

Location



Introduction

New Zealand, located in the South Pacific Ocean, consists of two main islands, North and South Island, which are separated by the 32 km wide *Cook Strait*, and hundreds of smaller islands and island groups which include *Stewart Island*, the *Snares Islands*, the *Auckland Islands*, *Campbell Island*, the *Chatham Islands*, the *Bounty Islands* and the *Antipodes Islands*.

The country's 15,134 km of coastline includes coves, bays, fjords, harbours, sandy beaches, steep cliffs and rocky shores. Weather in New Zealand is highly variable, ranging from subtropical summers in the north to subfreezing temperatures inland, however, much of the coast experiences mild temperatures year round. Conditions on the water can be rough with big waves and strong winds, particularly in the Tasman Sea.

Regional Seas and Biogeography

South Pacific Ocean

Tasman Sea

Large Marine Ecosystem: New Zealand Shelf

Habitats

Much of the North Island is ringed by coastal plains, with limestone caverns, caves and underground rivers common on its central west coast.

On the northeastern coast, the Bay of Islands includes more than 125 small islands and secluded coves. The *Bay of Plenty* is largely white sand beach.

On South Island, the larger of the two main islands, the east coast is mainly coastal plain, the Canterbury Plains, while the west coast is much more rugged with fjords, inlets, and rocky cliffs.

- > **Mangroves:** Only present in the northern part of *North Island*, especially in harbours and bays bordering both sides of the island.
- > **Cold-water corals:** Present on both islands, scattered on the south-west and north-east of South island and mainly on the east side of North island from *Cook Strait* all the way north to *Great exhibition Bay*
- > **Seagrasses:** Found on both islands but mainly on *North island* along the bays
- > **Salmarshes:** Found in bays on both islands
- > **Tidal flats:** Found all along the islands

Biodiversity Hotspots

In this section, acronyms are used for some of the most common types of hotspot: National Park (NP), Marine Protected Area (MPA), Important Bird Area (IBA), Important Marine Mammal Area (IMMA), Ramsar Wetland of International Importance (Ramsar).

-> Ramsar sites

The country has four coastal Ramsar sites, two on *North Island* and two on *South Island*.

The *Firth of Thames* (also Shorebird Network site, IBA and IMMA) is a large coastal reserve bounded by a peninsula and mountains with shallow marine waters, mud and grass flats, mangrove swamp and salt marsh. It is important for roosting, wintering and migratory wading birds.

The *Manawatu River mouth and estuary* (also IBA and IMMA) serves as an important feeding area for a wide variety of migratory species, particularly at high tide.

The *Farewell Spit* (also a Nature Reserve, Shorebird Network site, IBA and IMMA) is a long sand spit and intertidal area which is exposed to the Tasman Sea to the north and a dune complex leading to mudflats in the south. This site is an important staging area for migratory shorebirds.

The *Awarua Wetland* (also a Scientific Reserve, IBA and IMMA) is an important migratory staging area for

wading birds, as well as a breeding, feeding molting site for other birds. The habitat includes a coastal lagoon, peatlands, saltmarsh, gravel beach, lakes and ponds.

-> Other protected areas

The majority of New Zealand is covered by protected areas (parks, sanctuaries, reserves, etc.) on both South and North Island as well as almost all smaller islands.

Eight marine mammal sanctuaries provide special protection for marine mammals. *Auckland Islands* (also a marine reserve) is a breeding and feeding ground for New Zealand sea lions as well as a breeding ground for Southern right whales (Port Ross area) during the winter. *Banks Peninsula* (also includes *Akaroa* and *Pōhātū* marine reserves) and *West Coast North Island* (also includes *Tapuae* and *Parininihi* marine reserves) are special protected areas for Hector's dolphin staying in bays and harbours. *Te Pēwhairangi (Bay of Islands)*, *Catlins Coast*, *Clifford and Cloudy Bay*, *Te Waewae Bay* are other important sanctuaries.

New Zealand has also established the *Te Korowai o Te Tai o Marokura* (Kaikoura Marine Management Area) under the Kaikoura Marine Management Act of 2014, which includes the *Te Rohe o Te Whānau Puha Whale Sanctuary* from the *Clarence River* to *Gore Bay*, intended to reduce seismic impacts on marine mammals, and the *Ohau Point New Zealand Fur Seal Sanctuary* to protect the New Zealand Fur Seal breeding colonies.

There are over 35 different marine reserves banning fishing or removing or disturbing any marine life including birds, mammals and reptiles.

-> IBAs

IBAs (coastal and marine) cover most of the *South island* and *North island* and they completely cover smaller islands spread along New Zealand, including *Adams Island*, *Cascade*, *Curtis* and *Cheeseman Islands*, *Disappointment Island*, the *Enderby Group*, *Macauley* and *Hazard Islands*, *Marotere Islands*, *Piopiotaui Mokohinau Islands*, *North Coast Rakiura*, *Taiaroa Head* and *Taragana Hen Island*, hosting breeding populations of multiple sea- and shorebird species. The *Meyer* and *Herald Island* are of particular importance as large numbers of sea- and shorebird species, as well as other groups, crowd the islands. The eastern *Snares Islands* also host a large number of waterbirds.

The *Bank's Peninsula* and *Catlin's Coast* are both IBAs and IMMAs where waterbirds and marine mammals share resources. The *Auckland Island* and *Campbell Island* IBAs are also part of the *New Zealand Subantarctic Islands* IMMA which serves as breeding grounds for seabirds and for pinnipeds including the Endangered New Zealand sea lion, Southern elephant seals and New Zealand fur seals.

-> IMMAs

New Zealand counts 8 designated IMMAs spread between *North Island*, *South Island* as well as *Auckland and Campbell Islands*. Many of the IMMAs, were formed under the Marine Mammal Protection Act of 1978 and are focused on reducing seismic impact on marine mammals.

The *Tikapa Moana Te Moananui a Toi Hauraki Gulf* hosts year-round populations of Bryde whale and dolphins with also regular sightings of whale species. The canyon system of the *Hikurangi Trench* is a calving ground of pygmy sperm whales.

The *Central West Coast, North Island* encompasses the *West Coast North Island Marine Mammal Sanctuary* including harbours which are the preferred habitat for the Māui dolphin. Offshore waters are also used by transient Common bottlenose dolphins and Killer whales for feeding,

Between *South* and *North Island*, the two IMMAs *South Taranaki Bight* and *Marlborough Sounds and Cook Strait* count 35 different marine mammal species including threatened species of dolphins and whales often migrating and also includes colonies of New Zealand fur seals.

On South Island, *Kaikoura* encompasses two important MPAs for Hector's dolphin population and contains several breeding and feeding areas for New Zealand fur seals including the Ohau Point colony.

The *Rakiura Stewart Island and Te Ara a Kiwa* IMMA at the southern part of South Island counts over twenty species or sub-species of whales, dolphins and pinnipeds, including the third largest breeding area for the New Zealand sea lion and a population of Hector's dolphins. The area IMMA is also an important migratory route for Blue, Southern right and Humpback whales.

At risk Wildlife

In this section, some individual wildlife species are mentioned followed by a letter in parentheses. These are species included in the IUCN Red List of Threatened Species within the top three categories of risk - Vulnerable to extinction (VU), Endangered (EN) or Critically Endangered (CR). A more complete list of IUCN listed species is found in Appendix 1.

→ At risk birds

More than 100 species of waterbird are found in New Zealand. Of the eighty-six species of seabird that breed in New Zealand, thirty-eight species exclusively breed there. These include multiple species of albatross, petrel and penguin, many of which are dependent on offshore islands for nesting.

Ducks and shorebirds are found in significant numbers along the coast.

While largely a land-based species, some South Island Takahe (EN), the largest living member of the rail family, have been translocated to predator-free offshore Islands which may increase their risk of oil impact.

→ At risk reptiles

Five species of marine turtle occur in New Zealand waters, but none are known to nest here. Leatherbacks are found all along the coast but are most common around *North Cape* and the eastern coast of *Northland*. Greens are most common around *North Island*, *Rangaunu Harbour* in *Far North*, and *Poor Knight's Island*. Loggerheads are also found mostly around *North Island*. Hawksbill turtles are reported rarely on *North Island*, with occasional reports from as far south as *Cook Strait*. Reports of Olive ridleys in New Zealand are very rare.

In the southernmost area of the country around the *Kermadec Islands* near Tonga, there have been a few records of Green, Leatherback and Hawksbill turtles, however information on these very remote areas is sparse.

→ At risk mammals

Nearly half of the world's whale and dolphin species may be found in New Zealand's waters at various times, including threatened species such as the resident Māui and Hector dolphins (CR) and migratory species such as the Antarctic blue whale (CR), Pygmy blue (EN), Sei (EN), Sperm (EN) and Fin (VU) whales. However, eleven species are most common here. They include Bottlenose and Dusky dolphins, Orca and Southern right whales. The Long-finned pilot whale is known for its regular mass strandings, primarily at *Golden Bay*, *Great Barrier Island*, *Stewart Island* and the *Chatham Islands* occurring mainly from October to February. While the majority of strandings happen in the south of the country in the areas listed above, smaller groups of whales have stranded in the *Far North*, *Coromandel*, *Canterbury* and *Otago*.

Different species of pinnipeds breed on South Island including the New Zealand sea lion (EN) and New Zealand fur seal whose *Ohau Point* colony is the largest breeding colony on the east coast of *South Island* and has other colonies at *Cape Foulwind* and *Tauranga Bay*. Females are present on the colonies much of the year and males arrive for the breeding season in November being at sea from mid-January on. Most pups are born in November. Some Leopard seals may be present on the coast in autumn and winter, with a few remaining in local waters for a year, however no known breeding occurs in New Zealand. Southern elephant seals are resident on the country's sub-Antarctic islands, occasionally making their way to mainland New Zealand and staying for several months.

Past experience with oil spill and potential risks

In 1998 the fishing vessel *Don Wong 529* ran aground off of *Stewart Island* spilling 310 tonnes of fuel oil.

In 2000 the fishing vessel *Sea Fresh 1* spilled 60 tonnes of fuel at the *Chatham Islands*. No wildlife impact was reported in these two first spills but local responders were ready to respond with triage and cleaning stations in case of casualties.

In 2002 the log ship *Jody F Millenium* grounded in *Ginsbourne*, spilling approximately 25 tonnes of fuel along 8 km of coastline and impacting few sea birds which required capture and cleaning.

In 2013, the fishing vessel *Mutiara II* spilled 1,500 litres of diesel fuel in *Napier Harbour* impacting a few seabirds (blue penguins) which were rescued and rehabilitated by local responders including *Massey University's Wildbase*. The same year the *Sureste 700* spilled 3 tonnes of diesel near *Stewart Island* but no wildlife casualties were reported.

The most recent and significant incident occurred in 2011 with the containership *MV Rena* which grounded in the *Bay of Plenty* spilling more than 300 tonnes of bunker fuel and had a serious impact on wildlife. *Massey University's Wildbase Oil Response team* coordinated the response to oiled wildlife, which included numerous penguins, among other species.

The country's oil and gas industry is concentrated offshore in area between *North and South Island* and both southern coasts of *North Island*, and east of *South Island* below *Dunedin*.

International and Regional Treaties and Agreements

→ Oil spill and HNS Response

- d CLC Convention 69
- CLC Protocol 76
- CLC Protocol 92
- FUND Protocol 76
- FUND Protocol 92
- FUND Protocol 2003
- d LLMC Convention 76
- LLMC Protocol 96
- OPRC Convention 90
- HNS Convention 96
- HNS PROT 2010
- OPRC_HNS 2000
- BUNKERS CONVENTION 01

→ Marine Biodiversity Protection

- Noumea Convention and its Protocol Concerning Co-operation in Combating Pollution Emergencies in the South Pacific Region (Emergencies Protocol)
- Memorandum of Understanding Between New Zealand and Australia's Maritime Safety Authority (Tasman Sea)

Oil Spill Response and HNS Spill Response

→ National Contingency Plan?

The National Oil Spill Contingency Plan (NOSCP) was updated in 2020. The plan is reviewed at least every three years, with more frequent reviews if deemed necessary.

→ Role of Competent National Authorities

Under the NOSCP, Maritime New Zealand (MNZ) oversees all marine emergency responses, including oil spills. MNZ manages the Rescue Coordination Centre (NZRCC) which is the first point of contact for spills. A Coordinated Incident Management System (CIMS) is used which is compatible amongst all government agencies for collaboration in the country for any type of emergency response.

Where a Tier 1 or 2 spill occurs within a regional council's waters, response is managed by the council (12 in total) under its Regional Marine Oil Spill Contingency Plan.

In the case of a spill overwhelming a regional team (Tier 3), a member of the National On-Scene Commanders (NOSCs) team oversees a National Response Team which includes trained MNZ responders, regional councils and the maritime industry.

Response to spills in the country's Exclusive Economic Zone but outside of regional council waters is determined by the appointed NOSC.

An Oil Pollution Advisory Committee, appointed by the Minister of Transport which includes interested parties from government and industry as well as members of the Maori communities which have a close relationship with the marine environment, works with MNZ on responses.

Oiled Wildlife Preparedness and Response

→ Formal guidelines?

Under the NOSCP, Massey University's Wildbase team has been contracted by the government to lead the National Oiled Wildlife Response Team (NOWRT) since 1998, which includes personnel trained in oiled wildlife response. The NOSC determines whether to activate the NOWRT.

→ Response objectives and strategy

The current strategy includes prevention of wildlife becoming oiled, as well as pre-emptive capture and relocation, rescue and rehabilitation of oiled wildlife where safe and appropriate.

→ **Euthanasia or rehabilitation?**

Rehabilitation is a primary objective when wildlife is oiled, with euthanasia employed where appropriate on humane grounds.

→ **Impact assessment**

Impact assessment takes place as part of wildlife response, coordinated by Wildbase, under the Department of Conservation (DoC).

→ **Notification and early response**

Wildbase is notified by MNZ if an oiled wildlife response is deemed necessary. Wildbase, in turn, notifies relevant members of the NOWRT.

→ **Wildlife responders**

Under the New Zealand oiled wildlife response system, organisations to be involved, including NGOs, universities and individual researchers are designated by MNZ, the DoC and Massey University's Wildbase. Wildbase and the DoC have trained responders throughout the country. All responders, once trained by Wildbase personnel, become members of the NOWRT.

→ **Cooperation between stakeholders**

During the *MV Rena* response in 2011, MNZ, Wildbase, Auckland Zoo, Pukaha National Wildlife Centre at Mount Bruce, the DoC, the NOWRT and the local Bay of Plenty community and international responders worked closely on rescue, rehabilitation, pre-emptive capture and release of oiled wildlife. Cooperation on preparedness within the country continues. Many other NGOs, particularly members of the Wildlife Rehabilitators Network of New Zealand, would work under the lead of the DoC and Wildbase.

→ **Permanent facilities**

Wildbase's Hospital, within the Veterinary Teaching Hospital at Massey University, is the main facility for rehabilitation of oiled wildlife. Wildbase also maintains 16 regional response kits throughout the country, two mobile cleaning facilities, a mobile response trailer, and equipment for oiled wildlife field response.

→ **Current processes**

Wildbase coordinates exercises for the NOWRT and regional wildlife responders, and assists with exercises coordinated by MNZ. A workshop for NOWRT members on the country's online oil spill response emergency management software was held in 2020.

The New Zealand NOSCP is reviewed at least every three years, with provision for further review based on any Tier 3 incidents where the plan was used, or lessons learned during response training and exercises. Massey University supports the revision process regarding the Tier 3 wildlife response operational plan and MNZ holds regular training and exercises involving wildlife under DoC and Wildbase direction.

Documentation and references

- ITOPF Country Profile (2018): <https://www.itopf.org/knowledge-resources/countries-territories-regions/new-zealand/>
- IMO (2021): <https://www.imo.org/en/About/Conventions/Pages/StatusOfConventions.aspx>
- Birdlife Data Zone: <http://datazone.birdlife.org/country/new-zealand>
- Department of Conservation Maps-Conservation areas: <https://www.doc.govt.nz/map/index.html?layers=Public%20conservation%20areas>
- East Asian-Australasia Flyway Network: <https://www.eaaflyway.net/the-flyway/flyway-site-network/>
- Important Marine Mammal Areas Atlas: <https://www.marinemammalhabitat.org/imma-eatlas/>
- Ramsar: <https://www.ramsar.org/wetland/new-zealand>
- UNEP-WCMC: <https://data.unep-wcmc.org/>
- Kaikoura Marine Management Area: <https://www.doc.govt.nz/kaikoura-marine>
- Maritime New Zealand National Marine Spill Contingency Plan (2020): <https://www.maritimenz.govt.nz/public/environment/responding-to-spills/documents/national-oil-spill-plan-2017.pdf/>
- SPREP: <https://www.sprep.org/>
- Wildbase: https://www.massey.ac.nz/massey/learning/departments/centres-research/wildbase/wildbase_home.cfm

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Appendix 1

→ At risk birds

Common name / Latin name / IUCN Red List Category (CR,EN,VU) / Resident-Migratory (season) / Breeding-Nesting-Pupping (season)

New Zealand storm-petrel / *Fregatta maoriana* / CR / Resident / Breeding/nesting
Magenta petrel / *Pterodroma magenta* / CR / Resident / Breeding/nesting
Whenua Hou Diving petrel / *Pelecanoides whenauhouensis* / CR / Resident / Breeding/nesting
Black stilt / *Himantopus novaeselandiae* / CR / Resident / Breeding/nesting
Southern red-breasted plover / *Charadrius obscurus* / CR / Resident / Breeding/nesting
Blue duck / *Hymenolaimus malacorhynchos* / EN / Resident / Breeding/nesting
Erect-crested penguin / *Eudyptes scalperi* / EN / Resident / Breeding/nesting
Yellow-eyed penguin / *Megadyptes antipodes* / EN / Resident / Breeding/nesting
Northern royal albatross / *Diomedea sanfordi* / EN / Migrant / Breeding/nesting
Antipodean albatross / *Diomedea antipodensis* / EN / Migrant / Breeding/nesting
Indian yellow-nosed albatross / *Thalassarche carteri* / EN / Resident / Breeding/nesting
Grey-headed albatross / *Thalassarche chrysostoma* / EN / Migrant / Breeding/nesting
Westland petrel / *Procellaria westlandica* / EN / Resident / Breeding/nesting
Hutton's shearwater / *Puffinus huttoni* / EN / Resident / Breeding/nesting
Pitt shag / *Phalacrocorax featherstoni* / EN / Resident / Breeding/nesting
Chatham oystercatcher / *Haematopus chathamensis* / EN / Resident / Breeding/nesting
Shore plover / *Thinornis novaeseelandiae* / EN / Resident / Breeding/nesting
Far eastern curlew / *Numenius madagascarensis* / EN / Migrant / Non-breeding
Black-fronted tern / *Chlidonias albobristatus* / EN / Resident / Breeding/nesting
South Island Takahe / *Porphyrio hochstetteri* / EN / Resident / Breeding/nesting
Auckland teal / *Anas aucklandica* / VU / Resident / Breeding/nesting
Campbell teal / *Anas nesiotis* / VU / Resident / Breeding/nesting
Auckland rail / *Lewinia muelleri* / VU / Resident / Breeding/nesting
Weka / *Gallirallus australis* / VU / Resident / Breeding/nesting
Southern rockhopper penguin / *Eudyptes chrysocome* / VU / Resident / Non-breeding
Snares penguin / *Eudyptes robustus* / VU / Resident / Breeding/nesting
Southern royal albatross / *Diomedea epomophora* / VU / Migrant / Breeding/nesting
Wandering albatross / *Diomedea exulans* / VU / Migrant / Non-breeding
Chatham albatross / *Thalassarche eremita* / VU / Migrant / Breeding/nesting
Campbell albatross / *Thalassarche impavida* / VU / Migrant / Breeding/nesting
Salvin's albatross / *Thalassarche salvini* / VU / Migrant / Breeding/nesting
White-winged petrel / *Pterodroma leucoptera* / VU / Migrant / Non-breeding
Cook's petrel / *Pterodroma cookii* / VU / Resident / Breeding/nesting

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Pycroft's petrel / *Pterodroma pycrofti* / VU / Resident / Breeding/nesting
Chatham petrel / *Pterodroma axillaris* / VU / Resident / Breeding/nesting
White-necked petrel / *Pterodroma cervicalis* / VU / Resident / Breeding/nesting
White-chinned petrel / *Procellaria aequinoctialis* / VU / Resident / Breeding/nesting
Black petrel / *Procellaria parkinsoni* / VU / Migrant / Breeding/nesting
Buller's shearwater / *Ardenna bulleri* / VU / Migrant / Breeding/nesting
Rough-faced shag / *Leucocarbo carunculatus* / VU / Resident / Breeding/nesting
Stewart shag / *Leucocarbo chalconotus* / VU / Resident / Breeding/nesting
Chatham shag / *Leucocarbo onslowi* / VU / Resident / Breeding/nesting
Auckland shag / *Leucocarbo colensoi* / VU / Resident / Breeding/nesting
Campbell shag / *Leucocarbo campbelli* / VU / Resident / Breeding/nesting
Bounty shag / *Leucocarbo ranfurlyi* / VU / Resident / Breeding/nesting
Wrybill / *Anarhynchus frontalis* / VU / Resident / Breeding/nesting
Chatham snipe / *Coenocorypha pusilla* / VU / Resident / Breeding/nesting
Fairy tern / *Sterna nereis* / VU / Resident / Breeding/nesting

→ At risk reptiles

Common name / Latin name / IUCN Red List Category (CR,EN,VU) / Resident-Migratory (season) / Breeding-Nesting-Pupping (season)

Hawksbill turtle / *Eretmochelys imbricata* / CR / Migratory / Non-nesting
Green turtle / *Chelonia mydas* / EN / Migratory / Non-nesting
Leatherback turtle / *Dermochelys coriacea* / VU / Migratory / Non-nesting
Loggerhead turtle / *Caretta caretta* / VU / Migratory / Non-nesting
Olive ridley turtle / *Lepidochelys olivacea* / VU / Migratory / Non-nesting

→ At risk mammals

Common name / Latin name / IUCN Red List Category (CR,EN,VU) / Resident-Migratory (season) / Breeding-Nesting-Pupping (season)

Antarctic blue whale / *Balaenoptera musculus* spp. / CR / Migratory / unknown
North Island Hector's (Maui) dolphin / *C. hectori* ssp *maui* / CR / Resident / Breeding/calving
New Zealand sea lion / *Phocarctos hookeri* / EN / Resident / Breeding/calving
Hector's dolphin / *Cephalorhynchus hectori* / EN / Resident / Breeding/calving
Sei whale / *balaenoptera borealis* / EN / Migratory / unknown
Blue whale / *Balaenoptera musculus* / EN / Migratory / unknown
Sperm whale / *Physeter macrocephalus* / EN / Migratory / unknown
Short-beaked common dolphin / *Delphinus delphis* ssp *Ponticus* / VU / Migratory / unknown
Fin whale / *Balaenoptera physalus* / VU / Migratory / unknown