IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 27 October 2014

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

Stevns Klint

SITE INFORMATION

Country:
Denmark
Inscribed in: 2014
Criteria:
(viii)

Site description:

This geological site comprises a 15 km-long fossil-rich coastal cliff, offering exceptional evidence of the impact of the Chicxulub meteorite that crashed into the planet at the end of the Cretaceous, about 65 million years ago. Researchers think that this caused the most remarkable mass extinction ever, responsible for the disappearance of over 50 per cent of all life on Earth. The site harbours a record of the cloud of ash formed by the impact of the meteorite – the exact site being at the bottom of the ocean off the coast of Mexico’s Yucatán Peninsula. An exceptional fossil record is visible at the site, showing the complete succession of fauna and micro-fauna charting the recovery after the mass extinction.
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SUMMARY

2014 Conservation Outlook

Good

The site’s features providing evidence of the meteorite impact and its outstanding fossil record are well preserved and the site has been and will remain of iconic scientific significance. The site benefits from a strong legislative framework, effective collaboration of a number of local organizations that cover its management and a very strong support and engagement of the local community and private landowners. The current threats to the site’s values are very low and well regulated. The anticipated increase in visitation will need to be properly addressed and will require additional resources.

Current state and trend of VALUES

Good
Trend: Stable

The site’s iconic features providing a globally exceptional representation of the Chixulub meteorite impact and its outstanding fossil record have been well preserved and threats to these values are almost non-existent. The site has an iconic scientific importance and will remain highly significant in the future.

Overall THREATS

Very Low Threat

The current threats to the site’s values are limited to one active chalk quarry located between the two component areas of this serial site and impacts of tourism. The quarry is subject to strict regulations and no further permissions for quarrying will be granted for the area of Stevns Klint in the future. The current levels of visitation are relatively low and visitation is well regulated; however, with the anticipated increase in visitation impacts on the site’s values might increase due to uncontrolled fossil collecting which will require regulatory

measures to be enhanced accordingly.

Overall PROTECTION and MANAGEMENT

Highly Effective

The site benefits from a strong legislative framework, effective collaboration of a number of local organizations that cover its management and a very strong support and engagement of the local community and private landowners. Following the inscription of the site a new management structure will be established and its effectiveness is still to be evaluated at a later stage.

FULL ASSESSMENT

Description of values

Values

World Heritage values

- **A globally exceptional testimony to the impact of meteorite on the history of life**
  Criterion:(viii)

  Stevns Klint is a globally exceptional testimony to the impact of meteorite on the history of life on Earth. The property provides a globally exceptional representation of the evidence of the Chixulub meteorite impact that took place at the end of the Cretaceous Period, c.66 million years ago. This impact is widely believed by modern scientists to have caused the end of the Age of the Dinosaurs, and led to the extinction of more than 50% of life on Earth. Stevns Klint is highly significant in terms of its past, present and future contribution to science especially pertaining to the definition of and explanation of the Cretaceous/Tertiary (K/T) boundary (SoOUV, 2014).

- **Outstanding fossil record**
  Criterion:(viii)

  The outstanding fossil record at Stevns Klint provides a succession of three biotic assemblages including the most diverse end-Cretaceous marine ecosystem known. The million years recorded in the rock at Stevns Klint provides evidence of a climax preimpact community, fauna that survived a mass extinction event, and the subsequent faunal recovery and increased biodiversity following this event. The fossil record shows which taxa became extinct and which survived and reveals the tempo and mode of evolution of the succeeding post impact fauna that diversified to the marine fauna of

today, thus providing important context for the main K/T boundary layer exposed at Stevns Klint (SoUV, 2014).

Other important biodiversity values

▶ **Natura 2000 sites**

An abandoned quarry within the property is part of the European Natura 2000 network as habitat for amphibian species. The marine area of the site is also part of Natura 2000 network (IUCN Evaluation, 2013).

▶ **Important bird migration route**

The site lies on an important bird migration route between Scandinavia and southern Europe and Africa (IUCN Evaluation, 2013). It is one of very few sites in Europe where hundreds of endangered raptors pass during migration from Sweden to continental Europe.

Assessment information

Threats

Current Threats

Low Threat

The current threats to the site’s values are limited to one active chalk quarry located between the two component areas of this serial site and impacts of tourism. The quarry is subject to strict regulations and no further permissions for quarrying will be granted for the area of Stevns Klint in the future. The current levels of visitation are relatively low and necessary regulations and management measures are in place for managing visitation; however, these will need to be sustained and adequately resourced in the future.

► Mining/ Quarrying

Low Threat
Outside site

The site is a serial property with a small gap between the two components at Sigerslev Kridtbrud where an active chalk quarry exists, including a quay for seaborne export. Permission to extract in the specified areas has been granted to OMYA A/S. No permissions will be granted in the future since Stevns Klint is an Area of National Geological Interest. Shipping associated with the export is very limited and well regulated, but requires continued supervision. The quarry is the only active one in the Municipality of Stevns (IUCN Evaluation, 2013; Nomination file, 2012).

► Tourism/ visitors/ recreation

Low Threat
Inside site

Current levels of visitation are relatively low, but it is expected that visitation will increase which can lead to increasing impacts due to uncontrolled fossil collecting. This threat is managed through the legislative framework for protection of natural heritage in Denmark and regional and municipal planning to support the protection of the site. There are necessary regulations and management measures in place for managing visitation; however, these will need to be sustained and adequately resourced in the future (SoOUV, 2014; IUCN Evaluation, 2013).

Potential Threats

Very Low Threat

Even though the sea-levels are projected to increase, based on the predictions for the next hundred years the site will remain mainly above sea-level and its accessibility will not be limited.

► Temperature changes

Very Low Threat

Inside site
Outside site

Even with increasing sea-levels as predicted for the next hundred years, the boundary of the site will still be mainly above sea-level and accessibility will not be limited (IUCN Evaluation, 2013).

Protection and management

Assessing Protection and Management

▶ Research

Highly Effective

Stevns Klint is very well known internationally and research is carried out by researchers from all over of the world. Locally, research is carried out at Østsjællands Museum (Nomination file, 2012).

▶ Tourism and interpretation

Mostly Effective

A number of visitor facilities are found along the cliff. The Stevns Museum attracts about 5000 visitors annually. Various geological exhibitions are hosted in other locations. It is planned to expand the existing facilities, including establishment of a new visitors' centre (Nomination file, 2012). The potential impacts of increasing visitation need to be closely monitored (IUCN Evaluation, 2013). In expanding existing facilities and preparing interpretation concept, it is necessary that conservation and scientific values of the site are given proper attention.

▶ Education and interpretation programs

Highly Effective

The Østsjællands Museum has developed a number of education programmes and coordinates dissemination of information about the site's geology through production of education materials and various activities, such as lectures and participation in radio and TV shows (Nomination file,

2012).

▶ Sustainable use

Highly Effective

The site provides opportunities for tourism, research and education which are all carried out in a sustainable way.

▶ Sustainable finance

Highly Effective

Ongoing management funding has been provided through the Stevns Municipality. A number of activities are coordinated and funded by various organizations, e.g. the Danish Nature Agency, Østsjællands Museum (Nomination file, 2012).

▶ Boundaries

Highly Effective

The site comprises the 15km long coastal cliff of Stevns Klint. The boundaries of the site encompass all most important geological features and accommodate the natural processes of coastal erosion. The buffer zone follows the national 300m coastal protection zone on land and the boundaries of the Natura 2000 area of Stevns Klint seawards (Nomination file, 2012; IUCN Evaluation, 2013).

▶ Implementation of Committee decisions and recommendations

Highly Effective

At the time of inscription in June 2014 the World Heritage Committee adopted a number of recommendations; however, it is too early to evaluate the progress achieved in their implementation (Decision 38COM.8B.10).

▶ Management effectiveness

Data Deficient

The effectiveness of the new management structure will need to be evaluated once it has been established.

► Staff training and development

Highly Effective

The staff of Østsjællands Museum includes two qualified geologists, two communication experts and about 25 part-time guides. Staff of the Stevns Municipality are also involved in the management of the site (Nomination file, 2012). The new organizational structure that has been developed to secure the management of the site includes a full time site manager since April 2014.

► Monitoring

Mostly Effective

The Stevns Municipality is responsible for the monitoring of the site in collaboration with the Østsjællands Museum coordinated and supervised by the newly established organisation Development Group Stevns Klint. The Danish Nature Agency is responsible for the monitoring of Natura 2000 sites (Nomination file, 2012).

► Management system

Mostly Effective

A new organizational structure for the management of the site following its inscription was outlined in the nomination documents which would include a board, a secretariat and a number of working groups. The new structure would be implemented by autumn 2014 (IUCN Evaluation, 2013; SoOUV, 2014). The current Management Plan for the site was developed by the Municipality of Stevns in 2011 with a high degree of involvement of local residents, interested organizations and other stakeholders. The implementation of the Management Plan takes place in collaboration between a number of stakeholder groups, including Stevns Municipality and Ostsjaellands Museum, with collaboration of the Heritage Agency of Denmark, The Danish Nature Agency, Selskabet Hojeruplund Society, Foreningen Boesdal, Stevns Tourist Association and the Danish Society for Nature Conservation, as well as the landowners. (Nomination file, 2012; Stevns Klint Management Plan, 2011).

▶ Legal framework and enforcement

Highly Effective

The site is subject to a number of national and municipal legal instruments, including the Planning Act, the Danish Act on the Protection of Nature and the Act on Coastal Protection. The site has also been designated as an Area of National Geological Interest. The existing regulatory framework provides adequate protection to the site's values (IUCN Evaluation, 2013).

▶ Relationships with local people

Highly Effective

There has been a strong support from the local community for the nomination of the site and high level of engagement in its preparation. Landowners have been well informed about the process and supportive (IUCN Evaluation, 2013; SoOUV, 2014).

▶ Integration into regional and national planning systems

Mostly Effective

The site is located within 200 m belt of sea-shore where strict regulations are in place.

Overall assessment of protection and management

Highly Effective

The site benefits from a strong legislative framework, effective collaboration of a number of local organizations that cover its management and a very strong support and engagement of the local community and private landowners. Following the inscription of the site a new management structure will be established and its effectiveness is still to be evaluated at a later stage.

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

Highly Effective

There are very few threats to the site's values. The active chalk quarry that is located between the two component areas of the site is subject to strict

regulations and monitoring.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **A globally exceptional testimony to the impact of meteorite on the history of life**
Good
Trend:Stable

The site provides an exceptional testimony of the evidence of the Chixulub meteorite impact showing evidence of global mass extinction and has an iconic scientific importance. The values of the site are well preserved and are currently not threatened (IUCN Evaluation, 2013).

▶ **Outstanding fossil record**
Good
Trend:Stable

The site displays an outstanding fossil record with very good state of preservation (IUCN Evaluation, 2013; Nomination file, 2012).

Other important biodiversity values

▶ **Natura 2000 sites**

An abandoned quarry within the property is part of the European Natura 2000 network as habitat for amphibian species. The marine area of the site is also part of Natura 2000 network (IUCN Evaluation, 2013).

▶ **Important bird migration route**

The site lies on an important bird migration route between Scandinavia and southern Europe and Africa (IUCN Evaluation, 2013). It is one of very few sites in Europe where hundreds of endangered raptors pass during migration

from Sweden to continental Europe.

Summary of the Values

▶ **Assessment of the current state and trend of World Heritage values**
Good
Trend: Stable

The site's iconic features providing a globally exceptional representation of the Chixulub meteorite impact and its outstanding fossil record have been well preserved and threats to these values are almost non-existent. The site has an iconic scientific importance and will remain highly significant in the future.

▶ **Assessment of the current state and trend of other important biodiversity values**
Data Deficient
Trend: Data Deficient

Data deficient

Additional information

Key conservation issues

▶ **Impacts of tourism**
Local

Current levels of visitation are relatively low, but it is expected that visitation will increase which can lead to increasing impacts due to uncontrolled fossil collecting. There are necessary regulations and management measures in place for managing visitation; however, these will need to be sustained and adequately resourced in the future (IUCN Evaluation, 2013).

Benefits

Understanding Benefits

► Contribution to education

The Østsjællands Museum has developed a number of education programmes and coordinates dissemination of information about the site's geology through production of education materials and various activities, such as lectures and participation in radio and TV shows (Nomination file, 2012).

► Importance for research

The site provides a globally exceptional representation of the evidence of the Chixulub meteorite impact which is widely believed by modern scientists to have caused the end of the Age of the Dinosaurs, and led to the extinction of more than 50% of life on Earth. This is the most significant and readily accessible site, of hundreds available, to see the sedimentary record of the ash cloud formed by the meteorite impact. In addition, the site has iconic scientific importance as the most significant and accessible of the 3 localities where the radical theory for asteroid driven extinction was developed through the seminal work of Walter and Luis W Alvarez, with their co-workers. Stevns Klint is highly significant in terms of its past, present and future contribution to science especially pertaining to the definition of and explanation of the Cretaceous/Tertiary (K/T) boundary (SoOUV, 2014).

Summary of benefits

The site is of iconic scientific importance as it provides a globally exceptional evidence of the meteorite impact which is widely believed to have caused the end of the Age of the Dinosaurs.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects

1	Østsjællands Museum	A number of education programmes and research activities.
2	Development Group Stevns Klint	Monitoring programme involving local community

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	N.A.	Development of a conceptual framework for access, visitation and interpretation.	
2	Stevns Municipality, Østsjællands Museum, Development Group Stevns Klint	Visitor centre including exhibition for the communication of the OUV of the site	

REFERENCES

№	References
1	Decision 38 COM 8B.10.
2	IUCN Evaluation, 2013.
3	Nomination of Stevns Klint, 2012.
4	Statement of Outstanding Universal Value, 2014. In Decision 38 COM 8B.10.
5	Stevns Klint Management Plan, 2011.