[23]\*[24]\*[25] The French rebuilt the lighthouse and settled a military outpost, which remained for seven years before being abandoned.

### Recent developments



A brown booby

The island was abandoned by the end of World War II after being briefly occupied by the US from 1944–45. Since then it has been visited by sport fishermen, patrols of the French Navy, and by Mexican tuna and shark fishermen. There have been infrequent scientific and amateur radio expeditions, and in 1978 Jacques-Yves Cousteau visited with his team of divers and a survivor from the 1917 evacuation to film a television special called *Clipperton: The Island that Time Forgot*.\*[26]

It was visited by ornithologist Ken Stager of the Los Angeles County Museum in 1958. Appalled at the depredations visited by feral pigs upon the island's brown booby and masked booby colonies (reduced to 500 and 150 birds, respectively), Stager procured a shotgun and killed all 58 pigs. By 2003, the booby colonies had 25,000 brown boobies and 112,000 masked boobies, the world's second-largest brown booby colony and its largest masked booby colony.\*[11]

When the independence of Algeria in 1962 threatened French nuclear testing sites in the African nation, the French Ministry of Defence considered Clipperton Island as a possible replacement. This was eventually ruled out due to the hostile climate and remote location. The French explored reopening the lagoon and developing a harbor for trade and tourism during the 1970s but this idea was abandoned. An automatic weather installation

was completed on 7 April 1980, with data collected by this station being transmitted by satellite to Brittany.

In 1981, the Academy of Sciences for Overseas Territories recommended that the island have its own economic infrastructure, with an airstrip and a fishing port in the lagoon. This would mean opening up the lagoon by creating a passage in the atoll rim. For this purpose, an agreement was signed with the French government, represented by the High Commissioner for French Polynesia, whereby the island became French state property.

In 1986 a meeting took place regarding the establishment of a permanent base for fishing, between the high commissioner of French Polynesia, representing the state, and the survey firm for the development and exploitation of the island (SEDEIC). Taking into account the economic constraints, the distance from markets, and the small size of the atoll, nothing apart from preliminary studies was undertaken. All plans for development were abandoned.

### Castaways

In early 1962 the island provided a home to nine crewmen of the sunken tuna clipper MV *Monarch*, stranded for 23 days from 6 February to 1 March. They reported that the lagoon water was drinkable, though they preferred to drink water from the coconuts they found. Unable to use any of the dilapidated buildings, they constructed a crude shelter from cement bags and tin salvaged from Quonset huts built by the American military 20 years earlier.\*[27]

Wood from the huts was used for firewood, and fish caught off the fringing reef combined with some potatoes and onions they had saved from their sinking vessel to augment the meagre supply of coconuts. The crewmen reported that they tried eating bird's eggs, but found them to be rancid, and they decided after trying to cook a "little black bird" that it did not have enough meat to make the effort worthwhile. Pigs had been eradicated, though the crewmen reported seeing their skeletons around the atoll. The crewmen were eventually discovered by another fishing boat and rescued by the United States Navy destroyer USS *Robison*.\*[27]

In 1988, five Mexican fishermen became lost at sea after a storm during their trip along the coast of Costa Rica. They drifted within sight of the island but were unable to reach it.\*[28] Steven Longbaugh and David Heritage, two American deckhands from a fishing boat based in California, were stranded for three weeks in 1998. They were rescued after rebuilding a survival radio and using distress flares to signal for help.\*[29]

### Recent history

The Mexican and French oceanographic expedition SURPACLIP (UNAM Mexico and UNC Nouméa) made extensive studies in 1997. In 2001, French geogra-



*Surf on Clipperton Island*

pher Christian Jost extended the 1997 studies through his French “Passion 2001” expedition, explaining the evolution of the ecosystem, and releasing several papers, a video film, and a website.\*[30] In 2003 Lance Milbrand\*[31] stayed for 41 days on a National Geographic Society expedition, recording his adventure in video, photos, and a written diary (see links below).

In 2005, the ecosystem was extensively studied for four months by a scientific mission organized by Jean-Louis Étienne, which made a complete inventory of mineral, plant, and animal species, studied algae as deep as 100 m (330 ft) below sea level, and examined the effects of pollution. A 2008 expedition from the University of Washington’s School of Oceanography collected sediment cores from the lagoon to study climate change over the last millennium.\*[32]

On 21 February 2007, administration was transferred from the High Commissioner of the Republic in French Polynesia to the Minister of Overseas France.\*[33]

A recreational scuba diving expedition by the luxury live-aboard safari boat *M/V Nautilus Explorer* dived on the reefs from 15 to 20 April 2007 to observe the marine life and compare these observations with those reported by the Connie Limbaugh (Scripps) expeditions in 1956 and 1958. Commencing in 2010, the *Nautilus Explorer* will be running diving expeditions from Cabo San Lucas via Socorro Island every spring.

During the night of 10 February 2010, the *Sichem Osprey*, a Maltese chemical tanker, ran aground on its way from the Panama Canal to South Korea. The 170-metre (560 ft) ship contained xylene, a clear, flammable volatile liquid. All 19 crew members were reported safe, and the vessel reported no leaks.\*[34]\*[35] The vessel was refloated on March 6\*[36] and returned to service.\*[37]

In mid-March 2012, the crew from The Clipperton Project\*[38] noted the widespread presence of refuse, particularly on the northeast shore and around the Rock. Debris including plastic bottles and containers create a potentially harmful environment to its flora and fauna. This trash is common to only two beaches (North East and South West) and the rest of the island is fairly clean. Other refuse has been left over after the occupation by

the Americans in 1944–45, the French in 1966–69 and the 2008 scientific expedition.

### Amateur radio DX-peditions

The island has long been an attractive destination for amateur radio groups, due to its remoteness, difficulty of landing, permit requirements, romantic history, and interesting environment. While some radio operation was done ancillary to other expeditions, major DX-peditions include FO0XB (1978), FO0XX (1985), FO0CI (1992), FO0AAA (2000), and TX5C (2008).

One DX-pedition was the Cordell Expedition in March 2013 using the callsign TX5K,\*[39] organized and led by Robert Schmieder. The project combined radio operations with selected scientific investigations.\*[40] The team of 24 radio operators made more than 114,000 contacts, breaking the previous record of 75,000. The activity included extensive operation on 6 metres, including EME (Earth-Moon-Earth, or moonbounce) contacts. A notable accomplishment was the use of DXA, a real-time satellite-based online graphic radio log web page that allowed anyone anywhere with a browser to see the radio activity. Scientific work carried out during the expedition included the first collection and identification of foraminifera, and extensive aerial imaging of the island using kite-borne cameras. The team included two scientists from the French-Polynesian University of Tahiti and a TV crew from the French TV channel Thalassa.

An April 2015 DXpedition using callsign TX5P was conducted by Alain Duhauchoy, F6BFH, concurrent with the Passion 2015 scientific expedition to Clipperton Island, and engaging in research of Mexican use of the island during the early 1900s.

### 4.6.3 See also

### 4.6.4 Notes

- [1] Art. 9, Loi n° 55-1052 du 6 août 1955 modifiée portant statut des Terres australes et antarctiques françaises et de l’île de Clipperton.  
Décret du 31 janvier 2008 relatif à l’administration de l’île de Clipperton.
- [2] Clipperton Island History.
- [3] Clipperton Island DXpedition, includes details on several previous ham radio expeditions to Clipperton, and photos of the island.
- [4] “Clipperton Island Shrubs and Grasslands” . *Terrestrial Ecoregions*. World Wildlife Fund. Retrieved 2012-06-17.
- [5] Clipperton Island Travel Tips, Lance Hildebrand’s Journal
- [6] Atoll Research Bulletin No. 94. National Academy of Sciences, Washington, D.C., December 15, 1962, pp.8–9.

- [7] Atoll Research Bulletin No. 94. National Academy of Sciences, Washington, D.C., December 15, 1962, pg.10.
- [8] Snodgrass and Heller, 1902.
- [9] CLIPPERTON ISLAND: PIG STY, RAT HOLE AND BOOBY PRIZE; by Robert L. Pitman, Lisa T. Ballance, and Charly Bost; published in *Marine Ornithology*, volume 33, page 193-194
- [10] Accepted name: *Johngarthia planata*, Stimpson; see: <http://www.catalogueoflife.org/col/search/all/key/johngarthia+planata/match/1> ; <http://crustac3a.tumblr.com/post/38610682919/this-crab-johngarthia-planata-is-one-of-the-few>
- [11] “Clipperton Island: Pig Sty, Rat Hole, and Booby Prize” (PDF). Retrieved 2012-06-17.
- [12] “Clipperton” . *BirdLife data zone: Important Bird Areas*. BirdLife International. 2012. Retrieved 2012-11-21.
- [13] “1992 Clipperton Island Expedition” . Qsl.net. Retrieved 2012-06-17.
- [14] Büch, Boudewijn. *Eilanden* ('Islands'). Holland, 1991, IScBN 9041330860
- [15] *Clipperton Islands Case (Mexico v. France)*, Judicial Decisions Involving Questions of International Law (28 January 1931).
- [16] Original treaty between Mexico and France, French Foreign Ministry Archives, PDF file: Gouv-fr-PDF-19.
- [17] “About Clipperton Island” . Clippertonproject.com.
- [18] “Trip Report and Photos - Clipperton Island, 2010, Elaine Jobin” . Elainejobin.com. 1917-07-18. Retrieved 2012-06-17.
- [19] Mansmann, Ivo (1990). *Clipperton, Schicksale auf einer vergessenen Insel*. Halle: Mitteldeutscher Verlag. ISBN 3-354-00709-5. Retrieved July 7, 2015.
- [20] Restrepo, Laura. *La Isla de la Pasión*, 1989, ISBN 978-0-06-081620-9
- [21] Bergua, Ana Garcia (2007). *Isla de Bobos*. Mexico City: Planeta Editorial. ISBN 978-9707490642. Retrieved July 7, 2015.
- [22] “Isla de Bobos” [Booby Island]. *Goodreads*. Retrieved July 7, 2015. (Spanish)
- [23] Arbitral award in English from JSTOR; *Clipperton Island Case (France v. Mexico)*, (1931) 2 R.I.A.A. 1105 (in French, as published in the *UN Reports of International Arbitral Awards*).
- [24] Clipperton Island Case (France v. Mexico), in *Encyclopaedic Dictionary of International Law* (3d ed. 2009)
- [25] Clipperton Islands Case (*Mexico v. France*) Judicial Decisions Involving Questions of International Law (28 January 1931; article by William Heflin that includes a discussion of the case
- [26] Simon Rogerson, “Cousteau and the Pit” , *Dive magazine*, July 19, 2006.
- [27] Atoll Research Bulletin No. 94. National Academy of Sciences, Washington, D.C., December 15, 1962, pp.8–10.
- [28] Arias, Ron. *Five against the sea: A true story of courage and survival*, 1989
- [29] LaJoie, John. *American Maritime Accident Report*, 1998
- [30] Bruno Quintero (1999-02-22). “Clipperton ou Ile de La Passion” . Clipperton.fr.
- [31] “Lance Milbrand” . Milbrandcinema.com. Retrieved 2012-06-17.
- [32] “Clipperton Atoll Expedition 2008” . Faculty.washington.edu. Retrieved 2012-06-17.
- [33] Ben Cahoon. “French Minor Dependencies” . Worldstatesmen.org.
- [34] “Diver.Net”, Retrieved, November 13, 2010” . Diver.net. 2010-03-01. Retrieved 2012-06-17.
- [35] “ReefTools, Retrieved November 13, 2010” . Reeftools.com. 2010-02-22. Retrieved 2012-06-17.
- [36] “Lloyd's of London;” Retrieved, November 13, 2010” . Lloydslist.com. Retrieved 2012-06-17.
- [37] “MarineTraffic.com” Retrieved, November 13, 2010” . Marinetraffic.com. 2012-06-13. Retrieved 2012-06-17.
- [38] “The Clipperton Project, 1 March 2012” . Clippertonproject.com. 2011-05-26. Archived from the original on 2 May 2012. Retrieved 2012-06-17.
- [39] “The 2013 Cordell Expedition to Clipperton Island” .
- [40] “Cordell Expeditions” .

#### 4.6.5 References

- Allen, G. R. and D. R. Robertson. 1996. *An annotated checklist of the fishes of Clipperton Atoll, tropical eastern Pacific*. Retrieved (2001) from: <<http://www.ots.ac.cr/rbt/revistas/45-2/allen.htm>>.
- Dickinson, Edwin D. *The Clipperton Island Case. American Journal of International Law*, Vol. 27, No. 1., pp. 130–133.
- IFRECOR. 1998. Clipperton. Retrieved (2001), PDF file: Reefbase-PDF-98.
- Jost, C. and S. Andrefouët, 2006, Review of long term natural and human perturbations and current status of Clipperton Atoll, a remote island of the Eastern Pacific, *Pacific Conservation Biology*, Surrey Beatty & Sons Pty Ltd, Chipping Norton, NSW, Australia, 12: 3



- Jost, C., 2005g, Risques environnementaux et enjeux à Clipperton (Pacifique français). *Revue européenne Cybergeog*, 314, 01 juillet 2005, cartes et fig., 15 p. <http://193.55.107.45/eurogeo2.htm>
- Jost, C., 2005f, Bibliographie de l'île de Clipperton, île de La Passion (1711–2005). Paris, *Journal de la Société des Océanistes*, 120–121, juin-déc. 2005, texte et 411 réf., pp. 181–197.
- Pitman, R. L. and J. R. Jehl, 1998. Geographic variation and reassessment of species limits in the “masked” boobies of the eastern Pacific Ocean. *Wilson Bulletin* 110:155–170.
- Restrepo, Laura. *La Isla de la Pasión* 1989, ISBN 978-0-06-081620-9 (a version of the tragic events which took place on Clipperton, put in the form of a novel).
- Sachet, M. H. 1962. Flora and vegetation of Clipperton Island. *Proceedings of the California Academy of Sciences*. 4th ser., v.31, no.10. The Academy, San Francisco.
- Skaggs, Jimmy. 1989. *Clipperton. A History of the Island the World Forgot*. Walker and Company. New York.
- Snodgrass, R. E. and E. Heller. 1902. *The birds of Clipperton and Cocos Islands; Papers from the Hopkins Stanford Galapagos expedition 1898–1899*. The Academy, Washington, DC.
- Tamburini Francesco, La controversia tra Francia e Messico sulla sovranità dell'isola di Clipperton e l'arbitrato di Vittorio Emanuele III (1909–1931), in “*Ricordo di Alberto Aquarone, Studi di Storia*”, Pisa, Edizioni Plus, 2008
- UNEP/IUCN. 1988. *Coral Reefs of the World*. Volume 3: Central and Western Pacific. UNEP Regional Seas Directories and Bibliographies. IUCN/UNEP, Gland, Switzerland, Cambridge, UK, and Nairobi, Kenya.

#### 4.6.6 External links

##### Photo galleries

- Clipperton Island 2008 Flickr gallery containing 94 large photos from a visit to Clipperton Island in 2008.
- 3D Photos of Clipperton Island 2010 3D anaglyphs of Clipperton Island

##### General websites

- Wikimedia Atlas of Clipperton Island
- Clipperton Island at Infoplease
- WorldStatesmen – France – Minor possessions

##### French-language websites

- (French) 80 pages from C. Jost, CNRS, researcher's website
- (French) Site of Jean-Louis Étienne's expedition

##### Expeditions to Clipperton

- Lance Milbrand's castaway photo album at NationalGeographic.com
- Lance Milbrand's Clipperton diary at NationalGeographic.com
- 1992 Clipperton Island Expedition
- Chris Grossman's pictures from the 2007 *Nautilus Explorer* expedition to Clipperton Island
- The 2008 Amateur Radio “DXpedition”
- “Cousteau and the Pit” , Simon Rogerson, *Dive magazine*, July 19, 2006.
- 2008 Clipperton Atoll Expedition, includes several large photos of Clipperton Atoll.

## 4.7 Cocos Island

For other uses, see [Cocos Island \(disambiguation\)](#).

**Cocos Island** (Spanish: *Isla del Coco*) is an island designated as a National Park off the shore of Costa Rica, that does not allow inhabitants other than Costa Rican Park Rangers. It constitutes the 11th\*<sup>[2]</sup> of the 13 districts of Puntarenas Canton of the province of Puntarenas.\*<sup>[3]</sup> It is located in the Pacific Ocean, approximately 550 km (342 mi) from the Pacific shore of Costa Rica.\*<sup>[4]</sup> With an area of approximately 23.85 km<sup>2</sup> (9.21 sq mi), about 8 km × 3 km (5 mi × 2 mi) and a perimeter of around 23.3 km (14.5 mi),\*<sup>[5]</sup> this island is more or less rectangular in shape.

Surrounded by deep waters with counter-currents, Cocos Island is admired by scuba divers for its populations of hammerhead sharks, rays, dolphins and other large marine species.\*<sup>[6]</sup> The extremely wet climate and oceanic character give Cocos an ecological character that is not shared with either the Galápagos Archipelago or any of the other islands (e.g., Malpelo or Coiba) in this region of the world.\*<sup>[7]</sup>

### 4.7.1 Present status and international distinctions

Cocos Island was declared a Costa Rican National Park by means of Executive Decree in 1978 . Cocos Island National Park was designated a World Heritage Site by UNESCO in 1997. In 2002, the World Heritage Site designation was extended to include an expanded marine zone of 1,997 km<sup>2</sup> (771 sq mi). In addition, it is included in the list of “Wetlands of International Importance” .\*[8]

In 2009 Cocos Island was short-listed as a candidate to be declared one of the *New7Wonders of Nature* of the world by the *New7Wonders of the World* Foundation, and ranked second in the islands category. \*[9]

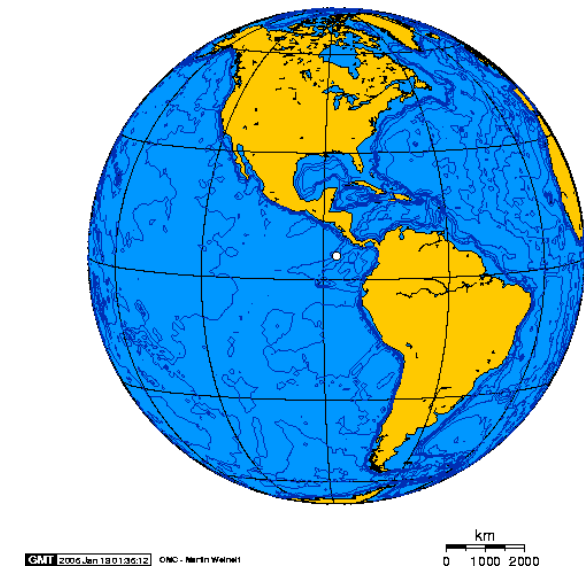
Thanks to the breathtaking marine life in its waters (see Fauna section below), Cocos Island was named one of the best 10 scuba diving spots in the world by PADI (Professional Association of Diving Instructors) and a “must do” according to diving experts. \*[10] For many, the main attractions are the large pelagic fish species, which are very abundant in this unique meeting point between deep and shallow waters. The largest schools of hammerhead sharks in the World are consistently reported there. Encounters with dozens if not hundreds of these and other large animals are nearly certain in every dive. Smaller and colorful species are also abundant in one of the most extensive and rich reefs of the south eastern Pacific. \*[11] The famous oceanographer Jacques Cousteau visited the island several times and in 1994 called it “the most beautiful island in the world” . These numerous accolades highlight the urgent need to protect Cocos Island and surrounding waters from illegal large-scale fishing, poaching and other threats.

The only persons allowed to live on Cocos Island are Costa Rican Park Rangers, who have established two encampments, including one at English Bay. Tourists and ship crew members are allowed ashore only with permission of island rangers, and are not permitted to camp, stay overnight or collect any flora, fauna or minerals from the island. Occasional amateur radio DXpeditions are allowed to visit.

This island is popular in pirate lore as well. It is said that over 300 expeditions have gone in search of treasure such as the hoard of Benito Bonito, the Treasure of Lima, and many others. Some incidents of small caches have been discovered, leading many to believe the stories of vast pirate treasures to be valid.

### 4.7.2 Geology and landscape

Cocos Island is an oceanic island of both volcanic and tectonic origin. It is the only emergent island of the Cocos Plate, one of the minor tectonic plates. Potassium-argon dating established the age of the oldest rocks between 1.91 and 2.44 million years (Late Pliocene)\*[12] and is composed primarily of basalt, which is formed by cooling



*Orthographic projection centred over Cocos Island*



*A waterfall at Wafer Bay, Cocos Island*



*Wafer Bay Sunset*

lava.

The landscape is mountainous and irregular and the summit is Cerro Iglesias at 575.5 m. \*[12] In spite of its mountainous character, there are flatter areas between 200–260 m in elevation in the central part of the island, which are said to be a transitional stage of the geomorphological cycle of V-shaped valleys. \*[13] With four bays, three of them in the north side (Wafer, Chatham and Weston), Co-



*Cabins for Park Ranger made by volunteers under the technical direction of architect Ibo Bonilla*



*Cliffs known as "The Moai"*

Cocos Island has a number of short rivers and streams that drain the abundant rainfall into them. Due to large, 300-foot cliffs that ring much of the island, the easiest point of entry is at Chatham Bay.\* [14] The largest rivers are the Genio and the Pittier, which drain their water into Wafer Bay. The mountainous landscape and the tropical climate combine to create over 200 waterfalls throughout the island. The island's soils are classified as entisols which are highly acidic and could be easily eroded by the Island's high rainfall on the steep slopes, were it not for the dense forest coverage.

### 4.7.3 Climate

The climate of the island is mostly determined by the latitudinal movement of the Intertropical Convergence Zone which creates cloudiness and precipitation that is constant throughout the year.\* [15] This makes the climate in the island humid and tropical with an average annual temperature of 26.6 °C (79.9 °F) and an average annual rainfall of over 7,000 mm (276 in). Rainfall is high throughout the year, although lower from January through March and slightly lower during late September and October.\* [16] Numerous oceanic currents from the central Pacific Ocean that converge on the island also have an important influence.



*Genius River Bridge, made with marine debris by Tico artist "Pancho"*

### 4.7.4 Ecology



*Chatham beach on Cocos Island*

Cocos Island is home to dense and exuberant tropical moist forests. It is the only oceanic island in the eastern Pacific region with such rain forests and their characteristic types of flora and fauna. The cloud forests at higher elevations are also unique in the eastern Pacific. The island was never linked to a continent, so the flora and fauna arrived via long distance dispersal from the Americas. The island has therefore a high proportion of endemic species.

## Flora

The island has 235 known species of flowering plants, of which 70, or nearly 30%, are endemic. A good comprehensive study on the flora of the island is provided in the journal *Proceedings of the California Academy of Sciences*.<sup>\*</sup>[17] Also, 74 species of ferns and fern allies (lycopodiophytes and pteridophytes, see<sup>\*</sup>[18]), and 128 species of mosses and liverworts (bryophytes, see<sup>\*</sup>[19]), 90 species of fungi and 41 species of slimemolds<sup>\*</sup>[20] have been reported. Nevertheless, more exhaustive investigations are expected to reveal many more species.

The island has three main plant communities. The coastal forests extend from the seacoast up to 50 meters elevation. Purple coral tree (*Erythrina fusca*), coconut palm (*Cocos nucifera*), and pond-apple (*Annona glabra*) are the predominant trees, with an understory of ferns, shrubs of the Rubiaceae and Solanaceae families, sedges and grasses, and herbaceous plants of the Leguminosae and Malvaceae families.

The inland forests extend from 50 to 500 meters elevation. “Palo de hierro” or huriki (*Sacoglottis holdridgei*), “avocado” (*Ocotea insularis*) and the endemic *Cecropia pittieri* are the most common canopy trees. The trees are festooned at all levels with epiphytic plants, including orchids, ferns, bromeliads and mosses. The understory includes sedges such as *Hypolirum amplum* and various species of ferns and tree ferns including *Cyathea armata* and *Danaea media*. The endemic palm *Rooseveltiya frankliniana* is also common.

Cloud forests are found at the highest elevations, over 500 meters. *Melastoma* spp. is predominant.

The general vegetation of Cocos Island has greatly changed since the island was first named and described by Europeans. Captain Wafer, who visited the island in 1685 and whose name was given to the landing place, describes extensive coconut groves extending inland into the interior of the island. It is very unlikely that these groves developed naturally, and it seems evident that pre-European man must once have cleared considerable areas in the ravine bottoms and interior plateaus and ridges, utilizing the clearings for coconut plantations of substantial extent. It has been posited that these plantations were used to provide fresh liquid and food for pre-Columbian voyages (balsa rafts using *guara* navigation) between Guatemala and northwestern South America. After the Spanish conquest and its consequences, these voyages ended and the tropical jungle recovered the land that had been laboriously cleared by early human hands.<sup>\*</sup>[21]

## Fauna

**Land fauna** The island has over 400 known species of insects, of which 65 (16%) are endemic. The greatest diversity is found among the Lepidoptera and Formicidae. Over 50 species of other arthropods have been described

(spiders, centipedes, millipedes, and isopods).

Two species of lizard are found on the island, an anole (*Anolis townsendii*) and a gecko (*Sphaerodactylus pacificus*); both are endemic. No amphibians have been reported.

Nearly 90 bird species have been reported. The island and neighboring rocks are home to large nesting colonies of migratory seabirds, including the brown booby (*Sula leucogaster*), red-footed booby (*Sula sula*), great frigatebird (*Fregata minor*), white tern (*Gygis alba*) and brown noddy (*Anous stolidus*). Seven species of land birds inhabit the island, including three endemics: the Cocos cuckoo (*Coccyzus ferrugineus*), Cocos flycatcher (*Nesotriccus ridgwayi*) and Cocos finch (*Pinaroloxias inornata*).<sup>\*</sup>[22]

The island has five land mammal species, pigs, deer, goats, cats and rats. All these land mammals were introduced by humans. The Costa Rican government has vowed to control the populations of these animals, as they are harmful to the local ecosystems.<sup>\*</sup>[23]

**Marine fauna** The rich coral reef, volcanic tunnels, caves, massifs and deeper waters surrounding Cocos Island are home to more than 30 species of coral, 60 species of crustaceans, 600 species of molluscs and over 300 species of fish. These include large populations of yellowfin tuna (*Thunnus albacares*), giant mantas (*Manta birostris*), sailfish (*Istiophorus platypterus*) and sharks, such as whitetip reef shark (*Triaenodon obesus*) and scalloped hammerhead shark (*Sphyrna lewini*). The largest of all species of fish is also present, the whale shark (*Rhincodon typus*).

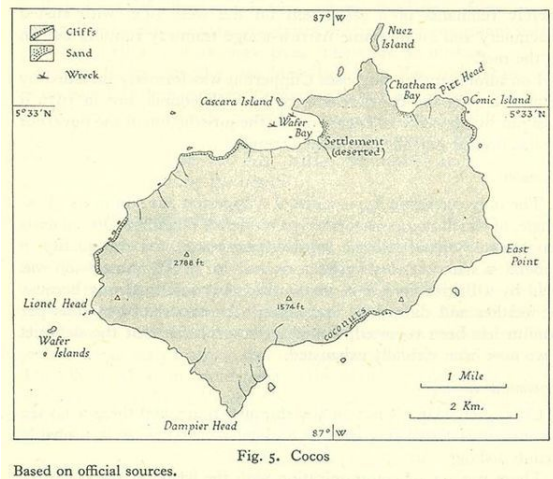
Other large marine animals include humpback whales (*Megaptera novaeangliae*), pilot whales (*Globicephala macrorhynchus*), bottlenose dolphins (*Tursiops truncatus*), and sea lions (*Zalophus californianus*).

There are also reptiles; hawksbill turtles (*Eretmochelys imbricata*), green turtles (*Chelonia mydas*) and olive ridley turtles (*Lepidochelys olivacea*).

## 4.7.5 History

### Discovery and early cartography

The 16th century historian Gonzalo Fernández de Oviedo informs in his book *Historia General y Natural de las Indias, Islas y Tierra Firme del Mar Océano* (Seville, 1535) about the discovery of the island due to the Spanish navigator from Avilés Juan de Cabezas (also known as Juan de Grado) in 1526.<sup>\*</sup>[24] D. Lievre, *Una isla desierta en el Pacífico; la isla del Coco in Los viajes de Cockburn y Lievre por Costa Rica* (1962: 134) tells that the first document with the name “Isle de Coques” is a map painted on parchment, called that of Henry II that appeared in 1542 during the reign of Francis I of France. The planisphere



Cocos Island

of Nicolás Desliens (1556, Dieppe) places this *Ysle de Coques* about one and half degrees north of the Equator. (See also Mario A. Boza and Rolando Mendoza, *Los parques nacionales de Costa Rica*, Madrid, 1981.) Blaeu's *Grand Atlas*, originally published in 1662, has a colour world map on the back of its front cover which shows *I. de Cocos* right on the Equator. Frederik De Witt's *Atlas*, 1680 shows it similarly. The *Hondius Broadside map* of 1590 shows *I. de Cocos* at the latitude of 2 degrees and 30 minutes northern latitude, while in 1596 Theodore de Bry shows the Galápagos Islands near 6 degrees north of the Equator. Emanuel Bowen, *A Complete system of Geography*, Volume II (London, 1747: 586) states that the Galápagos stretch 5 degrees north of the Equator.

#### Administrative history



The islet Manuelita is a preferred site for diving and observing multiple marine species

The island became part of Costa Rica in 1832 by decree No. 54 of the Constitutional Assembly of the free state of Costa Rica.

Whalers stopped at Cocos Island regularly until the mid-19th century, when inexpensive kerosene started to replace whale oil for lighting.

In October 1863 the ship *Adelante* dumped 426

Polynesian ex-slaves on the island, the captain being too lazy to take them home as promised. When they were saved by the *Tumbes*, one month later, only 38 had survived, as the rest had perished from smallpox. (See: 'Ata).

In 1897 the Costa Rican government named the German adventurer and treasure hunter August Gissler the first Governor of Cocos Island and allowed him to establish a short-lived colony there.

On May 12, 1970 the insular territory of Cocos Island was incorporated administratively into Central Canton of the Province of Puntarenas by means of Executive Decree No. 27, making it the Eleventh District of Central Canton. The island's 33 residents, the Costa Rican park rangers, were allowed to vote for the first time in Costa Rica's February 5, 2006 election.

#### 4.7.6 Piracy and hidden treasures

The first claims of treasure buried on the island came from a woman named Mary Welsh, who claimed 350 tons of gold raided from Spanish galleons had been buried on the island. She had been a member of a pirate crew led by Captain Bennett Graham, and was transported to an Australian penal colony for her crimes. She possessed a chart showing where Graham's treasure was supposed to be hidden. On her release she returned to the island with an expedition, which had no success in finding anything, with the points of reference in the chart having disappeared.\* [25]

Another pirate supposed to have buried treasure on the island was the Portuguese Benito Bonito.\* [26]\* [27] Though Bonito was hunted down and executed, his treasure was never retrieved.\* [27]

The best known of the treasure legends tied to the island is that of the *Treasure of Lima*. In 1820, with the army of José de San Martín approaching Lima, Viceroy José de la Serna is supposed to have entrusted treasure from the city to British trader Captain William Thompson for safekeeping until the Spaniards could secure the country. Instead of waiting in the harbor as they were instructed,\* [28] Thompson and his crew killed the Viceroy's men and sailed to Cocos, where they buried the treasure.\* [26]\* [27] Shortly afterwards, they were apprehended by a Spanish warship. All of the crew except Thompson and his first mate were executed for piracy. The two said they would show the Spaniards where they had hidden the treasure in return for their lives – but after landing on Cocos, they escaped into the forest.\* [27]

Hundreds of attempts to find treasure on the island have failed.\* [27]\* [29] Several early expeditions were mounted on the basis of claims by a man named Keating, who was supposed to have befriended Thompson. On one trip, Keating was said to have retrieved gold and jewels from the treasure.\* [30]\* [31] Prussian adventurer August

Gissler lived on the island for most of the period from 1889 until 1908, hunting the treasure with the small success of finding six gold coins.\*[27]

### Treasure of Lima: A Buried Exhibition

Treasure of Lima: A Buried Exhibition is an art project curated by Nadim Samman for Thyssen-Bornemisza Art Contemporary Academy and commissioned by Francesca von Habsburg. Works by forty internationally celebrated artists were placed inside an exhibition architecture (i.e. contemporary ‘treasure’ chest) designed by architects ArandaLasch and then buried at a secret location on Cocos Island in May 2014. The GPS coordinates (or ‘map’) of the exhibition location were logged at the site of burial. These coordinates were then given to the Dutch artist Constant Dullaart, who worked with a leading cryptographer to encode them. The resulting string of code was then made physical as a 3D printed steel cylinder and placed inside a second version of the chest. This chest will be auctioned to raise funds for a shark research and conservation initiative on Cocos Island. The buyer will not receive the de-encryption key.

Treasure of Lima: A Buried Exhibition brought together artists, marine biologists, collectors, and sailors together to engage with conservation issues while exploring the history of piracy on Cocos, the politics of access and exclusion in the fields of art and natural heritage, as well as the limits of the exhibition format.

### 4.7.7 Habitats threatened

The mostly unperturbed habitats are, however, under growing human pressure. Illegal poaching of large marine species in and around its protected waters has become a main concern.\*[32] Growing local and worldwide demand for tuna, shark fin soup and other seafood is threatening the island's fragile ecosystems.\*[33] The government of Costa Rica has been openly accused of passivity and even benefiting corruptly from illegal shark fin and other seafood trade to large markets, such as China and other Asian countries.\*[34] The government has shown some willingness to protect the island's natural riches and prosecute poachers.\*[35] However, efforts to effectively patrol the waters and enforce environmental laws face big financial and bureaucratic difficulties, as well as being prone to the corruption of local, national and international authorities.

Recent events show that large-scale illegal poaching keeps happening. Despite initial hope in stopping and charging poachers,\*[36] who have been caught with abundant evidence,\*[37] they have been quickly released under suspicious circumstances.\*[38] Also, efforts to raise funds for protection have been dwarfed.

Marvin Orlando Cerdas, a judge with the local Puntarenas Court of Justice, obscurely allowed 22 poachers

caught red-handed to escape the country.\*[38]

Also under highly suspicious and allegedly corrupt circumstances, the District Attorney Michael Morales Molina, stopped the auction for public benefit of confiscated goods, immediately after the spokesman of the large illegal poacher ship “Tiuna” simply made the request.\*[39]

### 4.7.8 Cocos Island in fiction

The book *Desert Island*\*[40] proposed the highly detailed theory that Daniel Defoe used the Isla del Coco as an accurate model for his descriptions of the island inhabited by the marooned Robinson Crusoe. However Defoe placed Crusoe's island not in the Pacific, but rather off the coast of Venezuela in the Atlantic Ocean.\*[41]

Robinson's neighbouring *Terra Firma* is shown on the colour map of Joannes Jansson (Amsterdam) depicting the northeastern corner of South America, entitled *Terra Firma et Novum Regnum Granatense et Popayan*. It belongs to the early group of plates printed by William Blaeu from 1630 onwards. The properly called Terra Firma was the Isthmus of Darien.\*[42] Crusoe's two references to Mexico are against a South American island as well.

The Clive Cussler novel *The Silent Sea* (2010) references mystic Chinese pirate tales but locates the island off the northern Pacific coast of the US.

### 4.7.9 References

- Cocos Island National Park institutional website
- Private Site and most popular dedicated to Cocos Island by Ocean & Earth Defenders World Federation (Research & Information Center for Marine and Wildlife Protection)

- [1] “Ramsar List” . Ramsar.org. Retrieved 13 April 2013.
- [2] Isla Coco
- [3] GUIA DE CODIGOS TRIBUTARIOS
- [4] Hogue, C. and Miller, S. 1981. Entomofauna of Cocos Island, Costa Rica. Atoll Research Bulletin 250: 1–29.
- [5] Montoya, M. 2007. Conozca la Isla del Coco: una guía para su visitación. In Biocursos para amantes de la naturaleza: Conozca el parque nacional Isla del Coco, la isla del tesoro (26 abril al 6 de mayo 2007). (ed. Organization for Tropical Studies). Organization for Tropical Studies. San José, Costa Rica. 35–176.
- [6] Shark-counting divers off Costa Rica reveal limits of marine reserves

- [7] Kirkendall, L. and Jordal, B. 2006. The bark and ambrosia beetles (Curculionidae, Scolytinae) of Cocos Island, Costa Rica and the role of mating systems in island zoogeography. *Biological Journal of the Linnean Society* 89(4): 729–743.
- [8] Ramsar Convention text in English
- [9] New 7 Wonders of the Word: Live Ranking
- [10] World's 10 best scuba spots - Active - MSNBC.com
- [11] Guzmán, H. M. and Cortés, J. (1992). Cocos Island (Pacific of Costa Rica) coral reefs after the 2010-83 El Niño disturbance. *Revista de Biología Tropical* 40: 309–324.
- [12] Castillo, P., Batiza, R., Vanko, D., Malavassi, E., Barquero, J., and Fernandez, E. 1988. Anomalously young volcanoes on old hot-spot traces. I. Geology and petrology of Cocos Island. *Geological Society of America Bulletin* 100: 1400–1414.
- [13] Malavassi, E. 1982. Visita al Parque Nacional Isla del Coco. *Revista Geográfica de América Central* (15–16): 211–216.
- [14] Stater, Adam. “Chatham Bay, Cocos Island” .
- [15] Herrera, W. 1984. Informe de campo. Gira realizada a la Isla del Coco con el objetivo de recabar información climatológica. San José, Servicio de Parques Nacionales, 6 p.
- [16] Sinergia 69. 2000. Volumen 2. Aspectos meteorológicos y climatológico del ACMIC y su área de influencia. San José, Proyecto GEF/PNUD Conocimiento y uso de la biodiversidad del ACMIC, 184 p.
- [17] Trusty, J.L., Kesler, H.C. and Haug-Delgado, G. 2006. Vascular flora of Isla del Coco, Costa Rica. *Proceedings of the California Academy of Sciences (Fourth Series)* 57(7): 247–355.
- [18] Gomez, L.D. 1975. The Ferns and Fern-Allies of Cocos Island, Costa Rica. *American Fern Journal* 65 (4): 102–104.
- [19] Dauphin G. 1999. Bryophytes of Cocos Island, Costa Rica: diversity, biogeography and ecology. *Revista de Biología Tropical*. 47:309–328
- [20] Rojas, C. and Stephenson, S.L. 2008. Myxomycete ecology along an elevation gradient on Cocos Island, Costa Rica. *Fungal Diversity* 29: 119–129.
- [21] Heyerdahl, T. 1978. *Early Man and the Ocean*. Doubleday & Company, New York
- [22] Stater, Adam. “Endemic Birds of Cocos Island” .
- [23] nacion.com: ALDEA GLOBAL “País en guerra contra especies invasoras de isla del Coco”
- [24] J. Lines, *Diario de Costa Rica*, May 12, 1940
- [25] “Legends and Lore” . PBS.org. Retrieved May 27, 2011.
- [26] MacInnis, Joe (1975). *Underwater Man*. New York: Dodd, Mead & Company. p. 28. ISBN 0-396-07142-2. OCLC 1166443.
- [27] “Legends and Lore (Part 2)”. PBS.org. Retrieved May 27, 2011.
- [28] “American Castaways Are Found On Tropical Island” . *The Daily News (Huntingdon, Pennsylvania)*. 29 October 1931. The ship had a slip-hawser on its anchor and instructions to await developments. But the captain and crew had ideas of their own. When morning came, Lima was still in the hands of the patriots but their treasures had vanished.
- [29] “Briton given permission to look for legendary treasure of Lima” . *The Daily Telegraph*. 26 July 2010.
- [30] Walter Noble Burns (11 November 1911). “The Treasure of Cocos Island; The Romantic History of a Pirate Hoard on an Island in the Pacific” . *Newburg Telegram*.
- [31] MacInnis, pp. 29–30.
- [32] Eco-Exchange - April-May 2001 - Modern-Day Pirates Plunder Saltwater Booty Near Costa Rica's Fabled Cocos Island
- [33] 38 Million Sharks Killed for Fins Annually, Experts Estimate
- [34] “CNN.com - Transcripts” . *CNN*.
- [35] Costa Rica Court Rules for Sea Turtles, Jails Captain
- [36] Cae atunero con pesca ilegal en Isla del Coco - EL PAÍS - nacion.com
- [37] El ‘Tiuna’ traía más de 280 toneladas de atún y explosivos - EL PAÍS - nacion.com
- [38] Juez puntarenense levanta medidas cautelares a atuneros - EL PAÍS - nacion.com
- [39] Dall’ Anese: ‘La isla del Coco está perdida’ - EL PAÍS - nacion.com
- [40] Robinson Crusoe Enterprises, North Vancouver, 1996
- [41] See discussion page for further details.
- [42] Bowen, 1747: 593, and Charles Theodore Middleton, *A new and Complete System of Geography*, Volume II, London, printed for J. Cooke, 1777–1778, page 448

#### 4.7.10 External links

- “Cocos Island moist forests” . *Terrestrial Ecoregions*. World Wildlife Fund.
- Island of the Sharks - Legends and Lore

## 4.8 Easter Island

For the album by Kris Kristofferson, see Easter Island (album).

“Rapa Nui” redirects here. For other uses, see Rapa Nui (disambiguation).

**Easter Island** (Rapa Nui: *Rapa Nui*, Spanish: *Isla de Pascua*) is a Chilean island in the southeastern Pacific Ocean, at the southeasternmost point of the Polynesian Triangle. Easter Island is famous for its 887 extant monumental statues, called *moai*, created by the early Rapa Nui people. In 1995, UNESCO named Easter Island a World Heritage Site, with much of the island protected within Rapa Nui National Park.

Polynesian people most likely settled on Easter Island sometime between 700 to 1100 CE, and created a thriving and industrious culture as evidenced by the island's numerous enormous stone *moai* and other artifacts. However, human activity, the introduction of the Polynesian rat and overpopulation led to gradual deforestation and extinction of natural resources which severely weakened the Rapa Nui civilization.\*[5] By the time of European arrival in 1722, the island's population had dropped to 2,000–3,000 from an estimated high of approximately 15,000 just a century earlier. European diseases and Peruvian slave raiding in the 1860s further reduced the Rapa Nui population, to a low of only 111 inhabitants in 1877.\*[6]

Easter Island is one of the most remote inhabited islands in the world.\*[7] The nearest inhabited land (around 50 residents in 2013) is Pitcairn Island, 2,075 kilometres (1,289 mi) away;\*[8] the nearest town with a population over 500 is Rikitea, on the island of Mangareva, 2,606 km (1,619 mi) away; the nearest continental point lies just in central Chile, 3,512 kilometres (2,182 mi) away.

Easter Island is a special territory of Chile that was annexed in 1888. Administratively, it belongs to the Valparaíso Region, and, more specifically, it is the only commune of the Province Isla de Pascua.\*[9] According to the 2012 Chilean census, the island has about 5,800 residents, of which some 60 percent are descendants of the aboriginal Rapa Nui.

### 4.8.1 Name

The name “Easter Island” was given by the island's first recorded European visitor, the Dutch explorer Jacob Roggeveen, who encountered it on Easter Sunday (5 April) in 1722, while searching for Davis or David's island. Roggeveen named it *Paasch-Eyland* (18th century Dutch for “Easter Island”).\*[10] The island's official Spanish name, *Isla de Pascua*, also means “Easter Island” .

The current Polynesian name of the island, *Rapa Nui* (“Big Rapa”), was coined after the slave raids of the early 1860s, and refers to the island's topographic resemblance to the island of Rapa in the Bass Islands of the Austral Islands group.\*[11] However, Norwegian ethnographer Thor Heyerdahl argued that *Rapa* was the original name of Easter Island and that *Rapa Iiti* was named by refugees from there.\*[12]

The phrase *Te pito o te henua* has been said to be the original name of the island since Alphonse Pinart gave it the romantic translation “the Navel of the World” in his *Voyage à l'Île de Pâques*, published in 1877.\*[13] William Churchill (1912) inquired about the phrase and was told that there were three *te pito o te henua*, these being the three capes (land's ends) of the island. The phrase appears to have been used in the same sense as the designation of “Land's End” at the tip of Cornwall. He was unable to elicit a Polynesian name for the island itself, and concluded that there may not have been one.\*[14]

According to Barthel (1974), oral tradition has it that the island was first named *Te pito o te kainga a Hau Maka* “The little piece of land of Hau Maka” .\*[15] However, there are two words pronounced *pito* in Rapa Nui, one meaning 'end' and one 'navel', and the phrase can thus also mean “the Navel of the World” . This was apparently its actual meaning: French ethnologist Alphonse Pinart gave it the actual translation “the Navel of the World” . Another name, *Mata ki te rangi*, means “Eyes looking to the sky” .\*[16]

### 4.8.2 History

Main article: [History of Easter Island](#)

Inhabitants of Easter Island have endured famines, epidemics, civil war, slave raids, colonialism, and near-deforestation; its population declined precipitously more than once.

Estimated dates of initial settlement of Easter Island have ranged from 300 to 1200 CE, approximately coinciding with the arrival of the first settlers in Hawaii. Rectifications in radiocarbon dating have changed almost all of the previously posited early settlement dates in Polynesia. Rapa Nui is now considered to have been settled in the narrower range of 700 to 1100 CE. Ongoing archaeological studies suggest a still-later date: “Radiocarbon dates for the earliest stratigraphic layers at Anakena, Easter Island, and analysis of previous radiocarbon dates imply that the island was colonized late, about 1200 CE. Significant ecological impacts and major cultural investments in monumental architecture and statuary thus began soon after initial settlement.”\*[17]\*[18]

According to oral tradition, the first settlement was at Anakena. Researchers have noted that the Caleta Anakena landing point provides the island's best shelter from prevailing swells as well as a sandy beach for canoe landings and launchings so it appeals as a likely early place of settlement. However, this conclusion contradicts radiocarbon dating, according to which other sites preceded Anakena by many years, especially the Tahai, whose radiocarbon dates precede Anakena's by several centuries.

The island was most likely populated by Polynesians who navigated in canoes or catamarans from the Gambier Is-



lands (Mangareva, 2,600 km (1,600 mi) away) or the Marquesas Islands, 3,200 km (2,000 mi) away. According to some theories, such as the Polynesian Diaspora Theory, there is a possibility that early Polynesian settlers arrived from South America due to their remarkable sea-navigation abilities. Theorists have supported this through the agricultural evidence of the sweet potato. The sweet potato was a favored crop found among Polynesian society for generations. But the origins of the sweet potato trace back to South America, proving evidence of interaction at some point in time between these two societies.\*[19] When James Cook visited the island, one of his crew members, a Polynesian from Bora Bora, was able to communicate with the Rapa Nui. The language most similar to Rapa Nui is Mangarevan, with an estimated 80 percent similarity in vocabulary. In 1999, a voyage with reconstructed Polynesian boats was able to reach Easter Island from Mangareva in 19 days.\*[20]



A View of the Monuments of Easter Island, Rapanui, c. 1775-1776 by William Hodges.\*[21] The earliest known painting of Easter Island.

According to oral traditions recorded by missionaries in the 1860s, the island originally had a strong class system, with an *ariki*, or high chief, wielding great power over nine other clans and their respective chiefs. The high chief was the eldest descendent through first-born lines of the island's legendary founder, Hotu Matu'a. The most visible element in the culture was the production of massive statues called moai that some believe represented deified ancestors. According to *National Geographic*, "Most scholars suspect that the moai were created to honor ancestors, chiefs, or other important personages. However, no written and little oral history exists on the island, so it's impossible to be certain."\*[22]

It was believed that the living had a symbiotic relationship with the dead in which the dead provided everything that the living needed (health, fertility of land and animals, fortune etc.) and the living, through offerings, provided the dead with a better place in the spirit world. Most settlements were located on the coast and most moai were erected along the coastline, watching over their descendants in the settlements before them, with their backs toward the spirit world in the sea.

Diamond suggested that cannibalism took place on Easter

Island after the construction of the moai contributed to environmental degradation when extreme deforestation destabilized an already precarious ecosystem.\*[23] Archeological record shows that at the time of the initial settlement the island was home to many species of trees, including at least three species which grew up to 15 metres (49 ft) or more: *Paschalococos* – possibly the largest palm trees in the world at the time, *Alphitonia zizyphoides*, and *Elaeocarpus rarotongensis*, as well as at least six species of native land birds. A major factor that contributed to the extinction of multiple plant species was the introduction of the Polynesian rat. Studies by paleobotanists have shown rats can dramatically affect the reproduction of vegetation in an ecosystem. In the case of Rapa Nui, recovered plant shell seeds showed markings of being gnawed on by rats.\*[5] Barbara A. West wrote, "Sometime before the arrival of Europeans on Easter Island, the Rapanui experienced a tremendous upheaval in their social system brought about by a change in their island's ecology... By the time of European arrival in 1722, the island's population had dropped to 2,000–3,000 from a high of approximately 15,000 just a century earlier."\*[24]

By that time, 21 species of trees and all species of land birds went extinct through some combination of overharvesting/overhunting, rat predation, and climate change. The island was largely deforested, and it did not have any trees more than 3 metres (10 feet) tall. Loss of large trees meant that residents were no longer able to build seaworthy vessels, significantly diminishing their fishing abilities. Deforestation also affected agricultural production on Rapa Nui. At first, the native tropical forests provided ideal shade cover for soil. But with many of the native forest being destroyed, the topsoil became eroded causing a sharp decline in agricultural production.\*[5] This was further exacerbated by the loss of land birds and the collapse in seabird populations as a potential source of food. By the 18th century, residents of the island were largely sustained by farming, with domestic chickens as the primary source of protein.\*[25]

As the island became overpopulated and resources diminished, warriors known as *matatoa* gained more power and the Ancestor Cult ended, making way for the Bird Man Cult. Beverly Haun wrote, "The concept of mana (power) invested in hereditary leaders was recast into the person of the birdman, apparently beginning circa 1540, and coinciding with the final vestiges of the moai period."\*[26] This cult maintained that, although the ancestors still provided for their descendants, the medium through which the living could contact the dead was no longer statues, but human beings chosen through a competition. The god responsible for creating humans, Makemake, played an important role in this process. Katherine Routledge, who systematically collected the island's traditions in her 1919 expedition,\*[27] showed that the competitions for Bird Man (Rapanui: *tangata manu*) started around 1760, after the arrival of the first Europeans, and ended in

1878, with the construction of the first church by Roman Catholic missionaries who formally arrived in 1864. Petroglyphs representing Bird Men on Easter Island are exactly the same as some in Hawaii, indicating that this concept was probably brought by the original settlers; only the competition itself was unique to Easter Island.

European accounts from 1722 and 1770 mention standing statues, but Cook's 1774 expedition noted that several moai were lying face down, having been toppled in war.



*Motu Nui islet, part of the Birdman Cult ceremony*

According to Diamond and Heyerdahl's version of the island's history, the *huri mo'ai*—"statue-toppling"—continued into the 1830s as a part of fierce internal wars. By 1838 the only standing moai were on the slopes of Rano Raraku, in Hoa Hakananai'a in Orongo, and Ariki Paro in Ahu Te Pito Kura. A study headed by Douglas Owsley published in 1994 asserted that there is little archaeological evidence of pre-European societal collapse. Bone pathology and osteometric data from islanders of that period clearly suggest few fatalities can be attributed directly to violence.\*[28]

The first-recorded European contact with the island was on 5 April (Easter Sunday), 1722, when Dutch navigator Jacob Roggeveen visited the island for a week and estimated a population of 2,000 to 3,000 inhabitants. The number may have been greater, since some may have been frightened into hiding by a misunderstanding that led Roggeveen's men to fire on the natives, killing more than a dozen and wounding several more.

The next foreign visitors (on 15 November 1770) were two Spanish ships, *San Lorenzo* and *Santa Rosalia*. The

Spanish reported the island as largely uncultivated, whose seashore was lined with stone statues.

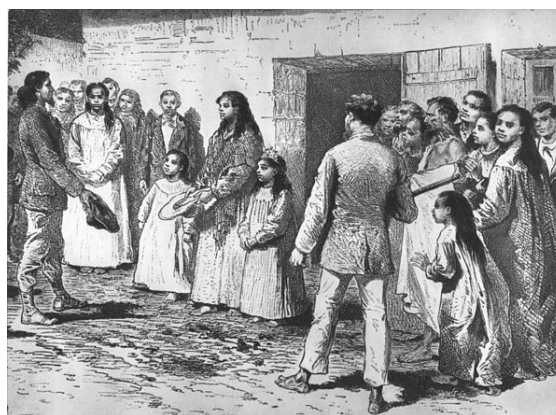
Four years later, in 1774, British explorer James Cook visited Easter Island; he reported that some statues had fallen over. The British ship *HMS Blossom* arrived in 1825 and reported seeing no standing statues. Easter Island was approached many times during the 19th century, but by then the islanders had become openly hostile to any attempt to land, and very little new information was reported before the 1860s.

### 19th century

A series of devastating events killed or removed most of the population in the 1860s. In December 1862, Peruvian slave raiders struck. Violent abductions continued for several months, eventually capturing around 1,500 men and women, half of the island's population.\*[29] Among those captured were the island's paramount chief, his heir, and those who knew how to read and write the rongorongo script, the only Polynesian script to have been found to date.

When the slave raiders were forced to repatriate the people they had kidnapped, they disembarked carriers of smallpox together with a few survivors on each of the islands. This created devastating epidemics from Easter Island to the Marquesas islands. Easter Island's population was reduced to the point where some of the dead were not even buried.

Tuberculosis, introduced by whalers in the mid-19th century, had already killed several islanders when the first Christian missionary, Eugène Eyraud, died from this disease in 1867. About a quarter of the island's population succumbed along with him. In the following years, the managers of the sheep ranch and the missionaries started buying the newly available lands of the deceased, and this led to great confrontations between natives and settlers.



*"Queen Mother" Koreto with her daughters "Queen" Caroline and Harriette in 1877*

Jean-Baptiste Dutrou-Bornier bought up all of the island apart from the missionaries' area around Hanga Roa

and moved a couple of hundred Rapanui to Tahiti to work for his backers. In 1871 the missionaries, having fallen out with Dutrou-Bornier, evacuated all but 171 Rapanui to the Gambier islands.\*[30] Those who remained were mostly older men. Six years later, only 111 people lived on Easter Island, and only 36 of them had any offspring.\*[31] From that point on the island's population slowly recovered. But with over 97% of the population dead or gone in less than a decade, much of the island's cultural knowledge had been lost.

Alexander Salmon, Jr., a son of an English Jewish merchant and a Pōmare Dynasty princess, eventually worked to repatriate workers from his inherited copra plantation. He eventually bought up all lands on the island with the exception of the mission, and was its sole employer. He worked to develop tourism on the island, and was the principal informant for the British and German archaeological expeditions for the island. He sent several pieces of genuine Rongorongo to his niece's husband, the German consul in Valparaíso, Chile. Salmon sold the Brander Easter Island holdings to the Chilean government in 1888 January 2 and signed as a witness to the cession of the island. He returned to Tahiti in December of that year. He effectively ruled the island from 1878 until his cession to Chile in 1888.

Easter Island was annexed by Chile on 9 September 1888 by Policarpo Toro by means of the “Treaty of Annexation of the Island” (Tratado de Anexión de la isla). Toro, then representing the government of Chile, signed with Atamu Tekena, designated “King” by the Chilean government after the paramount chief and his heir had died. The validity of this treaty is still contested by some Rapanui. Officially, Chile purchased the nearly all encompassing Mason-Brander sheep ranch, comprised from lands purchased from the descendants of Rapanui who died during the epidemics, and then claimed sovereignty over the island.

### 20th century

Until the 1960s the surviving Rapanui were confined to Hanga Roa. The rest of the island was rented to the Williamson-Balfour Company as a sheep farm until 1953.\*[32] The island was then managed by the Chilean Navy until 1966, at which point the island was reopened in its entirety. In 1966 the Rapanui were given Chilean citizenship.\*[33]

Following the 1973 Chilean coup d'état that brought Augusto Pinochet to power, Easter Island was placed under martial law. Tourism slowed down and private property was “restored”. During his time in power, Pinochet visited Easter Island on three occasions. The military built a number of new military facilities and a new city hall.\*[34]

After an agreement in 1985 between Chile and United States, the runway at Mataverí International Airport was



General Pinochet posing with a native Rapa Nui woman

enlarged and was inaugurated in 1987. The runway was expanded 423 metres (1,388 ft) reaching 3,353 metres (11,001 ft). Pinochet is reported to have refused to attend the inauguration in protest of pressures from the United States to attend human rights cases.\*[35]

### 21st century

On 30 July 2007, a constitutional reform gave Easter Island and the Juan Fernández Islands (also known as Robinson Crusoe Island) the status of “special territories” of Chile. Pending the enactment of a special charter, the island continued to be governed as a province of the V Region of Valparaíso.\*[36]

A total solar eclipse visible from Easter Island occurred for the first time in over 1,300 years on 11 July 2010, at 18:15:15.\*[37]

Species of fish were collected in Easter Island for one month in different habitats including shallow lava pools, depths of 43 meters, and deep waters. Within these habitats, two holotypes and paratypes, *Antennarius randalli* and *Antennarius moai*, were discovered. These are considered frog-fish because of their characteristics: “12 dorsal rays, last two or three branched; bony part of first dorsal spine slightly shorter than second dorsal spine; body without bold zebra-like markings; caudal peduncle short, but distinct; last pelvic ray divided; pectoral rays 11 or 12” .\*[38]

### Indigenous rights movement

Starting in August 2010, members of the indigenous Hitorangi clan occupied the Hangaroa Eco Village and Spa.\*[39]\*[40] The occupiers allege that the hotel was bought from the Pinochet government, in violation of a Chilean agreement with the indigenous Rapa Nui, in the 1990s.\*[41] The occupiers say their ancestors had been cheated into giving up the land.\*[42] According to a BBC report, on 3 December 2010, at least 25 people were injured when Chilean police using pellet guns attempted to

evict from these buildings a group of Rapa Nui who had claimed that the land the buildings stood on had been illegally taken from their ancestors.\* [43]

In January 2011, the UN's Special Rapporteur on Indigenous People, James Anaya, expressed concern about the treatment of the indigenous Rapa Nui by the Chilean government, urging Chile to “make every effort to conduct a dialogue in good faith with representatives of the Rapa Nui people to solve, as soon as possible the real underlying problems that explain the current situation” .\* [39]

The incident ended in February 2011, when up to 50 armed police broke into the hotel to remove the final five occupiers. They were arrested by the government and no injuries were reported.\* [39]

### 4.8.3 Geography



*Easter Island, Salas y Gómez Islands, South America and the islands in between*

Easter Island is one of the world's most isolated inhabited islands. Its closest inhabited neighbor is Pitcairn Island, 2,075 km (1,289 mi) to the west, with fewer than 100 inhabitants. The nearest continental point lies in central Chile near Concepción, at 3,512 kilometres (2,182 mi). Easter Island's latitude is similar to that of Caldera, Chile, and it lies 3,510 km (2,180 mi) west of continental Chile at its nearest point (between Lota and Lebu in the Biobío Region). Isla Salas y Gómez, 415 km (258 mi) to the east, is closer but is uninhabited. Archipelago Tristan da Cunha in the southern Atlantic competes for the title of the most remote island, lying 2,430 kilometres (1,510 mi) from Saint Helena island and 2,816 kilometres (1,750 mi) from the South African coast.

The island is about 24.6 km (15.3 mi) long by 12.3 km (7.6 mi) at its widest point; its overall shape is triangular. It has an area of 163.6 square kilometres (63.2 sq mi), and a maximum altitude of 507 meters (1,663 ft). There are

three *Rano* (freshwater crater lakes), at Rano Kau, Rano Raraku and Rano Aroi, near the summit of Terevaka, but no permanent streams or rivers.

### Geology



*Typical landscape on Easter Island; rounded extinct volcanoes covered in low vegetation.*

Easter Island is a volcanic high island, consisting mainly of three extinct coalesced volcanoes: Terevaka (altitude 507 metres) forms the bulk of the island, while two other volcanoes, Poike and Rano Kau, form the eastern and southern headlands and give the island its roughly triangular shape. Lesser cones and other volcanic features include the crater Rano Raraku, the cinder cone Puna Pau and many volcanic caves including lava tubes.\* [44] Poike used to be a separate island until volcanic material from Terevaka united it to the larger whole. The island is dominated by hawaiite and basalt flows which are rich in iron and show affinity with igneous rocks found in the Galápagos Islands.\* [45]

Easter Island and surrounding islets, such as Motu Nui and Motu Iti, form the summit of a large volcanic mountain rising over 2,000 metres (6,600 ft) from the sea bed. The mountain is part of the Sala y Gómez Ridge, a (mostly submarine) mountain range with dozens of seamounts, formed by the Easter hotspot. The range begins with Pukao and next Moai, two seamounts to the west of Easter Island, and extends 2,700 km (1,700 mi) east to the Nazca Ridge. The ridge was formed by the Nazca Plate floating over the Easter hotspot.\* [46] The movement of Nazca and formerly the Farallon Plate over the hotspot has created a long underwater ridge, the Nazca Ridge, whose eastern end is being subducted under Peru. Only at Easter Island, its surrounding islets and Sala y Gómez does the Sala y Gómez Ridge form dry land.

Pukao, Moai and Easter Island were formed in the last 750,000 years and are the ridge's youngest islands. The most recent eruption was a little over 100,000 years ago.

In the first half of the 20th century, steam reportedly came out of the Rano Kau crater wall. This was pho-

tographed by the island's manager, Mr. Edmunds.\*[47] According to geologists the last volcanic activity on the island occurred 10,000 years ago.

### Climate

See also: Climate of Chile

Under the Köppen climate classification, the climate of Easter Island is classified as a tropical rainforest climate (*Af*) that borders on a humid subtropical climate. The lowest temperatures are recorded in July and August (18 °C or 64 °F) and the highest in February (maximum temperature 28 °C or 82 °F\*[48]), the summer season in the southern hemisphere. Winters are relatively mild. The rainiest month is May, though the island experiences year-round rainfall.\*[49] Easter Island's isolated location exposes it to winds which help to keep the temperature fairly cool. Precipitation averages 1,118 millimetres or 44 inches per year. Occasionally, heavy rainfall and rainstorms strike the island. These occur mostly in the winter months (June–August). Since it is close to the South Pacific High and outside the range of the intertropical convergence zone, cyclones and hurricanes do not occur around Easter island.\*[50]

### 4.8.4 Ecology

Easter Island, together with its closest neighbour, the tiny island of Isla Sala y Gómez 415 kilometers (258 mi) farther east, is recognized by ecologists as a distinct ecoregion, the Rapa Nui subtropical broadleaf forests. The original subtropical moist broadleaf forests are now gone, but paleobotanical studies of fossil pollen, tree moulds left by lava flows, and root casts found in local soils indicate that the island was formerly forested, with a range of trees, shrubs, ferns, and grasses. A large extinct palm, *Paschalococos disperta*, related to the Chilean wine palm (*Jubaea chilensis*), was one of the dominant trees as attested by fossil evidence. Like its Chilean counterpart it probably took close to 100 years to reach adult height. The Polynesian rat, which the original settlers brought with them, played a very important role in the disappearance of the Rapanui palm. Although some may believe that rats played a major role in the degradation of the forest, less than 10% of palm nuts show teeth marks from rats. The remains of palm stumps in different places indicate that humans caused the trees to fall because in large areas, the stumps were cut efficiently.\*[54]

The clearance of the palms to make the settlements led to their extinction almost 350 years ago.\*[55] The toromiro tree (*Sophora toromiro*) was prehistorically present on Easter Island, but is now extinct in the wild. However the Royal Botanic Gardens, Kew and the Göteborg Botanical Garden are jointly leading a scientific program to reintroduce the toromiro to Easter Island. With the palm and

the toromiro virtually gone, there was considerably less rainfall as a result of less condensation. After the island was used to feed thousands of sheep for almost a century, by the mid-1900s the island was mostly covered in grassland with *nga'atu* or bulrush (*Schoenoplectus californicus tatora*) in the crater lakes of Rano Raraku and Rano Kau. The presence of these reeds, which are called *tatora* in the Andes, was used to support the argument of a South American origin of the statue builders, but pollen analysis of lake sediments shows these reeds have grown on the island for over 30,000 years. Before the arrival of humans, Easter Island had vast seabird colonies containing probably over 30 resident species, perhaps the world's richest.\*[56] Such colonies are no longer found on the main island. Fossil evidence indicates five species of landbirds (two rails, two parrots and a heron), all of which have become extinct.\*[57]

- Vegetation on the island
- View of Easter Island from space, 2001. The Poike peninsula is on the right.
- Digital recreation of its ancient landscape, with tropical forest and palm trees
- View toward the interior of the island
- View of Rano Kau and Pacific Ocean

The immunosuppressant drug sirolimus was first discovered in the bacterium *Streptomyces hygroscopicus* in a soil sample from Easter Island. The drug is also known as rapamycin, after Rapa Nui.\*[58] It is now being studied for extending longevity in mice.\*[59]

Trees are sparse, rarely forming natural groves, and it has been argued whether native Easter Islanders deforested the island in the process of erecting their statues,\*[60] and in providing sustenance for an overpopulated island. Experimental archaeology demonstrated that some statues certainly could have been placed on “Y” shaped wooden frames called *miro manga erua* and then pulled to their final destinations on ceremonial sites.\*[60] Other theories involve the use of “ladders” (parallel wooden rails) over which the statues could have been dragged.\*[61] Rapanui traditions metaphorically refer to spiritual power (*mana*) as the means by which the moai were “walked” from the quarry. Recent experimental recreations have proven that it is fully possible that the moai were literally walked from their quarries to their final positions by use of ropes, casting doubt on the role that their existence plays in the environmental collapse of the island.\*[62]

Given the island's southern latitude, the climatic effects of the Little Ice Age (about 1650 to 1850) may have exacerbated deforestation, although this remains speculative.\*[60] Many researchers\*[63] point to the climatic downtrend caused by the Little Ice Age as a contributing

factor to resource stress and to the palm tree's disappearance. Experts, however, do not agree on when exactly the island's palms became extinct.

Jared Diamond dismisses past climate change as a dominant cause of the island's deforestation in his book *Collapse* which assesses the collapse of the ancient Easter Islanders. Influenced by Heyerdahl's romantic interpretation of Easter's history (as he acknowledges in chapter 2 of *Collapse*), Diamond insists that the disappearance of the island's trees seems to coincide with a decline of its civilization around the 17th and 18th centuries. He notes that they stopped making statues at that time and started destroying the *ahu*. But the link is weakened because the Bird Man cult continued to thrive and survived the great impact caused by the arrival of explorers, whalers, sandalwood traders, and slave raiders.

Midden contents show that the main source of protein was tuna and dolphin. With the loss of the trees, there was a sudden drop in the quantities of fish bones found in middens as the islanders lost the means to construct fishing vessels, coinciding with a large increase in bird bones. This was followed by a decrease in the number of bird bones as birds lost their nesting sites or became extinct. A new style of art from this period shows people with exposed ribs and distended bellies, indicative of malnutrition, and it is around this time that many islanders moved to living in fortified caves and the first signs of warfare and cannibalism appear.

Soil erosion because of lack of trees is apparent in some places. Sediment samples document that up to half of the native plants had become extinct and that the vegetation of the island drastically altered. Polynesians were primarily farmers, not fishermen, and their diet consisted mainly of cultivated staples such as taro root, sweet potato, yams, cassava, and bananas. With no trees to protect them, sea spray led to crop failures exacerbated by a sudden reduction in fresh water flows. There is evidence that the islanders took to planting crops in caves beneath collapsed ceilings and covered the soil with rocks to reduce evaporation. Cannibalism occurred on many Polynesian islands, sometimes in times of plenty as well as famine. Its presence on Easter Island (based on human remains associated with cooking sites, especially in caves) is supported by oral histories.

Benny Peiser<sup>\*</sup>[6] noted evidence of self-sufficiency when Europeans first arrived. The island still had smaller trees, mainly toromiro, which became extinct in the 20th century probably because of slow growth and changes in the island's ecosystem. Cornelis Bouman, Jakob Roggeveen's captain, stated in his logbook, "... of yams, bananas and small coconut palms we saw little and no other trees or crops." According to Carl Friedrich Behrens, Roggeveen's officer, "The natives presented palm branches as peace offerings." According to ethnographer Alfred Métraux, the most common type of house was called "hare paenga" (and is known today as "boat

house" ) because the roof resembled an overturned boat. The foundations of the houses were made of buried basalt slabs with holes for wooden beams to connect with each other throughout the width of the house. These were then covered with a layer of totora reed, followed by a layer of woven sugarcane leaves, and lastly a layer of woven grass. There were reports by European visitors who said they had seen "boles of large palm trees" .

Peiser claims that these reports indicate that large trees existed at that time, which is perhaps contradicted by the Bouman quote above. Plantations were often located farther inland, next to foothills, inside open-ceiling lava tubes, and in other places protected from the strong salt winds and salt spray affecting areas closer to the coast. It is possible many of the Europeans did not venture inland. The statue quarry, only one kilometre (0.62 miles) from the coast with an impressive cliff 100 m (330 ft) high, was not explored by Europeans until well into the 19th century.



Panorama of Anakena beach, Easter Island. The moai pictured here was the first to be raised back into place on its *ahu* in 1955 by islanders using the ancient method.

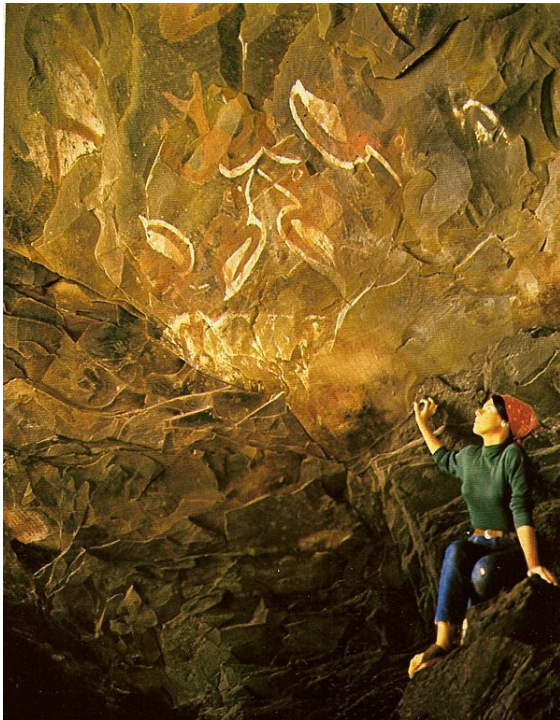
Easter Island has suffered from heavy soil erosion in recent centuries, perhaps aggravated by agriculture and massive deforestation. This process seems to have been gradual and may have been aggravated by sheep farming throughout most of the 20th century. Jakob Roggeveen reported that Easter Island was exceptionally fertile. "Fowls are the only animals they keep. They cultivate bananas, sugar cane, and above all sweet potatoes." In 1786 Jean-François de La Pérouse visited Easter Island and his gardener declared that "three days' work a year" would be enough to support the population.

Rollin, a major in the Pérouse expedition, wrote, "Instead of meeting with men exhausted by famine... I found, on the contrary, a considerable population, with more beauty and grace than I afterwards met in any other island; and a soil, which, with very little labor, furnished excellent provisions, and in an abundance more than sufficient for the consumption of the inhabitants." <sup>\*</sup>[64]

According to Diamond, the oral traditions (the veracity of which has been questioned by Routledge, Lavachery,

Mètraux, Peiser and others) of the current islanders seem obsessed with cannibalism, which he offers as evidence supporting a rapid collapse. For example, he states, to severely insult an enemy one would say, “The flesh of your mother sticks between my teeth.” This, Diamond asserts, means the food supply of the people ultimately ran out.\*[65] Cannibalism, however, was widespread across Polynesian cultures.\*[66] Human bones have not been found in earth ovens other than those behind the religious platforms, indicating that cannibalism in Easter Island was a ritualistic practice. Contemporary ethnographic research has proven there is scarcely any tangible evidence for widespread cannibalism anywhere and at any time on the Island.\*[67] The first scientific exploration of Easter Island (1914) recorded that the indigenous population strongly rejected allegations that they or their ancestors had been cannibals.\*[27]

## 4.8.5 Culture



Bird paintings in the cave called “Cave of the Men Eaters”

### Mythology

Main article: Rapa Nui mythology

The most important myths are:

- **Tangata manu**, the Birdman cult which was practiced until the 1860s.
- **Makemake**, an important god.

- **Aku-aku**, the guardians of the sacred family caves.
- **Moai-kava-kava** a ghost man of the **Hanau epe** (long-ears.)
- **Hekai ite umu pare haonga takapu Hanau epe kai noruego**, the sacred chant to appease the aku-aku before entering a family cave.

### Stone work

The Rapa Nui people had a Stone Age culture and made extensive use of several different types of local stone:

- **Basalt**, a hard, dense stone used for **toki** and at least one of the moai.
- **Obsidian**, a volcanic glass with sharp edges used for sharp-edged implements such as **Mataa** and also for the black pupils of the eyes of the moai.
- **Red scoria** from **Puna Pau**, a very light red stone used for the **pukao** and a few moai.
- **Tuff** from **Rano Raraku**, a much more easily worked rock than basalt, and was used for most of the moai.

**Statues** Main article: **Moai**

The large stone statues, or *moai*, for which Easter Island is famous, were carved in the period 1100–1680 CE (rectified radio-carbon dates).\*[16] A total of 887 monolithic stone statues have been inventoried on the island and in museum collections so far.\*[68] Although often identified as “Easter Island heads”, the statues have torsos, most of them ending at the top of the thighs, although a small number are complete figures that kneel on bent knees with their hands over their stomachs.\*[69]\*[70] Some upright moai have become buried up to their necks by shifting soils.

Almost all (95%) moai were carved from compressed, easily worked solidified volcanic ash or tuff found at a single site on the side of the extinct volcano **Rano Raraku**. The native islanders who carved them used only stone hand chisels, mainly **basalt toki**, which lie in place all over the quarry. The stone chisels were sharpened by chipping off a new edge when dulled. While sculpting was going on the volcanic stone was splashed with water to soften it. While many teams worked on different statues at the same time, a single moai took a team of five or six men approximately a year to complete. Each statue represented the deceased head of a lineage.

Only a quarter of the statues were installed, while nearly half remained in the quarry at Rano Raraku and the rest sat elsewhere, presumably on their way to intended locations. The largest moai raised on a platform is known as “**Paro**”. It weighs 82 tons and is 9.8 m (32.15 ft)

long.\* [71] Several other statues of similar weight were transported to several ahu on the North and South coasts.

Possible means by which the statues were moved include employment of a *miro manga erua*, a Y-shaped sledge with cross pieces, pulled with ropes made from the tough bark of the *hau-hau* tree,\* [72] and tied around the statue's neck. Anywhere from 180 to 250 men were required for pulling, depending on the size of the moai. Some 50 of the statues were re-erected in modern times. One of the first was on Ahu Ature Huke in *Anakena* beach in 1956.\* [73] It was raised using traditional methods during a Heyerdahl expedition.

Another method that might have been used would be to attach ropes to the statue and rock it, tugging it forward as it rocked. This would fit the legend of the Mo'ai 'walking' to their final locations.\* [74]\* [75]\* [76] This might have been managed by as few as 15 people. This is supported by the following evidence:

1) The heads of the moai in the quarry are sloped forward whereas the ones moved to final locations are not. This would serve to provide a better centre of gravity for transport.

2) The statues found along the transport roads have wider bases than statues installed on ahu; this would facilitate more stable transport. Studies have also shown fractures along the bases of the statues in transport; these could have arisen from rocking the statue back and forth and placing great pressures on the edges. The statues found mounted on ahu do not have wide bases and stone chips found at the sites suggest they were further modified on placement.

3) The abandoned and fallen statues in proximity to the old roads are found (more often than would be expected from chance) face down when headed down ascending grades, and on their backs when headed uphill. Some were documented standing upright along the old roads, e.g., by a party from Captain Cook's voyage which rested in the shade of a standing statue. This would be consistent with upright transport.

In 2011, a large moai statue was excavated from the ground.\* [77]

- Moais
- *Tukuturi*, an unusual bearded kneeling moai
- All fifteen standing moai at *Ahu Tongariki*, excavated and restored in the 1990s
- *Ahu Akivi*, one of the few inland ahu, with the only moai facing the ocean

**Stone platforms** *Ahu* are stone platforms. Varying greatly in layout, many were reworked during or after the *huri mo'ai* or *statue-toppling* era; many became ossuaries; one was dynamited open; and *Ahu Tongariki* was swept



*Two ahu at Hanga Roa. In foreground Ahu Ko Te Riku (with a pukao on its head). In the mid-ground is a side view of an ahu with five moai showing retaining wall, platform, ramp and pavement. The Mataverí end of Hanga Roa is visible in the background with Rano Kau rising above it.*

inland by a tsunami. Of the 313 known ahu, 125 carried moai—usually just one, probably because of the shortness of the moai period and transportation difficulties. *Ahu Tongariki*, one kilometer (0.62 miles) from Rano Raraku, had the most and tallest moai, 15 in total. Other notable ahu with moai are *Ahu Akivi*, restored in 1960 by William Mulloy, Nau Nau at *Anakena* and *Tahai*. Some moai may have been made from wood and were lost.

The classic elements of ahu design are:

- A retaining rear wall several feet high, usually facing the sea
- A front wall made of rectangular basalt slabs called *paenga*
- A fascia made of red scoria that went over the front wall (platforms built after 1300)
- A sloping ramp in the inland part of the platform, extending outward like wings
- A pavement of even-sized, round water-worn stones called *poro*
- An alignment of stones before the ramp
- A paved plaza before the ahu. This was called *marae*
- Inside the ahu was a fill of rubble.

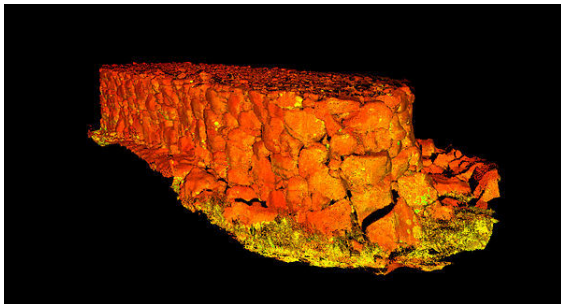
On top of many ahu would have been:

- Moai on squareish “pedestals” looking inland, the ramp with the *poro* before them.
- *Pukao* or *Hau Hiti Rau* on the moai heads (platforms built after 1300).
- When a ceremony took place, “eyes” were placed on the statues. The whites of the eyes were made of coral, the iris was made of obsidian or red scoria.



Ahu evolved from the traditional Polynesian *marae*. In this context *ahu* referred to a small structure sometimes covered with a thatched roof where sacred objects, including statues, were stored. The ahu were usually adjacent to the marae or main central court where ceremonies took place, though on Easter Island ahu and moai evolved to much greater size. There the marae is the unpaved plaza before the ahu. The biggest ahu is 220 meters (720 ft) and holds 15 statues, some of which are 9 meters (30 ft) high. The filling of an ahu was sourced locally (apart from broken, old moai, fragments of which have also been used in the fill).\*[78] Individual stones are mostly far smaller than the moai, so less work was needed to transport the raw material, but artificially leveling the terrain for the plaza and filling the ahu was laborious.

Ahu are found mostly on the coast, where they are distributed fairly evenly except on the western slopes of Mount Terevaka and the Rano Kau and Poike\*[79] headlands. These are the three areas with the least low-lying coastal land, and apart from Poike the furthest areas from Rano Raraku. One ahu with several moai was recorded on the cliffs at Rano Kau in the 1880s, but had fallen to the beach before the Routledge expedition.\*[27]



A Hare Moa, a Chicken House, image cut from a laser scan collected by nonprofit CyArk

**Stone walls** One of the highest-quality examples of Easter Island stone masonry is the rear wall of the ahu at Vinapu. Made without mortar by shaping hard basalt rocks of up to seven tons to match each other exactly, it has a superficial similarity to some Inca stone walls in South America.\*[80]

**Stone houses** Two types of houses are known from the past: *hare paenga*, a house with an elliptical foundation, made with basalt slabs and covered with a thatched roof that resembled an overturned boat, and *hare oka*, a round stone structure. Related stone structures called *Tupa* look very similar to the *hare oka*, except that the *Tupa* were inhabited by astronomer-priests and located near the coast, where the movements of the stars could be easily observed. Settlements also contain *hare moa* ( “chicken house” ), oblong stone structures that were used to house chickens. The houses at the ceremonial village of Orongo are unique in that they are shaped like *hare paenga* but are

made entirely of flat basalt slabs found inside Rano Kao crater. The entrances to all the houses are very low, and entry requires crawling.

In early times the people of Rapa Nui reportedly sent the dead out to sea in small funerary canoes, as did their Polynesian counterparts in other islands. They later started burying people in secret caves in order to save the bones from desecration by enemies. During the turmoil of the late 18th century, the islanders seem to have started to bury their dead in the space between the belly of a fallen moai and the front wall of the structure. During the time of the epidemics they made mass graves that were semi-pyramidal stone structures.

**Petroglyphs** Petroglyphs are pictures carved into rock, and Easter Island has one of the richest collections in all Polynesia. Around 1,000 sites with more than 4,000 petroglyphs are catalogued. Designs and images were carved out of rock for a variety of reasons: to create totems, to mark territory or to memorialize a person or event. There are distinct variations around the island in terms of the frequency of particular themes among petroglyphs, with a concentration of Birdmen at Orongo. Other subjects include sea turtles, Komari (vulvas) and Makemake, the chief god of the *Tangata manu* or Birdman cult.\*[81]

- Petroglyphs
- Makemake with two birdmen, carved from red scoria
- Fish petroglyph found near Ahu Tongariki

**Caves** The island and neighbouring Motu Nui are riddled with caves, many of which show signs of past human use for planting and as fortifications, including narrowed entrances and crawl spaces with ambush points. Many caves feature in the myths and legends of the Rapa Nui.

### Rongorongo

Main article: Rongorongo

Easter Island once had an apparent script called *rongorongo*. Glyphs include pictographic and geometric shapes; the texts were incised in wood in reverse boustrophedon direction. It was first reported by a French missionary, Eugène Eyraud, in 1864. At that time, several islanders said they could understand the writing, but according to tradition, only ruling families and priests were ever literate, and none survived the slave raids and subsequent epidemics. Despite numerous attempts, the surviving texts have not been deciphered, and without decipherment it is not certain that they are actually writing. Part of the problem is the small amount that has survived:



Sample of rongorongo

only two dozen texts, none of which remain on the island. There are also only a couple of similarities with the petroglyphs on the island.\*[82]

### Wood carving

Wood was scarce on Easter Island during the 18th and 19th centuries, but a number of highly detailed and distinctive carvings have found their way to the world's museums. Particular forms include:\*[83]

- **Reimiro**, a gorget or breast ornament of crescent shape with a head at one or both tips.\*[84] The same design appears on the flag of Rapa Nui. Two Rei Miru at the British Museum are inscribed with Rongorongo.
- **Moko Miro**, a man with a lizard head. The Moko Miro was used as a club because of the legs, which formed a handle shape. If it wasn't held by hand, dancers wore it around their necks during feasts. The Moko Miro would also be placed at the doorway to protect the household from harm. It would be hanging from the roof or set in the ground. The original form had eyes made from white shells, and the pupils were made of obsidian.\*[85]
- **Moai kavakava** are male carvings and the **Moai Paepae** are female carvings.\*[86] These grotesque and highly detailed human figures carved from Toromiro pine, represent ancestors. Sometimes



Ancestor figure, circa 1830, from LACMA collections

these statues were used for fertility rites. Usually, they are used for harvest celebrations; “the first picking of fruits was heaped around them as offerings”. When the statues were not used, they would be wrapped in bark cloth and kept at home. There were a few times that are reported when the islanders would pick up the figures like dolls and dance with them.\*[86] The earlier figures are rare and generally depict a male figure with an emaciated body and a goatee. The figures' ribs and vertebrae are exposed and many examples show carved glyphs on various parts of the body but more specifically, on the top of the head. The female figures, rarer than the males, depict the body as flat and often with the female's hand lying across the body. The figures, although some were quite large, were worn as ornamental pieces around a tribesman's neck. The more figures worn, the more important the man. The figures have a shiny patina developed from constant handling and contact with human skin.

- **Ao**, a large dancing paddle

### 21st-century culture

The Rapanui sponsor an annual festival, the *Tapati*, held since 1975 around the beginning of February to celebrate Rapanui culture. The islanders also maintain a national football team and three discos in the town of Hanga Roa. Other cultural activities include a musical tradition that combines South American and Polynesian influences and

woodcarving.

**Sports** The Chilean leg of the **Red Bull Cliff Diving World Series** takes place on the Island of Rapa Nui.

#### 4.8.6 Demographics

Further information: **Europeans in Oceania**

##### 2012 census

Population at the 2012 census was 5,761 (increased from 3,791 in 2002).<sup>[87]</sup> In 2002, 60% were **Rapanui**, **Chileans** of European or mixed European and Amerindian descent were 39% of the population, and the remaining 1% were **Native Americans** from mainland Chile.<sup>[88]</sup> Population density on Easter Island in 2012 is only 35 inhabitants per square kilometre (91/sq mi).

- Real life in Rapa Nui
- **Polynesian** dancing with feather costumes is on the tourist itinerary.
- Hanga Roa town hall
- Fishing boats
- Front view of the Catholic Church, Hanga Roa
- Catholic Church, Hanga Roa
- Interior view of the Catholic Church in Hanga Roa

##### Demographic history

The 1982 population was 1,936. The increase in population in the last census was partly caused by the arrival of people of **European** or mixed European and **Native American** descent from the Chilean mainland. However, most married a Rapanui spouse. Around 70% of the population were natives. Estimates of the pre-European population range from 7–17,000. Easter Island's all-time low of 111 inhabitants was reported in 1877. Out of these 111 Rapanui, only 36 had descendants, but all of today's Rapanui claim descent from those 36.

#### 4.8.7 Administration and legal status

Easter Island shares with **Juan Fernández Islands** the constitutional status of “special territory” of Chile, granted in 2007. As of 2011 a special charter for the island was under discussion in the **Chilean Congress**.

Administratively, the island is a province of the **Valparaíso Region** and contains a single commune (*comuna*). Both the province and the commune are called *Isla de Pascua* and encompass the whole island and its surrounding islets and rocks, plus **Isla Salas y Gómez**, some 380 km (236 mi) to the east.<sup>[1]</sup>

##### Authorities and representatives

Within the electoral divisions of Chile, Easter Island belongs to the 13th electoral district and 6th senatorial constituency. The people are represented in the Chamber of Deputies by **Joaquín Godoy (RN)** and **Aldo Cornejo (PDC)**. Constituents are also represented by two senators, **Francisco Chahuán (RN)** and **Ricardo Lagos Weber (PPD)**.

- **Provincial Governor:** **Marta Raquel Hotus Tuki (2014–)**. Appointed by the President of the Republic.
- **Mayor:** **Pedro Pablo Edmunds Paoa (PRO)**, directly elected for four years (2012–2016) Municipality located in **Hanga Roa**.
- **Municipal council**, directly elected for four years (2012-2016):
  - **Alberto Hotus Chávez (PPD)**
  - **Eliana Amelia Olivares San Juan (UDI)**
  - **Hipólito Icka Nahoe (PH)**
  - **Marcelo Icka Paoa (PDC)**
  - **Marcelo Pont Hill (PPD)**
  - **Nicolás Haoa Cardinali (IND)**

#### 4.8.8 Notable people

- **Hotu Matu'a**—island founder
- **King Nga'ara**—one of the last 'ariki
- **Kings of Easter Island**
- **Thor Heyerdahl**—ethnographer
- **Fr Sebastian Englert, OFM Cap.**—missionary and ethnologist
- **William Mulloy**—archaeologist
- **Pedro Pablo Edmunds Paoa**—Mayor and former Governor
- **Melania Carolina Hotu Hey**—former Governor (2006–2010)
- **Juan Edmunds Rapahango**—former Mayor

### 4.8.9 Transportation

Easter Island is served by Mataverí International Airport, with jet service (currently Boeing 767s and Boeing 787s) from LAN Airlines and, seasonally, subsidiaries such as LAN Peru.

### 4.8.10 See also

- North Sentinel Island
- Omphalos
- List of islands
- List of islands named after calendar entries
- List of largest monoliths in the world
- Podesta
- Rapa Nui language
- Rapa Nui mythology

### 4.8.11 References

- [1] “National Statistics Institute” . Retrieved 1 May 2010.
- [2] “COMUNAS: ACTUALIZACIÓN POBLACIÓN 2002-2012 Y PROYECCIONES 2013-2020” . *National Statistics Institute* (in Spanish). Retrieved 20 April 2015.
- [3] “Resultados Censo de Población y Vivienda 2012” (in Spanish). Instituto Nacional de Estadísticas. 2 April 2013.
- [4] “Chile Time” . WorldTimeZones.org. Retrieved 5 May 2007.
- [5] Hunt, T. (2006). “Rethinking the Fall of Easter Island” . *American Scientist* **94** (5): 412. doi:10.1511/2006.61.1002.
- [6] Peiser, B. (2005). “From Genocide to Ecocide: The Rape of Rapa Nui” (PDF). *Energy & Environment* **16** (3&4). doi:10.1260/0958305054672385.
- [7] “Welcome to Rapa Nui – Isla de Pascua – Easter Island” , *Portal RapaNui, the island's official website*
- [8] Thomas Brinkhoff (1 February 2013). “Pitcairn Islands” . *citypopulation.de*. Thomas Brinkhoff. Retrieved 8 November 2013.
- [9] *List of Chilean Provinces*, Congreso Nacional, retrieved 20 February 2013
- [10] An English translation of the originally Dutch journal by Jacob Roggeveen, with additional significant information from the log by Cornelis Bouwman, was published in: Andrew Sharp (ed.), *The Journal of Jacob Roggeveen* (Oxford 1970).
- [11] Thompson, William (1891), *Invention of the name 'Rapa Nui'*
- [12] Heyerdahl 1961 Heyerdahl's view was that the two islands were about the same size, and that “big” and “small” were not physical but historical attributes, “big” indicating the original. In reality, however, Easter Island is more than four times bigger than Rapa Iti. Heyerdahl also stated that there is an island called “Rapa” in Lake Titicaca in South America, but so far there is no map available showing an island of that name in the lake.
- [13] Pinart, Alphonse (1877). “Voyage à l'Île de Pâques (Océan Pacifique)”. *Le Tour du Monde; Nouveau Journal des Voyages* (Hachette) **36**: 225.
- [14] Churchill, William (1912). *The Rapanui Speech and the Peopling of Southeast Polynesia*.
- [15] Barthel, Thomas S. (1974), *The Eighth Land: The Polynesian Settlement of Easter Island* (1978 ed.), University of Hawaii
- [16] Beck, J. Warren (2003), “Mata Ki Te Rangi: Eyes towards the Heavens” , *Easter Island: Scientific Exploration Into the World's Environmental Problems in Microcosm*, p. 100, retrieved 27 March 2013
- [17] Hunt, T. L.; Lipo, CP (2006). “Late Colonization of Easter Island” . *Science* **311** (5767): 1603–6. Bibcode:2006Sci...311.1603H. doi:10.1126/science.1121879. PMID 16527931.
- [18] Hunt, Terry; Lipo, Carl (2011). *The Statues that Walked: Unraveling the Mystery of Easter Island*. Free Press. ISBN 1-4391-5031-1.
- [19] Rank, Michael (2013) *Lost Civilizations*. Seattle: CreateSpace Independent Publishing Platform. pp. 46-47.
- [20] “The Voyage to Rapa Nui 1999–2000” . Polynesian Voyaging Society.
- [21] More information at the picture's page at the National Maritime Museum's collections' web site.
- [22] Easter Island. *National Geographic*.
- [23] Bo Rothstein (2005). *Social traps and the problem of trust*. Cambridge University Press. p. 20. ISBN 0-521-84829-6
- [24] Barbara A. West (2008) *Encyclopedia of the Peoples of Asia and Oceania*. Infobase Publishing. p. 684. ISBN 0-8160-7109-8
- [25] Diamond 2005, pp. 103–107
- [26] Haun, Beverley (2008). *Inventing 'Easter Island'*. University of Toronto Press. p. 8. ISBN 0-8020-9888-6
- [27] Routledge 1919
- [28] Owsley, Douglas W. et al. “Biological effects of European contact on Easter Island” C.S. Larson and G.R. Milner, eds. *In the Wake of Contact: Biological Responses to Conquest* 1994
- [29] Diamond 2005, p. 171
- [30] Routledge 1919, p. 208

- [31] “Collapse of island's demographics in the 1860s and 1870s” . Rongorongo.org. Retrieved 23 June 2012.
- [32] “Annexation by Chile” .
- [33] Diamond 2005, p. 112
- [34] Lewis, Raymond J. (1994) “Review of *Rapanui; Tradition and Survival on Easter Island*.”
- [35] Délano, Manuel (17 August 1987) Pinochet no asiste a la inauguración de la pista de la isla de Pascua. *El Pais*.
- [36] Chilean Law 20,193, National Congress of Chile
- [37] “Eclipse fever focuses on remote Easter Island” . MSNBC.
- [38] Allen, Gerald R. (1970). “Two New Species of Frogfishes (Antennariidae) from Easter Island” . *Pacific Science* **24** (4): 521.
- [39] “Police evict Rapa Nui clan from Easter Island hotel” . BBC. 6 February 2011. Retrieved 29 November 2011.
- [40] “Rapanui: Protests Continue Against The Hotel Hanga Roa” . *IPIR*. 17 April 2012. Retrieved 28 July 2013.
- [41] “Indian Law.org” . *Congressman Faleomavaega to Visit Rapa Nui*. Retrieved 29 November 2011.
- [42] Hinto, Santi. “Giving Care to the Motherland: conflicting narratives of Rapanui” . *Save Rapanui*. Retrieved 29 November 2011.
- [43] “Easter Island land dispute clashes leave dozens injured” . BBC. 4 December 2010.
- [44] “Easter Island” . *Global Volcanism Program*. Smithsonian Institution. Retrieved 18 March 2010.
- [45] Baker, P. E.; Buckley, F.; Holland, J. G. (1974). “Petrology and geochemistry of Easter Island” . *Contributions to Mineralogy and Petrology* **44** (2): 85–100. Bibcode:1974CoMP...44...85B. doi:10.1007/BF00385783.
- [46] Haase, K. M.; Stoffers, P.; Garbe-Schonberg, C. D. (1997). “The Petrogenetic Evolution of Lavas from Easter Island and Neighbouring Seamounts, Near-ridge Hotspot Volcanoes in the SE Pacific” . *Journal of Petrology* **38** (6): 785. doi:10.1093/petroj/38.6.785.
- [47] Rapanui: Edmunds and Bryan Photograph Collection. Libweb.hawaii.edu. Retrieved 6 November 2010.
- [48] “Enjoy Chile – climate” . Enjoy-chile.org. Retrieved 23 June 2012.
- [49] Easter Island Article in Letsgochile.com
- [50] *Weather*, Easter Island Foundation
- [51] “Información climatológica de estaciones chilenas-Chile Norte” (in Spanish). Universidad de Chile. Retrieved 10 March 2013.
- [52] “Tabla 4.6: Medias mensuales de horas de sol diarias extraídas del WRDC ruso (en (hrs./dia))” (PDF). *Elementos Para La Creación de Un Manual de Buenas Prácticas Para Instalaciones Solares Térmicas Domiciliarias* (in Spanish). Universidad de Chile. September 2007. p. 81. Retrieved 21 January 2015.
- [53] “Weatherbase: Historical Weather for Easter Island, Chile” . Weatherbase. Retrieved 10 March 2013.
- [54] Mieth, A.; Bork, H. R. (2010). “Humans, climate or introduced rats – which is to blame for the woodland destruction on prehistoric Rapa Nui (Easter Island)?”. *Journal of Archaeological Science* **37** (2): 417. doi:10.1016/j.jas.2009.10.006.
- [55] Hogan, C. Michael. (2008). *Chilean Wine Palm: Jubaea chilensis*. GlobalTwitcher.com, ed. N. Stromberg
- [56] Steadman 2006, pp. 251, 395
- [57] Steadman 2006, pp. 248–252
- [58] “Rapamycin – Introduction” . Retrieved 10 July 2009.
- [59] “Rapamycin Extends Longevity in Mice” .
- [60] Jones, David T. (2007). “Easter Island, What to learn from the puzzles?”. *American Diplomacy*.
- [61] Diamond 2005, p. 107
- [62] “Easter Island Statues Could Have 'Walked' Into Position” . *Wired*.
- [63] Finney (1994), Hunter Anderson (1998); P.D. Nunn (1999, 2003); Orliac and Orliac (1998)
- [64] Heyerdahl 1961, p. 57
- [65] Diamond 2005, p. 109
- [66] Kirch, Patrick (2003). “Introduction to Pacific Islands Archaeology” . Social Science Computing Laboratory, Berkeley. Archived from the original on 6 December 2008. Retrieved 21 December 2014.
- [67] Flenley & Bahn 2003
- [68] “Easter Island Statue Project” . Retrieved 30 March 2009.
- [69] Skjølsvold, Arne “Report 14: The Stone Statues and Quarries of Rano Raraku in Thor Heyerdahl and Edwin N. Ferdon Jr. (eds.) 'Reports of the Norwegian Archaeological Expedition to Easter Island and the East Pacific', Volume 1, *Archaeology of Easter Island*, Monographs of the School of American Research and The Museum of New Mexico, Number 24, Part 1, 1961, pp. 339–379. (esp. p. 346 for the description of the general statues and Fig. 91, p. 347, pp. 360–362 for the description of the kneeling statues)
- [70] Van Tilburg, Jo Anne. *Easter Island. Archaeology, Ecology and Culture*, British Museum Press 1994:134–135, fig. 106
- [71] NOVA Online|Secrets of Easter Island|Paro. Pbs.org. Retrieved 6 November 2010.

- [72] Flenley, J. R.; King, Sarah M. (1984). "Late Quaternary pollen records from Easter Island" . *Nature* **307** (5946): 47. Bibcode:1984Natur.307...47F. doi:10.1038/307047a0.
- [73] "Anakena beach at Easter Island" . Easter Island Traveling. Retrieved 2 May 2015.
- [74] Hunt, Terry; Lipo, Carl (2011). *The Statues that Walked: Unraveling the Mystery of Easter Island*. Free Press.
- [75] "NG Live!: Walking With Giants: How the Easter Island Moai Moved" . *video.nationalgeographic.com*. Retrieved 2015-05-12.
- [76] "NG Live!: Terry Hunt and Carl Lipo: The Statues That Walked" . *video.nationalgeographic.com*. Retrieved 2015-05-12.
- [77] "Easter Island Statue Project Field Season IV" . Eisp.org. Retrieved 23 June 2012.
- [78] Heyerdahl 1961
- [79] Heavy erosion and landslides may have buried them in soil.
- [80] Heyerdahl 1961 However, Alfred Metraux pointed out that the rubble filled Rapanui walls were a fundamentally different design to those of the Inca, as these are trapezoidal in shape as opposed to the perfectly fitted rectangular stones of the Inca. See also this FAQ at the Wayback Machine (archived October 11, 2007)
- [81] Lee 1992
- [82] Fischer, pp. 31, 63.
- [83] Routledge 1919, p. 268
- [84] Wooden gorget (rei miro). British Museum.
- [85] Brooklyn Museum, "Collections: Arts of the Pacific Islands: Lizard Figure (Moko Miro)." Last modified 2011.
- [86] Encyclopædia Britannica Online, "Moai Figure" .
- [87] Primeros datos del Censo: Hay 37.626 mujeres más que hombres en la V Región. Estrellavalpo.cl (11 June 2002). Retrieved 6 November 2010.
- [88] "Censo 2002" . Ine.cl. Retrieved 23 June 2012.

#### 4.8.12 Bibliography

- Diamond, Jared (2005). *Collapse. How Societies Choose to Fail or Succeed*. New York: Viking. ISBN 0-14-303655-6.
- Fischer, Steven Roger (1995). "Preliminary Evidence for Cosmogonic Texts in Rapanui's Rongorongo Inscriptions" . *Journal of the Polynesian Society* (104): 303–21.
- Fischer, Steven Roger (1997). *Glyphbreaker: A Decipherer's Story*. New York: Copernicus/Springer-Verlag.

- Fischer, Steven Roger (1997). *RongoRongo, the Easter Island Script: History, Traditions, Texts*. Oxford and New York: Oxford University Press. ISBN 0-19-823710-3.
- Heyerdahl, Thor (1961). Thor Heyerdahl & Edwin N. Ferdon Jr., ed. *The Concept of Rongorongo Among the Historic Population of Easter Island*. Stockholm: Forum.
- Heyerdahl, Thor (1958). *Aku-Aku; The 1958 Expedition to Easter Island*.
- McLaughlin, Shawn (2007). *The Complete Guide to Easter Island*. Los Osos: Easter Island Foundation.
- Metraux, Alfred (1940). "Ethnology of Easter Island" . *Bernice P. Bishop Museum Bulletin* (Honolulu: Bernice P. Bishop Museum Press) (160).
- Pinart, Alphonse (1877). "Voyage à l'Ile de Pâques (Océan Pacifique)". *Le Tour du Monde; Nouveau Journal des Voyages* (Hachette) **36**: 225.
- Routledge, Katherine (1919). *The Mystery of Easter Island. The story of an expedition*. London. ISBN 0-404-14231-1.
- Steadman, David (2006). *Extinction and Biogeography in Tropical Pacific Birds*. University of Chicago Press. ISBN 978-0-226-77142-7.

#### 4.8.13 Further reading

- Altman, Ann M. (2004). *Early Visitors to Easter Island 1864–1877 (translations of the accounts of Eugène Eyraud, Hippolyte Roussel, Pierre Loti and Alphonse Pinart; with an Introduction by Georgia Lee)*. Los Osos: Easter Island Foundation.
- Englert, Sebastian F. (1970). *Island at the Center of the World*. New York: Charles Scribner's Sons.
- Erickson, Jon D. and John M. Gowdy (2000). "Resource Use, Institutions, and Sustainability: A Tale of Two Pacific Island Cultures." *Land Economics* 76(3): 345–354.
- Kjellgren, Eric (2001). *Splendid isolation: art of Easter Island*. New York: The Metropolitan Museum of Art. ISBN 9781588390110.
- Lee, Georgia (1992). *The Rock Art of Easter Island. Symbols of Power, Prayers to the Gods*. Los Angeles: The Institute of Archaeology Publications. ISBN 0-917956-74-5.
- Pendleton, Steve and David Maddock (2014). *Collecting Easter Island – Stamps and Postal History*. London: Pacific Islands Study Circle. ISBN 978-1-899833-22-1, 216pp; <http://www.pisc.org.uk/>.

- Thomson, William J. (1891). “Te Pito te Henua, or Easter Island. Report of the United States National Museum for the Year Ending June 30, 1889” . *Annual Reports of the Smithsonian Institution for 1889* (Washington: Smithsonian Institution): 447–552.in [Google Books](#)
- van Tilburg, Jo Anne (1994). *Easter Island: Archaeology, Ecology and Culture*. Washington, D.C.: Smithsonian Institution Press. ISBN 0-7141-2504-0.
- Vergano, Dan. “Were rats behind Easter Island mystery?” *USA Today* (15 November 2009)

#### 4.8.14 External links

- [Easter Island travel guide from Wikivoyage](#)
- [Easter Island - The Statues and Rock Art of Rapa Nui – Bradshaw Foundation / Dr Georgia Lee](#)
- [Chile Cultural Society – Easter Island](#)
- [Rapa Nui Digital Media Archive—Creative Commons–licensed photos, laser scans, panoramas, focused in the area around Rano Raraku and Ahu Te Pito Kura with data from an Autodesk/CyArk research partnership](#)
- [Mystery of Easter Island – PBS Nova program](#)
- [Current Archaeology's comprehensive description of island and discussion of dating controversies](#)
- [Easter Island Traveling – Easter Island facts, travel info and tourism services bookings](#)

## 4.9 Fangataufa

**Fangataufa** or *Fangatafoa* is a small, low, narrow, coral atoll in the eastern side of the Tuamotu Archipelago. Along with its neighboring atoll, Moruroa, it has been the site of approximately 200 nuclear bomb tests.

### 4.9.1 Geography

The island is approx. 9.5 km long and 9.5 km wide. It has a lagoon area of 45 km<sup>2</sup> and a land area of 5 km<sup>2</sup>. It is located 37 km south of Moruroa atoll, 197 km east of Tematangi, 240 km southwest of the Gambier Islands and 1190 km southeast of Tahiti.

Access to the lagoon is through a pass lying 0.5 mile SW of the northernmost point of the atoll; the channel has a width of about 60m and a dredged depth of 6.5m. A 12m long quay, in 2.5m of water, is situated in the NE part of the lagoon; another quay, 50m long in 5m of water, and landing ramps, were constructed in its E part. The access

channel is marked, on each side, by two beacons. There is an abandoned airfield, built to accommodate medium size transport aircraft, on the NE coast of the atoll. It is reported that the pass of Fangataufa is obstructed by a **chain boom**. This boom can be moved by agreement with the local military authority.

### 4.9.2 History

The first recorded European to arrive to Fangataufa Atoll was Frederick William Beechey in 1826. This atoll was inhabited well into the 20th century.

Fangataufa was the site of France's first two-stage thermonuclear test, code named **Canopus**, detonated on August 24, 1968. The nuclear explosion had a yield of 2.6 megatons. The atoll was also the location of the 1970 914-kiloton **Licorne** ('Unicorn') test and 2 other atmospheric nuclear tests as well as several underground nuclear tests. Today, Fangataufa serves as a wildlife sanctuary for various species of birds.

Fangataufa is permanently uninhabited. It is classified as a **Common Military Zone**. The zone includes the lagoon areas enclosed by the atoll and by baselines linking the closest points emerging from the reef on both sides of the channel. Entry is prohibited without authorization.

### 4.9.3 Administration

Administratively Fangataufa Atoll is part of the commune of Tureia, which includes the atolls of Tureia, Moruroa, Tematangi and Vanavana. It was ceded to France for nuclear tests in 1964.

### 4.9.4 See also

- [Bengt Danielsson](#), a member of Kon-Tiki crew; an outspoken critic of nuclear testing
- [force de frappe](#)
- [FOST](#)

### 4.9.5 References

- [1] “Population” . *Institut de la statistique de la Polynésie française*. Retrieved 25 September 2014.

- [History](#)

### 4.9.6 External links

- (French) [Archives sur le Centre d'Expérimentations Nucléaires du Pacifique \(C.E.P.\) à Mururoa, Hao et Fangataufa](#)

- France finally agrees to pay damages to nuclear test victims

## 4.10 Floreana Island

For other uses, see [Santa Maria Island \(disambiguation\)](#).

**Floreana Island** is an island of the Galápagos Islands. It was named after Juan José Flores, the first president of Ecuador, during whose administration the government of Ecuador took possession of the archipelago. It was previously called **Charles Island** (after King Charles II of England), and **Santa Maria** after one of the caravels of Columbus.

The island has an area of 173 square kilometres (67 sq mi). It was formed by volcanic eruption. The island's highest point is Cerro Pajas at 640 metres (2,100 ft), which is also the highest point of the volcano like most of the smaller islands of Galapagos.

### 4.10.1 History

Since the 19th century, whalers kept a wooden barrel at Post Office Bay, so that mail could be picked up and delivered to their destination by ships on their way home, mainly to Europe and the United States. Cards and letters are still placed in the barrel without any postage. Visitors sift through the letters and cards in order to deliver them by hand.\*[1]

Due to its relatively flat surface, supply of fresh water as well as plants and animals, Floreana was a favorite stop for whalers and other visitors to the Galapagos. When still known as Charles Island in 1819, the island was set alight as a prank by helmsman Thomas Chappel from the Nantucket whaling ship the *Essex*. Being the height of the dry season, the fire soon burned out of control. The next day saw the island still burning as the ship sailed for the offshore grounds and after a full day of sailing the fire was still visible on the horizon.\*[2] Many years later Thomas Nickerson, who had been a cabin boy on the *Essex*, returned to Charles Island and found a black wasteland: “neither trees, shrubbery, nor grass have since appeared.”\*[3] It is believed the fire contributed to the extinction of some species originally on the island.\*[3]

In September 1835 the second voyage of HMS *Beagle* brought Charles Darwin to Charles Island. The ship's crew was greeted by Mr. Nicholas Lawson, acting for the Governor of Galápagos, and at the prison colony Darwin was told that tortoises differed in the shape of the shells from island to island, but this was not obvious on the islands he visited and he did not bother collecting their shells. He industriously collected all the animals, plants, insects and reptiles, and speculated about finding “from future comparison to what district or 'centre of cre-

ation' the organized beings of this archipelago must be attached.”\*[4]

In 1929, Friedrich Ritter and Dore Strauch arrived in Guayaquil from Berlin to settle on Floreana, and sent letters back that were widely reported in the press, encouraging others to follow. In 1932 Heinz and Margaret Wittmer arrived with their son Harry, and shortly afterwards their son Rolf was born there, the first citizen of the island to have been born in the Galápagos. Later in 1932, the self-described “Baroness” von Wagner Bosquet arrived with companions, but a series of strange disappearances and deaths (including possible murders) and the departure of Strauch left the Wittmers as the sole remaining inhabitants of the group who had settled there. They set up a hotel which is still managed by their descendants, and Mrs. Wittmer wrote an account of her experiences in her book *Floreana: A Woman's Pilgrimage to the Galapagos*.\*[5]\*[6] A documentary film recounting these events, *The Galapagos Affair*, was released in 2013.\*[7]

The demands of these visitors, early settlers, and introduced species devastated much of the local wildlife with the endemic Floreana tortoise being declared extinct\*[8] and the endemic Floreana mockingbird becoming extirpated on the island (the few remaining are found on the nearby islands of Gardiner and Champion).\*[9]

When Charles Darwin visited the island in 1835, he found no sign of its native tortoise and assumed that whalers, pirates, and human settlers had wiped them out. Since about 1850, no tortoises have been found on the island (except for one or two introduced animals kept as pets by the locals), and the International Union for Conservation of Nature classified the Floreana tortoise (*Chelonoidis elephantopus* sometimes called *Chelonoidis nigra*) as extinct.\*[10] However, it may be that there are pure Floreana tortoises living on other islands in the archipelago.\*[10]\*[11]\*[12]

### 4.10.2 Points of interest

- A favorite dive and snorkeling site, “Devil's Crown”, located off the northeast point of the island, is an underwater volcanic cone, offering the opportunity to snorkel with schools of fish, sea turtles, sharks and sea lions, which are abundant amongst the many coral formations found here.
- At Punta Cormorant, there is a green olivine beach to see sea lions and a short walk past a lagoon to see flamingos, rays, sea turtles and ghost and *Grapsus grapsus* (Sally Lightfoot) crabs. Pink flamingos and green sea turtles nest from December to May on this island. The “joint footed” petrel is found here, a nocturnal sea bird which spends most of its life away from land.
- Post Office Bay provides visitors the opportunity to



send post cards home without a stamp via the over 200-year-old post barrel and other travelers.

- A miniature football (soccer) field, complete with goals, at the end of Post Office Bay, is used by tour boat crews and their tourists.

### 4.10.3 Gallery

- Floreana Island
- Post Barrel
- Punta Cormorant

### 4.10.4 References

- [1] "Galapagos Islands Guided Tour - Isla Floreana, Ecuador" . Retrieved 1 November 2011.
- [2] Philbrick, Nathaniel (2001). *In the Heart of the Sea: The Tragedy of the Whaleship Essex*. New York: Penguin Books. ISBN 0-14-100182-8.
- [3] Nickerson, Thomas. "Account of the Ship Essex Sinking, 1819-1821" . Nantucket, Massachusetts: Nantucket Historical Society. Retrieved 18 February 2013.
- [4] Keynes, R. D. ed. 2001. *Charles Darwin's Beagle Diary*. Cambridge: Cambridge University Press, p. 356.
- [5] "In Depth in Galapagos Islands at Frommer's" . Retrieved 1 November 2011.
- [6] Minster, C. (2014). "Unsolved Murder Mystery: The Galapagos Affair" . About.Com. Retrieved 2014-04-23.
- [7] O'Malley, S. (2014-04-04). "Review of *The Galapagos Affair-Satan Came to Eden*". RogerEbert.com. Archived from the original on 2014-04-07. Retrieved 2014-04-24.
- [8] Fitter, Julian; Fitter, Daniel; and Hosking, David. (2000) *Wildlife of the Galápagos*. Princeton, NJ: Princeton University Press, p.83.
- [9] Fitter, Julian; Fitter, Daniel; and Hosking, David. (2000) *Wildlife of the Galápagos*. Princeton, NJ: Princeton University Press, p.68.
- [10] "Extinct Galapagos tortoise may just be hiding : Nature News Blog" . Blogs.nature.com. 2013-07-11. Retrieved 2013-08-23.
- [11] "'Extinct' giant Floreana tortoise may be alive, say scientists | Nature" . The Earth Times. 2012-01-10. Retrieved 2013-08-23.
- [12] "Extinct Galapagos Tortoise Could Be Resurrected" . News.nationalgeographic.com. 2010-10-28. Retrieved 2013-08-23.

### 4.10.5 Bibliography

- Strauch, Dora (1936). *Satan Came to Eden*. Harper & brothers. OCLC 3803834.
- Treherne, John E. (1983). *The Galapagos Affair*. Random House. ISBN 978-1-4464-6788-6. OCLC 9731840.
- Wittmer, Margaret (2013). *Floreana: A Woman's Pilgrimage to the Galapagos*. Midpoint Trade Books Incorporated. ISBN 978-1-55921-399-8. OCLC 857863449.
- Egnal, George *Frederick Ritter My Evil Paradise Floreana* (Amazon Kindle Ebook, 2013)

### 4.10.6 External links

- Floreana

## 4.11 Howland Island



Howland Island

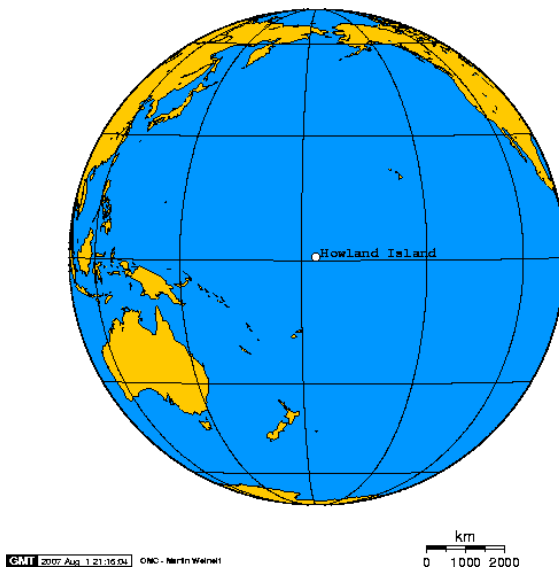
Location of Howland Island in the Pacific Ocean

**Howland Island** /ˈhɑːlənd/ is an uninhabited coral island located just north of the equator in the central Pacific Ocean, about 1,700 nautical miles (3,100 km) southwest of Honolulu. The island lies almost halfway between Hawaii and Australia and is an unincorporated, unorganized territory of the United States. Geographically, together with Baker Island it forms part of the Phoenix Islands. For statistical purposes, Howland is grouped as one of the United States Minor Outlying Islands.

Howland is located at 0°48′24″N 176°36′59″W﻿ / ﻿0.80667°N 176.61639°WCoordinates:  0°48′24″N



Howland Island seen from space



Orthographic projection centered over Howland Island

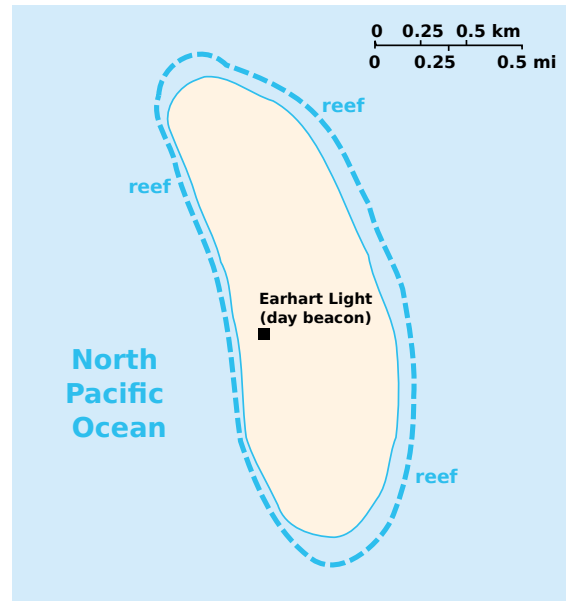
176°36'59"W / 0.80667°N 176.61639°W.\* [1] It covers 450 acres (1.8 km<sup>2</sup>), with 4 miles (6.4 km) of coastline. The island has an elongated plantain-shape on a north-south axis. There is no lagoon.

**Howland Island National Wildlife Refuge** consists of the 455-acre (1.84 km<sup>2</sup>) island and the surrounding 32,074 acres (129.80 km<sup>2</sup>) of submerged land. The island is managed by the U.S. Fish and Wildlife Service as an insular area under the U.S. Department of the Interior and is part of the Pacific Remote Islands Marine National Monument.

The atoll has no economic activity. It is perhaps best known as the island Amelia Earhart was searching for but never reached when her airplane disappeared on July 2, 1937, during her planned round-the-world flight. Airstrips constructed to accommodate her planned

stopover were subsequently damaged, were not maintained and gradually disappeared. There are no harbors or docks. The fringing reefs may pose a maritime hazard. There is a boat landing area along the middle of the sandy beach on the west coast, as well as a crumbling day beacon. The island is visited every two years by the U.S. Fish and Wildlife Service.\* [2]

#### 4.11.1 Flora and fauna



Map of Howland Island

The climate is equatorial, with little rainfall and intense sunshine. Temperatures are moderated somewhat by a constant wind from the east. The terrain is low-lying and sandy: a coral island surrounded by a narrow fringing reef with a slightly raised central area. The highest point is about six meters above sea level.

There are no natural fresh water resources.\* [3] The landscape features scattered grasses along with prostrate vines and low-growing pisonia trees and shrubs. A 1942 eyewitness description spoke of "a low grove of dead and decaying kou trees" on a very shallow hill at the island's center. In 2000, a visitor accompanying a scientific expedition reported seeing "a flat bulldozed plain of coral sand, without a single tree" and some traces of building ruins.\* [4] Howland is primarily a nesting, roosting and foraging habitat for seabirds, shorebirds and marine wildlife.

The U.S. claims an Exclusive Economic Zone of 200 nautical miles (370 km) and a territorial sea of 12 nautical miles (22 km) around the island.

Since Howland Island is uninhabited, no time zone is specified. It lies within a nautical time zone which is 12 hours behind UTC.



Map of the central Pacific Ocean showing Howland Island and nearby Baker Island just north of the Equator and east of Tarawa.

### 4.11.2 History

#### Prehistoric settlement

Sparse remnants of trails and other artifacts indicate a sporadic early Polynesian presence. A canoe, a blue bead, pieces of bamboo, and other relics of early settlers have been found.\*[Note 1] The island's prehistoric settlement may have begun about 1000 BC when eastern Melanesians traveled north\*[6] and may have extended down to Rawaki, Kanton, Manra and Orona of the Phoenix Islands, 500 to 700 km southeast. K.P. Emery, an ethnologist for Honolulu's Bernice P. Bishop Museum, indicated that settlers on Manra Island were apparently of two distinct groups, one Polynesian and the other Micronesian,\*[7] hence the same might have been true on Howland Island, though no proof of this has been found.

The difficult life on these isolated islands along with unreliable fresh water supplies may have led to the dereliction or extinction of the settlements, much the same as other islands in the area (such as Kiritimati and Pitcairn) were abandoned.\*[8]

#### Sightings by whalers

Captain George B. Worth of the Nantucket whaler *Oeno* sighted Howland around 1822 and called it Worth Island.\*[9]\*[10] Daniel MacKenzie of the American whaler *Minerva Smith* was unaware of Worth's sighting when he charted the island in 1828 and named it after his ship's owners\*[11] on December 1, 1828. Howland Island was at last named on September 9, 1842 after a lookout who sighted it from the whaleship *Isabella* under

Captain Geo. E. Netcher of *New Bedford*.

#### U.S. possession and guano mining

Howland Island was uninhabited when the United States took possession of it under the Guano Islands Act of 1856. The island was a known navigation hazard for many decades and several ships were wrecked there. Its guano deposits were mined by American companies from about 1857 until October 1878, although not without controversy.

Captain Geo. E. Netcher of the *Isabella* informed Captain Taylor of its discovery. As Taylor had discovered another guano island in the Indian Ocean, they agreed to share the benefits of the guano on the two islands. Taylor put Netcher in communication with Alfred G. Benson, president of the American Guano Company, which was incorporated in 1857.\*[12] Other entrepreneurs were approached as George and Matthew Howland, who later became members of the United States Guano Company, engaged Mr. Stetson to visit the Island on the ship *Rousseau* under Captain Pope. Mr. Stetson arrived on the Island in 1854 and described it as being occupied by birds and a plague of rats.\*[13]

The American Guano Company established claims in respect to Baker Island and Jarvis Island which was recognised under the U.S. Guano Islands Act of 1856. Benson tried to interest the American Guano Company in the Howland Island deposits, however the company directors considered they already had sufficient deposits. In October 1857 the American Guano Company sent Benson's son Arthur to Baker and Jarvis Islands to survey the guano deposits. He also visited Howland Island and took samples of the guano. Subsequently Alfred G. Benson resigned from the American Guano Company and together with Netcher, Taylor and George W. Benson formed the United States Guano Company to exploit the guano on Howland Island, with this claim being recognised under the U.S. Guano Islands Act of 1856.\*[12]

However, when the United States Guano Company dispatched a vessel in 1859 to mine the guano they found that Howland Island was already occupied by men sent there by the American Guano Company. The companies ended up in New York state court,\*[Note 2] with the American Guano Company arguing that United States Guano Company had in effect abandoned the island, since the continual possession and actual occupation required for ownership by the Guano Islands Act did not occur. The end result was that both companies were allowed to mine the guano deposits, which were substantially depleted by October 1878.\*[14]

In the late 19th Century there were British claims on the island, as well as attempts at setting up mining. John T. Arundel and Company, a British firm using laborers from the Cook Islands and Niue, occupied the island from 1886 to 1891.\*[15]

To clarify American sovereignty, Executive Order 7368 was issued on May 13, 1936.\*[16]

### Itascatown (1935–42)

In 1935, a brief attempt at colonization was made, part of the Baker, Howland and Jarvis Colonization Scheme administered by the Department of Commerce to establish a permanent U.S. presence on the equatorial Line Islands. It began with a rotating group of four alumni and students from the Kamehameha School for Boys, a private school in Honolulu. Although the recruits had signed on as part of a scientific expedition and expected to spend their three-month assignment collecting botanical and biological samples, once out to sea they were told, “Your names will go down in history” and that the islands would become “famous air bases in a route that will connect Australia with California” .

The settlement was named **Itascatown** after the USCGC *Itasca* that brought the colonists to Howland and made regular cruises between the other Line Islands during that era. Itascatown was a line of a half-dozen small wood-framed structures and tents near the beach on the island's western side. The fledgling colonists were given large stocks of canned food, water, and other supplies including a gasoline powered refrigerator, radio equipment, complete medical kits and (characteristic of that era) vast quantities of cigarettes. Fishing provided much-needed variety for their diet. Most of the colonists' endeavors involved making hourly weather observations and gradually developing a rudimentary infrastructure on the island, including the clearing of a landing strip for airplanes. During this period the island was on Hawaii time, which was then 10.5 hours behind UTC.\*[Note 3] Similar colonization projects were started on nearby Baker Island, Jarvis Island and two other islands.

### Kamakaiwi Field

Ground was cleared for a rudimentary aircraft landing area during the mid-1930s, in anticipation that the island might eventually become a stopover for commercial trans-Pacific air routes and also to further U.S. territorial claims in the region against rival claims from Great Britain. Howland Island was designated as a scheduled refueling stop for American pilot Amelia Earhart and navigator Fred Noonan on their round-the-world flight in 1937. Works Progress Administration (WPA) funds were used by the Bureau of Air Commerce to construct three graded, unpaved runways meant to accommodate Earhart's twin-engined Lockheed Model 10 Electra.

The facility was named *Kamakaiwi Field* after James Kamakaiwi, a young Hawaiian who arrived with the first group of four colonists. He was selected as the group's leader and he spent more than three years on Howland, far longer than the average recruit. It has also been referred

to as *WPA Howland Airport* (the WPA contributed about 20 percent of the \$12,000 cost). Earhart and Noonan took off from *Lae, New Guinea*, and their radio transmissions were picked up near the island when their aircraft reached the vicinity but they were never seen again.

### Japanese attacks during World War II



*Earhart Light, pictured here showing damage it sustained during World War II, was named for Amelia Earhart during the late 1930s.*

A Japanese air attack on December 8, 1941 by 14 twin-engined Mitsubishi G3M “Nell” bombers of Chitose Kōkūtai, from Kwajalein islands, killed two of the Kamehameha School colonists: Richard “Dicky” Kanani Whaley, and Joseph Kealoha Keli’hananui. The raid came one day after the Japanese attack on Pearl Harbor and damaged the three airstrips of Kamakaiwi Field. Two days later a Japanese submarine shelled what was left of the colony's few buildings into ruins.\*[18] A single bomber returned twice during the following weeks and dropped more bombs on the rubble of tiny Itascatown. The two survivors were finally evacuated by the *USS Helm* a U.S. Navy destroyer on January 31, 1942. Howland was occupied by a battalion of the United States Marine Corps in September 1943 and known as Howland Naval Air Station until May 1944.

All attempts at habitation were abandoned after 1944. Colonization projects on the other four islands were also disrupted by the war and ended at this time.\*[19] No aircraft is known to have ever landed there, although anchorages nearby could be used by float planes and flying boats during World War II. For example, on July 10, 1944, a

U.S. Navy Martin PBM-3-D Mariner flying boat (BuNo 48199), piloted by William Hines, had an engine fire and made a forced landing in the ocean offshore of Howland. Hines beached the aircraft and although it burned, the crew escaped unharmed, was rescued by the USCGC *Balsam* (the same ship that later took Unit 92 to Gardner Island). \* [20]

### 4.11.3 National Wildlife Refuge



*Emperor Angelfish and hump coral - Howland Island NWR.*

On June 27, 1974, Secretary of the Interior Rogers Morton created Howland Island National Wildlife Refuge which was expanded in 2009 to add submerged lands within 12 nautical miles (22 km) of the island. The refuge now includes 648 acres (2.62 km<sup>2</sup>) of land and 410,351 acres (1,660.63 km<sup>2</sup>) of water. \* [21] Along with six other islands, the island was administered by the U.S. Fish and Wildlife Service as part of the Pacific Remote Islands National Wildlife Refuge Complex. In January 2009, that entity was upgraded to the Pacific Remote Islands Marine National Monument by President George W. Bush. \* [22]

The island habitat has suffered from the presence from multiple invasive exotic species. Black rats were introduced in 1854 and eradicated in 1938 by feral cats introduced the year before. The cats proved to be destructive to bird species and they were eliminated by 1985. Pacific crabgrass continues to compete with local plants. \* [23]

Public entry to the island is only by special use permit from the U.S. Fish and Wildlife Service and it is generally restricted to scientists and educators. Representatives from the agency visit the island on average once every two years, often coordinating transportation with amateur radio operators or the U.S. Coast Guard to defray the high cost of logistical support. \* [23]

### 4.11.4 Earhart Light

Colonists, sent to the island to establish possession claims by the United States, built the Earhart Light (0°48'20.48"N 176°37'8.55"W / 0.8056889°N 176.6190417°W), named after Amelia Earhart, as a day beacon or navigational landmark. It is shaped somewhat like a short lighthouse. It was constructed of white sandstone with painted black bands and a black top meant to be visible several miles out to sea during daylight hours. It is located near the boat landing at the middle of the west coast by the former site of Itascatown. The beacon was partially destroyed during early World War II by the Japanese attacks, but it was rebuilt in the early 1960s by men from the U.S. Coast Guard ship *Blackhaw*. \* [24] \* [25] By 2000, the beacon was reported to be crumbling and it had not been repainted in decades. \* [26]

Ann Dearing Holtgren Pellegreno overflew the island in 1967, and Linda Finch did so in 1997, during memorial circumnavigation flights to commemorate Earhart's 1937 world flight. No landings were attempted but both Pellegreno and Finch flew low enough to drop a wreath on the island. \* [27]

### 4.11.5 Image gallery

- Earhart Light with post World War II repairs
- Aircraft wreckage on Howland
- Itascatown settlement remains
- Howland island flora
- Howland island flora (leeward)
- Brown boobies
- Brown boobies
- Ruddy turnstones

### 4.11.6 See also

- Howland and Baker islands, includes coverage of the Howland-Baker EEZ
- History of the Pacific Islands
- Phoenix Islands
- List of Guano Island claims

### 4.11.7 References

## Notes

- [1] Quote: “Howland's Island, although naturally uninhabitable, gave various indications of early visitors, probably natives drifting from windward islands, whose traces were still visible in the remains of a canoe, a blue bead, pieces of bamboo, and other distinctly characteristic belongings.” \* [5]
- [2] *American Guano Co. v. U.S. Guano Co.*, 44 Barb. 23 (N.Y. 1865).
- [3] Quote: Thursday, July 1, 1937... Howland Island was using the 10+30 hour time zone —the same as Hawaii standard time...” \* [17]

## Citations

- [1] “Howland Island” . *Geographic Names Information System*. United States Geological Survey. Retrieved February 24, 2009.
- [2] “Howland Island National Wildlife Refuge.” *fws.gov*. Retrieved: April 29, 2010.
- [3] “United States Pacific Island Wildlife Refuges.” *CIA: The World Factbook*. ISSN 1553-8133. Retrieved: November 25, 2010.
- [4] Payne, Roger. “At Howland Island, 2000.” *pbs.org*. Retrieved: July 6, 2008.
- [5] Hague, James D. Web copy “Our Equatorial Islands with an Account of Some Personal Experiences.” *Century Magazine*, Vol. LXIV, No. 5, September 1902. Retrieved: January 3, 2008.
- [6] Suárez 2004, p. 17.
- [7] Bryan, E.H. “Sydney Island.” *janeresture.com*. Retrieved: July 7, 2008.
- [8] Irwin 1992, pp. 176–179.
- [9] Sharp 1960, p. 210.
- [10] Bryan 1942, pp. 38–41.
- [11] Maude 1968, p. 130.
- [12] “The Guano Companies in Litigation – A Case of Interest to Stockholders.” *The New York Times*, May 3, 1865. Retrieved: March 23, 2013.
- [13] Howland, Llewellyn. “Howland Island, Its Birds and Rats, as Observed by a Certain Mr. Stetson in 1854.” *Pacific Science*, Vol. IX, April 1955, pp. 95–106. Retrieved: March 23, 2013.
- [14] “GAO/OGC-98-5 - U.S. Insular Areas: Application of the U.S. Constitution.” *U.S. Government Printing Office*, November 7, 1997. Retrieved: March 23, 2013.
- [15] Bryan 1942
- [16] “Memorandum of Secretary of State Cordell Hull to the President, February 18, 1936.” *Presidential Private File, Franklin D. Roosevelt Library*, Hyde Park, New York. Retrieved: March 18, 2010.

- [17] Long 1999, p. 206.
- [18] Butler 1999, p. 419.
- [19] “Howland Island.” *worldstatesmen.org*. Retrieved: October 10, 2010.
- [20] “Report 48199.” *vpnavy.org*. Retrieved: October 10, 2010.
- [21] White, Susan. “Welcome to Howland Island National Wildlife Refuge.” *U.S. Fish and Wildlife Service*, August 26, 2011. Retrieved: March 20, 2012.
- [22] Bush, George W. “Establishment of the Pacific Remote Islands Marine National Monument: A Proclamation by the President of the United States of America.” Washington, D.C.: White House, January 6, 2009. Retrieved: March 20, 2012.
- [23] “Howland Island National Wildlife Refuge.” *U.S. Fish and Wildlife Service*. Retrieved: March 20, 2012.
- [24] “Voyage to Howland Island of the USCGC *Kukui*.” *US Coast Guard*. Retrieved: October 10, 2010.
- [25] “Earhart beacon shines from lonely island.” *Eugene Register-Guard*, August 17, 1963. Retrieved: March 20, 2012.
- [26] “Historic Light Station Information and Photography: Pacific Rim” . *United States Coast Guard Historian's Office*. Retrieved: October 10, 2010.
- [27] Safford et al. 2003, pp. 76–77.

## Bibliography

- Bryan, Edwin H., Jr. *American Polynesia and the Hawaiian Chain*. Honolulu, Hawaii: Tongg Publishing Company, 1942.
- Butler, Susan. *East to the Dawn: The Life of Amelia Earhart*. Cambridge, MA: Da Capo Press, 1999. ISBN 0-306-80887-0.
- “Eyewitness account of the Japanese raids on Howland Island (includes a grainy photo of Itascatown).” *ksbe.edu*. Retrieved: October 10, 2010.
- Irwin, Geoffrey. *The Prehistoric Exploration and Colonisation of the Pacific*. Cambridge, UK: Cambridge University Press, 1992. ISBN 0-521-47651-8.
- Long, Elgen M. and Marie K. Long. *Amelia Earhart: The Mystery Solved*. New York: Simon & Schuster, 1999. ISBN 0-684-86005-8.
- Maude, H.E. *Of Islands and Men: Studies in Pacific History*. Melbourne, Australia: Oxford University Press, 1968.

- Safford, Laurance F. with Cameron A. Warren and Robert R. Payne. *Earhart's Flight into Yesterday: The Facts Without the Fiction*. McLean, Virginia: Paladwr Press, 2003. ISBN 1-888962-20-8.
- Sharp, Andrew. *The Discovery of the Pacific Islands*. Oxford: Oxford University Press, 1960.
- Suárez, Thomas. *Early Mapping of the Pacific*. Singapore: Periplus Editions, 2004. ISBN 0-7946-0092-1.

#### 4.11.8 External links

- Geography, history and nature on Howland Island
- “Historic Light Station Information and Photography: Pacific Rim” . United States Coast Guard Historian's Office.
- Howland Island National Wildlife Refuge
- 'Voyage of the Odyssey' – pictures and travelogue
- Howland Island at Infoplease
- Howland Island – Small Island, Big History

## 4.12 Iwo Jima

For other uses, see Iwo Jima (disambiguation).

**Iwo To** (硫黄島 *Iō-tō*, "sulfur island" ),<sup>[2]</sup> known in English as **Iwo Jima** (/ˈiːwə ˈdʒiːmə/ <sup>ⓘ</sup> <sup>ⓘ</sup> listen), is an island of the Japanese Volcano Islands chain south of the Ogasawara Islands and together with them form the Ogasawara Archipelago also known as the Bonin Islands. The island of 21 km<sup>2</sup> (8 square miles) is 1,200 kilometres (750 mi; 650 nmi) south of mainland Tokyo and is administered as part of Ogasawara, one of the eight villages of Tokyo (though it is uninhabited). It is famous as the setting of the February–March 1945 Battle of Iwo Jima between the United States, elements of the British Pacific Fleet versus the Empire of Japan during World War II. The island grew in recognition in the west when the iconic photograph *Raising the Flag on Iwo Jima* was taken on Mount Suribachi, the highest point at 160 metres (528 feet), during the battle by Associated Press photographer Joe Rosenthal. The U.S. occupied Iwo Jima until 1968 when it was returned to Japan.

### 4.12.1 Name

It was discovered by Spanish sailor Bernardo de la Torre who named it Sufre Island, after the old Spanish term for sulphur (*azufre* in modern Spanish).<sup>[3]</sup> At that time Iwo Jima and other islands were the limit between the Spanish and Portuguese Empires in the far East.

In 1779, the island was charted as Sulphur Island, the literal translation of its official name, during Captain James Cook's third surveying voyage.<sup>[4]</sup>



*Airport Control Tower, 2010*

The historical spelling *iwautau*<sup>[5]</sup> had come to be pronounced (approximately) *Iwō-tō* by the age of Western exploration, and the 1946 orthography reform fixed the spelling and pronunciation at *Iō-tō*. An alternative, *Iwō-jima*, modern *Iō-jima*, also appeared in nautical atlases.<sup>[6]</sup>

*Tō* and *shima* are different readings of the kanji for island (島), the *shima* being changed to *jima* in this case.

Japanese naval officers who arrived to fortify the island before the U.S. invasion mistakenly called it *Iwo Jima*.<sup>[6]</sup> In this way, the “Iwo Jima” reading became mainstream and was the one used by U.S. forces who arrived during World War II. Former island residents protested against this rendering, and the Ministry of Land, Infrastructure, Transport and Tourism's Geographical Survey Institute debated the issue and formally announced on June 18, 2007, that the official Japanese pronunciation of the island's name would revert to the pre-war *Iō-tō*.<sup>[2]</sup> Moves to revert the pronunciation were sparked by the high profile films *Flags of Our Fathers* and *Letters from Iwo Jima*.<sup>[6]</sup> The change does not affect how the name is written with kanji, "硫黄島", only how it is pronounced or written in hiragana, katakana and rōmaji.

### 4.12.2 Geographic features

The island has an approximate area of 21 km<sup>2</sup> (8 sq mi). The most prominent feature is **Mount Suribachi** on the southern tip, a vent that is thought to be dormant and is 161 m (528 ft) high.\* [1] Named after a Japanese grinding bowl, the summit of Mount Suribachi is the highest point on the island. Iwo Jima is unusually flat and featureless for a volcanic island. Suribachi is the only obvious volcanic feature, as it is only the **resurgent dome** (raised centre) of a larger submerged volcanic caldera.\* [7]

Captain Cook's surveying crew in 1776 to 1779 landed on a beach which is now 40 m (131 ft) above sea level due to volcanic uplifting.\* [7] Such uplifting occurs on the island at a varying rate of between 100 and 800 mm (3.9 and 31.5 in) per year, with an average rate of 200 mm (8 in) per year.\* [8]

80 km (43 nautical miles, 50 mi) north of the island is **North Iwo Jima** (北硫黄島 *Kita-Iō-tō*, literally: “North Sulfur Island”) and 59 kilometres (37 mi; 32 nmi) south is **South Iwo Jima** (南硫黄島 *Minami-Iō-tō*, “South Sulfur Island”); these three islands make up the **Volcano Islands** group of the **Ogasawara Islands**. Just south of *Minami-Iō-jima* are the **Mariana Islands**.

Iwo Jima has a history of minor volcanic activity a few times per year\* [9] (fumaroles, and their resultant discolored patches of seawater nearby), but so far no sign of a big eruption coming. The latest activity was in May 2012 (fumaroles and discolored patches of seawater).

### 4.12.3 History



*Landsat photo of Iwo Jima (Iōtō), ca. 1999. Mt. Suribachi is in the lower left hand corner.*

#### Pre-1945

The island was discovered in October 1543 by Spanish sailor **Bernardo de la Torre** on board of the carrack *San Juan de Letrán* when trying to return from Sarangani to **New Spain**.\* [10]

Before World War II Iwo Jima was administered as **Iōjima village** and was (as it is today) part of Tokyo. A census in June 1943 reported an island civilian population of 1,018 (533 males, 485 females) in 192 households in six settlements. The island had a primary school, a Shinto shrine, and a single police officer; it was serviced by a mail ship from *Haha-jima* once a month, as well as a **Nippon Yusen** ship once every couple of months. The island's economy relied upon sulfur mining, sugarcane farming, and fishing; an isolated island in the middle of the Pacific Ocean with poor economic prospect, Iwo Jima had to import all rice and consumer goods from the **Home Islands**.

Even before the beginning of World War II, there was a garrison of the **Imperial Japanese Navy** at the southern part of Iwo Jima. It was off-limits to the island's civilian population, who already had little contact with the naval personnel, except for trade purposes.

Throughout 1944, Japan conducted a massive military buildup on Iwo Jima in anticipation of a U.S. invasion. In July 1944, the island's civilian population was forcibly evacuated, and no civilians have permanently settled on the island since.

#### Battle of Iwo Jima

Main article: [Battle of Iwo Jima](#)

The invasion of Iwo Jima began on February 19, 1945, and continued to March 27, 1945. The battle was a major initiative of the **Pacific Campaign of World War II**. The Marine invasion, known as “**Operation Detachment**”, was charged with the mission of capturing the **airfields** on the island, which up until that time had harried U.S. bombing missions to Tokyo. Once the bases were secured, they could then be of use in the impending invasion of the Japanese mainland.

The battle was marked by some of the fiercest fighting of the War. The **Imperial Japanese Army** positions on the island were heavily fortified, with vast bunkers, hidden artillery, and 18 kilometres (11 mi) of tunnels.\* [11]\* [12] The battle was the first U.S. attack on the Japanese **Home Islands** and the Imperial soldiers defended their positions tenaciously. Of the 21,000 Japanese soldiers present at the beginning of the battle, over 19,000 were killed and only 1,083 taken prisoner.\* [13]

One of the first objectives after landing on the beachhead was the taking of Mount Suribachi. At the second raising of a flag on the peak, Joe Rosenthal photographed





*U.S. postage stamp, 1945 issue, commemorating the Battle of Iwo Jima.*

five Marines: Ira Hayes, Michael Strank, René Gagnon, Harlon Block, Franklin Sousley, and U.S. Navy corpsman John Bradley raising the United States flag on the fourth day of the battle (February 23). The photograph was extremely popular, being reprinted in thousands of publications. It won the Pulitzer Prize for Photography that same year, and ultimately came to be regarded as one of the most significant and recognizable images of the war, and possibly the most reproduced photograph of all time.\*[1]

Within the next month of fighting, three of the Marines raising the flag were killed: Strank, Block and Sousley. Contrary to popular belief, the famous picture of the six men raising the flag was not the first flag raising on the Island. Another, smaller, flag had been raised a few hours earlier by five other Marines who were the first to the top of Suribachi. The second flag was raised by these six after the Secretary of the Navy asked for the original flag that had been raised.

After the fall of Mount Suribachi in the south, the Japanese still held a strong position throughout the island. General Tadamichi Kuribayashi still had the equivalent of eight infantry battalions, a tank regiment, two artillery, and three heavy mortar battalions, plus the 5,000 gunners and naval infantry. With the landing area secure, more troops and heavy equipment came ashore and the invasion proceeded north to capture the airfields and the

remainder of the island. Most Japanese soldiers fought to the death. On the night of March 25, a 300-man Japanese force launched a final counterattack led by Kuribayashi. He was killed in the battle and his body hidden, his ivory handled pistol was captured by one Marine. The Marines suffered heavy casualties; more than 50 were killed and another 119 Americans were wounded. The island was officially declared “secured” the following morning.

According to the U.S. Navy, “The 36-day (Iwo Jima) assault resulted in more than 26,000 American casualties, including 6,800 dead.”\*[14] To put that into context, the 82-day *Battle of Okinawa* lasted from early April until mid-June 1945 and U.S. (five Army, two Marine Corps Divisions and Navy personnel on ships) casualties were over 62,000 of whom over 12,000 were killed or missing, while the *Battle of the Bulge* lasted 40 days (16 December 1944 – 25 January 1945) with almost 90,000 U.S. casualties consisting of 19,000 killed, 47,500 wounded, and 23,000 captured or missing.

After Iwo Jima was declared secured, about three thousand Japanese soldiers were left alive in the island's warren of caves and tunnels. Those who could not bring themselves to commit suicide hid in the caves during the day and came out at night to prowl for provisions. Some did eventually surrender and were surprised that the Americans often received them with compassion — offering them water, cigarettes, or coffee.\*[15] The last of these stragglers, two of Lieutenant Toshihiko Ohno's men (Ohno's body was never found), Yamakage Kufuku and Matsudo Linsoki, lasted 3-and-one-half years, surrendering on January 6, 1949.\*[16]\*[17]

The U.S. military occupied Iwo Jima until 1968, when it was returned to Japan.

It has been reported that many of the Japanese remains in Iwo Jima are missing their skulls.\*[18] It is possible that the souvenir collection of body remains continued also in the immediate post-war period.\*[18] (See *American mutilation of Japanese war dead*)

### Reunion of Honor

On February 19, 1985, the 40th anniversary of the day that U.S. forces began the assault on the island, veterans from both forces gathered for the Reunion of Honor just a few meters/yards away from the spot where U.S. Marines had landed on the island.\*[19] During the memorial service a granite plaque was unveiled with the message:

On the 40th anniversary of the battle of Iwo Jima, American and Japanese veterans met again on these same sands, this time in peace and friendship. We commemorate our comrades, living and dead, who fought here with bravery and honor, and we pray together that our sacrifices on Iwo Jima will always be remembered and never be repeated.

It is inscribed on both sides of the plaque, with the English translation facing the beaches where U.S. forces landed and the Japanese translation facing inland, where Japanese troops defended their position.

After that, the Japan-U.S. combination memorial service of the 50th anniversary was held in front of this monument in March 1995. The 55th anniversary was held in 2000, followed by a 60th reunion in March 2005 (see U.S. National Park Service photo below), and a 70th anniversary ceremony in March 2015. \* [20]

- Raising of the first U.S. flag at Iwo Jima
- Raising of the second U.S. flag at Iwo Jima
- Strank and company celebrate the flag raising.
- 60th Reunion 2005
- Reunion of Honor Memorial

#### Japanese military base

The Japan Maritime Self-Defense Force (JMSDF) operates a naval air base on the island at North Field (IATA: **IWO**, ICAO: **RJAW**). The airstrip is 2,650 meters (8,700 ft) long and 60 meters (200 ft) wide. Its orientation is 07/25. The JMSDF is in charge of support, air traffic control, fueling, and rescue. The Japan Air Self-Defense Force also uses the base. The Japan Ground Self-Defense Force is in charge of explosive ordnance disposal, and maintains a garrison of 400 troops on the island. \* [6] Two abandoned airfields from World War II are nearby, Central Field to the south of the current air base, and an unfinished Japanese airfield to the north of the base, which was improved after the U.S. invasion of the island.

The U.S. Navy's Carrier Air Wing Five, based at the United States Naval Air Facility Atsugi when not embarked/deployed aboard USS *George Washington*, also uses the base for field carrier landing practice (FCLP). The U.S. Navy still has a 1,639 acres (663 ha) disused communication facility (Iwo-Jima Communication Site) on the island, while the U.S. Coast Guard's Iwo Jima LORAN-C transmitter facility was transferred to Japan in 1993 and demolished in 1994.

Civilian access to the island is restricted to those attending memorial services for U.S. and Japanese fallen soldiers, construction workers for the naval air base, and meteorological agency officials. The Japanese troops stationed on the island register their residential addresses in Ayase, Kanagawa or Sayama, Saitama for voting, tax, and social security purposes. Officially, there is no population on the island.

#### U.S. nuclear arms base

Iwo Jima appears to be one of a number of Japanese islands which has been used by the United States to host nuclear arms, according to Robert S. Norris, William M. Arkin, and William Burr writing for the *Bulletin of Atomic Scientists* in early 2000. \* [21] \* [22] This is despite a Japanese policy of not allowing nuclear weapons on Japanese soil. Whether the site is used for this purpose is unknown, as great secrecy surrounds the United States' siting of nuclear arms bases; but on December 12, 1999, U.S. Under Secretary for Defense Policy Walter Slocombe told *The New York Times*, "Our position is that there have been no violations of our obligations under the security treaty and related arrangements." \* [23]

Norris, Arkin and Burr concluded however:

There were nuclear weapons on Chichi Jima and Iwo Jima (Iwo To), an enormous and varied nuclear arsenal on Okinawa, nuclear bombs (without their fission cores) stored on the mainland at Misawa and Itazuke airbases (and possibly at Atsugi, Iwakuni, Johnson, and Komaki airbases as well), and nuclear-armed U.S. Navy ships stationed in Sasebo and Yokosuka. [...] Chichi Jima, Iwo Jima, and Okinawa were under U.S. occupation, that the bombs stored on the mainland lacked their plutonium and/or uranium cores, and that the nuclear-armed ships were a legal inch away from Japanese soil. All in all, this elaborate stratagem maintained the technicality that the United States had no nuclear weapons "in Japan." \* [23]

#### 4.12.4 Gallery

- Mount Suribachi on Iwo Jima.
- Suribachi seen from the northern end of the invasion beach.
- Volcano crater on Mount Suribachi.
- Invasion beach seen from the top of Mount Suribachi.
- A pair of bunkers left over from World War II.
- View of Suribachi from a beach on the western side of the island.
- Close up view of Suribachi, scarred from the impacts of munitions during the Battle of Iwo Jima.
- Sunset at Iwo Jima from the invasion beach.

### 4.12.5 See also

- Battle of Iwo Jima
- Iwo Jima LORAN-C transmitter
- List of volcanoes in Japan
- *Raising the flag on Iwo Jima*
- USS Iwo Jima (LHD-7)

### 4.12.6 References

- [1] Global Volcanism Program | Iwo Jima
- [2] 地名等の統一に関する連絡協議会硫黄島の呼称を「いおうじま」から「いおうとう」へ変更 (in Japanese). Geographical Survey Institute of Japan. 2007-06-18. Retrieved 2007-06-20.
- [3] Welsch, Bernard (Jun 2004). “Was Marcus Island Discovered by Bernardo de la Torre in 1543?”. *The Journal of Pacific History* (Taylor & Francis. Ltd.) **39** (1): 114, 115. doi:10.1080/00223340410001684886.
- [4] Patrick, John M. *Iwo Jima – Sulphur Island*. United States Naval Institute Proceedings 76, no. 9 (September 1950): 1028-1029.
- [5] Kōjien dai rokuban (Japanese dictionary). Iwanami shoten, 2008.
- [6] Greimel, Hans; Lily Hindy (June 20, 2007). “Japan changes name of Iwo Jima”. *USA Today*. Retrieved 2007-06-24.
- [7] Global Volcanism Program:Iwo Jima
- [8] US Geophysics Research Forum, Geophysic Study Committee. *Active Tectonics*, p. 104. National Academies Press, 1986. ISBN 0-309-03638-0
- [9] kaiho.mlit.go.jp (Japanese)
- [10] Brand, Donald D. *The Pacific Basin: A History of its Geographical Explorations* The American Geographical Society (New York, 1967) p.123.
- [11] Letters From Iwo Jima World War II Multimedia Database
- [12] Japanese Defense of Iwo Jima
- [13] Morison, Samuel Eliot (2002) [1960]. *Victory in the Pacific, 1945*, vol. 14 of *History of United States Naval Operations in World War II*. Urbana, Ill.: University of Illinois Press. ISBN 0-252-07065-8. OCLC 49784806.
- [14] history.navy.mil
- [15] Toland, John (1970). *The Rising Sun: The Decline and Fall of the Japanese Empire 1936-1945*. New York: Random House. p. 731. OCLC 105915.
- [16] “Japanese Surrender After Four Year Hiding”. *Pacific Stars and Stripes*. Jan 10, 1949. p. 5.

- [17] Cook, Donald. “Capture of Two Holdouts January 6, 1949”. *No Surrender: Japanese Holdouts*. Retrieved 2007-09-11.
- [18] Harrison, p.828
- [19] Boardman, Robert (January–February 1986). “A Higher Honor”. *Discipleship Journal*. NavPress. Retrieved 2007-06-20.
- [20] <http://www.breitbart.com/big-government/2015/03/21/veterans-return-to-iwo-jima-for-70th-anniversary/>
- [21] Norris, Robert S.; William M. Arkin; William Burr (January–February 2000). “Where they were: how much did Japan know?”. *Bulletin of the Atomic Scientists* **56** (1): 11–13, 78–79. doi:10.2968/056001005. Retrieved 2009-07-20.
- [22] Norris, Robert S.; William M. Arkin; William Burr (November–December 1999). “NRDC: Nuclear Notebook: Appendix B: Deployments By Country, 1951-1977” (PDF). *Bulletin of the Atomic Scientists* **55** (6): 66–67. doi:10.2968/055006019. Retrieved 2009-07-20.
- [23] “Allegations of Clandestine U.S. Nuclear Weapons in Japan”. *Disarmament Diplomacy* (The Acronym Institute) (42). December 1999. Retrieved 2007-06-24.

### 4.12.7 External links

- Ioto or Iwo Jima at the Global Volcanism Program
- Google Earth view of Iwo Jima

## 4.13 Macquarie Island

**Macquarie Island** lies in the southwest Pacific Ocean, about half-way between New Zealand and Antarctica, at 54° 30' S, 158° 57' E.\* [1] Politically a part of Tasmania, Australia, since 1900, it became a Tasmanian State Reserve in 1978, and a World Heritage Site in 1997. It was a part of Esperance Municipality until 1993 when the municipality was merged with other municipalities to Huon Valley. The island is home to the entire royal penguin population during their annual nesting season. Ecologically, the island is part of the Antipodes Subantarctic Islands tundra ecoregion.

Since 1948 the Australian Antarctic Division (AAD) has maintained a permanent base, the Macquarie Island Station, on the isthmus at the northern end of the island at the foot of Wireless Hill. The population of the base, the island's only human inhabitants, usually varies from 20 to 40 people over the year.

### 4.13.1 History

The Australian/Briton Frederick Hasselborough discovered the uninhabited island accidentally on 11 July 1810

when looking for new sealing grounds.\* [2] He claimed Macquarie Island for Britain and annexed it to the colony of New South Wales in 1810. The island took its name after Colonel Lachlan Macquarie, Governor of New South Wales from 1810 to 1821. Hasselborough reported a wreck “of ancient design”, which has given rise to speculation that the island may have been visited before by Polynesians or others.\* [3]

Fabian Gottlieb von Bellingshausen, who explored the area for Alexander I of Russia, produced the first map of Macquarie Island. Bellingshausen landed on the island on 28 November 1820, defined its geographical position and traded his rum and food for Macquarie Island's fauna with the sealers. Between 1810 to 1919, seals and then penguins were hunted almost to the point of extinction.\* [2] The conditions on the island and the surrounding seas were considered so harsh that a plan to use it as a penal settlement was rejected.\* [3]

In 1877, the crew of the schooner *Benleugh* was shipwrecked on the islands for four months; folklore says they came to believe there was hidden treasure on the island.\* [4] The ship's owner, John Sen Inches Thomson, wrote a book on his sea travels, including his time on the island.\* [4] The book, written in 1912, was entitled *Voyages and Wanderings In Far-off Seas and Lands*.\* [4]

In 1890, New South Wales transferred the island to Tasmania,\* [5] which leased it to Joseph Hatch (1837–1928) between 1902 and 1920 for his oil industry based on harvesting penguins.

Between 1911 and 1914, the island became a base for the Australasian Antarctic Expedition under Sir Douglas Mawson. George Ainsworth operated a meteorological station between 1911 and 1913, followed by Harold Power (1913 to 1914) and by Arthur Tulloch from 1914 until it was shut down in 1915.

In 1933, the authorities declared the island a wildlife sanctuary under the Tasmanian *Animals and Birds Protection Act 1928*, and in 1972 it was made a State Reserve under the Tasmanian *National Parks and Wildlife Act 1970*.\* [6]

The Australian National Antarctic Research Expeditions (ANARE) established its expedition headquarters on 25 May 1948 on Macquarie Island.

On 5 December 1997, Macquarie Island was listed as a World Heritage Site mainly because of its unique geological features.\* [6]

On 23 December 2004, an earthquake measuring 8.1 on the Richter magnitude scale (one of the largest earthquakes ever recorded) rocked the island but caused little damage.\* [7]

On 12 April 2008, a 7.1 earthquake on the Macquarie Fault occurred near Macquarie Island.\* [8]

Geoscience Australia issued a Tsunami Inundation Advice for Macquarie Island Station.\* [9] The paper indi-

cates that in certain scenarios no warning of a significant tsunami caused by a local earthquake could be provided and would inundate the isthmus upon which the existing station resides. Such a Tsunami would likely affect other parts of the coastline and field huts located close to the shore. Such a significant earthquake at Macquarie Island capable of causing such a Tsunami is a high risk according to several papers.

#### 4.13.2 Geography



*The Macquarie Island bluffs*

The island is about 34 km (21 mi) long and 5 km (3 mi) wide, with an area of 128 km<sup>2</sup> (49 sq mi).\* [2] Near Macquarie Island are two small groups of minor islands, the Judge and Clerk Islets (54°21'S 159°01'E / 54.350°S 159.017°E), 14 km (9 mi) to the north, 0.2 km<sup>2</sup> (49 acres) in area, and the Bishop and Clerk Islets (55°03'S 158°46'E / 55.050°S 158.767°E), 34 km (21 mi) to the south, 0.6 km<sup>2</sup> (150 acres) in area.

The island is in two main pieces of plateau of around 150–200 m (490–660 ft) elevation to the north and south, joined by a narrow isthmus close to sea level. The high points include Mount Elder on the north-east coastal ridge at 385 m (1,263 ft), and Mounts Hamilton and Fletcher in the south at 410 m (1,345 ft).

Macquarie Island is an exposed portion of the Macquarie Ridge and is located where the Australian plate meets the Pacific plate. The island lies close to the edge of the submerged microcontinent of Zealandia, but is not regarded as part of it as the Macquarie Ridge is oceanic rather than continental crust.

It is the only place in the Pacific Ocean where rocks from the mantle are actively exposed at sea level. It also is the only oceanic environment with an exposed ophiolite sequence. Due to these unique geological exposures it was made a UNESCO world heritage site in 1997.\* [10]

The Bishop and Clerk Islets are part of the Australian state of Tasmania and mark the southernmost point of Australia (including islands).

In the 19th century the phantom Emerald Island supposedly lay to the south of Macquarie Island.

### 4.13.3 Climate

Macquarie Island's climate is moderated by the sea, and all months have an average temperature above freezing although snow is common between June and October and may even occur in Macquarie Island's "summer".

Average daily maximum temperatures range from 4.9 °C (40.8 °F) in July to 8.8 °C (47.8 °F) in January. Precipitation occurs fairly evenly throughout the year and averages 967.9 mm (38.11 in) annually. Macquarie Island is one of the cloudiest places on Earth with an average of only 856 hours of sunshine per year, similar to that in Tórshavn in the Faroe Islands.

### 4.13.4 Flora and fauna

See also: [Birds of Macquarie Island](#) and [Category:Flora\\_of\\_Macquarie\\_Island](#)

The flora has taxonomic affinities with other subantarctic



*A royal penguin rookery on Macquarie Island.*

islands, especially those to the south of New Zealand. Plants rarely grow over 1 m in height, though the tussock-forming grass *Poa foliosa* can grow up to 2 m tall in sheltered areas. There are over 45 vascular plant species and more than 90 moss species, as well as many liverworts and lichens. Woody plants are absent. The island has five principal vegetation formations: grassland, herbfield, fen, bog and feldmark. Bog communities include 'featherbed', a deep and spongy peat bog vegetated by grasses and low herbs, with patches of free water.\*[12] Endemic flora include the cushion plant *Azorella macquariensis*, the grass *Puccinellia macquariensis*, as well as two orchids – *Nematoceras dienenum* and *Nematoceras sulcatum*.\*[13]

Fauna found on the island include: subantarctic fur seals, Antarctic fur seals, New Zealand fur seals and southern elephant seals – over 80,000 individuals of this species.

Royal penguins and Macquarie shags are endemic breeders, while king penguins, southern rockhopper penguins and gentoo penguins also breed here in large numbers. The island has been identified by BirdLife International as an Important Bird Area because it supports about 3.5 million breeding seabirds of 13 species.\*[14]

### Ecological balance

The ecology of the island was affected soon after the beginning of European visits to the island in 1810. The island's fur seals, elephant seals and penguins were killed for fur and blubber. Rats and mice that were inadvertently introduced from the ships prospered due to lack of predators. Cats were subsequently introduced deliberately to keep the rodents from eating human food stores. In about 1870, rabbits were left on the island by sealers to breed for food. By the 1970s, the then 130,000 rabbits were causing tremendous damage to vegetation.\*[15]

The feral cats introduced to the island have had a devastating effect on the native seabird population, with an estimated 60,000 seabird deaths per year. From 1985, efforts were undertaken to remove the cats. In June 2000, the last of the nearly 2,500 cats were culled in an effort to save the seabirds.\*[16] Seabird populations responded rapidly,\*[17] but rats and rabbits continued to cause widespread environmental damage.

The rabbits rapidly multiplied before numbers were reduced to about 10,000 in the early 1980s when myxomatosis was introduced. Rabbit numbers then grew again to over 100,000 by 2006.\*[18] The rodents feed on young chicks while rabbits nibbling on the grass layer has led to soil erosion and cliff collapses, destroying seabird nests. Large portions of the Macquarie Island bluffs are eroding as a result. In September 2006 a large landslide at Lusitania Bay, on the eastern side of the island, partially destroyed an important penguin breeding colony. Tasmania Parks and Wildlife Service attributed the landslide to a combination of heavy spring rains and severe erosion caused by rabbits.\*[19]

Research by Australian Antarctic Division scientists, published in the 13 January 2009 edition of the British Ecological Society's Journal of Applied Ecology, suggested that the success of the feral cat eradication program has allowed the rabbit population to increase, damaging the Macquarie Island ecosystem by altering significant areas of island vegetation.\*[20] However, in a comment published in the same journal other scientists argued that a number of factors (primarily a reduction in the use of the Myxoma virus) were almost certainly involved and the absence of cats may have been relatively minor among them.\*[21] The original authors examined the issue in a later reply and concluded that the effect of the Myxoma virus use was small and reaffirmed their original position.\*[22]

On 4 June 2007 a media release by the Australian Fed-

eral Minister for the Environment and Water Resources, Malcolm Turnbull, announced that the Australian and Tasmanian Governments had reached an agreement to jointly fund the eradication of rodent pests, including rabbits, to protect Macquarie Island's World Heritage values.\*[23] The plan, estimated to cost \$24 million Australian dollars, was based on mass baiting the island similar to an eradication program on New Zealand's Campbell Island,\*[24] to be followed up with dog hunting teams trained by Steve Austin\*[25] over a period of up to seven years.\*[26] The baiting was expected to inadvertently affect kelp gulls, but higher than expected levels of bird deaths caused a temporary suspension of the program. Other species killed by the baits include giant petrels, black ducks and skuas.\*[27]

In February 2012, *The Australian* reported that rabbits, rats and mice had been nearly eradicated from the island.\*[28]

By April 2012, the hunting teams had located and exterminated 13 rabbits still surviving since the baiting in 2011. The last five rabbits found were in November 2011, including a lactating doe and four kittens. No fresh rabbit signs were found up to July 2013.\*[29] On 8 April 2014 Macquarie Island was officially declared pest-free after seven years of conservation efforts.\*[30] This achievement is the largest successful island pest-eradication program ever attempted.\*[31]

#### 4.13.5 Gallery

- A Macquarie Island beach
- Macquarie Island flora, *Epilobium pedunculare*
- Macquarie Island flora, *Stilbocarpa polaris*
- Royal penguins arguing
- Bull elephant seal fighting
- Simplified geological map
- Macquarie Island shag
- Gentoo penguin
- King penguin Lusitania Bay
- Eastern rockhopper penguin
- Sooty albatross
- Macquarie Island Station
- Wandering albatross
- Green Gorge Hut
- Highland herbfield dominated by *Pleurophyllum hookeri*

#### Wildlife sounds

*Problems listening to the files? See Wikipedia media help.*

#### 4.13.6 See also

- List of administrative heads of Macquarie Island
- List of islands of Australia
- List of Antarctic and subantarctic islands
- Island restoration
- Lachlan Macquarie
- Campbell Macquarie (shipwreck)
- South-east Commonwealth Marine Reserve Network

#### 4.13.7 References

- [1] Australian Antarctic Division. Aad.gov.au. Retrieved on 2013-07-16.
- [2] Scott, Keith (1993). *The Australian Geographic book of Antarctica*. Terrey Hills, New South Wales: Australian Geographic. p. 14. ISBN 1-86276-010-1.
- [3] Macquarie Island: a brief history —Australian Antarctic Division. Antarctica.gov.au. Retrieved on 2013-07-16.
- [4] Inches Thomson, John Sen (1912). *Voyages and Wanderings In Far-off Seas and Lands*. London, England: Headley Brothers. pp. 139–191.
- [5] Australian Antarctic Territory. Worldstatesmen.org. Retrieved on 2013-07-16.
- [6] Parks & Wildlife Service - History of the Reserve. Parks.tas.gov.au (2013-06-24). Retrieved on 2013-07-16.
- [7] “Antarctic expeditioners unscathed by earthquake” . *News Online* (Australian Broadcasting Corporation). 24 December 2004. Retrieved 5 April 2007.
- [8] USGS Report
- [9] Geoscience Australia Professional Opinion 2014/01
- [10] Macquarie Island - UNESCO World Heritage Centre. Whc.unesco.org. Retrieved on 2013-07-16.
- [11] “Climate statistics for Macquarie Island” . Bureau of Meteorology. Retrieved 18 February 2012.
- [12] “Macquarie Island - a report on a short visit” . *Croft, J.R.; & Richardson, M.M.* Australian National Botanic Gardens. Retrieved 3 August 2010.
- [13] “Plants of Macquarie Island” . Australian Plants Society. Retrieved 20 July 2010.

- [14] BirdLife International. (2011). Important Bird Areas factsheet: Macquarie Island. Downloaded from <http://www.birdlife.org> on 2011-12-24.
- [15] Macquarie Island faces 'ecosystem meltdown' after conservation efforts backfire. *The Guardian*. viewed 12 January 2009.
- [16] Squires, Nick (22 January 2007). "Cull upsets island's ecological balance". *The Daily Telegraph* (London). Retrieved 12 May 2010.
- [17] Brothers, N. & Bone, C. (2008) The response of burrow-nesting petrels and other vulnerable bird species to vertebrate pest management and climate change on sub-Antarctic Macquarie Island. *Papers and Proceedings of the Royal Society of Tasmania*, 142, 123-148
- [18] "Fears for sub-antarctic island plagued by rabbits". *News Online* (Australian Broadcasting Corporation). 15 July 2006. Retrieved 5 April 2007.
- [19] "Rabbits blamed for penguin deaths in landslide". *News Online* (Australian Broadcasting Corporation). 21 October 2006. Retrieved 5 April 2007.
- [20] "Lessons learned from devastating effects of cat eradication on Macquarie Island".
- [21] Dowding, J.E.; Murphy, E.C.; Springer, K.; Peacock, A.J.; Krebs, C.J. 2009. Cats, rabbits, Myxoma virus, and vegetation on Macquarie Island: a comment on Bergstrom et al. (2009). *Journal of Applied Ecology* 46: 1129-1132
- [22] Bergstrom, Dana M.; Lucieer, Arko; Kiefer, Kate; Wasley, Jane; Belbin, Lee; Pedersen, Tore K.; Chown, Steven L. (2009). "Management implications of the Macquarie Island trophic cascade revisited: a reply to Dowding et al. (2009)". *Journal of Applied Ecology* 46 (5): 1133. doi:10.1111/j.1365-2664.2009.01708.x.
- [23] Turnbull, Malcolm (7 June 2007). "Agreement to eradicate rabbits on Macquarie Island" (PDF). Australian Government. Archived from the original (PDF) on 27 September 2007. Retrieved 12 June 2007.
- [24] Darby, Andrew (11 April 2007). "Up against rats, rabbits and costs". *The Sydney Morning Herald*. Retrieved 11 April 2007.
- [25] Antarctica expedition: Macquarie Island, Australian Geographic, 23 March 2011.
- [26] Parks and Wildlife Service, Tasmania - Plan for the Eradication of Rabbits and Rodents on Macquarie Island
- [27] Ogilvie, Felicity (23 October 2010). "Bird deaths lead to review of baiting program". *ABC News (Australia)*. Retrieved 17 January 2013.
- [28] Denholm, Matthew (February 13, 2012). "Natives thriving since pests were voted off the island". *The Australian*. Retrieved February 27, 2012.
- [29] "Parks & Wildlife Service - Project News & Updates". [parks.tas.gov.au](http://parks.tas.gov.au).
- [30] "Parks & Wildlife Service - News Article". [parks.tas.gov.au](http://parks.tas.gov.au).
- [31] "Macquarie Island declared pest free". *ABC News*.
  - Macquarie Island, an 1882 paper in the *Transactions of the Royal Society of New Zealand*
  - Macquarie Island, an 1894 paper in the *Transactions of the Royal Society of New Zealand*

#### 4.13.8 External links

- Macquarie Island station (Australian Antarctic Division)
  - Macquarie Island station webcam
- World heritage listing for Macquarie Island
- Macquarie Island oceanic crust
- A picture of Macquarie Island (historical heritage - Remnants of seal hunting)

Coordinates: 54°37′00″S 158°51′00″E﻿ / ﻿54.6167°S 158.85°E﻿ / -54.6167; 158.85

## 4.14 Napuka

**Napuka**, or **Pukarua**, is a small coral atoll in the Disappointment Islands, in the northeastern part of the Tuamotu Archipelago in French Polynesia. It is located only 15 km to the southeast of Tepoto Nord, its nearest neighbor, forming a small group. These two atolls are quite isolated, the nearest land being Fangatau Atoll 170 km to the south.

Napuka Atoll is 10.5 km long and about 4 km wide. Its reef is quite broad, completely enclosing the lagoon. The total dry land area of the thirty islands on Napuka's reef is 8 km<sup>2</sup>. The surface of the lagoon is 18 km<sup>2</sup>.

Napuka has 299 inhabitants according to the 2012 census. The main village is **Tepukamaruia** (Te Puka Maru Ia).

### 4.14.1 History

The first recorded European to reach Napuka Atoll was the British explorer John Byron, in 1765. He named Napuka and Tepoto "Disappointment Islands" because he found the natives to be of a hostile disposition toward him.

Napuka was visited by the historic **United States Exploring Expedition**, 1838-1842. This atoll was probably the one that Charles Wilkes called "Wytoohee" or "Wutoohee".

The airport on Napuka opened in 1977.

### 4.14.2 Administration

Napuka Atoll is the head of the commune of Napuka, which consists of the atolls of Napuka and Tepoto Nord.

### 4.14.3 References

[1] “Population” . *Institut de la statistique de la Polynésie française*. Retrieved 9 October 2014.

- [oceandots.com at the Wayback Machine](#) (archived December 23, 2010)
- [Atoll names](#)
- [Origin of the name \(in German\)](#)
- [United States Exploring Expedition, - Charles Wilkes](#)
- [Napuka airport](#)

### 4.14.4 External links

- [Atoll list \(in French\)](#)

## 4.15 Norfolk Island

**Norfolk Island** (<sup>ⓘ</sup><sup>\*</sup> iˈnɔrfək ˈaɪlənd/; Norfuk: *Norfʻk Ailen* <sup>[6]</sup>) is a small island in the Pacific Ocean located between Australia, New Zealand and New Caledonia, 1,412 kilometres (877 mi) directly east of mainland Australia's Evans Head, and about 900 kilometres (560 mi) from Lord Howe Island. The island is part of the Commonwealth of Australia. Together with two neighbouring islands, it forms one of Australia's external territories. It has 2,300 inhabitants living on a total area of about 35 km<sup>2</sup> (14 sq mi). Its capital is Kingston.

Originally settled by East Polynesians, Norfolk Island was colonised by Great Britain as part of its settlement of Australia in 1788, at which point it was uninhabited. The island served as a convict penal settlement until May 1855, except for an 11-year hiatus between 1814 and 1825, when it was abandoned. In 1856, permanent civilian residence on the island began when it was settled from Pitcairn Island. In 1901, the island became a part of the Commonwealth of Australia.

The evergreen Norfolk Island pine is a symbol of the island and thus pictured on its flag. Native to the island, the pine is a key export industry for Norfolk Island, being a popular ornamental tree on mainland Australia, where two related species grow, and also worldwide.

### 4.15.1 History

Main article: [History of Norfolk Island](#)

#### Early history

Norfolk Island was first settled by East Polynesian seafarers either from the Kermadec Islands north of New Zealand or from the North Island of New Zealand. They arrived in the thirteenth or fourteenth century, and survived for several generations before disappearing.<sup>[7]</sup>

The first European known to have sighted the island was Captain James Cook, in 1774, on his second voyage to the South Pacific on HMS *Resolution*. He named it after Mary Howard, Duchess of Norfolk (c. 1712 – 1773).<sup>[8]</sup>

Sir John Call argued the advantages of Norfolk Island in that it was uninhabited and that New Zealand flax grew there. In 1786 the British government included Norfolk Island as an auxiliary settlement, as proposed by John Call, in its plan for colonisation of New South Wales. The decision to settle Norfolk Island was taken due to Empress Catherine II of Russia's decision to restrict sales of hemp. Practically all the hemp and flax required by the Royal Navy for cordage and sailcloth was imported from Russia.

When the First Fleet arrived at Port Jackson in January 1788, Governor Arthur Phillip ordered Lieutenant Philip Gidley King to lead a party of 15 convicts and seven free men to take control of Norfolk Island and prepare for its commercial development. They arrived on 6 March 1788.

During the first year of the settlement, which was also called “Sydney” like its parent, more convicts and soldiers were sent to the island from New South Wales.

#### Nineteenth century



*Norfolk Island gaol*

As early as 1794, Lieutenant-Governor of New South Wales Francis Grose suggested its closure as a penal settlement, as it was too remote and difficult for shipping



and too costly to maintain.\* [9] The first group of people left in February 1805, and by 1808 only about 200 remained, forming a small settlement until the remnants were removed in 1813. A small party remained to slaughter stock and destroy all buildings, so that there would be no inducement for anyone, especially from other European powers, to visit and lay claim to the place. From 15 February 1814 to 6 June 1825 the island was abandoned.

In 1824 the British government instructed the Governor of New South Wales **Thomas Brisbane** to occupy Norfolk Island as a place to send “the worst description of convicts”. Its remoteness, previously seen as a disadvantage, was now viewed as an asset for the detention of recalcitrant male prisoners. The convicts detained have long been assumed to be a hardcore of recidivists, or ‘doubly-convicted capital respites’ – that is, men transported to Australia who committed fresh colonial crimes for which they were sentenced to death, and were spared the gallows on condition of life at Norfolk Island. However, a recent study has demonstrated, utilising a database of 6,458 Norfolk Island convicts, that the reality was somewhat different: more than half were detained at Norfolk Island without ever receiving a colonial conviction, and only 15% had been reprieved from a death sentence. Furthermore, the overwhelming majority of convicts sent to Norfolk Island had committed non-violent property sentences, and the average length of detention was three years.\* [10]

The second penal settlement began to be wound down by the British government after 1847, and the last convicts were removed to **Tasmania** in May 1855. The island was abandoned because transportation from the United Kingdom to **Van Diemen's Land** had ceased in 1853, to be replaced by penal servitude in the UK.

On 8 June 1856, the next settlement began on Norfolk Island. These were the descendants of Tahitians and the **HMS *Bounty*** mutineers, including those of **Fletcher Christian**. They resettled from the **Pitcairn Islands**, which had become too small for their growing population. They left Pitcairn Islands on 3 May 1856 and arrived with 194 persons on 8 June. The Pitcairners occupied many of the buildings remaining from the penal settlements, and gradually established traditional farming and whaling industries on the island. Although some families decided to return to Pitcairn in 1858 and 1863, the island's population continued to grow. They accepted additional settlers, who often arrived with whaling fleets.

In 1867, the headquarters of the **Melanesian Mission** of the **Church of England** was established on the island. In 1920 the Mission was relocated from Norfolk Island to the **Solomon Islands** to be closer to the population of focus.

### Post-nineteenth century

After the creation of the **Commonwealth of Australia** in 1901, Norfolk Island was placed under the authority of the new Commonwealth government to be administered as an external territory. During **World War II**, the island became a key **airbase** and refuelling depot between **Australia** and **New Zealand**, and **New Zealand** and the **Solomon Islands**. Since Norfolk Island fell within **New Zealand's** area of responsibility it was garrisoned by a **New Zealand Army** unit known as **N Force** at a large Army camp which had the capacity to house a 1,500 strong force. **N Force** relieved a company of the **Second Australian Imperial Force**. The island proved too remote to come under attack during the war and **N Force** left the island in February 1944.

In 1979, Norfolk was granted limited self-government by **Australia**, under which the island elects a government that runs most of the island's affairs.

In 2006, a formal review process took place, in which the **Australian government** considered revising this model of government. The review was completed on 20 December 2006, when it was decided that there would be no changes in the governance of Norfolk Island.\* [11]

Financial problems and a reduction in tourism led to Norfolk Island's administration appealing to the **Australian federal government** for assistance in 2010. In return, the islanders were to pay income tax for the first time but would be eligible for greater welfare benefits.\* [12] However, by May 2013 agreement had not been reached and islanders were having to leave to find work and welfare.\* [13] An agreement was finally signed in **Canberra** on 12 March 2015 to replace self-government with a local council but against the wishes of the Norfolk Island government.\* [14]\* [15] A majority of Norfolk Islanders have objected to the **Australian plan** to make changes to Norfolk Island without first consulting them and allowing their say with 68% of voters against forced changes.\* [16]

### 4.15.2 Geography



View across to **Nepean Island** (foreground) and **Phillip Island**

Norfolk Island is located in the **South Pacific Ocean**, east of the **Australian mainland**. Norfolk Island is the main



Map of Norfolk Island

island of the island group the territory encompasses and is located at 29°02'S 167°57'E / 29.033°S 167.950°E. It has an area of 34.6 square kilometres (13.4 sq mi), with no large-scale internal bodies of water and 32 km (20 mi) of coastline. The island's highest point is Mount Bates (319 metres (1,047 feet) above sea level), located in the northwest quadrant of the island. The majority of the terrain is suitable for farming and other agricultural uses. Phillip Island, the second largest island of the territory, is located at 29°07'S 167°57'E / 29.117°S 167.950°E, seven kilometres (4.3 miles) south of the main island.

The coastline of Norfolk Island consists, to varying degrees, of cliff faces. A downward slope exists towards Slaughter Bay and Emily Bay, the site of the original colonial settlement of Kingston. There are no safe harbour facilities on Norfolk Island, with loading jetties existing at Kingston and Cascade Bay. All goods not domestically produced are brought in by ship, usually to Cascade Bay. Emily Bay, protected from the Pacific Ocean by a small coral reef, is the only safe area for recreational swimming, although surfing waves can be found at Anson and Ball Bays.

The climate is subtropical and mild, with little seasonal differentiation. The island is the eroded remnant of a basaltic volcano active around 2.3 to 3 million years ago,\*[17] with inland areas now consisting mainly of rolling plains. It forms the highest point on the Norfolk Ridge, part of the submerged continent Zealandia.

The area surrounding Mount Bates is preserved as the Norfolk Island National Park. The park, covering around 10% of the land of the island, contains remnants of the forests which originally covered the island, including stands of subtropical rainforest.

The park also includes the two smaller islands to the

south of Norfolk Island, Nepean Island and Phillip Island. The vegetation of Phillip Island was devastated due to the introduction during the penal era of pest animals such as pigs and rabbits, giving it a red-brown colour as viewed from Norfolk; however, pest control and remediation work by park staff has recently brought some improvement to the Phillip Island environment.

The major settlement on Norfolk Island is Burnt Pine, located predominantly along Taylors Road, where the shopping centre, post office, bottle shop, telephone exchange and community hall are located. Settlement also exists over much of the island, consisting largely of widely separated homesteads.

Government House, the official residence of the Administrator, is located on Quality Row in what was the penal settlement of Kingston. Other government buildings, including the court, Legislative Assembly and Administration, are also located there. Kingston's role is largely a ceremonial one, however, with most of the economic impetus coming from Burnt Pine.

### Gallery

- Anson Bay on Norfolk Island.
- Captain Cook lookout within the Norfolk Island National Park.

### Climate

Norfolk Island has a marine subtropical climate, which is best characterised as mild. The temperature almost never falls below 10 °C (50 °F) or rises above 26 °C (79 °F). The absolute maximum recorded temperature is 28.4 °C (83.1 °F), while the absolute minimum is 6.2 °C (43.2 °F).\*[18] Average annual precipitation is 1,290.2 millimetres (50.80 in), with most rain falling from April to August. Other months receive significant amounts of precipitation as well.

### Environment

**Flora** Norfolk Island has 174 native plants; 51 of them are endemic. At least 18 of the endemic species are rare or threatened.\*[19] The Norfolk Island palm (*Rhopalostylis baueri*) and the smooth tree-fern (*Cyathea brownii*), the tallest tree-fern in the world,\*[19] are common in the Norfolk Island National Park but rare elsewhere on the island. Before European colonization, most of Norfolk Island was covered with subtropical rain forest, the canopy of which was made of *Araucaria heterophylla* (Norfolk Island pine) in exposed areas, and the palm *Rhopalostylis baueri* and tree ferns *Cyathea brownii* and *C. australis* in moister protected areas. The understory was thick with lianas and ferns covering the forest floor. Only one small tract (5 km<sup>2</sup>) of rainforest



*Rhopalostylis baueri*, a native palm

remains, which was declared as the Norfolk Island National Park in 1986.\*[19]

This forest has been infested with several introduced plants. The cliffs and steep slopes of Mount Pitt supported a community of shrubs, herbaceous plants, and climbers. A few tracts of cliff top and seashore vegetation have been preserved. The rest of the island has been cleared for pasture and housing. Grazing and introduced weeds currently threaten the native flora, displacing it in some areas. In fact, there are more weed species than native species on Norfolk Island.\*[19]

**Fauna** As a relatively small and isolated oceanic island, Norfolk has few land birds but a high degree of endemism among them. Many of the endemic species and subspecies have become extinct as a result of massive clearance of the island's native vegetation of subtropical rainforest for agriculture, hunting and persecution as agricultural pests. The birds have also suffered from the introduction of mammals such as rats, cats, pigs and goats, as well as from introduced competitors such as common blackbirds and crimson rosellas.\*[20]

Extinctions include that of the endemic Norfolk kākā and Norfolk ground dove along with endemic subspecies of pigeon, starling, triller, thrush and boobook owl, though the latter's genes persist in a hybrid population descended from the last female. Other endemic birds are the white-

chested white-eye, which may be extinct, the Norfolk parakeet, the Norfolk gerygone, the slender-billed white-eye and endemic subspecies of the Pacific robin and golden whistler.\*[20]

The Norfolk Island Group Nepean Island is also home to breeding seabirds. The providence petrel was hunted to local extinction by the beginning of the 19th century, but has shown signs of returning to breed on Phillip Island. Other seabirds breeding there include the white-necked petrel, Kermadec petrel, wedge-tailed shearwater, Australasian gannet, red-tailed tropicbird and grey ternlet. The sooty tern (known locally as the whale bird) has traditionally been subject to seasonal egg harvesting by Norfolk Islanders.\*[21]

Norfolk Island, with neighbouring Nepean Island, has been identified by BirdLife International as an Important Bird Area because it supports the entire populations of white-chested and slender-billed white-eyes, Norfolk parakeets and Norfolk gerygones, as well as over 1% of the world populations of wedge-tailed shearwaters and red-tailed tropicbirds. Nearby Phillip Island is treated as a separate IBA.\*[20]

Norfolk Island also has a botanical garden, which is home to a sizeable variety of plant species.\*[21] However, the island has only one native mammal, Gould's wattled bat (*Chalinolobus gouldii*). It is very rare, and may already be extinct on the island.

The Norfolk swallowtail (*Papilio amyntor*) is a species of butterfly that is found on Norfolk Island and the Loyalty Islands.\*[22]

Cetaceans were historically abundant around the island as commercial hunts on the island was operating until 1956. Today, numbers of larger whales have disappeared, but even today many species such humpback whale, minke whale, sei whale, and dolphins can be observed close to shores, and scientific surveys have been conducted regularly.

Whale sharks can be encountered off the island, too.

- Gannet
- Masked boobies
- White tern
- Emily Bay
- Norfolk Island pines
- Captain Cook Lookout
- Bird Rock (off the north coast)
- Cathedral Rock (off the north coast)

### 4.15.3 Demographics

The population of Norfolk Island in the 2011 census was 2,302, which has declined since a high of 2,601 in 2001.

1,220 of the 2011 census night population were female, and 1,082 male. 78% of the population on census night were residents, with the remaining 22% visitors. 16% of the population were 14 years and under, 54% were 15 to 64 years and 24% were 65 years and over. The figures show an ageing population, with many people aged 20–34 having moved away from the island.\* [23]

Most islanders are of either **European-only** (mostly **British**) or combined **European-Tahitian** ancestry, being descendants of the *Bounty* mutineers as well as more recent arrivals from Australia and New Zealand. About half of the islanders can trace their roots back to **Pitcairn Island**.\* [24]

This common heritage has led to a limited number of **surnames** among the islanders —a limit constraining enough that the island's telephone directory also includes nicknames for many subscribers, such as Cane Toad, Dar Bizziebee, Lettuce Leaf, Goof, Paw Paw, Diddles, Rubber Duck, Carrots and Tarzan.\* [24]\* [25]

62% of islanders are **Christians**. After the death of the first chaplain Rev G. H. Nobbs in 1884, a **Methodist** church was formed and in 1891 a **Seventh-day Adventist** congregation led by one of Nobbs' sons. Some unhappiness with G. H. Nobbs, the more organised and formal ritual of the **Church of England** service arising from the influence of the Melanesian Mission, decline in spirituality, the influence of visiting American whalers, literature sent by Christians overseas impressed by the Pitcairn story, and the adoption of Seventh-day Adventism by the descendants of the mutineers still on Pitcairn, all contributed to these developments. The **Roman Catholic Church** began work in 1957 and in the late 1990s a group left the former Methodist (then Uniting Church) and formed a **charismatic** fellowship. In 2011, 34% of the ordinary residents identified as **Anglican**, 13% as **Uniting Church**, 12% as **Roman Catholic** and 3% as **Seventh-day Adventist**. 9% were from other religions. 24% had no religion, and 7% did not state their religion.\* [23] Typical ordinary congregations in any church do not exceed 30 local residents as of 2010. The three older denominations have good facilities. Ministers are usually short-term visitors.

**Literacy** is not recorded officially, but it can be assumed to be roughly at a par with Australia's literacy rate, as islanders attend a school which uses a **New South Wales** curriculum, before traditionally moving to the mainland for further study.

Islanders speak both English and a **creole language** known as **Norfuk**, a blend of 18th century English and Tahitian. The Norfuk language is decreasing in popularity as more tourists travel to the island and more young people leave for work and study reasons; however, there are efforts to keep it alive via dictionaries and the renaming of some tourist attractions to their Norfuk equivalents. In 2004 an act of the Norfolk Island Assembly made it a co-official language of the island.\* [3]\* [26]\* [27] The act is

long-titled: “An Act to recognise the Norfolk Island Language (Norf'k) as an official language of Norfolk Island.” The “language known as 'Norf'k'” is described as the language “that is spoken by descendants of the first free settlers of Norfolk Island who were descendants of the settlers of Pitcairn Island” . The act recognises and protects use of the language but does not require it; in official use, it must be accompanied by an accurate translation into English.\* [28]\* [29] 32% of the total population reported speaking a language other than English in the 2011 census, and just under three-quarters of the ordinarily resident population could speak Norfuk.\* [23]

**Emigration** is growing as many islanders take advantage of the close ties between Norfolk and Australia and New Zealand.

The sole school on the island, Norfolk Island Central School, provides education from **kindergarten** through to Year 12. The school has a contractual arrangement referred to as a **Memorandum of Understanding** with the New South Wales Department of Education and Communities regarding the teaching staff of the school, the latest of which took affect in January 2015.\* [30]

No public **tertiary education** infrastructure exist on the Island. The Norfolk Island Central School works in partnership with **Registered Training Organisation** (RTOs) and local employers to support students accessing **Vocational Education and Training** (VET) courses.\* [31]

The small economy of the island causes many skilled workers to emigrate as well.

#### 4.15.4 Culture

While there was no “indigenous” culture on the island at the time of settlement, the Tahitian influence of the Pitcairn settlers has resulted in some aspects of Polynesian culture being adapted to that of Norfolk, including the hula dance. Local cuisine also shows influences from the same region.

Islanders traditionally spend a lot of time outdoors, with fishing and other aquatic pursuits being common pastimes, an aspect which has become more noticeable as the island becomes more accessible to tourism. Most island families have at least one member involved in primary production in some form.

As all the Pitcairn settlers were related to each other, islanders have historically been informal both to each other and to visitors. The most noticeable aspect of this is the “**Norfolk Wave**”, with drivers waving to each other (ranging from a wave using the entire arm through to a raised index finger from the steering wheel) as they pass.

Religious observance remains an important part of life for some islanders, particularly the older generations, but actual attendance is about 8% of the resident population plus some tourists. In the 2006 census 19.9% had no



View across to Phillip Island

religion\* [32] compared with 13.2% in 1996.\* [33] Businesses are closed on Sundays.

One of the island's residents was the novelist Colleen McCullough, whose works include *The Thorn Birds* and the *Masters of Rome* series as well as *Morgan's Run*, set, in large part, on Norfolk Island.

Helen Reddy also moved to the island for a period, and still maintains a house there.

American novelist James A. Michener, who served in the United States Navy during World War II, set one of the chapters of his episodic novel *Tales of the South Pacific* on Norfolk Island.

The island is one of the few locations outside North America to celebrate the holiday of Thanksgiving.\* [34]

## Crime

Though usually peaceful, Norfolk Island has been the site of two murders in the 21st century.\* [35] In 2002, Janelle Patton, an Australian living on the island, was murdered.\* [36] It was the first murder on Norfolk since 1893.\* [37] Two years later the Deputy Chief Minister, Ivens Buffett, was shot dead by his son (who was deemed incompetent to stand trial), becoming the first Australian minister to be murdered in office.\* [38] Crime incidence is generally low on Norfolk Island, although recent reports indicate that petty theft and dangerous driving are becoming more prevalent.

## Murder of Janelle Patton

The Patton murder prompted considerable debate, with some residents arguing that traditional loyalties would prevent a local being charged. In February 2006, 28-year-old New Zealand chef Glenn McNeill was arrested and charged with Patton's murder.\* [36] McNeill had been working on Norfolk at the time and claimed at hearings in Australia and on Norfolk Island that he accidentally hit Patton with his car before stabbing her with a fish filleting knife and leaving her body in a picnic reserve, a statement he later retracted.\* [39] His trial ended on 9 March 2007, when the 11-person jury returned a guilty verdict.\* [40]

On 25 July 2007, McNeill was sentenced to a maximum 24 years in jail. Norfolk Island's Chief Justice Mark Weinberg, in a sentence handed down in a Sydney courthouse and broadcast live to Norfolk Island's court, said McNeill may be eligible for release after a minimum 18 years in prison. McNeill will serve his sentence in mainland Australia.\* [41]

Doubt about McNeill's guilt came in 2011. A member of the jury at McNeill's trial has stated that the jury "knew" that McNeill did not kill Patton, but that he knew who did and would not give up their names.\* [42] Patton is purported to have been murdered by a couple in charge of a cannabis operation. Patton is said to have known of their dealings and they were afraid she would report them to the authorities. Supporting this is the fact that an unknown female's DNA was found on Patton's underwear.\* [43] McNeill was involved in disposing of her body as his fingerprints were found at the crime scene. He claims to have been coerced into disposing of the body because they accused him of stealing cannabis plants from them though this has never been substantiated and was seen as not having credible grounds for an appeal by an Australian court.\* [44]

## 4.15.5 Government and politics

Main article: Politics of Norfolk Island

Norfolk Island is the only non-mainland Australian territory to have achieved self-governance. The *Norfolk Island Act 1979*, passed by the Parliament of Australia in 1979, is the Act under which the island is governed. The Australian government maintains authority on the island through an Administrator, currently Gary Hardgrave.\* [45] A Legislative Assembly is elected by popular vote for a term of not more than three years, although legislation passed by the Australian Parliament can extend its laws to the territory at will, including the power to override any laws made by the Norfolk Island Legislative Assembly.

The Assembly consists of nine seats, with electors casting nine equal votes, of which no more than two can be given to any individual candidate. It is a method of voting called a "weighted first past the post system". Four of the members of the Assembly form the Executive Council, which devises policy and acts as an advisory body to the Administrator. The current Chief Minister of Norfolk Island is Lisle Snell. Other ministers include: Minister for Tourism, Industry and Development; Minister for Finance; Minister for Cultural Heritage and Community Services; and Minister for Environment.

All seats are held by independent candidates. Norfolk Island has not embraced party politics. In 2007 a branch of the Australian Labor Party was formed on Norfolk Island, with the aim of reforming the system of government.

Residents of Norfolk Island are entitled to enrol in a mainland Australian division in a state to which they have a connection, or the Division of Canberra in the Australian Capital Territory, or for the Division of Solomon in the Northern Territory. Enrolment for Norfolk Islanders is not compulsory, but once enrolled they must vote.\*[46]

Disagreements over the island's relationship with Australia were put in sharper relief by a 2006 review undertaken by the Australian government.\*[11] Under the more radical of two models proposed in the review, the island's legislative assembly would have been reduced to the status of a local council.\*[24] However, in December 2006, citing the "significant disruption" that changes to the governance would impose on the island's economy, the Australian government ended the review leaving the existing governance arrangements unaltered.\*[47]

In a move that apparently surprised many islanders the Chief Minister of Norfolk Island, David Buffett, announced on 6 November 2010 that the island would voluntarily surrender its self-government status in return for a financial bailout from the federal government to cover significant debts.\*[48]

It was announced on 19 March 2015 that self-governance for the island would be revoked by the Commonwealth and replaced by a local council with the state of New South Wales providing services to the island. A reason given was that the island had never gained self-sufficiency and was being heavily subsidised by the Commonwealth, by \$12.5 million in 2015 alone. It meant that residents would have to start paying Australian income tax, but they would also be covered by Australian welfare schemes such as Centrelink and Medicare.\*[49]

The Norfolk Island Legislative Assembly decided to hold a referendum on the proposal. On 8 May 2015, voters were asked if Norfolk Islanders should freely determine their political status and their economic, social and cultural development, and to "be consulted at referendum or plebiscite on the future model of governance for Norfolk Island before such changes are acted upon by the Australian parliament".\*[50] 68% out of 912 voters voted in favour. The Norfolk Island Chief Minister, Lisle Snell, said that "the referendum results blow a hole in Canberra's assertion that the reforms introduced before the Australian Parliament that propose abolishing the Legislative Assembly and Norfolk Island Parliament were overwhelmingly supported by the people of Norfolk Island".\*[51]

The *Norfolk Island Legislation Amendment Bill 2015* passed the Australian Parliament on 14 May 2015 (Assented on 26 May 2015) abolishing self-government on Norfolk Island and transferring Norfolk Island into a council as part of New South Wales law.\*[52] From 1 July 2016 Norfolk Island legislation will be transferred to New South Wales and subject to NSW legislation.\*[53]

The island's official capital is Kingston; it is, however,

more a centre of government than a sizeable settlement. The largest settlement is at Burnt Pine.

The most important local holiday is Bounty Day, celebrated on 8 June, in memory of the arrival of the Pitcairn Islanders in 1856.

Local ordinances and acts apply on the island, where most laws are based on the Australian legal system. Australian common law applies when not covered by either Australian or Norfolk Island law. Suffrage is universal at age eighteen.

As a territory of Australia, Norfolk Island does not have diplomatic representation abroad, or within the territory, and is also not a participant in any international organisations, other than sporting organisations.

The flag is three vertical bands of green, white, and green with a large green Norfolk Island pine tree centred in the slightly wider white band.

### Constitutional status

Norfolk Island was originally a colony acquired by settlement but was never within the British Settlements Act.\*[54]\*[55] It was accepted as a territory of Australia, separate from any state, by the Norfolk Island Act 1913 (Cth),\*[56] passed under the territories power (Constitution section 122) and made effective in 1914.\*[57] In 1976 the High Court of Australia held unanimously that Norfolk Island is a part of the Commonwealth.\*[58]

The Government of Australia thus holds that:

Norfolk Island has been an integral part of the Commonwealth of Australia since 1914, when it was accepted as an Australian territory under section 122 of the Constitution. The Island has no international status independent of Australia.\*[59]

Norfolk Island has a limited form of self-government, established by the Norfolk Island Act 1979 (Cth).\*[60]

Consistent with the Australian position, the United Nations Decolonization Committee\*[61] does not include Norfolk Island on its list of Non-Self-Governing Territories.

This legal position is disputed by some residents on the island. Some islanders claim that Norfolk Island was actually granted independence at the time Queen Victoria granted permission to Pitcairn Islanders to re-settle on the island.\*[62]

### Immigration and citizenship

The island is subject to separate immigration controls from the remainder of Australia. Until recently immigration to Norfolk Island even by other Australian citizens

was heavily restricted. In 2012, immigration controls were relaxed with the introduction of an Unrestricted Entry Permit\*[63] for all Australian and New Zealand citizens upon arrival and the option to apply for residency; the only criteria are to pass a police check and be able to pay into the local health scheme.\*[64]

Australian citizens and residents from other parts of the nation now have automatic right of residence on the island after meeting these criteria (Immigration (Amendment No. 2) Act 2012). Australian citizens must carry either a passport or a Document of Identity to travel to Norfolk Island. Citizens of all other nations must carry a passport to travel to Norfolk Island even if arriving from other parts of Australia. Holders of Australian visas who travel to Norfolk Island have departed the Australian Migration Zone. Unless they hold a multiple-entry visa, the visa will have ceased; in which case they will require another visa to re-enter mainland Australia.\*[63]

Non-Australian citizens who are permanent residents of Norfolk Island may apply for Australian citizenship after meeting normal residence requirements and are eligible to take up residence in mainland Australia at any time through the use of a Permanent Resident of Norfolk Island visa.\*[63] Children born on Norfolk Island are Australian citizens as specified by Australian nationality law.

Non-Australian citizens who are Australian permanent residents should be aware that during their stay on Norfolk Island they are “outside of Australia” for the purposes of the Migration Act. This means that not only will they need a still-valid migrant visa or Resident return visa to return from Norfolk Island to the mainland, but also the time spent in Norfolk Island will not be counted for satisfying the residence requirement for obtaining a Resident return visa in the future.\*[63] On the other hand, as far as Australian nationality law is concerned, Norfolk Island is a part of Australia, and any time spent by an Australian permanent resident on Norfolk Island will count as time spent in Australia for the purpose of applying for Australian citizenship.\*[65]

### Health care

Norfolk Island Hospital is the only medical centre on the island. Medicare and the Pharmaceutical Benefits Scheme do not cover Norfolk Island.\*[66] All visitors to Norfolk Island, including Australians, are recommended to purchase travel insurance. Although the hospital can perform minor surgery, serious medical conditions are not treated on the island and patients are flown back to mainland Australia. Air charter transport can cost in the order of A\$25,000. For serious emergencies, medical evacuations are provided by the Royal Australian Air Force. The island has one ambulance staffed by St John Ambulance Australia volunteers.

The lack of medical facilities available in most remote communities has a major impact on the health care of

Norfolk Islanders. As is consistent with other extremely remote regions many older residents find it impossible to remain on the island when their health falters, many have to leave their homes and live in New Zealand or Australia to get medical care.

### Defence and law enforcement

Defence is the responsibility of the Australian Defence Force. There are no active military installations or defence personnel on Norfolk Island. The Administrator may request the assistance of the Australian Defence Force if required.

Civilian law enforcement and community policing is provided by the Australian Federal Police. The normal deployment to the island is one sergeant and two constables. These are augmented by five local Special Members who have police powers but are not AFP employees.

### Courts

The Norfolk Island Court of Petty Sessions is the equivalent of a Magistrates Court and deals with minor criminal, civil or regulatory matters. The Chief Magistrate of Norfolk Island is usually the current Chief Magistrate of the Australian Capital Territory. Three local Justices of the Peace have the powers of a Magistrate to deal with minor matters.

The Supreme Court of Norfolk Island deals with more serious criminal offences, more complex civil matters, administration of deceased estates and federal laws as they apply to the Territory. The Judges of the Supreme Court of Norfolk Island are generally appointed from among Justices of the Federal Court of Australia and may sit on the Australian mainland or convene a circuit court. Appeals are to the Federal Court of Australia.

### Census

Norfolk Island takes its own censuses, separate from those taken by the Australian Bureau of Statistics for the remainder of Australia.

### Postal service

Australia Post sends and receives mail from Norfolk Island with the postcode 2899. However, distribution is carried out by the Norfolk Island Postal Service. Consequently, stamps issued by Norfolk cannot be used in Australia, and those issued by Australia Post cannot be used on the island.

### 4.15.6 Economy and infrastructure

Tourism, the primary economic activity, has steadily increased over the years. As Norfolk Island prohibits the importation of fresh fruit and vegetables, most produce is grown locally. Beef is both produced locally and imported. The island has one winery, Two Chimneys Wines.\*[67]

The Australian government controls the exclusive economic zone (EEZ) and revenue from it extending 200 nautical miles (370 km) around Norfolk Island (roughly 428,000km<sup>2</sup>) and territorial sea claims to three nautical miles (6 km) from the island. There is a strong belief on the island that some of the revenue generated from Norfolk's EEZ should be available to providing services such as health and infrastructure on the island, which the island has been responsible for, similar to how the Northern Territory is able to access revenue from their mineral resources.\*[68] The exclusive economic zone provides the islanders with fish, its only major natural resource. Norfolk Island has no direct control over any marine areas but has an agreement with the Commonwealth through the Australian Fisheries Management Authority (AFMA) to fish "recreationally" in a small section of the EEZ known locally as "the Box". While there is speculation that the zone may include oil and gas deposits, this is not proven.\*[24] There are no major arable lands or permanent farmlands, though about 25 per cent of the island is a permanent pasture. There is no irrigated land. The island uses the Australian dollar as its currency.

#### Taxes

Residents of Norfolk Island do not pay Australian federal taxes,\*[69] creating a tax haven for locals and visitors alike. Because there is no income tax, the island's legislative assembly raises money through an import duty, fuel levy, medicare levy, GST and local/international phone calls.\*[24]\*[69] In a move that apparently surprised many islanders the Chief Minister of Norfolk Island, David Buffett, announced on 6 November 2010 that the island would voluntarily surrender its tax free status in return for a financial bailout from the federal government to cover significant debts. The introduction of income taxation will now come into effect on July 1, 2016, with a variation of opinion on the island about these changes but with many understanding that for the island's governance to continue there is a need to pay into the commonwealth revenue pool so that the island can have assistance in supporting its delivery of State government responsibilities such as health, education, medicare, and infrastructure.

#### Communications

As of 2004, 2532 telephone main lines are in use, a mix of analog (2500) and digital (32) circuits.\*[4] Satellite communications services are planned. There is one locally

based radio station (Radio Norfolk 89.9FM), broadcasting on both AM and FM frequencies. There is also one TV station featuring local programming (Norfolk TV), plus transmitters for ABC TV, SBS TV, Imparja Television and Southern Cross Television. The Internet country code top-level domain (ccTLD) is .nf.

#### Transport



Jetty at Kingston



There are no railways, waterways, ports or harbours on the island.\*[70] Loading jetties are located at Kingston and Cascade, but ships cannot get close to either of them. When a supply ship arrives, it is emptied by whaleboats towed by launches, five tonnes at a time. Which jetty is used depends on the prevailing weather on the day. The jetty on the leeward side of the island is often used. If the wind changes significantly during unloading/loading, the ship will move around to the other side. Visitors often gather to watch the activity when a supply ship arrives.

There is one airport, Norfolk Island Airport.\*[4] There are 80 kilometres (50 mi) of roads on the island (53 km (33 mi) paved, 27 km (17 mi) unpaved); however, local law gives cows the right of way.\*[24] Speed limits are low: 50 km/h (31 mph) maximum in the territory, 40 km/h (25 mph) in town and 30 km/h (19 mph) near schools.\*[71]

On 18 November 2009, a Pel-Air IAI Westwind II aircraft ditched near Norfolk Island after being unable to land in bad weather and not having sufficient fuel to di-



vert to another destination. All six passengers and crew were rescued from the sea.\* [72]

#### 4.15.7 See also

- Bibliography of Norfolk Island
- List of islands of Australia
- List of volcanoes in Australia
- Outline of Norfolk Island

#### 4.15.8 References

- Anderson, Atholl J., *The Prehistoric Archaeology of Norfolk Island, Southwest Pacific*, Canberra, Australian National Museum, 2001.
- Andrew Kippis, *The Life and Voyages of Captain James Cook*, Westminster 1788, Reprint London and New York 1904, pp. 246 ff
- Nobbs, Raymond, *Norfolk Island and its Third Settlement: The First Hundred Years 1856-1956* Sydney, Library of Australian History, 2006.

History of penal settlements:

- Causer, Tim "'The Worst Types of Sub-Human Beings": the Myth and Reality of the Convicts of the Norfolk Island Penal Settlement, 1825-1855', *Islands of History*, Sydney, 2011, pp. 8–31. (ISBN 9780980335453).
- Causer, Tim 'Norfolk Island's "Suicide Lotteries": Myth and Reality', *Islands of History*, Sydney, 2011, pp. 61–68. (ISBN 9780980335453).
- Clark, Manning, *A History of Australia*, Vols. I–III, Melbourne, Melbourne University Press, 1962, 1968, 1973.
- Clarke, Marcus, *For the Term of his Natural Life* (novel).
- Hazzard, Margaret, *Punishment Short of Death: a history of the penal settlement at Norfolk Island*, Melbourne, Hyland, 1984. (ISBN 0-908090-64-1).
- Murray-Brown, David, *Norfolk Island Cancellations and Postal Markings*. London: Pacific Islands Study Circle, 3rd edition, 2012, 978-1-899833-20-7, 130pp; <http://www.pisc.org.uk>
- Hughes, Robert, *The Fatal Shore*, London, Pan, 1988. (ISBN 0-330-29892-5).
- Wright, R., *The Forgotten Generation of Norfolk Island and Van Diemen's Land*, Sydney, Library of Australian History, 1986.

#### 4.15.9 Notes

- [1] Norfolk Island Broadcasting Act 2001 – Norfolk Ailen Brodkaasen Aekt 2001
- [2] "The Legislative Assembly of Norfolk Island". Retrieved 2014-10-18.
- [3] Norfolk Island Language (Norfolk) Act 2004 (Act No. 25 of 2004)
- [4] "Norfolk Island". *The World Factbook*. Central Intelligence Agency. 2012-10-16. Retrieved 2012-10-27.
- [5] "Norfolk Island". *The World Factbook*. CIA. Retrieved 22 July 2015.
- [6] NI Arrival Card
- [7] Anderson, Atholl; White, Peter (2001). "Prehistoric Settlement on Norfolk Island and its Oceanic Context" (PDF). *Records of the Australian Museum* (Supplement 27): 135–141. Retrieved 28 April 2015.
- [8] Channers On Norfolk Island Info. Channerson-norfolk.com (2013-03-15). Retrieved on 2013-07-16.
- [9] Grose to Hunter, 8 December 1794, *Historical Records of New South Wales*, Sydney, 1893, Vol.2, p.275.
- [10] Causer, T. "'The Worst Types of Sub-Human Beings": the Myth and Reality of the Convicts of the Norfolk Island Penal Settlement, 1825-1855', *Islands of History*, Sydney, 2011, pp.8–31.
- [11] "Governance & Administration". Attorney-General's Department. 28 February 2008. Archived from the original on 20 September 2010.
- [12] "Norfolk Island is about to undergo a dramatic change in order to secure a financial lifeline". ABC News 7.30 Report. 26 January 2011.
- [13] "Welfare fight forces families from island". Sydney Morning Herald. 5 May 2013.
- [14] "Norfolk Island self-government to be revoked and replaced by local council". The Guardian. 19 March 2015.
- [15] "'We're not Australian': Norfolk Islanders adjust to shock of takeover by mainland". The Guardian. 21 May 2015.
- [16] <http://www.radionz.co.nz/international/pacific-news/273213/solid-%27yes%27-vote-in-referendum-on-norfolk-island-governance>
- [17] Geological origins, Norfolk Island Tourism. Accessed 2007-04-13. Archived 7 September 2008 at the Wayback Machine
- [18] "Climate statistics for Australian locations: Norfolk Island". Bureau of Meteorology. 31 March 2010. Retrieved 5 June 2014.
- [19] Norfolk Island subtropical forests - Encyclopedia of Earth
- [20] Birdlife Data Zone: Norfolk Island, BirdLife International. (2015). accessed 2015-02-17.

- [21] Norfolk Island at Australian National Botanic Gardens. Environment Australia: Canberra, 2000.
- [22] Braby, Michael F. (2008). *The Complete Field Guide to Butterflies of Australia*. CSIRO Publishing. ISBN 0 643 09027 4.
- [23] “Norfolk Island Census of Population and Housing: Census Description, Analysis and Basic Tables” (PDF). 9 August 2011. Retrieved 3 March 2012.
- [24] “Battle for Norfolk Island” . British Broadcasting Corporation. 18 May 2007.
- [25] “Norfolk Island Phone Book” . Retrieved 2010-07-04.
- [26] *The Dominion Post*, 21 April 2005 (page B3)
- [27] Squires, Nick (19 April 2005). “Save our dialect, say Bounty islanders” . *The Telegraph UK* (London). Retrieved 6 April 2007.
- [28] “About Norfolk - Language” . Norfolkisland.com.au. Retrieved 13 April 2012.
- [29] “Norfolk declared official language in Norfolk Island - report” . Radio New Zealand International. 20 April 2005. Retrieved 13 April 2012.
- [30] Norfolk Island Central School (accessed 13 May 2015)
- [31] Page 4, Education Review, Norfolk Island, Stage One, Stage Two and Stage Three, The Report, 14 September 2014 (accessed 13 May 2015)
- [32] Norfolk Island Census, 2006
- [33] Norfolk Island Census, 1996
- [34] Norfolk Island 2011 Public Holidays
- [35] “TV broadcast transcript, 27/05/2004” . *7.30 Report*. Australian Broadcasting Corporation. 27 March 2004.
- [36] Wikinews contributors (9 March 2007). “First Norfolk Island murderer in a century found guilty” . Wikinews. Retrieved 2007-10-03.
- [37] Latham, Tim (2006), *Norfolk —Island of Secrets*, Allen & Unwin, pp. 51–55, ISBN 174114373X
- [38] “Man charged with murder of Ivens Buffett” . *The World Today transcript*. Australian Broadcasting Corporation. 20 July 2004. Retrieved 2007-10-03.
- [39] “Island murder 'confession' tape revealed” . *The Sydney Morning Herald*. 28 February 2007.
- [40] McDonald, Philipa (9 March 2007). “McNeill found guilty of Patton murder” . Australian Broadcasting Corporation. Archived from the original on 3 May 2010.
- [41] “Man sentenced for brutal South Pacific murder” . CNN. 25 July 2007.
- [42] [http://www.dailytelegraph.com.au/janelle-patton-killer-glenn-mcneill-is-innocent-jurors-sensation-story-e6freuy9-1226073597443](http://www.dailytelegraph.com.au/janelle-patton-killer-glenn-mcneill-is-innocent-jurors-sensation/story-e6freuy9-1226073597443)
- [43] <http://www.dailytelegraph.com.au/baffling-pieces-of-a-brutal-jigsaw-puzzle/story-e6freuy9-1225866996226>
- [44] Maynard, Roger (24 July 2011). “A Pacific murder mystery that won't go away” . *The Independent* (London).
- [45] Owens, Jared (17 June 2014). “Norfolk Island appointee Gary Hardgrave faces reform challenge” . *The Australian*.
- [46] “Australian Electoral Commission: Norfolk Island electors” . Medicare.
- [47] “Norfolk Island Governance Arrangements” (Press release). Department of Transport and Regional Services. 20 December 2006. Archived from the original on 2007-10-31.
- [48] Higgins, Ean. “Mutineer descendants opt for bounty” . *The Australian*.
- [49] <http://www.theguardian.com/australia-news/2015/mar/19/norfolk-island-self-government-to-be-revoked-and-replaced-by-local-council>
- [50] Norfolk Island to go ahead with governance referendum
- [51] Vote in referendum on Norfolk Island governance
- [52]
- [53]
- [54] Sir Kenneth Roberts-Wray, *Commonwealth & Colonial Law* (London, Stevens, 1966)
- [55] British Settlements Act, 1887
- [56] Norfolk Island Act 1913 (Cth) in ComLaw.
- [57] The history was examined in detail by the Supreme Court of Norfolk Island in *Newbery v The Queen* (1965) 7 FLR 34.
- [58] *Berwick Ltd v Gray* (1976) 133 CLR 603.
- [59] Australian Government, Department of Infrastructure and Regional Development website, retrieved 9 March 2015.
- [60] Norfolk Island Act 1979 (Cth) in ComLaw.
- [61] United Nations Special Committee on the Situation with regard to the Implementation of the Declaration on the Granting of Independence of Colonial Countries and Peoples.
- [62] “History” . *Norfolk Island's relationship with Australia*. Norfolk Island.
- [63] “Fact Sheet 59 - Immigration Arrangements for Norfolk Island” . Department of Immigration and Border Protection, Australia. January 2014. Retrieved 17 February 2015.
- [64] “Thinking of Moving to Norfolk Island?”. *channerson-norfolk.com*.
- [65] Australian Citizenship Act 2007 (Cth) sections 5(2)(c), 21 and 22; Australian Citizenship Act 2007 - Determination and claim subsection 5(2) - Australian Citizenship (Permanent Resident Status) - June 2007 in ComLaw.

- [66] “Eligibility and enrolment” . Medicare.
- [67] “Norfolk Island Wine” . *Wine-Searcher.com website*. Wine-Searcher.com. Retrieved 5 December 2013.
- [68] <http://tasmaniantimes.com/index.php?/article/norfolk-island-dies-while-australian-government-thieves-and-thrives/>
- [69] “Charting the Pacific” . Australian Broadcasting Corporation. Retrieved 2007-10-03.
- [70] “Norfolk Island information” . Asia Rooms. Retrieved 2007-10-04.
- [71] “Norfolk Is speed limits” . *NorfolkIslands.com*. Retrieved 2013-03-24.
- [72] “Investigation number: AO-2009-072; Aviation safety investigations & reports: Ditching – Israel Aircraft Westwind 1124A aircraft, VH-NGA, 5 km SW of Norfolk Island Airport, 18 November 2009” . Australian Transport Safety Bureau. Retrieved 2014-09-02.

Coordinates: 29°2′0″S 167°57′0″E﻿ / ﻿29.03333°S 167.95000°E﻿ / -29.03333; 167.95000

#### 4.15.10 Further reading

- Hoare, Merval. *Norfolk Island, an outline of its history 1774-1987*. 4th edition. St. Lucia, Queensland: University of Queensland Press, 1988. ISBN 0-7022-2100-7

#### 4.15.11 External links

##### Government

- Official government website
- Australian Department of Infrastructure and Regional Development

##### General information

- Norfolk Island entry at *The World Factbook*
- Norfolk Island at DMOZ
- Wikimedia Atlas of Norfolk Island

##### Travel

- The Guides to Norfolk Island

##### Archaeology and Polynesian settlement in prehistory

- Anderson, Athol; White, Peter (2001). “The Prehistoric Archaeology of Norfolk Island, Southwest Pacific” (PDF). *Records of the Australian Museum* (Australian Museum) (Supplement 27): iv+141.

- Anderson, Athol; White, Peter (2001). “Approaching the Prehistory of Norfolk Island” (PDF). *Records of the Australian Museum* (Australian Museum) (Supplement 27): 1–9.
- Anderson, Athol; Smith, Ian; White, Peter (2001). “Archaeological Fieldwork on Norfolk Island” (PDF). *Records of the Australian Museum* (Australian Museum) (Supplement 27): 11–32.

##### Others

- *Quis custodiet ipsos custodes? Inquiry into Governance on Norfolk Island* Commonwealth Parliament, Joint Standing Committee on the National Capital and External Territories, 2003
- *Norfolk Island and Its Inhabitants* 1879 account by Joseph Campbell
- “Norfolk Island subtropical forests” . *Terrestrial Ecoregions*. World Wildlife Fund.
- Anglican history on Norfolk Island Primary texts and photographs

## 4.16 Pagan

**Pagan** is a volcanic island in the Mariana Islands archipelago in the Pacific Ocean, belonging to the Commonwealth of the Northern Mariana Islands. Formerly inhabited, the inhabitants were evacuated due to volcanic eruptions in 1981.

### 4.16.1 Geography

Pagan is located about 320 kilometers (200 mi) north of Saipan, the main island of the Northern Mariana Islands. With an area of 47.23 km<sup>2</sup> (18.24 sq mi), it is the fourth largest island of the Northern Marianas. The island is a double island consisting of two stratovolcanoes joined by a narrow strip of land with a width of only 600 meters (660 yd). The southern volcano 18°04′30″N 145°43′30″E﻿ / ﻿18.075°N 145.725°E﻿ / 18.075; 145.725, is 548 m (1,798 ft) high with a caldera approximately 4 km (2.5 mi) in diameter, consisting of four craters joined together. Although several fumaroles were active in 1992, the southern volcano last erupted in 1864. The northern volcano, also known as **Mount Pagan**, 18°08′N 145°48′E﻿ / ﻿18.13°N 145.8°E﻿ / 18.13; 145.8, has a height of 570 m (1,870 ft). The volcano is in the center of a caldera with a diameter of approximately 6 km (3.7 mi), and eruptions have been documented in the 1820s, 1872-1873, and 1925. Pagan has two large lakes. Laguna Sanhalom (also **Inner Lake**) had an area of 17 hectares (42 acres) and depth of 23 m (75 ft) in the 1970s. Laguna Sanhiyon (also **Laguna Lake**) on the west coast of the northern island had an area of 16

hectares (40 acres) and depth of 20 m (66 ft). Both lakes contain brackish water.\* [1]

### 4.16.2 History

Archaeological finds indicate that Pagan was settled from several centuries BC. The first European contact was in 1669, when the island was sighted by the Spanish missionary Diego Luis de San Vitores who named it *San Ignacio* (Saint Ignatius in Spanish). It is likely that it was previously visited in 1522 by the Spanish sailor Gonzalo de Vigo, deserter from the Magellan expedition in 1521, and was the first European castaway in the history of the Pacific.\* [2] The native Chamorro population was forcibly deported to Saipan in 1695, and then three years later to Guam. The Chamorros began to return to Pagan in the early 19th century, but found that the island had been colonized by freed Kanakas from the Caroline islands. In the 1870s, first coconut plantations were established.

After the sale of the Northern Mariana islands by Spain to the German Empire in 1899, the island was administered as part of the colony of German New Guinea and leased to a private company, the Pagan Society, which traded mainly copra. The company was a partnership between a German and a Japanese. The island was devastated by typhoons in July and September 1905, September 1907 and in December 1913 which destroyed the coconut plantations and bankrupted the Pagan Society. In 1914, during World War I, the island was captured by the Empire of Japan, which was awarded control by the League of Nations as part of the South Pacific Mandate. The island was settled by ethnic Japanese and Okinawans, who restored the coconut plantations and raised cotton and sweet potatoes for export. In addition, the Japanese developed commercial fishing for bonito and tuna. On the island were ropes made and to a lesser extent sulfur removed. An airfield was established in 1935, and the Imperial Japanese Navy established a garrison in 1937. In 1942, the Japanese civilian population was 413 persons, with another 229 Chamorro residents. In June 1944, a garrison force of 2150 men of the Imperial Japanese Army arrived,\* [3] only to be cut off and isolated by the ongoing Allied offensive. Receiving supplies only occasionally by a submarine, the garrison soon faced starvation, and several hundred died of malnutrition before the surrender of Japan.

After World War II, under United States occupation, Pagan became part of the UN Trust Territory of the Pacific Islands until the granting of U.S. Commonwealth status. After the war, the United States Navy maintained a small establishment on Pagan and during the 1950s built public institutions, including a church, a copra warehouse, infirmary and a school house. However, the civilian population was under 100 people by the end of the 1970s, many of whom were seasonally present from Saipan. On May 15, 1981, Mount Pagan erupted, with lava flows covering a large part of the island's arable land and part of the run-



*Landsat view of Pagan*

way. The eruption lasted until 1985; furthermore, small outbreaks came in 1987, 1988, 1992, 1993, 1996, 2006, 2009, 2010 and 2012. The population of the island was evacuated to Saipan in May 1981. Repeated petitions by the islanders to return have been rejected by the authorities due to the continuing threat posed by the volcano. Efforts are underway by the Northern Islands Mayor's Office and concerned citizens to assist the approximately 300 displaced residents of the Northern Islands who wish to return and resettle in Anatahan, Alamagan, Pagan and Agrigan. Bandara was a settlement in the northwest of the island.

Pagan Island was included during Operation Christmas Drop 2006. United States Air Force C-130 aircrew observed cattle and a small cluster of buildings, including a grass airstrip, located on the island. Plans by a Japanese investor group to use Pagan as a dumping ground for debris and rubble from the 2011 Tōhoku earthquake and tsunami in Japan were provisionally shelved after protests in June 2012.\* [4]

Politically, Pagan remains part of the Northern Islands Municipality.

### 4.16.3 Military live-fire training range plans

In 2013 the US Naval Command filed a proposal to obtain the island for a new group of live-fire and maneuver

Ranges and Training Areas (RTAs).\*[5]

The proposal spawned an online community called Our Islands are Sacred, a petition on Change.org, and rallies against it held by the Sierra Club, Save Pagan Island, Roots Action and Care2Make a Difference.\*[6]

On April 3, 2015 (HST) the Department of Defense (DoD) released a long-awaited draft of the Environmental Impact Statement (EIS).\*[7] According to Michael G. Hadfield, a professor of biology at the University of Hawaii-Manoa who led an insect survey team to Pagan in 2010, “Speaking as a biologist, it’s got some really unique things about it. ... It’s not a wasteland, which I think some people envision because it’s got an active volcano. There’s a lot there that’s worth preserving — a couple of endangered bird species and snail species — which I specialize in and is about to hit the U.S. endangered species list.”\*[6]

Jerome Aldan, the mayor for CNMI’s Northern Islands, which includes Pagan, recently told a New Zealand radio program that the U.S. military’s description of the island as “uninhabited” was false.\*[6] According to an article by James Cave for the Huffington Post, an article which used Hadfield as its source:

“More than 50 families in Saipan consider Pagan their home island and have plans and desires to return to homesteads,” he says. The island is occupied by about a dozen people, who he says live in shacks without plumbing, electricity or access to markets.\*[8]

According to an April 17, 2015, article by Wyatt Olson for Stars and Stripes military news network, “the [legislature of the Northern Mariana Islands] is considering a joint resolution calling on the governor to oppose the military expansion on the 10-mile-long island. ... In wording that hints at the hornet’s nest the U.S. may have stirred with the proposal, the joint resolution asserts that “throughout the CNMI’s history, foreign powers and outside influences have made major decisions and have dictated the course of development” for the region and that the U.S. “once again stands poised to make some very important decisions with respect to the military utilization of the Northern Islands.” ”

On May 15, 2015, a map of the proposed site was made available online.

#### 4.16.4 References

- [1] Pacific Planning and Design Consultants: *Physical Development Master Plan for the Commonwealth of the Northern Mariana Islands*. Volume V, Pagan, Government Printing Office, January 1978, S. 10.
- [2] Coello, Francisco “Conflicto hispano-alemán” *Boletín de Sociedad Geográfica de Madrid*, t.XIX. 2º semestre 1885, Madrid, p.233,301.
- [3] Takizawa, Akira; Alsleben, Allan (1999–2000). “Japanese garrisons on the by-passed Pacific Islands 1944–



Pagan island, March 2012

1945” . *Forgotten Campaign: The Dutch East Indies Campaign 1941-1942*.

- [4] Haidee V. Eugenio: *No more tsunami debris. Japanese investors will still mine pozzolan*. In: *Saipan Tribune*, 1. Jun 2012
- [5] [http://www.cnmijointmilitarytrainingeis.com/system/assets/7/original/navy\\_\\_2013\\_\\_noi\\_for\\_cjmt\\_eis\\_oeis.pdf?1363282632](http://www.cnmijointmilitarytrainingeis.com/system/assets/7/original/navy__2013__noi_for_cjmt_eis_oeis.pdf?1363282632)
- [6] “Mariana officials bristle at US military's live-fire plans for Pagan, Tinian” . *Stars and Stripes*. Retrieved 1 June 2015.
- [7] “CJMT EIS-OEIS” . *cnmijointmilitarytrainingeis.com*. Retrieved 1 June 2015.
- [8] “The Pentagon Wants To Bomb The Hell Out Of This Tiny Pacific Island” . *The Huffington Post*. Retrieved 1 June 2015.

- Pascal Horst Lehne and Christoph Gäbler: *Über die Marianen*. Lehne-Verlag, Wohldorf in Germany 1972.
- Pagan
- “Pagan” . *Global Volcanism Program*. Smithsonian Institution.
- WorldStatesman- Northern Marianas
- L, Klemen (1999–2000). “Forgotten Campaign: The Dutch East Indies Campaign 1941-1942” .

#### 4.16.5 External links

- Gallery of photos from a 2010 biological survey
- The Northern Islands – facts on the Northern Islands by the Northern Islands Mayor's Office



A satellite image of the Pingelap atoll at low-tide. The pale strip in the centre is the airstrip.

## 4.17 Pingelap

**Pingelap** is an atoll in the Pacific Ocean, part of Pohnpei State of the Federated States of Micronesia, consisting of three islands: Pingelap Island, Sukoru and Daekae, linked by a reef system and surrounding a central lagoon, although only Pingelap Island is inhabited.\* [1] The entire system has a land area of 1.8 km<sup>2</sup> (455 acres) at high-tide, and is less than 2.5 miles (4.0 km) at its widest point.\* [2] The atoll has its own language, **Pingelapese**, spoken by most of the atoll's 250 residents.

### 4.17.1 History

The first European discoverer of the islands was Captain Thomas Musgrave in *Sugar Cane*. Captain MacAskill in the *Lady Barlow* rediscovered them in 1809. Errors in measurement of their location resulted in the islands being separately named on charts in the 19th century as the Musgrave Islands and the MacAskill islands, within the Caroline archipelago.\* [3]\* [4]

Japan seized the atoll in October 1914, following the start of World War I. Japan then occupied the southern part of Pingelap Island during hostilities in the Pacific Ocean theater of World War II for a supply base. Allied Forces later attacked it. The presence of foreign troops on the island led to the introduction of a number of infectious diseases, including gonorrhoea, tuberculosis and dysentery, which reduced the population from its pre-war level of around 1000 to 800, and decreased the fertility rate significantly.\* [1]

Historically, the atoll was ruled by a paramount chief known as the *nahnmariki*, a hereditary title that granted certain land rights to its holder. This system remained



A map of the Pohnpei region. Pingelap is at the eastern edge of the map.

in place during Japanese rule, although the title was re-named “Island Magistrate”. However, with the arrival of the U.S. Navy in 1945, a democratically-elected system was set up alongside the traditional system, which gradually weakened in power. Universal primary education was provided for Pingelapese children and a limited health care scheme was set up to eradicate the diseases introduced during the war.\* [1]

During the 1960s, the Peace Corps and U.S. Air Force settled on the main island, constructing a missile watching station in the northeast of the island and a pier, with work beginning in 1978 on an airstrip, jutting into the lagoon, on the main island.\* [1] The runway was finished in 1982, and currently between 2 and 3 planes per day fly to and from the atoll, operated by Caroline Islands Air.\* [5]

### 4.17.2 Climate

Pingelap enjoys a tropical climate, with even, warm temperatures throughout the year.

Precipitation is generally plentiful, with heavy year-round rainfall.

### 4.17.3 Color-blindness

A significant proportion, 4.92%,\* [6] of the population have complete achromatopsia (known on the island as maskun, meaning literally “not see” in Pingelapese), a recessive genetic disorder that causes total color-blindness in sufferers.\* [7]

Complete achromatopsia is normally a very rare condi-

tion, and its prevalence on the island has been traced back to a **population bottleneck** in 1775 after a catastrophic typhoon swept through the island, leaving only about 20 survivors.\* [8] One of these, Nanmwarki Mwanenihsed (the ruler at that time), is now believed to have been a carrier for the underlying genetic condition, but the achromatopsia disorder did not appear until the fourth generation after the typhoon, by which time 2.70% of the Pingelapese were affected. Since achromatopsia is an **autosomal recessive** disorder, inbreeding between the descendants of Nahnmwarki Mwanenihsed would result in an increased recessive allele frequency.\* [9] By generation six, the incidence rose to approximately 4.92%,\* [6] due to the **founder effect** and **inbreeding**, with all achromats on the island nowadays tracing their ancestry to Nanmwarki Mwanenihsed.

Today the atoll is still of particular interest to geneticists; due to the small **gene pool** and rapid population growth, the disorder is now prevalent in almost 10% of the population, with a further 30% being unaffected carriers (by comparison, in the United States, only 1 in 33,000, or 0.003%, are affected).\* [10] Leading neurologist Oliver Sacks's 1997 book *The Island of the Colorblind*\* [11] references the island.

#### 4.17.4 References

- [1] Damas, David (1994). *Bountiful Island: A Study of Land Tenure on a Micronesian Atoll*. Wilfrid Laurier University Press. ISBN 0-88920-239-7.
- [2] Damas, David (1985). "Pingelap Politics and American-Micronesian Relations". *Ethnology* (Ethnology, Vol. 24, No. 1) **24** (1): 43–55. doi:10.2307/3773489. JSTOR 3773489.
- [3] Findlay (1851), Vol. 2, p.1076.
- [4] Brigham (1900), Vol. 1, issue 2, p.131.
- [5] "Micronesian Diary: Pingelap, Phonpei". intangible.org. Retrieved 2007-06-13.
- [6] Hussels, I.E.; Mortons, N.E. (1972). "Pingelap and Mokil Atolls: achromatopsia". *American Journal of Human Genetics* **24** (3): 304–309. PMC 1762260. PMID 4555088.
- [7] Morton, N.E.; Hussels, I.E.; Lew, R.; Little, G.F. (1972). "Pingelap and Mokil Atolls: historical genetics". *American Journal of Human Genetics* **24** (3): 277–289. PMC 1762283. PMID 4537352.
- [8] "Gene Mutation for Color Blindness Found". Science News.
- [9] Cabe, Paul R. (2004). "Inbreeding and Assortive Mating". *Encyclopedia of genetics* **2ed**.
- [10] "The Achromatopsia Group". Retrieved 2007-06-13.
- [11] Sacks, Oliver (1997). *The Island of the Colour-blind*. Picador. ISBN 0-330-35887-1.
- Brigham, William Tufts (1900) *An Index to the Islands of the Pacific Ocean: A Handbook to the Chart on the Walls of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History*. (Bishop Museum Press)
- Findlay, A.G. (1851; reprinted 2013) *A Directory for the Navigation of the Pacific Ocean, with Descriptions of Its Coasts, Islands, Etc.: From the Strait of Magalhaens to the Arctic Sea, and Those of Asia and Australia*. (Cambridge University). ISBN 9781108059732

## 4.18 Pitcairn Islands

"Pitcairn" redirects here. For the ship, see *HMS Pitcairn (K589)*. For the play by Richard Bean, see *Pitcairn (play)*.

The **Pitcairn Islands** (/ˈpɪtkærn/;\* [5] Pitkern: *Pitkern Ailen*), officially named the **Pitcairn Group of Islands**, are a group of four volcanic islands in the southern Pacific Ocean that form the last British Overseas Territory in the Pacific. The four islands – Pitcairn, Henderson, Ducie, and Oeno – are spread over several hundred miles of ocean and have a total land area of about 47 square kilometres (18 sq mi). Only Pitcairn, the second largest island measuring about 3.6 kilometres (2.2 mi) from east to west, is inhabited.

The islands are inhabited by the descendants of the *Bounty* mutineers and the Tahitians (or Polynesians) who accompanied them, an event retold in numerous books and films. This history is still apparent in the surnames of many of the islanders. With only about 56 inhabitants, originating from four main families, Pitcairn is the least populous national jurisdiction in the world.\* [2]\* [6] The United Nations Committee on Decolonization includes the Pitcairn Islands on the United Nations list of Non-Self-Governing Territories.\* [7]

### 4.18.1 History

Main article: History of the Pitcairn Islands

#### Polynesian settlement and extinction

The earliest known settlers of the Pitcairn Islands were Polynesians who appear to have lived on Pitcairn and Henderson, as well as nearby Mangareva Island 400 kilometres (250 mi) to the northwest, for several centuries. They traded goods and formed social ties between the three islands despite the long canoe voyages between them, helping the small populations on each island survive despite having very limited resources. Eventually,

important natural resources were used up, inter-island trade broke down and a period of civil war began on Mangareva, causing the small human populations on Henderson and Pitcairn to be cut off and eventually go extinct. Although archaeologists believe that Polynesians were living on Pitcairn as late as the 15th century, the islands were uninhabited when they were rediscovered by Europeans.\*[8]

### European discovery

Ducie and Henderson Islands were discovered by Portuguese sailor Pedro Fernandes de Queirós, sailing for the Spanish Crown, who arrived on 26 January 1606. He named them La Encarnación ("The Incarnation") and San Juan Bautista ("Saint John the Baptist"), respectively. However, some sources express doubt about exactly which of the islands were visited and named by Queirós, suggesting that Queirós's La Encarnación may actually have been Henderson Island, and San Juan Bautista may have been Pitcairn Island.\*[9]

Pitcairn Island was sighted on 3 July 1767 by the crew of the British sloop HMS *Swallow*, commanded by Captain Philip Carteret. The island was named after Midshipman Robert Pitcairn, a fifteen-year-old crew member who was the first to sight the island. Robert Pitcairn was a son of British Marine Major John Pitcairn, who later was killed at the Battle of Bunker Hill in the American Revolution.

Carteret, who sailed without the newly invented accurate marine chronometer, charted the island at 25°2'S 133°21'W / 25.033°S 133.350°W, and although the latitude was reasonably accurate, the longitude was incorrect by about 3°. This made Pitcairn difficult to find, as highlighted by the failure of Captain James Cook to locate the island in July 1773.\*[10]\*[11]

### European settlement



The mutineers turning Bligh and part of the officers and crew adrift from the *Bounty*, 29 April 1789

Further information: [Mutiny on the Bounty](#)

In 1790, nine of the mutineers from the *Bounty*, along with the native Tahitian men and women who were with them (six men, eleven women and a baby girl), settled on Pitcairn Islands and set fire to the *Bounty*. The wreck is still visible underwater in Bounty Bay, discovered in 1957 by *National Geographic* explorer Luis Marden. Although the settlers survived by farming and fishing, the initial period of settlement was marked by serious tensions among them. Alcoholism, murder, disease and other ills took the lives of most mutineers and Tahitian men. John Adams and Ned Young turned to the scriptures, using the ship's Bible as their guide for a new and peaceful society. Young eventually died of an asthmatic infection. The Polynesians also converted to Christianity. They later converted from their original form of Christianity to Seventh-day Adventism, following a successful Adventist mission in the 1890s. After the rediscovery of Pitcairn, John Adams was granted amnesty for his part in the mutiny.\*[12]

Ducie Island was rediscovered in 1791 by Royal Navy Captain Edwards aboard HMS *Pandora*, while searching for the *Bounty* mutineers. He named it after Francis Reynolds-Moreton, 3rd Baron Ducie, also a captain in the Royal Navy.

The Pitcairn islanders reported it was not until 27 December 1795 that the first ship since the *Bounty* was seen from the island, but it did not approach the land and they could not make out the nationality. A second ship appeared some time in 1801, but made no attempt to communicate with them. A third came sufficiently near to see their house, but did not try to send a boat on shore. Finally, the American trading ship *Topaz* under Mayhew Folger became the first to visit the island, when the crew spent 10 hours on Pitcairn in February 1808. A report of Folger's discovery was forwarded to the Admiralty, mentioning the mutineers and giving a more precise location of the island: 25°2'S 130°0'W / 25.033°S 130.000°W.\*[13] However, this was not known to Sir Thomas Staines, who commanded a Royal Navy flotilla of two ships (HMS *Briton* and HMS *Tagus*) which found the island at 25°4'S 130°25'W / 25.067°S 130.417°W (by meridian observation) on 17 September 1814. Staines sent a party ashore and wrote a detailed report for the Admiralty.\*[12]\*[14]\*[15]\*[16]

Henderson Island was rediscovered on 17 January 1819 by a British Captain James Henderson of the British East India Company ship *Hercules*. On 2 March 1819, Captain Henry King, sailing on the *Elizabeth*, landed to find the king's colours already flying. His crew scratched the name of their ship into a tree, and for some years the island was known as either Elizabeth or Henderson. Oeno Island was discovered on 26 January 1824 by American Captain George Worth aboard the whaler *Oeno*.



### British colony

Pitcairn Island became a British colony in 1838,<sup>[2]</sup> and was among the first territories to extend voting rights to women. By the mid-1850s, the Pitcairn community was outgrowing the island and its leaders appealed to the British government for assistance and were offered **Norfolk Island**. On 3 May 1856, the entire community of 193 people set sail for Norfolk on board the *Morayshire*, arriving on 8 June after a miserable five-week trip. But after eighteen months on Norfolk, seventeen of the Pitcairners decided to return to their home island; five years later another twenty-seven did as well.<sup>[12]</sup> In 1886 the Seventh-day Adventist layman **John Tay** visited the island and persuaded most of the islanders to accept his faith. He returned in 1890 on the missionary schooner *Pitcairn* with an ordained minister to perform baptisms. From that time the majority of Pitcairners were Adventists.<sup>[17]</sup>

In 1902, Henderson, Oeno and Ducie islands were annexed by Britain: Henderson on 1 July, Oeno on 10 July and Ducie on 19 December.<sup>[18]</sup> In 1938, the three islands, along with Pitcairn, were formally incorporated into a single administrative unit called the “Pitcairn Group of Islands” .



*Church of Adamstown*

The population peaked at 233 in 1937, and has since fallen due to emigration, primarily to New Zealand, leaving some fifty people living on Pitcairn.<sup>[2]</sup>

### Sexual assault trials of 2004

Main article: [Pitcairn sexual assault trial of 2004](#)

In 2004, charges were laid against seven men living on Pitcairn and six living abroad. This accounted for nearly a third of the male population. After extensive trials, most of the men were convicted, some with multiple counts of sexual encounters with children.<sup>[19]</sup> On 25 October 2004, six men were convicted, including **Steve Christian**, the island's mayor at the time.<sup>[20]</sup><sup>[21]</sup><sup>[22]</sup> After the six men lost their final appeal, the British government set up a prison on the island at **Bob's Valley**.<sup>[23]</sup><sup>[24]</sup> The

men began serving their sentences in late 2006. By 2010, all had served their sentences or been granted home detention status.<sup>[25]</sup>

In 2010, then-mayor **Mike Warren** faced 25 charges of possessing images and videos of child pornography on his computer.<sup>[26]</sup><sup>[27]</sup>

An “entry clearance application” must be made for any child under the age of 16, prior to visiting Pitcairn, while adults visiting the island for periods of less than 14 days are not required to complete any application or visa request prior to arrival.<sup>[28]</sup>

The UK's Foreign and Commonwealth Office (FCO)<sup>[29]</sup> does not currently allow their staff based on Pitcairn to be accompanied by their children.<sup>[28]</sup>

### 4.18.2 Geography

Main article: [Geography of the Pitcairn Islands](#)

The Pitcairn Islands form the southeasternmost extension of the geological archipelago of the Tuamotus of French Polynesia, and consist of four islands: Pitcairn Island, Oeno Island (atoll with five islets, one of which is Sandy Island), Henderson Island and Ducie Island (atoll with four islets).

The Pitcairn Islands were formed by a centre of upwelling magma called the **Pitcairn hotspot**.

The only permanently inhabited island, Pitcairn, is accessible only by boat through **Bounty Bay**. Henderson Island, covering about 86% of the territory's total land area and supporting a rich variety of animals in its nearly inaccessible interior, is also capable of supporting a small human population despite its scarce fresh water, but access is difficult, owing to its outer shores being steep limestone cliffs covered by sharp coral. In 1988 this island was designated as a UNESCO World Heritage site.<sup>[30]</sup> The other islands are at a distance of more than 100 km (62 mi) and are not habitable.

\* Includes reef flat and lagoon of the atolls.

- [Pitcairn Island as seen from a globe view with other Pacific Islands.](#)
- [Satellite photo of Pitcairn Island](#)
- [Map of Pitcairn Islands](#)
- [View of Bounty Bay](#)

### Climate

Main article: [Climate of the Pitcairn Islands](#)



*Geodesy operations on Pitcairn Island*

Pitcairn is located just south of the Tropic of Capricorn and enjoys year-round warm weather. Summer temperatures average 25 to 35 °C (77 to 95 °F) from the months of October through to April, while the winter months range from 17 to 25 °C (63 to 77 °F). The average humidity in summer can exceed 95%. The rainy season is from November through to March.\*[2]

### Flora and fauna

See also: List of birds of the Pitcairn Islands

About nine plant species are thought to occur only on Pitcairn. These include tapau, formerly an important timber resource, and the giant nehe fern (*Angiopteris chauliodonta*). Some, such as red berry (*Coprosma rapensis* var. *Benefica*), are perilously close to extinction.\*[31] The plant species *Glochidion pitcairnense* is endemic to Pitcairn and Henderson Islands.\*[32]

In terms of fauna, an interesting and rare introduction is the Galápagos giant tortoise. The sole surviving tortoise, Mr. T (also known as Turpen), was one of five which arrived on Pitcairn between 1937 and 1951, brought to the island by Irving Johnson, skipper of the 29-metre (96 ft) Brigantine Yankee. Turpen usually lives at Tedside by Western Harbour. A protection order makes it an offence should anyone kill, injure, capture, maim or cause harm or distress to the tortoise.\*[33]

The birds of Pitcairn fall into several groups. These include seabirds, wading birds and a small number of resident land-bird species. Of twenty breeding species, Henderson Island has sixteen, including the unique flightless Henderson crane; Oeno hosts twelve; Ducie thirteen and Pitcairn six species. Birds breeding on Pitcairn include the fairy tern, common noddy and red-tailed tropicbird. The Pitcairn reed warbler, known by Pitcairners

as a “sparrow”, is endemic to Pitcairn Island; formerly common, it was added to the endangered species list in 2008.\*[34]

**Important bird areas** The four islands in the Pitcairn group have been identified by BirdLife International as separate Important Bird Areas (IBAs). Pitcairn Island itself is recognised because it is the only nesting site of the Pitcairn reed warbler. Henderson Island is important for its endemic landbirds as well as its breeding seabirds. Oeno's ornithological significance derives principally from its Murphy's petrel colony. Ducie is important for its colonies of Murphy's, herald and Kermadec petrels, and Christmas shearwaters.\*[35]

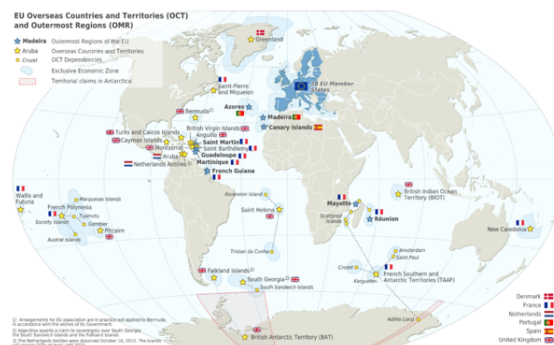
### Pitcairn Islands Marine Reserve

In March 2015 the British government established the largest continuous marine protected area in the world around the Pitcairn Islands. The reserve covers the islands' entire exclusive economic zone – 834,334 square kilometres (322,138 sq mi) – more than three times the land area of the British Isles. The intention is to protect some of the world's most pristine ocean habitat from illegal fishing activities. A satellite “watchroom” dubbed Project Eyes on the Seas has been established by the Satellite Applications Catapult and the Pew Charitable Trusts at the Harwell Science and Innovation Campus in Harwell, Oxfordshire to monitor vessel activity and to gather the information needed to prosecute unauthorised trawling.\*[36]\*[37]\*[38]\*[39]

## 4.18.3 Politics

Main article: Politics of the Pitcairn Islands

The Pitcairn Islands are a British overseas territory with



*Map of the European Union in the world with overseas countries and territories and outmost regions*

a degree of local government. The Queen of the United Kingdom is represented by a Governor, who also holds office as British High Commissioner to New Zealand and is based in Auckland.\*[40]

The 2010 constitution gives authority for the islands to operate as a representative democracy, with the United Kingdom retaining responsibility for matters such as defence and foreign affairs. The Governor and the Island Council may enact laws for the "peace, order and good government" of Pitcairn. The Island Council customarily appoints a Mayor of Pitcairn as a day-to-day head of the local administration. There is a Commissioner, appointed by the Governor, who liaises between the Council and the Governor's office.

The Pitcairn Islands has the smallest population of any democracy in the world.

#### 4.18.4 Military

The Pitcairn Islands are an overseas territory of the United Kingdom, meaning defence is the responsibility of the Ministry of Defence and Her Majesty's Armed Forces.\*[2] In 2004, the islanders had about 20 guns among them, which they surrendered ahead of the sexual assault trials.\*[41]

#### 4.18.5 Economy

##### Agriculture

The fertile soil of the Pitcairn valleys, such as Isaac's Valley on the gentle slopes southeast of Adamstown, produces a wide variety of fruits: including bananas (Pitkern: plun), papaya (paw paws), pineapples, mangoes, watermelons, rockmelons, passionfruit, breadfruit, coconuts, avocados, and citrus (including oranges, mandarins, grapefruit, lemons and limes). Vegetables include: sweet potatoes (kumura), carrots, sweet corn, tomatoes, taro, yams, peas, and beans. Arrowroot (*Maranta arundinacea*) and sugarcane are grown and harvested to produce arrowroot flour and molasses. Pitcairn Island is remarkably productive and its benign climate allows a wide range of tropical and temperate crops to be grown.\*[42]

Fish are plentiful in the seas around Pitcairn. Spiny lobster and a large variety of fish are caught for meals and for trading aboard passing ships. Almost every day someone will go fishing, whether it is from the rocks, from a long-boat or diving with a spear gun. There are numerous types of fish around the island. Fish such as nanwee, white fish, moi and opapa are caught in shallow water, while snapper, big eye and cod are caught in deep water, and yellow tail and wahoo are caught by trawling. A range of minerals—including manganese, iron, copper, gold, silver and zinc—have been discovered within the Exclusive Economic Zone (EEZ), which extends 370 km (230 mi) offshore and comprises 880,000 km<sup>2</sup> (340,000 sq mi).\*[43]

##### Honey production

In 1998 the UK's overseas aid agency, the Department for International Development, funded an apiculture programme for Pitcairn which included training for Pitcairn's beekeepers and a detailed analysis of Pitcairn's bees and honey with particular regard to the presence or absence of disease. Pitcairn, it was discovered, has one of the best examples of disease-free bee populations anywhere in the world and the honey produced was and remains exceptionally high in quality. Pitcairn bees were also found to be a particularly placid variety and, within a short time, the beekeepers were able to work with them wearing minimal protection.\*[44] As a result, Pitcairn today exports its renowned honey to New Zealand and to the United Kingdom, where it is stocked in London by Fortnum & Mason on Piccadilly and Partridges near Sloane Square. The honey has become a favourite of Queen Elizabeth and Prince Charles.\*[45] The Pitcairn Islanders, under the "Bounty Products" and "Delectable Bounty" brands, also export dried fruit including bananas, papayas, pineapples and mangoes to New Zealand.\*[46]

##### Tourism

Tourism plays a major role on Pitcairn, providing the locals with 80% of their annual income. Tourism is the main focus for building the future economy focusing on small groups coming by charter vessel and staying at "home stays". Occasionally, passengers from expedition-type cruise ships will come ashore for a day, weather permitting.\*[47] Since 2009, the Government has been operating the *MV Claymore II* as the island's only dedicated passenger/cargo vessel providing tourists with adventure tourism holidays to Pitcairn for three- or ten-day visits. Tourists stay with local families and get to experience the island's history while contributing to the local economy. Providing accommodation is a growing source of revenue and some families have invested in private self-contained units adjacent to their homes for tourists to rent. Each year about ten cruise ships call at the island for a few hours, generating income for the locals from the sale of souvenirs, landing fees and the stamping of passports. Children under the age of 16 years require a completed entry clearance application to visit the island.\*[48]

##### Lesser revenue sources

The Pitcairners are involved in creating crafts and curios (made out of wood from Henderson). Typical wood carvings include sharks, fish, whales, dolphins, turtles, vases, birds, walking sticks, book boxes and the famous models of the *Bounty*. Miro (*Thespesia populnea*), a dark, durable and beautifully grained wood, is preferred for carving. Islanders also produce exquisite tapa cloth and painted hattie leaves.\*[49] The major sources of revenue, until recently, have been the sale of coins and postage

stamps to collectors, .pn domain names, and the sale of handicrafts to passing ships, most of which are on the United Kingdom to New Zealand route via the Panama Canal.\*[50]

### Electricity

Electricity on the island is provided by diesel generators operating ten hours per day (from 8 am to 1 pm, and from 5 pm to 10 pm). A wind power plant was planned to be installed to help reduce the high cost of power generation currently associated with the import of diesel, and to provide 24-hour electricity to the islanders at 70 cents per unit with no government subsidy. The wind power scheme was however cancelled in 2013 after a project overrun of 3 years and a cost of £250,000.\*[51]

The only currently qualified high voltage electricity technician on the Pitcairn island, who manages the electricity grid, has now reached the retirement age.\*[52]

## 4.18.6 Demographics

Main article: [Demographics of the Pitcairn Islands](#)

The islands have suffered a substantial population decline since 1940, and the viability of the island's community is in doubt (see below). In recent years the government has been trying to attract new migrants. However, these initiatives have not been effective.\*[53]

In September 2003, a baby was born on the island for the first time in 17 years.\*[54] Another child, Adriana Tracey Christian, was born on Pitcairn on 3 March 2007.\*[55] In February 2005, Shirley and Simon Young became the first married outsider couple in recorded history to obtain citizenship on Pitcairn.\*[56]

As of 2014, there were 56 people residing on the island.\*[57]

### Language

Main article: [Languages of the Pitcairn Islands](#)

The majority of the resident Pitcairn Islanders are the descendants of the *Bounty* mutineers and Tahitians (or other Polynesians). Pitkern is a creole language derived from 18th century English, with elements of the Tahitian language.\*[2]\*[30] It is spoken as a first language by the population and is taught alongside standard English at the island's only school. It is closely related to the creole language Norfolk, spoken on Norfolk Island, because Norfolk was repopulated in the mid-19th century by Pitcairn-ers.

### Religion

100% of the population is Seventh-day Adventist.\*[2] A successful Seventh-day Adventist mission in the 1890s was important in shaping Pitcairn society. In recent years, the church has declined, with only about eight islanders worshipping regularly, but most of them still attend church on special occasions.\*[58] The Sabbath is observed as a day of rest and as a mark of respect for observant Adventists.

The church was built in 1954 and is run by the Church board and resident pastor, who usually serves a two-year term. The Sabbath School meets at 10 am on Saturday mornings, and is followed by Divine Service an hour later. On Tuesday evenings there is another service in the form of a prayer meeting.

### Education

Education is free and compulsory between the ages of five and 16.\*[59] All of Pitcairn's seven children were enrolled in school in 2000.\*[59] The island's children have produced a book in Pitkern and English called *Mi Bas Side orn Pitcairn* or *My Favourite Place on Pitcairn*.

The school at Palau provides pre-school and primary education based on the New Zealand syllabus. The teacher is appointed by the governor from suitable qualified applicants who are New Zealand registered teachers. The contract includes the role of editor of the *Pitcairn Miscellany*.

The Pitcairn Island Economic Report assumes that in around 2015–2016 there will not be any pre-school children and that the children who leave for New Zealand at age 15 for the last years of schooling are unlikely to return.\*[52]

### Historical population

Pitcairn's population has drastically decreased since its peak of over 250 in 1936 to 56 in 2014.\*[60]



*Pitcairn Islanders, 1916*

\* 1856 Immigration to Norfolk Island left Pitcairn unin-

habited. \*\* 1859 First group returns from Norfolk Island.  
\*\*\* As of July 2014

### Potential extinction

As of July 2014 the resident population of the Pitcairn Islands was 56, including the six temporary residents, an administrator, doctor, and police officer and each of their wives.\*[57] However, the actual permanent resident population was only 49 Pitkerners spread across 23 households.\*[52] At the same time, it is rare for the 49 residents to be all on-island at the same time as it is common for several residents to be off-island for varying lengths of time and reasons; for example, visiting family, medical reasons and attending international conferences. At the beginning of November 2013 approximately seven of the residents were known to be off-island.\*[52] A diaspora survey revealed that by 2045, if nothing is done, only three people of working age will be left on the island with the rest being very old. In addition, the survey revealed that residents who had left the island over the past decades showed little interest in coming back. Of the hundreds of emigrants contacted, 33 were willing to participate in the survey and only 3 expressed a desire to return. This may be partially attributable to the 2004 sexual assault trials which has caused many emigrants to be ashamed of their Pitcairn heritage. The current labour force consists of 31 able-bodied persons, 17 males and 14 females between 18 and 64 years of age. Of these 31 able-bodied persons 18 are over the age of 50, with only three in their 20s, and four in their 30s.\*[52] Most of the men undertake the more strenuous physical tasks on the island, e.g. crewing the longboats, cargo handling, operation and maintenance of physical assets. Longboat crew retirement age is 58 years of age and while not restricted to males, women do not presently work as longboat crew. There are currently 12 men aged between 18 and 58 residing on Pitcairn. Each long boat requires a minimum crew of three and of the current four men operating in the highly skilled role of longboat coxswain, two are in their late 50s.\*[52]

The Pitcairn Islands Government attempt to bring migrants to the islands so far was unsuccessful as since 2013 despite receiving some 700 inquiries per year apparently not a single formal settlement application was received.\*[52]\*[53] The new migrants are prohibited from taking local jobs and claiming benefits for a certain amount of time, even those with children.\*[61] The migrants are expected to have at least NZ\$30 000 per person in savings and are expected to build their own house at average cost of NZ\$140 000.\*[62]\*[63] It is also possible to bring the off-island builders at the additional cost between NZ\$23 000 and NZ\$28 000.\*[63] Also after the first 2 years the migrant's status will be actively reviewed by the island's council, therefore the Settlement status is not guaranteed at all.\*[64] The migrants are also required to take part in the unpaid public work to keep the island in order: maintain the island's numerous roads and paths,

build roads, navigate the island long boats, clean public toilets, etc.\*[65] There are also restrictions in bringing the children under the age of 16 to the island.\*[26]\*[28]

Freight from Tauranga to Pitcairn on the MV *Claymore II* (Pitcairn Island's dedicated passenger and cargo ship chartered by the Pitcairn Government) is charged at NZ\$350/m<sup>3</sup> for Pitkerners and NZ\$1000/m<sup>3</sup> for all other freight.\*[66] Also, Pitkerners are charged NZ\$3000 for a return trip from and to the island while others are charged NZ\$5000.\*[52]

Pitcairn Islands Government states that the average cost of living on the island is NZ\$9464.\*[62]

The Pitcairn Islands Government stated in the most recent (2014) Pitcairn Islands Economic Report\*[52] that “In reality, no-one will migrate to Pitcairn Islands for economic reasons as there are limited government jobs, a lack of private sector employment, as well as considerable competition for the tourism dollar” .\*[52] The Pitkerners are currently rotating (taking tourists in turns) to accommodate those few tourists who occasionally visit the island.\*[52]

As the island remains a British Overseas Territory, at some point the British government may have to make a decision concerning the island's future.\*[67]\*[68]

### 4.18.7 Culture

The once-strict moral codes, which prohibited dancing, public displays of affection, smoking, and consumption of alcohol, have been relaxed in recent years. Islanders and visitors no longer require a six-month licence to purchase, import, and consume alcohol.\*[69] There is now one licensed café and bar on the island, and the Government Store sells alcohol and cigarettes.

Fishing and swimming are two popular recreational activities. A birthday celebration or the arrival of a ship or yacht will involve the entire Pitcairn community in a public dinner in the Square, Adamstown. Tables are covered in a variety of foods, including fish, meat, chicken, philhi, baked rice, boiled plun (banana), breadfruit, vegetable dishes, an assortment of pies, bread, breadsticks, an array of desserts, pineapple and watermelon.

Public work ensures the ongoing maintenance of the island's numerous roads and paths. The island has a labour force of over 35 men and women (as of 2011).\*[2]

### 4.18.8 Media and communications

**Telephones** Pitcairn uses New Zealand's international calling code, +64. It is still on the manual telephone system.

**Radio** There is no broadcast station. Marine band walkie-talkie radios are used to maintain contact

among people in different areas of the island. Foreign stations can be picked up on shortwave radio.

**Amateur Radio** QRZ.COM lists six amateur radio operators on the island, using the ITU prefix (assigned through the UK) of VP6. Some of those operators have now died while others are no longer active. The last DX-pedition to Pitcairn took place in 2012\*[70] In 2008 a major DX-pedition visited Ducie Island.\*[71]

**Television** There are two live TV channels available via Trans-Pacific satellite, CNN, and Turner Classic Movies. Free-to-air satellite dishes can be used to watch foreign TV.

**Internet** There is one Government-sponsored satellite internet connection, with networking provided to the inhabitants of the island. Pitcairn's country code (top level domain) is .pn. Residents pay NZ\$100 (about £50) for 2 GB of data per month, at a rate of 256 kbit/s.\*[72] The Pitcairn Miscellany reports that despite the bandwidth recently being doubled to 512 kbit/s this is not per user but is in fact shared between all families on the island making normal internet use extremely difficult.

#### 4.18.9 Transport

The settlers of the Pitcairns all arrived by some form of boat or ship.

Pitcairn Island does not have an airport, airstrip or seaport;\*[48] the islanders rely on longboats to ferry people and goods between visiting ships and shore through Bounty Bay. Access to the rest of the shoreline is restricted by jagged geography. The island has one shallow harbour with a launch ramp only accessible by small longboats.\*[73]

A dedicated passenger/cargo supply ship chartered by the Pitcairn Island Government, the MV *Claymore II*, is the principal transport from Mangareva, Gambier Islands, French Polynesia although passage can also be booked through Pitcairn Travel, Pitcairn's locally owned tour operators who charter the SV *Xplore*, owned by Stephen Wilkins, which also departs from Mangareva.

**Totegegie Airport** in Mangareva is reachable by air from the French Polynesian capital Papeete.\*[74]

There is one 6.4-kilometre (4 mi) paved road leading up from Bounty Bay through Adamstown.

The main mode of transport on Pitcairn Islands is by four-wheel drive quad bikes or on foot.\*[48] As of December 2013 much of the road and track network and some of the footpaths of Pitcairn Island are viewable on Google's Street View.\*[75]\*[76]

#### 4.18.10 Notable People

On 20 September 1793, Fletcher Christian died here at age 28.\*[77]

#### 4.18.11 Gallery

- Bounty Bay in the 1970s
- Pitcairn landing site
- Pitcairn Island
- Henderson Island shelter
- Oeno
- St. Paul's Point in west Pitcairn Island
- Garnets Ridge, Pitcairn Island

#### 4.18.12 See also

- Law enforcement in the Pitcairn Islands
- Bibliography of Pitcairn Islands
- Bounty Bible
- Bounty Day
- Island Council (Pitcairn)
- List of islands
- Outline of the Pitcairn Islands
- Thursday October Christian I

#### 4.18.13 References

- [1] “Pitcairn Islands” . *nationalanthems.info*.
- [2] “CIA World Factbook – Pitcairn Islands” . *The World Factbook*. Central Intelligence Agency. Retrieved 26 February 2013.
- [3] Thomas Brinkhoff (1 February 2013). “Pitcairn Islands” . *citypopulation.de*. Thomas Brinkhoff. Retrieved 8 November 2013.
- [4] Pitcairn Islands Strategic Development Plan
- [5] Oxford English Dictionary
- [6] Country Comparison :: Population. *The World Factbook*.
- [7] “United Nations list of Non-Self-Governing Territories” . United Nations. Retrieved 4 July 2015.
- [8] Diamond, Jared M (2005). *Collapse: how societies choose to fail or succeed*. New York: Penguin. p. 132. ISBN 9780143036555. OCLC 62868295. But by A.D. 1606 ... Henderson's population had ceased to exist. Pitcairn's own population had disappeared at least by 1790 ... and probably disappeared much earlier.

- [9] “History of Government and Laws, Part 15 *History of Pitcairn Island*”. Pitcairn Islands Study Centre. Archived from the original on 11 December 2014. Retrieved 4 July 2015.
- [10] Brian Hooker. “Down with Bligh – hurrah for Tahiti” . *Finding New Zealand*. Archived from the original on 26 May 2010. Retrieved 4 July 2015.
- [11] Mark Winthrop. “The Story of the Bounty Chronometer” . Lareau Web Parlour. Archived from the original on 5 September 2009. Retrieved 4 July 2015.
- [12] “Pitcairn's History” . The Government of the Pitcairn Islands. Archived from the original on 17 December 2014. Retrieved 4 July 2015.
- [13] “Mutineers of the Bounty” . *The European Magazine, and London Review* (Philological Society of London,) **69**: 134. January–June 1816.,
- [14] *The Annual Biography and Obituary for the Year ....*, Longman, Hurst, Rees, Orme, and Brown, 1831, Volume 15 “Chapter X Sir Thomas Staines” pp. 366–367
- [15] History of Pitcairn Island, Pitcairn Islands Study Centre. Retrieved 15 September 2008.
- [16] “Pitcairn descendants of the *Bounty* Mutineers” . Jane's Oceania. 29 April 2009. Retrieved 4 July 2015.
- [17] IBP USA (1 August 2013). *Pitcairn Islands Business Law Handbook*. Int'l Business Publications. ISBN 9781438770796. Retrieved 25 January 2015.
- [18] Ben Cahoon. “Pitcairn Island” . worldstatesmen.org. Retrieved 4 July 2010.
- [19] Neil Tweedie (5 October 2004). “Islander changes his plea to admit sex assaults” . *The Telegraph* (London). Retrieved 29 November 2011.
- [20] David Fickling (26 October 2004). “Six found guilty in Pitcairn sex offences trial” . *The Guardian* (London). Retrieved 29 November 2011.
- [21] “Six guilty in Pitcairn sex trial” . BBC News. 25 October 2004. Retrieved 29 November 2011.
- [22] “6 men convicted in Pitcairn trials” . *The New York Times*. 24 October 2004. Retrieved 29 November 2011.
- [23] Marks, Kathy (25 May 2005). “Pitcairners stay free till British hearing” . *The New Zealand Herald*. Retrieved 29 November 2011.
- [24] Marks, Kathy (2009). *Lost Paradise: From Mutiny on the Bounty to a Modern-Day Legacy of Sexual Mayhem, the Dark Secrets of Pitcairn Island Revealed*. Simon and Schuster. p. 288. ISBN 9781416597841.
- [25] “Last Pitcairn rape prisoner released” . *The Sydney Morning Herald*. 23 April 2009. Archived from the original on 2 July 2015. Retrieved 4 July 2015.
- [26] Edward Gay (11 March 2013). “Pitcairn Island mayor faces porn charges in court” . *The New Zealand Herald*.
- [27] *R v Michael Warren* (Court of Appeal of the Pitcairn Islands 2012). Text
- [28] “Pitcairn Island travel advice” . *www.gov.uk*. UK government. Retrieved 6 September 2015.
- [29] “Foreign & Commonwealth Office – GOV.UK” . *www.gov.uk*.
- [30] Pitcairn Island. *Encyclopædia Britannica*
- [31] S. Waldren & N. Kingston (1998). *Coprosma rapensis var. benefica*. IUCN Red List of Threatened Species.
- [32] S. Waldren and N. Kingston (1998). *Glochidion pitcairnense*. IUCN Red List of Threatened Species.
- [33] Endangered Species Protection Ordinance, 2004 revised edition. government.pn
- [34] BirdLife International (2014). *Acrocephalus vaughani*. The IUCN Red List of Threatened Species.
- [35] BirdLife International. (2012). Important Bird Areas factsheet: Pitcairn Island.
- [36] Gauke, David (18 March 2015). *Budget 2015* (PDF). London: HM Treasury. p. 97. ISBN 9781474116152. Retrieved 18 March 2015.
- [37] Jonathan Amos (18 March 2015). “Budget 2015: Pitcairn Islands get huge marine reserve” . BBC News. Retrieved 18 March 2015.
- [38] “Pew, National Geographic Applaud Creation of Pitcairn Islands Marine Reserve” (Press release). London: The Pew Charitable Trusts. 18 March 2015. Retrieved 18 March 2015.
- [39] Brian Clark Howard (18 March 2015). “World's Largest Single Marine Reserve Created in Pacific” . *National Geographic*. Retrieved 18 March 2015.
- [40] “Home.” Government of the Pitcairn Islands. Retrieved 31 October 2011.
- [41] “Pitcairn islanders to surrender guns” . Television New Zealand. Reuters. 11 August 2004. Archived from the original on 17 March 2015. Retrieved 4 July 2015.
- [42] Secretariat of the Pacific Community (SPC): Pitcairn Islands-Joint Country Strategy, 2008.
- [43] Commonwealth Secretariat; Rupert Jones-Parry (2010). “Pitcairn Economy” . *The Commonwealth Yearbook 2010*. Commonwealth Secretariat. ISBN 9780956306012.
- [44] Aislinn Laing (9 January 2010). “Sales of honey fall for the first time in six years amid British bee colony collapse” . *The Daily Telegraph* (London). Retrieved 3 January 2015.
- [45] Sri Carmichael (8 January 2010). “I'll let you off, Mr Christian: you make honey fit for a queen” . *London Evening Standard*. Retrieved 3 January 2015.
- [46] Pitcairn Islands Study Center, News Release: Products from Pitcairn, 7 November 1999.

- [47] Pitcairn Island Report prepared by Jaques and Associates, 2003, p. 21.
- [48] Foreign travel advice: Pitcairn. Foreign and Commonwealth Office. (6 December 2012). Retrieved 2 April 2013.
- [49] Foreign and Commonwealth Office, Profile on Pitcairn Islands, British Overseas Territory, 11 February 2010.
- [50] Pitcairn Island Report prepared by Jaques and Associates, 2003, p. 18.
- [51] “UK aid wasted on South Pacific windfarm fiasco: failed green energy scheme for only 55 people cost £250,000” . *Daily Mail*. 8 April 2013. Retrieved 4 July 2015.
- [52] Rob Solomon and Kirsty Burnett (January 2014) Pitcairn Island Economic Review. government.pn.
- [53] “Pitcairn Island, an idyll haunted by its past” . *Toronto Star*. 16 December 2013.
- [54] *Pitcairn Miscellany*, 2003.
- [55] *Pitcairn Miscellany*, 2007.
- [56] *Pitcairn Miscellany*, March 2005.
- [57] “Pitcairn Residents” . *puc.edu*.
- [58] “Turning Point for Historic Adventist Community on Pitcairn Island” 30 September 2006
- [59] “Territories and Non-Independent Countries” . *2001 Findings on the Worst Forms of Child Labor*. Bureau of International Labor Affairs, U.S. Department of Labor (2002). *This article incorporates text from this source, which is in the public domain.*
- [60] “Pitcairn Census” . Pitcairn Islands Study Center. Retrieved 4 July 2015.
- [61] “Ch. XXII. Social Welfare Benefits Ordinance” in *Laws of Pitcairn, Henderson, Ducie and Oeno Islands. Revised Edition 2014*
- [62] Bill Haigh. “Pitcairn Island Immigration” . immigration.pn.
- [63] kerry young, heather menzies. “Pitcairn Island Immigration Questions and Answers” . young.pn.
- [64] Ch. XII. “Immigration Control Ordinance” in *Laws of Pitcairn, Henderson, Ducie and Oeno Islands. Revised Edition 2014*
- [65] Pitcairn Islands Repopulation Plan 2014 - 2019. The Pitcairn Islands Council
- [66] “MV *Claymore II* Ship Info | Pitcairn Island Tourism” . visitpitcairn.pn.
- [67] “Pitcairn Islands Face Extinction” . *The Wall Street Journal*. Retrieved 3 December 2014.
- [68] “South Pacific Island of 'Mutiny on the Bounty' Fame Running Out of People” . *The Wall Street Journal*. Retrieved 3 December 2014.
- [69] Pitcairn Island Government Ordinance. government.pn
- [70] “VP6T – Pitcairn – The station” . g3txf.com.
- [71] VP6DX- Ducie Island – 2008. Ducie2008.dl1mgb.com. Retrieved 20 September 2013.
- [72] “iPad Makes Its Way to the Farthest Reaches of the Earth” MacRumors.com. Retrieved 3 November 2010
- [73] David H. Evans (2007) *Pitkern Ilan=Pitcairn Island*. Self-published, Auckland, p. 46
- [74] *Lonely Planet South Pacific*, 3rd ed. 2006, “Pitcairn Getting There” pp. 429–30
- [75] “Pitcairn News” , 2013-12-13. Retrieved 13 February 2014
- [76] “View from the end of St Pauls Point on Street View” . Retrieved 13 February 2014
- [77] [https://books.google.com/books?id=\\_j8-Ymma7-EC&pg=PA61&lpg=PA61&dq=1790+death+OR+died+%22Fletcher+Christian%22&source=bl&ots=hfbfaMbJwj&sig=yApLn793Nlqpr2AwCol6zh-fd7M&hl=en&sa=X&ved=0CIEBEOgBMA9qFQoTCObL-sj\\_8ccCFUuliAodt5IPnQ#v=onepage&q=1790%20death%20OR%20died%20%22Fletcher%20Christian%22&f=false](https://books.google.com/books?id=_j8-Ymma7-EC&pg=PA61&lpg=PA61&dq=1790+death+OR+died+%22Fletcher+Christian%22&source=bl&ots=hfbfaMbJwj&sig=yApLn793Nlqpr2AwCol6zh-fd7M&hl=en&sa=X&ved=0CIEBEOgBMA9qFQoTCObL-sj_8ccCFUuliAodt5IPnQ#v=onepage&q=1790%20death%20OR%20died%20%22Fletcher%20Christian%22&f=false)

#### 4.18.14 Further reading

##### The Mutiny on the Bounty

- *Mutiny on the Bounty* by Charles Nordhoff and James Norman Hall, 1932
- *The Bounty: The True Story of the Mutiny on the Bounty* by Caroline Alexander (Harper Perennial, London, 2003 pp. 491)
- *The Discovery of Fletcher Christian: A Travel Book* by Glynn Christian, a descendant of Fletcher Christian, Bounty Mutineer (Guild Press, London, 2005 pp. 448)

##### After the Mutiny

- *Men Against the Sea* by Charles Nordhoff and James Norman Hall, 1933
- *Pitcairn's Island* by Charles Nordhoff and James Norman Hall, 1934
- *The Pitcairners* by Robert B. Nicolson (Pasifika Press, Auckland, 1997 pp. 260)
- *After the Bounty: The Aftermath of the Infamous Mutiny on the HMS Bounty—An Insight to the Plight of the Mutineers* by Cal Adams, a descendant of John Adams, Bounty Mutineer (Self-published, Sydney, 2008 pp. 184)



### 4.18.15 External links

#### Government of the Pitcairn Islands

- [Pitcairn Government](#)
- [Wikimedia Atlas of Pitcairn Islands](#)

#### Travel to Pitcairn

- [Pitcairn Island Tourism Official tourism site of the Pitcairn Islands.](#)

#### News from Pitcairn Island

- [Pitcairn News from Big Flower News from Big Flower, Pitcairn Island.](#)
- [Pitcairn Miscellany News from Pitcairn Island. The Editor is currently Jacqui Christian.](#)
- [Pitcairn News information from Chris Double, a Bounty descendant based in Auckland NZ](#)
- [Uklun Tul Un Dem Tul Pitcairn news by Kari Young, a Pitcairn resident.](#)

#### Pitcairn Island Study Groups on the Internet

- [The Pitcairn and Norfolk Islands Society](#)
- [US Pitcairn Islands Study Centre](#)
- [US Pitcairn Islands Study Group](#)

Coordinates: 25°04′S 130°06′W﻿ / ﻿25.067°S 130.100°W﻿ / -25.067; -130.100

## 4.19 Pukapuka

This article is about Pukapuka in the Cook Islands. For the coral atoll in French Polynesia, see Puka-Puka.

**Pukapuka** is a coral atoll in the Cook Islands in the Pacific Ocean, with three small islets threaded on a reef that encloses a beautifully clear lagoon. It is the most remote island of the Cook Islands, situated about 1140 kilometres northwest of Rarotonga. It is a triangular atoll with three islets comprising little more than three square kilometres of land area. On this small island an ancient culture and distinct language has been maintained over many centuries. In the 1990s Japanese archaeologists discovered evidence of human settlement up to 2,000 years ago. Pukapuka's closest prehistoric associations appear to be with Samoa and other islands to the west, but there was later a lot of contact with islands to the east. The traditional name for the atoll was Te Ulu-o-Te-Watu ('the head of the stone'), and the northern islet where the people normally reside is affectionately known as *Wale* (Home).



*Aerial View of Pukapuka Atoll*



*Map of Pukapuka Atoll*

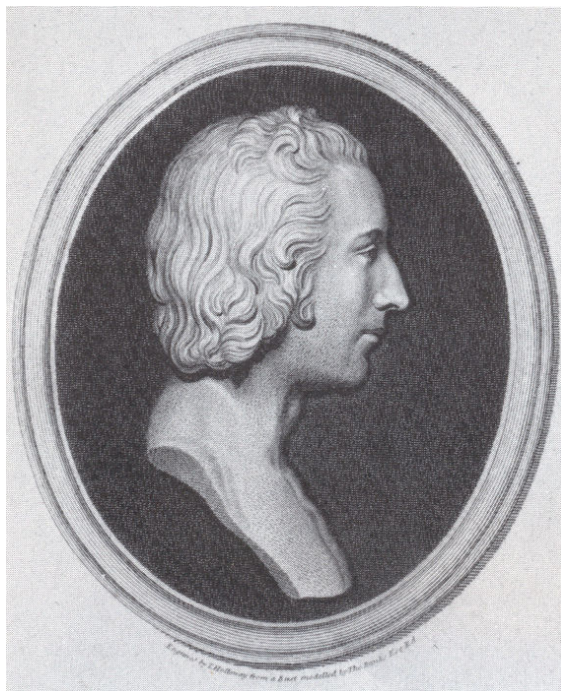
### 4.19.1 European visitors

Pukapuka was the first of the Cook Islands to be sighted by Europeans. The Spanish explorer Álvaro de Mendaña saw it on the feast day of Saint Bernard, on Sunday 20 August 1595 and named it **San Bernardo**.\*[1]

On 21 June 1765 the British Naval expedition under Commodore John Byron (*HMS Dolphin* and *HMS Tamar*) sighted the island. Byron gave the name “Islands of Danger” because of the high surf that made it too dangerous to land. The name “Danger Island” still appears on some maps. According to oral tradition, an unknown ship called at Pukapuka in the mid 18th century, and when the lineage chief Tāwaki boldly took the captain's pipe out of his mouth, he was shot. (Tāwaki's grandson, Pania, and great-grandson, Vakaawi, protected the Aitutakian mission teacher, Luka, in 1857).

Thirty years later, Pukapuka was given the name “Isles de la Loutre” (Isles of the Otter) by Pierre François Péron, a French adventurer who was acting as first mate on board the American merchant ship, *Otter* (Captain Ebenezer Dorr) after it was sighted on 3 April 1796. The following day, Péron, Thomas Muir of Huntershill (1765–1799) and a small party landed ashore but the inhabitants would not allow them to inspect the island. Trading later took

place near the ship, when adzes, mats and other artifacts were exchanged for knives and European goods.\* [2]



Thomas Muir

“Everything united to convince us that we had the right to attribute to ourselves the honour of having discovered three new islands; and with this conviction I gave them the name “Isles of the Otter” [Isles de la Loutre] which was the name of our vessel. In order to distinguish them we named the eastern one 'Peron and Muir' [Motu Kō], the one to the north 'Dorr' [Pukapuka], and the name of 'Brown' was given to the third [Motu Kotawa], after one of our officers.”\* [2] Péron believed that they were the first to discover the island, mostly because the people were so afraid of them. This was of course because Tāwaki had been killed during the ship visit about 30 years previously.

Because of Pukapuka's isolation, few vessels visited before 1857 when the London Missionary Society landed teachers from Aitutaki and Rarotonga. Luka Manuae of Aitutaki later wrote an extended account of the first days of contact 5–8 December 1857: “No te taeanga a te tuatua o te Atua ki Pukapuka” (‘The arrival of the Word of God at Pukapuka’, dated August 1869).\* [3] Some lineages wanted to kill the newcomers in revenge for an incident that had happened a month earlier, but Vakaawi, chief of Yālongo lineage, protected them. In the following days the island accepted Luka's Christian message, largely because of an encounter when two dead people were apparently raised back to life.

In 1862 Rev. William Wyatt Gill found most of the people on the island converted to Christianity. Early in 1863 Peruvian slavers raided the island and took away a total of 145 men and women; only two returned, Kolia and Pilato (Malowutia). The London Missionary Society

barque *John Williams* was wrecked on the west side in May 1864.\* [4] In 1868 the buccaneer Bully Hayes took about 40 people to go on a labour scheme, but none of them returned home.

#### 4.19.2 World War II

Three downed U.S. Navy fliers from the USS *Enterprise* landed on Pukapuka in February 1942.\* [5] Harold Dixon, Gene Aldrich, and Tony Pastula survived 34 days on the open ocean in a tiny 4 by 8 foot (1.2 by 2.4 m) raft, beginning their odyssey with no food or water stores and very few tools. They were found by Teleuka Iotua huddled in a hut belonging to Lakulaku Tutala on Loto Villages reserve, where he gave them coconuts to drink. He then went and got more help. Shortly after their arrival a typhoon struck the island. Their story was told in the book *The Raft* by Robert Trumbull, published by Henry Holt and Co. in 1942, and later released as a motion picture *Against the Sun*\* [6] in 2015.

#### 4.19.3 Geography

Pukapuka is shaped like a three bladed fan. There are three islets on the roughly triangular reef. Motu Kō, the biggest island is to the southeast; Motu Kotawa (Frigate Bird Island) is to the southwest; and the main island Wale is to the north. Ko and Motu Kotawa are uninhabited and are used for growing food. The airport (ICAO airport code: NCPK) is on Kō.

The three villages are located on the crescent-shaped bay of the northernmost islet of the atoll: Yātō (Leeward), Loto (Central) and Ngake (East). Loto (Roto on most maps) is host to Island Administration. The traditional names for these villages are Takanumi, Kotipolo and Te Lāngaikula. In daily life, the islanders frequently call them Tiapani (Japan), Malike or Amelika (USA) and Ōlani (Holland) respectively. Especially in sports competitions between the villages, the villagers use the names and flags of these countries.

Although the island features a well-maintained airstrip, flights from Rarotonga are very infrequent. The five hour flight from Rarotonga now operates when there is a Government charter once every six weeks or so. The island is closer to Samoa than to the rest of the Cook Islands and transport via Samoa is becoming a preferred option for Pukapukans visiting in organised groups (*tele parties*) from New Zealand and Australia.

The submerged Tima Reef is situated 23 km southeast of Pukapuka. About 60 km away is Nassau (Cook Islands) which is owned by the people of Pukapuka and considered part of it administratively. Since the 1950s it has been governed by the Council of Chiefs of Pukapuka. The Nassau Island Committee advises the Pukapuka Island Committee on matters relating to its own island.

Pukapuka and Nassau were hit by Cyclone Percy in February 2005 —a Category Four cyclone that destroyed the taro gardens, brought down thousands of trees, and damaged three-quarters of the houses.

#### 4.19.4 Treaty

The United States gave up its claim to the island in a treaty signed with the Cook Islands on 11 June 1980.

#### 4.19.5 Culture

Pukapuka has its own language and customs that are different from the rest of the Cook Islands.

The entire population is said to be descended from seventeen men, two women and an unknown number of children who survived a catastrophic storm and seismic wave (tsunami) in the 17th century. \* [7] The description of the tragedy, complete with thunder and lightning, is more in keeping with a cyclone, and the waves it generated swept most of the people away. A new estimate of the date of the calamity based on genealogical records suggests that it happened about 1700.

The island had a population of 664 at the 2001 census, but since 2005 the population has declined to less than 500.

The American writer Robert Dean Frisbie settled on Pukapuka in 1924 and immortalised the island in the books he wrote about it. He said at the time he was looking for a place beyond the reach of “the faintest echo from the noisy clamour of the civilised world” . He found it, and to this day Pukapuka is one of the most untouched and secluded places in the Cook Islands.

#### 4.19.6 See also

- Pukapukan language
- List of Guano Island claims
- List of reduplicated place names

#### 4.19.7 References

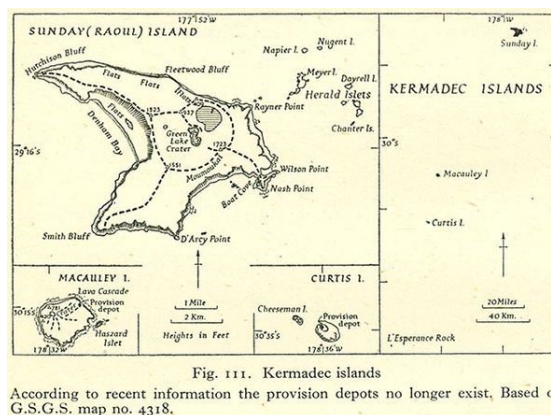
- [1] Sharp, Andrew, *The discovery of the Pacific Islands*, Oxford 1960 p.52,53
- [2] Pierre François PÉRON (1824). *Mémoires du Capitaine Péron, sur ses Voyages aux Côtes d' Afrique, en Arabie, a l' Île d' Amsterdam, aux Îles d' Anjouan et de Mayotte, aux Côtes Nord-Oeust de l' Amérique, aux Îles Sandwich, a la Chine, etc.* Libraire, Bossange Frères (Paris: Brissot-Thivars). Retrieved 31 July 2010.
- [3] Luka Manuae, (2012) “The arrival of the word of God at Pukapuka” , *Journal of Pacific History*, Dec.
- [4] Beaglehole, Earnest and Pearl (1938). “Ethnology of Pukapuka,” *Bernice P. Bishop Museum Bulletin*, 150.
- [5] “Where are they now?” *Newsweek Magazine*. 8 February 1954.
- [6] <http://www.imdb.com/title/tt2557276/>
- [7] Beaglehole and Beaglehole (1938).

#### 4.19.8 External links

- Cook Islands site
- Images of damage caused by Cyclone Percy

Coordinates: 10°53′S 165°51′W﻿ / ﻿10.883°S 165.850°W﻿ / -10.883; -165.850

## 4.20 Raoul Island



Map of the Kermadec Islands with Raoul Island

Anvil-shaped **Raoul Island** (*Sunday Island*), the largest and northernmost of the main Kermadec Islands, 900 km (560 mi) SSW of 'Ata Island of Tonga and 1,100 km (680 mi) NNE of New Zealand's North Island), has been the source of vigorous volcanic activity during the past several thousand years that was dominated by dacitic explosive eruptions.

The area of the island, including fringing islets and rocks mainly in the northeast, but also a few smaller ones in the southeast, is 29.38 km<sup>2</sup> (11 sq mi). The highest elevation is Moumoukai Peak, at an elevation of 516 m (1,693 ft).

Considering offshore islets and rocks, the northernmost island of New Zealand is Nugent Island, about 100 metres (328 ft) in diameter, located 3.6 km (2.2 mi) north-east of Raoul Island. The coordinates of the northernmost point are 29°13'52″S 177°52'09″W / 29.23111°S 177.86917°W. Napier Island stretches almost as far north as Nugent Island, which reaches just a few metres further north.

### 4.20.1 History

Stone implements of the Polynesian type have been found on Raoul Island, and there is indication of a prehistoric settlement (see below). But the island was uninhabited when first sighted by Western sailors.

From May 27 to June 16, 1917, the German raider *Wolf*, under the command of Korvettenkapitän Karl August Nerger, anchored in the protected bay to undertake engine overhaul and maintenance. During this period the *Wolf* captured the New Zealand steamship *Wairuna* (3,950 tons) and the American sailing bark *Winslow* (570 tons), commandeering all cargo and coal from both ships while at anchor.

The permanently manned **Raoul Island Station** has been maintained since 1937. It includes a government meteorological and radio station and hostel for Department of Conservation (DOC) officers and volunteers. The station stands on the northern terraces of the island, about 50 m (164 ft) in elevation above the cliffs of Fleetwood Bluff. Raoul Island Station represents the northernmost outpost of New Zealand.

### 4.20.2 Geography



*Raoul Island, looking towards the minor islands northeast*

Two Holocene calderas are found at Raoul. The older caldera cuts the center of Raoul Island is about 2.5 km × 3.5 km (1.6 mi × 2.2 mi) long and wide respectively. Denham caldera, formed during a major dacitic explosive eruption about 2200 years ago, truncated the western side of the island and is 6.5 km × 4 km (4.0 mi × 2.5 mi) long and wide respectively. Its long axis is parallel to the tectonic fabric of the Havre Trough that lies west of the volcanic arc.

Historical eruptions at Raoul during the 19th and 20th centuries have sometimes occurred simultaneously from both calderas, and have consisted of small-to-moderate phreatic eruptions, some of which formed ephemeral islands in Denham caldera. A 240 m (787 ft) high unnamed submarine cone, one of several located along a fissure on the lower NNE flank of Raoul volcano, has also erupted during historical time, and satellitic vents at

Raoul are concentrated along two parallel NNE-trending lineaments.

The Denham caldera was named for the nearby Denham Bay, itself named by Capt Henry Mangles Denham in *Herald* who came to complete a (chart) survey of the island on July 2, 1854. His son Fleetwood James Denham (16yrs) died from a tropical fever, and was buried near the beach at the head of Denham Bay, where a number of the grass-grown graves of former settlers were. The brass plaque heading this grave has been preserved.

Three small lakes, **Blue Lake** (1.17 km<sup>2</sup> or 0.45 sq mi, about 40% overgrown), **Green Lake** (160,000 m<sup>2</sup> or 1,700,000 sq ft) and **Tui Lake** (5,000 m<sup>2</sup> or 54,000 sq ft, drinking water quality) are located in the northern caldera of Raoul Island. The plains surrounding the lakes are called **Pumice Flats**.

### Climate

Raoul Island has a humid subtropical climate with warm, wet weather throughout the year.

### 4.20.3 Flora and fauna

The scientific categorisation of the flora and fauna of the island began in 1854 when *HMS Herald*, captained by Henry Mangles Denham, arrived to complete the charting of the island. He arrived on the 2nd and was occupied till 24 July, during which time he frequently had to move the ship on account of the rough weather experienced. William Grant Milne and John MacGillivray, naturalists on board the *Herald*, made a small collection of plants on Raoul. This was forwarded by Captain Denham to Sir W. Hooker, and was described by Sir Joseph Hooker in the *Journal of the Linnean Society* for 1857.

Raoul is part of the Kermadec Islands subtropical moist forests ecoregion and is largely covered with closed-canopy forest, predominantly of the evergreen Kermadec pōhutukawa (*Metrosideros kermadecensis*) and the Kermadec nikau palm (*Rhopalostylis baueri*, formerly described as *Rhopalostylis cheesemani*). It is just far enough south that the occasional fertile coconut from Polynesia that washes up on shore and takes root will not survive in the longterm due to a lack of warmth.\*[2] The island has no native land mammals and was formerly home to vast colonies of seabirds who nested in the forests. The islands may once have had a species of megapode (based on early settler records) and a subspecies of Kereru.\*[3] Currently native landbirds on the island include the Kermadec Red-crowned Parakeet (*Cyanoramphus novaezelandiae cyanurus*), the Australasian Harrier, Pukeko, Tui and several introduced species.\*[4] The island forms part of the Kermadec Islands Important Bird Area, identified as such by BirdLife International because it is an important site for nesting seabirds.\*[5]

Polynesian visitors introduced the **Polynesian rat** in the 14th century and **Norway rats**, **cats** and **goats** were introduced by European and American visitors in the 19th and 20th centuries. The rats and cats greatly reduced the seabird colonies, which mostly withdrew to offshore islets, and exterminated the Red-crowned Parakeet, the last confirmed record of resident parakeets for over a century being made in 1836. Although the goats did not eliminate the tree canopy as they did on other islands, they greatly reduced the **understory** vegetation and were removed in 1986. The Department of Conservation eradicated rats and cats between 2002 and 2006, following which Red-crowned Parakeets soon returned naturally, presumably from the Herald Islets, 2–4 km (1.2–2.5 mi) away. The parakeets had been absent from the island for 150 years and their natural return was a notable event in parrot conservation.\*[6]\*[7]

There are numerous invasive plant species on the island and a large scale weeding programme involving teams of DOC workers and volunteers has been under way for a number of years in an attempt to eradicate them.

The island is part of the **Kermadec Islands Marine Reserve**, New Zealand's largest marine reserve, which was created in 1990.

#### 4.20.4 Satellite islands and rocks

The two largest satellite islands are North Island and South Island of Meyer Islands.

- Islands and rocks in the northeast of Raoul Island
  - Fishing Rock
  - Egeria Rock
  - Meyer Islands
    - North Island
    - South Island
  - Napier
  - **Nugent Island** (northernmost island of New Zealand)
  - Herald Islets
    - Dayrell Island
    - Chanter Islands
      - Chanter (North) Island
      - South Island
      - West Island
- Islands and rocks in the southwest of Raoul Island
  - Milne Islands
  - Dougall Rocks

#### 4.20.5 2006 eruption

On March 17, 2006 at 8:21 a.m. **NZDT**, a 40-second long volcanic eruption occurred at the **Green Lake**. At the time, Mark Kearney, a 33-year-old DOC worker, was at the crater taking water temperature measurements. A 5-hectare (12-acre) area around Green Lake was affected with ash, mud and boulders. Two DOC workers were forced to turn back after going to the crater to search for Kearney.

Following the eruption, DOC decided to evacuate the remaining five staff members. A **Mil Mi-8** helicopter and **Piper PA-31 Navajo** aircraft took off from **Taupo** at 11 a.m. that morning.\*[8] They arrived at the island in the late afternoon and undertook a 45-minute search for Kearney but no sign was seen. The evacuated staff members were brought back to Auckland that evening.

A **Royal New Zealand Air Force P-3 Orion** made an over-flight on 21 March to provide further information on how safe it is to approach Green Lake. The **Volcanologists** aboard decided the area was still unsafe, and that the crater lake had risen by about 8 metres (26.2 ft) compared to measurements taken on 17 March. There was no cloud or ash plume.\*[9]

A group of police, the five evacuated workers, three other DOC staff and scientific staff left **Tauranga** on 18 March for the three-day boat trip to Raoul aboard the **RV Braveheart** to recover Kearney's body.\*[10] They were able to undertake a limited search, but decided that it was extremely unlikely that Kearney survived given the amount of devastation in the area around Green Lake. The **Braveheart** began the journey back to the mainland on 25 March, with three of the DOC workers staying on the island to continue research.\*[11] The three were joined by the other four evacuated workers at the start of May 2006. Two of the three will return to the mainland after the handover.\*[12]

Five hours after the eruption, the **Aura** satellite passed over and found an estimated 200 tonnes (197 long tons; 220 short tons) of **sulfur dioxide** had been released.\*[13] This confirmed that there were **magmatic** gases in the eruption, and the presence of degassing magma within the volcano. By the end of April, the activity in the area had decreased significantly and the “Alert Level” was lowered to 1.\*[14]

**HMNZS Te Mana** left for Raoul on 24 August 2006 on a resupply mission. Also on board were Kearney's sister, **Merryn McDermott**; three representatives of the **Ngāti Kuri iwi**; and **Chris Carter**, the Minister of Conservation. During a service held on 28 August, the **Ngāti Kuri** representatives performed a **tapu** lifting ceremony.\*[15] A plaque was erected to honour Kearney. **Te Mana** also allowed some volcanic monitoring to be undertaken using its **SH-2G Super Seasprite** helicopter. During a dawn flight, sample bottles were filled with crater lake water.\*[16]

A report by the New Zealand Department of Labour into the death was released on 14 October 2006. It cleared the Conservation Department and Geological and Nuclear Sciences of any negligence related to the death of Kearney. The report stated that the eruption was unpredictable and there was no indication of imminent seismic activity.\* [17]

As a geographically active 'hotspot', the **Kermadec Islands** also experience frequent earthquakes, the most recently significant of which occurred at 22:39 NZST on May 16, 2006.\* [18] The epicentre was approximately 290 km (180 mi) SSW from Raoul and measured 7.4 on the **moment magnitude scale**, and as such is classified as a 'major' earthquake by the **United States Geological Survey**. It was felt as far away as **Christchurch, New Zealand** some 1,500 km (930 mi) from the epicentre. Also of note on January 31, 2007 at 4:15:55 NZST a Magnitude 6.5 (Strong) earthquake shook the island. The epicenter was approximately 40 km (25 mi) S of Raoul and 10 km (6.2 mi) below the seabed. On December 9, 2007 at 8.28pm NZST a magnitude 7.6 earthquake shook the area, centered approximately 350 km (220 mi) north of Raoul Island at a depth of 188 km (117 mi).\* [19] On September 30, 2008 at 3:19:31 NZST a magnitude 7.0 earthquake centered 70 km (43 mi) S of Raoul occurred, with an approximate depth of 35 km (22 mi).\* [20] More recently on October 22, 2011 at 05:57:17 NZST a Magnitude 7.4 earthquake originating at 28.941S 176.045W at a depth of 39 km occurred according to the **United States Geological Survey**.

#### 4.20.6 July 2011 7.6 Earthquake

July 7, 2011 - 7:03AM. A 7.6 Magnitude earthquake occurred at a depth of 24 km, 211 km east of Raoul Island. July 7, 2011 - 8.51 AM Pacific Tsunami Warning Center scientist Barry Hirshorn told Newstalk ZB the quake generated a 1.9 metre tsunami at Raoul Island.

#### 4.20.7 October 2011 7.4 Earthquake

October 22, 2011 - 5.57PM. A 7.4 Magnitude earthquake occurred at a depth of 45 metres (148 feet), 230 km (143 mi) east of Raoul Island.

The Ministry of Civil Defence had issued the advisory while it assessed the severity of the threat to New Zealand. The Ministry was warning people in coastal areas to stay off beaches and out of the water. People were advised to avoid sightseeing and remain on alert in case the earthquake has generated a tsunami, however by mid-morning warnings had lifted.\* [21]

#### 4.20.8 Mihai Muncus-Nagy

Department of Conservation volunteer Mihai Muncus-Nagy, a 33 year old biologist from **Romania**, went missing on Raoul Island on 2 January 2012.\* [22] He went to Raoul at the end of October 2011.\* [23] His vehicle and gear was found close to where he was carrying out water temperature readings on the morning of 2 January 2012.

The remaining staff and volunteers searched the shore, but had not found any further signs of him. A helicopter was sent to Raoul by the **Rescue Coordination Centre New Zealand (RCCNZ)** from **Taupo, New Zealand** to carry out an aerial search. A **DOC** boat was also used in the search.\* [23]

Muncus-Nagy has been presumed drowned.\* [23]

#### 4.20.9 See also

- **Earthquakes in New Zealand**
- **List of extinct birds**
- **List of islands of New Zealand**
- **List of volcanoes in New Zealand**
- **New Zealand outlying islands**

#### 4.20.10 References

- [1] "NIWA National Climate Database" .
- [2] International Palm Society
- [3] Tennyson, A. & Martinson, P. (2006) *Extinct Birds of New Zealand* Te Papa Press, Wellington ISBN 978-0-909010-21-8
- [4] C. R. Veitch, C. M. Miskelly, G. A. Harper, G. A. Taylor, and A. J. D. Tennyson (2004) "Birds of the Kermadec Islands, South-west Pacific" *Notornis* 51(2): 61–90
- [5] BirdLife International. (2012). Important Bird Areas factsheet: Kermadec Islands. Downloaded from <http://www.birdlife.org> on 2012-02-03.
- [6] Ortiz-Catedral, Luis et al. (2009). "Recolonization of Raoul Island by Kermadec red-crowned parakeets *Cyanoramphus novaezelandiae cyanurus* after eradication of invasive predators, Kermadec Islands archipelago, New Zealand" (PDF). *Conservation Evidence* 6: 26–30. Retrieved 2009-06-22.
- [7] "Conservation breakthrough as kakariki re-colonise remote island" . Massey University. 2009-06-15. Retrieved 2009-06-15.
- [8] "DoC evacuates as Raoul Island erupts, 'one missing'". **New Zealand Press Association**. 17 March 2006.
- [9] "Raoul crater ruled unsafe" . **The Press**. 22 March 2006.

- [10] “Raoul five return to look for mate” . The Dominion Post. 20 March 2006.
- [11] “DOC searchers on Raoul Island to head home” . Radio New Zealand. 25 March 2006.
- [12] “Raoul survivors return to island” . NZPA. 25 March 2006.
- [13] Alert Bulletin, Raoul Island volcano, 24 March 2006
- [14] Alert Bulletin, Raoul Island volcano, 26 April 2006
- [15] “A place of death, and reconnection” . Dominion Post. 2006-08-26. Retrieved 2006-08-26.
- [16] “Frigate leaves for Raoul Island” . Dominion Post. 2006-08-24. Retrieved 2006-08-26.
- [17] “Family 'let down' by Raoul report” . The Dominion Post. 2006-10-14. Retrieved 2006-10-21.
- [18] Magnitude 7.4 - Kermadec Islands Region, United States Geological Survey
- [19] Quakes
- [20] Earthquake
- [21] “Tsunami - Potential threat to New Zealand Cancellation Update 2” . Ministry of Civil Defence. Retrieved 22 October 2011.
- [22] Anderson, Charles (8 January 2012). “Lost biologist drawn to NZ” . *Stuff.co.nz*. Retrieved 8 January 2012.
- [23] “Search for DOC man on Raoul Island called off” . *Stuff.co.nz*. 4 January 2012. Retrieved 8 January 2012.

#### 4.20.11 Further reading

- Oliver, R., 'The Vegetation of the Kermadec Islands'. *Transactions and Proceedings of the Royal Society of New Zealand*, Volume 42, 1909, p. 121. URL: RSNZ, accessed 3 January 2007.
- Polynesian stone implements
- “Raoul Island” . *Global Volcanism Program*. Smithsonian Institution.

#### 4.20.12 External links

- A visit to Raoul in 2002 by Dr. Floor Anthoni
- A history of the Bell family who lived on Raoul/Sunday Island from 1878 to 1914
- Kermadec Islands Marine Reserve (New Zealand Department of Conservation)
- Raoul Island volcano webcam and seismic information
- LINZ - highly detailed map

## 4.21 Rapa Iti

**Rapa**, sometimes called **Rapa Iti** (Little Rapa, to distinguish it from “Rapa Nui” (Big Rapa), a name for Easter Island), is the largest and only inhabited island of the Bass Islands in French Polynesia. An older name for the island is **Oparo**.<sup>[2]</sup> Its area is 40 km<sup>2</sup> with a population of almost 500 and a max elevation of 650 m. Its main town is Ahuréi.

### 4.21.1 Geography

Rapa Iti is located at 27°35′00″S 144°20′00″W﻿ / ﻿27.58333°S 144.33333°W﻿ / -27.58333; -144.33333. It is shaped roughly like a Greek final sigma (ς), with a well-protected central bay, surrounded by a ring of relatively high mountains. The whole island appears very much to be the peak of a sinking volcano, with the bay as the caldera.

Its main town, Ahuréi (or Ha'uréi), lies on the southern shore of that bay, which is called the Baie d'Ahuréi. A smaller village, 'Area, is located on the northern shore of the bay. The people are Polynesian. Former times' warfare is indicated by 28 extant ridgetop forts. Today Rapa is home to the Tahitian Choir, in which a third of the island's population sing traditional songs.

Although sometimes considered part of the Austral Islands, Rapa Iti and the Bass Islands have a different geological, linguistic and cultural history.<sup>[3]</sup>

### 4.21.2 History

Rapa Iti was first settled by Rapan-speaking Polynesians, most likely in the 13th century.<sup>[4]</sup> It is believed that the depletion of natural resources on the island resulted in warfare, and the inhabitants lived in up to 14 fortified settlements ( “pa” or "pare", a type of fort) on peaks and clifftops.<sup>[5]</sup> It is considered that the oldest of these is Morongo Uta, which was developed c. 1450–1550 AD.<sup>[6]</sup>

The first European to visit Rapa Iti was George Vancouver on 22 December 1791;<sup>[7]</sup> he named the island Oparo. Contact with Europeans brought liquor and disease, and between 1824 and 1830 over three quarters of the natives died.<sup>[7]</sup> Peruvian slavers raided the island as well.<sup>[8]</sup> When a handful of their victims were returned to the island, they brought with them smallpox, which caused an epidemic.<sup>[8]</sup> In 1826, there were almost 2000 inhabitants; forty years later, there were fewer than 120.<sup>[9]</sup>

The independent island kingdom was declared a French protectorate in 1867. The British established a coaling station on the island, which prompted France to formally annex it on 6 March 1881. Subsequently, the native monarchy was abolished and the last queen, the daughter or Parima, was deposed on 18 June 1887.

Thor Heyerdahl, notably, made excavations in Morongo Uta, seeking links between Rapa Iti and Rapa Nui (Easter Island).

### 4.21.3 Environment

The **Manatau French Polynesian Reserve** is a special French Polynesian Reserve to protect the animals and ridgetop forts of an area of southern Rapa. It is located near South Ahuréli.

The island is home to the endemic and vulnerable Rapa fruit dove which is threatened by habitat loss, predation by feral cats and hunting. Its population was estimated in 1989-90 at 274 individual birds. Other birds include the near threatened Murphy's petrel, the endangered Newell's shearwater, both of which nest there in small numbers, and the vulnerable bristle-thighed curlew which is a non-breeding visitor while migrating. Because of its significance for these species the island has been identified as an Important Bird Area by BirdLife International.\*[10]

### 4.21.4 Administration

The commune of **Rapa** consists of the islands of Rapa Iti and the four uninhabited Marotiri rocks.

### 4.21.5 References

- [1] “Population” . *Institut de la statistique de la Polynésie française*. Retrieved 10 January 2015.
  - [2] Tahiti guide
  - [3] F. Allan Hanson, *Rapan Lifeways* (1970)
  - [4] CDNN
  - [5] “Douglas Kennett, Atholl Anderson, Matthew Prebble, Eric Conte & John Southon. Prehistoric human impacts on Rapa, French Polynesia.” (PDF).
  - [6] “Morongo Uta” . Wondermondo.
  - [7] Richards, Rhys. “The Earliest Foreign Visitors and Their Massive Depopulation of Rapa-iti from 1824 to 1830” . *Journal de la Société des Océanistes*.
  - [8] Brash, Celeste; Jean-Bernard Carillet (2009). *Tahiti and French Polynesia*. Lonely Planet. pp. 236–237. ISBN 1741043166. Retrieved November 6, 2012.
  - [9] Anderson, Warwick (2000). “Infectious Diseases: Colonising the Pacific? (review)” (PDF). *Bulletin of the History of Medicine* **74** (3): 617. doi:10.1353/bhm.2000.0103.
  - [10] “Rapa” . *BirdLife data zone: Important Bird Areas*. BirdLife International. 2012. Retrieved 2012-12-27.
- F. Allan Hanson (1973). *Rapa: une île polynésienne hier et aujourd'hui*. Société des Océanistes.

### 4.21.6 External links

- Information from website of the government of French Polynesia (article not found)
- Article about a scientific study on the social history and development of Rapa Iti society (article not found)

## 4.22 Robinson Crusoe

This article is about the Chilean island. For the island in Fiji, see Robinson Crusoe Island (Fiji). For the Arkady Fiedler novel, see Robinson Crusoe Island (novel).

**Robinson Crusoe Island** (Spanish: *Isla Robinson Crusoe*), formerly known as **Más a Tierra** (Closer to Land),\*[3] is the second largest of the Juan Fernández Islands, situated 670 km (362 nmi; 416 mi) west of San Antonio, Chile, in the South Pacific Ocean. It is the most populous of the inhabited islands in the archipelago (the other being Alejandro Selkirk Island), with most of that in the town of San Juan Bautista at Cumberland Bay on the island's north coast.\*[2]

The island was home to the marooned sailor Alexander Selkirk from 1704 to 1709, and is thought to have inspired novelist Daniel Defoe's fictional Robinson Crusoe in his 1719 novel about the character.\*[4] To reflect the literary lore associated with the island and to lure tourists, the Chilean government renamed the location Robinson Crusoe Island in 1966.\*[3]

### 4.22.1 Geography



Town of San Juan Bautista, on the north coast at Cumberland Bay

Robinson Crusoe Island has a mountainous and undulating terrain, formed by ancient lava flows which have built up from numerous volcanic episodes. The highest point on the island is 915 m (3,002 ft) above sea level at El



Yunque. Intense erosion has resulted in the formation of steep valleys and ridges. A narrow peninsula is formed in the southwestern part of the island called Cordón Escarpado. The island of Santa Clara is located just off the southwest coast.\*[1]

Robinson Crusoe Island lies to the west of the boundary between the Nazca Plate and the South American Plate, and rose from the ocean 3.8 – 4.2 million years ago. A volcanic eruption on the island was reported in 1743 from El Yunque, but this event is uncertain. On 20 February 1835, a day-long eruption began from a submarine vent 1.6 kilometres (1.0 mi) north of Punta Bacalao. The event was quite minor—only a Volcanic Explosivity Index 1 eruption—but it produced explosions and flames that lit up the island, along with tsunamis.\*[1]

#### 4.22.2 Climate

Robinson Crusoe has a subtropical climate, moderated by the cold Humboldt Current, which flows northward to the east of the island, and the southeast trade winds. Temperatures range from 3 °C (37 °F) to 34 °C (93 °F), with an annual mean of 15.4 °C (60 °F). Higher elevations are generally cooler, with occasional frosts. Rainfall is greater in the winter months, and varies with elevation and exposure; elevations above 500 m (1,640 ft) experience almost daily rainfall, while the western, leeward side of the island is lower and drier.\*[5]

#### 4.22.3 Flora and fauna

The Fernandezian Region is a floristic region which includes the Juan Fernández Islands archipelago. It is in the Antarctic Floristic Kingdom, but often also included within the Neotropical Kingdom. As World Biosphere Reserves since 1977, these islands have been considered of maximum scientific importance because of the endemic plant families, genera, and species of flora and fauna. Out of 211 native plant species, 132 (63%) are endemic, as well as more than 230 species of insects.\*[6]

Robinson Crusoe Island has one endemic plant family, Lactoridaceae. The Magellanic penguin is also found there.\*[7] The Juan Fernández firecrown is an endemic and critically endangered red hummingbird, which is best known for its needle-fine black beak and silken feather coverage. The Masatierra petrel is named after the island's former name.\*[6]



Robinson Crusoe Island, seen from CS *Responder* during work on nuclear test ban hydroacoustic monitoring station in 2014.\*[8]

#### 4.22.4 History

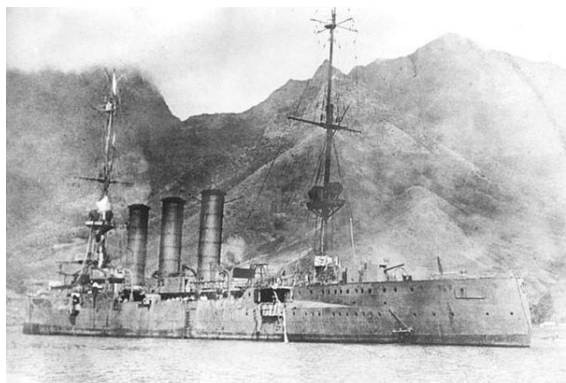
The island was first named Juan Fernandez Island after Juan Fernández, a Spanish sea captain and explorer who was the first to land there in 1574. It was also known as Más a Tierra.\*[3] There is no evidence of an earlier discovery either by Polynesians, despite the proximity to Easter Island, or by Native Americans.\*[9]

In 1704 the sailor Alexander Selkirk was marooned as a castaway on the island, where he lived in solitude for four years and four months. Selkirk had been gravely concerned about the seaworthiness of his ship, the *Cinque Ports*, and declared his wish to be left on the island during a mid-voyage restocking stop. His captain, Thomas Stradling, a colleague on the voyage of privateer and explorer William Dampier, was tired of his dissent and obliged. All Selkirk had left with him was a musket, gunpowder, carpenter's tools, a knife, a Bible, and some clothing.\*[10]

In an 1840 narrative, *Two Years Before the Mast*, Richard Henry Dana, Jr. described the port of Juan Fernandez as a young prison colony.\*[11] The penal institution was soon abandoned and the island again uninhabited\*[12] before a permanent colony was eventually established in the latter part of the 19th century. Joshua Slocum visited the island between 26 April and 5 May 1896, during his solo global circumnavigation on the sloop *Spray*. The island and its 45 inhabitants are referred to in detail in Slocum's memoir, *Sailing Alone Around the World*.\*[13]

#### World War I

During World War I, Vice Admiral Maximilian von Spee's German East Asia Squadron stopped and re-coaled at the island 26–28 October 1914, four days before the Battle of Coronel. While at the island, the admiral was unexpectedly rejoined by the armed merchant cruiser *Prinz Eitel Friedrich*, which he had earlier detached to attack Allied shipping in Australian waters. On 9 March 1915 SMS *Dresden*, the last surviving cruiser



*SMS Dresden, just prior to its scuttling in Cumberland Bay*

of von Spee's squadron after his death at the **Battle of the Falklands**, returned to the island's Cumberland Bay hoping to be interned by the Chilean authorities. Caught and fired upon by a British squadron at the **Battle of Más a Tierra** on 14 March, the ship was scuttled by its crew.\*[14]

#### 2010 tsunami

On 27 February 2010 Robinson Crusoe Island was hit by a tsunami following a magnitude 8.8 earthquake. The tsunami was about 3 m (10 ft) high when it reached the island.\*[15] Sixteen people lost their lives, and most of the coastal village of San Juan Batista was washed away.\*[16] The only warning the islanders had come from a 12-year-old girl,\*[17] who noticed the sudden drawback of the sea that presages the arrival of a tsunami wave and saved many of her neighbors from harm.\*[16]

#### 4.22.5 Society



*A fisherman with two spiny lobsters off Robinson Crusoe Island*

Robinson Crusoe had an estimated population of 843 in 2012. Most of the island's inhabitants live in the village of San Juan Bautista on the north coast at Cumberland Bay.\*[2] Although the community maintains a rustic

serenity dependent on the **spiny lobster** trade, residents employ a few vehicles, a **satellite Internet** connection and televisions. The main airstrip on the island is near the tip of the island's southwestern peninsula. The flight from **Santiago de Chile** is just under three hours. A ferry runs from the airstrip to San Juan Bautista.\*[18]

Tourists number in the hundreds per year. One activity gaining popularity is **scuba diving**.\*[18] particularly on the wreck of the German light cruiser *Dresden*, which was scuttled in Cumberland Bay during World War I.\*[14]

#### 4.22.6 In popular culture

*Apocalypse Island*, a television documentary aired by the **History Channel** on 3 January 2010, was filmed on Robinson Crusoe Island. It showed two rock formations that Canadian explorer Jim Turner claimed were badly degraded **Mayan** statues.\*[19] With no other sign of any pre-Spanish human presence on the island,\*[9] however, the program has been criticized as lacking in scientific credibility.\*[20]

#### 4.22.7 See also

- **Flora of the Juan Fernández Islands**
- **Endemic flora of the Juan Fernández Islands**
- **Endemic fauna of the Juan Fernández Islands**

#### 4.22.8 References

- [1] Torres Santibáñez, Hernán; Torres Cerda, Marcela (2004). *Los parques nacionales de Chile: una guía para el visitante* (in Spanish). Editorial Universitaria. p. 49. ISBN 978-956-11-1701-3.
- [2] “Censos de poblacion y vivienda” . Instituto Nacional de Estadísticas (2012). Retrieved 2 January 2013.
- [3] Severin, Tim (2002). *In Search of Robinson Crusoe*. New York: Basic Books. pp. 23–24. ISBN 978-046-50-7698-7.
- [4] Severin, Tim (2002). *In Search of Robinson Crusoe*. New York: Basic Books. pp. 17–19. ISBN 978-046-50-7698-7.
- [5] “Parque Nacional Archipiélago de Juan Fernández” Corporacion Nacional Forestal de Chile (2010). Retrieved 27 May 2010.
- [6] “Forest on Robinson Crusoe Island” . Wondermondo (2012). Retrieved 18 October 2012.
- [7] Hogan, C. Michael (2008). *Magellanic Penguin*. GlobalTwitcher. Retrieved 18 October 2012.
- [8] “Welcome Back HA03 —Robinson Crusoe Island” , Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (2014). Retrieved 5 April 2014.

- [9] Anderson, Atholl; Haberle, Simon; Rojas, Gloria; Seelenfreund, Andrea; Smith, Ian & Worthy, Trevor (2002). *An Archeological Exploration of Robinson Crusoe Island, Juan Fernandez Archipelago, Chile*. New Zealand Archaeological Association.
- [10] Rogers, Woodes (1712). *A Cruising Voyage Round the World: First to the South-seas, Thence to the East-Indies, and Homewards by the Cape of Good Hope*. London: A. Bell and B. Lintot. pp. 125–126.
- [11] Dana, Richard Henry (1840). *Two Years Before the Mast: A Personal Narrative of Life at Sea*. New York: Harper & Brothers. pp. 28–32.
- [12] Coulter, John (1845). *Adventures in the Pacific: With Observations on the Natural Productions, Manners and Customs of the Natives of the Various Islands*. London: Longmans, Brown & Co. pp. 32–33.
- [13] Slocum, Joshua (2012). *Sailing Alone Around the World*. Oxford: Beaufoy Publishing. pp. 77–82. ISBN 978-190-67-8034-0.
- [14] Delgado, James P. (2004). *Adventures of a Sea Hunter: In Search of Famous Shipwrecks*. Vancouver: Douglas & McIntyre. pp. 168–174. ISBN 978-1-926685-60-1.
- [15] Ricketts, Colin (17 August 2011). “Tsunami warning came too late for Robinson Crusoe Island” . *Earth Times*. Retrieved 18 October 2012.
- [16] Bodenham, Patrick (09 December 2010). “Adrift on Robinson Crusoe Island, the forgotten few” . *The Independent*. Retrieved 7 April 2014.
- [17] Harrell, Eben (2 March 2010). “Chile’s president: Why did tsunami warnings fail?” . *Time Magazine*. Retrieved 4 March 2010.
- [18] Gordon, Nick (14 December 2004). “Chile: The real Crusoe had it easy” . *The Telegraph*. Retrieved 18 October 2012.
- [19] “Armageddon: Apocalypse Island” . A&E Television Networks (2009). Retrieved 18 October 2012.
- [20] Lowry, Brian (26 June 2010). “Wackadoodle Demo Widens” . *Variety*. Retrieved 9 February 2014.

#### 4.22.9 External links

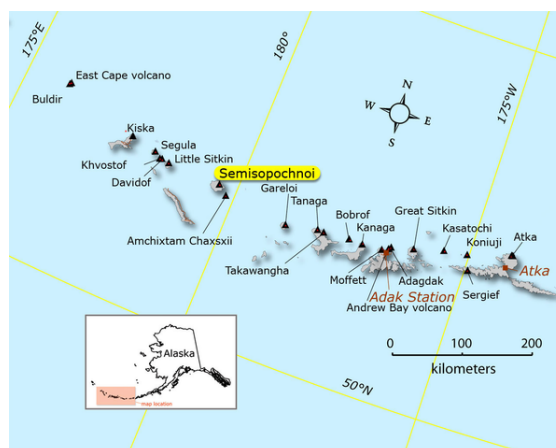
- [Routes around the island with descriptions and photos of sights](#)
- [Robinson Crusoe Island satellite map with anchorages and other ocean-related information](#)
- [A detailed map of the island showing footpaths and walkers' refuges](#)
- [Juan Fernandez photo gallery with images of landscapes, flora and fauna on the island](#)
- [“Robinson Crusoe, Moai Statues and the Rapa Nui: the Stories of Chile’s Far-Off Islands” from Sounds and Colours](#)

- [A digital field trip to Robinson Crusoe Island by Goat Island Images](#)
- [“Chasing Crusoe”](#) , a multimedia documentary about the island

### 4.23 Semisopochnoi Island



*Eastern Cerberus Cone in the Semisopochnoi Caldera.*



*Location of Semisopochnoi in the Aleutians. Amchixtam Chaxsxii, just southeast of Semisopochnoi, is an underwater volcano.*

**Semisopochnoi Island** or **Unyak Island** (Russian: Семисопочный – “having seven hills”; Aleut: *Unyax*<sup>\*</sup> [1]) is part of the Rat Islands group in the western Aleutian Islands of Alaska. The island is uninhabited and provides an important nesting area for maritime birds. The island is of volcanic origin, containing several volcanoes including Mount Cerberus. It has a land area of 85.558 square miles (221.59 km<sup>2</sup>), measuring 18 kilometres (11 mi) in length and 20 kilometres (12 mi) in width.

At 179°46' East (in the Eastern Hemisphere), the easternmost tip of Semisopochnoi is, by longitude, the easternmost land location in the United States and North America. Semisopochnoi sits only 14 minutes west of the 180th meridian.



Satellite photo showing the Seven Mountains of Semisopchnoi



Semisopchnoi nautical chart

### 4.23.1 Wildlife

Semisopchnoi has no native land mammals. Arctic foxes were introduced to the island during the 19th century for fur farming and removed in 1997. Most ground-nesting bird species (Aleutian cackling goose, rock ptarmigan) and most burrow-nesting seabirds (storm-petrels, ancient murrelets, Cassin's auklets, tufted puffins) were extirpated by foxes; Semisopchnoi Island is currently in the early stages of recovery. The island has remained free of Norway rats.

The large least and crested auklet colony near Sugarloaf Head is one of the largest among the nine auklet colonies in the Aleutian Islands. Crested auklets and least auklets breed in one colony, located on the south facing slopes of Sugarloaf Peak volcano and its associated cinder cones near Sugarloaf Head. Semisopchnoi Island also supports a significant population of red-faced cormorants.

In total, Semisopchnoi supports well over a million seabirds, most of which are least auklets or crested auklets.\* [2]

### 4.23.2 Geology

Semisopchnoi, the largest subaerial volcano of the western Aleutians, is 20 km wide at sea level and contains a caldera 8 km wide that formed as a result of collapse of a low-angle, dominantly basaltic volcano following the eruption of a large volume of dacitic pumice. The high point of the island is 1,221 meter Anvil Peak, a double-peaked cone that forms much of the island's northern part. The three-peaked, 774-meter high Mount Cerberus is a volcano within the caldera. Each of the peaks contains a summit crater; lava flows on the northern flank of Cerberus appear younger than those on the southern side. Other post-caldera volcanoes include the symmetrical 855 m high Sugarloaf Peak south-southeast of the caldera and Lakeshore Cone, a small cinder cone at the edge of Fenner Lake in the northeast part of the caldera. Most documented historical eruptions have originated from Cerberus, although Coats (1950) considered that both Sugarloaf and Lakeshore Cone within the caldera could have been active during historical time.\* [3]\* [4]\* [5]

Semisopchnoi's last known volcanic eruption was in April 1987. A historic eruption of Semisopchnoi was reported in 1873, and at least four others may have occurred in the previous hundred years, but documentation is scanty. These eruptions apparently emanated from the flanks of Mount Cerberus; the most recent flow appears to be less than a century old.\* [6]

### 4.23.3 Easternmost North America location debate

The other contenders for the title of easternmost North America location are Nordost Rundingen, Greenland at 12°08' West and Cape Spear, Newfoundland, Canada at 52°37' West—which, along with Semisopchnoi are all island locations. Cape St. Charles at 55° 37' West on the Labrador Peninsula is the easternmost point of mainland North America. Cape Spear is the easternmost location relative to the geographic center of North America if Greenland is excluded because it is not politically part of North America. For this and other reasons, Cape Spear is traditionally considered to be the easternmost location in North America. The locations within the territory of the Aleutian Islands which lie exactly on the 180th meridian are by longitude simultaneously the most westerly and most easterly points of the USA.

### 4.23.4 References

- [1] Bergsland, K. (1994). *Aleut Dictionary*. Fairbanks: Alaska Native Language Center.
- [2] Audubon Site Profile, Semisopchnoi Island
- [3] Global Volcanism Program, Semisopchnoi

- [4] Coats R R, 1950. Volcanic activity in the Aleutian Arc. U S Geol Surv Bull, 974-B: 35-47
- [5] Alaska Volcano Observatory, Semisopchnoi
- [6] Wood, C. A., and Kienle, Juergen, (eds.), 1990, Volcanoes of North America: United States and Canada: New York, Cambridge University Press, 354 p.

### 4.2.3.5 External links

- Semisopchnoi Photos Photographs from Semisopchnoi Island, July 2008

Coordinates: 51°57′05″N 179°36′03″E﻿ / ﻿51.95139°N 179.60083°E﻿ /

## 4.24 Socorro Island

This article is about the Mexican island. For the Chilean island, see Guamblin Island.

Coordinates: 18°47′04″N 110°58′30″W﻿ / ﻿18.78444°N 110.97500°W﻿ / 18.78444; -110.97500 **Socorro Island** (Spanish: *Isla Socorro*) is a small volcanic island in the Revillagigedo Islands, a Mexican possession lying some 600 kilometers off the country's western coast at 18°48'N, 110°59'W. The size is 16.5 by 11.5 km, with an area of 132 km<sup>2</sup>. It is the largest of the four islands of the Revillagigedo Archipelago.

### 4.24.1 Geology

The island rises abruptly from the sea to 1,050 meters (3,440 feet) in elevation at its summit. Isla Socorro is a shield volcano.

The island is part of the northern Mathematicians Ridge, a mid-ocean ridge that became largely inactive 3.5 million years ago when activity moved to the East Pacific Rise. All four islands along with the many seamounts on the ridge are post-abandonment alkaline volcanoes. Socorro Island is unusual in that it is the only dominantly silicic peralkaline volcanic island in the Pacific Ocean.\*[1]

It most recently erupted in late January-early February, 1993, which was a submarine flank eruption off the coast from Punta Tosca. An earlier eruption was on May 21, 1951; earlier eruptions probably occurred in 1905, 1896 and 1848. The initial volcanic event probably occurred in 3090 BC +/- 500 years.\*[2] **Mount Evermann** (Spanish: *Cerro Evermann*) is the name given to the summit dome complex, in honor of ichthyologist Barton Warren Evermann. The island's surface is broken by furrows, small craters, and numerous ravines, and covered in lava domes, lava flows and cinder cones.\*[3]

There is a naval station 18°43′41″N 110°57′07″W﻿ / ﻿18.728°N 110.952°W﻿ / 18.728; -110.952, established in 1957, with a population of 250 (staff and families), living in a village with a church, that stands on the western side of Bahia Vargas Lozano, a small cove with a rocky beach, about 800 meters east of Cabo Regla, the southernmost point of the island. The station is served by a dock, a local helipad and airport *Isla Socorro*, located six kilometers to the north, at 18°46′23″N 110°55′52″W﻿ / ﻿18.773°N 110.931°W﻿ / 18.773; -110.931. There is a freshwater spring about 5 km northwest of Cabo Regla, at the shoreline of Ensenada Grayson (or Caleta Grayson), an inlet. This is brackish or even covered by the sea at high tide. Apart from some temporary pools and maybe one that is more permanent, a small freshwater seep exists most of the time some 45 meters (49 yards) inland at Bahia Lucio Gallardo Pavon (Binner's Cove), 800 meters NW of the naval station.\*[4]

### 4.24.2 History



Offshore Socorro Island

No evidence of human habitation on Socorro exists before its discovery by Spanish explorers. Hernando de Grijalva and his crew discovered an uninhabited island on 19 December 1533 and named it *Santo Tomás*.\*[5]\*[6] In 1542, Ruy López de Villalobos, while exploring new routes across the Pacific, rediscovered *Inocentes* and renamed it *Isla Anublada* ( "Cloudy Island" ) due to the clouds frequently forming on the northern slopes of Mount Evermann, and again in 1608, Martín Yañez de Armida, in charge of another expedition, visited *Santo Tomás* and changed its name to *Isla Socorro* after Our Lady of Perpetual Help (*Virgen del Perpetuo Socorro*).\*[7]

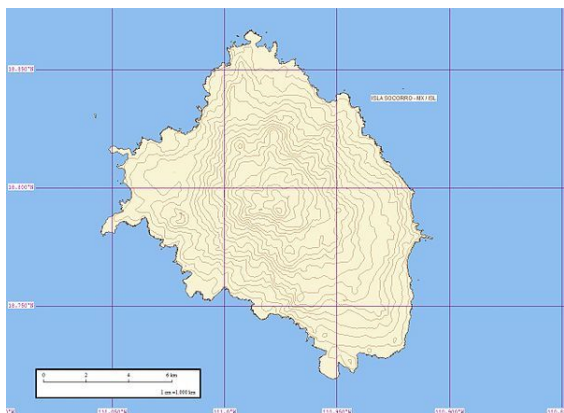
At the beginning of the twentieth century, Barton Warren Evermann, director of the California Academy of Sciences in San Francisco promoted the scientific exploration of the island. The most comprehensive biological collections were obtained at this time. The volcano on Socorro was renamed in his honor.

Archie Smith, an American laborer from San Diego, was abandoned on the island for one month in 1929 before being rescued by a passing fishing boat.\*[8]

In September 1997, the island was struck by Hurricane

Linda, one of the strongest hurricanes ever recorded.

### 4.24.3 Ecology



Map of Socorro Island



Location of Socorro Island and the rest of the Revillagigedo Archipelago, and extent of Mexico's western EEZ in the Pacific

The lowlands of Socorro – except on the northern, more humid side – are covered with thick shrubland, consisting mainly of endemic *Croton masonii* and a cactus, probably Engelmann's prickly pear (*Opuntia engelmannii*). Above 650 metres (2,130 ft) and on the northern side, a richer vegetation occurs. This includes small trees such as *Ficus cotinifolia*, black cherry (*Prunus serotina*\* [note 1]), and the endemic *Guettarda insularis*, which bear epiphytic orchids (*Epidendrum nitens*, *E. rigidum* and the endemic *Pleurothallis unguicallosa*)\* [4]

The native land fauna is depauperate, with birds predominating and mammals absent. There is one endemic species of iguanid lizard (*Urosaurus auriculatus*) and the land crab *Gecarcinus planatus* which occurs on islands throughout the region.\* [4]

Sheep, cats and rodents were introduced to the island by human activity; more recently, the locust *Schistocerca piceifrons* has also established itself on the island.\* [9] Unlike the mammals on Guadalupe Island or Clarión,

their impact on the local flora was minor, but cat predation has had a drastic effect since the mid-1970s due to the fauna's island tameness,\* [4]\* [10] and the locusts that swarm twice a year seriously damage vegetation during that time. There have been no recorded extinctions of plants on Socorro; several birds have been drastically affected by cat predation however, and one taxon, the Socorro dove, has gone extinct in the wild.

Socorro is an important breeding location for several seabirds, many of which have here one of their north(east)ernmost breeding colonies. The present status of these birds is not well known, and they presumably have suffered from cat predation. In 1953, the following taxa were present:

- Wedge-tailed shearwater, *Puffinus pacificus* (or *Ardenna pacifica*)
- Western red-billed tropicbird, *Phaethon aethereus mesonauta* – breeding suspected but not verified
- Nazca booby, *Sula granti* – breeding suspected but not verified
- Northeast Pacific brown booby, *Sula leucogaster brewsteri* – breeding suspected but not verified
- East Pacific great frigatebird, *Fregata minor ridgwayi* – breeding suspected but not verified; a doubtfully distinct subspecies
- East Pacific sooty tern, *Onychoprion fuscatus crissalis* – a doubtfully distinct subspecies
- East Pacific brown noddy, *Anous stolidus ridgwayi*

Non-endemic landbirds and shorebirds occur mostly as vagrants or use the island as a stopover during migration; the northern mockingbird became established in the late 20th century.\* [9] Among those that are recorded not infrequently are great blue heron, Hudsonian curlew, spotted sandpiper and wandering tattler. Unlike the situation on smaller and more isolated Clarión, wind-blown or vagrant birds seem to constitute the bulk of the recorded species, including brown pelican, osprey, peregrine falcon, semipalmated plover, willet, sanderling, belted kingfisher and buff-bellied pipit. It may be that this puzzling observation is due to the presence of the red-tailed hawks and cats, which has at least made the local *Urosaurus* more wary than its relative on Clarión, and might deter passing birds from stopping on Socorro.\* [4]

### Endemism

Being the largest of the Revillagigedo Islands and closer to mainland than Clarión, Socorro sports a rich array of endemic taxa, mainly plants and landbirds as well as lizards. Some are threatened due to the presence of feral cats.\* [11]

### Animals



The Socorro dove (*Zenaida graysoni*) only survives in captivity at present

- Socorro parakeet, *Aratinga brevipes* (endangered)
- Socorro red-tailed hawk, *Buteo jamaicensis socorroensis*
- Socorro common ground dove, *Columbina passerina socorroensis*
- Socorro elf owl, *Micrathene whitneyi graysoni* (probably extinct since c. 1970)
- Socorro mockingbird, *Mimodes graysoni* (critically endangered)
- Socorro yellow-crowned night heron, *Nycticorax violaceus gravirostris* (or *Nyctanassa violacea gravirostris*)
- Socorro tropical parula, *Parula pitiayumi graysoni*
- Socorro towhee, *Pipilo (maculatus) socorroensis*
- Townsend's shearwater, *Puffinus auricularis* (critically endangered; recently extirpated from San Benedicto and probably Clarión)
- Socorro wren, *Troglodytes sissonii* (near threatened)
- Socorro dove, *Zenaida graysoni* (extinct in the wild)
- *Urosaurus auriculatus* (endangered)

#### Plants\* [12]

*Brickellia peninsularis* var. *amphithalassa*, *Cheilanthes peninsularis* var. *insularis*, *Nicotiana stocktonii*, *Spermacoce nesiotica* and *Zapoteca formosa* ssp. *rosei* are near-endemics, being restricted to Socorro and Clarión. Whether *Teucrium townsendii* ssp. *affine* is the same plant as those on San Benedicto is not conclusively determined.\* [12]

#### 4.24.4 Visiting information

Socorro Island is a popular scuba diving destination known for underwater encounters with dolphins, sharks, manta rays and other pelagic animals. Since there is no public airport on the island, divers visit here on live-aboard dive vessels. The most popular months are between November and May when the weather and seas are calmer.

#### 4.24.5 See also

- List of volcanoes in Mexico

#### 4.24.6 Notes

- [1] Probably ssp. *capuli* according to biogeography, Brattstrom & Howell (1956) *contra* CMICD (2007)

#### 4.24.7 References

- [1] Bohrson, Wendy A.; Reid, Mary R. (1997). "Genesis of Silicic Peralkaline Volcanic Rocks in an Ocean Island Setting by Crustal Melting and Open-system Processes: Socorro Island, Mexico". *Journal of Petrology* **38** (9): 1137–1166. doi:10.1093/ptroj/38.9.1137.
- [2] Global Volcanism Program | Socorro | Eruptive History. Volcano.si.edu. Retrieved on 2013-03-31.
- [3] Global Volcanism Program (2007): Socorro. Version of 2007-JUN-10. Retrieved 2007-NOV-13.
- [4] Brattstrom, Bayard H. & Howell, Thomas R. (1956). "The Birds of the Revilla Gigedo Islands, Mexico" (PDF). *Condor* **58** (2): 107–120. doi:10.2307/1364977.
- [5] Brand, Donald D. (1967). Friis, Herman R., ed. *The Pacific Basin. A History of its Geographical Exploration*. New York: American Geographical Society. p. 370.
- [6] American Geographical Society of New York (1967), Special publication, issue 38, p. 370, American Geographical Society, ISSN 0065-843X
- [7] "Socorro Island, Mexico". CTBTO. Retrieved 20 March 2011.
- [8] "Modern Robinson Crusoe Is Rescued from Lonely Island". *The Bend Bulletin*. 1 July 1929. Retrieved 30 May 2015.
- [9] "*Mimus graysoni*". *IUCN Red List of Threatened Species. Version 2007*. International Union for Conservation of Nature. 2007. Retrieved 23 November 2007.
- [10] BirdLife International (2007): Socorro Dove – BirdLife Species Factsheet. Retrieved 2007-NOV-24.
- [11] Socorro Island's endemics and cats
- [12] California/Mexico Island Conservation Database (CMICD, 2007): Plant accounts: Socorro. Retrieved 2007-NOV-13.

#### 4.24.8 External links

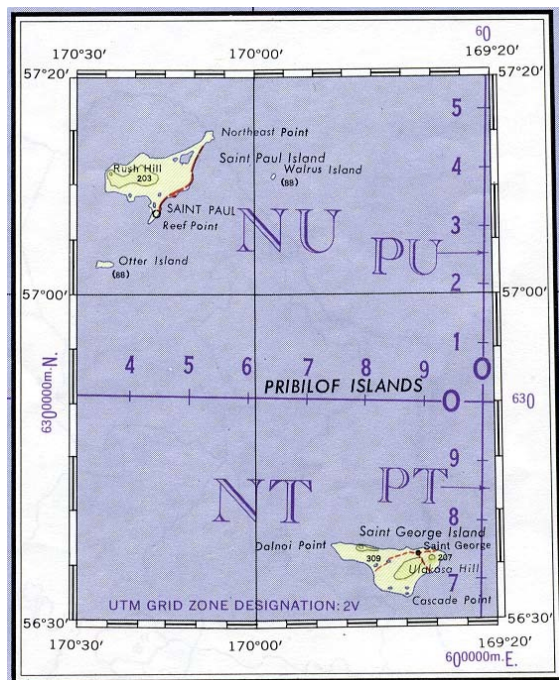
- Socorro Endemic Bird Area (BirdLife International)

### 4.25 St George Island



Location in Alaska

The **Pribilof Islands** (formerly the **Northern Fur Seal**



Map of the Pribilof Islands

**Islands**) are a group of four volcanic islands off the coast of mainland Alaska, in the Bering Sea, about 200 miles (320 km) north of Unalaska and 200 miles southwest of Cape Newenham. The Siberia coast is roughly 500 miles (800 km) northwest. About 200 km<sup>2</sup> (77 sq mi) in total area, they are mostly rocky and are covered with tundra, with a population of 572 as of the 2010 census.

#### 4.25.1 Principal islands

The principal islands are Saint Paul and Saint George. The former was named for the Feast of Saints Peter and Paul, on the day of which the island was discovered; the latter was probably named for the ship sailed by the islands' discoverer, Gavriil Pribilof.\*[1] The Otter and Walrus islets are near St. Paul. The total land area of all the islands is 75.072 sq mi (194.44 km<sup>2</sup>). The islands are part of the Bering Sea unit of the Alaska Maritime National Wildlife Refuge.\*[2]

#### 4.25.2 Fur trade

While oral traditions of the Aleut people maintain the islands were sparingly visited, “no ethnohistoric or archaeological evidence points to the use or occupation of the Pribilof Islands... by any native people prior to the Russian period in Alaska.”\*[3] The seasonal migrations of the Northern fur seal became known by the Russians in the 1780s. Swimming north through the Aleutian Islands, the seals returned in the autumn with newly born pups. The unknown northern breeding grounds became a focus of Russian trappers. An employee of the Lebedev-Lastochkin Company, Gavriil Pribylov, sailed in 1786 to discover the location, after disobeying orders to retrieve company property in the Kurile Islands.\*[4] The rookeries Pribylov visited held upwards of four million seals, for which they became famous.\*[3] The islands became site to the LLC's first artel in what later became Russian America.\*[4]

With the creation of the Russian-American Company, a monopoly, Russian operations continued on the islands. Under the Alaska Purchase sovereignty was passed to the United States in 1867. From 1870 to 1890, the U.S. government leased them to the Alaska Commercial Company. From 1890 through 1910, the North American Commercial Company held the monopoly on seal-hunting there, but the industry shrank considerably owing to seal-hunting on the open sea.

The North Pacific Fur Seal Convention of 1911 was signed by Canada, Japan, Russia, and the United States to restrict hunting in the area. Under the Fur Seal Act\*[5] of 1966, hunting of the seals was forbidden in the Pribilofs, with the exception of subsistence hunting by native Aleuts.

#### 4.25.3 Seal Island Historic District

Main article: Seal Island Historic District

Naturalist and paleontologist Roy Chapman Andrews visited the island in 1913 aboard the schooner *Adventuress* in her maiden voyage with John Borden and crew. His films of fur seals led to efforts to protect the animals. The



buildings on St. George and St. Paul islands related to the hunting of the Northern Fur Seal make up the national historic district.

#### 4.25.4 Today

Residents are concentrated in the towns of St. Paul and St. George, each on an island of the same name. St. Paul has a population of 479 (2010 census), with its economy heavily dependent on the annual taking of the snow crab and on subsistence and commercial halibut harvests. Support services to commercial fleets plying the waters of the Bering Sea also contribute to the economy. The balance of economic activity on the island relates to working for the government. The U.S. Coast Guard maintains a base on St. Paul, but no longer maintains a LORAN-C master station, as the technology has been replaced by GPS navigation. The National Weather Service has a station on the island, and the National Oceanic and Atmospheric Administration maintains a presence. St. George has a population of 102. The economy is similar to that of St Paul. Many of the residents of the islands are related.

The Pribilof Islands are a birdwatching attraction, home to many species that do not fly in North America beyond Alaska. More than 240 species have been identified, and an estimated two million seabirds nest there annually. St. Paul is particularly popular, having a high cliff wall, known as Ridge Wall, above the Bering Sea.

#### 4.25.5 See also

- Harrison Gray Otis, chief government agent in 1879

#### 4.25.6 References

- [1] Chisholm, Hugh, ed. (1911). "Pribilof Islands". *Encyclopædia Britannica* (11th ed.). Cambridge University Press.
- [2] Bering Sea Unit, AMNWR U.S. Fish and Wildlife
- [3] Veltre, Douglas W. and Allen P. McCartney. *Russian Exploitation of Aleuts and Fur Seals: The Archaeology of Eighteenth and Early Nineteenth-Century Settlements in the Pribilof Islands, Alaska*. *Historical Archaeology* 36, No. 3 (2002), pp. 8–17.
- [4] Solojova, Katerina and Aleksandra Vovnyanko. *The Rise and Decline of the Lebedev-Lastochkin Company: Russian Colonization of South Central Alaska, 1787–1798*. *The Pacific Northwest Quarterly* 90, No. 4 (1999), pp. 191–205.
- [5] Fur Seal Act of 1966 (16 U.S.C. 1151–1187, P.L. 89-702, November 2, 1966, 80 Stat. 1091)

#### 4.25.7 External links

- The AMIQ Institute – a research project documenting the Pribilof Islands and their inhabitants
- FURSEAL.HTML – summary of the Fur Seal Act at U.S. Fish & Wildlife Service web site. Retrieved on April 16, 2008.
- 16 U.S.C. CHAPTER 24 —CONSERVATION AND PROTECTION OF NORTH PACIFIC FUR SEALS – text of the U.S. Code on the U.S. Government Printing Office web site. Retrieved on April 16, 2008.
- Alaska Fisheries Science Center Historical Corner: The Pribilof Islands Retrieved on July 23, 2014.

Coordinates: 56°50′N 170°00′W﻿ / ﻿56.833°N 170.000°W﻿ /

### 4.26 Takuu Atoll



Tauu

Location of Tauu Atoll in the Pacific Ocean

**Takuu**, pronounced (*Tau' u' u*), known also as **Takuu Mortlock** or **Marqueen Islands**,\* [1] is a small, isolated atoll off the east coast of Bougainville in Papua New Guinea.

#### 4.26.1 Geography

Takuu lies about 250 km to the northeast of Kieta, capital of Bougainville. The atoll consists of about 13 islands to the east and one island to the northwest. Its position is 4°45'S 157°2'E / 4.750°S 157.033°E. Takuu Island is the southernmost and largest of the islands on the eastern side



*Takuu Atoll seen from space. Courtesy NASA.*

of the atoll. Most of the population however, lives on a small neighbouring island named Nukutoa.

The islands in the atoll are very low-lying, about a meter above the high tide mark. Local rise in sea level has been noticed by the people of Takuu and by Richard Moyle, an anthropologist who has been visiting for the last decade. It is, however, much lower than the publicised 20 centimeters a year. Two scientists (Scott Smithers and John Hunter) who visited the atoll in November and December 2008 say it does not appear to be sinking due to tectonic activity.

While the atoll is likely to persist physically for some time, a variety of problems due to apparent climate-change related phenomena and the political situation are making life on Takuu very difficult. Professor Richard Moyle of Auckland University has predicted that climate change will eventually extinguish the atoll's ability to sustain life. "Takuu families living elsewhere in Papua New Guinea will take in as many as they can, but with no single resettlement location, I can't see Takuu continuing to function as a community" (Wane 2005:10).

#### 4.26.2 Population and culture

The islands are inhabited by approximately 400 people of Polynesian origin. Takuu is one of the Polynesian outlier cultures which are situated outside of the Polynesian Triangle. The people of Takuu have traditionally placed great value on the retention of their indigenous practices and religious sites. To protect Takuu from outside influences, the Ariki (chief) banned Christian missionaries for the last 25 years. Only four researchers have been permitted to spend time on the islands in that time. The ban was only lifted in the last five years, as young islanders who had lived and studied on the Papua New Guinea mainland returned to their homeland. A number of churches have now been established on Nukutoa.

Since 2006 a team of filmmakers (principally Briar March and Lyn Collie) have visited the atoll twice, making a documentary that records culture and life on the atoll, and examines the possibility that the community

might have to relocate to the Bougainville mainland if their physical situation worsens. The second shoot in 2008 included the visit of scientists Scott Smithers and John Hunter.

Traditional life continues to this day on Takuu. Traditional thatched houses stand in crowded rows, so close to each other that the eaves almost touch. There are few trees on the island apart from coconut palms, and the main street serves as a marae, a space for ritual ceremonies. Music is still a fundamental part of life on Takuu. Because of the long period of isolation, many of the indigenous songs, stories and dances have survived. Many of the songs date from the period before European contact, which occurred in the mid 19th century. The songs tell stories of voyages between the islands, while "dance performances fill 20 or 30 hours a week" (Wane 2005). Many of the songs are celebrations of successful relationships, whether relationships that link extended families together in productive activity or relationships binding people with their ancestors in times of need.



Nukutoa village, Takuu, 2000. Photo:Hamish McDonald

#### 4.26.3 Language

The people of Takuu speak a Polynesian language. Recent classifications of the Polynesian languages place the Takuu language in an Ellicean branch, along with Nukuoro, Kapingamarangi, Nukuria, Nukumanu, Luangiua, and Sikaiana. Twentieth-century classifications had placed these languages in a Samoic Outlier group.\* [2]

#### 4.26.4 Economy

The local economy depends on agriculture and fishing. In recent years, the cultivation of food plants has grown steadily more difficult as the fresh water table becomes contaminated by sea water. Some of the traditional taro gardens have salt water flowing into them at high tide, which kills the crop. As a result, the returns from culti-



High tide threatens Nukutoa island, Takuu

vation are diminishing and the people have been forced to appeal to the Papua New Guinea and Bougainville Regional governments for assistance. In 2001, the community faced a time of great deprivation and hunger when the supply ship that regularly visits the islands was laid up for six months for repairs - and this is not unusual.

In early 2006 a cyclone devastated the islands and added to their already compromised situation. In December 2008, a series of floods at high tide over three days washed away kitchens, flooded homes and destroyed a number of churches, terrifying the people. The service boat was unable to come for several weeks afterwards, emphasising the vulnerability of the atoll community. It appears that some of the community are now looking to relocate permanently to the Bougainville mainland.

#### 4.26.5 References

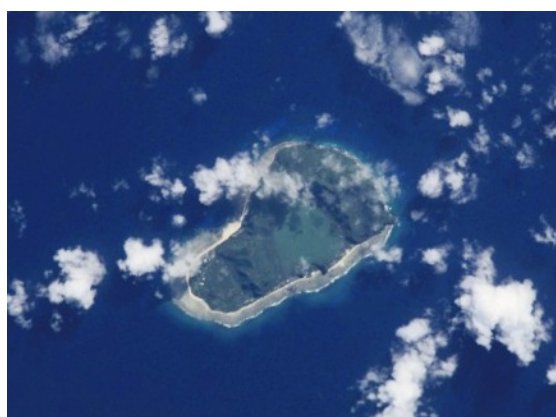
- [1] Richard Parkinson et al. *Thirty years in the South Seas*, 1999
- [2] Austronesian Basic Vocabulary Database
- Joanna Wane, 2005. 'Before the Flood'. *Ingenio et Labore: Magazine of the University of Auckland*, Spring 2005, 10–12. Accessed 19 May 2009.
- Herb Kawainui Kāne, *Evolution of the Hawaiian Canoe*, 1998. [http://pvs.kcc.hawaii.edu/ike/kalai\\_waa/kane\\_evolution\\_hawaiian\\_canoe.html](http://pvs.kcc.hawaii.edu/ike/kalai_waa/kane_evolution_hawaiian_canoe.html). Accessed 17 January 2011.

#### 4.26.6 External links

- Before the flood *Ingenio* magazine, University of Auckland (pdf file)
- Mortlock Islands The two distinct island groups named “Mortlock Islands”
- Locals face starvation as their Island home sinks [CNN.com/World](http://www.cnn.com/World)

- Musical Memory of Takuu Royal Society of New Zealand, Marsden Fund Newsletter
- PNG island sinking *World today* archives, ABC On-line (Australia)
- Takuu Islands Association An associated dedicated to saving the islands
- Takuu's tragedy unfolding *Islands Business*
- There once was an Island

### 4.27 Tikopia



NASA picture of Tikopia.

**Tikopia** is a small high island in the southwestern Pacific Ocean. Covering an area of 5 square kilometers (2 sq. mi.), the island is the remnant of an extinct volcano. Its highest point, Mt. Reani, reaches an elevation of 380 meters (1,247 ft) above sea level. Lake Te Roto covers an old volcanic crater which is 80 metres (260 ft) deep.\* [1]

The first Europeans arrived on the 22nd of April of 1606 as a part of the Spanish expedition of Pedro Fernández de Quirós.\* [2]

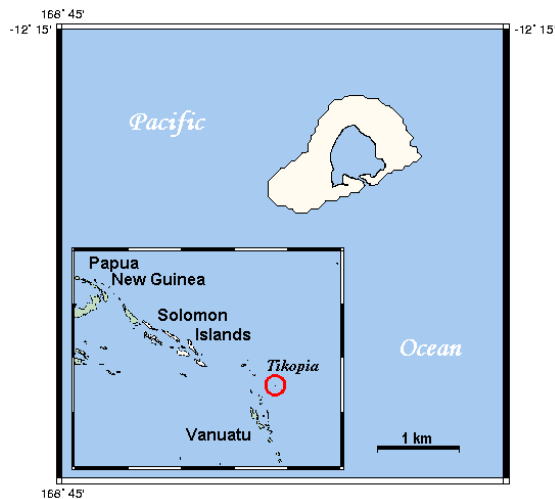
Tikopia's location is relatively remote. It is sometimes grouped with the Santa Cruz Islands. Administratively, Tikopia belongs to Temotu Province as the southernmost of the Solomon Islands. Some discussions of Tikopian society include its nearest neighbour, the even tinier island of Anuta.

#### 4.27.1 A Polynesian outlier

While it is located in the Melanesia region of the Pacific the people of Tikopia are culturally Polynesian. Tikopia is therefore a Polynesian outlier. The linguistic analysis indicates that Tikopia was colonized by seafaring Polynesians, mostly from the Ellice Islands. In Tikopian mythology Atua Fafine and Atua I Raropuka are creator gods and Atua I Kafika is the supreme sky god.

The time frame of the migration is not precisely identified but is understood to be some time between the 10th century to the mid-13th century.\* [3] Although the arrival of the voyagers in Anuta could have occurred later. The pattern of settlement that is believed to have occurred is that the Polynesians spread out from **Tonga** and other islands in the central and south eastern pacific islands. During pre-European-contact times there was frequent canoe voyaging between the islands as **Polynesian navigation** skills are recognised to have allowed deliberate journeys on double-hull sailing canoes or **outrigger canoes**.\* [4] The voyagers moved into the Tuvaluan atolls, with **Tuvalu** providing a stepping stone to migration into the **Polynesian Outlier** communities in **Melanesia** and **Micronesia**.\* [5]\* [6]\* [7]

#### 4.27.2 Population



*Tikopia and inset showing position*

The population of Tikopia is about 1,200, distributed among more than 20 villages mostly along the coast. The largest village is *Matautu* on the west coast,\* [1] not to be confused with *Mata-Utu*, the capital of Wallis and Futuna. Historically, the tiny island has supported a high-density population of a thousand or so. Strict social controls over reproduction prevented further increase.\* [8]\* [9] Unlike most of the Solomon Islands, the inhabitants are **Polynesians**, their language, **Tikopian**, is a member of the **Samoic** branch of the **Polynesian languages** and is generally referred to as a **Polynesian outlier**.

Tikopians practice an intensive system of agriculture (which has been compared to **permaculture**), similar in principle to forest gardening and the gardens of the New Guinea highlands. Their agricultural practices are strongly and consciously tied to the population density.\* [1] For example, around A.D. 1600, the people agreed to slaughter all pigs on the island, and substitute fishing, because the pigs were taking too much food that could be eaten by people.\* [1] Tikopians have develop rit-

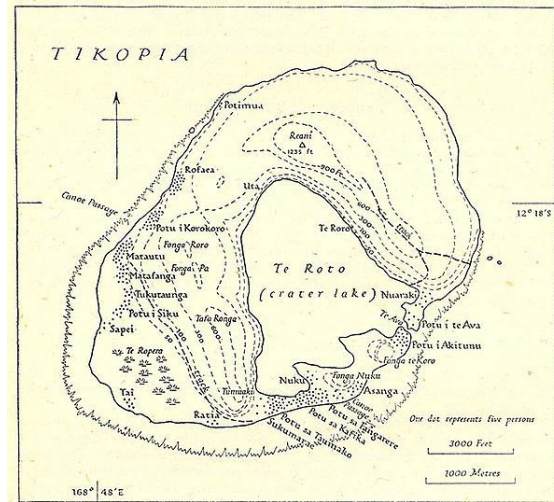


Fig. 227. Tikopia

Scale, orientation, coastline and form lines are only approximate. The reef continues as a very narrow fringe round the northern coast. Two main tracks only are shown; there are also less important tracks through cultivations; and the beach is also used as a highway. Based on: (1) R. Firth, *We, The Tikopia*, pp. xviii, xix (London, 1936); (2) R. Firth, *Primitive Polynesian Economy*, p. 40 (London, 1939).

*An old map of Tikopia from the 40's*

uals and figurative constructions related to their fishing practices.\* [10]

Unlike the rapidly Westernizing society of much of the rest of Temotu Province, Tikopia society is little changed from ancient times. Its people take great pride in their customs, and see themselves as holding fast to their Polynesian traditions while they regard the **Melanesians** around them to have lost most of theirs.\* [11] The island is controlled by four chiefs (*ariki*) Kifika, Tafau, Taumako and Fangarere, with the *ariki* Kifika recognised as the first among equals.\* [12]

Tikopians have a highly developed culture with a strong Polynesian influence, including a complex social structure.\* [1]

#### 4.27.3 Field work on Tikopia by Raymond Firth

New Zealand anthropologist, **Raymond Firth**, who lived on Tikopia in 1928 and 1929, detailed the social life of Tikopia at that time. He showed how the society was divided geographically into two zones and was organized into four clans, headed by clan chiefs.\* [1] At the core of social life was the *te paito* - the house inherited from male (patrilineal) ancestors, who were buried inside it. Relationships with the family grouping of one's mother (matrilateral relations) were also very important. The relations between a mother's brother and his nephew had a sacred dimension: the uncle oversaw the passage of his nephew through life, in particular, officiating at his manhood ceremonies. Intricate economic and ritual links between *paito* houses and deference to the chiefs within the clan organization were key dimensions of island life.

Raymond Firth speculates about the ways population control may have been achieved, including celibacy, warfare (including expulsion), infanticide and sea-voyaging (which claimed many youths).

#### 4.27.4 Christianity

The Melanesian Mission (Anglican) first made contact with Tikopia in 1858. A mission teacher was not allowed to settle on Tikopia until 1907.<sup>[1]</sup><sup>[11]</sup> Conversion to Christianity of the total population did not occur until the 1950s.<sup>[11]</sup>

The introduction of Christianity resulted to the banning of traditional birth control,<sup>[8]</sup> which had the consequence of a 50% increase of the population: 1,200 in 1920 to 1,800 in 1950. The increase in population resulted in migration to other places in the Solomon Islands including in the settlement of Nukukaisi in Makira.<sup>[8]</sup>

#### 4.27.5 Cyclone Zoe

Cyclone Zoe in December 2002 devastated the vegetation and human settlements in Tikopia.<sup>[13]</sup><sup>[14]</sup> Despite the extensive damage, no deaths were reported, as the islanders followed their traditions and sheltered in the caves in the higher ground. The narrow bank that separated the freshwater lagoon from the sea was breached by the storm, resulting in the continuing contamination of the lagoon and the threatened death of the sago palms on which the islanders depend for survival.<sup>[14]</sup> A remarkable international effort by “friends of” the island, including many yacht crews who had had contact with Tikopia over the decades, culminated in the construction in 2006 of a gabion dam to seal the breach.<sup>[14]</sup>

#### 4.27.6 See also

- Melanesia
- Oceania
- Pacific Islands
- Polynesian outlier
- Jared Diamond's book *Collapse* describes Tikopia as a success case in matching the challenges of sustainability, contrasting it with Easter Island.

#### 4.27.7 References

- [1] “Tikopia” . *Solomon Islands Historical Encyclopaedia 1893-1978*. Retrieved 18 May 2015.
- [2] Kelly, Celsus, O.F.M. *La Austrialia del Espiritu Santo. The Journal of Fray Martín de Munilla O.F.M. and other documents relating to the Voyage of Pedro Fernández de*

*Quirós to the South Sea (1605-1606) and the Franciscan Missionary Plan (1617-1627)* Cambridge, 1966, p.39, 62.

- [3] Kennedy, Donald G. (1929). “Field Notes on the Culture of Vaitupu, Ellice Islands” . *Journal of the Polynesian Society* **38**: 2–5.
- [4] Bellwood, Peter (1987). *The Polynesians – Prehistory of an Island People*. Thames and Hudson. pp. 39–44.
- [5] Bellwood, Peter (1987). *The Polynesians – Prehistory of an Island People*. Thames and Hudson. pp. 29, 54. ISBN 0500274509.
- [6] Bayard, D.T. (1976). *The Cultural Relationships of the Polynesian Outiers*. Otago University, Studies in Prehistoric Anthropology, Vol. 9.
- [7] Kirch, P.V. (1984). “The Polynesian Outiers” . *Journal of Pacific History* **95** (4): 224–238. doi:10.1080/00223348408572496.
- [8] Macdonald, Judith (1991). *Women of Tikopia*. Thesis (PhD - Anthropology) University of Auckland.
- [9] Resture, Jane. “Tikopia” . *Solomon Islands*. Retrieved 18 May 2015.
- [10] Firth, Raymond (1981). “Figuration and symbolism in Tikopia fishing and fish use” . 37 (72 & 73) *Journal de la Société des Océanistes*, pp219-226. Retrieved 18 May 2015.
- [11] Macdonald, Judith (2000). “Chapter 6, Tikopia and “What Raymond Said” ”. *Ethnographic Artifacts: Challenges to a Reflexive Anthropology* (PDF). University of Hawaii Press: edited by S. R. Jaarsma, Marta Rohatynskij. pp. 112–13.
- [12] Macdonald, Judith (2003). “Tikopia” . *Volume 2, Encyclopedia of Sex and Gender: Men and Women in the World's Cultures*. edited by Carol R. Ember, Melvin Ember, Springer. pp. 885–892.
- [13] “Tikopia project” . *help save a civilization*. Retrieved 18 May 2015.
- [14] Baldwin, James. “Excerpt from the book ‘Across Islands and Oceans’ ”. *Tikopia Island: A little-known outpost of traditional culture in the South Pacific*. Retrieved 18 May 2015.

#### 4.27.8 External links

- (The Island of Tikopia. HTV International/Channel 4 UK 1984) Early documentary film for UK television by Krov and Ann Menuhin. Part of the series of South Seas Voyage. <https://www.youtube.com/watch?v=7QEPkMa3avA>
- Flaskepost fra stillehavet (Message in a Bottle from the Pacific Ocean) A children's television program produced by NRK about a Norwegian family that spends a year living on the Island.
- An essay on Tikopia, prepared for the BBC

- BBC photo essay, from the aftermath of Cyclone Zoe Despite the overwhelming devastation and the greatest fears, no one on Tikopia was killed in the disaster.
- Tools and practical help after the cyclone
- Restoring the freshwater lagoon of Tikopia
- Solomon Islands - John Seach a Tour Site but with information on each of the islands
- older detail map

#### 4.27.9 Further reading

- Baldwin, James, Across Islands and Oceans, specially chapter 8. Tikopia Unspoilt (Amazon Kindle Book)
- Firth, Raymond (2004), *We the Tikopia* (reprint ed.), London: Routledge, ISBN 0-415-33020-3, retrieved 18 November 2012 First published 1936 by George Allen & Unwin Ltd. This classic study is still used in contemporary anthropology classes
- Firth, Raymond, The Work of the Gods in Tikopia, Melbourne: Melbourne University Press (1940, 1967)
- Firth, Raymond, SOCIAL CHANGE IN TIKOPIA. Re-Study of a Polynesian Community after a Generation, London: Allen and Unwin. 1959, 360 pages
- Firth, Raymond (2006). *Tikopia Songs: Poetic and Musical Art of a Polynesian People of the Solomon Islands*. Cambridge University Press.
- Kirch, Patrick Vinton; C. Christensen (1981), *Nonmarine mollusks from archaeological sites on Tikopia, southeastern Solomon Island*, S. Pacific Science 35:75-88
- Kirch, Patrick Vinton; Yen, D.E (1982), *Tikopia: The Prehistory and Ecology of a Polynesian Outlier*, Honolulu, Hawaii: Bishop Museum Press, ISBN 9780910240307
- Kirch, Patrick Vinton (1983), *Mangaasi-style ceramics from Tikopia and Vanikoro and their implications for east Melanesian prehistory*, Indo-Pacific Prehistory Association Bulletin 3:67-76
- Kirch, Patrick Vinton (1986), *Tikopia: tracing the prehistory of a Polynesian culture*, Archaeology 39(2):53-59
- Kirch, Patrick Vinton (1986), *Exchange systems and inter-island contact in the transformation of an island society: The Tikopia case*, P. V. Kirch, ed., Island Societies: Archaeological Approaches to Evolution and Transformation, pp. 33-41. Cambridge: Cambridge University Press
- Kirch, Patrick Vinton; D. Steadman and D. S. Pahlavan (1990), *Extinction, biogeography, and human exploitation of birds on Anuta and Tikopia, Solomon Islands*, Honolulu, Hawaii: Occasional Papers of the Bishop Museum 30:118-153
- Kirch, Patrick Vinton (1996), *Tikopia social space revisited*, J. Davidson, G. Irwin, F. Leach, A. Pawley, and D. Brown, eds., Oceanic Culture History: Essays in Honour of Roger Green, pp. 257-274. Dunedin: New Zealand Journal of Archaeology Special Publication
- Macdonald, Judith (1991). *Women of Tikopia*. Thesis (PhD - Anthropology) University of Auckland.
- Macdonald, Judith (2000). "Chapter 6, Tikopia and "what Raymond Said" ". *Ethnographic Artifacts: Challenges to a Reflexive Anthropology* (PDF). University of Hawaii Press: edited by S. R. Jaarsma, Marta Rohatynskyj.
- Macdonald, Judith (2003). "Tikopia" . *Volume 2, Encyclopedia of Sex and Gender: Men and Women in the World's Cultures*. Springer: edited by Carol R. Ember, Melvin Ember. pp. 885–892.

Coordinates: 12°17′47.3″S 168°49′55.0″E﻿ / ﻿12.296472°S 168.831944°E﻿ /

## Chapter 5

# Antarctic Ocean

### 5.1 Deception Island

This article is about the island in Antarctica. For the novel, see [Deception Island \(novel\)](#). For the island in Washington State, see [Deception Pass](#). For the island in Chile, see [List of islands of Chile#Deceit Island](#).

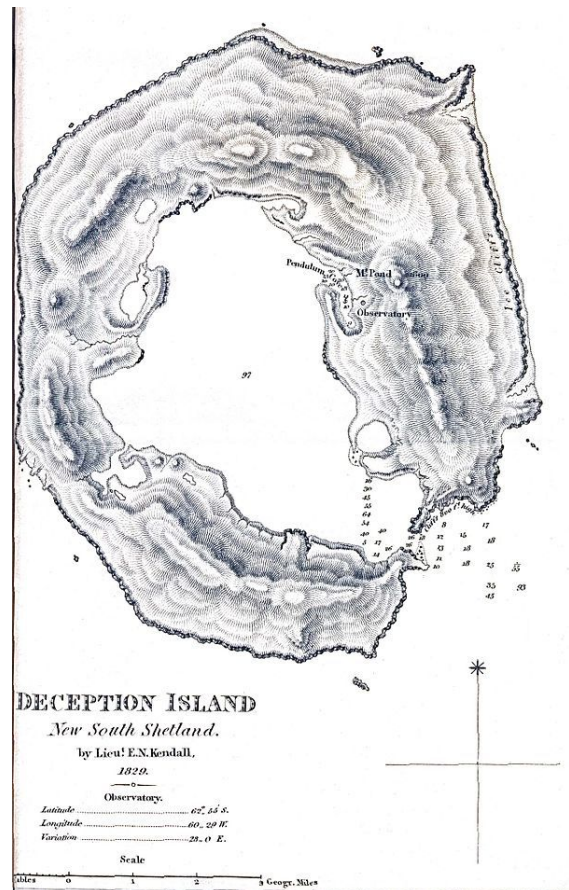
**Deception Island** is an island in the South Shetland Islands archipelago, with one of the safest harbours in Antarctica. This island is the caldera of an active volcano, which seriously damaged local scientific stations in 1967 and 1969. The island previously held a whaling station; it is now a tourist destination and scientific outpost, with Argentine and Spanish research bases. While various countries have asserted sovereignty, it is still administered under the Antarctic Treaty System.

#### 5.1.1 History

The first authenticated sighting of Deception Island was by the British sealers William Smith and Edward Bransfield from the brig *Williams* in January 1820; it was first visited and explored by the American sealer Nathaniel Palmer on the sloop *Hero* the following summer, on 15 November 1820. Palmer remained for two days, exploring the central bay. [2] Palmer was the first to name the island “Deception”. [3]

#### Whaling and sealing

Over the next few years, Deception became a focal point of the short-lived fur sealing industry in the South Shetlands; the industry had begun with a handful of ships in the 1819–20 summer season, rising to nearly a hundred in 1821–22. While the island did not have a large seal population, it was a perfect natural harbour, mostly free from ice and winds, and a convenient rendezvous point. It is likely that some men lived ashore in tents or shacks for short periods during the summer, though no archaeological or documentary evidence survives to confirm this. Massive overhunting meant that the fur seals became almost extinct in the South Shetlands within a few years, and the sealing industry collapsed as quickly as it



1829 map

had begun; by around 1825 Deception was again abandoned. [2]

In 1829, the British Naval Expedition to the South Atlantic under the command of Captain Henry Foster in HMS *Chanticleer* stopped at Deception. The expedition conducted a topographic survey and scientific experiments, particularly pendulum and magnetic observations. [4] A watercolour made by Lieutenant Kendall of the *Chanticleer* during the visit may be the first image made of the island. [2] A subsequent visit by the American elephant-sealer *Ohio* in 1842 reported the first recorded volcanic activity, with the southern shore “in flames”. [2]

The second phase of human activity at Deception began in the early twentieth century. In 1904, an active whaling industry was established at South Georgia, taking advantage of new technology and an almost untouched population of whales to make rapid profits. It spread south into the South Shetland Islands, where the lack of shore-based infrastructure meant that the whales had to be towed to moored factory ships for processing; these needed a sheltered anchorage and a plentiful supply of fresh water, both of which could be found at Deception. In 1906, the Norwegian-Chilean whaling company Sociedad Ballenera de Magallanes started using Whalers Bay as a base for a single ship, the *Gobernador Bories*.<sup>[2]</sup>

Other whalers followed, with several hundred men resident at Deception during the Antarctic summers and as many as thirteen ships operating in peak years. In 1908, the British government formally declared the island to be part of the Falkland Islands Dependencies and thus under British control, establishing postal services as well as appointing a magistrate and customs officer for the island. The magistrate would ensure that whaling companies were paying appropriate license fees to the Falklands government as well as ensuring that catch quotas were adhered to. A cemetery was built in 1908, a radio station in 1912, a hand operated railway also in 1912,<sup>[5]</sup> and a small permanent magistrate's house in 1914.<sup>[2]</sup> The cemetery, by far the largest in Antarctica, held graves for 35 men along with a memorial to 10 more presumed drowned.<sup>[6]</sup> These were not the only constructions; as the factory ships of the period were only able to strip the blubber from whales and could not use the carcasses, a permanent on-shore station was established by the Norwegian company Hvalfangerselskabet Hektor A/S in 1912 – it was estimated that up to 40% of the available oil was being wasted by the ship-based system. This was the only successful shore-based industry ever to operate in Antarctica, reaping high profits in its first years.<sup>[2]</sup> A number of exploring expeditions visited Deception during these years, including the Wilkins-Hearst expedition of 1928, when a Lockheed Vega was flown from a beach airstrip on the first successful flights in Antarctica.<sup>[2]</sup>

The development of pelagic whaling in the 1920s, where factory ships fitted with a slipway could tow aboard entire whales for processing, meant that whaling companies were no longer tied to sheltered anchorages. A boom in pelagic Antarctic whaling followed, with companies now free to ignore quotas and escape the costs of licenses. This rapidly led to overproduction of oil and a collapse in the market, and the less profitable and more heavily regulated shore-based companies had trouble competing. In early 1931, the Hektor factory finally ceased operation, ending commercial whaling at the island entirely.<sup>[2]</sup>

### Scientific research

Deception remained uninhabited for a decade but was revisited in 1941 by the British auxiliary warship *HMS Queen of Bermuda*, which destroyed the oil tanks and some remaining supplies in order to ensure it could not be used as a German supply base.<sup>[2]</sup> In 1942, an Argentinean party aboard the *Primero de Mayo* visited and left signs and painted flags declaring the site Argentinean territory; the following year, a British party with *HMS Carnarvon Castle* returned to remove the signs.<sup>[7]</sup> The island was finally reoccupied in early 1944 by a party of men from *Operation Tabarin*, a British expedition, who established a permanent scientific station. This was occupied until 5 December 1967, when an eruption forced a temporary withdrawal. It was used again between 4 December 1968 and 23 February 1969, when further volcanic activity caused it to be abandoned.<sup>[8]</sup>

In 1955, Chile inaugurated its station Pedro Aguirre Cerda at Pendulum Cove, with a refuge site at Gutierrez Vargas, to increase the Chilean presence in the sector claimed by that nation. The same year, the Falkland Islands Dependencies Aerial Survey Expedition was established at Deception to help survey the Antarctic Peninsula, operating aircraft from Hunting Aerosurveys Ltd.<sup>[2]</sup>

In 1961, Argentina's president Arturo Frondizi visited the island to show his country's interest. Regular visits were made by other countries operating in the Antarctic, including the 1964 visit of the US Coast Guard icebreaker *Eastwind*, which ran aground inside the harbour.<sup>[9]</sup>

However, the volcano returned to activity in the late 1960s, destroying the existing scientific stations. Both British and Chilean stations were demolished, and the island was abandoned for several years. The final major eruption was reported by the Russian Bellingshausen station on King George Island and the Chilean station Arturo Pratt on Greenwich Island; both stations experienced major falls of ash on 13 August 1970.<sup>[10]</sup>



*Argentine Base Deception*

In 2000, there were two summer-only scientific stations,



the Spanish Gabriel de Castilla Spanish Antarctic Station\* [11] and the Argentinian Decepción Station.\* [12]

Remains of previous structures at Whalers Bay include rusting boilers and tanks, an aircraft hangar and the British scientific station house (Biscoe House), with the middle torn out by the 1969 mudflows. A bright orange derelict airplane fuselage was recovered in 2004. There are plans to restore the airplane and return to the island.\* [12]

The Russian cruise ship *MV Lyubov Orlova* ran aground at Deception Island on 27 November 2006.\* [13] She was towed off by Spanish Navy icebreaker, *Las Palmas* and later became a ghost ship in the North Atlantic.

### 5.1.2 Geography

The island is approximately circular with a diameter of about 12 km (7.5 mi). A peak on the east side of the island, Mount Pond, has an elevation of 542 m (1,778 ft), and over half the island is covered by glaciers. The centre of the island is a caldera formed in a huge (VEI-6) eruption which has been flooded by the sea to form a large bay, now called Port Foster, about 9 km (5.6 mi) long and 6 km (3.7 mi) wide. The bay has a narrow entrance, just 230 m (755 ft) wide, called Neptune's Bellows. Adding to the hazard is Ravn Rock, which lies 2.5 m (8.2 ft) below the water in the middle of the channel. Just inside Neptune's Bellows lies the cove Whalers Bay, which is bordered by a large black sand beach.

Several maars line the inside rim of the caldera, with some containing crater lakes (including one named Crater Lake). Others form bays within the harbour, such as the 1 km (0.6 mi) wide Whalers Bay. Other features of the island include Mount Achala, Primero de Mayo Bay, Sewing-Machine Needles, Telefon Bay and Telefon Ridge.

### 5.1.3 Environment



The Spanish base *Gabriel de Castilla*

Deception Island has become a popular tourist stop in Antarctica because of its several colonies of chinstrap penguins, as well as the novel possibility of making a warm bath by digging into the sands of the beach. Mount Flora is the first site in Antarctica where fossilized plants were discovered.\* [14]

After the Norwegian Coastal Cruise Liner *MS Nordkapp* ran aground off the coast of Deception Island on 30 January 2007, fuel from the ship washed into a bay. Ecological damage has not yet been determined. On 4 February 2007 the Spanish Gabriel de Castilla research station on Deception Island reported that water and sand tests were clean and that they had not found signs of the oil, estimated as 500 to 750 litres (130 to 200 US gallons; 110 to 160 imperial gallons) of light diesel.

Deception Island exhibits some wildly varying microclimates. Some water temperatures reach 70 °C (158 °F). Near volcanic areas, the air can be as hot as 40 °C (104 °F).

### Antarctic Specially Protected Areas

Some 11 terrestrial sites have been collectively designated an Antarctic Specially Protected Area (ASP 140), primarily for their botanic and ecological values, because the island has the greatest number of rare plant species of any place in the Antarctic. This is largely due to frequent volcanic activity creating new substrates for plant colonisation.\* [15]

- Collins Point (Site A) contains good examples of long-established vegetation, with high species diversity and several rarities.
- Crater Lake (Site B) has a scoria-covered lava tongue with a diverse cryptogamic flora, and exceptional development of turf-forming mosses.
- An unnamed hill at the southern end of Fumarole Bay (Site C) has several rare species of moss which have colonised the heated soil crust close to a line of volcanic vents.
- Fumarole Bay (Site D) is geologically complex with the most diverse flora on the island.
- West Stonethrow Ridge (Site E) supports several rare mosses, liverworts and lichens.
- Telefon Bay (Site F) has all its surfaces dating from 1967, thus allowing accurate monitoring of colonisation by plants and animals.
- Pendulum Cove (Site G) is another known-age site being colonised by mosses and lichens.
- Mount Pond (Site H) contains exceptional moss, liverwort and lichen communities.

- Perchue Cone (Site J) is an ash and cinder cone with rare mosses.
- Ronald Hill to Kroner Lake (Site K) is another known-age site being colonised by numerous cryptogam species, and with a unique algal community on the lake shore.
- South East Point (Site L) supports the most extensive population of Antarctic pearlwort known in the Antarctic region.

In addition, two marine sites in Port Foster have collectively been designated Antarctic Specially Protected Area 145, to protect their benthic communities.\*[16]

### Important Bird Area

Baily Head, a prominent headland forming the easternmost extremity of the island, has been identified as an Important Bird Area (IBA) by BirdLife International because it supports a very large breeding colony of chinstrap penguins (100,000 pairs). The 78 ha IBA comprises the ice-free headland and about 800 m of beach on either side of it. Other birds known to nest at the site include brown skuas, Cape petrels and snowy sheathbills.\*[17]



Warm volcanic bath at Port Foster

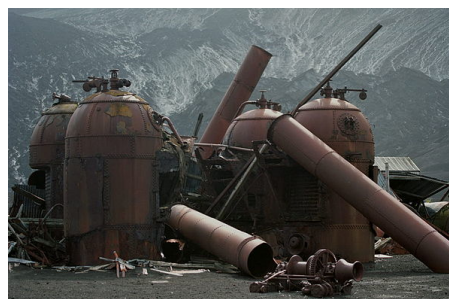
### 5.1.4 Gallery



The derelict hangar



The destroyed British base



Remains of the whaling station's boilers

### 5.1.5 See also

- List of Antarctic islands south of 60° S
- List of volcanoes in Antarctica

### 5.1.6 References

- [1] "Deception Island" . *Global Volcanism Program*. Smithsonian Institution. Retrieved 25 December 2008.
- [2] Dibbern, J. Stephen (2 September 2009). "Fur seals, whales and tourists: a commercial history of Deception Island, Antarctica" . *Polar Record* **46** (03): 210–221. doi:10.1017/S0032247409008651.
- [3] "History" . Deception Island Management Group. 2005. Retrieved 12 March 2014.
- [4] Gordon Elliott Fogg, *A history of Antarctic science*, Cambridge, Cambridge University Press, 1992, pp. 72–74
- [5] Williams, Glynn. "Railways in Antarctica" . *http://www.sinfin.net*". Retrieved 4 September 2014.

- [6] *The Antarctic Treaty: measures adopted at the twenty-eighth consultative meeting held at Stockholm 6 – 17 June 2005 (Command Paper 7166)*. Foreign and Commonwealth Affairs Office. July 2007. pp. 293–299. Retrieved 18 July 2013.
- [7] HMS Carnarvon Castle 1943
- [8] Fuchs, Vivian (1982). *Of Ice and Men*. Oswestry: Anthony Nelson. p. 291–2. ISBN 0-904614-06-9.
- [9] From the log book of Christopher Malinge, Seaman on the USCGC *Eastwind*
- [10] Fuchs, Vivian (1982). *Of Ice and Men*. Oswestry: Anthony Nelson. p. 294. ISBN 0-904614-06-9.
- [11] “Gabriel De Castilla” . New Zealand: Shades Stamp Shop. Retrieved 24 May 2009.
- [12] “4 April – Otter Recovery” . British Antarctic Survey. Retrieved 24 May 2009.
- [13] “Cruise Ship MS Lyubov Orlova Runs Aground Needing Rescue In Antarctica” . CruiseBruise. Retrieved 7 May 2011.
- [14] Jurassic Liverworts from Mount Flora, Hope Bay, Antarctica
- [15] “Parts of Deception Island, South Shetland Islands” (PDF). *Management Plan for Antarctic Specially Protected Area No. 140: Measure 3, Appendix 1*. Antarctic Treaty Secretariat. 2005. Retrieved 2013-09-28.
- [16] “Port Foster, Deception Island, South Shetland Islands” (PDF). *Management Plan for Antarctic Specially Protected Area No. 145: Measure 3, Appendix 2*. Antarctic Treaty Secretariat. 2005. Retrieved 2013-09-29.
- [17] “Baily Head, Deception Island” . *BirdLife data zone: Important Bird Areas*. BirdLife International. 2012. Retrieved 2012-12-09.

### 5.1.7 Further reading

- Official Deception Island website. Accessed 3 May 2007.
- Volcanic Activity. Accessed 4 June 2007.
- Deception Island, Eco-Photo Explorers. Accessed 3 May 2007.
- LeMasurier, W. E.; Thomson, J. W. et al. (1990). *Volcanoes of the Antarctic Plate and Southern Oceans*. American Geophysical Union. ISBN 0-87590-172-7.

### 5.1.8 External links

- Images from Deception Island
- Página Web de la base Gabriel de Castilla
- “Steamed Ice and Frosted Lava” Account of a tourist visit to Deception Island
- British Deception Island station
- 21 photos of Deception island
- A visit to Deception Island, and other places on the Antarctic Peninsula, in 2002/3

## 5.2 Franklin Island

**Franklin Island** is an island 13 kilometres (7 nmi) long, lying in the Ross Sea about 130 kilometres (80 mi) east of Cape Hickey, Victoria Land. It was discovered on January 27, 1841 by James Clark Ross, and named for Sir John Franklin, the noted Arctic explorer, who as Governor of Van Diemen's Land (Tasmania) had royally entertained the expedition on its way south at Hobart in 1840.\*[1]

Though located just 80 kilometres (50 mi) north of Beaufort Island and appearing at first glance to be part of the same group, Franklin Island is not usually considered to be part of the Ross Archipelago.

The island is colonized by a large group of brooding Adélie penguins.

**Bernacchi Head** (76°8'S 168°20'E / 76.133°S 168.333°E) is a precipitous cliff forming the southern extremity of Franklin Island. It was named “Cape Bernacchi” by the British Antarctic Expedition, 1898–1900, for Louis C. Bernacchi, a member of the expedition. The generic name has been changed to “Head” by the Advisory Committee on Antarctic Names to avoid duplication with Cape Bernacchi on the coast of Victoria Land.

The **Franklin Shoals** (76°0'S 169°0'E / 76.000°S 169.000°E) are shoals close to Franklin Island.

### 5.2.1 See also

- Composite Antarctic Gazetteer
- List of Antarctic islands south of 60° S
- Scientific Committee on Antarctic Research
- Territorial claims in Antarctica

## 5.2.2 References

- [1] “Franklin Island” . *Geographic Names Information System*. United States Geological Survey. Retrieved 2012-04-06.

This article incorporates public domain material from the United States Geological Survey document “Franklin Island” (content from the Geographic Names Information System).

## 5.3 Laurie Island

**Laurie Island** is the second largest of the South Orkney Islands. The island is claimed by both Argentina as part of Argentine Antarctica, and the United Kingdom as part of the British Antarctic Territory. However, under the Antarctic Treaty System all sovereignty claims are frozen, as the island lies south of the parallel 60°. Buchanan Point at the north-eastern end of the island, with Cape Whitson on its south coast, are Important Bird Areas.

### 5.3.1 History

Laurie Island was discovered by Captains George Powell and Nathaniel Palmer in the course of their 1821 expedition to the South Atlantic. Richard Holmes Laurie used Powell's observations to create a map of the island, and subsequently, the island was named after him.\*[1]\*[2] Two years later, James Weddell mapped the island for the second time, though his charts turned out to be much less accurate than Powell's charts. Weddell attempted to rename the island to Melville Island for the 2nd Viscount Melville,\*[3] but the name failed to stick when the Scottish National Antarctic Expedition opted for Laurie Island instead.\*[4]

William S. Bruce conducted the first comprehensive scientific study of Laurie Island during the Scottish National Antarctic Expedition. Aboard his ship, the *Scotia*, Bruce landed on Laurie Island in March 1903. The first settlement, Omond House, was built by the crew out of stone, and would be used both as a shelter and as a post from which to study the weather.\*[5]

In January 1904, Bruce offered control of Omond House to the government of Argentina; the house would later be renamed Orcadas Base. The British Government had previously refused to carry on the Scottish National Antarctic Expedition's scientific studies, as they considered Laurie Island itself worthless. The expedition lacked the necessary mandate to claim the island for either Britain or Scotland.\*[6] Nevertheless, Bruce's offer was accepted, and the Argentines would continue operating the meteorological station at Omond House, sending a ship each year to replenish supplies. Laurie Island would prove politically valuable to Argentina. To justify its claim to a sector of Antarctica, Argentina argued



*Orcadas Base*

that its permanent settlement on the island demonstrated sovereignty, a key to securing a claim over a mostly desolate area.\*[7]\*[8] Robert Rudmose-Brown, who participated in Bruce's expedition, expressed a different view. He argued in a 1947 article that no country had the capability to govern a region as vast as Antarctica and thus no country had the standing to claim Antarctica as its own.\*[6]

By 1908, Britain had come to regret its previous assessment of Laurie Island. In the Letters Patent of 1908, Britain declared a claim over the South Orkney Islands and incorporated Laurie Island into the newly created Falkland Islands Dependencies, meaning that Laurie Island would be subject to the British government in the Falklands.\*[6]\*[9] Argentina did not lodge a formal protest against the Letters Patent and Britain interpreted this as an acceptance of the British claim. The British position was that Bruce had given the meteorological station, but not the island itself to Argentina.\*[10] The territorial dispute escalated in 1925 with the construction of an Argentinian wireless telegraph station on the island. As Argentina viewed Laurie Island as its own, the Argentine government did not request permission from the British government to operate the station, and for the first time, Argentina made an outright declaration that it had sovereignty over the island.\*[6] Britain saw the possibility of strategically relinquishing the South Orkney Islands to Argentina in order to strengthen diplomatic relations or to secure the Falkland Islands themselves. The Argentine occupation of Laurie Island posed a problem for this strategy, as it weakened Britain's claim to the South Orkneys. Before a British cession of the South Orkney Islands could exert any leverage, Britain would have to solidify its own claim over the territory.\*[7]

Laurie Island is also the site of the first post office built in the Antarctic. After William S. Bruce turned over the meteorological station to the Argentinian government, Argentina initiated postal services on 20 February 1904. The post office went inactive shortly after, until 1942, when Argentina restarted postal services, in part to assert its claim to the South Orkney Islands.\*[11]\*[12]\*[13] In response, the British government refused to acknowl-

edge the legitimacy of the post office. When the auxiliary cruiser HMS *Carnarvon Castle* visited Laurie Island, the Secretary of State for the Colonies cautioned the crew against sending letters while on shore, as doing so would undercut the British position that Argentina had no authority to establish a post office on Laurie Island in the first place.\*[14]

### 5.3.2 Geology

Sedimentary rocks, most notably the Greywacke-Shale Formation, constitute the bulk of Laurie Island.\*[15]\*[16] Dr. John H. Harvey Pirie, a geologist aboard the *Scotia* described the rock as “a fine-grained greywacke of a blue-grey or greenish-grey colour.” The greywacke contained grains of many different minerals, quartz being the most numerous, along with plagioclase feldspar, titanite, zircon, biotite, chlorite, and veins of calcite. Pirie also found shale formations distributed across the island, usually fractured and twisted. Graptolite Island, off of Laurie Island's south-east coast, particularly exhibited these shale formations.\*[17] It was on Graptolite Island that Pirie collected three fossils which he later mistook to be the remains of ancient animal organisms known as graptolites, hence the name of the island. Gertrude Elles believed that *Pleurograptus* was the specific species to which the graptolites belonged. Later analysis showed that the fossils on Graptolite Island were merely the remains of ancient plants.\*[18]\*[19]

The dating of the Greywacke-Shale Formation has proved to be a source of scientific controversy. Based on Pirie's incorrect analysis of the “graptolites”, geologist I. Rafael Cordini dated the rock's genesis to the Ordovician Period. However, this explanation proved to be untenable, as Laurie Island would have been far older than had been thought possible. The reassessment of Pirie's fossils as plant remains dates the formation of the Greywacke to the Carboniferous Period, many millions of years later than originally thought.\*[19]\*[16] Coordinates: 60°43'43"S 44°31'05"W / 60.72861°S 44.51806°W

### 5.3.3 See also

- Composite Antarctic Gazetteer
- List of Antarctic islands south of 60° S
- SCAR
- Territorial claims in Antarctica

### 5.3.4 References

[1] “Laurie Island”. *Geographic Names Information System*. United States Geological Survey. Retrieved 23 July 2013.

- [2] “Name Details: Laurie Island (Gazetteer of the British Antarctic Territory)”. Australian Antarctic Data Centre. Retrieved 23 July 2013.
- [3] SCAR Composite Gazetteer
- [4] Goodlad, James A. “South Orkney Islands”. University of Strathclyde. Retrieved 23 July 2013.
- [5] Goodlad, James A. “Autumn in Scotia Bay”. University of Strathclyde. Retrieved 23 July 2013.
- [6] Wilson, Robert E. (March 1964). “National Interests and Claims in the Antarctic”. *Arctic* (Arctic Institute of North America) **17** (1): 19–20. doi:10.14430/arctic3481. Retrieved 8 August 2013.
- [7] Howkins, Adrian John (May 2008). “Frozen Empires: A History of the Antarctic Sovereignty Dispute Between Britain, Argentina, and Chile, 1939–1959” (PDF). University of Texas at Austin. Retrieved 23 July 2013.
- [8] Goodlad, James A. “Bruce in Argentina”. University of Strathclyde. Retrieved 23 July 2013.
- [9] “Letters Patent of 21 July 1908” (PDF). *British Foreign and State Papers, 1907-08* (London) **101**: 76–77. 1912. Retrieved 9 August 2013.
- [10] “Antarctica Cases (United Kingdom vs. Argentina; United Kingdom vs. Chile)” (PDF). International Court of Justice. 16 March 1956. Retrieved 9 August 2013.
- [11] Headland, Robert K. (1989). *Chronological List of Antarctic Expeditions and Related Historical Events*. Cambridge: Cambridge University Press. p. 229.
- [12] Riffenburgh, Beau, ed. (2007). *Encyclopedia of the Arctic 1*. New York: Routledge. pp. 727–728.
- [13] Dodds, Klaus (2002). *Pink Ice: Britain and the South Atlantic Empire*. London: I.B.Tauris & Co Ltd. pp. 17–18.
- [14] “Argentine Encroachments Against Certain Antarctic Dependencies of the Falkland Islands”. The National Archives of the UK (TNA): Public Record Office (PRO) CAB 66/33/41. 27 January 1943. Retrieved 6 August 2013.
- [15] Goodlad, James A. “Survey of Laurie Island”. University of Strathclyde. Retrieved 23 July 2013.
- [16] Thomson, Janet W. (5 April 1972). “The geology of Powell, Christofferson and Michelsen Islands, South Orkney Islands” (PDF). *British Antarctic Survey Bulletin, No. 33 and 34*. British Antarctic Survey. Retrieved 23 July 2013.
- [17] Pirie, John H. Harvey (7 February 1905). “On the Graptolite-Bearing Rocks of the South Orkneys”. *Proceedings of the Royal Society of Edinburgh*. Neill and Company, Limited. pp. 463–470.
- [18] Stone, Phil (September 2003). “Fossils from the South Atlantic: the geological legacy of the Scottish National Antarctic Expedition, 1902-1905” (41). Edinburgh Geological Society. Retrieved 23 July 2013.
- [19] Stone, Phil (2003). “Falkands Fossils” (PDF). Natural Environment Research Council. Retrieved 23 July 2013.

### 5.3.5 External links

## 5.4 Peter I Island

**Peter I Island** (Norwegian: *Peter I Øy*)\*[1] is an uninhabited volcanic island in the Bellingshausen Sea, 450 kilometres (280 mi) from Antarctica. It is claimed as a dependency of Norway, and along with Queen Maud Land and Bouvet Island comprises one of the three Norwegian dependent territories in the Antarctic and Subantarctic. Peter I Island is 11 by 19 kilometres (6.8 by 11.8 mi) long and 156 square kilometres (60 sq mi). The tallest peak is the ultra and 1,640-meter (5,380 ft) tall Lars Christensen Peak. Nearly all of the island is covered by a glacier and it is surrounded most of the year by pack ice, making it inaccessible almost all year round. There is little life on the island apart from seabirds and seals.

The island was first sighted by Fabian Gottlieb von Bellingshausen on 21 January 1821 and was named for Peter I of Russia. Not until 2 February 1929 did anyone set foot on the island, when Nils Larsen and Ola Olstad's Second *Norvegia* Expedition, financed by Lars Christensen, was successful. They claimed it for Norway, who annexed it in 1931 and made it a dependency in 1933. The next landing occurred in 1948 and the island has been subject to some scientific research and a limited amount of tourism. The island became subject to the Antarctic Treaty in 1961. Since 1987, there has been an automated meteorological station on the island. Three amateur radio DX-peditions have visited the island and there are sporadic landings by tourists.

### 5.4.1 History

The first sighting of Peter I Island was made on 21 January 1821 by Fabian Gottlieb von Bellingshausen's expedition,\*[2] who commanded the ships *Vostok* and *Mirny* under the Russian flag. He named the island for Tsar Peter I “the Great” of Russia. Drift ice made it impossible for Bellingshausen to come nearer than 25 kilometres (16 mi) from the island. It was the first land to have been spotted south of the Antarctic Circle, and was thus also the southernmost sighted land at the time of its discovery.\*[3] In January 1910, the French expedition led by Jean-Martin Charcot and his ship *Pourquoi-Pas* confirmed Bellingshausen's discovery, but they also did not land, being stopped 5 kilometres (3.1 mi) from the island by pack ice.\*[3]

In 1926 and 1927, Norwegian Eyvind Tofte circumnavigated and surveyed the island from *Odd I*. However, he was also prevented from landing.\*[3] The Norwegian whale-ship owner Lars Christensen financed several expeditions to the Antarctic, in part for research and in part to claim land for Norway. The latter was motivated by the British taxation of whaling stations in the Antarctic, and Christensen hoped to be



*The first landing on the island (1929).*

able to establish stations on Norwegian territory to gain better privileges and so at least the taxes went to his home country.\*[4] The first expedition to land on the island was the Christensen-financed second *Norvegia* expedition, led by Nils Larsen and Ola Olstad. They landed on 2 February 1929 and claimed the island for Norway. Larsen attempted to land again in 1931, but was hindered by pack ice.\*[3] On 6 March 1931, a Norwegian royal proclamation declared the island under Norwegian sovereignty\*[4] and on 23 March 1933 the island was declared a dependency.\*[3]\*[5]

The next landing occurred on 10 February 1948 by Larsen's ship *Brategg*. Biological, geological and hydrographic surveys underwent for three days, before the pack ice forced the expedition to leave. The expedition built a hut and placed a copy of the document of occupation from 1929 inside. On 23 June 1961, Peter I Island became subject to the Antarctic Treaty, after Norway's signing of the treaty in 1959.\*[6]\*[7] Since then, there have been several landings on the island by various nations for scientific investigations,\*[3] as well as a limited number of ships that have successfully landed tourists on the island.\*[2]

In 1987, the Norwegian Polar Institute sent five scientists to spend eleven days on the island. The main focuses were aerial photography and topographical measurements to allow an accurate map of the island to be produced. The second important area was marine biological investigations, although also geological, biological and other surveys were conducted. The team also built an automatic weather station.\*[8] Three DX-peditions have been sent to the island, in 1987, 1994 and 2006.\*[9]\*[10]\*[11]

### 5.4.2 Geography

Peter I Island is a volcanic island located 450 kilometres (280 mi) off the coast of Ellsworth Land of continental Antarctica. It has an area of 154 square kilometres (59 sq mi). The island is almost entirely covered by glacier,\*[1] with about 95% of the surface covered by ice.\*[12]

Surrounding the island is a 40-meter (130 ft) tall ice front



Coastline of Peter I Island, visited during an expedition of *RV Polarstern* in 1994.

and vertical cliffs.\* [13] The long stretches of ice caps are supplemented with rock outcrops.\* [12] Landing is only possible at three points, and only during the short period of the year in which the island is not surrounded by pack ice.\* [13] These landings take place on the west side at **Kapp Ingrid Christensen**, a peninsula which divides the bays **Norvegiabukta** and **Sandefjordbukta**. On the cape are some narrow strips of beach, which are suitable for landing.\* [12] The beach in **Norvegiabukta** is just 4 meters (13 ft) wide and is entered via the natural arch **Tsarporten**.\* [2] On the west side is a plateau, while the north and south coasts feature ice shelves. The eastern side is the steepest and features two rock columns with flat tops in the sea.\* [14]

The island is a shield volcano, although it is not known if it is still active, and it has been categorized as either **Holocene** or **historic**, based on date samples ranging from 0.1 to 0.35 million years ago. The summit, **Lars Christensen Peak**, is a 100-metre (330 ft) wide circular crater.\* [15] An ultra prominent peak at 1,640 metres (5,380 ft) elevation, it is named for **Lars Christensen**. It is not known whether this volcano is extinct or not, because the upper part is apparently unmodified by glaciation—indicating an eruption several centuries ago.\* [16]

### 5.4.3 Environment

The island's vegetation consists exclusively of **mosses** and **lichens** which have adapted to the extreme Antarctic climate.\* [13] The island has a very harsh climate with strong winds and freezing temperatures. The steady snowfall keeps vegetation to a minimum.\* [14] The island is a breeding ground for a few seabirds, particularly southern fulmars,\* [13] but also **Wilson's storm petrels** and **Antarctic terns**. Penguins, including **Adélie** and **chinstrap penguins**, visit the island infrequently.\* [14] There are numerous seals, particularly **crabeater seals**, **leopard seals**\* [13] and smaller numbers of **southern elephant seals**.\* [14]



Map of the island.

### 5.4.4 Politics

Peter I Island is one of Norway's two territorial claims in **Antarctica**, the other being **Queen Maud Land**.\* [1] Peter I Island is the only claim within  $90^{\circ}\text{W}$  and  $150^{\circ}\text{W}$  and is also the only claim which is not a sector.\* [17] Being south of  $60^{\circ}\text{S}$ , the island is subject to the **Antarctic Treaty**.\* [12] The treaty ensures free access to the island for any scientific investigation, and states that it can only be used for peaceful purposes. Norway, Australia, France, New Zealand and the United Kingdom have all mutually recognized each other's claims in Antarctica.\* [18]

Norwegian administration of the island is handled by the **Polar Affairs Department** of the **Ministry of Justice and Public Security**, located in **Oslo**.\* [19] The annexation of the island is regulated by the **Dependency Act** of 24 March 1933. It establishes that **Norwegian criminal law**, **private law** and **procedural law** applies to the island, in addition to other laws that explicitly state they are valid on the island. It further establishes that all land belongs to the state, and prohibits the storage and detonation of nuclear products.\* [5]

Since 5 May 1995, Norwegian law has required all Norwegian activity in Antarctica, including Peter I Island, to follow international environmental law for Antarctica. All Norwegian citizens who plan activities on Peter I Island must therefore report to the **Norwegian Polar Institute**, who may deny any non-conforming activity. All people visiting the island must follow laws regarding pro-

tection of nature, treatment of waste, pollution and insurance for search and rescue operations.\*[20]

### 5.4.5 See also

- List of Antarctic and subantarctic islands
- List of islands of Norway by area
- List of volcanoes in Antarctica

### 5.4.6 References

- [1] “Peter I Øy” . Norwegian Climate and Pollution Agency. Archived from the original on 29 August 2011. Retrieved 29 August 2011.
- [2] Rubin (2005): 180
- [3] Barr (1987): 67
- [4] Kyvik *et.al* (2008): 52
- [5] “Lov om Bouvet-øya, Peter I's øy og Dronning Maud Land m.m. (bilandsloven)” (in Norwegian). Lovdata. Archived from the original on 29 August 2011. Retrieved 29 August 2011.
- [6] “Parties” . Secretariat of the Antarctic Treaty. Archived from the original on 29 August 2011. Retrieved 29 August 2011.
- [7] Barr (1987): 79
- [8] Barr (1987): 68
- [9] “The FIRST Peter One DXpedition, 1987” . Peter One. Archived from the original on 29 August 2011. Retrieved 29 August 2011.
- [10] “The 1994 Peter I 3YØPI Expedition” . Peter One. Archived from the original on 29 August 2011. Retrieved 29 August 2011.
- [11] “We hope you enjoyed the 3YØX DX-perience!”. Peter One. Archived from the original on 29 August 2011. Retrieved 29 August 2011.
- [12] Barr (1987): 65
- [13] “Peter I Øy” . Norwegian Polar Institute. Archived from the original on 29 August 2011. Retrieved 29 August 2011.
- [14] “Discover Peter I Island on an Antarctic Cruise” . Adventure Life. Archived from the original on 29 August 2011. Retrieved 29 August 2011.
- [15] “Peter I Island” . Global Volcanism Program. Archived from the original on 29 August 2011. Retrieved 29 August 2011.
- [16] LeMasurier (1990): 512
- [17] Kyvik *et.al* (2008): 57

- [18] National Research Council (U.S.). Polar Research Board (1986). *Antarctic treaty system: an assessment*. National Academies Press. p. 370. ISBN 978-0-309-03640-5.
- [19] “Polar Affairs Department” . Norwegian Ministry of the Environment. Archived from the original on 29 August 2011. Retrieved 29 August 2011.
- [20] “Antarktis” . Norwegian Ministry of the Environment. Archived from the original on 29 August 2011. Retrieved 29 August 2011.

### 5.4.7 Bibliography

- Barr, Susan (1987). *Norway's Polar Territories*. Oslo: Aschehoug. ISBN 82-03-15689-4.
- Kyvik, Helga, ed. (2008). *Norge i Antarktis*. Oslo: Schibsted Forlag. ISBN 82-516-2589-0.
- LeMasurier, W. E.; Thomson, J. W., eds. (1990). *Volcanoes of the Antarctic Plate and Southern Oceans*. American Geophysical Union. ISBN 0-87590-172-7.
- Rubin, Jeff (2005). *Antarctica*. Lonely Planet. ISBN 1-74059-094-5.

Coordinates: 68°51′00″S 90°35′00″W﻿ / ﻿68.85000°S 90.58333°W﻿ / -68.85000; -90.58333



## Chapter 6

# Text and image sources, contributors, and licenses

### 6.1 Text

- **Bear Island (Norway)** *Source:* [https://en.wikipedia.org/wiki/Bear\\_Island\\_\(Norway\)?oldid=674648094](https://en.wikipedia.org/wiki/Bear_Island_(Norway)?oldid=674648094) *Contributors:* Danny, Wapcaplet, Gustavf-enwiki, Kosebamse, Egil, Ahoerstemeier, Stan Shebs, Samuelsen, Andres, Ruhrjung, Wernher, HarryHenryGebel, Phil Boswell, Robbot, Jfire, Gidonb, Lupo, MPF, Tagishsimon, RetiredUser2, Neutrality, Jakro64, D6, Rich Farmbrough, Martpol, SpookyMulder, Kwamikagami, Sietse Snel, Bookofjude, Geschichte, Kurt Shaped Box, Saga City, Gene Nygaard, Japanese Searobin, AlexTiefing, Woohookitty, Jpers36, Mandavi, Timosa, Ratzler, Tapir2001, NormanEinstein, Jon Harald Søby, GraemeLeggett, Kdbank71, Rjwilmsi, Ligulem, FlaBot, MacRusgail, YurikBot, Hairy Dude, RussBot, Snillet, Hede2000, Mikesegegn, Gaius Cornelius, Manxruler, TheGrappler, Charly Steinbeisser, Nlu, Closedmouth, Orcaborealis, Alureiter, TrygveFlathen, SmackBot, Victor M. Vicente Selvas, CRKingston, AndyZ, Hmains, Bluebot, Salvor, MalafayaBot, Scwlong, Berland, KaiserbBot, Bardsandwarriors, RFD, Nakon, Bigsteeve, Wizardman, Oceanh, Jonatanj, Ligulembot, Grumpy444grumpy-enwiki, JHunterJ, Iancrose, Jetman, Whhalbert, P-Chan, WeggeBot, Tkynerd, DBaba, Thijs!bot, Edwardx, Marek69, KrakatoaKatie, Alphachimpbot, Arsenikk, JAnDbot, Maias, Acroterion, Magioladitis, Johnbibby, Sammalin, CommonsDelinker, Eivindgh, Bot-Schafter, Robertgreer, VolkovBot, TXiKiBoT, Archwyrn, Mohonu, Radagast3, BotMultichill, Ori, Jonas Poole, Goustien, Lightmouse, Maralia, Jontew, Sun Creator, SchreiberBike, Kikos, MelonBot, Berean Hunter, Addbot, Laaknor-Bot, LinkFA-Bot, Ondewelle, Zorrobot, Waltloc, Luckas-bot, Citation bot, GB fan, ArthurBot, Manitobamountie, GrouchoBot, Pepper, Plasticpork, Full-date unlinking bot, TobeBot, Trappist the monk, Dinamik-bot, Aja675, RjwilmsiBot, DASHBot, EmausBot, WikitanvirBot, The Blade of the Northern Lights, ZéroBot, Bahudhara, H3llBot, Northamerica1000, Achawat, AwesomeSheepGuy, EnzaiBot, Smallditor, Dexbot, Woeler1, Hylke95, Monkbot, Snorvege, Truxtondo and Anonymous: 51
- **Uyedineniya Island** *Source:* [https://en.wikipedia.org/wiki/Uyedineniya\\_Island?oldid=662686126](https://en.wikipedia.org/wiki/Uyedineniya_Island?oldid=662686126) *Contributors:* KNewman, Rjwilmsi, Sardanaphalus, Hardscarf, SmackBot, Hmains, Janm67, Fenix down, Cydebot, Tkynerd, Dr. Blofeld, Maias, Magioladitis, The Anomebot2, Eivindgh, VolkovBot, Mohonu, SieBot, Antipoeten, Amdf, SlubGlub, Addbot, Zorrobot, Luckas-bot, Yobot, Rubinbot, Xufanc, Zartaux, Lothar von Richthofen, Macrep теңей, Geisterpunker, EmausBot, ZéroBot, ChuispastonBot, ClueBot NG, Frietjes, Northamerica1000, BattyBot, Dendrite1, KasparBot and Anonymous: 4
- **Rudolf Island** *Source:* [https://en.wikipedia.org/wiki/Rudolf\\_Island?oldid=550567057](https://en.wikipedia.org/wiki/Rudolf_Island?oldid=550567057) *Contributors:* Kosebamse, Everyking, JoJan, D6, Bender235, Darwinek, Cherubino, Russavia, Gerhard51, Zazaban, CRKingston, Hmains, Scwlong, TCY, Bardsandwarriors, Jugbo, JK-Brooks85, Fenix down, Cydebot, JAnDbot, Geonarva, Robertgreer, AlleborgoBot, Mohonu, SieBot, Steven Crossin, Ziniticus, Addbot, Kisbesbot, Numbo3-bot, Lightbot, Zorrobot, Luckas-bot, Xqbot, JMilty, EmausBot, John of Reading, ZéroBot, Northamerica1000 and Anonymous: 8
- **Annobón Province** *Source:* [https://en.wikipedia.org/wiki/Annob%C3%B3n\\_Province?oldid=681268717](https://en.wikipedia.org/wiki/Annob%C3%B3n_Province?oldid=681268717) *Contributors:* Karada, Docu, Carlossuarez46, PedroPVZ, Thorwald, D6, Woohookitty, BD2412, Pigman, Zello, SmackBot, Chris the speller, TimBentley, MalafayaBot, Bazonka, Colonies Chris, Capmo, Joseph Solis in Australia, Filiep, MarcosFenn, Rotherpe, Jcmenal, Johnpacklambert, Gate-way, Plasticup, Idioma-bot, Jameswoodward, TXiKiBoT, Roquai, Parkwells, Mr Accountable, Ikrodriguez, SchreiberBike, Addbot, Narayang, Lightbot, Legobot, Yobot, AnomieBOT, Xufanc, LlywelynII, RevelationDirect, Sven70, LilHelpa, TheAMmollusc, Sputink, GrouchoBot, Schekinov Alexey Victorovich, Rodneidy, FrescoBot, Gouerouz, Tahir mq, Full-date unlinking bot, Look2See1, Slifkinj, WunderbAru, CopperSquare, Sonia Murillo Perales, MerllwBot, Kevachaché, Hamish59, Dexbot, FoCuSandLeArN, Mogism, Julietdeltalima, DivermanAU and Anonymous: 15
- **Ascension Island** *Source:* [https://en.wikipedia.org/wiki/Ascension\\_Island?oldid=681351255](https://en.wikipedia.org/wiki/Ascension_Island?oldid=681351255) *Contributors:* Zundark, William Avery, Maury Markowitz, Olivier, Tim Starling, Hoshie, Stan Shebs, Ronz, Arwel Parry, Jiang, Mulad, Bemoeial, Astrotrain, Morwen, Frazydee, Michael Glass, Robbot, Chris, Pibwl, Romann, Merovingian, Ktotam, Wikibot, Profoss, SoLando, Kathy T, Fabiform, MPF, Bkonrad, Cantus, Gilgamesh-enwiki, Brockert, Gzornenplatz, Smartcowboy, Gugganij, Gadfium, Manuel Anastácio, Keith Edkins, Quadell, Beland, Kusunose, Grinner, Secfan, Icairns, Acad Ronin, Danfreak, Demiurge, Master Of Ninja, Qui1che, D6, Brianhe, Guanabot, Pmsyzz, ArnoldReinhold, Dave souza, Dbachmann, Harriv, WegianWarrior, Sc147, STGM, LordHarris, Worldtraveller, RobNS, Dpaajones, Acentx, Man vyi, Jojit fb, Darwinek, Mooglee, PierreWiki, Towel401, Haham hanuka, A2Kafir, Poli, Buaidh, Rodw, Cdc, Wdfarmer, Messlo, Rwendland, Saga City, Dabbler, Snorgy, Vadim Makarov, Throbblefoot, Stephen, Stemonitis, Bellhalla, GarciaB, Ratzler, Jeff3000, Tabletop, NormanEinstein, Isnow, BlaiseFEgan, Eras-mus, SDC, GraemeLeggett, Graham87, BD2412, Electionworld, Rjwilmsi, Erebus555, Carl Logan, Vary, Nneonneo, Oo64eva, Ground Zero, Nihiltres, Catsmeat, Mark83, Goudzovski, Glenn L, Chobot, YurikBot, StuffOfInterest, JarrahTree, RussBot, Fabartus, Lalolanda, Ergzay, NawlinWiki, Dysmorodrepanis-enwiki, Lucero del Alba-enwiki, EntChickie, Vince-Bowdren, RFBailey, Number 57, Melly42, Caerwine, Orioane, Arthur Rubin, Chanheigeorge, LeonardoRob0t, Rhyddfrydol, Katieh5584,

Picksomething, Erudy, NeilN, Nick-D, Zewu-enwiki, Sardanaphalus, SmackBot, Mangoe, David Kernow, Eskimbot, Kintetsubuffalo, HeartofaDog, Mauls, Commander Keane bot, Gilliam, Hmains, Polaron, Chris the speller, Kurykh, Henrique Moreira-enwiki, Akanemoto, Banksmeister general, Colonies Chris, Konstable, Wilybadger, Tamfang, Smallbones, OrphanBot, MJCdetroit, Alexmcfire, Bardsandwarriors, Whpq, Joema, Abrahami, Cybercobra, VegaDark, Mr Minchin, Segafreak2, Only, The PIPE, Shrumster, Springnuts, SashatoBot, Mksword, Harryboyles, Green Giant, Tramlink, Jaywubba1887, Ex nihil, Still A Student, Apcbg, SQGibbon, AXG, Girmitya, Maksim L., Theonecynic, Dan39, Skinsmoke, Kripkenstein, M@sk, Acumm12715, Istanbuljohnm, Iyobi, Iridescent, Sinaloa, Civil Engineer III, RaviC, Chris55, ChrisCork, Threadnecromancer, Jonathan A Jones, Alexburids, Chmee2, MarsRover, Cydebot, Vanished user 2340ru-jowierfj08234irjwfw4, Cec-enwiki, Extramural, FDV, DBaba, Nasaman58, Legis, Kozuch, After Midnight, BetacommandBot, Thijs!bot, Totensiebush, N5iln, Marek69, Missvain, Colwoyoung, Jamie lee142000, Deipnosophista, AlefZet, Rcragun, Luna Santin, F-451, Alphachimpbot, JAnDbot, The Transhumanist, Islandman, Frankie816, TAnthony, Maias, Magioladitis, WolfmanSF, Avjoska, Schaferpho, Pvmoutside, The Anomebot2, Avicennasis, Mrbobmac, 28421u2232nfenfcenc, Ashishbhatnagar72, KTo288, J.delanoy, JamesR, S100, GeoWriter, Christomir, Maproom, Bilbobee, SuzanneKn, GaborLajos, Tauex, D4RK-L3G10N, Biofoundationsoflanguage, KylieTastic, Tygrrr, Brycehan, B0YCOtT, Gibmetal77, Harveysburger, Squids and Chips, Idioma-bot, Fax10, Bnyynms, W2ch00, VolkovBot, John-Blackburne, Seattle Skier, Sdsds, TXiKiBoT, Hobe, A4bot, Vasily Melenchuk, Dormskirk, ^demonBot2, Fraxinus Croat, TronnaRob, Vinhtantran, AlleborgoBot, Red, Darkieboy236, SieBot, Simplifier, WereSpielChequers, BotMultichill, Jack Merridew, SE16, Ulysses54, Barliner, KrisCoils, HkCaGu, Evaluist, Treehill, Goustien, Lightmouse, OKBot, Seedbot, StaticGull, Hamiltondaniel, Wee Curry Monster, Beachgrinch, Gr8opinionater, Swedish fusilier, Plastikspork, EoGuy, XPTO, DragonBot, Whatsthatpicture, JC1520, Howard Alexander, Dn9ahx, Teutonic Tamer, Rui Gabriel Correia, Silas Maxfield, Samantha555, Kikos, Banano03, Twoboats, DumZiBoT, Loranchet, Joseph031164, FellGleaming, PL290, Felix Folio Secundus, Addbot, Gibson625, FDT, The C of E, Jollie1, Lightbot, Zorrobot, Lucas-bot, Yobot, Ptbotgourou, KamikazeBot, Bility, AnomieBOT, Stephenluscombe, Xufanc, Danno uk, Xqbot, Koektrommel, Night w, Eric Blatant, ProtectionTaggingBot, RibotBOT, SassoBot, Chris.urs-o, Lerwick75, GhalyBot, Shadowjams, George2001hi, D'ohBot, Ausseagull, Citation bot 2, Agiseb, Number Googol, Moonraker, Tahir mq, Pietje96, Pinochet (3), Full-date unlinking bot, AHeneen, BeckenhamBear, Seth.vincent, Fry1989, RjwilmsiBot, Phlegat, Cajohnson1234, DASHBot, EmausBot, WikitanvirBot, Sidewalkingcrab, AvicBot, ZéroBot, LuzoGraal, Agent0060, Ό οϊστρος, Scythia, Alec s cheat, Gsarwa, Shortascn, ChuispastonBot, Rubyobj, Rayfrito, Oisivejeunesse, ClueBot NG, Barabbas1312, CocuBot, Frietjes, SneerfulWizard, Rezabot, CopperSquare, Widr, KLBot2, Plantdrew, Candle421, Alrightcoxy, Klilidiplomus, Justincheng12345-bot, Inops, Squidville1, Garamond Lethe, Smalleditor, SiBr4, Comfortless, Rob984, HonorTheIsland, OrangeJacketGuy, Noyster, Autohome, HowFalcons, WPGA2345, L T T H U, Gerritdeveer1597, KasparBot and Anonymus: 233

- Bouvet Island** *Source:* [https://en.wikipedia.org/wiki/Bouvet\\_Island?oldid=672921232](https://en.wikipedia.org/wiki/Bouvet_Island?oldid=672921232) *Contributors:* The Epopt, Zundark, Koyaanis Qatsi, LA2, Chuckhoffmann, William Avery, Hoshie, Mearling, Egil, Samuelsen, Den fjättrade ankan-enwiki, Александр, Jiang, Nike395, David Newton, Bemoeial, Kaare, Astrotrain, Morwen, Itai, Finlay McWalter, Michael Glass, Denelson83, Robbot, Balldur, Hadal, JackofOz, Lupo, Seth Ilys, Kallgan, DocWatson42, Andy, Leflyman, Tom Radulovich, Snowdog, Fo0bar, Gilgamesh-enwiki, Mboverload, Golbez, ALargeElk, Joseph Dwayne, Keith Edkins, Evertyp, Domino theory, DragonflySixtyseven, Secfan, Sam Hocevar, Urhixidur, Mike Rosoft, D6, Adambondy, Discospinster, Brianhe, Guanabot, Mani1, Pavel Vozenilek, SpookyMulder, Bender235, Livajo, Bletch, Mdhowe, Apyule, Giraffedata, Chirag, John Fader, Obradovic Goran, Jonathunder, Perceval, HasharBot-enwiki, Ranveig, Jumbuck, Buaidh, Geo Swan, Ceyockey, Richard Weil, Nicklott, Woohookitty, Grillo, Ratzler, MONGO, Plaws, Twthmoses, Tapir2001, GregorB, SDC, Graham87, Nobot-enwiki, Jørgen-enwiki, Electionworld, Rjwilmsi, Koavf, MariusStrom, FlaBot, SchuminWeb, Ground Zero, Rune.welsh, TheDJ, Sonitus, Steppenfox, Taichi, Chobot, NSR, Sophitus, YurikBot, Borgx, RobotE, JWB, Jimp, Miskatonic, Manxruler, NawlinWiki, Joel7687, Howcheng, Seegoon, BBnet3000, Emijrp, Thnidu, Arundhati bakshi, Wikipeditor, Curpsbot-unicodify, Ybbor, GrinBot-enwiki, Dan Atkinson, SmackBot, David Kernow, KocjoBot-enwiki, RobotJcb, Benashbe-enwiki, Kharker, Rakela, Snori, MalafayaBot, Barend, DHN-bot-enwiki, Scwlong, Writenright, Berland, Parent5446, BIL, Pats1, Ziggie, Ohconfucius, Bcsterline, DLInth, Buchanan-Hermit, Six.oh.six, Diverman, Grapetonix, Apcbg, Jimmy Pitt, Meco, Peter Horn, MTSbot-enwiki, Istanbuljohnm, Timbrocks, Verdi1, Cydebot, Hebrides, Strongdar-enwiki, BetacommandBot, Thijs!bot, McGehee, Cool Blue, Dawnseeker2000, Spencer, Alphachimpbot, Arx Fortis, Dybdal-enwiki, Arsenikk, JAnDbot, Islandman, Maias, Reichsgauleiter Hansen, Nidator, The Anomebot2, Enaidmawr, Anaxial, Stevethewretch, Masebrock, DrKiernan, Zosma, Plasticup, Ljgual124, Faronicus, Idioma-bot, Deor, VolkovBot, DOHC Holiday, Seattle Skier, Gobiman, TXiKiBoT, Asar1ai, John Carter, IllaZilla, Broadbot, Rjm at sleepers, Bentley4, Dvmedis, BlueTyson, Ayengar, Spitfire8520, Angelastic, Billinrio, Lylefor, SieBot, Inks002, BotMultichill, Lifeinantarctica, Goustien, Sanya3, Mr. Granger, ClueBot, Dmies, Gargolla, Jeremiestrother, The Moseph, Tomeasy, Against the current, AlanM1, XLinkBot, Dthomsen8, NellieBly, Good Olfactory, Pakkislol, Addbot, Elemented9, N9XTN, Sammypaige888810, Ironholds, LaaknorBot, Drkazmer, Lightbot, Llakais, Bermicourt, Wasabisake, Luckas-bot, The Earwig, Bility, DiverDave, AnomieBOT, Xufanc, LlywelynII, Materialsscientist, Donribon, ABTsportsline, ArthurBot, Xqbot, Susiemorgan, Jsmckay, Manitobamountie, GrouchoBot, ProtectionTaggingBot, Chris.urs-o, Fonadier, FrescoBot, Sirtywell, DivineAlpha, RunningClam, Tahir mq, Full-date unlinking bot, Vanpump, Tibetan Prayer, Tbhotch, EmausBot, ZeniffMartineau, ThatDamnBlueCollarTweaker, The Blade of the Northern Lights, Kragernon, Al83tito, Pan Brerus, L Kensington, Sven Manguard, Brycehughes, ClueBot NG, Citrum quaerendae, Frietjes, 88zxcvb, Parjlarsson, Helpful Pixie Bot, Curb Chain, Gob Lofa, Bibcode Bot, Lowercase sigmabot, ElphiBot, Briang7723, Meatsgains, MrBill3, Rfaloxb, Simidre, Gdfusion, Dhnlin, Khazar2, Ithiliana, JYBot, Superweenhutjunior, Mogism, 331dot, 17. mai, Lugia2453, NealCruco, TheShaxMan, Epicgenius, TheMillionRabbit, Thatoneguywholols, LieutenantLatvia, Giminiman, Brassironhoof, Bahadur22, Coolmikecanada, Alledaagsewaanzin, Mathkid421, Ontheisland69, Jaedenquintana, Jerodycett, KasparBot and Anonymus: 205
- Brava, Cape Verde** *Source:* [https://en.wikipedia.org/wiki/Brava%2C\\_Cape\\_Verde?oldid=681233551](https://en.wikipedia.org/wiki/Brava%2C_Cape_Verde?oldid=681233551) *Contributors:* Docu, Stefan Kühn, David Newton, Warofdreams, Pumpie, Robbot, RedWolf, Dbenbenn, Explendido Rocha, BozMo, Rich Farmbrough, ESKog, Markussepp, Darwinek, Quintucket, Crobzub, Gene Nygaard, Markaci, Deror avi, Woohookitty, Waldir, BD2412, Jake Wartenberg, Vegaswikian, Harmil, Stefankirchner, Bgwhite, YurikBot, RussBot, Gaius Cornelius, The Ogre, Zwobot, Chanheigeorge, Sardanaphalus, SmackBot, Ppntori, Elagatis, Mitoelias, Enr-v, NickPenguin, Akramali, Andrws, Lavateraguy, WeggeBot, PKT, Marek69, Missvain, NigelR, JaGa, Naniwako, Idioma-bot, Broadbot, AlleborgoBot, TenIslands, Ponyo, SieBot, BotMultichill, Jonas Poole, Price Morse Collins, Particip, El bot de la dieta, Addbot, Lightbot, Luckas-bot, Yobot, AnomieBOT, Torbenbrinker, Ulric1313, LilHelpa, Xqbot, DSisyphBot, Gouerouz, Plasticspork, WikitanvirBot, Andredibrava, ZéroBot, Mjbmrbot, ClueBot NG, BG19bot, Cvfastferry, RudolfRed, Ifar, Domfranza, Mattia, KasparBot and Anonymus: 27
- Saint Helena** *Source:* [https://en.wikipedia.org/wiki/Saint\\_Helena?oldid=681819238](https://en.wikipedia.org/wiki/Saint_Helena?oldid=681819238) *Contributors:* Kpjas, The Epopt, Vicki Rosenzweig, Koyaanis Qatsi, -- April, Andre Engels, Scipius, Danny, Christian List, Valhalla, Montrealais, Patrick, Infrogmation, Gabbe, Hoshie, Menchi, Greenman, Ihcoyc, Mdebets, Ahoerstemeyer, Stan Shebs, Docu, Notheruser, Angela, Den fjättrade ankan-enwiki, Jdforrester, Александр, Vzbs34, Jiang, BRG, Smack, Raven in Orbit, Timwi, WhisperToMe, Wik, Tpradbury, Astrotrain, Imc, Grendelkhan, Joy, Fvw, Jerzy, Pollinator, Francs2000, Calieber, Denelson83, Robbot, Chrism, Romanm, Mirv, Postdlf, Bryce, Henrygb, Puckly, Ktotam, JackofOz, David Edgar, Profoss, Fuelbottle, PBP, Alan Liefthing, Benji Franklyn, Wwoods, Bkonrad, Cantus, Gilgamesh-enwiki, Per

- Honor et Gloria, Mboverload, Avala, Bobblewik, Smartcowboy, Gugganij, Andycjp, Keith Edkins, Geni, Knutux, Formeruser-81, Beland, Secfan, Hammersfan, Eranb, Trek011-enwiki, Acad Ronin, Gerrit, Picapica, Qui1che, Grstain, D6, Apalsola, Dcfleck, Brianhe, Rich Farmbrough, Guanabot, Rama, Vsmith, Bishonen, Eric Shalov, Quisnsabe, Pavel Vozenilek, SpookyMulder, Bender235, Flapdragon, Kbh3rd, Swid, \*drew, El C, Kwamikagami, Amos Wolfe, Dpaajones, Acntx, Giraffedata, L.Willms, Jojit fb, Towel401, (aeropagica), Haham hanuka, Polylerus, Jonathunder, Alansohn, Buaidh, Geo Swan, Improv, Craigy144, Eagleridge, Sewellitokiemu, Avenue, Rwendland, TaintedMustard, Cromwellt, Jguk, Inge, Richard Weil, Vartan84, B1mbo, Dr Gangrene, Woohookitty, Doctor Boogaloo, Ender78, Ratzler, Chochopek, Duncan.france, Ortcutt, Tabletop, BartBenjamin, GregorB, Eyreland, Palica, RichardWeiss, Graham87, Chun-hian, Dashers, DePiep, Electionworld, Ketiltrout, Jorunn, Angusmclellan, FlaBot, Ground Zero, NekoDaemon, Krun, Srleffler, Gareth E Kegg, Chobot, Bgwhite, YurikBot, Wavelength, Retaggio, Lordsutch, RussBot, Xoloz, Kmorrow, Fabartus, Porturology, Peterkingiron, Van der Hoorn, Gaius Cornelius, NawlinWiki, The Ogre, JAJ, Humansdorpie, RFBailey, Vivaldi, Beanyk, Mysid, Strolls, Caerwine, HopeSeekr of xMule, Tigershrike, Deeday-UK, Sandstein, Capt Jim, Mythobeast, Cloudbound, Јованб6, Rms125a@hotmail.com, Nporiord, Petri Krohn, Wechselstrom, Willtron, Garion96, Argo Navis, TLSuda, Erudy, Paul Erik, Fastifex, Kingboyk, GrinBot-enwiki, West Virginian, SmackBot, David Kernow, Robin Whittleton, MichaelSH, Bomac, Big Adamsky, Cvdr, Mauls, Alsandro, Gilliam, Hmains, Choalbaton, Polaron, Jeffro77, MK8, Hibernian, Akanemoto, Bazonka, Barend, DHN-bot-enwiki, Da Vyni, Hongooi, Simon pipe, Danielnez1, Veggies, Shalom Yechiel, Alexmcfire, Yidisheryid, Azumanga1, Rarelibra, RFD, Segafreak2, Jon T Bruinline, Gbinal, Doodle77, Mwtoews, Vina-iwbot-enwiki, Deiz, TheStuzy, J 1982, Tony Corsini, Bucksburg, Pronoun, Green Giant, Mabuska, Jaywubba1887, GJaxon, Apcbg, Roregan, Neddysagoon, Aotearoa, DI2000, Iridescent, Sinkers, Brandizzi, Joseph Solis in Australia, JoeBot, Dariusofthedark, Richard75, MottyGlix, Gil Gamesh, GrahamBould, RaviC, Chris55, ThreeBlindMice, Paolosupernova, Nauticashades, Flowerpotman, Packersh, Malleus Fatuorum, Thijs!bot, Mpob, Sagaciousuk, Edgao@eastlink.ca, Marek69, Missvain, Horologium, Shura007, Catsmoke, Dgies, Floridasand, AlefZet, Escarbot, The Person Who Is Strange, Freddiem, Fatidiot1234, Nathanwright, Dr. Blofeld, Jj137, Gerard Mulholland, Darklilac, RedCoat10, Arx Fortis, Savefrance, Kitia, Sluzzelin, JAnDbot, Deflective, The Transhumanist, Wootery, Hodgetts, Islandman, Vgmaster, Rotherpe, Maias, Reichsgauleiter Hansen, Felix Stember, Pvmoutside, Mouchoir le Souris, Robneyer, The Anomebot2, Maud1mouse, Sammalin, As530, Phil88, Mattinbg, Daemonic Kangaroo, MartinBot, Feijuada, CommonsDelinker, Burgh House, J.delanoy, Pharaoh of the Wizards, Nev1, YourPTR!, Abhijitsathe, SuzanneKn, Sdrinkwater, Ahuskay, Flatterworld, Hdckman, Largoplano, Dubhe.sk, Biofoundationsoflanguage, Marie.greetham, Dacrycarpus, Stanqo, Gingal23, Andy Marchbanks, Rémi, Funandtrvl, Bynnms, W2ch00, VolkovBot, RingtailedFox, Vlmal11, Seattle Skier, Tmohr, Philip Trueman, Abberley2, TXiKiBoT, Dwaynebailey, Hobe, Recato, Lexington50, ^demonBot2, John Rocco, BotKung, Gwynethemerson, Albertuk-enwiki, Eurocopter, Hopefully acceptable username, Thunderbird2, Deconstructhis, The Red Hat of Pat Ferrick, SieBot, AS, Euryalus, Dbryant 94560, Parmenidesandthales, Mangostar, Purbo T, Oober349, Flyer22, BTH, Yerpo, Lightmouse, Jungy23, JohnSawyer, Akarkera, TCrEoLe89, Dodger67, Gr8opinionater, Faithlessthe wonderboy, ClueBot, Short pat, PipepBot, Gene93k, Shirebooks, Nnemo, XPTO, Drmies, Niceguyedc, Piledhigheranddeeper, Carl1, Auntof6, Daamsie, Detroitrobot, Walrsiad, Excirial, AssegaiAli, Peterneum, Jusdafax, JC1520, Howard Alexander, Rbfafe, Piccadilly Sirkus, Sun Creator, JordanHenderson, ZioNata, L.tak, Dn9ahx, Wkharrisjr, Robert Midwinter, Dekisugi, DJSouthUnited, SchreiberBike, Stepheng3, Silas Maxwell, Samantha555, Yoman82, Shirebooks1, SoxBot III, Alastair Carnegie, DumZiBoT, JacobS, Chino, Badgernet, Dave baby, Entlink, Jamesrforlyth, Good Olfactory, Addbot, Nobody25, Andrew K. Zimmerman, Leszek Jańczuk, Douglas the Comeback Kid, FDT, CarsracBot, Viswanathansuresh, Lemonade100, Strawless, Lightbot, Jarble, Krenakarore, Ettrig, Krukouski, Legobot, Luckas-bot, Yobot, Bunnyhop11, Fraggel81, Christopedia, Abondhal, Nallimbot, Gerixau, Painstaker, MacTire02, Bility, AnomieBOT, Puertoricol, Rockypedia, Tuxon, Xufanc, Cosmic Air, ArthurBot, LilHelpa, Xqbot, Amazon510, Capricorn42, Kyng, MaryBowler, Zaps93, FrescoBot, Paine Ellsworth, Originalwana, Sthelenaerland, Rufus Total, Linguarum, Galloramenu, Yahia.barie, Cheesby, Moonraker, Pietje96, Jauhienij, Crusoe8181, Bewitched fan 2k, Shirebooks2, Themanisdry, Gaius Octavius Princeps, SeoMac, Schwede66, PleaseStand, T-hotch, MrArifnajafov, RjwilmsiBot, AssociateAffiliate, Ospel, Marcel!, WildBot, EmausBot, John of Reading, WikitanvirBot, Sidewalkingcrab, GoingBatty, PaulDrye, AvicBot, LuzoGraal, Ida Shaw, Orange Suede Sofa, Hazard-Bot, WoodyJoe, UncommonID, ClueBot NG, WIERDGREENMAN, Speary, Everest700, Leeeyon17, Helpful Pixie Bot, BG19bot, Northamerica1000, Midgeaugh-Botheaugh, Kbluebulls, PaintedCarpet, Altaír, Rachel.lam.2010, Mark2304, Flagpolewiki, RudolfRed, Jeremy112233, Vanobama, Cyberbot II, 331dot, Syahier, Simon Pipe, UK, Rjp422, Rotlink, Asdqwezxcerty, Epicgenius, Rob984, Eyesnore, Haminoon, Callista blue, Valetude, Mimo, Ben Tuckett, Agrso, LKY23, Spilia4, Ashleyweir, Pingu7931, Sihfdahbfkjsaf, Polemicista, Mndata, Julietdeltalima, Rag22, Richard Mwangi, Nlumley, KasparBot, MPCR, EnronEvolved, SSTflyer and Anonymous: 427
- **Southern Thule** *Source:* [https://en.wikipedia.org/wiki/Southern\\_Thule?oldid=681224729](https://en.wikipedia.org/wiki/Southern_Thule?oldid=681224729) *Contributors:* Hoshie, MiLo28, Henrygb, Michael Devore, Gilgamesh-enwiki, Golbez, Sam Hocoavar, Expatkiwi, Discospinster, Flapdragon, Zscout370, Holdek, Jonathunder, A2Kafir, Geo Swan, Megan1967, Rillian, MacRusgail, Manxruiter, Red Jay, Philip Stevens, KnightRider-enwiki, SmackBot, Britannicus, Verne Equinox, Kharker, Kevin Ryde, AndySimpson, John, Apcbg, Peter Horn, ThreeBlindMice, Cydebot, Thijs!bot, Nick Cooper, Seattle Skier, TXiKiBoT, Darkieboy236, Langus-TxT, Wee Curry Monster, DumZiBoT, MystBot, Good Olfactory, Addbot, Abocok, LaaknorBot, ZorroBot, Yobot, AnomieBOT, Xufanc, Xqbot, Lothar von Richthofen, Racexr11, İñaki Salazar, Zackmann08 and Anonymous: 22
  - **St Kilda, Scotland** *Source:* [https://en.wikipedia.org/wiki/St\\_Kilda%2C\\_Scotland?oldid=681054370](https://en.wikipedia.org/wiki/St_Kilda%2C_Scotland?oldid=681054370) *Contributors:* DWeir, Caltrop, Docu, GCarty, Charles Matthews, Astrotrain, Warofdreams, Raul654, Adam Carr, Robbot, Ktotam, TPK, Unother, MPF, Seabhcán, Folks at 137, Michael Devore, Lurker, Gilgamesh-enwiki, Solipsist, Bobblewik, OwenBlacker, Grinner, RetiredUser2, Thincat, Icairns, Quota, Grstain, Rich Farmbrough, Cnyborg, Martpol, Flapdragon, Kelvinc, Kwamikagami, Art LaPella, Bobo192, Touriste, Smalljim, Scotthattton, Towel401, Grutness, Alansohn, LtNOWIS, Maccainich, Hoary, Dabber, Deacon of Pndapetzim, Suruena, Cordeaux, L.broadhurst@richmond.com, Axeman89, Embryomystic, Ceyockey, Johnwcowan, Stemonitis, Woohookitty, PatGallacher, SP-KP, Ratzler, JBellis, Tabletop, Kelisi, SteveCrook, Graham87, Blisco, Ryoung122, Magister Mathematicae, Josh Parris, Rjwilmsi, Josiah Rowe, XLerate, Tintazul, Oliver Chettle, MacRusgail, Lordelph, Cactus.man, Kummi, YurikBot, Jamesmorrison, Hairy Dude, RussBot, Ivirivi00, Pigman, Mark O'Sullivan, NawlinWiki, Daniel563, Dysmorodrepanis-enwiki, Aeusoos1, RFBailey, Ruhrfrisch, Tony1, Epipelagic, Wangi, CorbieVreccan, T-rex, Robyvecchio, Giddylake, Zzuuzz, Chase me ladies, I'm the Cavalry, Closedmouth, SMcCandlish, Lynbarn, Acer, Mais ouil!, Stevoux, Snalwibma, KnightRider-enwiki, Tcruss, Stalfur, SmackBot, David Kernow, Herostratus, Finavon, Mauls, Peter Isotalo, Hmains, JMiall, Fetofs, Chris the speller, Morrismaciver, Greatgavini, Apeloverage, Breadandcheese, Stormboynt, Rcbutcher, John Reaves, Scwlong, Tamfang, Brzak, Alphathon, JRPG, Chlewbob, New World Man, Greenshed, Fuhghettaboutit, Ohconfucius, Yohan euan o4, Ser Amantio di Nicolao, BrownHairedGirl, Anlace, John, Tony Corsini, RomanSpa, Fenix down, JHunterJ, Billreid, SQGibbon, SandyGeorgia, Cnrb, Brandizzi, Sardon, YukataNinja, GDallimore, Ü, Trialsanderrors, Joey80, W guice, LM82, Nilfanon, Cydebot, Peripitus, Jackydl01, Younsmere, Mike Christie, Lugnuts, JamesCollins, Jfmm, Michael C Price, Asenine, Nabokov, Mtlur, Kozuch, PamD, Rosser1954, Malleus Fatuorum, Thijs!bot, Epr123, Barticus88, Osborne, Marek69, Saibo, Strauszsek, Stevvvv4444, Gioto, Safisk, Moun-tolive, IrishPete, Storkk, Waddeldj, Ericoides, Gannet77, Rotherpe, Maias, Jllm06, Steven Walling, Neitakk, Catgut, Sammalin, LorenzoB, Rif Winfield, Pere prlpz, StaraBlazkova-enwiki, Ben MacDui, Anaxial, CommonsDelinker, Jascal, J.delanoy, Pharaoh of the Wizards, DrKiernan, Dh mellor, Cjacks1958, Snacks tasty, Kon-Tiki001, 83d40m, Treisijis, AlasdairW, Richard New Forest, Funandtrvl, Hugo999,

VolkovBot, Galena11, Mcewan, Abberley2, TXiKiBoT, Jkeene, Eyenbosch, Steven J. Anderson, Grimme, Martin451, Bentley4, Jalo, Akerbeltz, Plutonium27, Cantiorix, Cj1340, Steve Borg, Euryalus, WereSpielChequers, Yintan, Editore99, Cameron, Oxymoron83, Faradayplank, Paulmcmillan, Pretty Green, Tofts, Lightmouse, JBank94, Escape Artist Swyer, Mygerardromance, Finetooth, 45ossington, Gr8opinionater, Elnon, ClueBot, Dmries, Mild Bill Hiccup, Ranger Steve, Habashia, Kheskett, Richerman, Ashdod, Piledhigheranddeeper, Luke4545, McMarcoP, Catfish Jim and the soapdish, Ottre, Coinmanj, NuclearWarfare, S19991002, SchreiberBike, Acabashi, Versus22, DumZiBoT, ברךוילי, Mr Larrington, Prof Wrong, Wikiuser100, Triptropic, FTGHSmith, Good Olfactory, Kbdankbot, MatthewVanitas, Addbot, Don'tKnowItAtAll, M.nelson, LaaknorBot, Ld100, LinkFA-Bot, CuteHappyBrute, Rmorrison, Tassedethe, Numbo3-bot, Ondewelle, Legobot, Luckas-bot, Yobot, EchetusXe, Jason Recliner, Esq., Otter, Mister Flash, MacTire02, AnomieBOT, Iexec1, Greyswift, Galoubet, Ulric1313, Flewis, Giarsllim, ArthurBot, Xqbot, Capricorn42, Jowaninpensans, Member389845, Supersmartnerdykid2, Bob-sagetwarrior, Admit books 3 ttttt, 4jhn5, LEVEL666, Eric Blatant, Christopher12356, Eugene-elgato, Onathologist, FrescoBot, OgreBot, RedBot, TobeBot, Dinamik-bot, Tbhotch, RjwilmsiBot, DASHBot, EmausBot, John of Reading, Racerx11, TuHan-Bot, Vietnam bathtub, SporkBot, Wayne Slam, David J Johnson, Nangamy, Jrsfa, Oyster Flute, MIKHEIL, RafikiSykes, Helpful Pixie Bot, Thoughtfortheday, Tholme, Gob Lofa, Bobby768, Rubysmit, LWP154, Loriendrew, Refsub, Cyberbot II, Khazar2, Scotire, Dexbot, ArmbrustBot, URTh de, ReconditeRodent, Theveravee, CFIndlay12, Zhanmusi and Anonymous: 143

- Trindade and Martim Vaz** *Source:* [https://en.wikipedia.org/wiki/Trindade\\_and\\_Martim\\_Vaz?oldid=681172645](https://en.wikipedia.org/wiki/Trindade_and_Martim_Vaz?oldid=681172645) *Contributors:* CesarB, Miguels, Sjorford, Tom Radulovich, Wouterhagens, Rogier, Gilgamesh-enwiki, Kesac, Karl-Henner, Acad Ronin, D6, Violetriga, Darwinek, Dabbler, Woohookitty, Ratzer, Palica, Matilda, Graham87, Kbdank71, Rjwilmsi, Choess, Srleffler, Irregulargalaxies, Roboto de Ajvol, The Ogre, Zwobot, 2fort5r, SmackBot, Rrius, Hmains, Dauto, MalafayaBot, Colonies Chris, Zsinj, Eliyahu S, Bolivian Unicyclist, Elendil's Heir, Wiz9999, Dantadd, Victor Lopes, Pobbie Rarr, Brandizzi, CmdrObot, Phase Theory, Cydebot, Bellerophon5685, Paulj-effersons, CieloEstrellado, Baticus88, Xander2015, JustAGal, Lajsikonik, Escarbot, AntiVandalBot, Fayenatic london, Volcanoguy, DagosNavy, JAnDbot, Ipoellet, BlueMoses, Jllm06, Brownag, Ibn Battuta, Limongi, Rrostrom, Plasticup, EconomistBR, Juliancolton, Seattle Skier, Mcewan, TXiKiBoT, Bdb484, A4bot, Broadbot, Flyer22, Goustien, Braziliandonuts3, Velvetron, ClueBot, XPTO, UrsoBR, Brianboulton, DumZiBoT, Dthomsen8, SelfQ, Addbot, Freakmighty, Lightbot, Krenakarore, Yobot, KamikazeBot, Synchronism, AnomieBOT, ArthurBot, Xqbot, Aa77zz, FtI74, Chronus, RedBot, Aj4444, Dinamik-bot, Seascan, EmausBot, John of Reading, Racerx11, ZéroBot, Xoil, ChuispastonBot, ClueBot NG, Gangt99, D30099, BG19bot, Dmck15, Flat Out, Ac2k, Srt# PiriLimPomPom, Romanmorata, MrMeow1923 and Anonymous: 45
- Tristan da Cunha** *Source:* [https://en.wikipedia.org/wiki/Tristan\\_da\\_Cunha?oldid=682116952](https://en.wikipedia.org/wiki/Tristan_da_Cunha?oldid=682116952) *Contributors:* Vicki Rosenzweig, Zundark, Malcolm Farmer, SJK, Patrick, PhilipMW, Llywrch, Modster, Gabbe, Menchi, Mearling, Jimfbleak, Docu, Andrewa, Error, Susurus, Jiang, Kaihsu, Raven in Orbit, GregRobson, WhisperToMe, Wik, Astrotrain, Ed g2s, AnonMoos, Jamesday, Frazzydee, Michael Glass, Carlossuarez46, Denelson83, Robbot, Dale Arnett, Chrism, Altenmann, Romanm, O. Pen Sauce, Smallweed, Mikedash, JackofOz, Carnildo, Adam78, DocWatson42, MPF, Andy, Everyking, DO'Neil, Gilgamesh-enwiki, Bobblewik, Smartcowboy, Gugganij, Utcursch, Pgan002, Keith Edkins, Quadell, WilliamB, Beland, GreenReaper, Quilche, Bluemask, Grstain, D6, O'Dea, Naryathegreat, Eb, hoop, Rich Farmbrough, Guanabot, Vsmith, Quiensabe, Ascánder, Bender235, Waxwing slain, Livajo, Kwamikagami, Worldtraveller, Sole Soul, Robotje, Dpaajones, Man vyi, Kjkolb, Nev, Jiltix, Polylerus, Jonathunder, Acb, A2Kafir, Honeycake, Alansohn, Eleland, Buaidh, Sabine's Sunbird, Craigy144, Sl, MarkGallagher, Mac Davis, Dark Shikari, Mrhollybrain, Dschwen, RainbowOfLight, Kazvorpal, Larry G, Deror avi, Stemonitis, DrDaveHPP, Alvis, BJones, Everton, Ratzer, Matijap, Tusitala, SDC, Prashanthns, Mrtoodles, Graham87, Kbdank71, Dpr, Electionworld, Kafuffle, Ketiltrout, Rjwilmsi, Nightscream, SchuminWeb, Ground Zero, MacRusgail, Vilcxjo, NGerda-enwiki, Chobot, Bgwhite, Dj Capricorn, Sophitus, Roboto de Ajvol, RussBot, Fabartus, Ivirivi00, Hydrargyrum, Gaius Cornelius, Member, NawlinWiki, Howcheng, Pylambert, Lexicon, RFBailey, Gadget850, Caerwine, Square87-enwiki, MLA, Orioane, Ninly, Canley, ViperSnake151, Jonathan.s.kt, Citylover, Lyr1, Eptin, Sardanaphalus, SmackBot, Pwt898, David Kernow, Ttarrag, Verne Equinox, Rojomoke, Kintet-subuffalo, Imzadi1979, Mauls, Typhoonchaser, Coolian, Jamie C, Kurykh, Jeekc, Hibernian, Akanemoto, Sadads, Modest Genius, Mike hayes, Can't sleep, clown will eat me, Duncancumming, Valich, Snowmanradio, Bardsandwarriors, Rarelibra, Frank.corr, Hoof Hearted, WaldoJ, Segafreak2, Algr, Andrew Dalby, Patroklos, Lester, DLinth, John, Rigadoun, Green Giant, Jaywubba1887, Ckatz, Apcbg, Luokehao, Aotearoa, Gabrielx, P199, Peter Horn, RevTenderBranson, Paukrus, Istanbuljohnm, Iridescent, Alessandro57, Joseph Solis in Australia, Twas Now, WordsAmp, Chris55, Gotterdammerung-enwiki, Van helsing, BeenAroundAWhile, W guice, Picaroon, Sulfis, Three-BlindMice, Chmee2, Ken Gallager, Reywas92, Heff01, Xtv, Chris4682, Easyid, Robert.Allen, Malleus Fatuorum, Thijs.bot, Kahastok, Robsinden, Edwardx, Marek69, Aiko, Missvain, Bernerjc, Swinginruss, AlefZet, Escarbot, AntiVandalBot, Obiwankenobi, Dr. Blofeld, Tjmayerinsf, Golf Bravo, Yellowdesk, Kuteni, Volcanoguy, Deflective, The Transhumanist, Ipoellet, Top Gunn, PhilKnight, Maias, VoABot II, Scanlan, Poetdancer, Sammalin, Toddc, Rif Winfield, Swegam, Salopian, Rickard Vogelberg, Pikolas, El Zoof, Sm8900, Commons-Delinker, EdBever, J.delanoy, Discott, Marc30319, YourPTR!, Guilherme Paula, GeoWriter, Maproom, Egrwin, Nemo 73, Mjb1981, SuzanneKn, Leftcase, Biofoundationsoflanguage, TottyBot, Nathaniel, Gibmetal77, Idioma-bot, Bynnms, Jrugordon, VolkovBot, Chienlit, Itsmrdan, Af648, TXiKiBoT, A4bot, Seraphim, Broadbot, ^demonBot2, GeneralBelly, Gilisa, Billinghurst, Alan K N, Sleepsong, Occradman, Vinhtantran, AlleborgoBot, Tennysonm, Doverbeach01, Onweerwolf, Enkyo2, SieBot, MeegsC, Keilana, Goustien, Targeman, Adam37, Wee Curry Monster, Gr8opinionater, Gubernatoria, Ossguy, Mr. Granger, Loren.wilton, ClueBot, The Thing That Should Not Be, Supertouch, Farolif, Mezigue, Rich Uncle Skeleton, TypoBoy, Piledhigheranddeeper, Jeremiestrother, Fer Servadu, Detroitrobot, No such user, Alexbot, Jusdafax, Noneforall, Gtstricky, Sun Creator, Dn9ahx, 7&6=thirteen, Websitewiki, SchreiberBike, Silas Maxfield, Samantha555, Kikos, Banano03, Mhockey, Smarkflea, Vanished user uih38riiw4hjl, NinetyCharacters, DumZiBoT, Lunboks, XLinkBot, Rror, Wikiuser100, Tristianian, Good Olfactory, Bidgetfox, Polkmin, Addbot, Douglas the Comeback Kid, Blue Square Thing, FDT, Cst17, SoSaysChappy, LaaknorBot, ModeratelyEvil79, SamatBot, Fárbaudi, 84user, Zorrobot, David0811, Legobot, Luckas-bot, Yobot, Amirobot, Bility, AnomieBOT, Xufanc, Singerspell, Goodtimber, Gamera1123, Ibjle, GB fan, ArthurBot, Xqbot, Brandywick, Night w, Poetaris, JonC0001, Anonymous from the 21st century, RibotBOT, Chris.urs-o, Tokiohotelover, Astatine-210, Fotaun, FrescoBot, Fotherington-thomas, Mabär, Doremo, Megaandroid30, Kiwikibble, Medvebaba, Wikitza, Cheesby, Moonraker, RedBot, MastiBot, Tahir mq, Twistlethorp, TobeBot, Fama Clamosa, AHeneen, Vrenator, SeoMac, 雲起林野, JV Smithy, Tbhotch, DARTH SIDIOUS 2, RjwilmsiBot, EmausBot, John of Reading, Racerx11, Antelope, Josve05a, Cristiano Tomás, SporkBot, Stoltenhoff, Barney Bruchstein, Palaeozoic99, ClueBot NG, Vghostine, Catlemur, Chester Markel, Frietjes, Delusion23, O.Koslowski, Auchansa, 231Pacific, Popcorn-duff, BG19bot, Cushmado, Krenair, Mohamed CJ, Павел Петро, AvocatoBot, Kendall-K1, Euphoria42, Simidre, BattyBot, GarySDunne, Hmainsbot1, SiBr4, Ssboplayer, AVWall, Bettyboop330, Rob984, Felviper, SamoaBot, Ixion111, Dr.Gulliver, YOMAL SIDOROFF-BIARMSKII, AtticTapestry, Olivier SERRET, Fortuna Imperatrix Mundi, Banquo71, Runtmole, Somebody Stop Me, Tullyvallon, Nacotacl, MadsVad, KasparBot, Elucidata and Anonymous: 355
- Île Amsterdam** *Source:* [https://en.wikipedia.org/wiki/%C3%8Ele\\_Amsterdam?oldid=676458566](https://en.wikipedia.org/wiki/%C3%8Ele_Amsterdam?oldid=676458566) *Contributors:* Hoshie, Tregoweth, Eugene van der Pijll, Owen, Robbot, Millosh, Timvasquez, Revth, Gilgamesh-enwiki, Grant65, Gadfium, Kevintoronto, D6, Metron, Discospinster, Pavel Vozenilek, SpookyMulder, Bender235, Accis, Zscout370, Kwamikagami, Redf0x, Polylerus, MrTree, Alfanje-enwiki,

Geo Swan, Gene Nygaard, Yoimjamie, Ratzler, Kelisi, Tapir2001, SDC, Alan Canon, Roboto de Ajvol, YurikBot, RobotE, RussBot, Van der Hoorn, Stereoroid, Orioane, Theodolite, Citylover, IlliteratePoet, Premkudva, Fastifex, Asterion, SmackBot, David Kernow, Pmaas, Zonder, Hmains, A. B., TCY, Maurice45, SashatoBot, Apcbg, Peter Horn, Istanbuljohnm, ALife-enwiki, Laurens-af, RagingR2, Cydebot, Channer, Monsieur Fou, Omicronpersei8, BetacommandBot, Thijs1bot, Tensaibuta, Marek69, I do not exist, Nick Number, PoM, Escarbot, Alphachimpbot, Volcanoguy, JAnDbot, Driчерby, Maias, Magioladitis, Pvmoutside, Daarznieks, Juiced lemon, KarBOT, CommonsDelinker, Plasticup, VolkovBot, Seattle Skier, Kyle the bot, Classical geographer, Ulrika F.-enwiki, AlleborgoBot, Mohonu, SieBot, Antipoeten, WarrenPlatts, Goustien, Finetooth, Gubernatoria, Swedish fusilier, Tomas e, Excirial, Zaharous, Tunaonrice, SchreiberBike, Stephe3, Annunciator, Addbot, NjardarBot, Favonian, Tide rolls, Legobot, Luckas-bot, Yobot, PMLawrence, KDS4444, JackieBot, Xufanc, Satrugna02, ArthurBot, Xqbot, Kyng, Schekinov Alexey Victorovich, FrescoBot, Sooph, LucienBot, Thatys, Louperibot, SpongePappy, Tahir mq, Kiwichrish, VAP+VYK, Niobrara, Daniel Quinlan, Remco007, RjwilmsiBot, EmausBot, Finn Bjørkild, Werieih, Subtropical-man, Brandmeister, Mayur, ChuispastonBot, Brycehughes, ClueBot NG, Peter Geatings, BG19bot, Wiki13, Simidre, ChrisGualtieri, GoShow, Aliwal2012, Makecat-bot, Ssbplayer, Rotlink, Johnveroneau18, Meganesia, 32RB17, Andrew Feikema, Muskan Agrawal, KasparBot, Weathereditor and Anonymous: 70

- Christmas Island Source:** [https://en.wikipedia.org/wiki/Christmas\\_Island?oldid=681236462](https://en.wikipedia.org/wiki/Christmas_Island?oldid=681236462)
**Contributors:** AxelBoldt, The Eopot, Mav, Bryan Derksen, Zundark, Koyaanis Qatsi, Eclecticology, Imran, Montrealais, Hephaestos, Mbecker, Leandrod, Frecklefoot, JohnOwens, Tim Starling, Modster, Cprompt, Gabbe, Hoshie, Paul A, Kricxjo, Stan Shebs, Jpatokal, Den fjättrade ankan-enwiki, Kingturtle, Susurru, Jiang, Kaihsu, Deisenbe, Hashar, Eszett, Bemoeial, Dysprobia, Daniel Quinlan, WhisperToMe, DJ Clayworth, VeryVerily, Jfruh, Jason M, Camerong, Michael Glass, Jeffq, Denelson83, SD6-Agent, Vardion, Chrism, Insom, Saforrest, Wereon, Davidcannon, Alan Lieferting, Jpta-enwiki, Cattac, Paploo, Cantus, Sebjarod, BigHaz, Bobblewik, Rslloch, Gadfum, Andycjp, Keith Edkins, Alexf, Quadell, Beland, OverlordQ, Domino theory, Roisterer, Secfan, Marc Mongenet, Karl-Henner, Sam Hocevar, Huaiwei, Enzino, Tomwalden, Trevor MacInnis, Matb90, Esperant, SYSS Mouse, Mike Rosoff, Shiftchange, D6, Eric, Discospinster, Rich Farmbrough, Oska, Cnw, Vsmith, DerekLaw, Triskaideka, JPX7, SpookyMulder, Swid, Zscout370, Borofkin, El C, Spoon!, CDN99, Erauch, John Vandenberg, The-WhiteRussian, Pokrajac, Diceman, La goutte de pluie, Xoddam, Hesperian, Polylerus, Caeruleacentaur, Gsklee, Jonathunder, Jumpbuck, Red Winged Duck, Bob rulz, Honeycake, Alansohn, Alfante-enwiki, Buaidh, Andrew Gray, Linnhall, B3virq3b, Cdc, CJ, Avenue, Bart133, KingTT, Zantastik, RainbowOfLight, Danthemankhan, Henry W. Schmitt, Ianblair23, Ringbang, Nightstallion, Deroravi, TShilo12, Zntrip, Stemonitis, Adamm, Woohookitty, Mr Tan, RHaworth, LOL, Kosher Fan, Ratzler, WadeSimMiser, Jeff3000, Nakos2208-enwiki, Al E., Steinbach, Isnow, SDC, Zzyzx11, Capibara-enwiki, Palica, Stevey7788, Graham87, DarkSerge, BD2412, MasterPlan, Luh-e, Amire80, Vegaswikian, Sghan, Tbone, Dracontes, FloK, CAPS LOCK, SchuminWeb, WWC, Pdehaye, CalJW, JdforresterBot, Gurch, Wongm, Fosnez, Krun, Cookn4ever, Alphachimp, Chobot, DVdm, Sclarkson, Vmenkov, JPD, YurikBot, Borgx, Jimp, Kafziel, JarrahTree, RussBot, Hornandsoccer, Rakkor, Ivirivi00, Gaius Cornelius, Pseudomonas, Paki.tv, Jaxl, Welsh, Lexicon, RL0919, Saberwyn, FatMike, Tony1, DeadEyeArrow, Alex Law, Knusser, BlackJack, Orioane, 21655, Sghan81-enwiki, Nikkimaria, Closedmouth, KGasso, Chanheigeorge, Josh3580, Nolanus, Canley, LeonardoRob0t, Phil Holmes, Emc2, Nevanderson, Argo Navis, Erudy, Leon2323, GrinBot-enwiki, Finell, West Virginian, Luk, Lambroger, Sardanaphalus, Vanka5, SmackBot, Unschool, David Kernow, Hux, McGeddon, Saimdusan, Kilo-Lima, Zyxw, Ilikeeatingwaffles, Abbeyvet, Kintetsubuffalo, Commander Keane bot, Gilliam, Declan murphy, Hmains, Betacommand, Angelbo, Valley2city, Vinodm, Chris the speller, Michbich, Jamie C, Skookum1, Persian Poet Gal, Bduke, MK8, Hibernian, Hooraj, Akanemoto, Barend, Cshobe, GoodDay, Smartperson, OrphanBot, MJDetroit, Mvandrie, Rrburke, Dark link, Kcordina, RedHillian, Rarelibra, Khoikhoi, W33nie, Kasperd, Chibiabos, Battamer, EdGl, LeighBCD, Ohconfucius, SashatoBot, Takamaxa, Kingfish, Khazar, SilkTork, Clare., Foolish Child, Bydand, Breno, Green Giant, Ckatz, Ex nihil, Geof Sheppard, Apodeictic, Girmitya, Aotearoa, Magere Hein, Ryulong, Prunk, Peter Horn, MTSbot-enwiki, D12000, Paukrus, Mranostay, Djwells@, Mr Negotiator, Clarityfiend, Joseph Solis in Australia, Fitzwilliam, Thebigone45, Tawkerbot2, Eastlaw, Dia^, Jonathan A Jones, Adam Keller, Mattbr, Alexbuidrs, Orderinchaos, Neelix, Richard Keatinge, Rwphan, Kd5nfp, Ph0kin, Cydebot, Gogo Dodo, JFreeman, Tomservo, Bassman444, Snewoc, MarioMan, Kozuch, CieloEstrellado, Epbr123, Qwyrxian, GentlemanGhost, 23prootie, Marek69, Woody, Anggerik, Merbabu, Gaimhreadhan, Michael A. White, AlefZet, Escarbot, Visik, KrakatoaKatie, AntiVandalBot, Widefox, Seaphoto, Exteray, Marquess, Alphachimpbot, Qwerty Binary, JAnDbot, MER-C, Epeeefeche, The Transhumanist, Biloxibear, IanOsgood, Maia, Yahel Guhan, Meebles, Cjmhall, Magioladitis, WolfmanSF, VoABot II, Meredith, Scanlan, Mcavic, Olli J., Pvmoutside, The Anomebot2, Inkan1969, IkonicDeath, Just H, Prester John, Cacbm, Mabuhelwa, Snake-eyes, MartinBot, Jim.henderson, Rob Lindsey, CommonsDelinker, J.delanoy, Pharaoh of the Wizards, Cyborg Ninja, JamesR, Hans Dunkelberg, Yonidebot, TrueCRaysball, Abhijitsathe, PSBennett, NewEnglandYankee, DadaNeem, Largoplazo, STBotD, DorganBot, Idioma-bot, Funandtrvl, Deor, VolkovBot, ABF, Gottago, Jeff G., Moosejr26, Philip Trueman, Feroshki, TXiKiBoT, Pahari Sahib, Technopat, Glynnchong, Don4of4, LeaveSleeves, ^demonBot2, BotKung, Dchky, Bcharles, Luuva, Nocturnal Wanderer, Thurg00d420, Nowax, Truthanado, Vinhtranan, AlleborgoBot, Eggshorn, Akitor, Editor1234567, Biscuitin, SieBot, Coffee, Tiddly Tom, Derlinus, Lowbart, Triwbe, Kemlo, LibStar, Jimmymc666, Oxymoron83, Goustien, Lightmouse, Peanutbutterstella11, OKBot, Seedbot, Mygerardromance, Loren.wilton, Sfan00 IMG, ClueBot, Bob1960evens, MalwareSmarts, The Thing That Should Not Be, Speedtrainspota, Wutsje, Mild Bill Hiccup, Bev the great, Niceguyedc, Piledhigheranddeeper, Mspraveen, DragonBot, Detroitrobot, King wiston, Alexbot, John Nevard, Urbanchampion, Gtstrategy, MacedonianBoy, NuclearWarfare, SchreiberBike, IamNotU, C628, Kyul!, Thingg, Gonzo1234, Pzoxicuvybtrnm, Johnuniq, Itachi luvr 69, Nafsadh, Crawling in my skin, these wounds they will not heal, Vanished User 1004, Gregoryignatiushu, XLinkBot, Dsvyas, Steller's sea cow, Mitch Ames, Badgernet, Good Olfactory, Addbot, Michael Pennay, Crazyasane, Apoyon, EjsBot, AkhtaBot, Fieldday-sunday, Mmmazur, Renaissance77, CarsracBot, Glane23, AndersBot, Roux, Favonian, BobMiller1701, Tassedethe, Numbo3-bot, Tide rolls, Lightbot, Jus2424, AussieLegend2, Rojypala, Legobot, Luckasbot, Yobot, 2D, Senator Palpatine, Amirobot, KamikazeBot, Jryszard, Nokternus420, AnomieBOT, VX, Jim1138, Auranor, Sz-ibot, Ulric1313, Mahmudmasri, Jedipickles, Citation bot, Aglomax, ArthurBot, Quebec99, LiHelpa, Xqbot, Conay, Newzebras, Kfinnguy, MY MOM WONT LET ME EAT AT THE TABLE WITH A SWORD., BritishWatcher, Almabot, Xmasislanddude, Turnitupto11, Moalli, ProtectionTaggingBot, Omnipaediata, RibotBOT, CHJL, Nicko211, MerLinkBot, Sukandar, E0steven, A.amitkumar, Surv1v411st, Tobby72, MichealH, Samuelsidler, Christmasislander, Slivicon, BoundaryRider, JKDw, Pinethicket, Metricmike, Elockid, Editor1023, Wdcf, RedBot, Tahir mq, Rumiñawee, Kgbo, Gelo8, Commenus, Fama Clamosa, ItsZippy, Garbageboy 32, Doc Quintana, Somewhere On The Road of Life, Schwede66, Merlinsorca, Athene cheval, Tbotch, Bahnfreund, RjwilmsiBot, Chipmunkdavis, TjBot, Maretone, Uberin, EmausBot, Cricobr, Look2See1, Ajraddatz, RenamedUser01302013, Mo ainm, MikeyMouse10, Sundostund, Mobius Bot, H3llBot, SporkBot, Erianna, Meowmeow10, Rcsprinter123, Coasterlover1994, Millcock, Aegoceras, Donner60, Xiaoyu of Yuxi, Puffin, Orange Suede Sofa, Graeme374, ChuispastonBot, Senator2029, DASHBotAV, Brycehughes, Sue theria, ClueBot NG, ClaretAsh, Deoma12, Zasurus, MelbourneStar, Satellizer, A520, Duideka, Kittygirl7878, Kikichugirl, Yanw8888, Movses-bot, Muso799, Turn685, Achilders223, Frietjes, Primergrey, Mannanan51, Auchansa, Joe Stevanovski, Widr, Elizabethdmy, Helpful Pixie Bot, Pullymac, Candlebracadabra, Roundquarter, One.tall.chick, Xyzlr, Kaltenmeyer, Cowdy001, HIDECCHI001, Indah blestari, Nachhattardhammu, JASW78, Compbreak7, Montalban, Atomician, WhitmanNE, Dentalplanlisa, Miapetrea, DPL bot, 220 of Borg, Fylbecatulous, Muffin Wizard, BattyBot, Justincheng12345-bot, Zarospwnz, Donaldtrumpcommando, Liam987, Maclearite, Cyberbot II, Vibhabamba, ChrisGualtieri, Sj96,

Khazar2, JYBot, SantoshBot, Hmainsbot1, Mogism, Makecat-bot, Yellowtail23, Fredjames1234, Philjones876, Raj Singh, Kaiytee1, Seqqis, CsDix, Rob984, ManCityRoxTS, ButcherPetee, Samrong01, Ray Lightyear, عراقى1, Amyknight8, ChrisFley, George8211, Quenhi-tran, Mtak111, Nick Mitchell 98, Maxwellco, Lisleauxrostres, Amortias, Truthbeers 888, Lyndonbaines, Julietdeltalima, TingJD, Cornkak, LL221W, Fayemiles, KasparBot, Jemma. q, Djmandibular, Weathereditor and Anonymous: 540

- **Cocos (Keeling) Islands** *Source:* [https://en.wikipedia.org/wiki/Cocos\\_\(Keeling\)\\_Islands?oldid=681589123](https://en.wikipedia.org/wiki/Cocos_(Keeling)_Islands?oldid=681589123) *Contributors:* The Epopt, Vicki Rosenzweig, Mav, Bryan Derksen, Christian List, Tim Starling, Earth, Gabbe, Hoshie, Paul A, Ahoerstemeier, Den fjättrade ankan-enwiki, Jiang, RickK, WhisperToMe, Wik, Ranjran, Mtcv, Slawojarek, Denelson83, Robbot, Pigsontewing, Chrism, Moncrief, Premeditated Chaos, Mervyn, Seth Ilys, GreatWhiteNortherner, Davidcannon, Ncox, Jpta-enwiki, MeirM, Cantus, DO'Neil, Yekrats, Grant65, Pne, Keith Edkins, Beland, OverlordQ, Kvasir, Billposer, Roisterer, Secfan, Huaiwei, Kate, Shiftchange, D6, Rich Farmbrough, Qutezuze, Vsmith, Florian Blaschke, Dave souza, Quiensabe, Bender235, Jnestorius, CanisRufus, Zscout370, El C, Kwamik-agami, Touriste, ZayZayEM, Polylerus, Jonathunder, Jumbuck, Ahsouus, Bob rulz, Alansohn, Alfanje-enwiki, Buaidh, CJ, Hu, Avenue, Evil Monkey, Kusma, Instantnood, Iustinus, Nightstallion, Japanese Searobin, Adamm, Woohookitty, Henrik, Ratzer, Nakos2208-enwiki, Chris Buckey, Julo, Gimboid13, Palica, Dysepsion, Matilda, Graham87, CraigKeogh, Ketiltrout, Messenger88, Lpstubbs-enwiki, JdforresterBot, Hottentot, Spudtater, Benanhalt, Chobot, Peterl, Vmenkov, EamonnPKeane, JPD, YurikBot, JarrahTree, Conscious, DanMS, Timlenders, Oliver05, Hydrargyrum, Gaius Cornelius, Lexicon, Number 57, RL0919, Saberwyn, Tony1, Bota47, Kmusser, Orioane, Nikkimedia, Arthur Rubin, Canley, Tevildo, Citylover, GrinBot-enwiki, West Virginian, SmackBot, F, David Kernow, Zyxx, Declare, Renesis, Gilliam, Kurykh, Bidgee, Rkित, MK8, Akanemoto, Barend, Cshobe, GoodDay, Tamfang, AussieLegend, MJCdetroit, Mvandrie, Rarelibra, RFD, Coffee and TV, Engleham, Ohconfucius, JLogan, Ser Amantio di Nicolao, Kingfish, Marco polo, SilkTork, Clare., Breno, JorivS, Green Giant, Highpriority, Mathias-S, Apodeictic, Girmitya, Aotearoa, Ryulong, Peter R Hastings, Peter Horn, DI2000, Keith-264, Paul venter, Joseph Solis in Australia, Epistemos, Meow, RaviC, Orderinchaos, Toropop, Maradja, Neelix, Two hundred percent, Adolphus79, Amandajm, LarryQ, Thijs!bot, Barticus88, Osborne, Felix Portier-enwiki, PalawanOz, 23prootie, Rpenble, Marek69, Bobblehead, Merbabu, Dawkeye, Heroewithmetaphors, Escarbot, Trengarasu, AMittelman, Seaphoto, InchyAlly, LibLord, Alphachimpbot, Storkk, Kitia, Tonyf1, JAnDbot, Deflective, MER-C, The Transhumanist, Biloxibear, Maias, .anacondabot, Magioladitis, Scanlan, Olli J., Nyttend, Rich257, Elizabethreed, DerHexer, Fantastic4boy-enwiki, Ashishbhatnagar72, Rickard Vogelberg, MartinBot, STBot, MattKelley, J.delanoy, JamesR, Wkitty42, Abhijitsathe, Natobxl, Tei Tetua, 97198, Jauren, MatthewBurton, TottyBot, DH85868993, DorganBot, Treisjys, Urbanguy1974, Marquz-enwiki, Obafan29484, Goyston, VolkovBot, TreasuryTag, That-Vela-Fella, ROxBo, Philip Trueman, TXiKiBoT, Woodsstock, Sakletare, Bcharles, IxK85, Brycewhite, MDfoo, AlleborgoBot, Mohonu, Demmy, Biscuitin, Michel-lecrisp, SieBot, StAnselm, Inks002, Simplifier, Gerakibot, Cb77305, Psychless, Keilana, Dirk P Broer, HkCaGu, A. Carty, LibStar, Editore99, Deadlokd, Lightmouse, OKBot, Mori Riyo-enwiki, Squirmymcpee, TheCatalyst31, Singlelaw, Newm30, YSSYGuy, ClueBot, GorillaWarfare, Hatcher, PipepBot, Gene93k, NoGringo, Piledhigheranddeeper, 718 Bot, Detroiterbot, Alexbot, Jefflayman, Howard Alexander, PixelBot, Asmaybe, Sun Creator, MacedonianBoy, Dn9ahx, Cocoliras, Stepheg3, Sometimes A Great Notion, MelonBot, Naf-sadh, DumZiBoT, Gregorygnatiushu, Dthomsen8, Mitch Ames, Ilikepie2221, Good Olfactory, Freakmighty, Corvus13-enwiki, Fieldday-sunday, NjardarBot, Mnmazur, CarsracBot, AndersBot, Blaylockjam10, Jaydec, Zakokiopiokaletioz, Numbo3-bot, Lightbot, مام, Fune-feai, Jim, Legobot, Luckas-bot, Yobot, Legobot II, Amirobot, DisillusionedBitterAndKnackered, Nallimbot, AnakngAraw, MacTire02, AnomieBOT, Glen Dillon, Rubinbot, Galoubet, JackieBot, Xufanc, Sz-izwbob, Obersachsebot, Xqbot, Conay, TechBot, Battang, Smin90, GrouchoBot, ProtectionTaggingBot, Alexandru Stanoi, MerlLinkBot, Schekinov Alexey Victorovich, FrescoBot, Voxii, Anna Roy, Bartle1, Slivicon, Flint1972, Omdo, RedBot, Tahir mq, ArgGeo, TobeBot, Fama Clamosa, Timmietovenaar, Lotje, Dinamik-bot, Stalwart111, Lindaanecunies-ross, RjwilmsiBot, Chipmunkdavis, Maretone, Esoglou, EmausBot, John of Reading, WikitanvirBot, Philiasshspots, Look2See1, GoingBatty, Peeweebee, Barryhickman, Sundostund, Dolovis, Ptilinopus, Ace Wiki 9000, Ό οϊστρος, H3llBot, Suslindis-ambiguator, Jackrayers, JimmyTwoShoes fan, SporkBot, Erianna, Brandmeister, ClueBot NG, ClaretAsh, Deoma12, Sakitumi, Akuindo, Jacsam2, MoondyneAWB, MelbourneStar, Movses-bot, Frietjes, Rezabot, Xenophonix, Helpful Pixie Bot, Jutherine, PhnomPencil, AvocadoBot, Darouet, Kendall-K11, JASW78, Montalban, TZ master, CaptainJoshuaStEdmund, Asd36f, Muffin Wizard, Cyberbot II, Chris-Gualtieri, Khazar2, Virgin12312, JYBot, Delotrooladoo, FoCuSandLeArN, Mogism, Evad37, Corinne, Raj blorida, Timberau, Seqqis, CsDix, Rob984, AsianGeographer, Haminoon, عراقى1, Nick Mitchell 98, Milesjolly1997, Polemicista, KasparBot, Aindil Minkom and Anonymous: 194
- **Crozet Islands** *Source:* [https://en.wikipedia.org/wiki/Crozet\\_Islands?oldid=678110176](https://en.wikipedia.org/wiki/Crozet_Islands?oldid=678110176) *Contributors:* Hoshie, Hike395, Maximus Rex, Sandman-enwiki, Slawojarek, Michael Glass, Lupo, DocWatson42, MPF, Snowdog, Gadfium, Keith Edkins, Thorwald, Qui1che, Rich Farmbrough, Guanabot, Ffirehorse, Pavel Vozenilek, Bender235, Zscout370, Mdhowe, Obradovic Goran, Geo Swan, Bathrobe, Dschwen, Brholden, Japanese Searobin, Ratzer, Matijap, Kelisi, SDC, BD2412, Rjwilmsi, Immortal Synn, Physchim62, King of Hearts, YurikBot, Jimp, RussBot, Dooky, Arria Belli, Chanheigeorge, Citylover, Premkudva, Serendipodous, SmackBot, David Kernow, Davepape, Hmains, Bluebot, TimBentley, MalafayaBot, Bazonka, A. B., Aquafire, Apcbg, Mecoo, Peter Horn, Paukrus, Istanbuljohhm, Jetman, Laurens-af, Verdi1, Hebrides, BetacommandBot, Thijs!bot, Marek69, Nick Number, PoM, Noroton, Volcanoguy, Maias, .anacondabot, Magioladitis, Eldumpo, Sammalin, Juiced lemon, Jackson Peebles, CommonsDelinker, Toni S., Plasticup, Chris sb, STBotD, Hugo999, VolkovBot, Seattle Skier, TXiKiBoT, BobM, Tebbers, SieBot, Inks002, Jonas Poole, Sanya3, Mojoworker, Rabo3, Wee Curry Monster, Swedish fusilier, Jfblanc, DragonBot, Sun Creator, SchreiberBike, Kikos, Whoeluis, Good Olfactory, Addbot, EjsBot, NjardarBot, Numbo3-bot, Lightbot, ררן, Zorrobot, Luckas-bot, 金翅大脰脰, Xufanc, ArthurBot, Xqbot, Stho002, GrouchoBot, Tahir mq, Plasticspork, Full-date unlinking bot, Trappist the monk, 雲起林野脰, EmausBot, Dewritech, Kevjonesin, Brycehughes, Bluegrass33, Helpful Pixie Bot, Simidre, Khazar2, Earth100, Ssbbplayer, Charles.millar, Finnusertop, Monkbot, KasparBot and Anonymous: 54
- **Diego Garcia** *Source:* [https://en.wikipedia.org/wiki/Diego\\_Garcia?oldid=681971977](https://en.wikipedia.org/wiki/Diego_Garcia?oldid=681971977) *Contributors:* AxelBoldt, Koyaanis Qatsi, William Avery, Ram-Man, Patrick, Boud, JohnOwens, Llywrch, Hoshie, Mic, Den fjättrade ankan-enwiki, Julesd, Cadr, Hike395, Popsracer, Pwd-enwiki, Fuzheado, Wik, Tpradbury, Astrotrain, Cleduc, Itai, Topbanana, Denelson83, Bwefler, Robbot, Moncrief, Bkell, Mod-eha, JackofOz, Wayland, Oobopshark, PBP, Admbws, DocWatson42, Christiaan, Everyking, Bkonrad, Varlaam, Duncharris, Gilgamesh-enwiki, Jorge Stolfi, Grant65, Gzornenplatz, Matt Crypto, Bobblewik, Deus Ex, Keith Edkins, GD-enwiki, Robert Brockway, OwenBlacker, Neutrality, Peter bertok, Ericg, Grstain, Mike Rosoft, D6, Freakofnurture, N328KF, Discospinster, Aakkshay, Rich Farmbrough, Pmsyzz, Cnyborg, Vsmith, Vheissu, Arthur Holland, JPX7, Edgarde, Bender235, Flapdragon, Clue, O'Dubghaill, Kross, Cypher-enwiki, Smalljim, RobNich, Xevious, Cwolsfsheep, Giraffedata, Jkh.gr, Pearle, A2Kafir, Alfanje-enwiki, LtNOWIS, Sherur-cij, Rd232, Geo Swan, Ahuman, Lightdarkness, Rwendland, Polyphilo, Wtmitchell, Knowledge Seeker, Jguk, Sleigh, Gene Nygaard, Bastin, Pcpcep, Stemonitis, Kelly Martin, Woohookitty, Before My Ken, Ratzer, GregorB, Kralizec!, ZephyrAnycon, Silverpsycho13, Emerson7, Graham87, Deltabignet, BD2412, Padraic, Rjwilmsi, Tim!, Koavf, Bensin, MLRoach, FlaBot, Mark83, Ewlyahoom, Srl-efler, Gareth E Kegg, Cornellrockey, Albrozduke, YurikBot, TFOxton, RobotE, Jimp, RussBot, DanMS, Hydrargyrum, Gaius Cornelius, NawlinWiki, Robertvan1, Czyrko, Welsh, Topperfalkon, Ghostreveries, Ospalh, Historymike, Deepak-enwiki, Holderca1, Arthur Rubin, Svetlana Miljkovic-enwiki, JQF, Dspradau, Rogue 9, SmackBot, Looper5920, John Lunney, Hux, KnowledgeOfSelf, Verne Equinox,

- Brick Thrower, Bwithh, Zyxw, CTSCo, Kintetsubuffalo, Onebravemonkey, Tnkr111, Gilliam, Quidam65, Hmains, Choalbaton, Quadm, AStephenGray, Chris the speller, Bluebot, SynergyBlades, Rick7425, Thumperward, Moshe Constantine Hassan Al-Silverburg, Not Sure, Dual Freq, Chendy, Ushi5, Bolivian Unicyclist, Bardsandwarriors, Maurice45, Rarelibra, Khoikhoi, FedLawyer, Derek R Bullamore, NickdelaG, Parrot of Doom, Jgrimmer, SashatoBot, Lambiam, Nishkid64, Xdamr, Mukadderat, Harryboyles, Valfontis, J. Finkelstein, Tazmaniacs, SilkTork, Robofish, Bwmoll3, Apcbg, Publicus, Abe.Froman, Skinsmoke, Tyhopho, Tonster, MrDolomite, Paukrus, Hu12, Burto88, Spartian, Highspeed, Haus, Igoldste, Civil Engineer III, KenWalker, Tawkerbot2, RaviC, TreyGreene, Eastlaw, Anon user, CmdrObot, Van helsing, Blue-Haired Lawyer, MFlet1, ThreeBlindMice, MarsRover, Ezrakilty, Djcastel, Abdullahazzam, Cydebot, Brelson, Spaceteve, Urashimataro, Cec~enwiki, Tec15, Shirulashem, Mtpaley, Thijs!bot, Marek69, Horologium, Sfxdude, Desmoh, Canadian, RobotG, Lorens, QuiteUnusual, IrishPete, TimVickers, Dougher, Savefrance, Blaine Steinert, Sophie means wisdom, 0331marine, MSBOT, Maias, Pedro, Swikid, VoABot II, Vernon39, Dwp222, Bucksbot06, Zenomax, Zwitterion117, BilCat, Allstarecho, Papercrab, TokyoTom, Textorus, Climax Void, Jerem43, Ekki01, Mark387533, R'n'B, CommonsDelinker, Billy Pilgrim, Abby, MrBell, BrokenSphere, Skier Dude, PrimusUnus, Astrakan, Ndunruh, Adanedhel21, STBotD, Jamesontai, Ginga123, Jevansen, Aladamnbama, DMCer, Idioma-bot, Agamemnus, Lights, Deor, VolkovBot, JoeDeRose, Harfarhs, Aesopos, Martinevans123, TXiKiBoT, Revmqo, Anna Lincoln, Cjnavuel, Mzmadmike, ETO Buff, Falcon8765, Spinningspark, Rick951, Vinhtran, Mohonu, The Red Hat of Pat Ferrick, GoonerDP, YonaBot, YonaBot, Smsarmad, Bakashi10, Lusteard, Évaluist, Goustien, Android Mouse Bot 3, Lightmouse, WacoJacko, Jweddes, Archtransit, Dolphin51, Denisarona, BHenry1969, ClueBot, Felix Sonderkammer, Victor Chmara, Binksternet, Foosballking, Redcloud, Gaia Octavia Agrippa, Reader34, XPTO, NiD.29, Jamestheporno, Soaringbear, Niceguyedc, Davidjevans1818, Ashdod, Rlbarton, Thomasvincent, DragonBot, Ktr101, Tomeasy, Relata refero, Rhododendrites, Secondarywaltz, Coinmanj, NuclearWarfare, Jotterbot, SoxBot, Redthoreau, SchreiberBike, DumZiBoT, Bingobangobongoboo, AlanM1, Aji1217, Birdswithfangs, Sillago, SilvonenBot, CapnZapp, Manfi, TomSSmith, Kembangraps, Justinger, Canopus1968, Mortense, DOI bot, Oxfordtours, Tcnv, AkhtaBot, CanadianLinuxUser, Douglas the Comeback Kid, G0T0, AndersBot, LemmeyBOT, Prhg, 84user, Zorrobot, Emperor Genius, Krenakarore, Legobot, Luckas-bot, Yobot, Mackin90, PM-Lawrence, Max Density, Gongshow, PoizonMyst, Jean.julius, AnomieBOT, Taam, Xufanc, Ulric1313, Truth or consequences-2, Citation bot, Bob Burkhardt, ArthurBot, Quebec99, LilHela, Xqbot, Night w, Andhat, Seligne, Gernttrash, Skippy Silversmith, Howard McCay, FrescoBot, Mark Renier, Haenious, Outback the koala, BenzolBot, Airborne84, Citation bot 1, Massic80, DrillBot, Glass spiders, Mauritianboy, Wikitza, Moonraker, Tupsumato, Turian, Kgrad, Lotje, Rennell435, Mcg410, Reaper Eternal, Schwede66, Jnik99, RjwilmsiBot, Mztourist, EmausBot, WikitanvirBot, Look2See1, GoingBatty, Greggott, AlanS1951, ZxxZxxZ, LuzoGraal, Illegitimate Barrister, Dolovis, Matthewcgirling, Dpenn89, Ὁ οἶστρος, AvicAWB, H3llBot, Brandmeister, Cattaraugus, ClamDip, Saebvn, Cruks, Spicemix, Whoop whoop pull up, ClueBot NG, DavidStewart85, Kingroyos, BarrelProof, -sche, Snotbot, Ssanto21, Qzxpqbb, Mohd, Toukir Hamid, Slorri, BG19bot, Gredner, Darouet, Cold Season, Yowanvista, Altair, Zujua, Sid.317, MarkoRF1, ChrisGualtieri, Symphonic Spenguin, Bubblehead1996, Mogism, Makecat-bot, SHFW70, Rob984, Cacw, Ugog Nizdast, Valetude, Finnusertop, Notthebestusername, HenryV1415, Pinkguitar001, Argovian, Monkbot, Poeppop, Monart, Philippdx, Nickelson95, Galant Khan, Interpuncts, The night knight, Solahope3, Mate Get Trolled, Jeff jefferson the 69th, Mr ninjatuna and Anonymous: 398
- **Île Saint-Paul** *Source:* [https://en.wikipedia.org/wiki/%C3%8E\\_Ile\\_Saint-Paul?oldid=673886211](https://en.wikipedia.org/wiki/%C3%8E_Ile_Saint-Paul?oldid=673886211) *Contributors:* William Avery, Olivier, Timwi, Robbot, Chrism, Timvasquez, Folks at 137, Revth, Acad Ronin, D6, Pavel Vozenilek, Anthony Appleyard, Raymond, Dschwen, Gene Nygaard, Richard Weil, Zntrip, Woohookitty, SP-KP, Ratzter, Buxtehude, Wachholder0, Ground Zero, Sreffer, Wavelengh, RobotE, V Brian Zurita, Pigman, Stereoid, Chooserr, Salmanazar, Orioane, Chanheigeorge, Ybbor, Citylover, Fastifex, SmackBot, David Kernow, Hmains, Scwlong, TCY, Maurice45, Derek R Bullamore, Apcbg, Peter Horn, Istanbuljohnm, Laurens-af, CmdrObot, Cydebot, Chaner, Monsieur Fou, RoadMap, Thijs!bot, PoM, Escarbot, Mikmaq, Volcanoguy, JAnDbot, Elkoref, TAnthony, Maias, Feldmarschall von Hansen, VoABot II, Pvmoutside, The Anomebot2, Eldumpo, Sammalin, Juiced lemon, CommonsDelinker, Nono64, Tiyoringo, VolkovBot, Seattle Skier, Glocke380, Bluedenim, Mohonu, SieBot, Calliopejen1, Goustien, Benea, XPTO, Tunaonrice, BOTarate, Kikos, DumZiBoT, WikHead, Good Olfactory, Felix Folio Secundus, Addbot, Tassedethe, Zorrobot, Legobot, Luckas-bot, Yobot, AnomieBOT, JackieBot, Xufanc, Jerct, Citation bot, ArthurBot, MauritsBot, Khajidha, RibotBOT, Bigboysdontcry, LucienBOT, Citation bot 1, DrillBot, RedBot, Tahir mq, Niobrara, SeoMac, RjwilmsiBot, TjBot, EmausBot, Werieth, ZéroBot, LuzoGraal, Gunamoi1, Noble fan, MillingMachine, Helpful Pixie Bot, Historynut101, KLBot2, Simidre, RichardMills65, Makecat-bot, Jo-Jo Eumerus, Rotlink, Monkbot and Anonymous: 46
  - **Tromelin Island** *Source:* [https://en.wikipedia.org/wiki/Tromelin\\_Island?oldid=679761024](https://en.wikipedia.org/wiki/Tromelin_Island?oldid=679761024) *Contributors:* The Epopt, Bryan Derksen, Koyaanis Qatsi, Olivier, Andres, AnonMoos, Alan Liefthing, Ævar Arnfjörð Bjarmason, Curps, Gilgamesh~enwiki, D6, SpookyMulder, Bender235, Zscout370, Kwamikagami, Touriste, Ardric47, RyanGerbill10, TShilo12, Ratzter, Electionworld, Koavf, Gaius Cornelius, Aeu-soes1, Orioane, Ordinary Person, Erudy, Premkudva, SmackBot, David Kernow, Goldfishbutt, Od Mishehu, Kintetsubuffalo, Hmains, Bluebot, XQ fan, Bardsandwarriors, Maurice45, Wiz9999, Mgiaganteu1, Apcbg, Thricecube, Cydebot, Thijs!bot, PoM, Escarbot, JAnDbot, Deflective, Maias, anacondabot, The Anomebot2, Sammalin, KarBOT, CommonsDelinker, Mjb1981, VolkovBot, Daniil naumoff, Rei-bot, Mohonu, SieBot, Virgile1991~enwiki, Gerakibot, Vellvetron, PipepBot, Farras Octara, DragonBot, AssegaiAli, Alexbot, SchreiberBike, Ptomblin, BodhisattvaBot, MystBot, Good Olfactory, Addbot, Blaylockjam10, Lightbot, Raptus Regaliter Cattus Petasatus, Luckas-bot, Yobot, Carl Steinbeißer, JackieBot, Xufanc, АлександрBв, RibotBOT, Moonraker, RedBot, Arcobalenofiamma, Lexusuns, Kingroyos, Frietjes, Zenfantmoris69, BG19bot, Altair, Simidre, Liam987, Mogism, Yi238, CsDix, Geosoph, 32RB17 and Anonymous: 20
  - **Antipodes Islands** *Source:* [https://en.wikipedia.org/wiki/Antipodes\\_Islands?oldid=679146289](https://en.wikipedia.org/wiki/Antipodes_Islands?oldid=679146289) *Contributors:* Samw, Moriori, Millosh, Alan Liefthing, Folks at 137, Snowdog, Revth, Pne, Bobblewik, D6, Thortful, John Vandenberg, Darwinek, Mh26, Grutness, Avenue, Db-inf~enwiki, Stuartyeates, Matijap, Graham87, Mendaliv, XLerate, YurikBot, Jimp, Houi, Tavisil, ENeville, Johantheghost, UniReb, Closedmouth, Kimon, Goldfishbutt, KocjoBot~enwiki, Hmains, Betacommand, Chris the speller, Droll, Kahuroa, Vina-ibwot~enwiki, Niels, Bjankuloski06en~enwiki, Twalls, Peter Horn, Paukrus, GrahamBould, Cydebot, LawrieM, Thijs!bot, Marek69, JustAGal, Peter Entwisle, Spencer, KonstableBot, Maias, Repku, WolfmanSF, The Anomebot2, JaGa, Geonarva, Jasper33, FruitMonkey, Plasticup, Siebengang, Idioma-bot, VolkovBot, Macedonian, 41S, Gwinva, BotMultichill, Matthewedwards, Goustien, Benea, OKBot, Prof saxx, DragonBot, Wkharrisjr, Cahyo Ramadhani, Good Olfactory, Islandbaygardener, Addbot, Blanche of King's Lynn, Rejctwater, Lightbot, OIEnglish, WikiDreamer Bot, Yobot, AnomieBOT, Archon 2488, Xufanc, Xqbot, Stho002, RibotBOT, FrescoBot, EmausBot, ZéroBot, Billingd, MIKHEIL, BG19bot, BattyBot, Cmdmtp and Anonymous: 22
  - **Atlasov Island** *Source:* [https://en.wikipedia.org/wiki/Atlasov\\_Island?oldid=661218903](https://en.wikipedia.org/wiki/Atlasov_Island?oldid=661218903) *Contributors:* Dysprosia, DO'Neil, Gilgamesh~enwiki, Apoivre, Keith Edkins, JamesTeterenko, David Sneek, Ht1848, Nesnad, Darwinek, Alfanje~enwiki, Mr Tan, Scriberius, BD2412, Erebus555, Vegaswikian, Allynfolksjr, Chobot, Roboto de Ajvol, Chamdarae, Ikataki, Chooserr, Seeaxid, Curpsbot-unicodify, Hardscarf, SmackBot, Hydrogen Iodide, Hmains, Droll, Bazonka, Bardsandwarriors, Axem Titanium, CBM, MikaIh, Chmee2, Thijs!bot, Marek69, Escarbot, Kzaral, Volcanoguy, JAnDbot, The Anomebot2, Geonarva, Plasticup, Greatestrowever, Inwind, Rdfr, VolkovBot, 今古庸龍, Mohonu, Gerakibot, Otolemur crassicaudatus, Addbot, Lightbot, Zorrobot, Waltloc, Luckas-bot, MaterialsScientist, D'ohBot,

- Guanlongwucaii, SeoMac, Jiyuukaminari, EmausBot, Look2See1, Racerx11, Stormchaser89, Japanimation station, CocuBot, Northamerica1000, Khazar2, Jo-Jo Eumerus and Anonymous: 15
- Banaba Island** *Source:* [https://en.wikipedia.org/wiki/Banaba\\_Island?oldid=677784695](https://en.wikipedia.org/wiki/Banaba_Island?oldid=677784695) *Contributors:* Edward, Ellywa, J'axis, Andres, RickK, Owen, Phil Boswell, Robbot, Fredrik, David Edgar, Davidcannon, Waltpohl, Gilgamesh-enwiki, Jason Quinn, Eregli bob, Enzino, Acad Ronin, Kate, Gertjan R., Kwamikagami, RobNS, Darwinek, HasharBot-enwiki, Grutness, Henry W. Schmitt, Deror avi, TShilo12, Kelly Martin, Lofor, Ratzler, Kelisi, SDC, Jon Harald Søby, FlaBot, YurikBot, Dimimimon8, Ivirivi00, Nicke L, Deuar, SmackBot, Cla68, Kintetsubuffalo, Hmains, MK8, Droll, Veggies, Tim Pierce, New World Man, Boleslav1-enwiki, Girmitya, MarcosFenn, Midnight Today, Minisarm, Red Director, Anthonyhcole, Roberta F., Thijs!bot, Marek69, Joan-of-arc, Deflective, The Anomebot2, Mrathel, Ekki01, STBotD, Owen S Hughes, Idioma-bot, VolkovBot, That-Vela-Fella, Yf metro, Kalimera, Lunasspectos29, SieBot, TJRC, Goustien, Targeman, Lightmouse, HairyWombat, ImageRemovalBot, ClueBot, Deanlaw, MacedonianBoy, Addbot, LaaknorBot, Jtchaneg-enwiki, Lightbot, Zorrobot, Jarble, Waltloc, Luckas-bot, Yobot, Amirobot, 90 Auto, LiHelpa, Xqbot, Plasticspork, Crusoe8181, Mean as custard, Mexicogreencard, EmausBot, Racerx11, ZéroBot, Mhults7791, Erianna, Graeme374, MozzazzoM, Unitedstates1000, PaintedCarpet, Mich.kramer, BattyBot, YFdyh-bot, Obkiribati1, Donkey darren and Anonymous: 27
  - Bokak Atoll** *Source:* [https://en.wikipedia.org/wiki/Bokak\\_Atoll?oldid=681441958](https://en.wikipedia.org/wiki/Bokak_Atoll?oldid=681441958) *Contributors:* The Anome, Gene Poole, Cmholm, Robbot, Postdlf, Ich, Jdavidb, Gilgamesh-enwiki, D6, Jayjg, Samboy, Pavel Vozenilek, El C, Reinyday, Bollar, Darwinek, Grutness, Dominic, Axeman89, Centauri, Ratzler, Magister Mathematicae, BD2412, Rjwilmsi, Btw-enwiki, MChew, Lzz, RussBot, Davidpdx, Shocktm, TDogg310, BOT-Superzerocool, Remus Lupin-enwiki, Petri Krohn, Johnski, Samspace, Rriter, SamuelSpade, Stifle, Hmains, KAJ, MalafayaBot, Droll, Colonies Chris, Harvardy, Crozibriz, Marek69, WinBot, Fatidiot1234, MortimerCat, Galileo01, R'n'B, STBotD, Rei-bot, EmxBot, Goustien, DragonBot, MacedonianBoy, SchreiberBike, Stepheng3, SilvononBot, Good Olfactory, Albambot, Addbot, Numbo3-bot, Luckas-bot, Yobot, Quebec99, TechBot, AustralianRupert, Aipy com, Metricmike, Plasticspork, Yunshui, GoingBatty, AvicBot, Trymybestwikipedia, SporkBot, Mateo Flecha, PaintedCarpet, Yowanvista, CitationCleanerBot, BattyBot and Anonymous: 21
  - Campbell Island, New Zealand** *Source:* [https://en.wikipedia.org/wiki/Campbell\\_Island%2C\\_New\\_Zealand?oldid=677585923](https://en.wikipedia.org/wiki/Campbell_Island%2C_New_Zealand?oldid=677585923) *Contributors:* Docu, Nurg, Alan Liefiting, Albatross2147, Revth, Gadium, D6, Vsmith, Pavel Vozenilek, Viriditas, Giraffedata, Grutness, Sabine's Sunbird, Avenue, Evil Monkey, PoccilScript, Ratzler, Matijap, Eras-mus, Mandarax, Kbdank71, Rjwilmsi, Coemgenus, Vary, XLerate, FlaBot, Axver, RussBot, Conscious, Yllosubmarine, UniReb, Closedmouth, Citylover, David Kernow, Kaiwen1, Kharker, Snowmanradio, Richard001, Smokefoot, Kahuroa, Apcbg, Peter Horn, Dabean, GrahamBould, Sadalmelik, Cydebot, LawrieM, Phenss, Thijs!bot, Marek69, Peter Entwisle, KonstableBot, Maiais, Magioladitis, Pvmoutside, Athaenara, Geonarva, Jasper33, LordAnubisBOT, Funandtrvl, Daniil naumoff, 41S, Hozro, GWBeasley, SieBot, Calliopejen1, Mbz1, Matthew Yeager, Goustien, Lightmouse, Tampasteve, AlexKazakhov, Prof saxx, Jacob Myers, ClueBot, SchreiberBike, DumZiBoT, XLinkBot, Mitch Ames, Kaiwhakahaere, Islandbaygardener, A little mollusk, Addbot, Lightbot, Yobot, Gerixau, AnomieBOT, Piano non troppo, Xufanc, Gamera1123, Stho002, Oneliketadow, Plasticspork, Silent Billy, BECP, Conservation ranger, Canyq, Sinazita, Trymybestwikipedia, Anglais1, Hatifnatter, Rocketrod1960, ClueBot NG, Rich Smith, MIKHELL, CopperSquare, Sam50south, Gob Lofa, BG19bot, Cooldude5298, Compfreak7, CitationCleanerBot, Szcureq, Andrewgprout, Jamesmcmahon0, Yaydrone, Jacksamjohn, Sam Sailor, Bettifm, Bad Weather 2014, Weathereditor and Anonymous: 49
  - Clipperton Island** *Source:* [https://en.wikipedia.org/wiki/Clipperton\\_Island?oldid=681305999](https://en.wikipedia.org/wiki/Clipperton_Island?oldid=681305999) *Contributors:* The Epopot, Bryan Derksen, Koyaanis Qatsi, SimonP, Anthere, Imran, Olivier, Hoshie, Docu, Nikai, Kaihsu, Hike395, Wik, McKay, Bcorr, Adam Carr, David.Monnaix, Hjr, Denelson83, Robbot, Globe199, RedWolf, Ankur, Mikedash, Bkell, JerryFriedman, Colinpcarr, Centrx, DocWatson42, Marnanel, Folks at 137, Tom Radulovich, Bkonrad, Moyogo, RScheiber, DO'Neil, Horatio, Jaan513, SWAdair, Bobblewik, Gugganj, Geni, Quadell, SimonArlott, Roisterer, OwenBlacker, DragonflySixtyseven, Icairns, Neutrality, Magnum1, D6, Jkl, Brianhe, Rich Farmbrough, Guanabot, Rama, Samboy, Pavel Vozenilek, Bender235, Kwamikagami, Art LaPella, Jpgordon, Bobo192, Touriste, Bollar, Dupuy, Polylerus, Hagerman, HasharBot-enwiki, Jumbuck, Buaidh, Riana, Sligocki, Wtmitchell, Dave.Dunford, Gene Nygaard, Drbreznjev, Vanished user j123mqwfk56jd, Centauri, CruiserBob, Woohookitty, Bellhalla, Ratzler, Duncan.france, Tbc2, Harac, Zzyzx11, Kralizec!, Palica, Sigbal, Electionworld, Rjwilmsi, Red King, Lzz, Born2cycle, Physchim62, YurikBot, Spacepotato, Wester, Bhawthorne, Gaius Cornelius, Manxruler, Dysmorodrepanis-enwiki, Dialectric, Veledan, Howcheng, Chooserr, Bob247, Orioane, Endomion, Chanheigeorge, NYArtsnWords, Tarunuee, LeonardoRob0t, Arundhati bakshi, Erudy, Citylover, Fastifex, GrinBot-enwiki, KNHaw, The Yeti, West Virginian, SmackBot, Enlil Ninlil, David Kernow, Reedy, Herostratus, K-UNIT, KevAvatar, Zywx, Rojomoke, Kintetsubuffalo, Relaxing, JFHJr, Hmains, Chris the speller, MalafayaBot, Kotra, Batray, KaiserbBot, Yourmother-enwiki, Bardsandwarriors, MrRadioGuy, Bigturtle, Gamgee, The PIPE, Wizardman, Aaker, Barrel Roll, Ser Amantio di Nicolao, John, Mugsywuiii, Green Giant, Apcbg, Paukrus, Hu12, Joseph Solis in Australia, RaviC, Themightyquill, Cydebot, Verdy p, Mathew5000, Pustelnik, FrancoGG, BetacommandBot, Thijs!bot, Wikid77, Marek69, CharlotteWebb, PoM, Escarbot, AntiVandalBot, Random user 8384993, Aille, Ipoellet, Rotherpe, Maiais, FJM, SHCarter, Singularity, Nyttend, Jcmenal, LorenzoB, Schmieder, Gwern, Zoticogrillo, Rashaun, CommonsDelinker, Dinkytown, Oxygu3, Maproom, Eivindgh, LordAnubisBOT, Geo115fr, STBotD, Gwen Gale, Cjost, Bully25, Rémi, Smallfixer, Hugo999, Vranak, Iwavnns, Vlma111, Philip Trueeman, TXiKiBoT, Daniil naumoff, Rei-bot, Robert1947, Cherry1000, Vinhtantran, AlleborgoBot, Nosferatüttr, SieBot, Inks002, Twirling, Aureliusweb, Goustien, Targeman, OKBot, Alphapalau, Sfan00 IMG, Ecjmartin, ClueBot, NoGringo, Swedish fusilier, Jhapeman, Piledhigheranddeeper, Detroiterbot, Jusdafax, Legacypac, SchreiberBike, Chaosdruid, Samantha555, Mhockey, BodhisattvaBot, Trabelsiismail, Little Mountain 5, SilvononBot, Nicky416, Good Olfactory, Nohomers48, Underwaterbuffalo, Fothergill Volkensniff IV, LaaknorBot, Jaydec, Kisbesbot, Lightbot, Zorrobot, Legobot, Luckas-bot, Yobot, Pbtogourou, KamikazeBot, AnomieBOT, Xufanc, Citation bot, RevelationDirect, Uerkelman, ArthurBot, Matthieu Martin, Xqbot, Hammersbach, YBG, GrouchoBot, Thebigviking, FrescoBot, Mistakefinder, Noelesp, D'ohBot, Outback the koala, Citation bot 1, Moonraker, Tahir mq, Mjs1991, Oahfapgah, Peacedance, TjBot, John of Reading, Chermundy, Werrieth, ZéroBot, 2sc945, Ebrambot, Friendlyface98, Biroudou, Spiffulent, Meridian 45 37, Brycehughes, ClueBot NG, MelbourneStar, Mightymights, Helpful Pixie Bot, Fritrinu, BG19bot, Mouloud47, William sburr, Hadi Payami, Liam987, Jeanloujustine, Cyberbot II, ChrisGualtieri, Raymond1922A, Makecat-bot, TheIrishWarden, Wuestehu, CsDix, Iloilo Wanderer, Ngazidja, Prisoner of Zenda, L'Aquotique, Supersnack, Auguel and Anonymous: 145
  - Cocos Island** *Source:* [https://en.wikipedia.org/wiki/Cocos\\_Island?oldid=680333347](https://en.wikipedia.org/wiki/Cocos_Island?oldid=680333347) *Contributors:* AxelBoldt, Gorm, SimonP, Olivier, Patrick, Infrogmation, Smelialichu, Paddu, Darkwind, Bogdangiusca, Nikai, Smack, Hike395, Charles Matthews, Wik, Zoicon5, Topbanana, Wetman, Flockmeal, Slawojarek, Robbot, RedWolf, Naddy, Nilmerg, Rholton, Mervyn, Hadal, Folks at 137, Tom Radulovich, Everyking, Michael Devore, KevinTernes, Bobblewik, Sesel, MarkSweep, Roisterer, Sam Hocevar, Neutrality, Marcus2, Ukexpat, D6, Discospinster, Vsmith, Florian Blaschke, User2004, Slipstream, Blakespot, Arthur Holland, Jnestorius, Art LaPella, Prsephone1674, ZayZayEM, Darwinek, Pearle, Merenta, Buaidh, Geo Swan, Ashley Pomeroy, SmthManly, Japanese Searobin, TShilo12, Camw, Daniel Case, Pol098, SP-KP, Ratzler, Zzyzx11, David Levy, Kbdank71, Rjwilmsi, Angusmclellan, Vegaswikian, Chanting Fox, Isotope23, Hottentot, RexNL, Choess, CJLL Wright, Jaraalbe, Kummi, Wavelength, RobotE, Todd Vierling, RussBot, Gaius Cornelius, Dysmorodrepanis-enwiki, Chooserr, Sir48, Crid, Jack Upland, Citylover, Paul Erik, D Monack, A bit iffy, SmackBot, VigilancePrime, Lauxmann, Gilliam, Skizzik, Yankees76, Bazonka, MisterHand, OrphanBot, Gildir, MikeTheRaptor, G-Bot-enwiki, Japoniano, Yodin, Sinaloa,



Phoenixrod, Tau'olunga, Georgejmyersjr, Joey80, CmdrObot, The ed17, Cydebot, Reywas92, Lugnuts, Steven Russell, Doug Weller, Xabier Cid, Maxcrc, JamesAM, Imprimaturrc, Thijs!bot, Osborne, Marek69, Rquesada, Gioto, Jj137, PhilKnight, B.S. Lawrence, Ma-ias, .anacondabot, Dapsv~enwiki, Magioladitis, Jllm06, Indon, Jcmenal, Pridkett, Jim.henderson, Genghishkhanviet, Rettetast, Bwtranch, CommonsDelinker, J.delanoy, Paris1127, Olegwiki, DorganBot, Hugo999, VolkovBot, Taotriad, Haim Berman, Philip Trueman, TXiKi-BoT, Broadbot, Duambo~enwiki, Robert1947, AlleborgoBot, SieBot, Calliopejen1, Antipoeten, Ori, Jackson777, Goustien, Slumach, Prof saxx, ClueBot, Mariordo, Mild Bill Hiccup, Niceguyedc, Dylan620, DuendeThumb, Boneyard90, Samurai-lupin, Alexbot, Jusdafax, John Nevard, SchreiberBike, Crojasa, Mhockey, DumZiBoT, Avispon, Avoided, SilvononBot, Good Olfactory, Addbot, Loewenfels, Asfreeas, CarsracBot, Glane23, LinkFA-Bot, Tassedethe, Lightbot, Zorrobot, Waltloc, He A, Luckas~bot, TheSuave, Yobot, Themfromspace, The-serialcomma, 金翅大[?] [?], AnomieBOT, Rubinbot, Tavrian, PizaoofDoom, Salvaje50, Xqbot, Prunesqualer, Misterbiologist, Pinethicket, I dream of horses, Jsclu1, TobeBot, RjwilmsiBot, Axxis10, EmaasBot, Chermundy, Lucas Thoms, MGMike71, Página Oficial Isla del Coco Costa Rica, Ace Wiki 9000, Tolly4bolly, Sarmilanair, Crimsonraptor, 48ESS48, ClueBot NG, Womantis, Mateo Flecha, Widr, Calabe1992, BG19bot, Frisch1, PaintedCarpet, Vvven, Dexbot, Sunstar0, Lemnaminor, Cacw, Prosnow76, Antpaz, Gavtmac, Erwhite1, Killercolt108 and Anonymous: 139

- Easter Island Source:** [https://en.wikipedia.org/wiki/Easter\\_Island?oldid=682237828](https://en.wikipedia.org/wiki/Easter_Island?oldid=682237828)
**Contributors:** Bryan Derksen, Jeronimo, Ed Poor, Andre Engels, Danny, Rmhermen, Ktsquare, Schewek, Olivier, AntonioMartin, Edward, JohnOwens, Llywrch, Modster, Lexor, Aezram, Dominus, Wapcaplet, Ixf64, Chmouel, Shoaler, Egil, Ahoerstemeier, DavidWBrooks, TUF-KAT, Darkwind, Julesd, Glenn, Error, Bogdangiusca, Nikai, Andres, Jiang, Rawr, Tobias Conradi, Mxn, Smaack, Schneelocke, The Tom, Pascal, MGMike71, Viajero, Hydnjo, Fuzheado, WhisperToMe, Wik, E23~enwiki, Morwen, Phoebe, Carlos.yanez, Samsara, Shizhao, Dbabbitt, Renato Caniatti~enwiki, Wetman, Twang, Robbot, Paranoid, Moriori, Chocolateboy, Naddy, Lowellian, Postdlf, Rorro, Baloo rch, TittoAssini, Wikibot, JackofOz, Reid, Ruakh, Davidcannon, Centrx, Giftlite, JamesMLane, DocWatson42, MPF, Lproven, Jpta~enwiki, Tom harrison, Tom Radulovich, Foot, Everyking, Wyss, Dratman, Alison, Henry Flower, Aoi, Sunny256, Patrick-br, Cantus, Gilgamesh~enwiki, Papyromancer, Jackol, Bobblewik, Stevietheman, Gadfium, Utcursch, Pgan002, LiDaobing, LucasVB, Antandrus, HorsePunchKid, Everttype, ShakataGaNaI, Jossi, Melloss, DragonflySixtyseven, Maximamax, Latitude0116, Thincat, PFHLai, Neutrality, Gerald Farinas, Hardouin, Clemwang, Zondor, Adashiel, Trevor MacInnis, Esperant, DanielCD, Johncapistrano, A-giau, Discospinster, Brutannica, Kdammers, Vsmith, Mani1, Paul August, SpookyMulder, Bender235, Kaisershatner, Aranel, Pt, \*drew, El C, Bletch, Kwamikagami, Kross, Summer Song, Chairboy, Aude, Art LaPella, Cacophony, Hobadee, BillC, Kurzon, Mpj17, Ratzler, Apokrif, Tabletop, Ric man, Al E., John Hill, Rchamberlain, Jon Harald Søyby, Parudox, MarcoTolo, Isewell, GraemeLeggett, Palica, Dysepsion, Cuchullain, BD2412, Kbdank71, Jaxhere, Timdearborn, Rjwilmsi, Coemgenus, Koavf, Tawker, Mentality, Vegaswikian, Kalogeropoulos, Durin, The wub, Bhadani, DoubleBlue, Wareq, MarnetteD, Nandesuka, JamesEG, Authalic, Ian Pitchford, RobertG, CrazyM108, Vson, Itinerant1, RexNL, Gurch, Wgfcrafty, CJLL Wright, Chobot, DVdm, Bred, The Rambling Man, YurikBot, Wavelength, Sceptr, Deeprivia, CheeseLover, Phantomstevie, RussBot, John Quincy Adding Machine, Yosef1987, HVH, Kerowren, Gaius Cornelius, CambridgeBayWeather, Rsrikanth05, Neilbeach, Wimt, NawlinWiki, Mal7798, Ukle, Dysmorodrepanis~enwiki, Wiki alf, BigCow, Neural, Grafen, Erielhonan, Trovatore, Berend de Boer, Howcheng, Far call, D. F. Schmidt, Diotti, Larsinio, PhilipO, PhilipC, Number 57, TDogg310, Tony1, Zwobot, Epipegagic, Freshgavin, Sir Edgar, Aaron Schulz, IslandGyrl, DeadEyeArrow, GeoffCapp, Rhmoore, Caerwine, Arch o median, Pawyilee, Zello, Lt-wiki-bot, Dj fc, SMcCandlish, Bamse, Nessuno834, JoanneB, JLaTondre, Katieh5584, Jonathan.s.kt, Citylover, Zvika, Elliskev, Sam Weber, Stumps, West Virginian, Luk, SaveTheWhales, Attilios, Wolf1728, Momento, GrafZahl, SmackBot, Eperotao, Esradekan, Elonka, Moeron, Nihonjoe, VigilancePrime, Hydrogen Iodide, C.Fred, Saimdusan, Jagged 85, Jfurr1981, Pennywisdom2099, Anastrophe, Liaocyed, Jab843, Frymaster, Boris Barowski, Kintetsubuffalo, Hmuseau, HeartofaDog, Shin Natsume, Gilliam, Ohnoitsjamie, Hmains, Kaiwen1, Skizzik, Seamus waldron, Welwitschia, Master Jay, Bluebot, SlimJim, Rakela, Persian Poet Gal, MK8, Cattus, Jprg1966, MalafayaBot, SchiftyThree, Hibernian, Droll, Henrique Moreira~enwiki, TheLeopard, Nbarth, 7258, Colonies Chris, Cmputer, Mje, Herodoto, RyanEberhart, Storm-chaser, Gbuffett, Smallbones, Onorem, Skidude9950, Gala.martin, Michael Kümmling, Rrburke, Xyzzylugh, Edivorce, Patrick Bate-man, Rarelibra, Mistico, Krich, Flyguy649, CanDo, Dectype, Rmarti55, Gokmop, Pwjb, Chicbicyclist, Paul H., Dantadd, The PIPE, Esb, RyGuy17, Filpaul, Paper33d, Deiz, Kukini, Carlosp420, Drunken Pirate, Ged UK, Ugur Basak Bot~enwiki, Ohconfucius, JLo-gan, MegaHasher, SashatoBot, Ser Amantio di Nicolao, Fabant, Mouse Nightshirt, BHC, DavidCooke, J 1982, Janagath, Sir Nicholas de Mimsy-Porpington, Shlomme, KarlM, Mgianteus1, Goodnightmush, Chris 42, IronGargoyle, ZincOrbie, A. Parrot, Werdan7, Stwalk-ster, San Saba, Stizz, Drieakko, Aotearoa, Gazjo, Andrws, Peyre, Atakdoug, Mfield, DwightKingsbury, Patrick Schwemmer, Benn.jamin, Alan.ca, BranStark, Ossipevsk, Iridescent, Clarityfiend, Jetman, Mijotoba, Joseph Solis in Australia, Santonoc, Theoldanarchist, Chipandy, Eguirald~enwiki, Igoldste, Tony Fox, Newyorkbrad, Blehfu, Gil Gamesh, Courcelles, Fdp, Tawkerbot2, Andy120, Cryptic C62, Rodrigobeltransuito, SkyWalker, JForget, Jonathan A Jones, Joey80, Alexbuirds, Xous, Behemot~enwiki, Dgw, NickW557, El aprende-lenguas, Todowd, Ken Gallager, Alton, Yaris678, Jac16888, Cydebot, Atomaton, Kanags, MC10, Paul cilwa, Gogo Dodo, Heff01, Aanderson@amherst.edu, ST47, Chiller1800, Soetermans, Bravelobster, Doug Weller, DumbBOT, Chrislk02, Chachilongbow, SpK, Gonzo fan2007, Maziotis, Uspn, CieloEstrellado, Eprb123, Biruitorul, Qwyrxian, Felix Portier~enwiki, 23prootie, Mojo Hand, Bobo159, Marek69, Kathovo, James086, Tirkfl, Least, Sturm55, Jmeryg, Dezidor, Lualoha, Dawnseeker2000, Escarbot, Mentifisto, Calaka, AntiVandalBot, Luna Santin, QuiteUnusual, Dr. Blofeld, Edokter, Julia Rossi, Vanjagenije, -m-i-k-e-y-, Cgram@adelphia.net, Lfstevens, Storkk, Myanw, Res2216firestar, Arsenikk, JAnDbot, Deflective, Husond, Barek, MER-C, Nodoremi, JPbio, Mr Jiggy Fly, Roleplayer, Dapsv~enwiki, Magioladitis, WolfmanSF, Obertura~enwiki, Bongwarrior, VoABot II, Jackmass, Scanlan, Dentren, Jmorrison230582, Xn4, Kuyabribri, Bigdan201, Jespinos, Ise Black, Kevinmon, The Anomebot2, Avicennasis, Neitakk, Catgut, ClovisPt, Animum, Ceribik, Fang 23, Gerry D, Rif Winfield, DerHexer, Edward321, Lelkesa, Purslane, Urco, Wikianon, Cocytus, FisherQueen, Fmoolten, Camachoe, Timmod, MartinBot, XRiffRaffx, Kiore, MarshalN20, CommonsDelinker, Jakecs50, Zeete, Tgeairn, Edardna nitsuj, J.delanoy, Pharaoh of the Wizards, Trusilver, Neolandes, Sageofwisdom, Bogey97, Uncle Dick, Hamsterbrains, Ginsengbomb, AgainErick, Lama010101, Danbrown99, OttoMäkelä, GeoWriter, Antarcticwik, Abhijitsathe, DarkFalls, SpigotMap, Hillock65, Coppertwig, Pyrospirit, Watacolour, Spencerspencer, SJP, Joost 99, MKoltnow, Jenglo, Mattcymru, Minesweeper.007, BrettAllen, KylieTastic, Juliancolton, RB972, Zara1709, Gwen Gale, Geekdiva, Useight, WLRoss, TheNewPhobia, Davecrosby uk, Idioma~bot, 1812ahill, Signalhead, Hugo999, KookyKooa, Deor, VolkovBot, Dave Andrew, AlnoktaBOT, Soliloquial, TheOtherJesse, Tomer T, DoDoBirds, Sześćsetsześćdziesiątsześć, Albertitors, Gieskj01, Philip Trueman, TXiKiBoT, Jkeene, Warko, Eve Hall, Maximillion Pegasus, BertSen, Ngresonance, Hqb, Daniil nau-moff, Scoelho86, Qxz, Bkboy, TwiligToves, Martin451, Dobe2002, Raymondwinn, Seb az86556, PDFbot, BotKung, Maxim, Rumi-ton, ARUNKUMAR P.R, Mazarin07, Tsunamishadow, Penarc, Oisín Allen, BigDunc, Annmaltmanphd, Adam.J.W.C., Falcon8765, Ru-pestre, Tracerbullet11, Kaseman519, C45207, !dea4u, Cryptophile, Monty845, HiDrNick, NZ forever, Twooars, Hylroller07, Logan,

Munci, MrChupon, Patparks, NHRHS2010, EmxBot, Steven Weston, Zash star2, Omarpeppy, Ponyo, Logares1, SieBot, Soakleif, Scarian, Euryalus, WereSpielChequers, Blsopp, Winchelsea, Mbz1, Alex Middleton, Caltas, Yintan, Jkkoopster75, Webbianator101, GOOBERMAN, Toddst1, Tiptoety, Radon210, Wilson44691, SPACKlick, Oxyoron83, AngelOfSadness, Goustien, Vicdude42, Latinasunidas, Patricia Vargas Casanova, Diego Grez-Cañete, Rosiestep, Seedbot, Spitfire19, Nimbusania, Maralia, WikiLaurent, Ipodkid12, Lukasz Lukomski, Wee Curry Monster, Into The Fray, A.C. Norman, Velvetro, Explicit, Atif.t2, MenoBot, Loren.wilton, Martarius, Tunisir Ahmed, ClueBot, Travellatin, SuaveGemini, Snigbrook, ShayDC, Bexsd, TransporterMan, The Thing That Should Not Be, Mardetanha, Abriiggs198, Jan1nad, Ark2120, Dpmuk, Vallegrande, Motanel, Drmies, Marshall007, Mild Bill Hiccup, Polyamorph, SuperHamster, Proclivities, CounterVandalismBot, Tradewater, Niceguyedc, Stefanbcn, Parkwells, Jan B Stolz, Piledhigheranddeeper, DuendeThumb, GOREDSEX2078, Rockfang, UniverSoul, Prachursharma, F-402, Deselliers, Detroiterbot, Bbruchs, No such user, Catfish Jim and the soapdish, Excirial, Crywalt, Bruhmever, Queen6781, Keysanger, Noloopass26, Spidaq-enwiki, Doticus, Cowmaster555, Shem1805, Polly, Stepheg3, Mcadwell, Thingg, Adderly, Aitias, Horselover Frost, Samantha555, Kikos, Versus22, Mhockey, Burner0718, Egmon-taz, Goodvac, Vanished user uih38rriw4hjlisd, Miami33139, DumZiBoT, Mr Larrington, EdChem, XLinkBot, Spitfire, Emmette Hernandez Coleman, Marioizthebest, Tupahotu, Avoided, Kingnoskcaj, Mitch Ames, Ougner, Manfi, Badgernet, Alexius08, WikiDao, KAVE-BEAR, Raso mk, ElMeBot, Jhendin, Luwilt, Jman345, Islandbaygardener, Addbot, Proofreader77, Chevyl948, Connie957, RN1970, Willking1979, AlexandrDmitri, Jojhutton, Hda3ku, Crazysane, Cooldogsadger, Vjspin3, Ixthexmanx401, Ronhjones, Fieldday-sunday, Mr. Wheely Guy, Citx, Kman543210, CanadianLinuxUser, Fluffernutter, Groundsquirl13, Reedmalloy, Jnorm, Aggienmmi, Mnmazur, Glane23, Gesrsydbcjd, Sicari impuratus, Hankie Doodle Dandy, Sebeat, Favonian, ChenzwBot, LinkFA-Bot, Mdnavman, Peti610botH, Athaniel-enwiki, Tassedethe, Numbo3-bot, Shadowsill, Ehrenkater, Tide rolls, Someone9871, Lightbot, Krano, Szalax, David0811, Jarble, Salad8, HerculeBot, Artichoke-Boy, Luckas-bot, Yobot, Bunyhopy11, Senator Palpatine, Fraggie81, Legobot II, Gjvb, Newportm, Ow! Was it something I said?!, Umbertoumm, MacTire02, Tempodivaise, AnomieBOT, KDS4444, Thuvan Dihn, DemocraticLuntz, Parasidic, Rubinbot, Void2258, Ogeinamas, IRP, Xufanc, AdjustShift, Zacherystaylor, Dinesh smita, Tecumseh1, Chuletadechancho, Tomasgreene, WereSpellCheckers, Materials scientist, Citation bot, Diegobarriga, OllieFury, Felyza, Maxis ftw, Serveux, ArthurBot, Sox4evr111, ChristianH, DirlBot, Erudite Valkyrie, Xqbot, Jonathan321, Sionus, Night w, The sock that should not be, Capricorn42, Gensanders, Jsharpminor, Jmundo, CDNG, Gap9551, Maddie!, Anonymous from the 21st century, GrochoBot, BeenChanged, Ruodysey, Americanjourna2223, ProtectionTaggingBot, Trurle, Btafreshi, RibotBOT, Chris.urs-o, 78.26, Adolf Galland, Buyyouadrunk, Spellage, Adamhadad, Crisastemis, Haploidavey, Isidora S. H., FrescoBot, Vividuppers, Toby72, Misiokuk, Wikipe-tan, Wiki938, RogerDodger111, Aergoth, Stu.W UK, Mythic444, Recognizance, Vicharam, BrideOfKripenstein, HJ Mitchell, Rkr1991, BenzolBot, Jamesooders, 8gigdisk, StarFire83301, Citation bot 1, Cubs197, Pinethicket, I dream of horses, Tamariki, The Doddsy, SoccerMan2009, A8UDI, MastiBot, Tahir mq, Space-Flight89, Île flottante, Ryan Merlo, Prospect 2000, Henaff03, Pristino, Effaheap, Kgrad, Qpr123, Euriditi, TobeBot, Reigfvngkaiaienen-fuaak, Fox Wilson, Alexandicity, Vrenator, MikeLousado, Marydeல்லucas, Dontjudge, 雲起林野, Taytaylorious09, Sml9910, Dianna, Gazzajohnstun, Athene cheval, Tbotch, Cholandes, Romanrozumny, Lord of the Pit, DARTH SIDIOUS 2, Between My Ken, Rjwilmsi-bot, MMS2013, Tomriddle666, Strepadair, Galloping Moses, Beyond My Ken, Lillyber, Wdjunkin, Slon02, Ddboline, DarknessShines2, Onef9day, EmausBot, Orphan Wiki, Immunize, Gfoley4, Az29, Dadaist6174, Holdenzgolden23, Boonshofer, Rutvik1234, MFdeS, Clive tooth, Bettymnz4, Christopherwobrien, Tommy2010, Hello12ppy, EDOTca1, Wikipelli, K6ka, Chiton magnificus, Djembayz, Sullyss73, Mahinavai, Josve05a, NicatronTg, Sharkfangalex, Subtropical-man, HaqaRoa, H3llBot, Brianweath, SporkBot, Monterey Bay, Gz33, Nanib, Jenxjen, Qamon23, Augurar, Brandmeister, L Kensington, Hon3ybee, CrescentBlade2609, Donner60, Puffin, Küñall, Hazard-Bot, ChuispastonBot, Peter Karlsen, TYelliot, ShatteredSpiral, Mjbmrbot, Rohith goura, ClueBot NG, Dan Hunton, Caylean, Gareth Griffith-Jones, MIKHEIL, CocuBot, Satellizer, 7D HMS, Dionweston, ScottSteiner, Geekman314, Rezabot, Chiquilaird, Zz pot, Brik111, Wikian-des, Funnystuff21, Joebueballs, Helpful Pixie Bot, B21O303V3941W42371, Smeeds, Gob Lofa, Bibcode Bot, Bobbyv132, Lowercase sigmabot, BG19bot, Aslan1245, Mr.fizzman, Northamerica100, Smithjeffrey333, MusikAnimal, Frisch1, PaintedCarpet, Iny12, MrBill3, NotWith, Trollololololol50000, Piano410, Mattyboy93, Zedshort, Van Gulik, AlbertGoomba, MeIsBigBoy, Enciclopediaenlinea, Calvinlld, Arigoldberg, DaveAEC, MarkoRF1, NotMiserable, Churdny, Powersx2x, Magerius, Rivalnator, EuroCarGT, E4024, Dexbot, Uncommon fritillary, Stoermerjp, Ssbbplayer, CuriousMind01, GTheory, Lugia2453, Frosty, UFFOXsink, WilliamDigiCol, Pablo escogrif, Srourourke, Legendfire842, Epicgenius, 2009branden2009, Gigungus, Rumpye8, AmaryllisGardener, Eyesnore, Rod6807, Windroff, St Gesus, Tentinator, Infamous Castle, EvergreenFir, Jowhoward63, Wildoneshackerpro, Angel0522, AnthonyW90, KevinLiu, יהוה, Ugog Nizdast, Gilsempole, Zariane, My name is not dave, BetterWorld4, TCMemoire, Janitoalevic, Ddk2130, Chari.amber, MattGWeb, Nufc 100, Batman1221221, Gurlabh, Minerbeaver, Monkbot, MarblePlinth, Currannow, Daanmaate, FriendlyCaribou, Mammassays123, Asd-klf;., Julietdeltalima, Farouk Rizki, Jyoshi8o8, Dontdenythelavutubes, Electrasfroot, Yousucknub, Jf2839, Lectorum, Jerodlycett, Elisebee, KasparBot, Happyalover, Doggy500, Ebaniri and Anonymous: 1475

- **Fangataufa** *Source:* <https://en.wikipedia.org/wiki/Fangataufa?oldid=654734938> *Contributors:* Bryan Derksen, Wetman, Altenmann, Folks at 137, Fastfission, Keith Edkins, D6, Rama, HasharBot-enwiki, Joshbaumgartner, Japanese Searobin, TShilo12, Chochopek, Btw-enwiki, Midgley, KnightRider-enwiki, SmackBot, Unyoyega, Zyxx, Hmains, Bluebot, MalafayaBot, Drinkinv8, Tim Q. Wells, Pjminton-enwiki, Cydebot, Tzar-enwiki, Oreo Priest, The Anomebot2, Pikolas, CommonsDelinker, Ljgua124, Hugo999, VolkovBot, Tourbillon, Johnfos, Lamro, Truthanado, Mohonu, ClueBot, Addbot, Krenakarore, Yobot, Sumivec, Xufanc, LlywelynII, Xqbot, Ribot-BOT, EmausBot, Racerx11, ZéroBot, SporkBot, TheConduqtor and Anonymous: 6
- **Floreana Island** *Source:* [https://en.wikipedia.org/wiki/Floreana\\_Island?oldid=680429562](https://en.wikipedia.org/wiki/Floreana_Island?oldid=680429562) *Contributors:* Pladask, RedWolf, Davidcannon, Gadium, Gcanyon, Dave souza, Darwinek, Ratzler, FlaBot, タチコマ robot, SmackBot, Kintetsubuffalo, Yamaguchi 先生, Radagast83, Iridescent, Eluchil404, Filiep, CmdrObot, Cydebot, Thijs!bot, WinBot, Mbethke, Steveprutz, WolfmanSF, Avjoska, The Anomebot2, Philg88, EI0I, WLross, Rémi, Idioma-bot, VolkovBot, Holme053, FergusM1970, Jalo, Alcmaeonid, Scherzomio, Gbawden, Soler97, Freeman501, ترحمان05, Plastikspork, Mild Bill Hiccup, Ktr101, Keysanger, Basketball110, Stepheg3, Camtm, Tdskl, DumZiBoT, Movera, Addbot, Lightbot, Voevoda, HerculeBot, Yobot, AnomieBOT, Dinesh smita, Xqbot, LizRoot25A, Dger, Mati300, RedBot, 777sms, ZéroBot, Warairarepano&Guaicaipuro, Helpful Pixie Bot, Mrsfarley118, BattyBot, SHFW70, Melonkelon, JimnChina, ProfMJB and Anonymous: 21
- **Howland Island** *Source:* [https://en.wikipedia.org/wiki/Howland\\_Island?oldid=674620999](https://en.wikipedia.org/wiki/Howland_Island?oldid=674620999) *Contributors:* The Epopt, Bryan Derksen, Koyaanis Qatsi, Andre Engels, Rmhermen, Michael Hardy, Hoshie, Matthewmayer, Deadstar, Ellywa, TUF-KAT, Jiang, Dwo, Dysprosia, Slawojarek, PuzletChung, Christm, Tomchiukk, RedWolf, Postdlf, Clnrg, David Edgar, Folks at 137, Bkonrad, Wyss, Varlaam, LLarson, Revth, Radius, Gilgamesh-enwiki, Bobblewik, Stevietheman, Beland, Cjewell, Ot, Pmanderson, Wzfr, Neutrality, Urhixidur, Safety Cap, D6, Dablaze, Rich Farmbrough, Guanabot, Evice, CanisRufus, \*drew, Kwamikagami, Whosyourjudas, Mdhove, Bollar, Fremley, Clarkbhm, Colin Douglas Howell, Irrawaddy, Sparkgap, Darwinek, Jonathunder, A2Kafir, Alansohn, Raymond, WikiParker, Pfahlstrom, Henry W. Schmitt, Gene Nygaard, Richard Weil, Deror avi, Dismas, Unixxx, Renamed user 3bax0gh23bs, Ratzler, Melesse, Electionworld, Jake Wartenberg, AdnanSa, Karelj, Sonitus, McDogm, Rynogertie, Chobot, Roboto de Ajvol, RobotE, Pigman, Gaius Cornelius, Nahallac Silverwinds, Chooserr, Retired username, Lomn, Tonym1, Gadget850, Bota47, Chanheigeorge, Arundhati bakshi, Cafe Nervosa, Smack-

- Bot, David Kernow, Nihonjoe, NaiPiak, Kintetsubuffalo, Hmains, EncMstr, MalafayaBot, Droll, CSWarren, Rebutcher, TCY, Snowmanradio, Bardsandwarriors, Elendi's Heir, Jóna Þórunn, Nhprman, Ohconfucius, SashatoBot, Ser Amantio di Nicolao, Reaganamerican, General Ization, Edwy, Hu12, Newyorkbrad, JForget, Neelix, Myasuda, Cydebot, Richardguk, Simon Brady, Nsaun75, Dustelnik, LarryQ, Thijs!bot, Ning-ning, Pstanton, Marek69, Ufwuct, Tillman, Tigga, Defective, Leuko, Bzuk, Rotherpe, Bongwarrior, Dj9kddie, Saamb, Lonewolf BC, Farpointer, Daarznies, GregU, MartinBot, CommonsDelinker, AlexiusHoratius, LordAnubisBOT, Jann94024, BaseballDetective, Mxmsj, WarFox, Gwen Gale, Rémi, Funandtrvl, Deor, VolkovBot, TXiKiBoT, Burpen, Rei-bot, Gwinva, Eubulides, Geanixx, CharlesRobertCountofNesselrode, AlleborgoBot, EmxBot, SieBot, Jonas Poole, Prof. Woodruff, Dopenut, Byrialbot, Goustien, Targeman, Lightmouse, Techman224, COBot, ImageRemovalBot, Ecjmartin, ClueBot, Ridge Runner, Muhandes, MacedonianBoy, Footprintpress, Antigraivetyece, Kintaro, Little Mountain 5, Avoided, SilvononBot, Good Olfactory, Addbot, Joghutton, Lightbot, Zorrobot, WikiDreamer Bot, Waltloc, Jim, Legobot, Luckas-bot, The Original Historygeek, Xufanc, RevelationDirect, Xqbot, Night w, RibotBOT, Brutal Deluxe, FrescoBot, LucienBOT, MastiBot, ArgGeo, FoxBot, DARTH SIDIOUS 2, Onel5969, TjBot, EmausBot, John of Reading, Orphan Wiki, Skysurf, Fixblor, H3llBot, L Kensington, ClueBot NG, Unscintillating, Delusion23, Helpful Pixie Bot, MozzazzoM, Zackmann08, EricEnfermero, MeanMotherJr, StarryGrandma, Khazar2, Jianhui67, Dabdo and Anonymous: 92
- **Iwo Jima Source:** [https://en.wikipedia.org/wiki/Iwo\\_Jima?oldid=681732364](https://en.wikipedia.org/wiki/Iwo_Jima?oldid=681732364) *Contributors:* Rmhermen, Deb, Hephaestos, Patrick, Michael Hardy, Ronincyberpunk, Ixf64, Cyde, Stan Shebs, Jpatokal, GCarty, Mxn, Conti, Emperorbma, WhisperToMe, Furrykef, Topbanana, HarryHenryGebel, Raul654, Scott Sanchez, Jeffq, Lumos3, Robbot, Chrism, Pjedicke, Saforest, Raeky, Xyzzyva, Gwalla, DocWatson42, Paul Richter, Ydorb, Tom harrison, Folks at 137, Wwoods, Bkonrad, Gilgamesh-enwiki, Zinnmann, Bobblewik, Golbez, Fishal, Antandrus, The Singing Badger, Evertime, Balcer, Pmanderson, NoPetrol, Mschlindwein, Fg2, Klemen Kocjancic, Asimperson, Mike Rosoff, D6, CES-enwiki, AliveFreeHappy, Madewokherd, Discospinster, Rich Farmbrough, Rupertslander, Vapour, Paul August, Bender235, Andrejj, Kbh3rd, Kaisershatner, Kross, Bendono, Chriscf, Sf, Bobo192, TomStar81, Imars, Gurezaemon, Sasquatch, Rajah, Scotthatton, Schnolle, Danski14, Alansohn, Anthony Appleyard, Bathrobe, Andrew Gray, Hoary, Milesli, Gblaz, Yummifruitbat, Hohum, Snowwolf, Dhartung, BanyanTree, Sciurinae, LordAmeth, Gene Nygaard, Nightstallion, Forteblast, TShilo12, JALockhart, Mindmatrix, Bellhalla, TigerShark, Before My Ken, GregorB, JediKnyghte, Neanderthalprimadonna, Karmosin, Shikai shaw, Tokek, Cckerberos, Dysepsion, Kvladiko, Graham87, Imersion, MikeDockery, Edison, Rjwilmsi, Roger, JHMM13, Sdoran, Chitrell, Durin, Bensin, Olessi, Yamamoto Ichiro, FlaBot, Ground Zero, CalJW, Nivix, Bubbleboys, Wongm, Chobot, DVdm, Bgwhite, YurikBot, Quentin X, Wolfmankurd, RussBot, Wisekwai, Hydrargyrum, Pseudomonas, Nicke L, NawlinWiki, Dysmorodrepanis-enwiki, Dialectric, Tfine80, Dforest, Megapixie, Cleared as filed, RUL3R, Ospahl, Gadget850, DeadEyeArrow, Bota47, Strolls, Galar71, David Underdown, Zzuuzz, Likwidshoe, Arthur Rubin, Chrishmt0423, Curpsbot-unicodify, Thomas Blomberg, NeilN, Roke, Nick-D, Andman8, Pouchkidium, Neier, SmackBot, Looper5920, Nihonjoe, Wehwalt, NorthernFire, Ikip, Stephensuleeman, Kintetsubuffalo, Gilliam, Hmains, ERcheck, Teemu Ruskeepää, Chris the speller, Endroit, Bluebot, Exitmoose, MalafayaBot, Hibernian, DHN-bot-enwiki, Da Vynici, Colonies Chris, Hmortar, Thief12, GoodDay, Zsinj, Can't sleep, clown will eat me, Skidude9950, MJCdetroit, Wes!, Brianhenke, Mytwocents, Asakura Akira, Stor stark7, Curly Turkey, Ptpete25, Rklawton, Rigadoun, Johnl, -js-, Peterbr-enwiki, Vovvon, Ryulong, Peter Horn, DagErlingSmørgrav, Hu12, Patrick Schwemmer, Ambadale, Aaronp808, Iridescent, Myopic Bookworm, Ceabaird, Meow, Dlohcierekim, Michaelh2001, Willisv, Mika1h, Dgw, FlyingToaster, Cydebot, Gogo Dodo, Bellerophon5685, Waltgibson, Bobo12345, Shirulashem, M karzarj, TGordon, Gimmetrow, Flash1240, Tortdog, LilDice, Thijs!bot, Epbr123, N5iln, Supafly.za, Plateblock, CamperStrike, AntiVandalBot, Akgradecki, No Left Turn, Prolog, Camptown, Krtek2125, Qwerty Binary, Myanw, Kariteh, Volcanoguy, JAnDbot, Defective, Samuel Webster, Instinct, Andonic, PBot, Martí Cabré, Dann Dobson, Magioladitis, DougRWms, 仲代陽子 -enwiki, Jacksjb, Bongwarrior, VoABot II, Hb2019, River torch, Tedickey, The Anomebot2, KConWiki, MetsBot, Allstarecho, DerHexer, CoyoteOfTruth, GregU, Charmerchick0001, Seba5618, MartinBot, Paracel63, Anaxial, Rigmahroll, Wikitiki89, J.delanoy, Leon math, Bogey97, Incongruous, Extrantit, Cocoaguy, WarthogDemom, Ian.thomson, St.daniel, RussGrover, Amake, Anomen, Bailo26, Naniwako, Manoamuppet, NewEnglandYankee, Kidlittle, STBotD, Num1dgen, Td321, MishaPan, PeSHir, Wofng, Hugo999, SammoMan, Seattle Skier, Philip Trueman, TXiKiBoT, Revmqo, Eve Hall, Toll booth, Heartcoke, GcSwRhlc, Qxz, Shadow Gx222, Leafyplant, Broadbot, Henryodell, ARUNKUMAR P.R, RadiantRay, Auric Trinity, Adam.J.W.C., Coolsnail007, Vector Potential, Seevs12, Trojan51, MurderWatcher1, Td4321, Twooars, PGWG, Poke it with a stick, Ttony21, Tresiden, Scarian, Phe-bot, Lucasbrfbot, Quest for Truth, Oda Mari, DedicatedEncyclopedic, JetLover, Oxymoron83, Antonio Lopez, AngelOfSadness, Goustien, Lightmouse, Alex.muller, Macy, Nancy, Mygerardromance, Pinkadelica, Canglesea, Sagredo, Loren.wilton, MBK004, ClueBot, Lordjohne, Binksternet, Trfasulo, Ideal gas equation, The Thing That Should Not Be, Egliedman, Wysprgr2005, Doseiai2, Ridge Runner, Ktr101, Excirial, Skateguy8, Gtstricky, Coinmanj, NuclearWarfare, Dekisugi, Mikaey, Thingg, Briarfallen, Puppykitty, Berean Hunter, DumZiBoT, Bigshotje, SilvononBot, NellieBly, Da stooges, Pswam, The Spartan Army 50, Lemchesvej, Addbot, Xp54321, Pigr8, Willking1979, DOI bot, Tanhabot, Mww113, Fieldday-sunday, CanadianLinuxUser, Redbayonet, Chamal N, CarsracBot, Scorchy, Swantonsoup, Puppywarfuzz, Tide rolls, Lightbot, Moocowsrule, ShootinPutin109, Santosga, Luckasbot, Ptboutgourou, Fraggel81, Reenem, QueenCake, KamikazeBot, Rubinbot, Thezealot228, Piano non troppo, DoLaN28, Ulric1313, Materialsscientist, Citation bot, E2eamon, ArthurBot, Xqbot, DSisyphBot, TheWeakWilled, The-Exposeinator, Ched, Ttjtb19, Ajeoldif, RibotBOT, SassoBot, Chris.urs-o, Doulos Christos, N419BH, Super j75, Dako1, Joaquin008, Atomicgur00, Skaterchild147, FrescoBot, Surv1v411st, Pepper, Seibun, Deckerky070, Snowwie, OgreBot, Citation bot 1, Miguel67, Pinethicket, Andrei Rublev, Plasticspork, Full-date unlinking bot, Rotblats09, Postal2, Lotje, Rennell435, Cowlibob, DARTH SIDIOUS 2, Dr. Diehl, Mean as custard, Beyond My Ken, Agsftw, Kapowninja, Immunize, RA0808, AlanSiegrist, Gwillhickers, Sp33dyphil, Tommy2010, K6ka, The Blade of the Northern Lights, 15turnsm, RivettsRoad, Loser111111, Tolly4bolly, L Kensington, Donner60, ChuispastonBot, Noble fan, Rocketrod1960, Gunbird-driver, ClueBot NG, Daniel1362, Target for Today, Mateo Flecha, Egg Centric, Corusant, Maxamilon, Helpful Pixie Bot, Gunbirddriver2, BZTMPS, BG19bot, Davygravy12, Kaltenmeyer, Joydeep, Snow Blizzard, Gomojo99, Achawat, Roysef, DOCTORENTERPRISE, Mean-MotherJr, BattyBot, Justincheng12345-bot, Iamtheman111, KaylaB101, Singout1, Mogism, Pablogarlib, Fycafterpro, Adam.eckelberg, Howicus, Josh.rynders, Shitopia, Mrkingofwheels, User-name157, Jdpthethird, Monkbot, Rawr11111, JohnnyJohn69, Witherby10 and Anonymous: 492
  - **Macquarie Island Source:** [https://en.wikipedia.org/wiki/Macquarie\\_Island?oldid=677503568](https://en.wikipedia.org/wiki/Macquarie_Island?oldid=677503568) *Contributors:* Olivier, Tim Starling, Cyde, Gaz-enwiki, Notheruser, Raven in Orbit, Vaceutino, Michael Glass, Lupo, SoLando, Graeme Bartlett, DocWatson42, Curps, Gilgamesh-enwiki, Keith Edkins, Kvasir, PDH, One Salient Oversight, Allissonn, Grunners, Mpesce, Ramendra, Thorwald, Kate, Shiftchange, D6, Discospinster, Rich Farmbrough, Vsmith, Pavel Vozenilek, Joeperson, Bender235, Violetriga, \*drew, Kwamikagami, Robotje, Warwick, Diceman, Scotthatton, Polylerus, Red Winged Duck, Grutness, Tilgreioeg, Arthana, Geo Swan, Nick Moss, Stack, Avenue, Wtmitchell, Dschwen, Stemonitis, Ratzer, Zzyzx11, Marudubshinki, Graham87, Kbdank71, SDalley, Rjwilmsi, DoubleBlue, Gareth E Kegg, Nomadtales, Kdhenrik-enwiki, Roboto de Ajvol, YurikBot, Sceptre, RussBot, Gaius Cornelius, Cheyne, Johantheghost, Dhollm, UniReb, Tony1, Jeremy Visser, Citylover, Nekura, SmackBot, AndreniW, Esrcadekan, Yamaguchi 先生, Gilliam, Dr bab, MalafayaBot, Droll, Scwlong, Snowmanradio, WikiCats, New World Man, Zzorse, SirlsacBrock, Angela26, Ozhiker, The celt, Marco polo, Breno, Luokehao, Samwingkit, Peter Horn, SkinSmoke, DI2000, Paukrus, Joseph Solis in Australia, Tmangray, Jynus, Lord Warlock, Joey80, CmdrObot, Cydebot, Thijs!bot, Jmg38, TassieMania, A3RO, Tillman, Ingolfson, Volcanoguy, JAnDbot, Janejellyroll, Maias, anacondabot,

Dapsv-enwiki, Pudghey, Ben MacDui, J.delanoy, Spinach Dip, Dlsnider, 1812ahill, Hugo999, VolkovBot, Daniil naumoff, Rei-bot, Merteuil, McM.bot, Shaidar cuebiyar, Calliopejen1, Mbz1, Jonas Poole, JuanFox, Prof saxx, ClueBot, M.O.X, SchreiberBike, DumZiBoT, Addbot, Yelizandpaul, Baffle gab1978, Maadonna, Ondewelle, Lightbot, Krenakarore, AussieLegend2, Waltloc, Aaroncrick, Legobot, Lucas-bot, Yobot, AnomieBOT, Archon 2488, Rangasyd, Simon the Likable, Flewis, MaterialsScientist, Citation bot, Bob Burkhardt, Xqbot, Night w, Capricorn42, Mononomic, Leavit2stever, RibotBOT, Kyng, Doulos Christos, Амартүвшин, Hullwarren, Jschnur, RedBot, Île flottante, Jauhienij, Crusoe8181, Elekhk, TobeBot, Fama Clamosa, RjwilmsiBot, Chipmunkdavis, EmausBot, WikitanvirBot, Racerx11, MacDoggald, ZéroBot, Jdowding, H3llBot, Donner60, Platypusmonotreme, ClueBot NG, Satellizer, Russososs, Duideka, Helpful Pixie Bot, Someone35, BG19bot, Cowdy001, Frisch1, Compfreak7, Tony Tan, Hergilfs, Rfaloxb, Simidre, Sj96, YFdyh-bot, Spirit of Eagle, Sbbplayer, Athrotaxis, Frosty, Jhaxelxy75, Corinne, Andrej 1950, Scottycraig, C.mcquarrie, Dougwhirrie, Omnibus1745, GreenGoldfish17, Jpm214, Ucj747, Kevjiangba, Bettifm, ThaGreenlander, Chaussivert and Anonymous: 113

- **Napuka** *Source:* <https://en.wikipedia.org/wiki/Napuka?oldid=654786259> *Contributors:* Rich Farmbrough, Markussepe, Mdhowe, Roy da Vinci, Grutness, TShilo12, Btw-enwiki, OpenToppedBus, YurikBot, Hmains, Bluebot, MalafayaBot, LouScheffer, Cydebot, Thijs!bot, EP111, The Anomebot2, Ljgual24, Montchav, VolkovBot, Mohonu, Addbot, H92Bot, Lightbot, Psidium, Pepper, Redrose64, Dinamikbot, Racerx11, ZéroBot, CactusBot, FeedBot, Caroline1981 and Anonymous: 2
- **Norfolk Island** *Source:* [https://en.wikipedia.org/wiki/Norfolk\\_Island?oldid=681632971](https://en.wikipedia.org/wiki/Norfolk_Island?oldid=681632971) *Contributors:* The Epopt, Koyaanis Qatsi, Scipius, Karen Johnson, Anthere, Chuq, Hoshie, Ixf64, Zanimum, Sannse, Shoaler, Ahoerstemeier, Pjamescowie, Docu, Notheruser, KoyaanisQatsi, Den fjättrade ankan-enwiki, Jiang, Hike395, Charles Matthews, Bemoelial, Lfh, Wik, Grendelkhan, Joseaperez, AnonMoos, Bcorr, Green slime-enwiki, Bearcat, Robbot, Dale Arnett, Moriori, Chrism, Romanm, Chris Roy, Postdlf, Clarkk, JackofOz, Davidcannon, MPF, Jpta-enwiki, Popup-enwiki, Tom Radulovich, Jonathan O'Donnell, Cantus, Gilgamesh-enwiki, BigHaz, Gzornenplatz, Bobblewik, Sesel, Thewikipedian, Gadium, Keith Edkins, The Singing Badger, Kvasir, Robert Brockway, Mzajac, Roisterer, Secfan, Rlquall, Derek Parnell, Acad Ronin, Fermion, Thorwald, Mike Rosoft, Shiftchange, D6, N328KF, Sysy, CALR, Discospinster, Rich Farmbrough, Pmysyz, Florian Blaschke, MeltBanana, Quiensabe, SpookyMulder, \*drew, El C, Lankiveil, Kwamikagami, Mjrogers50, Spoon!, CDN99, Ruzewski, Bollar, Garlics82, Malafaya, Darwinek, Jumbuck, JadziaLover, Buaidh, Verdlanco, Thewalrus, Theodore Kloba, CJ, Avenue, Marianocecowski, SidP, Cromwellt, Bsadowski1, Gene Nygaard, Alai, Instantnood, YixilTesiophon, Richard Weil, Deror avi, Bastin, Zntrip, Woohookitty, ScottDavis, SteveMcKay, PoccilScript, Ratzter, JeremyA, Tckma, MONGO, Nakos2208-enwiki, Tbc2, GregorB, Isnow, Maartenvdbent, Hughcharlesparker, Jon Harald Søby, Palica, Gena Wenli, Slgrandson, Graham87, Monk, Chun-hian, Anarchivist, Luh-e, Electionworld, Rjwilmsi, Enzedbrit, Suirotra, Vegaswikian, Funnyhat, Afterwriting, Cassowary, DickMack, Axver, Algri, McDogm, Glenn L, CJLL Wright, Chobot, Kresspahl, DVdm, Gdrbot, Vmenkov, YurikBot, Wavelength, Bawpcwpm, Jimp, RussBot, Norma Jones, John Quincy Adding Machine, Ghostieguide, MulgaBill, ExRat, JRG, JAJ, Tony1, Martinwilke1980, Johnlp, Bob247, Dankru, Orioane, Lt-wiki-bot, Nikkimaria, Chase me ladies, I'm the Cavalry, Chanheigeorge, Canley, Fram, Citylover, GrinBot-enwiki, Ellislike, Nick-D, West Virginian, Harthacnut, SmackBot, Pwt898, David Kernow, Herostratus, Hydrogen Iodide, EncycloPete, Kintetsubuffalo, Hmusseau, Commander Keane bot, Portillo, Persian Poet Gal, Mordac, MalafayaBot, Hibernian, Stevage, Akanemoto, Barend, Sadads, Kevin Ryde, Chastacosta, Stormboyt, AussieLegend, Anthon.Eff, Rarelibra, Smooth O, EdGI, Kahuroa, Bezapt, SashatoBot, Beasterline, Polihale, Ser Amantio di Nicolao, Fabant, Breno, Knobblly, Edwy, Green Giant, Ckatz, Buckboard, Aotearoa, Novangelis, MTSbot-enwiki, Skinsmoke, DI2000, DwightKingsbury, HelloAnnyong, Triki-wiki, Joseph Solis in Australia, Octane, Courcelles, Tawkerbot2, DJGB, Sxim, CmdrObot, Megaboz, Ljmh, JohnCD, Scheridon, MarsRover, Neelix, Pewwer42, Cahk, Kanags, ChristTrekker, Rowlandw, Snewoc, Quibik, Brentadams88, Johnsp1, Thijs!bot, Marek69, Basement12, GenuineMongol, Oosh, AlefZet, Escarbot, AntiVandalBot, Obiwankenobi, Ozzieboy, Shirt58, Dr. Blofeld, Goldenrowley, Cymruman, Volcanoguy, JAnDbot, Tigga, Deflective, Husond, Petecarney, The Transhumanist, Maias, Magioladitis, WolfmanSF, BlueMoses, Meredyth, Websterwebfoot, Olli J., Appraiser, ZwickauDeluxe, Pvmoutside, Steven Walling, The Anomebot2, Markoff Chaney, Daarznicks, 1549bcp, Markus451, Mattinbgn, Rickard Vogelberg, Atarr, MartinBot, Firemin, CommonsDelinker, Pinot, Pharaoh of the Wizards, Trusilver, Ginsengbomb, Jasper33, Wikiwikiwoolgar, Abhijitsathe, Naniwako, HiLo48, Plasticup, Rev. John, ULC, Bluepizzazaeagle, Flatterworld, Olegwiki, DH85868993, Hugo999, VolkovBot, CWii, Jeff G., Seattle Skier, AlnoktaBOT, AdamSommerton, Rclocher3, Vlmastra, TXiKiBoT, Oshwah, Sroc, Easel3, Turnkey, John Carter, Seb26, ^demonBot2, Bleaney, Kenshin, UnitedStatesian, Gibson Flying V, Indudududududunesia, Adam.J.W.C., Mcsmom, Falcon8765, Socksysquirrel, Truthanado, Kid Bugs, AlleborgoBot, Michael Frynd, Munci, Legoktm, Demmy, SPQRRobin, SieBot, StAnselm, Jpp42, Gerakibot, Votedukakis, Kevin Rudd, Flyer22, Neutralhomer, HkCaGu, LibStar, Bbaron58, Lightmouse, Sherpa Steve, OKBot, Svick, Kentynet, Dolphin51, ImageRemovalBot, Newm30, YSSYguy, ClueBot, Maltese otter, Lonelygirl16, Garyzx, Drmies, Bflocket, Joao Xavier, Parkwells, Ashdod, Jeremiestrother, Detroiterbot, No such user, King wiston, Socrates2008, Jusdafax, MacedonianBoy, Iohannes Animosus, Trainunion, M.O.X, SchreiberBike, Silas Maxfield, Samantha555, Kattigara, DumZiBoT, BodhisattvaBot, Reedwood, Manfi, Podylover, Good Olfactory, NCDane, Thedoctor98, Surtsicna, Jhendin, Factoid08, Addbot, Mspence835, Apoyon, Jonnmalloy, Compactdisc90, Jaydec, AgadaUrbanit, Berlinerzeitung, Tide rolls, Lightbot, Ghoongta, AussieLegend2, HerculeBot, Jim, Ben Ben, Legobot, Lucas-bot, Yobot, Newportm, Naufjbot-enwiki, Amirobot, KamikazeBot, MacTire02, Bility, AnomieBOT, Archon 2488, Rubinbot, Stephenluscombe, Galoubet, Lucas Brown 42, Dinesh smita, Ulric1313, Crecy99, Elmmappleoakpine, Gameral123, Citation bot, Elonia, Xqbot, Night w, Conay, Khajidha, Jmundo, GrouchoBot, Alumnum, RibotBOT, Joes23b, Tokiohotelover, Lothar von Richthofen, Mistakefinder, Masterknighted, Charlesqw, Taweetham, Citation bot 1, Windshuttle, JKDw, Pinethicket, YJDrake, Yahia.barie, Moonraker, RedBot, MastiBot, Tahir mq, Wikiain, ScottMHoward, Effiaheap, Crusoe8181, Ianprime0509, Kaziuk17, Stalwart111, 雲起林野, Nero the second, Tbhotch, Darset, DARTH SIDIOUS 2, Bahnfreund, RjwilmsiBot, TjBot, Phlegat, EmausBot, Kenny.elladan, Spongie555, Hous21, Camira, Illegitimate Barrister, Ra prime, Suslindsambiguator, Lkingscott, Felozzie, Andattaca2010, Philafrenzy, Hazard-Bot, Grammar Prof, Petr, ClueBot NG, ClaretAsh, Fractules, MoondyneAWB, Norfolk Island Chat, ThomasPa, Михаил Марчук, Laurenzwa, IgnorantArmies, Helpful Pixie Bot, Jutherine, Tdimhcs, Someone35, 2197work, BG19bot, Cowdy001, ElphiBot, Compfreak7, Crashdown13, United States Man, Candle421, Hadi Payami, BattyBot, Jcarver6, Cyberbot II, 711Cthulhu, Khazar2, Jethro B, JYBot, Treemapper, Mogism, SiBr4, Qazp, Sbbplayer, Anegada, Seqqis, Juliana 8, CamV8, Rob984, David.r.1929, Viti1234, The Anonybot, PinkAechFas, Ginsuloft, LoHi48, Wikisteve123, Celine5H, Wikivator, Gary Hardgrave, Very dark brown, Julietdeltalima, KasparBot, Mr.Bob.298, Norfolk Island Democracy, RyugaXI and Anonymous: 241
- **Pagan (island)** *Source:* [https://en.wikipedia.org/wiki/Pagan\\_\(island\)?oldid=679810908](https://en.wikipedia.org/wiki/Pagan_(island)?oldid=679810908) *Contributors:* Docu, Dmoews, Robbot, RedWolf, Folks at 137, D6, Darwinek, Grutness, Michael Gäbler, Camw, Ratzter, SJB, Vegaswikian, MChew, Lzz, YurikBot, UniReb, Qrfqr, Chanheigeorge, Josh3580, Hmains, Droll, Arcarius, Backspace, Adrignon, Jetman, RideABicycle, Cydebot, Casliber, Thijs!bot, Saruwine, Tillman, JAnDbot, Luke119, JoergenB, AlexiusHoratius, Peko2, Twist9, Seattle Skier, McM.bot, Dominictimms, SieBot, HkCaGu, Felixaldonso, Inoen, ClueBot, PipepBot, Detroiterbot, Good Olfactory, Addbot, Magalahi, Baffle gab1978, Lucas-bot, Yobot, Xqbot, Fotaun, FrescoBot, Kgrad, EmausBot, Dewritech, Racerx11, Stormchaser89, ZéroBot, Graeme374, Petr, ClueBot NG, Mateo Flecha, Jamaican-InChinadotcom, Delusion23, Byclipper, MeanMotherJr, BattyBot, NahidSultan, Hmainsbot1, Calucido and Anonymous: 23
- **Pingelap** *Source:* <https://en.wikipedia.org/wiki/Pingelap?oldid=679339405> *Contributors:* Davidcannon, Christopherlin, Acad Ronin,

Dufekin, Circeus, Anthony Appleyard, Henkvd, Daniel Case, Wikimike, Blcook223, Smurrayinchester, Garion96, Hmains, Snori, Mwingog2777, Huon, RolandR, JorisvS, WeggeBot, Thijs!bot, Zachseymour, Zaiken, Kuteni, The Anomebot2, MiPe, Kharash, Treasury-Tag, John Carter, MCTales, Julianan, MacedonianBoy, C. A. Russell, Addbot, Kelly, DOI bot, Lightbot, Luckas-bot, Jcc349, Citation bot, Xqbot, Thehelpfulbot, Citation bot 1, ZéroBot, ClueBot NG, HMSolent, Wbm1058, BG19bot, CitationCleanerBot, Indiana State, Robevans123, KasparBot, Mwahne and Anonymous: 8

- **Pitcairn Islands** *Source:* [https://en.wikipedia.org/wiki/Pitcairn\\_Islands?oldid=682286333](https://en.wikipedia.org/wiki/Pitcairn_Islands?oldid=682286333) *Contributors:* The Epoet, Brion VIBBER, Koyaanis Qatsi, Jeronimo, Rjstott, Larry Sanger, Scipius, Youssefsan, Rmhermen, Deb, Formulax-enwiki, Rickyrab, Frecklefoot, Patrick, Michael Hardy, Llywrcb, Dhum Dhum, Mic, Islandboy99, Darren Rowe, Theanthrope, Skysmith, Ahoerstemeier, Stan Shebs, Docu, Jpatokal, Notheruser, Den fjättrade ankan-enwiki, Jdforrester, Darkwind, Andres, Tristanb, Jiang, Kaihsu, Cherkash, Rl, Varitek, Rob Hoof, Denny, Charles Matthews, Timwi, Dcoetzee, TwinsFan48, WhisperToMe, Sarrazip, Tpbradbury, Grendelkhan, VeryVerily, Quoth-22, Raul654, Pakaran, Finlay McWalter, Michael Glass, Jeffq, Huangdi, Twang, Sjorford, Robbot, Vardion, Sander123, Chrism, Fredrik, PBS, Chris 73, Moncrief, Nurg, Romanm, TimothyPilgrim, Postdlf, Henrygb, Academic Challenger, Hemanshu, JackofOz, Wereon, Oobopshark, Davidcannon, Giftlite, Dbenbenn, DocWatson42, Akadruid, Dinomite, Wonder al, Jpta-enwiki, MeirM, Everykyng, Bkonrad, Snowdog, Cantus, LLarson, BigHaz, Sundar, Gracefool, Karl 6740, Pne, Sessel, Smartcowboy, Gugganij, OldakQuill, Circles, Gaddfium, Opera hat, Formeruser-81, Antandrus, The Singing Badger, BozMo, Beland, Secfan, Maximamax, Fuper, One Salient Oversight, Rlquall, Saopaulo1, Aramgutang, Gerald Farinas, Gerrit, Kasreyn, QuiIche, Mike Rosoft, D6, Mpj, A-giau, Discospinster, Rich Farmbrough, Rhobite, Guanabot, Xjy, Vsmith, LindsayH, Quiensabe, Gerry Lynch, Bender235, \*drew, El C, Gertjan R., Kwamikagami, Tverbeek, Shanes, Art LaPella, Cacophony, Leif, Kotuku33, RobNS, Infocidal, Bollar, BrokenSegue, Duk, Dpaaiones, Giraffedata, Man vyi, Darwinek, VBGfscJun3, Kundor, Thewayforward, Bobbis, Haham hanuka, Polylerus, Jonathunder, Spitzl, Alansohn, Alfjanje-enwiki, Duffman-enwiki, Buaidh, Free Bear, Amos-enwiki, Geo Swan, Joshbaumgartner, Lord Pistachio, Zippanova, SlimVirgin, Sowelilitokiemy, Alexg-enwiki, Walkerma, XLR8TION, Avenue, Snowolf, Cromwellt, Mixer, Brholden, Gene Nygaard, LukeSurl, Richard Weil, Smedley Hirkum, Japanese Searobin, TShilo12, Natalya, Zntrip, B1mbo, Bobrayner, Thryduulf, Velho, Woohookitty, Scriberius, Jason Palpatine, DD-enwiki, Ratzer, Tabletop, Grace Note, Jon Harald Søyby, Palica, Jbarta, Graham87, Cuchullain, Anarchivist, Electionworld, Jorunn, Rjwilmsi, Coemgenus, Koavf, IRT.BMT.IND, Ian Lancaster, Dar-Ape, FlaBot, Ian Pitchford, Ground Zero, MacRusgail, NekoDaemon, Rune.welsh, GagHalfрут, El Grego, Axver, McDogm, Thecurran, SteveBaker, Gareth E Kegg, Chobot, Metropolitan90, Elaphe1011, YurikBot, PATCBHO, Jimp, RussBot, Lofty, Danbarnesdaves, Tobit, Locke411, Gaius Cornelius, Member, Lusanaherandrator, NawlinWiki, SEWilcoBot, DD Ting, JonS, ExRat, 24ip, D. F. Schmidt, Number 57, TDogg310, EEMIV, Dave in Alaska, Kewp, Caerwine, Nlu, Metallion, Sandstein, Orioane, BMT, Nikkimaria, CapitalLetterBeginning, Loft, JuJube, Petri Krohn, Diogo sfreitas, GinaDana, Airodyssey, Aoa8212, Jonathan.s.kt, Citylover, Philip Stevens, Nick-D, West Virginian, Mhardcastle, True Pagan Warrior, SmackBot, Roland1989, David Kernow, Reedy, NaiPiak, Skeezi1000, Bjelleklang, Matveims, Verne Equinox, Zywx, Rojomoke, Kintetsubuffalo, Sebesta, Bugs5382, Anarkisto, Gilliam, Hmains, Polaron, Skookum1, MK8, Achmelvic, Thumperward, Akanemoto, Bazonka, Breadandcheese, Barend, Scwlong, Kotra, Aquarius Rising, AussieLegend, MJCDetroit, Azumanga1, Jjjsixsix, Jachapo, Khoikhoi, Korako, Cybercobra, Stewart king, Jiddisch-enwiki, MichaelBillington, BullRangifer, Cashpot, ChaChaFut, Ohconfucius, Jomegat, SashatoBot, Heather, Coasttocoast, Ser Amantio di Nicolao, Phinn, Cesium 133, Vgy7ujm, VirtualDave, MilborneOne, Kransky, IronGargoyle, Bluewind, CKatz, Tasc, Apcbq, EdK, Doczilla, Neddyseagoon, Aotearoa, Xxnick 2k5xx, Hognyn Lleo, MTSbot-enwiki, Skinsmoke, Zepheus, DI2000, Mackan, Emx-enwiki, WilliamJE, Iridescent, Jeev, Joseph Solis in Australia, Hford-enwiki, Pacific Expeditions, Lucy-marie, Dr-john, RaviC, J Milburn, Van helsing, W guice, Runningonbrains, Ryanjo, Cydebot, Nayeryouakim, Gogo Dodo, Anonymi, Porsche997SBS, The Lake Effect, Energyfreezer, Supernorton, Tinti, JamesAM, Thijs!bot, Epr123, Wikid77, Loudsox, Kablammo, Kwikiwiki, Horologium, Escarbot, AntiVandalBot, The Obento Musubi, Yaddah-enwiki, Loyd415, Dr. Blofeld, RedCoat10, Colin MacLaurin, TuvicBot, HolyT, Volcanoguy, JAnDbot, Deflective, Petecarney, The Transhumanist, Mcorazao, PhilKnight, Maias, Joshua, Amitkinger, anacondabot, Tim27, Magioladitis, Big P, Bongwarrior, VoABot II, JamesBWatson, PaddingtonX, Pvmoutside, Derekkos, The Anomebot2, WhatamDoing, Theroadislong, Cazzaranda, Sammalin, LorenzoB, Piano Bench Boy, Edward321, Fastestdogever, Textorus, Garik 11, VytaL, Seba5618, Flowanda, Mr WR, A tumiwa, Kiore, Timothy Titus, Paracel63, Kostisl, R'n'B, EdBever, J.delanoy, Pharaoh of the Wizards, Nev1, JamesR, YourPTR!, Monkeyzpop, Abhijitsathe, SpigotMap, Ibaloser, Naniwako, NewEnglandYankee, Touch Of Light, Flatterworld, Student7, Olegwiki, Largoplazo, Sawadeekarb, Ericnicolaas, Gwen Gale, DorganBot, Andy Marchbanks, Martial75, Osiris7, Idioma-bot, WWGB, Xenonice, Aucitypops, Hugo999, Bnynms, VolkovBot, That-Vela-Fella, Errol1968, Vlma111, Lear's Fool, Zoltan Bukovszky, Smnyng, TXiKiBoT, Hobe, Rei-bot, Atelerix, Aymath2, John Carter, LeaveSLeaves, Smdsen09, Kaiketsu, Toadaron, MikeRiggs, Monty845, Sealman, Sue Rangell, AllebotBot, Michael Frind, Rjakew, EmxBot, Omarpeppy, Michellecrisp, HatBucketBalls, SieBot, Calliopejen1, Bot-Multichill, ToePeu.bot, WTucker, Mangostar, Flyer22, Qst, Ambrand, JSpung, Goustien, Benea, OKBot, Moeng, Kenteny, Aketrongem, Maralia, Denisarona, Velvetron, Sfan00 IMG, Elassin, ClueBot, Spandrawn, E-cottage, UKoch, James Galloway, Piledhigheranddeeper, Jfblanc, Daamsie, Pointillist, Mbutterli, Detroitbot, Mkativerata, Jusdafax, Howard Alexander, Mfa fariz, Sun Creator, MacedonianBoy, Coinmanj, Danielklara, Tnxman307, SchreiberBike, Farthicle, La Pianista, Thingg, Aitias, Silas Maxfield, Samantha555, DerBorg, Certes, Vanished user 01, XLinkBot, Humbleoaf, BodhisattvaBot, WikHead, Good Olfactory, Airplaneman, AnonyLog, Rutger-dk, Glane23, West.andrew.g, Lemonade100, Mdnayman, Ehrenkater, Ondewelle, Tide rolls, Lightbot, Faunas, Gail, Zorrobot, HerculeBot, Math Champion, Humphrey Jungle, Luckas-bot, Yobot, Newportm, The pitcairn islander, KamikazeBot, MacTire02, Bility, AnomieBOT, Quangbao, Handle Dan Down 43-1, Rubinbot, ExperimentalArmy, Ulric1313, MaterialsScientist, Elmmappleoakpine, Citation bot, Nika 243, ArthurBot, Xqbot, Neurocod, Sionus, Night w, Conay, TechBot, Nasnema, Jsharpminor, GreenDragonInn, Alumnum, JprulestheWorld, Brandon5485, Bellerophon, BKuchau, Pastor Theo, Mdeaver, George2001hi, FrescoBot, Bobby72, English1123, Vyvyan Ade Basterd, Troglo, AliRoolz, Megaandroid30, Citation bot 1, SebySwift, Pinethicket, Tamariki, Elockid, Martinvl, Vettrock, RedBot, Tahir mq, Bewitched fan 2k, Kgrad, FoxBot, WardMuylaert, TobeBot, Mono, Jamief2, Andy christian, Tbhotch, Mondotta, RjwilmsiBot, Beyond My Ken, Salvio giuliano, EmausBot, John of Reading, WikitanvirBot, Look2See1, Tommy2010, Romo212, Ptilinopus, Asdfghjk133, Jpaul174, Faerie ixi, Spiffult, Deutschgirl, Bluegreen1011, Christopher Daniel Stephanidies Cushion, Orange Suede Sofa, Tautama, Hazard-Bot, ChuispastonBot, LikeLakers2, Rocketrod1960, Etamni, ClueBot NG, Morgankevinj huggle, MelbourneStar, SeiADP, Bright Darkness, Wagner Texas Ranger, Frietjes, Delusion23, Hazhk, O.Koslowski, CopperSquare, Widr, Ryansgay69, Lesch2k, Mightyrights, Helpful Pixie Bot, Electriccatfish2, Moneda de oro, Gob Lofa, BG19bot, Ferma, Pitcairn travel, Forjusticeandlulz, Northamerica1000, Wrzesien, MusikAnimal, Pitcairn islander, Ballbay2, Guay guay, Nextbook, Rfaloxb, JonathonSimister, Bestboy7850, Pratyga Ghosh, Lolitoast, An678ko, Hucklebur, JYBot, Nickthenerd, Mogism, Cantab12, Lugia2453, Darkeye0117, Jemappelleunganon, MidickEslarge, Wally moot, Tvx1, CrimsonViking, Epigegenius, Bubinek00, CsDix, Rob984, Uyee-enwiki, Waffles9761, Takvorian99, The Anonybot, Nodeve, Revolution1221, Sir.dr.mr.awesome, Pitcairn Islands, Haminoon, Drcheese100, The Rim of the Sky, Simonbartley, Dr. Philip Crossman, Sam Sailor, Dawndusk27, Ben Tuckett, Andreas11213, VCT123, Celine5H, Monkbot, Ayresmith1, Pingu7931, Kristoffer "Wiki" Winkler, Unician, Polemicista, Awrussell, Axytax, Rubbish computer, Asdfrewq435, Kkale6666666666, Lullibulli, Yofsotsi, MichaelSheehan12345, KasparBot, Mr.Bob.298, JustPeter98, Limbo Johnston, Official pitcairn wikipedia account, Magister grammaticus, CumbleSpuzz and Anonymous: 566

- **Pukapuka** *Source:* <https://en.wikipedia.org/wiki/Pukapuka?oldid=680001803> *Contributors:* Swestrup, Node ue, Kwamikagami, Jonathunder, Grutness, Avenue, TShilo12, Ratzter, Tabletop, BD2412, Eubot, YurikBot, Tenebrae, AjaxSmack, Suwarrow, Curpsbot-unicodify, Paul Erik, Ashenai, Unyoyega, Eskimbot, Gilliam, Hmains, Bluebot, Kurykh, MalafayaBot, Reaganamerican, Abrazame, Aotearoa, DI2000, ShelfSkewed, Cydebot, EwanSmith-enwiki, Thijs!bot, Nick Number, Rees11, Yomangani, BJTaylor, Kiaorana, Arch duche, .anacodabot, VoABot II, The Anomebot2, Majormax, Iceseaturles, Naniwako, TXiKiBoT, Zidonuke, Daniil naumoff, Goustien, Aleksandrit, Henry Merrivale, Alexbot, Evandefluver1, XLinkBot, Good Olfactory, Addbot, Kevinsal, Drz1627, Jarble, Yobot, RevelationDirect, Tianyamm2, Recognizance, DrilBot, Full-date unlinking bot, Kevbalmoral, EmausBot, WikitanvirBot, L235, 'O oίστρος, Aegoceras, Jelandstrom, ClueBot NG, Mateo Flecha, Corusant, MozzazzoM, BG19bot, Worldvoyager, Lopalelei, UglowT, Mboyden and Anonymous: 31
- **Raoul Island** *Source:* [https://en.wikipedia.org/wiki/Raoul\\_Island?oldid=679032411](https://en.wikipedia.org/wiki/Raoul_Island?oldid=679032411) *Contributors:* Carey Evans, Andres, Hike395, RedWolf, Nurg, Alan Liefthing, Tom Radulovich, Gilgamesh-enwiki, Mboverload, Bobblewik, Gadium, D6, Izogi, Mdhove, Darwinek, Grutness, Sabine's Sunbird, Geo Swan, Avenue, Evil Monkey, BLueFiSH.as, T1980, TShilo12, Woohookitty, Ratzter, Zzyzx11, Arbeo-enwiki, Ketiltrout, Rjwilmsi, Ligulem, JohnGH, YurikBot, Jimp, Dysmorodrepanis-enwiki, Brian, Colin, SmackBot, Mark Tranchant, Hydrogen Iodide, Hmains, Catenary, Richard001, Kahuroa, DavidHallett, GVP Webmaster, Peter Horn, GrahamBould, IdiotSavant, CBM, Marek69, Volcanoguy, KonstableBot, Maias, Magioladitis, BlakJakNZ, The Anomebot2, Jeroldc, Brastein, Trusilver, Encolpe, DadaNeem, Jevansen, RémiH, Hugo999, Deor, Seattle Skier, Mohonu, Goustien, Dv1007, Raoulie, Vivio Testarossa, JeffBillman, PalmyPete, InternetMeme, Good Olfactory, Addbot, Blaylockjam10, Numbo3-bot, Lightbot, Peko, Luckas-bot, AnomieBOT, GrouchoBot, Lotje, Schwede66, TjBot, Stormchaser89, Subtropical-man, H3llBot, Billingd, Mrhocks, MIKHEIL, Shaniap, 220 of Borg, Jeremy112233, YFdyh-bot, Meganesia, Monkbot, Bettifm and Anonymous: 37
- **Rapa Iti** *Source:* [https://en.wikipedia.org/wiki/Rapa\\_Iti?oldid=676681365](https://en.wikipedia.org/wiki/Rapa_Iti?oldid=676681365) *Contributors:* D6, Rich Farmbrough, Kwamikagami, Reuben, Grutness, Harburg, TShilo12, Rjwilmsi, Btw-enwiki, FlaBot, Nicke L, Colin, Citylover, SmackBot, Hmains, Welwitschia, MalafayaBot, Tamfang, OrphanBot, Vriullopp, JHunterJ, Drieakko, Yodin, Clarityfiend, Sardon, Daniel, ArnoldPlaton, Kjordahl, Maias, Daarznicks, CommonsDelinker, M-le-mot-dit, Ljgual24, Montchav, VolkovBot, Tourbillon, Rei-bot, Mohonu, SieBot, Goustien, Detroiterbot, PixelBot, SchreiberBike, KAVEBEAR, Addbot, SpBot, AnomieBOT, Xufanc, Sven70, RibotBOT, LucienBOT, RockfangSemi, Jesse V., EmausBot, Racerx11, Makecat-bot, Monkbot and Anonymous: 23
- **Robinson Crusoe Island** *Source:* [https://en.wikipedia.org/wiki/Robinson\\_Crusoe\\_Island?oldid=674918232](https://en.wikipedia.org/wiki/Robinson_Crusoe_Island?oldid=674918232) *Contributors:* Menchi, Glenn, David Shay, Tlogmer, Warling, Wizzy, Peter Ellis, Andyjcp, Alexf, Mike Rosoft, D6, Florian Blaschke, Bender235, Rling, Art LaPella, Deanos, Cohesion, Jason One, Max rspect, Yuckfoo, Mikenassau, TShilo12, Tom.k, Stemonitis, Woohookitty, Gettingtoit, Erebus555, Rui Silva, Starwalker-enwiki, Gurch, Moocha, YurikBot, PekoE, Janke, Serpentus-enwiki, Brz7, Curpsbot-unicodify, Citylover, Yakoo, Hydrogen Iodide, Ema Zee, DStoykov, Scwlong, OrphanBot, Fuhghettaboutit, MartinCollin, Maelnuneb, Ser Amantio di Nicolao, Rigadoun, Civil Engineer III, CmdrObot, Qrc2006, Cydebot, Bridgecross, Teratornis, Marek69, Missvain, AntiVandalBot, DarkAudit, Mountolive, Frankie816, Parsecboy, Scanlan, Dentren, Jespinos, The Anomebot2, Daarznicks, Ben MacDui, CommonsDelinker, Yonidebot, Horst, Johnnyboyc, Nico86-enwiki, AlexanderG, Robertgreer, Idioma-bot, TXiKiBoT, XavierGreen, Davegarred, C migue, Agyle, Deconstructhis, SieBot, Mingloon, YonaBot, Crash Underride, Ablehr, Mimihitam, Diego Grez-Cañete, Monomoti, Drmies, James Galloway, Keysanger, Arjayay, Perkeleperkele, SchreiberBike, XLinkBot, Aloysius the Gaul, Tomfriedel-enwiki, Voltigeur, Addbot, Hermannz, Queenmomcat, MagnusA.Bot, Leszek Jariczuk, Download, Kevin mack, SpBot, Tassedethe, Mr. Richard Bolla, DrpickeM, Luckasbot, Yobot, Adelpine, Kjaer, Umbertoumm, AnomieBOT, ArthurBot, LilHelpa, Obersachsebot, Xqbot, Chimplode, DSisyphBot, Tad Lincoln, Fti74, FrescoBot, MGA73bot, Aj4444, Kibi78704, Garepac, Pristino, KarlDubost, EmausBot, John of Reading, Look2See1, Pete Hobbs, GoingBatty, Chermundy, Gooseman8384, Chiton magnificus, ZéroBot, Traxs7, Brandmeister, Allanpeda, Noble fan, ClueBot NG, MIKHEIL, Ricky2011, O.Koslowski, PhnomPencil, Danayou2000, Epicgenius, Magnolia677, Dr.Gulliver, K. Alex92, AtticTapestry, Crystallised, KasparBot and Anonymous: 70
- **Semisopochnoi Island** *Source:* [https://en.wikipedia.org/wiki/Semisopochnoi\\_Island?oldid=679809405](https://en.wikipedia.org/wiki/Semisopochnoi_Island?oldid=679809405) *Contributors:* Docu, Pascal666, Urhixidur, D6, Edibobb, Eric Shalov, Sundberg, Grutness, Alansohn, Anthony Appleyard, Mailer diablo, TomH, Kelisi, Kralzecz!, MarSch, HJKKeats, Jonathan.s.kt, SnaIwibma, Sardanaphalus, SmackBot, Hmains, Backspace, Mksword, GVP Webmaster, Paukrus, Myasuda, Alai-bot, Thijs!bot, Watsimous, Lajsikonik, Yupik, Tillman, Ani td, EagleFan, W like wiki, Loki-dog, AlexiusHoratius, Station1, Akerbeltz, Synthebot, Mohonu, Vulcan's Forge, Goustien, Bde1982, SchreiberBike, Stepheng3, Thingg, Dfoxvog, Addbot, LaaknorBot, Glane23, Reelcheeper, Amirobot, Ulrich Kaden, SassoBot, Legendary Ranger, LucienBOT, Lothar von Richthofen, Metricmike, ZéroBot, Brownie Charles, SD5bot, Page Blanker Bot 2000 and Anonymous: 21
- **Socorro Island** *Source:* [https://en.wikipedia.org/wiki/Socorro\\_Island?oldid=668428644](https://en.wikipedia.org/wiki/Socorro_Island?oldid=668428644) *Contributors:* Wetman, Hajor, Owen, Moondyne, Tom Radulovich, Gilgamesh-enwiki, Sam Hocevar, YUL89YYZ, Avenue, VivaEmilyDavies, Ratzter, Miss Madeline, Skybum, SDC, Rjwilmsi, RobotE, Gaius Cornelius, Dysmorodrepanis-enwiki, TDogg310, SmackBot, Hmains, Chris the speller, Jamie C, Timneu22, A. B., Chlewbot, Backspace, Pjminton-enwiki, Joseph Solis in Australia, CmdrObot, Thijs!bot, DHimmelspach, Volcanoguy, VoABot II, The Anomebot2, Jemenal, CommonsDelinker, Peko2, Plasticup, Idioma-bot, Hugo999, Vrac, Seattle Skier, Hqb, Woilorio, SieBot, Goustien, Sean.hoyland, Ecmartin, Erupted, Plastikspork, LSFast, DragonBot, SchreiberBike, Frongle, Mhockey, Dthomsen8, Little Mountain 5, Ad-dbot, Mspicata, Lightbot, Krenakarore, Waltloc, Luckas-bot, Yobot, Deathbyhornet, Xufanc, MaterialsScientist, Xqbot, UteFan16, DrilBot, RedBot, Full-date unlinking bot, Alexandronikos, RjwilmsiBot, LaBoutiere, EmausBot, Chermundy, ZéroBot, Primus128, Kilopi, Mateo Flecha, BG19bot, Dan653, Nguyễn Quốc Việt, Monkbot and Anonymous: 27
- **Pribilof Islands** *Source:* [https://en.wikipedia.org/wiki/Pribilof\\_Islands?oldid=679901731](https://en.wikipedia.org/wiki/Pribilof_Islands?oldid=679901731) *Contributors:* Vicki Rosenzweig, Jeronimo, Hephaestos, Delirium, Stan Shebs, Uyanga, Dmadeo, Kneiphof, Keith Edkins, ClockworkLunch, H Padleckas, Thincat, KNewman, Worldtraveller, Polylerus, Evil Monkey, Ghirlandajo, Woohookitty, Kralzecz!, Patman, Dpr, Nordelch, SeanMack, Gringo300, Scott Mingus, Chobot, YurikBot, CambridgeBayWeather, Tony1, Bweenie, Otto ter Haar, Sardanaphalus, KnightRider-enwiki, Eskimbot, Hmains, Bluebot, Kotra, OrphanBot, Backspace, Twalls, Michael J Swassing, Peter Horn, Joseph Solis in Australia, BeenAroundAWhile, Thijs!bot, Magioladitis, Appraiser, Jllm06, The Anomebot2, Sammalin, R'n'B, AlexiusHoratius, Vox Rationis, Lilac Soul, Pinicola, Euras-tus, Safemariner, Seb az86556, Silveradochippie, Jpeeling, Mohonu, BotMultichill, PbBot, Thingg, MystBot, Addbot, JamesPaulWhite, Tim.landscheidt, Numbo3-bot, Lightbot, Legobot, A Stop at Willoughby, AnomieBOT, Bob Burkhardt, Xqbot, Moonraker, Erik Nor-gaard, Look2See1, Bettymnz4, PBS-AWB, Ebrambot, Quantumor, LeftCoastMan, Makecat-bot, KMJKWhite, Voltaire's Vaquero and Anonymous: 24
- **Takuu Atoll** *Source:* [https://en.wikipedia.org/wiki/Takuu\\_Atoll?oldid=665885689](https://en.wikipedia.org/wiki/Takuu_Atoll?oldid=665885689) *Contributors:* Kaihsu, Nurg, Wantok, Gilgamesh-enwiki, Gadium, Enzino, D6, Kwamikagami, Calton, Avenue, Gene Nygaard, Kelisi, RussBot, Cmglee, Bluebot, Kahuroa, JorisvS, Cydebot, Marek69, Bobblehead, Nankai, AntiSpamBot, Mohonu, Goustien, Niceguyedc, XLinkBot, Good Olfactory, Addbot, HerculeBot, Nallimbot, Xufanc, Xqbot, Tamariki, Newlyn2006, RedBot, Noommos, ZéroBot, Iketsi, AvocatoBot, KasparBot and Anonymous: 10

- **Tikopia** *Source:* <https://en.wikipedia.org/wiki/Tikopia?oldid=680628218> *Contributors:* Malcolm Farmer, Stephan Schulz, Davidcannon, Pgan002, A-giau, Cmdrjameson, Darwinek, Pearle, Carbon Caryatid, TShilo12, Ratzter, Kelisi, GregorB, Rjwilmsi, FlaBot, RobotE, Crazytales, Mike Halterman, IslandGyrl, Doncram, Divide, SMcCandlish, Jonathan.s.kt, Sardanaphalus, SmackBot, Mikoyan21, Bluebot, MK8, Ngio, Krsont, Anthon.Eff, Megalophias, Kahuroa, Rigadoun, Easterhase, Cydebot, Thijs!bot, Richiez, The Anomebot2, DadaNeem, ACSE, Marksoool, VolkovBot, TXiKiBoT, Flyte35, Mohonu, Sofiad, Michael97, American Clio, Addbot, Lightbot, HerculeBot, Lucas-bot, Amirobot, Nallimbot, AnomieBOT, JackieBot, LilHelpa, Rufusferret, Tamariki, Wotnow, Jfmantis, Fakasese, Mateo Flecha, MozzazzoM, BattyBot, Mogism, Bldmtn, KarenMenuhin and Anonymous: 23
- **Deception Island** *Source:* [https://en.wikipedia.org/wiki/Deception\\_Island?oldid=669584445](https://en.wikipedia.org/wiki/Deception_Island?oldid=669584445) *Contributors:* Stan Shebs, Nikai, Hike395, David Newton, Tinc, SEWilco, RedWolf, Smallweed, Millosh, David Gerard, Mintleaf~enwiki, Folks at 137, Gilgamesh~enwiki, Mboverload, ALargeElk, Keith Edkins, Beland, Neutrality, Acad Ronin, Thorwald, D6, Rich Farmbrough, Guanabot, Vsmith, Pavel Vozenilek, CanisRufus, Mordemur, Pietbarber, Ejrjrs, Grutness, Anthony Appleyard, Schnell, Andrew Gray, Avenue, Rodeime, Dave.Dunford, Gene Nygaard, GarciaB, Grillo, Jaxhere, Eubot, RobertG, Ewlyahoom, WouterBot, NevilleDNZ, Dell Adams, YurikBot, Ecemaml, Hairy Dude, Argentino, Gaius Cornelius, Manxruler, Kmusser, BorgQueen, Jor70, Katieh5584, Citylover, SmackBot, NorthernFire, Finavon, RobotJcb, Hmains, Bluebot, Droll, Apcbg, Naevus, Peter Horn, Peyre, Tawkerbot2, Cydebot, Arb, PamD, Sting, Imagea.org, Ash931, Altamel, Jeroenm, Volcanoguy, DagosNavy, EchoRevamped, Maias, Dentren, Filll, YourPTR!, Qatter, Paris1127, FruitMonkey, Ljgua124, Jonnyraine, Krk487, Hugo999, VolkovBot, Seattle Skier, TXiKiBoT, Susan Walton, Pghostby, Alanboswell63, Andy Dingley, Synthebot, Truthanado, Jonas Poole, OKBot, Loren.wilton, ClueBot, Nnemo, Keysanger, SchreiberBike, Jtle515, Kikos, DumZiBoT, Addbot, LaaknorBot, LinkFA-Bot, Rehman, Lightbot, Zorrobot, Waltdoc, Luckas-bot, Yobot, AnomieBOT, 4ing, Jim1138, Xufanc, Xqbot, TechBot, DutchmanInDisguise, RibotBOT, Hepworks, Full-date unlinking bot, Utility Monster, Trappist the monk, Lotje, Billspindler, Dinamikbot, RjwilmsiBot, Born2bgratis, Stormchaser89, ZéroBot, Ida Shaw, Lilpop,Rau&Loewenstein, Ger the sea, Fitzgabro, Brother Bulldog, ClueBot NG, Helpful Pixie Bot, Northamerica1000, Melissa89, Asd36f, Metaello, Mediran, Krisrp0, Dexbot, Froglich, Tritario, Erudite Manatee, Monkbot, Wearjohnstonlipsey34 and Anonymous: 39
- **Franklin Island (Antarctica)** *Source:* [https://en.wikipedia.org/wiki/Franklin\\_Island\\_\(Antarctica\)?oldid=676432925](https://en.wikipedia.org/wiki/Franklin_Island_(Antarctica)?oldid=676432925) *Contributors:* Eugene van der Pijll, Jvedral, D6, CheekyMonkey, Grutness, Woohookitty, Koavf, Eubot, Valentinian, RussBot, Hmains, Ser Amantio di Nicolao, Peter Horn, DuncanHill, Fleebo, SriMesh, Ljgua124, Deor, Kumioko (renamed), JanInad, Alexbot, SchreiberBike, Good Olfactory, Addbot, Tassedethe, Zorrobot, Luckas-bot, Fti74, Full-date unlinking bot, ZéroBot and Kumi-Taskbot
- **Laurie Island** *Source:* [https://en.wikipedia.org/wiki/Laurie\\_Island?oldid=675669830](https://en.wikipedia.org/wiki/Laurie_Island?oldid=675669830) *Contributors:* Astrotrain, Mervyn, Grutness, Marianoceowski, Rjwilmsi, Argentino, Nikkiamaria, SmackBot, Hmains, Bluebot, Ohconfucius, Peter Horn, Cydebot, Alaibot, Thijs!bot, Altamel, DagosNavy, Maias, The Anomebot2, FlorisBruynooghe, R'n'B, VolkovBot, Wee Curry Monster, Fadesga, Brianboulton, SchreiberBike, BOTarate, Kikos, Addbot, Nordisk varg, Zorrobot, Luckas-bot, 4ing, Fti74, Erik9bot, LucienBOT, D'ohBot, ZéroBot, Antarctic96, Khazar2, Gastón Cuello and Anonymous: 7
- **Peter I Island** *Source:* [https://en.wikipedia.org/wiki/Peter\\_I\\_Island?oldid=681648942](https://en.wikipedia.org/wiki/Peter_I_Island?oldid=681648942) *Contributors:* Gorm, William Avery, Frecklefoot, Samuelsen, David Newton, Pedant17, Kaare, Astrotrain, Eugene van der Pijll, Robbot, Sverdrup, Lupo, Everyking, Snowdog, Gilgamesh~enwiki, Keith Edkins, Beland, Eregli bob, Domino theory, TiMike, Jakro64, D6, Rich Farmbrough, Gerry Lynch, Pavel Vozenilek, Jonathunder, HasharBot~enwiki, Sowellitokiemu, Alinor, GarciaB, Ratzter, Kanoen, Tbone, FlaBot, YurikBot, RobotE, Yoninah, Daniel Mietchen, BOT-Superzerocool, Chanheigeorge, Nixer, Citylover, Jdos2, Sardanaphalus, SmackBot, David Kernow, Anagnorisis, NorthernFire, Hmains, Jamie C, Kharker, Droll, Berland, Kendrick7, Andrei Stroe, SilkTork, Dblowe, Peter Horn, Hu12, Jon kare, Cydebot, Hanfuzzy, BetacommandBot, Kahastok, Esquierman, Volcanoguy, Arsenikk, Pyro 911, Maias, Dentren, Albmont, Ebben, DrKiernan, Altes, STBotD, DorganBot, Idioma-bot, Seattle Skier, Martinevans123, John Carter, Mimihitam, Goustien, The Master and Margarita, Wee Curry Monster, ClueBot, Plastikspork, Xurei, Nickersonl, Sturmvoegel 66, BOTarate, Steheng3, Jonverve, Kikos, Good Olfactory, Addbot, Jafeluv, Lightbot, Zorrobot, The Bushranger, Folklore1, Alekksandr, 4ing, Xufanc, ArthurBot, LilHelpa, Ekconklin, Night w, Davshul, GrouchoBot, RibotBOT, Eisfbnore, FrescoBot, LucienBOT, Helmoony, Drieschkamp, EmausBot, GA bot, The Blade of the Northern Lights, ZéroBot, Prikytera, En Ess Zee, Phoenix500, Helpful Pixie Bot, BG19bot, Mark Arsten, Dexbot, Webclient101, Makecatbot, CsDix, HYH.124, Explorer1492, CaptainWill98 and Anonymous: 52

## 6.2 Images

- **File:16\_Napoleons\_exole\_St\_Helena\_June1970.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/7c/16\\_Napoleons\\_exole\\_St\\_Helena\\_June1970.jpg](https://upload.wikimedia.org/wikipedia/commons/7/7c/16_Napoleons_exole_St_Helena_June1970.jpg) *License:* CC BY-SA 2.5 *Contributors:* ? *Original artist:* ?
- **File:AMH-5134-NA\_Compass\_chart\_of\_the\_Kokos\_islands.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/27/AMH-5134-NA\\_Compass\\_chart\\_of\\_the\\_Kokos\\_islands.jpg](https://upload.wikimedia.org/wikipedia/commons/2/27/AMH-5134-NA_Compass_chart_of_the_Kokos_islands.jpg) *License:* Public domain *Contributors:* This is an image from the Atlas of Mutual Heritage and the Nationaal Archief, the Dutch National Archives. *Original artist:* Godlob Silo (land surveyor / mapmaker)
- **File:ASCENSION\_ISLAND\_-\_DEVIL'S\_ASHPIT.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/4e/ASCENSION\\_ISLAND\\_-\\_DEVIL%27S\\_ASHPIT.jpg](https://upload.wikimedia.org/wikipedia/commons/4/4e/ASCENSION_ISLAND_-_DEVIL%27S_ASHPIT.jpg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* JERRYE & ROY KLOTZ MD
- **File:ASCENSION\_ISLAND\_-\_GEORGETOWN.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/3e/ASCENSION\\_ISLAND\\_-\\_GEORGETOWN.jpg](https://upload.wikimedia.org/wikipedia/commons/3/3e/ASCENSION_ISLAND_-_GEORGETOWN.jpg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* JERRYE & ROY KLOTZ MD
- **File:A\_coloured\_voting\_box.svg** *Source:* [https://upload.wikimedia.org/wikipedia/en/0/01/A\\_coloured\\_voting\\_box.svg](https://upload.wikimedia.org/wikipedia/en/0/01/A_coloured_voting_box.svg) *License:* Cc-by-sa-3.0 *Contributors:* ? *Original artist:* ?
- **File:A\_gorgeous\_waterfall\_on\_isla\_del\_coco.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/23/A\\_gorgeous\\_waterfall\\_on\\_isla\\_del\\_coco.jpg](https://upload.wikimedia.org/wikipedia/commons/2/23/A_gorgeous_waterfall_on_isla_del_coco.jpg) *License:* CC BY 2.0 *Contributors:* ? *Original artist:* ?
- **File:Africa\_(orthographic\_projection).svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/86/Africa\\_%28orthographic\\_projection%29.svg](https://upload.wikimedia.org/wikipedia/commons/8/86/Africa_%28orthographic_projection%29.svg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Martin23230
- **File:Africa\_satellite\_orthographic.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/en/2/21/Africa\\_satellite\\_orthographic.jpg](https://upload.wikimedia.org/wikipedia/en/2/21/Africa_satellite_orthographic.jpg) *License:* PD *Contributors:* ? *Original artist:* ?

- **File:AluguerEmNossaSra.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/5/55/AluguerEmNossaSra.jpg> *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Torbenbrinker
- **File:Ambox\_current\_red.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/98/Ambox\\_current\\_red.svg](https://upload.wikimedia.org/wikipedia/commons/9/98/Ambox_current_red.svg) *License:* CC0 *Contributors:* self-made, inspired by Gnome globe current event.svg, using Information icon3.svg and Earth clip art.svg *Original artist:* Vipersnake151, penubag, Tkgd2007 (clock)
- **File:Ancestor\_Figure\_(moai\_kavakava)\_LACMA\_M.2008.66.6\_(2\_of\_3).jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/70/Ancestor\\_Figure\\_%28moai\\_kavakava%29\\_LACMA\\_M.2008.66.6\\_%282\\_of\\_3%29.jpg](https://upload.wikimedia.org/wikipedia/commons/7/70/Ancestor_Figure_%28moai_kavakava%29_LACMA_M.2008.66.6_%282_of_3%29.jpg) *License:* Public domain *Contributors:*
- Image: [http://collections.lacma.org/sites/default/files/remote\\_images/piction/ma-1412915-O3.jpg](http://collections.lacma.org/sites/default/files/remote_images/piction/ma-1412915-O3.jpg) *Original artist:* ?
- **File:Anglefish\_and\_Hump\_Coral\_-\_Howland\_Island\_NWR.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/9d/Anglefish\\_and\\_Hump\\_Coral\\_-\\_Howland\\_Island\\_NWR.jpg](https://upload.wikimedia.org/wikipedia/commons/9/9d/Anglefish_and_Hump_Coral_-_Howland_Island_NWR.jpg) *License:* Public domain *Contributors:* Anglefish and Hump Coral - Howland Island NWR *Original artist:* U.S. Fish & Wildlife Service - Pacific Region's
- **File:Annobón\_Bioko.PNG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/5/5b/Annob%C3%B3n\\_Bioko.PNG](https://upload.wikimedia.org/wikipedia/commons/5/5b/Annob%C3%B3n_Bioko.PNG) *License:* Public domain *Contributors:* <http://www.un.org/Depts/Cartographic/map/profile/equinea.pdf> *Original artist:* ?
- **File:Anous\_stolidus\_nesting\_cropped.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/d0/Anous\\_stolidus\\_nesting\\_cropped.JPG](https://upload.wikimedia.org/wikipedia/commons/d/d0/Anous_stolidus_nesting_cropped.JPG) *License:* Public domain *Contributors:* USFWS Hawaiian Islands NWR *Original artist:* Duncan Wright
- **File:Antarctic\_Deception\_Island\_(js)\_43.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/80/Antarctic%2C\\_Deception\\_Island\\_%28js%29\\_43.jpg](https://upload.wikimedia.org/wikipedia/commons/8/80/Antarctic%2C_Deception_Island_%28js%29_43.jpg) *License:* CC BY 3.0 *Contributors:* Own work *Original artist:* Jerzy Strzelecki
- **File:Antarctica\_(orthographic\_projection).svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/f/f2/Antarctica\\_%28orthographic\\_projection%29.svg](https://upload.wikimedia.org/wikipedia/commons/f/f2/Antarctica_%28orthographic_projection%29.svg) *License:* CC-BY-SA-3.0 *Contributors:* This vector image was created with Inkscape. *Original artist:* <a href="//commons.wikimedia.org/wiki/User:Heraldry" title="User:Heraldry">Heraldry</a>
- **File:Antarctica\_Peter\_I\_Island.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a2/Antarctica\\_Peter\\_I\\_Island.png](https://upload.wikimedia.org/wikipedia/commons/a/a2/Antarctica_Peter_I_Island.png) *License:* CC-BY-SA-3.0 *Contributors:* ? *Original artist:* ?
- **File:Antarctica\_location\_map.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/c7/Antarctica\\_location\\_map.svg](https://upload.wikimedia.org/wikipedia/commons/c/c7/Antarctica_location_map.svg) *License:* CC BY-SA 3.0 *Contributors:*
- Data from <http://nsidc.org/data/moa/> - Haran, T., J. Bohlander, T. Scambos, and M. Fahnestock compilers. 2005. MODIS Mosaic of Antarctica image map. National Snow and Ice Data Center, digital media. *Original artist:* Alexrk2
- **File:Antipodes\_Castaway\_Hut.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/9a/Antipodes\\_Castaway\\_Hut.JPG](https://upload.wikimedia.org/wikipedia/commons/9/9a/Antipodes_Castaway_Hut.JPG) *License:* Public domain *Contributors:* Own work *Original artist:* LawrieM
- **File:Antipodes\_Penguin.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/7f/Antipodes\\_Penguin.JPG](https://upload.wikimedia.org/wikipedia/commons/7/7f/Antipodes_Penguin.JPG) *License:* Public domain *Contributors:* Own work *Original artist:* LawrieM
- **File:Antipodes\_South\_Bay.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/7f/Antipodes\\_South\\_Bay.JPG](https://upload.wikimedia.org/wikipedia/commons/7/7f/Antipodes_South_Bay.JPG) *License:* Public domain *Contributors:* Own work *Original artist:* LawrieM
- **File:Arkhangel-obl-geo-stub.png** *Source:* <https://upload.wikimedia.org/wikipedia/commons/0/0b/Arkhangel-obl-geo-stub.png> *License:* Public domain *Contributors:* Own work *Original artist:* Евгений Катъшев
- **File:Ascension\_ISS006.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/cf/Ascension\\_ISS006.jpg](https://upload.wikimedia.org/wikipedia/commons/c/cf/Ascension_ISS006.jpg) *License:* Public domain *Contributors:* <http://www.oceandots.com/atlantic/saint-helena/ascension2.php> *Original artist:* NASA
- **File:Ascension\_Island\_Wideawake\_Airfield\_(1).JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/8c/Ascension\\_Island%2C\\_Wideawake\\_Airfield\\_%281%29.JPG](https://upload.wikimedia.org/wikipedia/commons/8/8c/Ascension_Island%2C_Wideawake_Airfield_%281%29.JPG) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Vincent van Zeijst
- **File:Ascension\_Island1.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/0/03/Ascension\\_Island1.JPG](https://upload.wikimedia.org/wikipedia/commons/0/03/Ascension_Island1.JPG) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* LordHarris
- **File:Ascension\_Island\_Black\_igneous\_rocks.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/d3/Ascension\\_Island\\_Black\\_igneous\\_rocks.jpg](https://upload.wikimedia.org/wikipedia/commons/d/d3/Ascension_Island_Black_igneous_rocks.jpg) *License:* CC BY 2.0 *Contributors:* Black igneous rocks *Original artist:* Ben Tullis from Cambridge, United Kingdom
- **File:Ascension\_Island\_Comfortless\_Cove.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/1/15/Ascension\\_Island\\_Comfortless\\_Cove.jpg](https://upload.wikimedia.org/wikipedia/commons/1/15/Ascension_Island_Comfortless_Cove.jpg) *License:* CC BY 2.0 *Contributors:* Comfortless Cove *Original artist:* Ben Tullis from Cambridge, United Kingdom
- **File:Ascension\_Island\_Lava\_fields.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/93/Ascension\\_Island\\_Lava\\_fields.jpg](https://upload.wikimedia.org/wikipedia/commons/9/93/Ascension_Island_Lava_fields.jpg) *License:* CC BY 2.0 *Contributors:* Lava fields *Original artist:* Ben Tullis from Cambridge, United Kingdom
- **File:Ascension\_Island\_Location.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/5/54/Ascension\\_Island\\_Location.jpg](https://upload.wikimedia.org/wikipedia/commons/5/54/Ascension_Island_Location.jpg) *License:* Public domain *Contributors:* **Source:** [https://www.cia.gov/cia/publications/factbook/reference\\_maps/pdf/political\\_world.pdf](https://www.cia.gov/cia/publications/factbook/reference_maps/pdf/political_world.pdf) *Original artist:* Original uploader was Iyobi at en.wikipedia Later version(s) were uploaded by Kmusser at en.wikipedia.
- **File:Asia\_(orthographic\_projection).svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/80/Asia\\_%28orthographic\\_projection%29.svg](https://upload.wikimedia.org/wikipedia/commons/8/80/Asia_%28orthographic_projection%29.svg) *License:* GFDL *Contributors:* Map by Ssolbergj Aquarius.geomar.de *Original artist:* Koyos + Ssolbergj (<a href="//commons.wikimedia.org/wiki/User\_talk:Ssolbergj" title="User talk:Ssolbergj">talk</a>)
- **File:Atardecer\_en\_Bahía\_Wafer\_Isla\_del\_Coco.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/d0/Atardecer\\_en\\_Bah%C3%ADa\\_Wafer\\_Isla\\_del\\_Coco.JPG](https://upload.wikimedia.org/wikipedia/commons/d/d0/Atardecer_en_Bah%C3%ADa_Wafer_Isla_del_Coco.JPG) *License:* GFDL *Contributors:* Own work *Original artist:* Axxis10
- **File:Atlantic\_Ocean\_laea\_location\_map.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/93/Atlantic\\_Ocean\\_laea\\_location\\_map.svg](https://upload.wikimedia.org/wikipedia/commons/9/93/Atlantic_Ocean_laea_location_map.svg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Tentotwo
- **File:Atlantisia\_rogersi\_sw.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/ae/Atlantisia\\_rogersi\\_sw.jpg](https://upload.wikimedia.org/wikipedia/commons/a/ae/Atlantisia_rogersi_sw.jpg) *License:* Public domain *Contributors:* <a data-x-rel="nofollow" class="external text" href="http://www.bweaver.nom.sh/rogers/intro.htm">ROSE ANNIE ROGERS: The Lonely Island Morehouse Publishing Co., Milwaukee, 1927.</a> *Original artist:* ROSE ANNIE ROGERS



- **File:Atlasov\_island.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/c1/Atlasov\\_island.jpg](https://upload.wikimedia.org/wikipedia/commons/c/c1/Atlasov_island.jpg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:AudioElleSeals.oga** *Source:* <https://upload.wikimedia.org/wikipedia/commons/3/36/AudioElleSeals.oga> *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Hullwarren
- **File:AudioRoyalPenguins.oga** *Source:* <https://upload.wikimedia.org/wikipedia/commons/f/f2/AudioRoyalPenguins.oga> *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Hullwarren
- **File:Austral\_isl\_Rapa\_Iti.PNG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a9/Austral\\_isl\\_Rapa\\_Iti.PNG](https://upload.wikimedia.org/wikipedia/commons/a/a9/Austral_isl_Rapa_Iti.PNG) *License:* CC BY-SA 3.0 *Contributors:* Own work (after Image:Karta FP Austral isl.PNG) *Original artist:* M-le-mot-dit
- **File:Australia\_location\_map.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/2f/Australia\\_location\\_map.svg](https://upload.wikimedia.org/wikipedia/commons/2/2f/Australia_location_map.svg) *License:* CC BY-SA 3.0 *Contributors:* own work, using
  - United States National Imagery and Mapping Agency data
  - World Data Base II data

*Original artist:* NordNordWest

- **File:B-1 Bombers on Diego Garcia.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/b/b0/B-1\\_Bombers\\_on\\_Diego\\_Garcia.jpg](https://upload.wikimedia.org/wikipedia/commons/b/b0/B-1_Bombers_on_Diego_Garcia.jpg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Banaba\_rainfall\_average.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/c6/Banaba\\_rainfall\\_average.svg](https://upload.wikimedia.org/wikipedia/commons/c/c6/Banaba_rainfall_average.svg) *License:* Public domain *Contributors:* I created this work entirely by myself. *Original artist:* <a href="//commons.wikimedia.org/wiki/User:Stepsherp" title="User:Stepsherp">\$hep</a> • <a href="//commons.wikimedia.org/wiki/User\_talk:Stepsherp" title="User talk:Stepsherp">|Talk to me!</a>
- **File:Bandera de la Provincia Annobón.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/6/6b/Bandera\\_de\\_la\\_Provincia\\_Annob%C3%B3n.png](https://upload.wikimedia.org/wikipedia/commons/6/6b/Bandera_de_la_Provincia_Annob%C3%B3n.png) *License:* CC0 *Contributors:* Own work *Original artist:* EG111111
- **File:Barochois Maurice, Diego Garcia.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/c2/Barochois\\_Maurice%2C\\_Diego\\_Garcia.jpg](https://upload.wikimedia.org/wikipedia/commons/c/c2/Barochois_Maurice%2C_Diego_Garcia.jpg) *License:* CC BY-SA 2.0 *Contributors:* Barochois Maurice, Diego Garcia *Original artist:* Steve Swayne from Maleny, Australia
- **File:Base Decepcion Antartida Argentina Isla Decepcion.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/6/68/Base\\_Decepcion\\_Antartida\\_Argentina\\_Isla\\_Decepcion.jpg](https://upload.wikimedia.org/wikipedia/commons/6/68/Base_Decepcion_Antartida_Argentina_Isla_Decepcion.jpg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Arcibel
- **File:Baxter-Campbell-Island.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/b/b9/Baxter-Campbell-Island.jpg> *License:* Attribution *Contributors:* [http://www.aspen-ridge.net/Shipmates/John\\_Baxter/John\\_Baxter\\_Page\\_2/John\\_Baxter\\_Page\\_3/Baxter-Campbell-Island.jpg](http://www.aspen-ridge.net/Shipmates/John_Baxter/John_Baxter_Page_2/John_Baxter_Page_3/Baxter-Campbell-Island.jpg) *Original artist:* Photo courtesy John Baxter and [www.aspen-ridge.net](http://www.aspen-ridge.net) (will be [www.60South.net](http://www.60South.net))
- **File:Biot-travel-svg-map.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/f/fa/Biot-travel-svg-map.svg> *License:* CC BY-SA 3.0 *Contributors:* Own work based on [OpenStreetMap.org](http://OpenStreetMap.org) and the Perry-Castañeda Library Map Collection - University of Texas Libraries *Original artist:* Globe-trotter
- **File:Bjoern12.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/7/76/Bjoern12.jpg> *License:* CC-BY-SA-3.0 *Contributors:* Transferred from en.wikipedia to Commons. *Original artist:* Mikesegehn at English Wikipedia
- **File:Bjoern9.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/e/e0/Bjoern9.jpg> *License:* CC-BY-SA-3.0 *Contributors:* ? *Original artist:* ?
- **File:Bjørnøya\_5.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/71/Bj%C3%B8rn%C3%B8ya\\_5.JPG](https://upload.wikimedia.org/wikipedia/commons/7/71/Bj%C3%B8rn%C3%B8ya_5.JPG) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Janno
- **File:Blotonstkilda.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/8/8a/Blotonstkilda.jpg> *License:* CC BY-SA 2.0 *Contributors:* Geograph *Original artist:* Bob Jones
- **File:Bokak Atoll.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/93/Bokak\\_Atoll.png](https://upload.wikimedia.org/wikipedia/commons/9/93/Bokak_Atoll.png) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Boreray and the Stacs.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/dd/Boreray\\_and\\_the\\_Stacs.jpg](https://upload.wikimedia.org/wikipedia/commons/d/dd/Boreray_and_the_Stacs.jpg) *License:* CC BY-SA 2.0 *Contributors:* <http://www.geograph.org.uk/photo/254075> *Original artist:* Stephen Hodges
- **File:Bouvet Island 1927.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/2c/Bouvet\\_Island\\_1927.jpg](https://upload.wikimedia.org/wikipedia/commons/2/2c/Bouvet_Island_1927.jpg) *License:* Public domain *Contributors:* <http://www.polarhistorie.no/ekspedisjoner/Norgeia%20I/NP011996.jpg> Norsk polarinstitutt *Original artist:* Unknown
- **File:Bouvet Island on the globe (Antarctica centered).svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/73/Bouvet\\_Island\\_on\\_the\\_globe\\_%28Antarctica\\_centered%29.svg](https://upload.wikimedia.org/wikipedia/commons/7/73/Bouvet_Island_on_the_globe_%28Antarctica_centered%29.svg) *License:* CC BY-SA 3.0 *Contributors:* *Original artist:* TUBS<sup>5</sup> <a href="//commons.wikimedia.org/wiki/User\_talk:TUBS" title="User talk:TUBS"></a> <a href="http://toolserver.org/~{ }daniel/WikiSense/Gallery.php?wikifam=commons.wikimedia.org.<span>&.</span>img\_user\_text=TUBS" title="Gallery" data-x-rel="nofollow"></a>
- **File:Bouvet Island west coast.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/0/0f/Bouvet\\_Island\\_west\\_coast.jpg](https://upload.wikimedia.org/wikipedia/commons/0/0f/Bouvet_Island_west_coast.jpg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* François Guerraz
- **File:Bouvet Island west coast glacier.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/96/Bouvet\\_Island\\_west\\_coast\\_glacier.jpg](https://upload.wikimedia.org/wikipedia/commons/9/96/Bouvet_Island_west_coast_glacier.jpg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* François Guerraz

- **File:Bouvet\_Map.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/85/Bouvet\\_Map.png](https://upload.wikimedia.org/wikipedia/commons/8/85/Bouvet_Map.png) *License:* Public domain *Contributors:* Own work *Original artist:* varp
- **File:Bouvet\_aerial\_photo.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/f/f2/Bouvet\\_aerial\\_photo.jpg](https://upload.wikimedia.org/wikipedia/commons/f/f2/Bouvet_aerial_photo.jpg) *License:* Public domain *Contributors:* <http://eol.jsc.nasa.gov/scripts/sseop/photo.pl?mission=ISS002&roll=E&frame=7002> [1] *Original artist:* NASA
- **File:Bouvet\_island\_0.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/44/Bouvet\\_island\\_0.jpg](https://upload.wikimedia.org/wikipedia/commons/4/44/Bouvet_island_0.jpg) *License:* Public domain *Contributors:* NOAA Photo Library (Primary source: Carl Chun, “Aus den Tiefen des Weltmeeres” 1903.) *Original artist:* Carl Chun, water colour by F. Winter
- **File:British\_Empire\_1897.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/28/British\\_Empire\\_1897.jpg](https://upload.wikimedia.org/wikipedia/commons/2/28/British_Empire_1897.jpg) *License:* Public domain *Contributors:* Cambridge University Library *Original artist:* Unknown
- **File:Brown\_booby.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/c2/Brown\\_booby.jpg](https://upload.wikimedia.org/wikipedia/commons/c/c2/Brown_booby.jpg) *License:* CC-BY-SA-3.0 *Contributors:* ? *Original artist:* ?
- **File:CIA-DG-BIOT.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/b/bb/CIA-DG-BIOT.jpg> *License:* Public domain *Contributors:* Diego Garcia (British Indian Ocean Territory) (Political) 1980 from Perry-Castañeda Library Map Collection: Indian Ocean Maps *Original artist:* U.S. Central Intelligence Agency
- **File:CIA.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/2/23/CIA.svg> *License:* Public domain *Contributors:* <http://www.law.cornell.edu/uscode/50/403m.html> *Original artist:* United States federal government
- **File:Cabanas\_para\_guarda\_parques\_Isla\_del\_Coco.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/6/63/Cabanas\\_para\\_guarda\\_parques\\_Isla\\_del\\_Coco.jpg](https://upload.wikimedia.org/wikipedia/commons/6/63/Cabanas_para_guarda_parques_Isla_del_Coco.jpg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Axxis10
- **File:Camp\_Justice\_-\_Diego\_Garcia.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/f/f4/Camp\\_Justice\\_-\\_Diego\\_Garcia.jpg](https://upload.wikimedia.org/wikipedia/commons/f/f4/Camp_Justice_-_Diego_Garcia.jpg) *License:* Public domain *Contributors:* <http://hq.afnews.af.mil/hometown/Webpages/PFarchives/diego.htm> *Original artist:* John Dendy
- **File:Cape\_Circoncision\_-\_Bouvet\_Island.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/7f/Cape\\_Circoncision\\_-\\_Bouvet\\_Island.jpg](https://upload.wikimedia.org/wikipedia/commons/7/7f/Cape_Circoncision_-_Bouvet_Island.jpg) *License:* Public domain *Contributors:* <http://polarhistorie.no/ekspedisjoner/Norvegia%20III/NP012003.jpg> Norsk Polarinstitutt *Original artist:* Bjarne Aagaard (1873–1956)
- **File:Carte\_of\_Scotlande.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/38/Carte\\_of\\_Scotlande.jpg](https://upload.wikimedia.org/wikipedia/commons/3/38/Carte_of_Scotlande.jpg) *License:* Public domain *Contributors:* Appears in Buchanan, Margaret St Kilda: a Photographic Album, W. Blackwood, 1983 *Original artist:* Unknown
- **File:Cercle\_rouge\_100%.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/4a/Cercle\\_rouge\\_100%25.svg](https://upload.wikimedia.org/wikipedia/commons/4/4a/Cercle_rouge_100%25.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Chart\_of\_Cocos\_Keeling\_Islands.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/3b/Chart\\_of\\_Cocos\\_Keeling\\_Islands.png](https://upload.wikimedia.org/wikipedia/commons/3/3b/Chart_of_Cocos_Keeling_Islands.png) *License:* Public domain *Contributors:* Holman's Travels. *Original artist:* James Holman
- **File:Christmas\_Island\_(5775069028).jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/e/e8/Christmas\\_Island\\_%285775069028%29.jpg](https://upload.wikimedia.org/wikipedia/commons/e/e8/Christmas_Island_%285775069028%29.jpg) *License:* CC BY-SA 2.0 *Contributors:* Christmas Island *Original artist:* DIAC images
- **File:Christmas\_Island\_Export\_Treemap\_(2012).svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/72/Christmas\\_Island\\_Export\\_Treemap\\_%282012%29.svg](https://upload.wikimedia.org/wikipedia/commons/7/72/Christmas_Island_Export_Treemap_%282012%29.svg) *License:* CC BY-SA 3.0 *Contributors:* [https://atlas.media.mit.edu/en/explore/tree\\_map/hs/export/cxr/all/show/2012/](https://atlas.media.mit.edu/en/explore/tree_map/hs/export/cxr/all/show/2012/) *Original artist:* Observatory of Economic Complexity
- **File:Christmas\_Island\_Population\_Pyramid-2011.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/0/03/Christmas\\_Island\\_Population\\_Pyramid-2011.png](https://upload.wikimedia.org/wikipedia/commons/0/03/Christmas_Island_Population_Pyramid-2011.png) *License:* CC BY-SA 4.0 *Contributors:* Own work *Original artist:* Leo Li
- **File:Christmas\_Island\_on\_the\_globe\_(Southeast\_Asia\_centered).svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/dc/Christmas\\_Island\\_on\\_the\\_globe\\_%28Southeast\\_Asia\\_centered%29.svg](https://upload.wikimedia.org/wikipedia/commons/d/dc/Christmas_Island_on_the_globe_%28Southeast_Asia_centered%29.svg) *License:* CC BY-SA 3.0 *Contributors:* *Original artist:* TUBS\*  

[</a> <a href="http://toolserver.org/~{ }daniel/WikiSense/Gallery.php?wikifam=commons.wikimedia.org\\_cspan>.&</span><img alt="Gallery" data-x-rel="nofollow"></a>](//commons.wikimedia.org/wiki/User_talk:TUBS "User talk:TUBS")
- **File:Christmas\_island\_76.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/0/05/Christmas\\_island\\_76.svg](https://upload.wikimedia.org/wikipedia/commons/0/05/Christmas_island_76.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Cleit\_above\_Village\_Bay.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/4b/Cleit\\_above\\_Village\\_Bay.jpg](https://upload.wikimedia.org/wikipedia/commons/4/4b/Cleit_above_Village_Bay.jpg) *License:* CC BY-SA 2.0 *Contributors:* *Original artist:* Bob Jones
- **File:Clipperton\_Waves.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/e/e4/Clipperton\\_Waves.jpg](https://upload.wikimedia.org/wikipedia/commons/e/e4/Clipperton_Waves.jpg) *License:* Public domain *Contributors:* <http://www.photolib.noaa.gov/htmls/mvey0762.htm> *Original artist:* Shannon Rankin, NOAA National Marine Fisheries Service, Southwest Fisheries Science Center (SWFSC)
- **File:Clippertonisland.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/1/12/Clippertonisland.jpg> *License:* Public domain *Contributors:* <http://www.photolib.noaa.gov/htmls/mvey0761.htm> *Original artist:* Shannon Rankin, NOAA National Marine Fisheries Service, Southwest Fisheries Science Center (SWFSC)
- **File:Coat\_of\_Arms\_of\_Ascension\_Island.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/23/Coat\\_of\\_Arms\\_of\\_Ascension\\_Island.svg](https://upload.wikimedia.org/wikipedia/commons/2/23/Coat_of_Arms_of_Ascension_Island.svg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* HowFalcons
- **File:Coat\_of\_Arms\_of\_the\_Pitcairn\_Islands.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/c2/Coat\\_of\\_arms\\_of\\_the\\_Pitcairn\\_Islands.svg](https://upload.wikimedia.org/wikipedia/commons/c/c2/Coat_of_arms_of_the_Pitcairn_Islands.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?

- **File:Coat\_of\_arms\_of\_Saint\_Helena.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/5/5e/Coat\\_of\\_arms\\_of\\_Saint\\_Helena.svg](https://upload.wikimedia.org/wikipedia/commons/5/5e/Coat_of_arms_of_Saint_Helena.svg) *License:* Public domain *Contributors:* Extracted from Image:Flag of Saint Helena.svg which comes from the xmap flag collection 2.9. *Original artist:* Patricia Fidi
- **File:Coat\_of\_arms\_of\_Tristan\_da\_Cunha.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/8c/Coat\\_of\\_arms\\_of\\_Tristan\\_da\\_Cunha.svg](https://upload.wikimedia.org/wikipedia/commons/8/8c/Coat_of_arms_of_Tristan_da_Cunha.svg) *License:* Public domain *Contributors:* own work based on Image:Flag of Tristan da Cunha.svg *Original artist:* PavelD
- **File:Coat\_of\_arms\_of\_the\_Pitcairn\_Islands.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/c2/Coat\\_of\\_arms\\_of\\_the\\_Pitcairn\\_Islands.svg](https://upload.wikimedia.org/wikipedia/commons/c/c2/Coat_of_arms_of_the_Pitcairn_Islands.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Cococrb2.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/c/c8/Cococrb2.jpg> *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Coconut\_Crab.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/4c/Coconut\\_Crab.jpg](https://upload.wikimedia.org/wikipedia/commons/4/4c/Coconut_Crab.jpg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Revmqo
- **File:Cocos(keeling)\_76.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/ac/Cocos%28keeling%29\\_76.jpg](https://upload.wikimedia.org/wikipedia/commons/a/ac/Cocos%28keeling%29_76.jpg) *License:* Public domain *Contributors:* [http://www.lib.utexas.edu/maps/islands\\_oceans\\_poles/cocos\(keeling\)\\_76.jpg](http://www.lib.utexas.edu/maps/islands_oceans_poles/cocos(keeling)_76.jpg) *Original artist:* Taken from Perry-Castañeda Library (PCL), originally from CIA Indian Ocean Atlas
- **File:Cocos\_(Keeling)\_Islands-CIA\_WFB\_Map.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/45/Cocos\\_%28Keeling%29\\_Islands-CIA\\_WFB\\_Map.png](https://upload.wikimedia.org/wikipedia/commons/4/45/Cocos_%28Keeling%29_Islands-CIA_WFB_Map.png) *License:* Public domain *Contributors:* <https://www.cia.gov/library/publications/the-world-factbook/maps/ck-map.gif> *Original artist:* CIA World Factbook
- **File:Cocos\_Island\_Atoll.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/f/f3/Cocos\\_Island\\_Atoll.JPG](https://upload.wikimedia.org/wikipedia/commons/f/f3/Cocos_Island_Atoll.JPG) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* PalawanOz
- **File:Cocos\_Islands\_1889.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/47/Cocos\\_Islands\\_1889.jpg](https://upload.wikimedia.org/wikipedia/commons/4/47/Cocos_Islands_1889.jpg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Commons-logo.svg** *Source:* <https://upload.wikimedia.org/wikipedia/en/4/4a/Commons-logo.svg> *License:* ? *Contributors:* ? *Original artist:* ?
- **File:Consolidated\_PBY\_Catalina\_wreck\_on\_Diego\_Garcia\_1982.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/en/5/55/Consolidated\\_PBY\\_Catalina\\_wreck\\_on\\_Diego\\_Garcia\\_1982.jpg](https://upload.wikimedia.org/wikipedia/en/5/55/Consolidated_PBY_Catalina_wreck_on_Diego_Garcia_1982.jpg) *License:* CC-BY-SA-3.0 *Contributors:* US Navy service member deployed to Diego Garcia  
*Original artist:*  
Mark Renier
- **File:ContinentAntarctica.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/6/67/ContinentAntarctica.svg> *License:* CC-BY-SA-3.0 *Contributors:* Own work *Original artist:* chris 論
- **File:CrozetIslands.A2005275.0620.250m.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/8/8a/CrozetIslands.A2005275.0620.250m.jpg> *License:* Public domain *Contributors:* [1] *Original artist:* Jeff Schmaltz, NASA
- **File:Crozet\_Map.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/f/f1/Crozet\\_Map.png](https://upload.wikimedia.org/wikipedia/commons/f/f1/Crozet_Map.png) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:DG\_Ariel\_Plantation.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/0/06/DG\\_Ariel\\_Plantation.jpg](https://upload.wikimedia.org/wikipedia/commons/0/06/DG_Ariel_Plantation.jpg) *License:* Public domain *Contributors:* Transferred from en.wikipedia; Transfer was stated to be made by User:Trengarasu. *Original artist:* Original uploader was Jgrimmer at en.wikipedia
- **File:Deception-Base.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/7/72/Deception-Base.jpg> *License:* CC-BY-SA-3.0 *Contributors:* No machine readable source provided. Own work assumed (based on copyright claims). *Original artist:* No machine readable author provided. Apcbg assumed (based on copyright claims).
- **File:Deception-Hangar.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/0/0f/Deception-Hangar.jpg> *License:* CC-BY-SA-3.0 *Contributors:* No machine readable source provided. Own work assumed (based on copyright claims). *Original artist:* No machine readable author provided. Apcbg assumed (based on copyright claims).
- **File:Deception-Island-Map.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/5/5a/Deception-Island-Map.jpg> *License:* Public domain *Contributors:* <http://mappery.com/fullsize-name/Deception-Island-Map> *Original artist:* Lieut. E.N. Kendall
- **File:Deception-Tourists.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/f/f5/Deception-Tourists.jpg> *License:* CC-BY-SA-3.0 *Contributors:* No machine readable source provided. Own work assumed (based on copyright claims). *Original artist:* No machine readable author provided. Apcbg assumed (based on copyright claims).
- **File:Degar\_sunset\_from\_cannon\_point.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/43/Degar\\_sunset\\_from\\_cannon\\_point.jpg](https://upload.wikimedia.org/wikipedia/commons/4/43/Degar_sunset_from_cannon_point.jpg) *License:* Public domain *Contributors:* Own work *Original artist:* Blaine Steinert at en.wikipedia
- **File:Diego\_Garcia\_Cattail\_Marsh.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/4c/Diego\\_Garcia\\_Cattail\\_Marsh.png](https://upload.wikimedia.org/wikipedia/commons/4/4c/Diego_Garcia_Cattail_Marsh.png) *License:* Public domain *Contributors:* U.S. Navy *Original artist:* U.S. Navy
- **File:Diego\_Garcia\_Cocos\_Forest.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/8f/Diego\\_Garcia\\_Cocos\\_Forest.png](https://upload.wikimedia.org/wikipedia/commons/8/8f/Diego_Garcia_Cocos_Forest.png) *License:* Public domain *Contributors:* U.S. NAVY NAVSUPFAC Natural Resources Management Plan, 2005 *Original artist:* U.S. Navy
- **File:Diego\_Garcia\_Hernandia\_Forest.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/e/ec/Diego\\_Garcia\\_Hernandia\\_Forest.png](https://upload.wikimedia.org/wikipedia/commons/e/ec/Diego_Garcia_Hernandia_Forest.png) *License:* Public domain *Contributors:* U.S. Navy NAVSUPFAC DIEGO GARCIA Natural Resources Management Plan, 2005 *Original artist:* U.S. Navy
- **File:Diego\_Garcia\_Island\_Map.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/e/e3/Diego\\_Garcia\\_Island\\_Map.jpg](https://upload.wikimedia.org/wikipedia/commons/e/e3/Diego_Garcia_Island_Map.jpg) *License:* Public domain *Contributors:* <http://www.globalsecurity.org/military/library/report/2002/diego-fdo-handbook.doc> (NAVCENT-METOCDETDGINST 3140.2 05 APR 2002) *Original artist:* US Navy (Naval Central Meteorology and Oceanography Detachment, Diego Garcia)

- **File:Diego\_Garcia\_Littoral\_Scrub\_1.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/5/53/Diego\\_Garcia\\_Littoral\\_Scrub\\_1.png](https://upload.wikimedia.org/wikipedia/commons/5/53/Diego_Garcia_Littoral_Scrub_1.png) *License:* Public domain *Contributors:* U.S. NAVY NAVSUPFAC DIEGO GARCIA, Natural Resources Management Plan, 2005 *Original artist:* U.S. Navy
- **File:Diego\_Garcia\_Mixed\_Species\_Marsh.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/1/18/Diego\\_Garcia\\_Mixed\\_Species\\_Marsh.png](https://upload.wikimedia.org/wikipedia/commons/1/18/Diego_Garcia_Mixed_Species_Marsh.png) *License:* Public domain *Contributors:* U.S. Navy NAVSUPFAC DIEGO GARCIA, Natural Resources Management Plan, 2005 *Original artist:* U.S. Navy
- **File:Diego\_garcian.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/3e/Diego\\_garcian.jpg](https://upload.wikimedia.org/wikipedia/commons/3/3e/Diego_garcian.jpg) *License:* Public domain *Contributors:* <http://www.photolib.noaa.gov/htmls/geod0341.htm> *Original artist:* Unknown
- **File:Diegogarcia.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/f/f4/Diegogarcia.jpg> *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:District\_map\_of\_Saint\_Helena.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/5/57/District\\_map\\_of\\_Saint\\_Helena.png](https://upload.wikimedia.org/wikipedia/commons/5/57/District_map_of_Saint_Helena.png) *License:* CC BY-SA 3.0 *Contributors:* Own work, using (1) and (2) *Original artist:* Maximilian Dörrbecker (Chumwa)
- **File:Dun,\_St\_Kilda.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/3d/Dun%2C\\_St\\_Kilda.jpg](https://upload.wikimedia.org/wikipedia/commons/3/3d/Dun%2C_St_Kilda.jpg) *License:* CC BY-SA 2.0 *Contributors:* Geograph *Original artist:* Bob Jones
- **File:EU\_OCT\_and\_OMR\_map\_en.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/72/EU\\_OCT\\_and\\_OMR\\_map\\_en.png](https://upload.wikimedia.org/wikipedia/commons/7/72/EU_OCT_and_OMR_map_en.png) *License:* CC BY-SA 3.0 *Contributors:* Natural Earth 1:50m (<http://www.naturalearthdata.com>) *Original artist:* Alexrk2
- **File:Easter\_Island\_cave.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/en/7/7d/Easter\\_Island\\_cave.jpg](https://upload.wikimedia.org/wikipedia/en/7/7d/Easter_Island_cave.jpg) *License:* ? *Contributors:* *Storia Illustrata*, year 1969 *Original artist:* ?
- **File:Easter\_Island\_map-en.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/b/bc/Easter\\_Island\\_map-en.svg](https://upload.wikimedia.org/wikipedia/commons/b/bc/Easter_Island_map-en.svg) *License:* CC BY-SA 2.5 *Contributors:* prof. William Mulloy's map (easier to read here); *Original artist:* Eric Gaba (Sting), translated by Bamse
- **File:Easter\_island\_and\_south\_america.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a4/Easter\\_island\\_and\\_south\\_america.jpg](https://upload.wikimedia.org/wikipedia/commons/a/a4/Easter_island_and_south_america.jpg) *License:* Public domain *Contributors:* From [http://www.lib.utexas.edu/maps/islands\\_oceans\\_poles/easterisland.jpg](http://www.lib.utexas.edu/maps/islands_oceans_poles/easterisland.jpg) *Original artist:* Original uploader was Pascal at en.wikipedia
- **File:EasternCerberusCone.JPG** *Source:* <https://upload.wikimedia.org/wikipedia/commons/4/4f/EasternCerberusCone.JPG> *License:* Public domain *Contributors:* <http://www.avo.alaska.edu/images/image.php?id=4656> *Original artist:* C.A. Neal, Alaska Volcano Observatory / U.S. Geological Survey
- **File:Edinburgh-Tristan.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/f/fb/Edinburgh-Tristan.jpg> *License:* CC BY-SA 2.0 *Contributors:* Edinburgh of the 7 seas 07 *Original artist:* michael clarke stuff
- **File:Equatorial\_Guinea-Annobon.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/73/Equatorial\\_Guinea-Annobon.png](https://upload.wikimedia.org/wikipedia/commons/7/73/Equatorial_Guinea-Annobon.png) *License:* CC-BY-SA-3.0 *Contributors:* Self-made, traced from public domain UN or CIA maps. *Original artist:* User:Golbez
- **File:Escudo\_de\_la\_Isla\_de\_Pascua.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/5/5e/Escudo\\_de\\_la\\_Isla\\_de\\_Pascua.svg](https://upload.wikimedia.org/wikipedia/commons/5/5e/Escudo_de_la_Isla_de_Pascua.svg) *License:* GFDL *Contributors:* Own work *Original artist:* B1mbo
- **File:Fat\_wooden\_Moai.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/d0/Fat\\_wooden\\_Moai.JPG](https://upload.wikimedia.org/wikipedia/commons/d/d0/Fat_wooden_Moai.JPG) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* WereSpielChequers
- **File:Featherstorestkilda.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/a/a0/Featherstorestkilda.jpg> *License:* CC BY-SA 2.0 *Contributors:* Geograph *Original artist:* Bob Jones
- **File:Flag\_of\_Antarctica.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/f/fa/Flag\\_of\\_Antarctica.svg](https://upload.wikimedia.org/wikipedia/commons/f/fa/Flag_of_Antarctica.svg) *License:* CC0 *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_Australia.svg** *Source:* [https://upload.wikimedia.org/wikipedia/en/b/b9/Flag\\_of\\_Australia.svg](https://upload.wikimedia.org/wikipedia/en/b/b9/Flag_of_Australia.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_Cape\_Verde.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/38/Flag\\_of\\_Cape\\_Verde.svg](https://upload.wikimedia.org/wikipedia/commons/3/38/Flag_of_Cape_Verde.svg) *License:* Public domain *Contributors:* Own work *Original artist:* Drawn by User:SKopp
- **File:Flag\_of\_Chile.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/78/Flag\\_of\\_Chile.svg](https://upload.wikimedia.org/wikipedia/commons/7/78/Flag_of_Chile.svg) *License:* Public domain *Contributors:* Own work *Original artist:* SKopp
- **File:Flag\_of\_Christmas\_Island.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/6/67/Flag\\_of\\_Christmas\\_Island.svg](https://upload.wikimedia.org/wikipedia/commons/6/67/Flag_of_Christmas_Island.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_Colombia.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/21/Flag\\_of\\_Colombia.svg](https://upload.wikimedia.org/wikipedia/commons/2/21/Flag_of_Colombia.svg) *License:* Public domain *Contributors:* Drawn by User:SKopp *Original artist:* SKopp
- **File:Flag\_of\_Costa\_Rica.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/f/f2/Flag\\_of\\_Costa\\_Rica.svg](https://upload.wikimedia.org/wikipedia/commons/f/f2/Flag_of_Costa_Rica.svg) *License:* Public domain *Contributors:* *Original artist:* Drawn by User:SKopp, rewritten by User:Gabbe
- **File:Flag\_of\_Ecuador.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/e/e8/Flag\\_of\\_Ecuador.svg](https://upload.wikimedia.org/wikipedia/commons/e/e8/Flag_of_Ecuador.svg) *License:* Public domain *Contributors:* <http://www.presidencia.gob.ec/pdf/Simbolos-Patrios.pdf> *Original artist:* President of the Republic of Ecuador, Zscout370
- **File:Flag\_of\_Equatorial\_Guinea.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/31/Flag\\_of\\_Equatorial\\_Guinea.svg](https://upload.wikimedia.org/wikipedia/commons/3/31/Flag_of_Equatorial_Guinea.svg) *License:* CC0 *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_France.svg** *Source:* [https://upload.wikimedia.org/wikipedia/en/c/c3/Flag\\_of\\_France.svg](https://upload.wikimedia.org/wikipedia/en/c/c3/Flag_of_France.svg) *License:* PD *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_French\_Polynesia.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/db/Flag\\_of\\_French\\_Polynesia.svg](https://upload.wikimedia.org/wikipedia/commons/d/db/Flag_of_French_Polynesia.svg) *License:* CC0 *Contributors:* From the Open Clip Art website *Original artist:* User:Nightstallion
- **File:Flag\_of\_Japan.svg** *Source:* [https://upload.wikimedia.org/wikipedia/en/9/9e/Flag\\_of\\_Japan.svg](https://upload.wikimedia.org/wikipedia/en/9/9e/Flag_of_Japan.svg) *License:* PD *Contributors:* ? *Original artist:* ?

- **File:Flag\_of\_Kiribati.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/d3/Flag\\_of\\_Kiribati.svg](https://upload.wikimedia.org/wikipedia/commons/d/d3/Flag_of_Kiribati.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_Mexico.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/f/fc/Flag\\_of\\_Mexico.svg](https://upload.wikimedia.org/wikipedia/commons/f/fc/Flag_of_Mexico.svg) *License:* Public domain *Contributors:* *Original artist:* Alex Covarrubias, 9 April 2006
- **File:Flag\_of\_New\_Zealand.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/3e/Flag\\_of\\_New\\_Zealand.svg](https://upload.wikimedia.org/wikipedia/commons/3/3e/Flag_of_New_Zealand.svg) *License:* Public domain *Contributors:* <http://www.mch.govt.nz/files/NZ%20Flag%20-%20proportions.JPG> *Original artist:* Zscout370, Hugh Jass and many others
- **File:Flag\_of\_Norfolk\_Island.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/48/Flag\\_of\\_Norfolk\\_Island.svg](https://upload.wikimedia.org/wikipedia/commons/4/48/Flag_of_Norfolk_Island.svg) *License:* CC0 *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_Norway.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/d9/Flag\\_of\\_Norway.svg](https://upload.wikimedia.org/wikipedia/commons/d/d9/Flag_of_Norway.svg) *License:* Public domain *Contributors:* Own work *Original artist:* Dbenbenn
- **File:Flag\_of\_Rapa.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/98/Flag\\_of\\_Rapa.svg](https://upload.wikimedia.org/wikipedia/commons/9/98/Flag_of_Rapa.svg) *License:* CC BY-SA 3.0 *Contributors:* Own work, based on this flag *Original artist:* ArnoldPlaton
- **File:Flag\_of\_Rapa\_Nui,\_Chile.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/d8/Flag\\_of\\_Rapa\\_Nui%2C\\_Chile.svg](https://upload.wikimedia.org/wikipedia/commons/d/d8/Flag_of_Rapa_Nui%2C_Chile.svg) *License:* Public domain *Contributors:* [http://www.fotw.net/flags/cl\\_rapa.html](http://www.fotw.net/flags/cl_rapa.html) *Original artist:* Mario Fuente Cid, Done on Inkscape Free Software
- **File:Flag\_of\_Russia.svg** *Source:* [https://upload.wikimedia.org/wikipedia/en/f/f3/Flag\\_of\\_Russia.svg](https://upload.wikimedia.org/wikipedia/en/f/f3/Flag_of_Russia.svg) *License:* PD *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_Saint\_Helena.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/0/00/Flag\\_of\\_Saint\\_Helena.svg](https://upload.wikimedia.org/wikipedia/commons/0/00/Flag_of_Saint_Helena.svg) *License:* Public domain *Contributors:* From the xmap flag collection 2.9 (gb-sh.svg). *Original artist:* Patricia Fidi
- **File:Flag\_of\_South\_Georgia\_and\_the\_South\_Sandwich\_Islands.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/e/ed/Flag\\_of\\_South\\_Georgia\\_and\\_the\\_South\\_Sandwich\\_Islands.svg](https://upload.wikimedia.org/wikipedia/commons/e/ed/Flag_of_South_Georgia_and_the_South_Sandwich_Islands.svg) *License:* CC0 *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_Tristan\_da\_Cunha.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/89/Flag\\_of\\_Tristan\\_da\\_Cunha.svg](https://upload.wikimedia.org/wikipedia/commons/8/89/Flag_of_Tristan_da_Cunha.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_Valparaiso\_Region,\_Chile.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/5/50/Flag\\_of\\_Valparaiso\\_Region%2C\\_Chile.svg](https://upload.wikimedia.org/wikipedia/commons/5/50/Flag_of_Valparaiso_Region%2C_Chile.svg) *License:* Public domain *Contributors:* Own work basado en File:Coat of arms of Valparaiso Region, Chile.svg *Original artist:* B1mbo
- **File:Flag\_of\_the\_Austral\_Islands.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/2e/Flag\\_of\\_the\\_Austral\\_Islands.svg](https://upload.wikimedia.org/wikipedia/commons/2/2e/Flag_of_the_Austral_Islands.svg) *License:* Public domain *Contributors:* Own work based on description [http://www.tahitinui.cn/fr/1\\_2\\_3.htm](http://www.tahitinui.cn/fr/1_2_3.htm) *Original artist:* Guilherme Paula
- **File:Flag\_of\_the\_Cocos\_(Keeling)\_Islands.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/74/Flag\\_of\\_the\\_Cocos\\_%28Keeling%29\\_Islands.svg](https://upload.wikimedia.org/wikipedia/commons/7/74/Flag_of_the_Cocos_%28Keeling%29_Islands.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_the\_Cook\_Islands.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/35/Flag\\_of\\_the\\_Cook\\_Islands.svg](https://upload.wikimedia.org/wikipedia/commons/3/35/Flag_of_the_Cook_Islands.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_the\_French\_Southern\_and\_Antarctic\_Lands.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a7/Flag\\_of\\_the\\_French\\_Southern\\_and\\_Antarctic\\_Lands.svg](https://upload.wikimedia.org/wikipedia/commons/a/a7/Flag_of_the_French_Southern_and_Antarctic_Lands.svg) *License:* Public domain *Contributors:* It is from the xmap flag collection, specifically “french\_austral\_territories.svg” in flags-2.6-src.tar.bz2. This image has been compared with images found at rbvex.it, World Statesmen, and the TAAF’s official website. *Original artist:* Académie de Grenoble
- **File:Flag\_of\_the\_Gambier\_Islands.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/f/f7/Flag\\_of\\_the\\_Gambier\\_Islands.svg](https://upload.wikimedia.org/wikipedia/commons/f/f7/Flag_of_the_Gambier_Islands.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_the\_Marshall\_Islands.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/2e/Flag\\_of\\_the\\_Marshall\\_Islands.svg](https://upload.wikimedia.org/wikipedia/commons/2/2e/Flag_of_the_Marshall_Islands.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_the\_Northern\_Mariana\_Islands.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/e/e0/Flag\\_of\\_the\\_Northern\\_Mariana\\_Islands.svg](https://upload.wikimedia.org/wikipedia/commons/e/e0/Flag_of_the_Northern_Mariana_Islands.svg) *License:* CC0 *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_the\_Pitcairn\_Islands.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/88/Flag\\_of\\_the\\_Pitcairn\\_Islands.svg](https://upload.wikimedia.org/wikipedia/commons/8/88/Flag_of_the_Pitcairn_Islands.svg) *License:* Public domain *Contributors:* Own work *Original artist:* User:Dbenbenn
- **File:Flag\_of\_the\_Solomon\_Islands.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/74/Flag\\_of\\_the\\_Solomon\\_Islands.svg](https://upload.wikimedia.org/wikipedia/commons/7/74/Flag_of_the_Solomon_Islands.svg) *License:* Public domain *Contributors:* Drawn by User:SKopp *Original artist:* User:SKopp
- **File:Flag\_of\_the\_Tuamotu\_Islands.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/b/be/Flag\\_of\\_the\\_Tuamotu\\_Islands.svg](https://upload.wikimedia.org/wikipedia/commons/b/be/Flag_of_the_Tuamotu_Islands.svg) *License:* CC BY-SA 2.5 *Contributors:* ? *Original artist:* ?
- **File:Flag\_of\_the\_United\_Kingdom.svg** *Source:* [https://upload.wikimedia.org/wikipedia/en/a/ae/Flag\\_of\\_the\\_United\\_Kingdom.svg](https://upload.wikimedia.org/wikipedia/en/a/ae/Flag_of_the_United_Kingdom.svg) *License:* PD *Contributors:* ? *Original artist:* ?
- **File:Folder\_Hexagonal\_Icon.svg** *Source:* [https://upload.wikimedia.org/wikipedia/en/4/48/Folder\\_Hexagonal\\_Icon.svg](https://upload.wikimedia.org/wikipedia/en/4/48/Folder_Hexagonal_Icon.svg) *License:* Cc-by-sa-3.0 *Contributors:* ? *Original artist:* ?
- **File:Gabriel-de-Castilla-Base.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/5/55/Gabriel-de-Castilla-Base.jpg> *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* SnowSwan
- **File:General\_Pinochet\_junto\_a\_una\_pascuense.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/e/ed/General\\_Pinochet\\_junto\\_a\\_una\\_pascuense.jpg](https://upload.wikimedia.org/wikipedia/commons/e/ed/General_Pinochet_junto_a_una_pascuense.jpg) *License:* CC BY 3.0 cl *Contributors:* [http://historiapolitica.bcn.cl/resenas\\_parlamentarias/wiki/Mario\\_Arnello\\_Romo](http://historiapolitica.bcn.cl/resenas_parlamentarias/wiki/Mario_Arnello_Romo) *Original artist:* Biblioteca del Congreso Nacional de Chile
- **File:Geodesy\_Collection\_Pitcairn\_Island.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/cf/Geodesy\\_Collection\\_Pitcairn\\_Island.jpg](https://upload.wikimedia.org/wikipedia/commons/c/cf/Geodesy_Collection_Pitcairn_Island.jpg) *License:* Public domain *Contributors:* <http://www.photolib.noaa.gov/htmls/geod0154.htm> *Original artist:* NOAA

- **File:Georgetown\_Ascension1.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/40/Georgetown\\_Ascension1.JPG](https://upload.wikimedia.org/wikipedia/commons/4/40/Georgetown_Ascension1.JPG) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* LordHarris
- **File:Gnome-searchtool.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/1/1e/Gnome-searchtool.svg> *License:* LGPL *Contributors:* <http://ftp.gnome.org/pub/GNOME/sources/gnome-themes-extras/0.9/gnome-themes-extras-0.9.0.tar.gz> *Original artist:* David Vignoni
- **File:Gough\_island\_top\_view.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/40/Gough\\_island\\_top\\_view.png](https://upload.wikimedia.org/wikipedia/commons/4/40/Gough_island_top_view.png) *License:* CC BY 2.5 *Contributors:* Gewin V (2005); *Eco-Defense against Invasions*. PLoS Biol 3(12): e429 <http://dx.doi.org/10.1371/journal.pbio.0030429> *Original artist:* Photo: Steven Chown
- **File:Government\_House\_Ascension\_Island.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/9f/Government\\_House\\_Ascension\\_Island.jpg](https://upload.wikimedia.org/wikipedia/commons/9/9f/Government_House_Ascension_Island.jpg) *License:* CC BY 2.0 *Contributors:* DSCF0066 *Original artist:* quirkycontinuum
- **File:Green\_Mountain3.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/2c/Green\\_Mountain3.JPG](https://upload.wikimedia.org/wikipedia/commons/2/2c/Green_Mountain3.JPG) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* LordHarris
- **File:Gulf\_of\_Guinea\_(English).jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a6/Gulf\\_of\\_Guinea\\_%28English%29.jpg](https://upload.wikimedia.org/wikipedia/commons/a/a6/Gulf_of_Guinea_%28English%29.jpg) *License:* CC-BY-SA-3.0 *Contributors:* ? *Original artist:* ?
- **File:Gun\_Dùn\_St\_Kilda.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/c8/Gun\\_D%C3%B9n\\_St\\_Kilda.jpg](https://upload.wikimedia.org/wikipedia/commons/c/c8/Gun_D%C3%B9n_St_Kilda.jpg) *License:* CC BY 2.0 *Contributors:* Flickr *Original artist:* Gajalbot
- **File:HMS\_Megaera\_(1849)\_at\_St\_Paul\_Island.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/4b/HMS\\_Megaera\\_%281849%29\\_at\\_St\\_Paul\\_Island.jpg](https://upload.wikimedia.org/wikipedia/commons/4/4b/HMS_Megaera_%281849%29_at_St_Paul_Island.jpg) *License:* Public domain *Contributors:* Illustrated London News *Original artist:* Uploaded by Shem1805 at en.wikipedia
- **File:Hangaroa\_Moais.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/b/b3/Hangaroa\\_Moais.jpg](https://upload.wikimedia.org/wikipedia/commons/b/b3/Hangaroa_Moais.jpg) *License:* CC-BY-SA-3.0 *Contributors:* Own work *Original artist:* Makemake at de.wikipedia
- **File:Hirta\_map.PNG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/6/6a/Hirta\\_map.PNG](https://upload.wikimedia.org/wikipedia/commons/6/6a/Hirta_map.PNG) *License:* CC-BY-SA-3.0 *Contributors:* Hand drawn by User:Ruhfisch based on maps from [1], [2], and [3], this NASA photo, and the National Geographic World Atlas. *Original artist:* Ruhfisch
- **File:Hodges\_easter-island.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a8/Hodges\\_easter-island.jpg](https://upload.wikimedia.org/wikipedia/commons/a/a8/Hodges_easter-island.jpg) *License:* Public domain *Contributors:* reproduction from art book. More information at the picture's page at the National Maritime Museum's collections' web site. *Original artist:* William Hodges
- **File:HowlandIslandLightWW2damage.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/0/02/HowlandIslandLightWW2damage.jpg> *License:* Public domain *Contributors:* <http://www.uscg.mil/hq/g-cp/history/WEBLIGHTHOUSES/LHPACIFIC.html> *Original artist:* USCG
- **File:Howland\_Island.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/77/Howland\\_Island.svg](https://upload.wikimedia.org/wikipedia/commons/7/77/Howland_Island.svg) *License:* Public domain *Contributors:* Image:HowlandIsland.jpeg *Original artist:* User:Indolences
- **File:Howland\_Island\_Locator1.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/0/0e/Howland\\_Island\\_Locator1.png](https://upload.wikimedia.org/wikipedia/commons/0/0e/Howland_Island_Locator1.png) *License:* CC BY 2.5 *Contributors:* Own work *Original artist:* Cafe Nervosa
- **File:Howland\_island\_nasa.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/4a/Howland\\_island\\_nasa.jpg](https://upload.wikimedia.org/wikipedia/commons/4/4a/Howland_island_nasa.jpg) *License:* Public domain *Contributors:* [http://earthobservatory.nasa.gov/Newsroom/NewImages/Images/ISS010-E-9287\\_lrg.jpg](http://earthobservatory.nasa.gov/Newsroom/NewImages/Images/ISS010-E-9287_lrg.jpg) *Original artist:* NASA
- **File:Îcône\_Ile.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/87/Îc%C3%B4ne\\_Ile.svg](https://upload.wikimedia.org/wikipedia/commons/8/87/Îc%C3%B4ne_Ile.svg) *License:* CC BY-SA 3.0 *Contributors:* *Original artist:* Isla.svg: \*Palm\_tree\_symbol.svg: DarkEvil
- **File:Ile\_aux\_ours.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/28/Ile\\_aux\\_ours.jpg](https://upload.wikimedia.org/wikipedia/commons/2/28/Ile_aux_ours.jpg) *License:* CC-BY-SA-3.0 *Contributors:* Transferred from en.wikipedia to Commons. *Original artist:* Mikesegehn at English Wikipedia
- **File:Ile\_de\_l'ascension\_routes.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/c0/Ile\\_de\\_l%27ascension\\_routes.svg](https://upload.wikimedia.org/wikipedia/commons/c/c0/Ile_de_l%27ascension_routes.svg) *License:* CC BY 3.0 *Contributors:* *Original artist:* Ile\_de\_l'ascension.svg: Treehill
- **File:Ile\_tromelin\_76.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/1/18/Ile\\_tromelin\\_76.jpg](https://upload.wikimedia.org/wikipedia/commons/1/18/Ile_tromelin_76.jpg) *License:* Public domain *Contributors:* [http://www.lib.utexas.edu/maps/islands\\_oceans\\_poles/ile\\_tromelin\\_76.jpg](http://www.lib.utexas.edu/maps/islands_oceans_poles/ile_tromelin_76.jpg) *Original artist:* Taken from Perry-Castañeda Library (PCL), originally from CIA Indian Ocean Atlas
- **File:Iles\_eparses\_de\_l'océan\_Indien.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/ad/Iles\\_eparses\\_de\\_l%27océan\\_Indien.svg](https://upload.wikimedia.org/wikipedia/commons/a/ad/Iles_eparses_de_l%27océan_Indien.svg) *License:* CC-BY-SA-3.0 *Contributors:* Iles\_eparses\_de\_l'océan\_Indien.png by User:Oxhop *Original artist:* Iles\_eparses\_de\_l'océan\_Indien.png: User:Oxhop
- **File:Ilhéus\_Secos.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/1/16/Ilh%C3%A9us\\_Secos.jpg](https://upload.wikimedia.org/wikipedia/commons/1/16/Ilh%C3%A9us_Secos.jpg) *License:* Public domain *Contributors:* Own work *Original artist:* Ingo Wölbern
- **File:Indian\_Ocean\_laea\_location\_map.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/c7/Indian\\_Ocean\\_laea\\_location\\_map.svg](https://upload.wikimedia.org/wikipedia/commons/c/c7/Indian_Ocean_laea_location_map.svg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Tentotwo
- **File:Indianocean.PNG** *Source:* <https://upload.wikimedia.org/wikipedia/commons/c/c5/Indianocean.PNG> *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Inselsoay.JPG** *Source:* <https://upload.wikimedia.org/wikipedia/commons/b/ba/Inselsoay.JPG> *License:* Public domain *Contributors:* Own work *Original artist:* Olaf1950
- **File:Insidestkildachurch.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/a/ad/Insidestkildachurch.jpg> *License:* CC BY-SA 2.0 *Contributors:* *Original artist:* Bob Jones
- **File:Isla\_Juan\_Fernandez\_-\_Langostas\_(Lobsters).jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/3a/Isla\\_Juan\\_Fernandez\\_-\\_Langostas\\_%28Lobsters%29.jpg](https://upload.wikimedia.org/wikipedia/commons/3/3a/Isla_Juan_Fernandez_-_Langostas_%28Lobsters%29.jpg) *License:* CC-BY-SA-3.0 *Contributors:* ? *Original artist:* ?
- **File:Isla\_Juan\_Fernandez\_(vista\_hacia\_Robinson\_Crusoe\_desde\_Montaña).jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/33/Isla\\_Juan\\_Fernandez\\_%28vista\\_hacia\\_Robinson\\_Crusoe\\_desde\\_Monta%C3%B1a%29.jpg](https://upload.wikimedia.org/wikipedia/commons/3/33/Isla_Juan_Fernandez_%28vista_hacia_Robinson_Crusoe_desde_Monta%C3%B1a%29.jpg) *License:* CC-BY-SA-3.0 *Contributors:* Own work *Original artist:* Serpentus

- **File:Isla\_del\_Coco-chatham\_beach.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/85/Isla\\_del\\_Coco-chatham\\_beach.jpg](https://upload.wikimedia.org/wikipedia/commons/8/85/Isla_del_Coco-chatham_beach.jpg) *License:* CC BY 2.0 *Contributors:* ? *Original artist:* ?
- **File:Isla\_del\_coco.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/99/Isla\\_del\\_coco.jpg](https://upload.wikimedia.org/wikipedia/commons/9/99/Isla_del_coco.jpg) *License:* CC BY 2.0 *Contributors:* ? *Original artist:* ?
- **File:Island\_couple.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/6/67/Island\\_couple.jpg](https://upload.wikimedia.org/wikipedia/commons/6/67/Island_couple.jpg) *License:* Public domain *Contributors:* Transferred from en.wikipedia; transferred to Commons by User:BokicaK using CommonsHelper. *Original artist:* Jgrimmer at en.wikipedia
- **File:Islote\_Manuelita\_en\_Isla\_del\_Coco.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/5/52/Islote\\_Manuelita\\_en\\_Isla\\_del\\_Coco.JPG](https://upload.wikimedia.org/wikipedia/commons/5/52/Islote_Manuelita_en_Isla_del_Coco.JPG) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Axxis10
- **File:Iwo-Jima-3c.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/b/b6/Iwo-Jima-3c.jpg> *License:* Public domain *Contributors:* US Government, Department of the Post Office, Hi-res scan by <a href="//commons.wikimedia.org/wiki/User:Gwillhickers" title="User:Gwillhickers">Gwillhickers</a> *Original artist:* US Post Office, Bureau of Engraving and Printing
- **File:Iwo-to\_landsat1999.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/24/Iwo-to\\_landsat1999.jpg](https://upload.wikimedia.org/wikipedia/commons/2/24/Iwo-to_landsat1999.jpg) *License:* CC-BY-SA-3.0 *Contributors:* Landsat Image *Original artist:* Tdk
- **File:Iwo\_Jima\_Airport\_Control\_Tower.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/b/b0/Iwo\\_Jima\\_Airport\\_Control\\_Tower.jpg](https://upload.wikimedia.org/wikipedia/commons/b/b0/Iwo_Jima_Airport_Control_Tower.jpg) *License:* CC BY-SA 3.0 *Contributors:* Self-photographed *Original artist:* Revmqo / Revmqo at English Wikipedia
- **File:Iwo\_jima\_location\_mapSagredo.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/dc/Iwo\\_jima\\_location\\_mapSagredo.png](https://upload.wikimedia.org/wikipedia/commons/dc/Iwo_jima_location_mapSagredo.png) *License:* Public domain *Contributors:* Own work *Original artist:* Sagredo 06:09, 31 December 2007 (UTC)
- **File:KermadecNikau.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/d/d4/KermadecNikau.jpg> *License:* Public domain *Contributors:* Own work *Original artist:* Kahuroa
- **File:Kermadec\_islands.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/9b/Kermadec\\_islands.jpg](https://upload.wikimedia.org/wikipedia/commons/9/9b/Kermadec_islands.jpg) *License:* Public domain *Contributors:* [http://lib.utexas.edu/maps/historical/pacific\\_islands\\_1943\\_1945/kermadec\\_islands.jpg](http://lib.utexas.edu/maps/historical/pacific_islands_1943_1945/kermadec_islands.jpg) *Original artist:* US
- **File:King\_Penguin\_Rookery\_Audio.oga** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/97/King\\_Penguin\\_Rookery\\_Audio.oga](https://upload.wikimedia.org/wikipedia/commons/9/97/King_Penguin_Rookery_Audio.oga) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Hullwarren
- **File:Küste\_der\_Peter-I.-Insel\_in\_der\_Amundsen-See\_1994.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/f/f4/K%C3%BCste\\_der\\_Peter-I.-Insel\\_in\\_der\\_Amundsen-See\\_1994.jpg](https://upload.wikimedia.org/wikipedia/commons/f/f4/K%C3%BCste_der_Peter-I.-Insel_in_der_Amundsen-See_1994.jpg) *License:* CC BY-SA 2.5 *Contributors:* Own work *Original artist:* Hannes Grobe
- **File:Localisation\_de\_l'ile\_de\_Clipperton.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/6/60/Localisation\\_de\\_l'ile\\_de\\_Clipperton.png](https://upload.wikimedia.org/wikipedia/commons/6/60/Localisation_de_l'ile_de_Clipperton.png) *License:* CC-BY-SA-3.0 *Contributors:* ? *Original artist:* ?
- **File:Localización\_de\_las\_islas\_de\_la\_Decepción\_en\_las\_Tuamotu.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/2f/Localizaci%C3%B3n\\_de\\_las\\_islas\\_de\\_la\\_Decepci%C3%B3n\\_en\\_las\\_Tuamotu.png](https://upload.wikimedia.org/wikipedia/commons/2/2f/Localizaci%C3%B3n_de_las_islas_de_la_Decepci%C3%B3n_en_las_Tuamotu.png) *License:* CC BY-SA 3.0 *Contributors:* Catalan Wikipedia *Original artist:* ca>User:Vriullop
- **File:LocationSaintHelena.png** *Source:* <https://upload.wikimedia.org/wikipedia/commons/d/dd/LocationSaintHelena.png> *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:LocationStHelena.PNG** *Source:* <https://upload.wikimedia.org/wikipedia/commons/e/ee/LocationStHelena.PNG> *License:* Public domain *Contributors:* Own work *Original artist:* Telim tor
- **File:Location\_Southeast\_Asia.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/dc/Location\\_Southeast\\_Asia.svg](https://upload.wikimedia.org/wikipedia/commons/d/dc/Location_Southeast_Asia.svg) *License:* Public domain *Contributors:* Derived from image:Location Malaysia ASEAN.svg by ASDFGHJ *Original artist:* ?
- **File:Logotipo\_de\_la\_Gobernación\_de\_Isla\_de\_Pascua.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/80/Logotipo\\_de\\_la\\_Gobernaci%C3%B3n\\_de\\_Isla\\_de\\_Pascua.svg](https://upload.wikimedia.org/wikipedia/commons/8/80/Logotipo_de_la_Gobernaci%C3%B3n_de_Isla_de_Pascua.svg) *License:* CC BY 3.0 cl *Contributors:* Based on File:Logo de la Gobernación de Colchagua.svg *Original artist:* Vectorized version: Diego Grez Cañete. Original logo: see information at File:Logo Gobierno de Chile 2010-2014.svg
- **File:Los\_Moais\_Riscos\_en\_Isla\_del\_Coco.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a0/Los\\_Moais\\_Riscos\\_en\\_Isla\\_del\\_Coco.JPG](https://upload.wikimedia.org/wikipedia/commons/a/a0/Los_Moais_Riscos_en_Isla_del_Coco.JPG) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Axxis10
- **File:Loudspeaker.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/8/8a/Loudspeaker.svg> *License:* Public domain *Contributors:* New version of Image:Loudspeaker.png, by AzaToth and compressed by Hautala *Original artist:* Nethac DIU, waves corrected by Zoid
- **File:Lymphad3.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/d/d1/Lymphad3.svg> *License:* CC-BY-SA-3.0 *Contributors:* *Original artist:*
- derivative work: MaEr (<a href="//commons.wikimedia.org/wiki/User\_talk:MaEr" title="User talk:MaEr">talk</a>)
- **File:Machias\_Seal\_Island\_puffins.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/94/Machias\\_Seal\\_Island\\_puffins.jpg](https://upload.wikimedia.org/wikipedia/commons/9/94/Machias_Seal_Island_puffins.jpg) *License:* CC BY 2.5 *Contributors:* Own work *Original artist:* The original uploader was Tgo2002 at English Wikipedia
- **File:MacquarieIsland11.JPG** *Source:* <https://upload.wikimedia.org/wikipedia/commons/3/3c/MacquarieIsland11.JPG> *License:* Public domain *Contributors:* Own work *Original artist:* M. Murphy
- **File:Map\_Banaba\_Island\_1936-en.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/ab/Map\\_Banaba\\_Island\\_1936-en.svg](https://upload.wikimedia.org/wikipedia/commons/a/ab/Map_Banaba_Island_1936-en.svg) *License:* Public domain *Contributors:* User:Indolences, utexas.edu *Original artist:* User:Indolences
- **File:Map\_of\_Christmas\_Island\_1976.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/99/Map\\_of\\_Christmas\\_Island\\_1976.jpg](https://upload.wikimedia.org/wikipedia/commons/9/99/Map_of_Christmas_Island_1976.jpg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Map\_of\_Cocos\_from\_Pacific\_Islands\_vol\_2\_(Geographical\_Handbook\_Series\_1943).jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/f/fe/Map\\_of\\_Cocos\\_from\\_Pacific\\_Islands%2C\\_vol\\_2\\_%28Geographical\\_Handbook\\_Series%2C\\_1943%29.jpg](https://upload.wikimedia.org/wikipedia/commons/f/fe/Map_of_Cocos_from_Pacific_Islands%2C_vol_2_%28Geographical_Handbook_Series%2C_1943%29.jpg) *License:* Public domain *Contributors:* Map Collection of the Perry-Castañeda Library, University of Texas. Originally from (1943) *Pacific Islands: 2, Eastern Pacific, Nov. 1943 [Geographical handbook series; B.R. 519a]*, London: Naval Intelligence Division OCLC: 310446759. <sup>[1]</sup> *Original artist:* Naval Intelligence Division, Admiralty (UK).

- **File:Map\_of\_Kiribati\_CIA\_WFB.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/92/Map\\_of\\_Kiribati\\_CIA\\_WFB.png](https://upload.wikimedia.org/wikipedia/commons/9/92/Map_of_Kiribati_CIA_WFB.png) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Mapa\_loc\_Valparaíso.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/c0/Mapa\\_loc\\_Valpara%C3%ADso.svg](https://upload.wikimedia.org/wikipedia/commons/c/c0/Mapa_loc_Valpara%C3%ADso.svg) *License:* CC BY-SA 2.5 *Contributors:* Own work *Original artist:* B1mbo
- **File:Marshall\_Islands\_location\_map.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/83/Marshall\\_Islands\\_location\\_map.svg](https://upload.wikimedia.org/wikipedia/commons/8/83/Marshall_Islands_location_map.svg) *License:* CC BY 3.0 *Contributors:* own work, using
  - United States National Imagery and Mapping Agency data
  - World Data Base II data*Original artist:* NordNordWest
- **File:Martin\_Vaz.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/4b/Martin\\_Vaz.png](https://upload.wikimedia.org/wikipedia/commons/4/4b/Martin_Vaz.png) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Mistress\_Stone.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/dc/Mistress\\_Stone.jpg](https://upload.wikimedia.org/wikipedia/commons/d/dc/Mistress_Stone.jpg) *License:* CC BY-SA 2.0 *Contributors:* *Original artist:* Bob Jones
- **File:Moai\_Rano\_raraku.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a2/Moai\\_Rano\\_raraku.jpg](https://upload.wikimedia.org/wikipedia/commons/a/a2/Moai_Rano_raraku.jpg) *License:* Public domain *Contributors:* Own work *Original artist:* Aurbina
- **File:Mutiny\_HMS\_Bounty.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/5/50/Mutiny\\_HMS\\_Bounty.jpg](https://upload.wikimedia.org/wikipedia/commons/5/50/Mutiny_HMS_Bounty.jpg) *License:* Public domain *Contributors:* National Maritime Museum *Original artist:* Robert Dodd
- **File:Mv-baffin-strait-route.png** *Source:* <https://upload.wikimedia.org/wikipedia/commons/f/f7/Mv-baffin-strait-route.png> *License:* GFDL *Contributors:* Based on Image:Orthographic\_projection\_over\_Diego\_Garcia.png with Inkscape drawing by Haus. *Original artist:* Map by User:Geo Swan, markup by User:Haus
- **File:Napoleon\_sainthelene.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/71/Napoleon\\_sainthelene.jpg](https://upload.wikimedia.org/wikipedia/commons/7/71/Napoleon_sainthelene.jpg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:NapukaISS002-E-6371.PNG** *Source:* <https://upload.wikimedia.org/wikipedia/en/9/9f/NapukaISS002-E-6371.PNG> *License:* PD *Contributors:* ? *Original artist:* ?
- **File:Norfolk\_COA.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/1/1e/Norfolk\\_COA.png](https://upload.wikimedia.org/wikipedia/commons/1/1e/Norfolk_COA.png) *License:* Public domain *Contributors:* (www.cyber-flag.net) *Original artist:* Norfolk\_COA.gif: www.cyber-flag.net
- **File:Norfolk\_Island-CIA\_WFB\_Map.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/1/1f/Norfolk\\_Island-CIA\\_WFB\\_Map.png](https://upload.wikimedia.org/wikipedia/commons/1/1f/Norfolk_Island-CIA_WFB_Map.png) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Norfolk\_Island\_Philip\_Island.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/cc/Norfolk\\_Island\\_Philip\\_Island.jpg](https://upload.wikimedia.org/wikipedia/commons/c/cc/Norfolk_Island_Philip_Island.jpg) *License:* CC BY 3.0 *Contributors:* Originally uploaded to **Flickr** as part of the Norfolk Island set *Original artist:* Steve Daggar
- **File:Norfolk\_Island\_Philip\_Island3.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/79/Norfolk\\_Island\\_Philip\\_Island3.jpg](https://upload.wikimedia.org/wikipedia/commons/7/79/Norfolk_Island_Philip_Island3.jpg) *License:* CC BY 3.0 *Contributors:* Originally uploaded to **Flickr** as part of the Norfolk Island set *Original artist:* Steve Daggar
- **File:Norfolk\_Island\_jail.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/6/67/Norfolk\\_Island\\_jail.jpg](https://upload.wikimedia.org/wikipedia/commons/6/67/Norfolk_Island_jail.jpg) *License:* CC BY 3.0 *Contributors:* Originally uploaded to **Flickr** as part of the Norfolk Island set *Original artist:* Steve Daggar
- **File:Norfolk\_Island\_jetty.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/1/1c/Norfolk\\_Island\\_jetty.jpg](https://upload.wikimedia.org/wikipedia/commons/1/1c/Norfolk_Island_jetty.jpg) *License:* CC BY 3.0 *Contributors:* Originally uploaded to **Flickr** as part of the Norfolk Island set *Original artist:* Steve Daggar
- **File:Norfolk\_Island\_jetty2.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/cb/Norfolk\\_Island\\_jetty2.jpg](https://upload.wikimedia.org/wikipedia/commons/c/cb/Norfolk_Island_jetty2.jpg) *License:* CC BY 3.0 *Contributors:* Originally uploaded to **Flickr** as part of the Norfolk Island set *Original artist:* Steve Daggar
- **File:Norfolk\_Island\_on\_the\_globe\_(Polynesia\_centered).svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/83/Norfolk\\_Island\\_on\\_the\\_globe\\_%28Polynesia\\_centered%29.svg](https://upload.wikimedia.org/wikipedia/commons/8/83/Norfolk_Island_on_the_globe_%28Polynesia_centered%29.svg) *License:* CC BY-SA 3.0 *Contributors:* *Original artist:* TUBS\*  

```
<a href="//commons.wikimedia.org/wiki/User_talk:TUBS" title="User talk:TUBS"></a> <a href="http://toolsserver.org/~{ }daniel/WikiSense/Gallery.php?wikifam=commons.wikimedia.org.<span>,&</span>"><img alt="Gallery" data-x-rel="nofollow"></a>
```
- **File:North\_America\_368x348.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/8f/North\\_America\\_368x348.png](https://upload.wikimedia.org/wikipedia/commons/8/8f/North_America_368x348.png) *License:* CC BY-SA 3.0 *Contributors:* Cropped version of Wikimedia Commons file Location North America.svg *Original artist:* Keepscales
- **File:Notquiteheathrow.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/f/fa/Notquiteheathrow.jpg> *License:* CC BY-SA 2.0 *Contributors:* Geograph *Original artist:* Bob Jones
- **File:Nugent\_Meyer\_Dayrell\_Islands.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/1/12/Nugent\\_Meyer\\_Dayrell\\_Islands.jpg](https://upload.wikimedia.org/wikipedia/commons/1/12/Nugent_Meyer_Dayrell_Islands.jpg) *License:* Public domain *Contributors:* Own work *Original artist:* Lawrie Mead at en.wikipedia
- **File:NukutoaHighTide.JPG** *Source:* <https://upload.wikimedia.org/wikipedia/commons/b/b3/NukutoaHighTide.JPG> *License:* CC-BY-SA-3.0 *Contributors:* Professor Richard Moyle, Auckland University *Original artist:* Professor Richard Moyle
- **File:Oceania\_(orthographic\_projection).svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/8e/Oceania\\_%28orthographic\\_projection%29.svg](https://upload.wikimedia.org/wikipedia/commons/8/8e/Oceania_%28orthographic_projection%29.svg) *License:* CC BY-SA 3.0 *Contributors:* Based on File:Australia (orthographic projection).svgbcdxgsgsd *Original artist:* Ch1902
- **File:Oceania\_laea\_location\_map.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/43/Oceania\\_laea\\_location\\_map.svg](https://upload.wikimedia.org/wikipedia/commons/4/43/Oceania_laea_location_map.svg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Uwe Dederling



- **File:Orcadas\_Base.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a2/Orcadas\\_Base.jpg](https://upload.wikimedia.org/wikipedia/commons/a/a2/Orcadas_Base.jpg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Antarctic96
- **File:Orthographic\_projection\_centred\_over\_Cocos\_Island.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/6/69/Orthographic\\_projection\\_centred\\_over\\_Cocos\\_Island.png](https://upload.wikimedia.org/wikipedia/commons/6/69/Orthographic_projection_centred_over_Cocos_Island.png) *License:* Public domain *Contributors:* I created this image using this online map creation tool *Original artist:* Geo Swan ([talk](https://commons.wikimedia.org/wiki/User_talk:Geo_Swan))
- **File:Orthographic\_projection\_centred\_over\_Ile\_Amsterdam.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/9f/Orthographic\\_projection\\_centred\\_over\\_Ile\\_Amsterdam.png](https://upload.wikimedia.org/wikipedia/commons/9/9f/Orthographic_projection_centred_over_Ile_Amsterdam.png) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Orthographic\_projection\_centred\_over\_Juan\_Fernandez.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/6/6e/Orthographic\\_projection\\_centred\\_over\\_Juan\\_Fernandez.png](https://upload.wikimedia.org/wikipedia/commons/6/6e/Orthographic_projection_centred_over_Juan_Fernandez.png) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Orthographic\_projection\_centred\_over\_the\_Iles\_Crozet.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/b/b4/Orthographic\\_projection\\_centred\\_over\\_the\\_Iles\\_Crozet.png](https://upload.wikimedia.org/wikipedia/commons/b/b4/Orthographic_projection_centred_over_the_Iles_Crozet.png) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Orthographic\_projection\_over\_Raoul\_Island.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/40/Orthographic\\_projection\\_over\\_Raoul\\_Island.png](https://upload.wikimedia.org/wikipedia/commons/4/40/Orthographic_projection_over_Raoul_Island.png) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Outer\_Hebrides\_UK\_relief\_location\_map.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/0/03/Outer\\_Hebrides\\_UK\\_relief\\_location\\_map.jpg](https://upload.wikimedia.org/wikipedia/commons/0/03/Outer_Hebrides_UK_relief_location_map.jpg) *License:* CC BY-SA 3.0 *Contributors:* Ordnance Survey OpenData. *Original artist:* Nilfanion, created using Ordnance Survey data
- **File:Outline\_map\_of\_Central\_America.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/4a/Outline\\_map\\_of\\_Central\\_America.svg](https://upload.wikimedia.org/wikipedia/commons/4/4a/Outline_map_of_Central_America.svg) *License:* CC BY-SA 2.0 *Contributors:* *Original artist:*
- Виктор В
- **File:Outre-mer\_en.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/1/16/Outre-mer\\_en.png](https://upload.wikimedia.org/wikipedia/commons/1/16/Outre-mer_en.png) *License:* CC-BY-SA-3.0 *Contributors:* ? *Original artist:* ?
- **File:Pacific\_Ocean\_laea\_location\_map.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/96/Pacific\\_Ocean\\_laea\\_location\\_map.svg](https://upload.wikimedia.org/wikipedia/commons/9/96/Pacific_Ocean_laea_location_map.svg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Tentotwo
- **File:PaganOverview.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/4/4b/PaganOverview.jpg> *License:* Public domain *Contributors:* en wiki (PaganOverview.jpg) uploaded to Wikipedia 20:25, 19 February 2007 (UTC) by RideABicycle (talk • contribs) *Original artist:* NASA
- **File:Pagan\_Island,\_Northern\_Marianas.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/e/e0/Pagan\\_Island%2C\\_Northern\\_Marianas.jpg](https://upload.wikimedia.org/wikipedia/commons/e/e0/Pagan_Island%2C_Northern_Marianas.jpg) *License:* Public domain *Contributors:* from <http://earthobservatory.nasa.gov/IOTD/view.php?id=77503> *Original artist:* NASA
- **File:Pano\_Anakena\_beach.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/d5/Pano\\_Anakena\\_beach.jpg](https://upload.wikimedia.org/wikipedia/commons/d/d5/Pano_Anakena_beach.jpg) *License:* CC-BY-SA-3.0 *Contributors:* Own work *Original artist:* Rivi
- **File:Panorama\_view\_of\_Robinson\_Crusoe\_Island\_-\_Chile.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/c4/Panorama\\_view\\_of\\_Robinson\\_Crusoe\\_Island\\_-\\_Chile.jpg](https://upload.wikimedia.org/wikipedia/commons/c/c4/Panorama_view_of_Robinson_Crusoe_Island_-_Chile.jpg) *License:* CC BY 2.0 *Contributors:* Panorama view of Robinson Crusoe Island *Original artist:* The Official CTBTO Photostream
- **File:People\_icon.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/37/People\\_icon.svg](https://upload.wikimedia.org/wikipedia/commons/3/37/People_icon.svg) *License:* CC0 *Contributors:* OpenClipart *Original artist:* OpenClipart
- **File:Peter\_I\_Island\_1929A.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/5/57/Peter\\_I\\_Island\\_1929A.jpg](https://upload.wikimedia.org/wikipedia/commons/5/57/Peter_I_Island_1929A.jpg) *License:* Public domain *Contributors:* [http://www.polarhistorie.no/ekspedisjoner/Norvegia%20III / NP011862.jpg](http://www.polarhistorie.no/ekspedisjoner/Norvegia%20III/NP011862.jpg) Norsk polarinstitutt *Original artist:* Unknown
- **File:Peter\_I\_Øy\_kart.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/5/5c/Peter\\_I\\_%C3%98y\\_kart.png](https://upload.wikimedia.org/wikipedia/commons/5/5c/Peter_I_%C3%98y_kart.png) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Haakon K
- **File:Phylica\_arborea.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/2a/Phylica\\_arborea.JPG](https://upload.wikimedia.org/wikipedia/commons/2/2a/Phylica_arborea.JPG) *License:* CC-BY-SA-3.0 *Contributors:* ? *Original artist:* ?
- **File:Pingelap.png** *Source:* <https://upload.wikimedia.org/wikipedia/commons/9/91/Pingelap.png> *License:* Public domain *Contributors:* Own work *Original artist:* Smurrayinchester
- **File:Pitcairn\_-\_Church\_of\_Adamstown.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/fff/Pitcairn\\_-\\_Church\\_of\\_Adamstown.jpg](https://upload.wikimedia.org/wikipedia/commons/fff/Pitcairn_-_Church_of_Adamstown.jpg) *License:* CC-BY-SA-3.0 *Contributors:* Own work *Original artist:* Makemake at German Wikipedia
- **File:Pitcairn\_Islanders,\_1916.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/2a/Pitcairn\\_Islanders%2C\\_1916.jpg](https://upload.wikimedia.org/wikipedia/commons/2/2a/Pitcairn_Islanders%2C_1916.jpg) *License:* Public domain *Contributors:* <http://www.oceania-ethnographica.com/poly14.html> *Original artist:* Pitcairn Islanders
- **File:Pitcairn\_Islands\_on\_the\_globe\_(French\_Polynesia\_centered).svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/37/Pitcairn\\_Islands\\_on\\_the\\_globe\\_%28French\\_Polynesia\\_centered%29.svg](https://upload.wikimedia.org/wikipedia/commons/3/37/Pitcairn_Islands_on_the_globe_%28French_Polynesia_centered%29.svg) *License:* CC BY-SA 3.0 *Contributors:* *Original artist:*TUBS\*  

```
<a href="//commons.wikimedia.org/wiki/User_talk:TUBS" title="User talk:TUBS"></a> <a href="http://toolserv.org/~{ }daniel/WikiSense/Gallery.php?wikifam=commons.wikimedia.org.<span>,&</span>img_user_text=TUBS" title="Gallery" data-x-rel="nofollow"></a>
```
- **File:Pohnpei.png** *Source:* <https://upload.wikimedia.org/wikipedia/commons/1/17/Pohnpei.png> *License:* CC BY-SA 2.5 *Contributors:* No machine readable source provided. Own work assumed (based on copyright claims). *Original artist:* No machine readable author provided. Aotearoa assumed (based on copyright claims).

- **File:Polynésie\_française\_collectivity\_location\_map.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/46/Polyn%C3%A9sie\\_fran%C3%A7aise\\_collectivity\\_location\\_map.svg](https://upload.wikimedia.org/wikipedia/commons/4/46/Polyn%C3%A9sie_fran%C3%A7aise_collectivity_location_map.svg) *License:* CC BY-SA 3.0 *Contributors:* Own work  
*Source of data:* NGDC GSHHS (public domain). *Original artist:* Eric Gaba (Sting - fr:Sting)
- **File:Poonsaan1v2.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/en/5/50/Poonsaan1v2.jpg> *License:* Public domain *Contributors:* ?  
*Original artist:* ?
- **File:Poonsaan2.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/3/32/Poonsaan2.jpg> *License:* Public domain *Contributors:* ?  
*Original artist:* ?
- **File:Portal-puzzle.svg** *Source:* <https://upload.wikimedia.org/wikipedia/en/f/fd/Portal-puzzle.svg> *License:* Public domain *Contributors:* ?  
*Original artist:* ?
- **File:Portugal\_Império\_total.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/7e/Portugal\\_Imp%C3%A9rio\\_total.png](https://upload.wikimedia.org/wikipedia/commons/7/7e/Portugal_Imp%C3%A9rio_total.png) *License:* Public domain *Contributors:* Transferred from en.wikipedia to Commons. *Original artist:* The Ogre at English Wikipedia Later versions were uploaded by The Red Hat of Pat Ferrick at en.wikipedia.
- **File:PrefSymbol-Tokyo.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/c/cb/PrefSymbol-Tokyo.svg> *License:* Public domain *Contributors:* Own work *Original artist:* User:Pmx
- **File:Premna\_Shrubland.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/d9/Premna\\_Shrubland.png](https://upload.wikimedia.org/wikipedia/commons/d/d9/Premna_Shrubland.png) *License:* Public domain *Contributors:* U.S. NAVY NAVSUPFAC DIEGO GARCIA, Natural Resources Management Plan, 2005 *Original artist:* U.S. Navy
- **File:PribilofIslands.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/2/20/PribilofIslands.jpg> *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Puerto\_sobre\_Rio\_Genio\_Isla\_del\_Coco.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a4/Puerto\\_sobre\\_Rio\\_Genio\\_Isla\\_del\\_Coco.JPG](https://upload.wikimedia.org/wikipedia/commons/a/a4/Puerto_sobre_Rio_Genio_Isla_del_Coco.JPG) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Axxis10
- **File:Pukapuka.png** *Source:* <https://upload.wikimedia.org/wikipedia/commons/8/81/Pukapuka.png> *License:* Public domain *Contributors:* Own work *Original artist:* Nevers
- **File:Pukapuka\_Aerial\_efs\_1280.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/e/ec/Pukapuka\\_Aerial\\_efs\\_1280.jpg](https://upload.wikimedia.org/wikipedia/commons/e/ec/Pukapuka_Aerial_efs_1280.jpg) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* EwanSmith
- **File:Queen\_of\_Easter\_Island\_meets\_Pinart\_in\_1877.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a8/Queen\\_of\\_Easter\\_Island\\_meets\\_Pinart\\_in\\_1877.jpg](https://upload.wikimedia.org/wikipedia/commons/a/a8/Queen_of_Easter_Island_meets_Pinart_in_1877.jpg) *License:* Public domain *Contributors:* <http://www.chauvet-translation.com/addlfigs.htm> *Original artist:* Émile Bayard
- **File:Question\_book-new.svg** *Source:* [https://upload.wikimedia.org/wikipedia/en/9/99/Question\\_book-new.svg](https://upload.wikimedia.org/wikipedia/en/9/99/Question_book-new.svg) *License:* Cc-by-sa-3.0 *Contributors:* Created from scratch in Adobe Illustrator. Based on Image:Question book.png created by User:Equazcion *Original artist:* Tkgd2007
- **File:RMS\_St\_Helena.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/2/2d/RMS\\_St\\_Helena.jpg](https://upload.wikimedia.org/wikipedia/commons/2/2d/RMS_St_Helena.jpg) *License:* Public domain *Contributors:* Own work *Original artist:* Burgh House
- **File:Rano-Kau-2b-Birdman-Cult.JPG** *Source:* <https://upload.wikimedia.org/wikipedia/commons/2/29/Rano-Kau-2b-Birdman-Cult.JPG> *License:* CC-BY-SA-3.0 *Contributors:* <http://www.ianandwendy.com/OtherTrips/SouthPacific/Easter-Island/index.htm> *Original artist:* Ian Sewell
- **File:Rapa-Nui-Landscape.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/a/a5/Rapa-Nui-Landscape.jpg> *License:* CC BY-SA 3.0 *Contributors:* Own work by uploader, <http://bjornfree.com/galleries.html> *Original artist:* Bjørn Christian Tørrissen
- **File:Rapa\_nui\_cyark\_2.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/ad/Rapa\\_nui\\_cyark\\_2.jpg](https://upload.wikimedia.org/wikipedia/commons/a/ad/Rapa_nui_cyark_2.jpg) *License:* CC BY-SA 3.0 *Contributors:* <http://archive.cyark.org/hare-moa-chicken-house-scan-shot-1-media> *Original artist:* CyArk
- **File:Red-footed\_booby.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/0/0c/Red-footed\\_booby.jpg](https://upload.wikimedia.org/wikipedia/commons/0/0c/Red-footed_booby.jpg) *License:* Public domain *Contributors:* Palmyra Atoll NWR (archive) *Original artist:* USFWS
- **File:Red-tailed\_Tropicbird3.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/86/Red-tailed\\_Tropicbird3.jpg](https://upload.wikimedia.org/wikipedia/commons/8/86/Red-tailed_Tropicbird3.jpg) *License:* CC BY-SA 3.0 *Contributors:* Own work  
The image was is a scan of the old print. *Original artist:* Brocken Inaglory / Brocken Inaglory
- **File:Red\_pog.svg** *Source:* [https://upload.wikimedia.org/wikipedia/en/0/0c/Red\\_pog.svg](https://upload.wikimedia.org/wikipedia/en/0/0c/Red_pog.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Red\_triangle\_with\_thick\_white\_border.svg** *Source:* [https://upload.wikimedia.org/wikipedia/en/3/39/Red\\_triangle\\_with\\_thick\\_white\\_border.svg](https://upload.wikimedia.org/wikipedia/en/3/39/Red_triangle_with_thick_white_border.svg) *License:* PD *Contributors:* Self-made  
*Original artist:* Anomie✂
- **File:Reichskolonialflagge.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/c/cd/Reichskolonialflagge.svg> *License:* Attribution *Contributors:* Own work *Original artist:* Drawing created by David Liuzzo
- **File:Relief\_Map\_of\_Sakhalin\_Oblast.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/4e/Relief\\_Map\\_of\\_Sakhalin\\_Oblast.svg](https://upload.wikimedia.org/wikipedia/commons/4/4e/Relief_Map_of_Sakhalin_Oblast.svg) *License:* Public domain *Contributors:* *Original artist:* Виктор В
- **File:Rob-cru.png** *Source:* <https://upload.wikimedia.org/wikipedia/commons/7/7d/Rob-cru.png> *License:* Public domain *Contributors:* Own work *Original artist:* Gi
- **File:Rongo-rongo\_script.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/76/Rongo-rongo\\_script.jpg](https://upload.wikimedia.org/wikipedia/commons/7/76/Rongo-rongo_script.jpg) *License:* Public domain *Contributors:* Englert, Sebastian; edited and translated by William Mulloy (1970) *Island at the Center of the World*, New York City: Charles Scribner's Sons *Original artist:* Unknown

- **File:Ropingpeg.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/1/1c/Ropingpeg.jpg> *License:* CC BY-SA 2.0 *Contributors:* Geograph *Original artist:* Bob Jones
- **File:RoyalPenguins4.JPG** *Source:* <https://upload.wikimedia.org/wikipedia/commons/0/0d/RoyalPenguins4.JPG> *License:* Public domain *Contributors:* Own work *Original artist:* M. Murphy
- **File:Rudolf\_Island.PNG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/ab/Rudolf\\_Island.PNG](https://upload.wikimedia.org/wikipedia/commons/a/ab/Rudolf_Island.PNG) *License:* Public domain *Contributors:* own work based on PD map *Original artist:* edited by M.Minderhoud
- **File:SMS\_Dresden\_before\_scuttling.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/dc/SMS\\_Dresden\\_before\\_scuttling.jpg](https://upload.wikimedia.org/wikipedia/commons/d/dc/SMS_Dresden_before_scuttling.jpg) *License:* Public domain *Contributors:* *Original artist:* Stephen Hodges
- **File:Stac\_an\_Armin\_and\_Boreray.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/0/0a/Stac\\_an\\_Armin\\_and\\_Boreray.jpg](https://upload.wikimedia.org/wikipedia/commons/0/0a/Stac_an_Armin_and_Boreray.jpg) *License:* CC BY-SA 2.0 *Contributors:* *Original artist:* Stephen Hodges
- **File:Staclevinish.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/8/81/Staclevinish.jpg> *License:* CC BY-SA 2.0 *Contributors:* Geograph *Original artist:* Stephen Hodges
- **File:Stamp\_Ascension\_1937\_1.5p.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/1/19/Stamp\\_Ascension\\_1937\\_1.5p.jpg](https://upload.wikimedia.org/wikipedia/commons/1/19/Stamp_Ascension_1937_1.5p.jpg) *License:* Public domain *Contributors:* scanned May 2005 by User:Stan Shebs *Original artist:* ?
- **File:Stamp\_Christmas\_Island\_1958\_2c.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/6/67/Stamp\\_Christmas\\_Island\\_1958\\_2c.jpg](https://upload.wikimedia.org/wikipedia/commons/6/67/Stamp_Christmas_Island_1958_2c.jpg) *License:* Public domain *Contributors:* eBay item 220728357784 *Original artist:* Postal administration of Christmas Island governed by Australia
- **File:Stkildachurch.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/1/14/Stkildachurch.jpg> *License:* CC BY-SA 2.0 *Contributors:* *Original artist:* Bob Jones
- **File:Stonehenge-Green.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/a/a6/Stonehenge-Green.jpg> *License:* Attribution *Contributors:* Own work *Original artist:* Mactographer
- **File:TakuuVillage.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/7/7d/TakuuVillage.jpg> *License:* CC-BY-SA-3.0 *Contributors:* Professor Richard Moyle, Auckland University *Original artist:* Hamish MacDonald
- **File:Takuu\_ISS002-E-5632\_2.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a9/Takuu\\_ISS002-E-5632\\_2.jpg](https://upload.wikimedia.org/wikipedia/commons/a/a9/Takuu_ISS002-E-5632_2.jpg) *License:* Public domain *Contributors:* <http://eol.jsc.nasa.gov/scripts/sseop/photo.pl?mission=ISS002&roll=E&frame=5632> *Original artist:* NASA
- **File:Taongi\_Atoll\_-\_EVS\_Precision\_Map\_(1-110,000).jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/db/Taongi\\_Atoll\\_-\\_EVS\\_Precision\\_Map\\_%281-110,000](https://upload.wikimedia.org/wikipedia/commons/d/db/Taongi_Atoll_-_EVS_Precision_Map_%281-110%2C000%29.jpg) *License:* CC BY 2.0 *Contributors:* Taongi Atoll - EVS Precision Map (1-110,000) *Original artist:* Mr Minton from San Diego, US
- **File:Taongi\_Beach\_&\_Lagoon.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/99/Taongi\\_Beach\\_%26\\_Lagoon.jpg](https://upload.wikimedia.org/wikipedia/commons/9/99/Taongi_Beach_%26_Lagoon.jpg) *License:* CC BY 3.0 *Contributors:* email attachment from the author. *Original artist:* A. E. “Buzz” Jehle N5UR
- **File:Taongi\_Frigatebird.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/f/f0/Taongi\\_Frigatebird.jpg](https://upload.wikimedia.org/wikipedia/commons/f/f0/Taongi_Frigatebird.jpg) *License:* CC BY 3.0 *Contributors:* email attachment from the author. *Original artist:* A. E. “Buzz” Jehle N5UR
- **File:Taongi\_Grey\_Reef\_Shark.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/en/7/79/Taongi\\_Grey\\_Reef\\_Shark.jpg](https://upload.wikimedia.org/wikipedia/en/7/79/Taongi_Grey_Reef_Shark.jpg) *License:* CC-BY-3.0 *Contributors:* email attachment from the author. *Original artist:* A. E. “Buzz” Jehle N5UR
- **File:Taongi\_IJN\_Landing\_Craft.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/74/Taongi\\_IJN\\_Landing\\_Craft.jpg](https://upload.wikimedia.org/wikipedia/commons/7/74/Taongi_IJN_Landing_Craft.jpg) *License:* CC BY 3.0 *Contributors:* [http://www.lst1138.com/sitebuilder/images/\\_lwf0004\\_Copy\\_1\\_-250x194.jpg](http://www.lst1138.com/sitebuilder/images/_lwf0004_Copy_1_-250x194.jpg) *Original artist:* Joe Lewin
- **File:Taongi\_Lagoon\_Shore.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/en/7/71/Taongi\\_Lagoon\\_Shore.jpg](https://upload.wikimedia.org/wikipedia/en/7/71/Taongi_Lagoon_Shore.jpg) *License:* CC-BY-3.0 *Contributors:* email attachment from the author. *Original artist:* A. E. “Buzz” Jehle N5UR
- **File:Taongi\_Red\_Footed\_Booby.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/en/4/4e/Taongi\\_Red\\_Footed\\_Booby.jpg](https://upload.wikimedia.org/wikipedia/en/4/4e/Taongi_Red_Footed_Booby.jpg) *License:* CC-BY-3.0 *Contributors:* email attachment from the author. *Original artist:* A. E. “Buzz” Jehle N5UR
- **File:Taongi\_test\_site\_master\_plan.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/1/19/Taongi\\_test\\_site\\_master\\_plan.jpg](https://upload.wikimedia.org/wikipedia/commons/1/19/Taongi_test_site_master_plan.jpg) *License:* Public domain *Contributors:* <http://www.osti.gov/opennet/servlets/purl/16001469-XdvwQD/16001469.pdf> *Original artist:* R H Campbell, LASL
- **File:Ted\_Morris\_on\_Diego\_Garcia.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/84/Ted\\_Morris\\_on\\_Diego\\_Garcia.jpg](https://upload.wikimedia.org/wikipedia/commons/8/84/Ted_Morris_on_Diego_Garcia.jpg) *License:* CC BY-SA 2.0 *Contributors:* Ted on the Track *Original artist:* Serendigity from Maleny, Australia
- **File:Teplitz\_Bay.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/e/eb/Teplitz\\_Bay.jpg](https://upload.wikimedia.org/wikipedia/commons/e/eb/Teplitz_Bay.jpg) *License:* Public domain *Contributors:* Fiala, Anthony (1907) *Fighting the Polar Ice*, London: Hodder and Stroughton *Original artist:* Anthony Fiala
- **File:Terrestrial\_globe.svg** *Source:* [https://upload.wikimedia.org/wikipedia/en/6/6b/Terrestrial\\_globe.svg](https://upload.wikimedia.org/wikipedia/en/6/6b/Terrestrial_globe.svg) *License:* CC-BY-SA-3.0 *Contributors:* ? *Original artist:* ?
- **File:Text\_document\_with\_red\_question\_mark.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a4/Text\\_document\\_with\\_red\\_question\\_mark.svg](https://upload.wikimedia.org/wikipedia/commons/a/a4/Text_document_with_red_question_mark.svg) *License:* Public domain *Contributors:* Created by bdesham with Inkscape; based upon Text-x-generic.svg from the Tango project. *Original artist:* Benjamin D. Esham (bdesham)

- **File:The Flag of Ascension Island.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/6/65/Flag\\_of\\_Ascension\\_Island.svg](https://upload.wikimedia.org/wikipedia/commons/6/65/Flag_of_Ascension_Island.svg) *License:* CC BY-SA 3.0 *Contributors:* <http://www.ascension-island.gov.ac/wp-content/uploads/2013/05/P1030625-Copy.jpg>, uses [http://upload.wikimedia.org/wikipedia/commons/2/23/Coat\\_of\\_Arms\\_of\\_Ascension\\_Island.svg](http://upload.wikimedia.org/wikipedia/commons/2/23/Coat_of_Arms_of_Ascension_Island.svg) *Original artist:* HowFalcons
- **File:The O Club on Diego Garcia.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/5/5d/The\\_O\\_Club\\_on\\_Diego\\_Garcia.jpg](https://upload.wikimedia.org/wikipedia/commons/5/5d/The_O_Club_on_Diego_Garcia.jpg) *License:* CC BY-SA 2.0 *Contributors:* O Club *Original artist:* Serendigity from Maleny, Australia
- **File:The Street.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/b/b1/The\\_Street.jpg](https://upload.wikimedia.org/wikipedia/commons/b/b1/The_Street.jpg) *License:* CC BY-SA 2.0 *Contributors:* From [geograph.org.uk](http://geograph.org.uk) *Original artist:* Des Colhoun
- **File:Thomas Muir\_-\_schottischer\_Volksfreund.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/4a/Thomas\\_Muir\\_-\\_schottischer\\_Volksfreund.jpg](https://upload.wikimedia.org/wikipedia/commons/4/4a/Thomas_Muir_-_schottischer_Volksfreund.jpg) *License:* Public domain *Contributors:* <http://www.erudit.org/revue/ron/2007/vn46/016131arf019n.jpg> *Original artist:* Unknown
- **File:Thornton, St Helena.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/1/1a/Thornton%2C\\_St\\_Helena.jpg](https://upload.wikimedia.org/wikipedia/commons/1/1a/Thornton%2C_St_Helena.jpg) *License:* Public domain *Contributors:* [themaritimegallery.co.uk](http://themaritimegallery.co.uk) *Original artist:* Thornton, engraver, fl. 1790
- **File:TikopiaMap.png** *Source:* <https://upload.wikimedia.org/wikipedia/commons/a/ad/TikopiaMap.png> *License:* CC-BY-SA-3.0 *Contributors:* Uploaded from en.wikipedia. Original source description: "This map's source is here, with the uploader's modifications, and the GMT homepage says that the tools are released under the GNU General Public License." *Original artist:* en>User:Kelisi (Transferred by Triggerhappy)
- **File:Tikopia\_ISS002.PNG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/8e/Tikopia\\_ISS002.PNG](https://upload.wikimedia.org/wikipedia/commons/8/8e/Tikopia_ISS002.PNG) *License:* Public domain *Contributors:* Astronaut Photography of Earth *Original artist:* Image courtesy of Earth Sciences and Image Analysis Laboratory, NASA Johnson Space Center
- **File:Tikopia\_historical.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/4c/Tikopia\\_historical.jpg](https://upload.wikimedia.org/wikipedia/commons/4/4c/Tikopia_historical.jpg) *License:* Public domain *Contributors:* [http://www.lib.utexas.edu/maps/historical/pacific\\_islands\\_1943\\_1945/tikopia.jpg](http://www.lib.utexas.edu/maps/historical/pacific_islands_1943_1945/tikopia.jpg) *Original artist:* U.S. Navy?
- **File:Topographic map of Saint Helena-en.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/e/e7/Topographic\\_map\\_of\\_Saint\\_Helena-en.svg](https://upload.wikimedia.org/wikipedia/commons/e/e7/Topographic_map_of_Saint_Helena-en.svg) *License:* CC BY-SA 3.0 *Contributors:* *Original artist:* Oona Räisänen (Mysid)
- **File:Topographical map of the Antipodes Islands in English.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/9/9b/Topographical\\_map\\_of\\_the\\_Antipodes\\_Islands\\_in\\_English.svg](https://upload.wikimedia.org/wikipedia/commons/9/9b/Topographical_map_of_the_Antipodes_Islands_in_English.svg) *License:* GFDL 1.2 *Contributors:*
- **File:Translation to english arrow.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/8/8a/Translation\\_to\\_english\\_arrow.svg](https://upload.wikimedia.org/wikipedia/commons/8/8a/Translation_to_english_arrow.svg) *License:* CC-BY-SA-3.0 *Contributors:* Transferred from en.wikipedia; transferred to Commons by User:Faigl.ladislav using CommonsHelper. *Original artist:* tkgd2007. Original uploader was Tkgd2007 at en.wikipedia
- **File:Tristan Map.png** *Source:* [https://upload.wikimedia.org/wikipedia/commons/3/3d/Tristan\\_Map.png](https://upload.wikimedia.org/wikipedia/commons/3/3d/Tristan_Map.png) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Tristan da Cunha, British overseas territory-20March2012.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/78/Tristan\\_da\\_Cunha%2C\\_British\\_overseas\\_territory-20March2012.jpg](https://upload.wikimedia.org/wikipedia/commons/7/78/Tristan_da_Cunha%2C_British_overseas_territory-20March2012.jpg) *License:* CC BY 2.0 *Contributors:* Tristan da Cunha - a perfect volcanic cone *Original artist:* Brian Gratwicke from DC, USA
- **File:Tristan da Cunha4.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/e/e2/Tristan\\_da\\_Cunha4.jpg](https://upload.wikimedia.org/wikipedia/commons/e/e2/Tristan_da_Cunha4.jpg) *License:* CC-BY-SA-3.0 *Contributors:* flickr *Original artist:* Chris and Steve at flickr
- **File:Tristan da Cunha location.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/a/a0/Tristan\\_da\\_Cunha\\_location.JPG](https://upload.wikimedia.org/wikipedia/commons/a/a0/Tristan_da_Cunha_location.JPG) *License:* CC-BY-SA-3.0 *Contributors:* Transferred from en.wikipedia; transferred to Commons by User:Smooth\_O using CommonsHelper. *Original artist:* Astrotrain at en.wikipedia
- **File:Tristanfromspace.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/3/37/Tristanfromspace.jpg> *License:* Public domain *Contributors:* <http://earthobservatory.nasa.gov/IOTD/view.php?id=80456> *Original artist:* NASA
- **File:Tromelin.jpg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/b/b2/Tromelin.jpg> *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Tromelin aerial photograph.JPG** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/c4/Tromelin\\_aerial\\_photograph.JPG](https://upload.wikimedia.org/wikipedia/commons/c/c4/Tromelin_aerial_photograph.JPG) *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Jean-Claude Hanon
- **File:USA Alaska location map.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/d/df/USA\\_Alaska\\_location\\_map.svg](https://upload.wikimedia.org/wikipedia/commons/d/df/USA_Alaska_location_map.svg) *License:* CC BY 3.0 *Contributors:* Own work *Original artist:* Alexrk2
- **File:Unbalanced scales.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/f/fe/Unbalanced\\_scales.svg](https://upload.wikimedia.org/wikipedia/commons/f/fe/Unbalanced_scales.svg) *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Uria lomvia 2.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/7/72/Uria\\_lomvia\\_2.jpg](https://upload.wikimedia.org/wikipedia/commons/7/72/Uria_lomvia_2.jpg) *License:* CC-BY-SA-3.0 *Contributors:* Own work *Original artist:* Michael Haferkamp
- **File:V73T Ham Shack.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/c/cc/V73T\\_Ham\\_Shack.jpg](https://upload.wikimedia.org/wikipedia/commons/c/cc/V73T_Ham_Shack.jpg) *License:* CC BY 3.0 *Contributors:* Transferred from en.wikipedia; transferred to Commons by User:Kurpfalzbilder.de using CommonsHelper. *Original artist:* A. E. "Buzz" Jehle N5UR. Original uploader was Cmhol at en.wikipedia
- **File:WW1 Landing at Direction Island.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/5/5c/WW1\\_Landing\\_at\\_Direction\\_Island.jpg](https://upload.wikimedia.org/wikipedia/commons/5/5c/WW1_Landing_at_Direction_Island.jpg) *License:* Public domain *Contributors:* This image is available from the Collection Database of the Australian War Memorial under the ID Number: H12436

This tag does not indicate the copyright status of the attached work. A normal copyright tag is still required. See Commons:Licensing for more information. *Original artist:* Donated to the Australian War Memorial collections by the Imperial War Museum, where it is listed as item Q22706.

- **File:War flag of the Imperial Japanese Army.svg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/0/06/War\\_flag\\_of\\_the\\_Imperial\\_Japanese\\_Army.svg](https://upload.wikimedia.org/wikipedia/commons/0/06/War_flag_of_the_Imperial_Japanese_Army.svg) *License:* Public domain *Contributors:* Own work, based on: Flags of the World - Japanese military flags, Japanese Rising Sun Flag and Drapeau-japonais-seconde-guerre-mondiale.jpg *Original artist:* Thommy

- **File:Wikibooks-logo.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/f/fa/Wikibooks-logo.svg> *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* User:Bastique, User:Ramac et al.
- **File:Wikinews-logo.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/2/24/Wikinews-logo.svg> *License:* CC BY-SA 3.0 *Contributors:* This is a cropped version of *Image:Wikinews-logo-en.png*. *Original artist:* Vectorized by Simon 01:05, 2 August 2006 (UTC) Updated by Time3000 17 April 2007 to use official Wikinews colours and appear correctly on dark backgrounds. Originally uploaded by Simon.
- **File:Wikiquote-logo.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/f/fa/Wikiquote-logo.svg> *License:* Public domain *Contributors:* ? *Original artist:* ?
- **File:Wikisource-logo.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/4/4c/Wikisource-logo.svg> *License:* CC BY-SA 3.0 *Contributors:* *Original artist:*Nicholas Moreau
- **File:Wikispecies-logo.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/d/df/Wikispecies-logo.svg> *License:* CC BY-SA 3.0 *Contributors:* *Image:Wikispecies-logo.jpg* *Original artist:* (of code) cs:User:-xfi-
- **File:Wikiversity-logo-Snorky.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/1/1b/Wikiversity-logo-en.svg> *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* Snorky
- **File:Wikivoyage-Logo-v3-icon.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/d/dd/Wikivoyage-Logo-v3-icon.svg> *License:* CC BY-SA 3.0 *Contributors:* Own work *Original artist:* AleXXw
- **File:Wiktionary-logo-en.svg** *Source:* <https://upload.wikimedia.org/wikipedia/commons/f/f8/Wiktionary-logo-en.svg> *License:* Public domain *Contributors:* Vector version of *Image:Wiktionary-logo-en.png*. *Original artist:* Vectorized by Fvasconcellos (talk · contribs), based on original logo tossed together by Brion Vibber
- **File:Zenaida\_graysoni.jpg** *Source:* [https://upload.wikimedia.org/wikipedia/commons/4/4e/Zenaida\\_graysoni.jpg](https://upload.wikimedia.org/wikipedia/commons/4/4e/Zenaida_graysoni.jpg) *License:* CC-BY-SA-3.0 *Contributors:* Own work *Original artist:* Magalhães
- **File:大洋.png** *Source:* <https://upload.wikimedia.org/wikipedia/commons/7/7b/%E5%A4%A7%E6%B4%8B.png> *License:* CC BY 3.0 *Contributors:* A variation of commons' file *Image:World Map Blank.svg* *Original artist:* user:S19991002

## 6.3 Content license

- Creative Commons Attribution-Share Alike 3.0
- Isla.svg
- Ile\_de\_l'ascension.svg
- Lymphad3.jpg
- File:Outline Map of Sakhalin Oblast.svg
- CGIAR-CSI SRTM 90m DEM Digital Elevation database
- Topography and SWBD: NASA Shuttle Radar Topography Mission (SRTM3 v 2.1) edited with 3DEM from Visualization Software LLC, and GRASS GIS  
*Original artist:* Matthewedwards