Environment And Food Agency

MÝVATN LAKE

Environmental Issues

The main environmental issues in Mývatnssveit district are related to energy production and the soil erosion. Plans in the seventies for large-scale power plants in the Laxá river led to the legal protection of the area. A nature research centre was established in the aftermath. The geothermal power plant Krafla has a noticeable impact on the landscape. There is some cinder mining in the area, especially in Jarðbaðshólar hills. A great deal of erosion has occurred east of Mývatn lake, and the vegetation and landscape of Dimmuborgir was severely threatened for some time. The causes of the erosion are most likely related to an interplay between grazing, atmospheric changes and volcanic activity in Vatnajökull glacier. Soil cultivation is underway to put an end to the erosion

Dear Visitor

Lava formations are easily damaged if trod on. Birds are sensitive to humans. Never leave garbage behind and keep the area clean. Off-road driving is prohibited. The diversity of life and landscape, must always be treated with respect. Similarly, the local inhabitants must be shown consideration. Be especially careful in geothermal areas. Enjoy your stay!

Publisher: Environment and Food Agency 2005
Text: Árni Einarsson
Hiking trail description: Friðrik Dagur Árnason
Photographs: Jóhann Óli Hilmarsson and Árni Einarsson
Cover Illustration: Vindbelgjarfjall
Map: Sigurgeir Skúlason
Map by courtesy of Icelandic Geodetic Survey
Edition: Stefán Benediktsson
Layout and printing: Gutenberg
UST-2005:09

UST

Nature Conservation

Lake Mývatn and the Laxá river region are protected according to laws no. 97 from the 9th of June, 2004.
The objective of the law is to promote nature conservation according to the principles of sustainable development and to ensure that the ecological limits of the region will not be threatened.
The law is to ensure the protection of the biological diversity of the Mývatn and Laxá region and to protect the geological formations and landscape with active nature conservation, especially from a scientific, sociological and aesthetic standpoint. The laws pertain to a 200-metre-wide stretch of banks along lakes, rivers and springs and the following wetland regions: Sortulækur, Geirastaðahraun, Sandvatn, Belgjarskógur, Slýja, Neslandatangi, Framengi, Kráká from Strengjabrekka to Laxá, Grænavatn, Helluvaðsá and Arnarvatn. The law also protects all water in the area of Mývatn and Laxá.
Details regarding necessary protective measures, protection of natural artefacts, exploitation of land, and public access will be put forth in a management plan for the entire district. Mývatn lake and Laxá river are listed as internationally important wetlands according to the Ramsar Convention. The Icelandic Environment and Food Agency is responsible for the surveillance of the area and ensures that its ecology is not disturbed. Wardens operate in Mývatnssveit district and provide tourists with assistance and information. Tourists are asked to treat this sensitive area with care and avoid interrupting its wildlife. Other nature conservation areas in the district are Skútustaðagígar craters, Herðubreiðarfriðland and Askja..

Laxá river

Mývatn Lake

Mývatn lake is about 37 square kilometres in area incised by numerous inlets and creeks, and dotted with around 50 islands and islets. The average depth is 2.5 metres, and maximum depth only around 4 metres. Mývatn's ecosystem is unique. The name of the lake derives from the myriad of midges in the area. Bird life is varied, and more species of duck are said to live there than in any other place on Earth. Mývatnssveit district has been unique nature and landscape formed by intense volcanic activity.

Geology

The Mývatn area is on the boundary of the North American and Eurasian tectonic plates. They drift about 2 cm apart each year, and lava wells up and fills the rift. This has caused great volcanic activity here through the ages.

Hverfjall Mountain

Hverfjall mountain is a beautifully formed 2500 years old tephra crater. The crater is about 1 km in diameter and 140 metres deep. The round shape of the crater is disrupted by a landslide that occurred at the south edge of the mountain during the eruption. In the Settlement period, lava flowed from Svörtuborgir almost encircling Hverfjall. At the same time, Dalfjall mountain erupted. Craters of the same type as Hverfjall are uncommon in the world, but there is another crater, Lúdentarskál, which is much older, southeast of Hverfjall mountain.

Skútustaðagígar - pseudocraters

Younger-Laxárdalshraun Lava Field

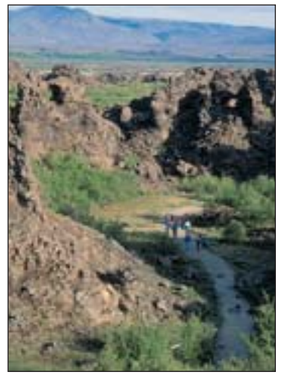
A great eruption occurred in a 12-km-long fissure south of Hverfjall mountain 2300 years ago. Several bizarre formations are in this lava, which has been called the Younger-Laxárhraun lava field. A great row of craters called Lúdentarborgir was formed on the fissure. Þrengslaborgir is the name of two prominent craters towards the south of the fissure. The Younger-Laxárhraun flowed over most of Mývatnssveit district and covered a large lake. The lava then flowed on through Laxárdalur valley, reaching the sea through Aðaldalur valley. Wherever the lava encountered lakes and wetland, steam explosions formed craters. Such craters are called pseudocraters since they are not outlets for lava but steam. There are clusters of beautiful pseudocraters all around Mývatn and also in Laxárdalur and Aðaldalur valleys. Many of the craters are double and some even triple. The largest are found near Vindbelgur mountain.

Hverfjall, a crater

Lúdentarborgir, a row of craters

Dimmuborgir

Dimmuborgir is a very peculiar lava formation. A pool of lava, about 2 kilometres in diameter, formed there during an eruption in Lúdentarborgir. This pool later drained in the direction of Mývatn, leaving behind high pillars of lava. It is believed that these pillars were formed in the pool when steam rose through the molten lava and cooled it. In many places, horizontal lines, formed when the surface of the pool gradually sank. The sinking surface also coated the pillars with lava slag, which can be seen in many places as a thin coating with vertical etchings. Lava formations like Dimmuborgir have been found off the coast of Mexico, but are not known to exist on dry land anywhere but here. The lava pillars at Höfði (Klasar and Strípar) are similar formations.



Dimmuborgir lava formations

The Krafla Volcanic Area

The Leirhnjúkur area is a central volcano. One hundred thousand years ago, there was a volcanic cone here that caved in after erupting. The caldera thus formed is now filled with younger volcanic materia. Underneath at a depth of about 3 km, however, is a magma chamber. Volcanic activity in the area occurs at intervals of several centuries. Magma flows into the chamber, which expands and raises the ground. The chamber then bursts suddenly, and magma flows through underground fissures to the north or south. A part of the magma may then surface in an eruption. As the pressure in the magma chamber decreases, the land subsides quickly. This process repeats itself every few months for several years running. The Mývatnselda eruptions (the "Mývatn fires") in 1724 began with a great volcanic explosion which formed the crater Víti. In the following years, a series of earthquakes and eruptions occurred in the vicinity of Krafla mountain. The greatest eruption took place in 1729, when lava flowed from Leirhnjúkur mountain down to Mývatn lake. Eldhraun, the lava field between Reykjahlíð and Grímsstaðir formed during the eruptions. A new series of eruptions began in Krafla in 1975, after an intermission of about 250 years. In the following nine years, nine eruptions occurred.

Leirhnjúkur og hraun frá Kröflueldstöðinni

A cracked lavamound in Eldhraun

Flora and Fauna at Mývatn Lake and Laxá River

Lake Mývatn was created when the Younger-Laxárdalshraun lavafield blocked a river course in Laxárdalur valley. Precipitation water is quickly absorbed into the bedrock and surfaces as spring water. Mývatn lake is one of the spring water areas. About 35 cubic metres of water flows each second from a myriad of cold and warm, springs, at the banks of the lake. The water is rich in minerals, and is the main reasons for the fertility of the lake. With the aid of sunlight, which is unusually bountiful in this area, a great amount of algae grows in the lake. The algae provides sustenance for midge larvae and crabs, which are food for birds and fishes. Mývatn lake is large enough and its renewal of water slow enough to sustain a flourishing ecosystem despite its altitude of 278 metres above sea level. At the bottom of the lake, an abundance of midge larvae thrives, transforming into pupae and growing into midges during the summer, particularly at the beginning of June and August. The male flies gather in swarms at the lake's edge and over knolls and hills on still days. These midges are called chironomidae (rykmý) and are plenty but harmless. Laxá river flows from Mývatn lake in three channels. It alternately cascades or flows in still pools among beautiful islets grown with wood cranesbill, angelica, buttercups and willow. The river is home to Barrow's Goldeneye and the Harlequin Duck, and it is among the best trout fishing rivers in the world. The water in Mývatn lake often takes on a greenish or brownish tinge in the summer due to blue-green algae (Cyanophyta) that inhabit it. The algae is carried into the Laxá river, together with plankton and turbidity, and provides the basis of the food chain. Laxá river is the most fertile stream in Iceland. Blackfly larvae sift substances from the water and constitute the river's most important food. The female flies suck blood from livestock and people, and thus gain nourishment for breeding.

Birdlife

Barrow's Goldeneye is the most characteristic bird on Mývatn lake and Laxá river. The Icelandic population, consisting of some 200 birds, is dependent on the ecological system of this lake area. It is a non-migratory bird and stays on holes in the ice which can be found on the river and lake throughout the winter. Barrow's Goldeneye is one of the few species in Iceland that originated in the western hemisphere. In the Rocky Mountains of North America, it nests in holes in trees, but at Mývatn lake, it nests in holes and crevices in the lava field. A considerable number of nests can also be found in sheep houses and barns, where nest boxes have been prepared for the birds. The largest habitation of Slavonian Crebe in Iceland is in the Mývatn district, with more than 200 pairs nesting there on average. The bird builds floating nests in vegetation at the bank of the lake, most often under bushes that droop over the water or in duckweed.
Two other species that can rarely be found in Iceland live in the area. These are the Common Scoter and Gadwall. The Common Scoter is a diving duck, and is most commonly seen on the west part of the lake. The males are easily recognisable due to their all-black colour. The Gadwall is a dabbing duck and is scattered all over the area.
Harlequin Ducks can be found all over Iceland, but they are more common in Laxá than anywhere else. These ducks live only on rivers during the summers and cannot be found on Mývatn lake. All species of Icelandic water birds nest in the Mývatn and Laxá area. The Tufted Duck is the most common, but Scaup, Wigeon, Teal and Red-breasted Merganser are also common. The Red-necked Phalarope is also very common. Whooper Swans and Greylag Geese are often seen, and a large flock of swans resides in the Mývatn lake area throughout the summer. Pink-footed geese nest in the highlands south of the lake, and to some extent by the lake. A few pairs of Great Northern Driver and Red-throated Driver nest in the Mývatnssveit district. Black-headed Gull and Artic Tern are common, and most species of waders, Passerines and birds of prey can be found in the area. Ptarmigans are particularly common, and several pairs of Gyrfalcon nest here, as well as some pairs of Short-eared Owl and Merlin.

Barrow's Goldeneye

Harlequin Duck

Slavonian Grebe

Trout

River trout is caught in great abundance in Mývatn lake, but Brown trout can be caught there also. A special variant of the Artic Char can be found in the cold spring areas in the lake, but in caves in the lava field, there are small Char called "gjáarlontur". In the upper part of Laxá river, Brown trout is the main catch, but a little Artic Char is sometimes caught there, too. Salmon migrates from the sea to the lower parts of the river. Farmers lay nets in Mývatn lake in the summer and autumn, and they fish using a hook and line in late winter. You can buy a licence to fly-fish.

Agriculture and Industry

Sheep farming has been the most important livelihood in Mývatn district for centuries. Hay was obtained from the islands, wetlands and banks of the lake. In the winter, hay was moved home on sleighs, but in many out-lying places sheep grazed both summer and winter. Sulphur was mined and exported from the hot spring areas, such as Námafjall mountain and Fremrinámur mines. The exploitation of nature resources in the area has a long history. Trout fishing has been practiced for centuries, angling in the winter and net fishing in the summer and autumn. The trout is frequently flattened and salted one night and then smoked with dung. Fresh eggs are collected from the nests of the most common birds. A diatomite plant was built at Bjarnarflag in 1967, pumping diatomaceous deposits up from the bottom of Mývatn. The plant was closed in December 2004. The Krafla power plant uses geothermal power to produce electricity. The Mývatnssveit district is one of the most popular tourist destinations in Iceland and provides a variety of tourism-related services.
Accommodation in hotels, at farms or camp sites is available. There are also restaurants and grocery shops in the area.

Vindbelgjarfjall mountain

Archaeology and Folklore

Two widely known archaeological discoveries are related to Mývatnssveit district. A famous Viking board game found in a grave by Baldursheimur is now kept in the National Museum. At Hofsstaðir farm, the remains of a 40-metre-long dwelling lodge from the 10th century, the longest of its kind in Iceland, can be found. The most renowned of the local ancient heroes is Víga-Skúta. His story is told in Reykdæla Saga and in Víga-Skúta and Víga-Glúms Saga. He possessed the axe Fluga ("Fly"), and with it, he killed many men. There are few stories of elves and trolls, but the ogress Kráka lived in Bláhvammur on the side of Bláfjall mountain, and she created the river Kráká to wreak revenge upon the district. Another ogress lived in Skessuhali east of Mývatn, but she turned into stone in her boat returning from the lake. She is still sitting on the rock Nökkvi ("barge") south of Hverfjall mountain. The most renowned ghost in the area is Grímsstaðaskotta, a cause of great evil. Many believed the water in Þangbrandspollur at Skútustaðir to have healing powers. Bishop Þangbrandur christened the inhabitants of the district in the pool.

.

Hiking Routes
There are many interesting hiking routes in Mývatnssveit district. Below are some brief descriptions of the routes that have been marked out.

Vindbelgjarfjall (Vindbelgur Mountain)
The route to the Vindbelgjarfjall starts east of the sideway leading to the farm Vagnbrekka, a walk of half an hour. It takes another half an hour to walk up the mountain, which is some 529 metres above sea level. The trail is steep at times, but it suits most hikers, and the view of the district from the summit is spectacular.

Skútustaðagígar Craters
The trail runs around Stakhólstjörn and takes about one hour to walk. There is also a shorter circular route into the western part of the area, which takes about 20-30 minutes. This is an easy walk through pseudocraters and in close proximity to diverse birdlife.

Kálfastrandarland Area
This is a circular route which begins just inside the gate to Kálfaströnd farm and leads to Klasar, opposite Höfði, and then back to the road. It is an easy walk through bizarre lava formations and landscape.

Dimmuborgir
Several hiking routes have been marked out in different colours in this area, and a brochure describing the trails is available in the information centre. The "Little Circle" is the route closest to the parking area, a walk of about 10-15 minutes. The "Big Circle" extends further into the area and takes about half an hour to walk, and the "Church Circle" takes about an hour. Mellandahringurinn, is a 30-minute walk. All of these routes are easy. The Krókastígur trail is a more difficult one and may take about 40 minutes.

Stóragjá Ravine – Grjótagjá Ravine – Hverfjall Mountain - Dimmuborgir
This route starts at the highway crossroads east of Mývatn lake and is a walk of about 2.5-4 hours. This is an easy walk as long as caution is taken. A path up the Hverfjall mountain's northwest side is a gently sloping easy walk, but the trail on the south side is quite steep. The walk from Hverfjall mountain to the parking area at Dimmuborgir runs partly through lava arches and tunnels.

The North Bank Circle
The North Bank Circle north of Mývatn lake takes about 2-3.5 hours to walk. The route begins at the highway west of Reykjahlíð. The trail crosses the highway, so you might choose to begin their journey there. From Fagraneshólar, the old highway leads to Reykjahlíð. This is an easy walk offering ample opportunities for bird observation.

Námafjall Mountain
The hot spring area named Hverir, east of Námafjall mountain, is one of the largest sulphur spring areas in Iceland. From there, a short but steep trail leads up the mountain, which is 485 metres high. There is a trail along the rim of the mountain and to Námaskarð pass. Hikers must take extreme caution, as the soil may give. People have sustained serious burns in the area. The route is relatively easy in dry weather, but can be tricky and slippery when wet.

Leirhnjúkur Mountain
An easy trail leads from the parking area to the mountain, taking approximately 15-20 minutes. It takes the hiker through the hot spring area, into craters formed in the Krafla fires and to the summit. From there, the route lies south and then east of the mountain, back to the parking area. The trail provides an excellent picture of the Krafla fires. This is a hike of about 1-1.5 hours. The route is relatively easy in dry weather, but can be slippery when wet.

Hófur Crater
A hiking trail leads from the hot spring area at Leirhnjúkur to the crater Hófur, which is north of Leirhnjúkur. Hófur is a beautifully formed crater dating back to the Mývatn fires. The walk is about an hour long. Do not walk up or on the rim of the crater, as the slag crumbles easily.

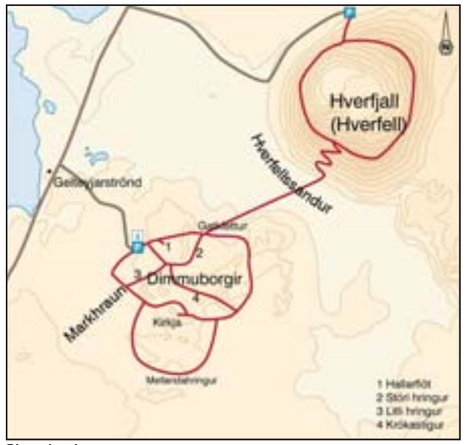
The Krafla Route (Reykjahlíð – Hlíðarfjall – Leirhnjúkur)
A trail leads from the southern part of the Leirhnjúkur circle through a crater area. It runs to Hlíðarfjall mountain, along the banks of Eldá river and then to the swimming pool at Reykjahlíð or the camping ground at Hlíð. This is a fairly easy walk of about 3-4 hours.

Hlíðarfjall Mountain
There is a marked route from the Krafla Route to Hlíðarfjall mountain. The trail is rather steep, but not difficult, and takes 30-40 minutes each way. From the mountain, which is 771 metres high, there is an excellent view of inland glaciers and the sea.

The Dalfjall Mountain Route
This route begins south of Leirhnjúkur and provides an excellent view of the entire area. It ends by the highway at Námaskarð pass. The route is varied and interesting, and Dalfjall mountain gives a good insight into the process of geological divergence in the area. The walk is a bit difficult and takes 3-4.5 hours.

The Víti Maar in Krafla Mountain
This is a short trail around the maar (or crater) Víti, which was formed in 1724, to a hot spring area east of it. The route is relatively easy in dry weather, but can be tricky and slippery when wet. The walk is an hour long.

Skútustaðir



Dimmuborgir

Leirahnjúkar

Hverir