

**Introduction**

Iceland is an island located in the North Atlantic, just south of the Arctic circle in between the Faroe Islands and southeast Greenland. The 4,970km long coastline is punctuated by many fjords, which is also where most of the settlements are located. There are 30 minor islands off the Icelandic coast and the majority of the landmass is tundra, lakes and glaciers. Iceland is highly geologically active with many volcanoes – eruptions are experienced on an average of once every five years. The Gulf stream warms Iceland and despite its proximity to the Arctic, the island's coasts remain ice-free through the winter. Iceland has one coastal national park: Snæfellsjökull National Park.

The risk of oil spills around Iceland comes mainly from shipping of fuel imports. Oil and gas exploration on the Continental Shelf is in an early phase and a number of areas are opening up for drilling. However, at present no exploration and production licences have been granted. In 2004, a GIS-based sensitivity map was compiled by a team from the Environment Agency of Iceland, the Institute of Natural History, the Marine Research Institute of Iceland and the Icelandic Maritime Administration. These maps contain information on the distribution of seabirds, coastal birds and seals off the southwest Icelandic coast. The Environment Agency of Iceland is the lead partner of a project to compile a North Atlantic Sensitivity and Response Map (NASARM), together with Greenland, the Faroe Islands and Norway. These maps will be published on the internet during 2011.

Very large numbers of seabirds can be found along sea cliffs in the summer. There are also a few species which overwinter in Iceland but migrate further north during the summer to feed and nest. Iceland is a major stop-over for birds who spend winters in Europe and breed in summer on Greenland and north-eastern Canada. Sea and coastal bird species known to occur in Iceland are: common guillemot (*Uria aalge*), Brünnich's guillemot (*Uria lomvia*), razorbill (*Alca torda*), Atlantic puffin (*Fratercula arctica*), black guillemot (*Cepphus grylle*), little auk (*Alle alle*), fulmar (*Fulmarus glacialis*), Manx shearwater (*Puffinus puffinus*), storm petrel (*Hydrobates pelagicus*), Leach's petrel (*Oceanodroma leucorhoa*), European Shag (*Phalacrocorax aristotelis*), great cormorant (*Phalacrocorax carbo*), northern gannet (*Morus bassanus*), kittiwake (*Rissa tridactylla*), arctic tern (*Sterna paradisaea*), great skua (*Stercorarius skua*) and Arctic Skua (*Stercorarius parasiticus*), common eider (*Somateria mollissima*), black-headed gull (*Larus ridibundus*), herring gull (*Larus argentatus*), glaucous gull (*Larus hyperboreus*), common gull (*Larus canus*), great black-backed gull (*Larus marinus*), lesser black-backed gull (*Larus fuscus*), Iceland gull (*Larus glaucides*), ivory gull (*Pagophila eburnea*), black headed gull (*Larus ridibundus*), white wagtail (*Motacilla alba*), oystercatcher (*Haematopus ostralegus*), ringed plover (*Charadrius hiaticula*) and purple sandpiper (*Calidris maritima*). During the spring and autumn a large number of migratory birds, including the Brent goose (*Branta bernicla*), turnstone (*Arenaria interpres*) and knot (*Calidris canuta*) visit the region. Icelandic people gather eggs of some cliff bird species (e.g. guillemots, razorbills, puffins) and auks are hunted as a delicacy. Eider duck feathers are harvested from nests and in return farmers actively protect nesting sites during the breeding period.

Common (*Phoca vitulina*) and grey seals (*Halichoerus grypus*) are known to occur along Icelandic coasts, although not in large numbers. Cetaceans such as killer whales (*Orcinus orca*), minke whales (*Balaenoptera acutorostrata*) and harbour porpoises (*Phocoena phocoena*) are common around Snæfellsnes Peninsula on the west coast. Commercial whaling is practiced intermittently along with scientific whale hunts. Polar bears (*Ursus maritimus*) occasionally visit the island, travelling on icebergs from Greenland. There is no resident Icelandic population of polar bears.

**Regional Seas**

Northeast Atlantic Ocean, Norwegian Sea. Iceland is a member of the Arctic Council.

**Past experience**

No major incidents have occurred. A small oil spill occurred in December 2006 when the Russian cargo ship Wilson Muuga ran aground in bad weather on Hvalsnesi, near Reykjanes on the southwest peninsula. The ship only suffered minor damage and most of the heavy fuel oil it was carrying was pumped out of the ship, however 50 tonnes of heavy fuel oil spilled into the sea and an unspecified amount reached the coastline. Following the incident, the Environment Agency of Iceland and the Institute of Natural History made an assessment of the need to rehabilitate oiled birds and decided to proceed by sending oiled birds to the Reyjavik zoo and Family Park for treatment. The Institute of Natural

Resources also setup a small facility in a local village. 50 eider ducks were rehabilitated by the zoo, of which most were released. The Iceland Institute of Natural History (Náttúrufræðistofnun Íslands) also conducted helicopter surveys of affected seabirds during this incident.

### **Response: the role of the authorities**

Iceland has a national Oil Spill Contingency Plan, but there is no formal wildlife response plan. The Environment Agency of Iceland (under the Ministry of Environment) has overall responsibility for dealing with oiled wildlife as part of their oil spill response. The Environment Agency is assisted by an advisory committee with knowledge and expertise of the affected environment, including sensitive areas and wildlife.

### **Oiled wildlife response**

#### Formal guidelines?

There are no formal guidelines for dealing with oiled wildlife, this is evaluated case by case, based on the risk at the particular time of year, presence of vulnerable/endangered species and feasibility of treating wildlife at the Reykjavik zoo and Family Park (as the only facility that that can rehabilitate oiled wildlife). There are some very inaccessible areas along Iceland's coastline where it would be difficult to collect oiled wildlife.

#### Response objectives and strategy

The authorities are likely to apply a strategy of rehabilitation and euthanasia on a case by case basis.

#### Euthanasia or rehabilitation?

There is no formal plan detailing arrangements for euthanising animals after an oil spill. If asked, the Reykjavik Zoo and Family Park will attempt rehabilitation for selected animals and euthanize those that are not suitable for rehabilitation as decided by veterinarians.

#### Impact assessment

The Institute of Natural History plays an advisory role, providing biological advice when needed to the authorities (Ministry of Environment and Environment Agency) on the potential impact of oil spills on marine wildlife. The Institute operates the Icelandic bird-ringing scheme and is also the umbrella organisation responsible for coordinating monitoring data on wildlife populations following an oil spill, providing a focal point for providing this data to the authorities. In addition to the Institute of Natural History itself, a number of organisations in Iceland carry out scientific monitoring of marine wildlife populations, including ornithologists at the University of Iceland Faculty of Life and Environmental Sciences and to a lesser extent the Marine Research Institute HAFRO (whales) and the Icelandic Seal Centre (Selasetur).

#### Notification and early response

In case of an oil spill emergency at sea, the Icelandic Coastguard would take the first alert and notify the Environment Agency of Iceland as the competent national authority for oil spill response. Together with the Institute of Natural History, these authorities would decide how to deal with any oiled wildlife.

### **Wildlife responders**

The Reykjavik zoo and Family Park has small facilities for treating and rehabilitating oiled birds and seals. They are the only wildlife rescue centre in Iceland able to take in oiled animals and deal with small numbers of oiled birds from time to time. There is no specific experience or facilities for dealing with polar bears in Iceland.

There are some other organisations that may play a role in a wildlife incident. The Icelandic Society for the Protection of Birds (Fuglavernd) is an NGO working on conservation and protection of birds and their habitat and have helped to create a nature reserve in the Southern Lowlands of Iceland. They have worked with the Icelandic Institute of Natural History to lobby for creation of Important Bird Areas in Iceland. The Blue Army Fellowship (Blái Herinn) has an environmental volunteer programme, which provided shoreline cleanup workforce during the Wilson Muuga incident.

### **Cooperation between stakeholders**

There is good collaboration between the Reykjavik Zoo and Family Park, local veterinarians, the Institute of Natural

History and Environment Agency of Iceland.

### **Permanent facilities**

The Reyjavik zoo and Family Park is the only wildlife rescue facility available in Iceland.

### **Current processes**

The Environment Agency of Iceland has an annual meeting and training event on oil spill response, which includes oiled wildlife response on its agenda. The Institute of Natural History and Reyjavik zoo normally participate.

### **Documentation and references**

General references

<http://english.ust.is/marine-protection-ERS/>

<http://en.wikipedia.org/wiki/Iceland>

<http://www.fisheries.is/ecosystem/marine-life/seabirds/>

<http://www.ust.is/media/fraedsluefni/pdf-skjol/WilsonMuuga.pdf>

[http://english.ust.is/media/fraedsluefni/Tjodgardurinn\\_Snafellsjokull\\_EN.pdf](http://english.ust.is/media/fraedsluefni/Tjodgardurinn_Snafellsjokull_EN.pdf)

ITOPF Country Profile for Iceland

Sensitivity Mapping Report of south and west Iceland from Vik in Myrdal to Öndverðarnesi, Environment Committee

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