IUCN Conservation Outlook Assessment 2017 **(archived)**
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Please note: this is an archived Conservation Outlook Assessment for Ilulissat Icefjord. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Ilulissat Icefjord

SITE INFORMATION

Country:
Denmark
Inscribed in: 2004
Criteria:
(vii) (viii)

Site description:
Located on the west coast of Greenland, 250 km north of the Arctic Circle, Greenland's Ilulissat Icefjord (40,240 ha) is the sea mouth of Sermeq Kujalleq, one of the few glaciers through which the Greenland ice cap reaches the sea. Sermeq Kujalleq is one of the fastest (19 m per day) and most active glaciers in the world. It annually calves over 35 km3 of ice, i.e. 10% of the production of all Greenland calf ice and more than any other glacier outside Antarctica. Studied for over 250 years, it has helped to develop our understanding of climate change and icecap glaciology. The combination of a huge ice-sheet and the dramatic sounds of a fast-moving glacial ice-stream calving into a fjord covered by icebergs makes for a dramatic and awe-inspiring natural phenomenon. © UNESCO

SUMMARY

2017 Conservation Outlook

Good with some concerns

There are currently no serious concerns regarding the World Heritage values of the site. The main current threats include impact from tourism; fishing, boat traffic and helicopter flights, but the management authorities are addressing all current threats efficiently. However, climate change will seriously affect the site's values in the future and will results in significant changes in the glacial landscape as well as in vegetation and animal communities.

Current state and trend of VALUES

Low Concern
Trend: Stable

The site's WorldHeritage values are well preserved despite the rapid increase in tourism. However there is more serious concern about the future impacts of the climate change on the glacial landscape and natural phenomenon of glacial calving. However, currently the site still represents an outstanding natural phenomenon.

Overall THREATS

Low Threat

The main current threats include impact from tourism; fishing, boat traffic and helicopter flights. There are currently no serious concerns and the managing authorities are addressing all current threats efficiently. However, climate change is already affecting the site and will most likely have even larger impact in the future. Some concerns also exist regarding potential overfishing of the Greenland Halibut which may in turn impair the ecosystem functions and negatively affect sea mammals.

Overall PROTECTION and MANAGEMENT

Mostly Effective

The site appears to be well managed; however, there is a lack of recent information on certain aspects. Threats which can be controlled by the managing body are limited and are well under control.

FULL ASSESSMENT

Description of values

Values

World Heritage values

- **The only remnant in the Northern Hemisphere of the continental ice sheets from the Quaternary Period**
  Criterion:(viii)

  The Ilulissat Icefjord is an outstanding example of a stage in the Earth's history: the last ice age of the Quaternary Period. The ice-stream is one of the fastest (40m per day) and most active in the world (WHC, 2014). Its annual calving of over 40 cu. km of ice which accounts for 10% of the production of all Greenland calf ice, more than any other glacier outside Antarctica (Joughin et al 2013). The glacier has been the object of scientific attention for 250 years and, along with its relative ease of accessibility, has significantly added to the understanding of ice-cap glaciology, climate change and related geomorphic processes (WHC, 2914). The ice cap formed during the Middle and Late Pleistocene over a once temperate landscape, the south central part of which drained through large rivers to Disko Bugt, still marked as channels under the ice and submarine troughs. The ice cap's oldest ice is estimated to be 250,000 years old, maintained by an annual accumulation of snow matched by loss through calving and melting at the margins. The ice cap holds a detailed record of past climatic change and atmospheric conditions (in trapped air bubbles) for this entire length of time, and shows that during the last ice age the climate fluctuated between extreme cold and warmer periods.

- **Natural spectacle**
  Criterion:(vii)

The combination of a huge ice sheet and a fast moving glacial ice-stream calving into a fjord covered by icebergs is a phenomenon only seen in Greenland and Antarctica. Ilulissat offers both scientists and visitors easy access for close view of the calving glacier front as it cascades down from the ice sheet and into the ice-choked fjord. The wild and highly scenic combination of rock, ice and sea, along with the dramatic sounds produced by the moving ice, combine to present a memorable natural spectacle (WHC, 2014). It is the most prolific and fastest ice-calving tidewater glacier (glaciers that calve into the sea) in Greenland producing a constant procession of icebergs and still actively eroding the fjord bed.

Other important biodiversity values

► Arctic vegetation

The flora of the area is a low-arctic type, typical of the nutrient-poor silicaceous soil which, where humid, shows solifluction an effect such as frost boils. Colonization of the margins of retreating ice also provides examples of plant succession. The main plant communities of the area are heath, fell-field, snow-patch, herb-slope, willow-scrub, fen, river-bank, seashore and aquatic (State Party of Denmark, 2002).

► Sea life

The upwelling caused by calving icebergs brings up nutrient-rich water which supports prolific invertebrate life and attracts great numbers of fish, seals and whales that feed on the generated nutrients. 20 species of fish have been recorded in the area; the dominant species is the flatfish Greenland halibut (Reinhardtius hippoglossoides) which feeds mainly on northern shrimp and euphausid crustaceans (IUCN, 2004). The halibut migrates seasonally in and out of the fjord, living both on the benthos and in the open sea. Warmer waters bring the Atlantic cod. The ringed seal is a high Arctic species, but it is also found in the low Arctic if there is sea ice. Harp seals, fin and minke whales occur in summer at the fjord mouth with very occasional blue and Greenland whales. Beluga visit Disko Bugt in autumn and winter.

► Sea birds

The seabirds are typical for the area, with numerous breeding colonies attracted by the high primary productivity of the glacier front, and by fish discarded by the local fishery. Large flocks of northern fulmar and gulls feed among the grounded icebergs. These are mainly Iceland gulls, glaucous gulls with lesser numbers of great black-backed gulls, kittiwakes and guillemots with great cormorant (IUCN, 2004).

► Land birds and mammals

Land birds include several species of geese, snow buntings, rock ptarmigan and Peregrine falcon. There are few mammals within the property. Arctic fox is believed to be common, whereas Arctic hare occur mainly in the higher land near the inland ice (IUCN, 2004).

Assessment information

Threats

Current Threats

Low Threat

The main current threats include impact from tourism; fishing, boat traffic and helicopter flights. The situation is well under control; management plan addresses most of the issues and regulations have been updated and implemented. Some concerns exist regarding potential overfishing of the Greenland Halibut which may in turn impair the ecosystem functions and negatively affect sea mammals.

► Shipping Lanes

Low Threat

Inside site, localised(<5%)
Outside site

Boat traffic in the bay as well as sightseeing helicopter flights impact the spectacular aspect of the site as well as some of its biological values. The disturbance is affecting nesting birds and sea life (State Party of Denmark, 2009; WHC, 2007; WHC, 2009). Cruise ships are not permitted within the property and anchoring of boats is also prohibited.

▶ Tourism/ visitors/ recreation

Very Low Threat
Inside site, localised(<5%)

A rapid growth of tourism has been registered, from 18'000 in 2006 to 35'000 in 2008. Tourism pressure brings physical damage, such as erosion of vegetation, as well as noise and pollution from motorized vehicles, vessels and helicopters. The situation is addressed through the revised management plan and is well under control (State Party of Denmark, 2009)

▶ Fishing / Harvesting Aquatic Resources

Low Threat
Inside site, scattered(5-15%)

Commercial fishing occurs along Greenland coast and in the bay (WHC, 2009). In 2013, a total of 9073 tonnes were caught in Disco Bay (http://www.natur.gl/kommunikation/nyheder/nyhed/a/status-quo-for-hellefisk-i-vestgroenland). Some indicators, such as the reduction of the average size of fish http://www.natur.gl/fisk-og-skaldyr/fisk/hellefisk/hellefiskene-i-ilulissat-uummannaq-og-upernavik), suggest that the stocks might be being overfished.

▶ Temperature extremes

High Threat
Inside site, throughout(>50%)
Outside site

Due to global warming, the melting of the glacier is accelerating and is followed by changes in the calving front. The Greenland’s fastest glacier, Jakobshavn Isbræ sped up more than twofold since mid 1990-s and has now accelerated to speeds unprecedented in its observational history. The

increase in annual discharge flux could reach or extend the factor of 10 within decades (Joughin et al., 2014). While the potential for large losses will be determined by the depth and inland extent of glaciers and given that the depth and inland extent of Jakobshavn's Isbræ is somewhat unique (Bamber et al., 2013), for the majority of Greenland's glaciers it will be difficult to sustain such large increases in ice discharge (Joughin et al., 2014).

Potential Threats

High Threat

Climate change is the most serious threat, but is out of control of the site’s management.

▶ Tourism/ Recreation Areas

Low Threat
Inside site, scattered(5-15%)
Outside site

Further increase of tourism is likely to happen, but the situation is well under control (State Party of Denmark, 2009). New regulations have been issued and a monitoring programme is in place.

▶ Temperature extremes

High Threat
Inside site, throughout(>50%)
Outside site

Global warming is going to lead to significant changes in glacial landscape. This is a global issue out of control of the site's management. There will be significant changes in the glacial landscape as well as in the vegetation and most probably animal communities.

Protection and management

Assessing Protection and Management

▶ Relationships with local people

Mostly Effective

A steering committee involving a local municipality was established in 2007 (State Party of Denmark, 2009, Government Order No. 10 of 15 June 2007). The management plan for the site was prepared following consultation with the local council of Ilulissat Local Authority.

► Legal framework

Mostly Effective

Good legal framework is in place; the principle legislative instrument is the 1980 Nature Conservation Act of Greenland (IUCN, 2004).
In 2007 the Executive Order no 10 of June 15 2007 on the protection of Ilulissat Icefiord was endorsed by the Parliament in Greenland. This was a revision of the Executive Order no 7 of March 25 2003 with following improvements:
• Traffic in Sermermiut is permitted only on designated paths in the period between April 1 and October 31.
• All navigation with vessels larger than a tonnage of 1,000 Gross Registered Tonnes is prohibited
• Anchoring and laying up boats are prohibited within the protected area
• Restrictions on pitching of tents and use of open fire (maximum 24 hours in the same locality)

► Enforcement

Mostly Effective

Enforcement of the relevant regulations appears effective.

► Integration into regional and national planning systems

Data Deficient

DD

► Management system

Mostly Effective

The Environmental and Nature Agency of Greenland is responsible for the management of the World Heritage Site and in close collaboration with Qaasuitsup Kommunia (Former the Municipality of Ilulissat), which is

responsible for the day-to day management of the World Heritage Area. This management system appears efficient. (State Party of Denmark, 2009)

► Management effectiveness

Mostly Effective

Management appears effective.

► Implementation of Committee decisions and recommendations

Highly Effective

Several measure have been undertaken to respond to World Heritage Commitee's Decisions and a detailed report was submitted in 2007 (State Party of Denmark, 2009).

► Boundaries

Highly Effective

The boundary of the site has been drawn to encompass all the interdependent elements of the geological process of the Icefjord – the relevant portion of the inland icecap, the ice stream, the glacial front and the fjord. The boundary also follows the watershed of the fjord and thus incorporates the adjacent moraines, kame terraces and deltas. Excluded are the settlements of the nearby villages of Ilimanaq and Ilulissat where a de facto buffer zone is defined within the municipality plan. (IUCN, 2004)

► Sustainable finance

Data Deficient

Funding was considered adequate at the time of inscription of the property (IUCN, 2004); however, no recent information is available.

► Staff training and development

Mostly Effective

Staff training and development was considered effective; however, recent information is not available.

► Sustainable use

Some Concern

Commercial fishing occurs along Greenland coast and in the bay (WHC, 2009). In 2013, a total of 9073 tonnes were caught in Disco Bay (http://www.natur.gl/kommunikation/nyheder/nyhed/a/status-quo-for-hellefisk-i-vestgroenland). Some indicators, such as the reduction of the average size of fish http://www.natur.gl/fisk-og-skaldyr/fisk/hellefisk/hellefiskene-i-ilulissat-uummannaq-og-upernavik), suggest that the stocks might be being overfished.

► Education and interpretation programs

Mostly Effective

A number of activities were planned in 2007 (State Party of Denmark, 2009): Icefjord Office will accumulate and dissipate scientific popular articles about climatic changes in Ilulissat Icefiord. The Icefjord Office will spend the project funding on educational purposes to increase awareness of the values of Ilulissat Icefjord to the local community, Greenlandic public and visitors. Projected educational activities about Ilulissat Icefjord include: Creation of a web page; National TV-broadcast; Creation of a DVD; Signposting in the World Heritage Site.

As of May 2014, there is a detailed website with many information on the site, including access, research and administration.

► Tourism and visitation management

Data Deficient

DD

► Monitoring

Mostly Effective

A comprehensive Monitoring Plan was developed in 2007 by the Geological Survey of Denmark and Greenland (GEUS) (State Party of Denmark, 2009)

► Research

Highly Effective

Scientific research over 150 years has made Ilulissat Icefjord one of the best observed ice-streams in the world. (IUCN, 2004)
A significant and unique set of glaciological records and many scientific publications have been written about the site. The site displays most of the surface characteristics of the Greenland ice margin clearly, compactly and accessibly. From the relatively ice-free mid of 18th century onwards, the Icefjord interested many scholars who noted its fluctuations over the years. Studies, especially over the last 10-20 years using aerial photography, core drilling, deep radar sounding and satellite monitoring, have been intensive. Such research has enlarged understanding of ice-stream dynamics, glacial erosion and deposition, Quaternary geology and prehistoric climates through the examination of ice cores.
Regarding monitoring of the impacts of global climate change, Ilulissat will have much to offer in future as well.

Overall assessment of protection and management

Mostly Effective

The site appears to be well managed; however, there is a lack of recent information on certain aspects. Threats which can be controlled by the managing body are limited and are well under control.

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

Some Concern

Fishing and boat traffic outside of the site need to be controlled.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ The only remnant in the Northern Hemisphere of the continental ice sheets from the Quaternary Period

Good
Trend:Stable

The geological features of the site remain in good condition (State Party of Denmark, 2009; WHC, 2009).

▶ Natural spectacle

Low Concern
Trend:Deteriorating

There is a concern about the future impacts of the climate change on the glacial landscape and natural phenomenon of glacial calving. However, currently the site still represents an outstanding natural phenomenon.

Summary of the Values

▶ Assessment of the current state and trend of World Heritage values

Low Concern

Trend: Stable

The site’s WorldHeritage values are well preserved despite the rapid increase in tourism. However there is more serious concern about the future impacts of the climate change on the glacial landscape and natural phenomenon of glacial calving. However, currently the site still represents an outstanding natural phenomenon.

▶ Assessment of the current state and trend of other important biodiversity values

High Concern

Trend: Data Deficient

Sea life may be affected by boat traffic and fishing along the coast, as well as by reduction of ice calving in the bay. There are also concerns regarding potential overfishing of some fish stocks and potential cascade affects on the

marine ecosystem.

Additional information

Benefits

Understanding Benefits

► Outdoor recreation and tourism

Ilulissat Icefjord is the most visited site in Greenland (35'000 visitors in 2008)

► Importance for research

The site has an outstanding record of glacial history. It has an exceptional potential for observation of the impacts from climate change.

Projects

Compilation of active conservation projects

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

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