

Location



Introduction

Iceland is an island nation, located at the junction of the North Atlantic and Arctic Oceans. The Arctic Circle passes through Grimsey Island, off the main island's northern coast, between the Faroe Islands and southeast Greenland. The country is bounded by the Greenland Sea to the north, the Norwegian Sea to the east, the Denmark Strait to the west, and the North Atlantic Ocean to the south.

The interior of the country is largely arctic desert with mountains, glaciers, waterfalls and many active volcanoes. Most of the country's vegetation is found in the lowlands near the 4,970 km of coastline. Iceland's climate is maritime with cool summers and mild winters due to the presence of the Gulf Stream. Average summer temperature ranges from 10-13°C, while winter temperature average around 0°C.

Iceland, along with the UK and Ireland, disputes Denmark's claim that the Faroe Islands' continental shelf extends beyond 200 nm.

Regional Seas and Biogeography

North Atlantic Ocean
Greenland Sea
Norwegian Sea
Denmark Strait

LMEs:

Iceland Shelf and Sea.

Habitats

High cliffs dominate the shore to the north and east with brackish and saline lagoons and estuaries, sandy beaches, tidal mudflats and brackish pools to the south. In addition to the mainland, there are approximately 30 minor islands. Numerous fjords dot the coastline.

Kelp beds are extensive around the entire coast. These beds form important habitat for fish and invertebrate species, which are primary food sources for marine birds and mammals.

Cold water corals are found around the southern half of the country with larger concentrations to the east and south. In addition to sequestering carbon dioxide, which counteracts climate change, the beds are nurseries for rockfish and other species which are food sources for marine birds and mammals.

Seagrass beds and rocky seaweed covered shores are important nursery areas for small invertebrates and some fishes, all of which are food sources for marine birds and mammals.

Saltmarshes are largely limited to the Western Region's south facing coasts. These marshes provide buffers against storm surge which provides both safe harbour for animals and prevents loss of land. They are nursery, food and refuge habitat for many fish species.

Tidal flats, both sandy and muddy are significant feeding sites for shorebirds.

High cliffs, both offshore and on the mainland host significant populations of breeding and nesting seabirds.

Biodiversity Hotspots

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

Large areas of the Icelandic coast and nearshore areas are protected under various schemes. The sites listed below are particularly important for marine species.

Ramsar Sites

Andakill Protected Habitat Area is a wetland complex at the estuary of the fjord Borgarfjörður which includes two rivers, the Hvíta and the Andakilsá and the Vatnshamravatn Lake, as well as floodplains, marshes and fields. The area supports numerous resting, feeding and breeding waterbirds, which forage on the mud, sand and gravel bars at low tide.

Grunnafjörður (also a national protected area and IBA) includes a river mouth, estuary and sea bay with extensive mudflats, mussel banks and salt marsh where large numbers of various waterbird species winter and breed. The area is internationally important for Brant Goose (*Branta bernicla*), Red Knot (*Calidris canutus*) and Sanderling (*Calidris alba*).

National Parks

Snaefellsjökull National Park is the first national park and the only coastal national park in Iceland. In addition to the coastline, a glacier covered volcano is the major attraction. The park is also known for its bird cliffs, covered with many seabirds. Marine mammals are common along the shore.

IBAs

IBAs cover much of the coast of Iceland. The sites listed below provide a few examples.

Melrakkaslétta (also an NPA) is a peninsula in northeast Iceland which has intertidal zones, coastal brackish lakes, four seabird nesting cliffs, marshes and freshwater lakes. It hosts many species of breeding waterfowl, raptors and waders and is important for staging waders and moulting geese.

Stokkseyri-Eyrbakki (also an NPA) is a coastal wetland in southern Iceland with a river outlet, saltmarshes, brackish pools and intertidal flats, hosting thousands of breeding, migrating and wintering birds. The area along the shore from the mouth of the Ölfusa River to Loftstadir Farm is one of the most important areas for waterbirds in the entire country.

Longgufjörður (also an NPA) consists of an extensive stretch of estuarine coast encompassing bays, offshore islands, rocky cliffs, intertidal flats, brackish lakes and saltmarshes, hosting breeding seabirds, migratory geese and shorebirds and wintering shorebirds.

Skerjaförður consists of bays, peninsulas, intertidal flats, brackish lagoons and marshes hosting important populations of coastal waterbirds, both wintering and on migration.

National Protected Areas

Iceland has more than 100 NPAs. The list below provides some examples.

The *Hornstrandir* region, on the northern Westfjord Peninsula is important habitat for a number of bird species, as well as one of the most important sites for Arctic Fox (*Alopex lagopus*) in Europe. The region includes seven IBAs, which host a variety of ducks, geese, shorebirds and raptors.

Breiðafjörður (also IBA), is important for wetland bird species, especially during spring and autumn, serving as a resting and feeding area for migrants. Some species overwinter and others use the area for moulting. Within the protected area are Vatnsfjörður, whose mudflats host feeding shorebirds in spring. Seals pup in the area and fox and mink are common.

Blautos and Innstavogsnes includes mudflats, beaches and bays hosting migrating geese and ducks and some nesting duck species.

Neskaupstaður Public Park hosts diverse birdlife, with nesting gulls and seabirds on its cliffs. Ducks, geese and waders are found along the shore, some of which nest in the park. Skruour is a rocky island offshore which is rich in birdlife, including the European Storm-petrel (*Hydrobates pelagicus*) which is protected under the Bern Convention.

The *Ölfusforir* area, the estuary of the river Ölfusá and the Floi Bird Reserve (also an IBA) is a cooperative effort between Fuglavernd, BirdLife International and local government to restore habitat for breeding ducks, geese and seabirds. Migratory and wintering birds also utilise this area.

Stapar and Hellnar Beach host nesting seabirds on the cliffs, and ducks and waders along the beach. Seals and several species of cetacean are found nearshore.

Latrabjarg is the westernmost point in Iceland and hosts hundreds of thousands of breeding and nesting seabirds each year.

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

Seabirds, waders, ducks and geese are found along much of the coast of Iceland. Offshore islands and steep cliffs provide nesting habitat for many pelagic species. The White-tailed Sea Eagle (*Haliaeetus albicilla*), which is primarily a fish-eating species, forages on the coast. Large numbers of wading birds are found on the east coast and many fjords support breeding and migrating birds.

→ At risk reptiles

There are no marine reptiles in Icelandic waters.

→ At risk mammals

Twelve species of whale and dolphin are found in Icelandic waters. In addition to the IUCN Red Listed species in Appendix 1, Humpback Whale (*Megaptera novaeangliae*), Northern Bottlenose Whale (*Hyperoodon ampullatus*), Orca (*Orcinus orca*), Pilot Whale (*Globicephala melas*), Harbour Porpoise (*Phocena phocena*), White-beaked Dolphin (*Lagenorhynchus albirostris*), and White-sided Dolphin (*Lagenorhynchus acutus*) are present at some various times of the year.

Seals and other coastal mammals not listed in Appendix 1 include Grey (*Halichoerus grypus*), Harbour (*Phoca vitulina*), and Harp Seal (*Pagophilus groenlandicus*), Bearded Seal (*Erignathus barbatus*) and Ringed Seal (*Pusa hispida*) may be found on the beaches or offshore, the later three being seen in the north of the country. Of these only the Harbour and Grey Seals pup on the island. Arctic Foxes (*Vulpes lagopus*) forage on the coast and Reindeer (VU), reintroduced in the 1700s, are found mainly in East Iceland.

Past experience with oil spill and potential risks

There have been no major spills in recent years, however, small spills have occurred in remote areas, particularly during winter and bad weather.

A small oil spill occurred in December 2006 when the Russian cargo ship *Wilson Muuga* ran aground in bad weather at Hvalsnesi, on the Reykjanes peninsula in southwest Iceland. The ship only suffered minor damage and most of the heavy fuel oil it was carrying was pumped out of the ship, however about 50 tonnes of heavy fuel oil, 14 tonnes of diesel oil and probably some lubricating oil, spilled into the sea, an unspecified amount of these reached the coastline.

Following the incident, the Environment Agency of Iceland (EAI) contacted the Reyjavik Famil Park and Zoo, which agreed to receive oiled birds for treatment. Approximately 50 Eider (*Somateria* sp) were rehabilitated by the Family Park and Zoo, most of which were released. The Icelandic Institute of Natural History (IINN) gave advice concerning birdlife and the local Public Health Authority regularly monitored beaches in the area. The EAI also organized the removal of oil-contaminated seaweed in cooperation with the Blue Army of Iceland and the Icelandic Coast Guard.

In 2020, oiled birds were found in the Vestmannaeyjar Island and on the south coast of the country. The source of the pollution was never determined. The Sea Life Trust facility in Vestmannaeyjar received oiled birds found in and near the harbour and 4 oiled birds found near Dyrholaey were sent to the Reyjavik Famil Park and Zoo, however, none survived.

A British oil tanker, *El Grillo*, which sank during World War II in the Seyoisfjorour Fjord in in East Iceland, has suffered chronic leaking for a number of years. A significant amount of bunker oil seeped out into the fjord after the attack and the subsequent voluntary sinking, but since then a number of cleanup operations have been undertaken as the ship continues to deteriorate. The Ministry for the Environment, Energy and Climate, in collaboration with the EAI/Umhverfisstofnun/UST), has plans for continuing to manage this problem and stop leaks from the vessel. In 2021, oil leaking from the shipwreck affected immature King Eider (*Somateria spectabilis*) and Common Eider (*Somateria mollissima*), and immature birds of other species.

Iceland's main risk of oil spills comes from shipping and activities related to import and storage of oil. There is no active oil and gas exploration in the country's waters at this time.

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

LLMC Convention 76

LLMC Protocol 96

OPRC Convention 90

HNS Convention 96

HNS PROT 2010

OPRC_HNS 2000

BUNKERS CONVENTION 01

→ Marine Biodiversity Protection

- Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (MOSPA)

- Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA)

- Copenhagen Agreement

- North Atlantic Marine Mammal Commission

Oil Spill Response and HNS Spill Response**→ National Contingency Plan?**

Under the National Contingency Plan, response is coordinated by the the EAI, the Icelandic Coast Guard and the Icelandic Transport Authority. The EAI also maintains its own internal contingency plan.

EAI/UST, in cooperation with Greenland, the Faroe Islands and Norway and funded by the Nordic Council, produced the North Atlantic Sensitivity and Response Map (NASARM), which guides response and prevention activities based on knowledge of natural areas at risk, types of risk present and location of response personnel and equipment.

→ Role of Competent National Authorities

The Icelandic Coast Guard, as the spill notification point for pollution outside of harbour areas, monitors marine pollution, provides for maritime safety, and would initiate response offshore. The Icelandic Coast Guard is also authorised to intervene, taking any necessary measures to prevent or reduce the risk of pollution at sea or along the coast, including taking control of vessels not observing their instructions.

EAI has primary coordinating responsibility for response to acute pollution in marine and coastal environment outside of harbour areas and has the authority to take measures to prevent or reduce the risk of pollution.

In harbour areas, the relevant Port Authority is responsible, while local fire brigades are responsible on land. The Icelandic Institute of Natural History (IINH/Náttúrufræðistofnun Íslands/NI) and the Marine and Freshwater Institute (MFI/Hafrannsóknastofnun/HAFRO), among other institutes, serve in advisory roles when needed.

Oiled Wildlife Preparedness and Response**→ Formal guidelines?**

There are no formal guidelines for oiled wildlife response in Iceland. Potential for response is evaluated on a case by case basis by the EAI.

→ Response objectives and strategy

Objectives and strategy are determined on a case by case basis by the EAI/UST, with input from relevant institutes and other experts, including local Public Health Authorities, however, the primary strategy is to protect habitat and prevent impact on wildlife. The EAI/UST is developing further guidelines on this as of 2022.

→ Euthanasia or rehabilitation?

EAI, in cooperation with outside experts, directs euthanasia and rehabilitation processes during a response.

→ Impact assessment

The EAI, with local Public Health Authorities and relevant environmental and wildlife research institutes, would be involved in impact assessment, based on sensitivity mapping already in place. Fuglavernd, the Icelandic BirdLife International partner, which is active in species and habitat conservation and restoration, including the restoration and management of a nature reserve in the Southern Lowlands, may play a role in avian impact assessment.

→ Notification and early response

The Coast Guard notifies EAI/UST, which then consults with relevant experts to determine what response to take and which agencies, NGOs and institutes to contact.

→ Wildlife responders

While there are no dedicated oiled wildlife responders in Iceland, the relevant institutes listed above, the Reykjavik Zoo, and a number of NGOs such as the Blue Army of Iceland and SeaLife Trust, have responded to incidents in the past and remain ready to assist.

Local Search and Rescue teams (ICE-SAR), which are volunteer-based associations, may also be called upon to assist.

→ Cooperation between stakeholders

The above listed agencies, NGOs, organisations, etc. have worked together in various situations.

→ Permanent facilities

There are no dedicated oiled wildlife responders in Iceland, the relevant institutes listed above, the Reykjavik Family Park and Zoo has capacity for a limited number of oiled birds. SeaLife Trust, whose main entity is based in the UK, has a beluga whale sanctuary in the Vestmannaeyjar Islands, situated in a secluded bay, which includes a landside facility for cetaceans and a small hospital for puffins.

→ Current processes

The EAI, Icelandic Coast Guard and Icelandic Transport Authority, hold annual joint exercises, one tabletop and one live, each year. In addition, these agencies participate in exercises under international agreements on oil pollution preparedness and response.

The EAI also conducts separate exercises, as does the Icelandic Coast Guard

Documentation and references

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Climate: <https://www.ipsinternational.org/what-is-icelands-climate-like>

Ocean Dataviewer: <https://data.unep-wcmc.org/datasets/>

Contingency Plan for Outside of Port Areas: www.ust.is/library/Skrar/Atvinnulif/Haf-og-vatn/Bradamengunarhopp/ADGERDAAAETLUN_MENGUN-UTAN-HAFNA-OG-NOTKUN-SKIPAFDREPA.pdf

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North Atlantic Sensitivity and Response Map: <https://vdocument.in/north-atlantic-sensitivity-and-response-map-nasarm-project-funded-by-the-nordic.html>

Coastal Habitat information: <https://en.ni.is/flora-funga/habitat-types/coastal-habitat-types>

BirdLife Data Zone: <http://datazone.birdlife.org/country>

Marine and Coastal Animals: <https://en.ni.is/fauna/mammals>

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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)

Long-tailed duck / *Clangula hyemalis* / VU / Migratory (Spring/summer) / Breeding/nesting (May-Sept.)
Horned Grebe / *Podiceps auritus* / VU / Migratory (Spring/summer) / Breeding/nesting (Spring/Summer)
Leach's Storm-petrel / *Hydrobates leucorhous* / VU / Migratory (Spring/summer) / Breeding/nesting (Spring/Summer)
Black-legged Kittiwake / *Rissa tridactyla* / VU / Migratory (Spring/summer) / Breeding/nesting (May-Aug)
Atlantic Puffin / *Fratercula arctica* / VU / Migratory (Spring/summer) / Breeding/nesting (Spring/Summer)
Snowy Owl / *Bubo scandiacus* / VU / Migratory (Autumn/winter) / Breeding/nesting (Spring/Summer)

→ At risk reptiles

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

None / / / /

→ At risk mammals

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

Blue Whale / *Balaenoptera musculus* / EN / Migratory (pattern not well understood / Breeding (unknown)/non-calving
Fin Whale / *Balaenoptera physalus* / EN / Migratory (pattern not well understood / Breeding (unknown)/non-calving
Sei Whale / *Balaenoptera physalus* / EN / Migratory (pattern not well understood / Breeding (unknown)/non-calving
Sperm Whale / *Physeter macrocephalus* / VU / Migratory (pattern not well understood / Breeding (unknown)/non-calving
Walrus / *Odobenus rosmarus* / VU / Migratory (winter) / Non-breeding
Hooded Seal / *Cystophora cristata* / VU / Migratory (winter) / Breeding/pupping (spring)
Polar Bear / *Ursus maritimus* / VU / Possible rare migrant / Non-breeding
Reindeer / *Rangifer tarandus* / VU / Resident (reintroduced) / Breeding(Sept-Oct)/calving (June)