

IUCN Conservation Outlook Assessment 2014 **(archived)**

Finalised on 27 May 2014

Please note: this is an archived Conservation Outlook Assessment for Surtsey. To access the most up-to-date Conservation Outlook Assessment for this site, please visit <https://www.worldheritageoutlook.iucn.org>.

Surtsey

SITE INFORMATION

Country:

Iceland

Inscribed in: 2008

Criteria:

(ix)

Site description:

Surtsey, a volcanic island approximately 32 km from the south coast of Iceland, is a new island formed by volcanic eruptions that took place from 1963 to 1967. It is all the more outstanding for having been protected since its birth, providing the world with a pristine natural laboratory. Free from human interference, Surtsey has been producing unique long-term information on the colonisation process of new land by plant and animal life. Since they began studying the island in 1964, scientists have observed the arrival of seeds carried by ocean currents, the appearance of moulds, bacteria and fungi, followed in 1965 by the first vascular plant, of which there were 10 species by the end of the first decade. By 2004, they numbered 60 together with 75 bryophytes, 71 lichens and 24 fungi. Eighty-nine species of birds have been recorded on Surtsey, 57 of which breed elsewhere in Iceland. The 141 ha island is also home to 335 species of invertebrates. © UNESCO

SUMMARY

2014 Conservation Outlook

Good

Surtsey is a highly controlled, isolated environment and current threats are very low. Under the current regime of strict protection, the site's values are well preserved. The Surtsey Nature Reserve has, since its inception in 1965, de facto been managed in conformity with the requirements of an IUCN category 1a Strict Nature Reserve. The fact that the ongoing ecological process have remained unaffected by human activities makes Surtsey a unique natural laboratory of global significance. The new management plan will strengthen protection and management of the site even more.

Current state and trend of VALUES

Good

Trend: Stable

Surtsey is of outstanding global significance because of its current geological and ecological features as well as the thoroughly studied geomorphological and biophysical processes which have created them. The fact that these features and processes have remained unaffected by human activities makes Surtsey a unique natural laboratory of global significance. The island's integrity and its values have been preserved through a very strict protection regime since 1965.

Overall THREATS

Low Threat

Overall the threats are low, but some concerns exist and these should be addressed by the new Management Plan 2013-2023. Current threats include shipping lanes, large vessels, fishing boats and dumping of waste at sea. Vigilance is required to ensure that oil spills, the discharge of sewage or solid waste from visiting recreational boats, fishing boats or cruise ships, is prevented and no harm occurs to the marine areas and natural environment surrounding

Surtsey. This threat will only increase with increasing number of sightseeing tourism, recreational boats and cruise ships inside the Reserve. Invasive alien species are a major potential threat to the biodiversity of the island.

Overall PROTECTION and MANAGEMENT

Highly Effective

Under the current regime of strict protection, the Surtsey island essentially protects itself. The Surtsey Nature Reserve has, since its inception in 1965, de facto been managed in conformity with the requirements of an IUCN category 1a Strict Nature Reserve. New Management Plan will strengthen further the protection.

FULL ASSESSMENT

Description of values

Values

World Heritage values

► **Ongoing scientific research of the colonisation and succession of life**
Criterion:(ix)

Surtsey is a world-recognised model for research of the colonisation and succession of life on a totally sterile land surface. Surtsey was born as a new volcanic island in 1963-67 and since that time has played a major role in studies of succession and colonisation. (SoOUV, 2008)

► **Ongoing process of colonization by plants and animals**
Criterion:(ix)

Surtsey has been the site of one of the few long term studies worldwide on primary succession, providing a unique scientific record of the process of colonisation of land by plants, animals and marine organisms. (SoOUV, 2008)

► **Pristine natural laboratory**
Criterion:(ix)

Not only is it geographically isolated, but it has been legally protected from its birth, providing the world with a pristine natural laboratory, free from human interference (SoOUV, 2008). Because of its continuing protection, Surtsey will continue to provide invaluable data on biological colonisation long into the future. Long-term continuous scientific research and monitoring in Surtsey is valuable in valuating environmental changes. (SoOUV, 2008, NS report 2007)

Other important biodiversity values

► Submarine eruption

The Surtsey eruption is the best-documented submarine eruption to date.

► Geological processes

Surtsey has provided invaluable information on post-eruptional processes such as the alteration of tephra into tuff and the evolution of a geothermal area.

► Erosion

Study on the impacts of wave and wind erosion on the aerial and submarine parts of the volcano.

Assessment information

Threats

Current Threats

Low Threat

Current threats are low, but some concerns exist, particularly with regards to shipping lanes and large vessels and dumping of waste at sea. These threats can increase with increasing tourism in the ocean around Surtsey.

► Shipping Lanes

Low Threat

Inside site

Outside site

Vigilance is required by visiting boats and vessels in the Reserve to ensure

that oil spills, the discharge of sewage or the disposal of food or solid waste from visiting recreational boats, fishing boats or cruise ships, is prevented and no harm occurs to the marine areas and natural environment surrounding Surtsey. This threat will increase with increasing number of recreational boats and cruise ships (Nomination, 2007).

► **Solid Waste**

Low Threat

Inside site

Outside site

The dumping of waste at sea, including damaged nets, fishing gear, containers or household garbage, is an issue of concern, as significant quantities of litter wash up on Surtsey's shores every year (Nomination, 2007).

► **Tourism/ visitors/ recreation**

Low Threat

Inside site

Outside site

There has been debate of whether or not to allow controlled tourism on the island. The municipality of Vestmannaeyjar has several times sent a request to the Environment Agency to have permission to go ashore in Surtsey with tourists. These requests have so far been denied (Nomination 2007).

► **Fishing / Harvesting Aquatic Resources**

Low Threat

Inside site

Outside site

Fishing with gill nets, lines and traps are allowed inside the Surtsey Nature Reserve. Fishing with towed bottom gear is prohibited within the World Heritage site, but allowed in the buffer zone (Nomination 2007).

Potential Threats

Very Low Threat

Potential threats are low and not of much concern except for invasive alien

species.

► **Invasive Non-Native/ Alien Species**

Low Threat

Inside site

Outside site

Invasive alien species are a major threat to the biodiversity of remote islands of the world. Every effort will be made to ensure that Surtsey remains free of alien invasive species. If a new species of plant or animal is found on Surtsey, which is considered alien invasive on the mainland, actions are taken to remove it before it has a chance to spread. (MP, draft 2008).

► **Other**

Very Low Threat

Inside site

Outside site

Some minor development activities may be required in the future for monitoring, research and conservation within the Surtsey Nature Reserve. Any such development activities will be subject to a full Environmental Impact Assessment in accordance with national law and consent by the Environment Agency (MP draft 2008).

► **Habitat Shifting/ Alteration**

Data Deficient

Inside site

Outside site

Climate changes can in the future affect natural colonization process and ecosystem developments of terrestrial biota and marine organisms at Surtsey.

► **Volcanoes**

Very Low Threat

Inside site

Outside site

Surtsey belongs to the Vestmannaeyjar archipelago which constitutes a separate volcanic system at the southern end of the Eastern Volcanic Zone of Iceland, the Vestmannaeyjar volcanic system. Volcanic eruption within the

system cannot be excluded (Nomination 2007).

Protection and management

Assessing Protection and Management

► Sustainable finance

Some Concern

Sustainable financing for research and monitoring are restricted. Funds to manage the Surtsey Nature Reserve, including funds to ensure regular scientific excursions to the island and material costs for regular monitoring and further scientific work on the island need to be secured for the long-term.

► Tourism and interpretation

Mostly Effective

The Surtsey Visitor Centre for the Surtsey Nature Reserve was opened in the town of Vestmannaeyjar. in July 2010. Since visits to Surtsey are de facto prohibited the main focus for tourism development relating to the island will be indirect rather than direct and involve inter alia the Surtsey Visitor Centre with facilitate education and interpretation programmes on Surtsey.

Although tourists are as a rule prohibited from going ashore on Surtsey, it is permissible to travel by boat within the Reserve and view the island from the sea or air. Opportunities exist for boat trips to the Reserve from the harbour in Vestmannaeyjar. Aerial sightseeing, when undertaken in a controlled and responsible manner, also provides an excellent means of viewing the island and its geological formations. Tourism is an important element of the economy of the Vestmannaeyjar Municipality and there is a need to communicate and promote the site in the municipality after the island was inscribed on the UNESCO World Heritage List.

► Research

Highly Effective

The Surtsey Research Society coordinates research and furthers scientific knowledge about the Reserve (www.surtsey.is).

The Icelandic Institute of Natural History, the Marine Research Institute and

Agricultural University of Iceland conduct research and regular monitoring of the natural conditions of the island of Surtsey.

All research within Surtsey Nature Reserve should contribute to the greater understanding and appreciation of the Reserve.

► **Relationships with local people**

Mostly Effective

The island of Surtsey is an important part of the inhabitant's local pride and identity and symbolises their close relationship with the natural environment. There has been debate amongst local inhabitants about whether or not to allow controlled tourism on the island. There has been no decision on this made yet.

► **Legal framework and enforcement**

Highly Effective

According to the Nature Conservation Act (No. 44/1999), the Environment Agency of Iceland is responsible for the management of protected areas, including preparation of management plans (MP 2008, Nomination 2007).

► **Integration into regional and national planning systems**

Mostly Effective

The Municipality of Vestmannaeyjar is the local guardian and physical planning authority for the Surtsey Nature Reserve.

► **Management system**

Mostly Effective

The supervision of the nature reserve is the responsibility of the Environment and Food Agency through a six member advisory panel which includes representatives from the Agency, the Surtsey Research Society, the Icelandic Institute of Natural History, the Marine Research Institute, and the Municipality of Vestmannaeyjar. By special agreement of the Ministry of Environment, the Surtsey Research Society co-ordinates all research on the island and advises on other activities (IUCN Evaluation, 2008).

The Municipality of Vestmannaeyjar is the local guardian and physical

planning authority for the Surtsey Nature Reserve. There is a Management Plan for the site provides a long term vision for management of the Reserve, along with a series of detailed goals and objectives that include the necessary measures for integrated conservation, research, monitoring and interpretation. Surtsey is a highly controlled, isolated environment and no visitors are allowed on the island (Nomination, 2007; SoOUV, 2008).

► **Management effectiveness**

Highly Effective

The management of the site has so far been highly effective.

► **Implementation of Committee decisions and recommendations**

Highly Effective

No Committee Decisions so far

► **Boundaries**

Highly Effective

The size of the area listed on UNESCO World Heritage List is 33.7 km² and coincides with the strictly protected part of the nationally designated Reserve. It encompasses the entire Surtsey volcano, of which 1.4 km² is above and 13.2 km² below sea surface, plus 19.1 km² of surrounding ocean. The remaining 31.9 km² oceanic area of the nationally designated Reserve is defined as a buffer zone for the nature heritage site. The total area of Surtsey Nature Reserve is 65,6 km² (Nomination 2007, IUCN Evaluation 2008).

► **Staff training and development**

Mostly Effective

A Head Warden was hired in 2008 and has the responsible for liaising with local officials and scientific research agencies and individuals as appropriate. The Environment Agency is responsible for providing trained staff to ensure day-to-day management of the Surtsey Nature Reserve. The Head Warden has facilities in the Surtsey Visitor Centre in the town of Vestmannaeyjar, and recruits two staff members over the summer.

► **Sustainable use**

Data Deficient

Data deficient

► **Education and interpretation programs**

Mostly Effective

An Interpretation and Education Strategy will be developed for implementation in the Surtsey Visitor Centre. Its main objective will be to improve visitors experience and ensure understanding and appreciation of the importance of the Surtsey Nature Reserve. The Strategy will include programmes tailored to the needs of visitors of different ages, nationalities and educational status, but with a focus on the youth. The Environment Agency is responsible for providing up-to-date information and interpretation material on the Surtsey Nature Reserve through brochures, posters and the Internet.

► **Monitoring**

Highly Effective

The Icelandic Institute of Natural History, Marine Research Institute and the Agricultural University of Iceland, in cooperation with the Surtsey Research Society, conduct research and monitoring of the state of natural phenomena within the Reserve.

Ever since Surtsey emerged from the sea during the 1963—1967 submarine eruption, the geomorphological processes, biological and geological features have been studied and monitored with minimal human impact. This also includes regular aerial photographs, mapping and multi-beam bathymetric mapping of the surrounding sea floor (Nomination 2007, IUCN Evaluation, 2008; SoOUV, 2008).

Overall assessment of protection and management

Highly Effective

Under the current regime of strict protection, the Surtsey island essentially protects itself. The Surtsey Nature Reserve has, since its inception in 1965, de

facto been managed in conformity with the requirements of an IUCN category 1a Strict Nature Reserve. New Management Plan will strengthen further the protection.

► **Assessment of the effectiveness of protection and management in addressing threats outside the site**

Mostly Effective

A new Management Plan 2013-2023 is now under preparation and will definitely, when accepted, strengthen protection of the Reserve. Threats outside the site are mainly the shipping lane with large vessels sailing south of Surtsey. Oil spills, sewage and disposal of garbage waste from vessels, fishing boats and cruise ships are all of some concern. In 2009 a new regulation proposed by the Icelandic Maritime Administration delimited a zone defined as an “Area to be ‘Avoided’” that put the main shipping lane farther out south from the Reserve.

State and trend of values

Assessing the current state and trend of values

World Heritage values

► **Ongoing scientific research of the colonisation and succession of life**

Good

Trend:Stable

The pristine volcanic island of Surtsey is remains a natural laboratory of logbal significance for studying ongoing geological, geomorphological and ecological processes in the development of landforms and biological communities (NS report, 2007). In 2013 50 years of ongoing scientific research was celebrated.

► **Ongoing process of colonization by plants and animals**

Good

Trend:Stable

Colonisation and ecosystem developments of terrestrial biota on Surtsey

have been followed since the formation of the island (SR, 2009). Thanks to strict regulations and effective management, all natural processes remain largely unaffected by human activities. Fishing with towed bottom gear is allowed in the buffer zone of the Reserve is of some concern but they are prohibited within the WH area (NS report, 2007).

► **Pristine natural laboratory**

Good

Trend:Stable

Strict regulations for research are in place and no tourists are allowed on the island. However, minimal disturbance occurs, since any visit to Surtsey causes some disturbance, particularly given harsh climate environment of Surtsey. Nonetheless the island remains a unique natural laboratory and various long-term research projects provide important baseline and indicators concerning the response of a young island system to disturbances such as climate change (NS report 2007, SR 2009).

Other important biodiversity values

► **Submarine eruption**

The Surtsey eruption is the best-documented submarine eruption to date.

► **Geological processes**

Surtsey has provided invaluable information on post-eruptional processes such as the alteration of tephra into tuff and the evolution of a geothermal area.

► **Erosion**

Study on the impacts of wave and wind erosion on the aerial and submarine parts of the volcano.

Summary of the Values

► **Assessment of the current state and trend of World Heritage values**

Good

Trend: Stable

Surtsey is of outstanding global significance because of its current geological and ecological features as well as the thoroughly studied geomorphological and biophysical processes which have created them. The fact that these features and processes have remained unaffected by human activities makes Surtsey a unique natural laboratory of global significance. The island's integrity and its values have been preserved through a very strict protection regime since 1965.

Additional information

Key conservation issues

► **Financing ongoing research and monitoring**

Local

The Environment Agency receives funds from the Government to manage the Surtsey Nature Reserve and the Surtsey Visitor Centre. Sustainable financing for research and monitoring is, however, restricted. Some research institutes participating in research activities contribute funds to their scientists for research and monitoring in Surtsey, but some scientists have to finance their research by themselves. The Surtsey Research Society receives small allocation from the State, but not yearly. The allocation is used to maintain the field hut Palsbaer, for publication of the Surtsey Research reports and for the webpage (<http://surtsey.is>).

► **Tourism**

Local

Tourism is an important element of the economy of the Vestmannaeyjar Municipality. There has been debate of whether or not to allow controlled tourism on the island. The municipality of Vestmannaeyjar has several times sent a request to the Environment Agency to allow tourist visits to the island.

These requests have so far been denied.

Benefits

Understanding Benefits

► Contribution to education

Education and interpretation programmes at the Surtsey Visitor Centre aim to increase awareness of the importance of the Surtsey Nature Reserve and the measures taken to protect its natural heritage. Surtsey Visitor Centre and education programmes will provide the public with a comprehensive overview of the importance of the Reserve and the rationale for managing it in a pristine condition.

► Outdoor recreation and tourism

Interpretation and education activities for tourists relating to the Surtsey Nature Reserve are conducted in the Surtsey Visitor Centre. Controlled and guided sightseeing tours by boats or flights in the Reserve would benefit local tourist agencies.

► Is the protected area valued for its nature conservation?

Management of the Surtsey Nature Reserve ensures that it remains a globally significant natural phenomenon, internationally recognised for its natural values and high standards of conservation management, scientific research and monitoring.

► Importance for research

Long-term continuous scientific research and monitoring in Surtsey contribute to the understanding of environmental changes, at present and in the future.

Summary of benefits

Education and interpretation programmes of Surtsey are important both inside and outside the local community. Long-term continuous scientific research and

monitoring in Surtsey contribute to the understanding of environmental changes, at present and in the future.

Projects

Compilation of active conservation projects

Nº	Organization/ individuals	Project duration	Brief description of Active Projects
1	.	.	.

REFERENCES

Nº	References
1	All published research reports by the Surtsey Research Society all available at http://surtsey.is/pp_ens/write_ref_2.htm
2	Nomination of Surtsey for the UNESCO World Heritage List, 2007 http://surtsey.is/SRS_publ/WHL/Surtsey_Nomination_Report_20...
3	Statement of Outstanding Universal Value (SoOUV 2008)
4	Surtsey Nature Reserve Management Plan 2008-2017 - Draft. The Environment Agency of Iceland, 2008. (MP-draft, 2008)
5	Surtsey Research 12. Surtsey Research Society 2009 http://surtsey.is/pp_ens/report/report_XII.htm
6	Surtsey Research Society website http://surtsey.is/index_eng.htm