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

Ennedi Massif: Natural and Cultural Landscape

SITE INFORMATION

Country:
Chad
Inscribed in: 2016
Criteria:
(iii) (vii) (ix)

Site description:

In the northeast of the country, the sandstone Ennedi Massif has been sculpted over time by water and wind erosion into a plateau featuring canyons and valleys that present a spectacular landscape marked by cliffs, natural arches and pitons. In the largest canyons, the permanent presence of water plays an essential role in the Massif’s ecosystem, sustaining flora and fauna as well as human life. Thousands of images have been painted and carved into the rock surface of caves, canyons and shelters, presenting one of the largest ensembles of rock art in the Sahara. © UNESCO

SUMMARY

2017 Conservation Outlook

Significant concern

The outstanding landscape values of the property remain in good condition. However, a number of pressures (tourism, livestock grazing) are expected to increase and might result in negative impacts on the aesthetic value of the property. However, concerns are high with regard to the site's values under criterion (ix). While the site represents an outstanding example of a very specific relict ecosystem, the revised boundaries of the property do not include the full range of these features. The original boundaries of the area nominated by the State Party were revised during the course of evaluation. Specifically, a reduction of approximately 20% was introduced which excluded areas in the Northern part of the original nomination where an oil concession was granted. Traditional management has until now safeguarded the integrity of the property; however, it should be complemented by additional professional management to be able to respond to the challenges facing the site. A management system has been proposed at the time of inscription, but remains to be established. Moreover, it was considered that the proposed system would be insufficient to provide efficient protection for the property's values under criterion (ix) due to the absence of field personnel and resources.

Current state and trend of VALUES

High Concern
Trend: Data Deficient

The outstanding landscape values of the property remain in good condition. However, a number of pressures (tourism, livestock grazing) are expected to increase and might result in negative impacts on the aesthetic value of the property. However, concerns are high with regard to the site's values under criterion (ix). While the site represents an outstanding example of a very specific relict ecosystem, the revised boundaries of the property do not include the full range of these features. On the other hand, a significant loss of populations of

many key species was documented in the property in the past and, while viable populations of many other species still exist in the property, it raises concerns regarding the impacts on the ecosystem integrity and functioning.

Overall THREATS

High Threat

While some current threats still remain at low level thanks to the remoteness od the property, some of them are expected to increase with the growing local population, particularly grazing pressure. Same is true for tourism impacts, including littering and off-road driving, which currently still remain relatively limited, but are likely to increase in the future. Poaching decimated populations of many animal species in the past and while viable populations of some key species exist in the property, they continue to be threatened. Oil operations in the vicinity of the property also represent a high potential threat. In fact, oil concessions have already resulted in a significant impact on the property through the reduction of the area originally nominated by the State Party. The reduction in the area proposed for inscription was triggered by the fact that an oil concession was granted in the area which was removed from the boundaries. However, this area contains significant attributes important for supporting the Outstanding Universal Value of the property.

Overall PROTECTION and MANAGEMENT

Serious Concern

Traditional management has until now safeguarded the integrity of the property; however, it should be complemented by additional professional management to be able to respond to the challenges facing the site. A management system has been proposed at the time of inscription, but remains to be established. Moreover, it was considered that the proposed system would be insufficient to provide efficient protection for the property's values under criterion (ix) due to the absence of field personnel and resources. Concerns were also expressed with regard to the final configuration of the property's boundaries. The original boundaries of the area nominated by the State Party were revised during the course of evaluation. Specifically, a reduction of approximately 20% was introduced which excluded areas in the Northern part of the original nomination where an oil concession was granted. The excluded area contains significant attributes important for supporting the OUV of the property and therefore this

excision is of concern.

FULL ASSESSMENT

Description of values

Values

World Heritage values

- **Desert landscape of outstanding aesthetic value**
  Criterion:(vii)

  The Ennedi Massif is one of the six major mountain ranges of the Sahara, the largest desert in the world. The morphological and colour contrasts between this relief and the surrounding desert plains confer an outstanding aesthetic value. The verdant wetlands of the gueltas contrast with the ochre and red rocks of the relief. Sheltering the last crocodiles of the region, the Guelta d’Archei is an exceptional site encased in imposing walls of red sandstone (World Heritage Committee, 2017).

- **Conditions enabling survival of relict species far from their current distribution**
  Criterion:(ix)

  The relief of the Ennedi Massif allows the local coexistence of hyper-arid to semi-arid zones and generates wetter conditions than in the surrounding desert plains which enabled the animal and plant species to survive in the massif after the installation of the current arid Saharan climate 4,300 years ago. These relict species are far removed from their current distribution ranges in the subtropical and tropical zone. An estimated population of 10 crocodiles is also present in the Guelta d’Archei, where water is present all year round. This relict species found itself isolated a few thousand years ago with the draining of the hydrographic network linking the Ennedi to the neighbouring regions. The massif shelters Saharan, Sahelian, subtropical and

relict species and constitutes an island of exceptional biodiversity in a desert (World Heritage Committee, 2017).

Assessment information

Threats

Current Threats

Low Threat

While some current threats still remain at low level thanks to the remoteness od the property, some of them are expected to increase with the growing local population, particularly grazing pressure. Same is true for tourism impacts, including littering and off-road driving, which currently still remain relatively limited, but are likely to increase in the future. Poaching decimated populations of many animal species in the past and while viable populations of some key species exist in the property, they continue to be threatened.

► Livestock Farming / Grazing

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

Pastoralism is the basis of local economy. Livestock grazing is concentrated in areas with permanent water access and therefore may result in significant, though localized impacts. However, overall pressure from grazing has not yet reached a critical stage and desertification has been observed during the evaluation mission even in the most heavily used areas (IUCN, 2016).

► Logging/ Wood Harvesting

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

Firewood collection by local communities does not represent a high threat currently, but could become an issue as a result of growing population and

visitor numbers (IUCN, 2016).

▶ Poaching

High Threat
Inside site, widespread(15-50%)
Outside site

Poaching has decimated populations of some species in the property and is reported to have led to local extinctions of several key species, such as Oryx, Addax, Dama Gazelle, Ostrich and Lion. There are still viable populations of some species, but these continue to be threatened (IUCN, 2016).

▶ Solid Waste

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

Decomposition of waste is very slow in a desert environment and waste management is therefore an important issue. However, the problem of littering currently is still limited (IUCN, 2016), but it might become an issue with the expected increase in visitors numbers.

▶ Roads/ Railroads

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

Off-road driving is common in the property and it impacts on vegetation and intactness of the landscape are visible. There is a need to establish a more rigorous system to control these activities (IUCN, 2016).

Potential Threats

High Threat

Many threats are expected to increase in the future, particularly grazing pressure and potentially agriculture development. he boundaries of the original nomination were modified by the State Party when the nomination was already being evaluated. Oil operations in the vicinity of the property also represent a high potential threat. In fact, oil concessions have already resulted in a significant impact on the property through the reduction of the area originally

nominated by the State Party. The reduction in the area proposed for inscription was triggered by the fact that an oil concession was granted in the area which was removed from the boundaries. However, this area contains significant attributes important for supporting the Outstanding Universal Value of the property.

► Crops, Livestock Farming / Grazing

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

Increasing pastoralism pressure represents a high potential threat to the values of the property (IUCN, 2016). While potential to develop agriculture is currently limited by the lack of water, it could be developed in the future in some areas by accessing underground water resources. The proposed budget in the management plan for the property includes development of drip irrigation (IUCN, 2016).

► Oil/ Gas exploration/development

High Threat
Outside site

The boundaries of the original nomination were modified by the State Party when the nomination was already being evaluated. The reduction in the area proposed for inscription was triggered by the fact that an oil concession was granted in the area which was removed from the boundaries. While this means that no oil concessions overlap with the boundaries of the property as inscribed, the area excised from the original nomination contains significant attributes important for supporting the Outstanding Universal Value of the property. Future oil operations in the vicinity of the property may have impacts on the property's integrity and values (IUCN, 2016).

► Tourism/ visitors/ recreation

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

The area is very remote and tourism is currently little developed. However, it is expected that tourism activities will increase in the future and this will

require careful management (IUCN, 2016).

Protection and management

Assessing Protection and Management

► Relationships with local people

Mostly Effective

About 40,000 nomadic or semi-nomadic pastoralist people live in the region of the property (including its buffer zone), following traditional lifestyles (IUCN, 2016). Local community representatives expressed their support to the nomination during the evaluation mission and the management plan for the property foresees that local communities will remain actively involved in the management of the site through the proposed local committees (IUCN, 2016).

► Legal framework

Some Concern

The property is protected by a special Decree on its protection (Decree 260/PR/ PM/MCDT/2016) of 5 March 2016. The protection regime established by this decree foresees the exclusion of mining prospecting or exploitation, hunting and logging. Traditional uses are permitted. Other relevant legal instruments include Law No.14/PR/2008 concerning forest, wildlife and fisheries resources, Law No. 14/PR/98 concerning the environment, and Law No.14/PR/60 concerning the protection of monuments and natural sites and prehistoric and archaeological monuments and objects. However, the legal framework needs to be further strengthened to guarantee the adequate level of protection for the property's Oustanding Universal Value (World Heritage Committee, 2017).

► Enforcement

Some Concern

Poaching remains a serious problem (IUCN, 2016), indicating that law enforcement is inefficient.

► Integration into regional and national planning systems

Data Deficient

Data deficient

► Management system

Serious Concern

The nomination dossier states that the traditional management by the indigenous people has until now safeguarded the integrity of the proposed property (State Party of Chad, 2015), but that traditional management should be complemented by additional professional management to be able to respond to the challenges facing the site. However, such management is not yet in place (IUCN, 2016). The proposed management system would include Local Organization and Implementation Committees, a site manager and a deputy who would have direct responsibility for the management of the site. While this proposed system was considered sufficient for safeguarding the property's outstanding landscape values, it was considered insufficient to protected its values under criterion (ix) due to the lack of field staff and resources (IUCN, 2016).

► Management effectiveness

Serious Concern

Currently the management of the site continues to be in the form of traditional management. The plans to strengthen it by combining it with professional management, expressed in the nomination dossier, remain the be implemented (World Heritage Committee, 2017). Concerns were, however, expressed with regard to the proposed management structure as it appeared insufficient to efficiently protect the site's biodiversity and ecological values due to the lack of professional field staff and resources (IUCN, 2016).

► Implementation of Committee decisions and recommendations

Data Deficient

A number of requests and recommendations were expressed by the World Heritage Committee at the time of the inscription of the property (World

Heritage Committee, 2016); however, their implementation by the State Party will be evaluated by the World Heritage Committee at its 42nd Session in 2018 and therefore at this stage it is not possible to evaluation its effectiveness.

▶ Boundaries

Serious Concern

The original boundaries of the area nominated by the State Party were revised during the course of evaluation. Specifically, a reduction of approximately 20% was introduced which excluded areas in the Northern part of the original nomination where an oil concession was granted. The excluded area contains significant attributes important for supporting the OUV of the property and therefore this excision is of concern (IUCN, 2016).

▶ Sustainable finance

Data Deficient

The main source of funding for the property is State budget. The nomination dossier notes that the Ministry of Culture, Youth and Sports would be responsible for allocating budget for the property (State Party of Chad, 2015). Additional co-financing mechanisms were foreseen with the support from different international organizations, such as African Parks and Sahara Conservation Fund. However, no information is available about the current levels of funding.

▶ Staff training and development

Serious Concern

The nomination dossier foresees establishment of a management system to compliment the traditional management by local communities (State Party of Chad, 2015). However, this remains to implemented.

▶ Sustainable use

Some Concern

Traditional uses are permitted in the property (World Heritage Committee, 2017). Livestock grazing is the main local activity and while its current levels within the property haven't reached a critical stage, it might become an issue

in the future with increasing grazing pressure (IUCN, 2016).

▶ Education and interpretation programs

Some Concern

Since a management system for the property has not been established yet (World Heritage Committee, 2017), it is assumed that no education and interpretation programs have been developed yet. However, the nomination dossier outlines the planned activities, including an exhibition and installation of information shields (State Party of Chad, 2015).

▶ Tourism and visitation management

Some Concern

Due to the remoteness of the property, current visitation levels remain very low. However, it is expected that they will increase and this will require careful management (IUCN, 2016).

▶ Monitoring

Some Concern

While traditional management by local communities continues to protect the property, no professional management system has been established yet and therefore no monitoring programmes for the property exist. However, a number of research activities by foreign universities have been ongoing in the property for a long period of time and have collected an important volume of data (State Party of Chad, 2015).

▶ Research

Mostly Effective

A number of universities and research institutions, for example the University of Köln, have been involved in research activities in the property for a long period of time (State Party of Chad, 2015).

Overall assessment of protection and management

Serious Concern

Traditional management has until now safeguarded the integrity of the

property; however, it should be complemented by additional professional management to be able to respond to the challenges facing the site. A management system has been proposed at the time of inscription, but remains to be established. Moreover, it was considered that the proposed system would be insufficient to provide efficient protection for the property's values under criterion (ix) due to the absence of field personnel and resources. Concerns were also expressed with regard to the final configuration of the property's boundaries. The original boundaries of the area nominated by the State Party were revised during the course of evaluation. Specifically, a reduction of approximately 20% was introduced which excluded areas in the Northern part of the original nomination where an oil concession was granted. The excluded area contains significant attributes important for supporting the OUV of the property and therefore this excision is of concern.

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

Given the fact that the management system for the property still needs to be established, the capacity to deal with threats originating from outside the site is absent.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **Desert landscape of outstanding aesthetic value**
Good
Trend:Stable

At the time of inscription the outstanding landscape values of the property were considered to be in good condition (IUCN, 2016). However, a number of pressures (tourism, livestock grazing) are expected to increase and might result in negative impacts on the aesthetic value of the property.

▶

Conditions enabling survival of relict species far from their current distribution

High Concern
Trend:Data Deficient

While the site represents an outstanding example of a very specific relict ecosystem, concerns were expressed with regard to the revised boundaries of the property which do not include the full range of these features (IUCN, 2016). On the other hand, a significant loss of populations of many key species was documented in the property in the past (IUCN, 2016) and, while viable populations of many other species still exist in the property, it raises concerns regarding the impacts on the ecosystem integrity and functioning.

Summary of the Values

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

High Concern

Trend: Data Deficient

The outstanding landscape values of the property remain in good condition. However, a number of pressures (tourism, livestock grazing) are expected to increase and might result in negative impacts on the aesthetic value of the property. However, concerns are high with regard to the site's values under criterion (ix). While the site represents an outstanding example of a very specific relict ecosystem, the revised boundaries of the property do not include the full range of these features. On the other hand, a significant loss of populations of many key species was documented in the property in the past and, while viable populations of many other species still exist in the property, it raises concerns regarding the impacts on the ecosystem integrity and functioning.

Additional information

Benefits

Understanding Benefits

► Outdoor recreation and tourism

Tourism is currently limited due to remoteness of the area, but might increase in the future. While this could provide new opportunities for local communities, it will also need to be carefully managed in order to avoid any impacts on the property's values.

► Importance for research

A number of universities and research institutions, for example the University of Köln, have been involved in research activities in the property (State Party of Chad, 2015).

REFERENCES

№	References
1	IUCN (2016). World Heritage Nomination – IUCN Technical Evaluation, Ennedi Massif: Natural and Cultural Landscape (Chad). In: IUCN World Heritage Evaluations 2016, IUCN Evaluations of nominations of natural and mixed properties to the World Heritage List. WHC/16/40.COM/INF.8B2. Gland, Switzerland: IUCN. Accessed 27 October 2017.
2	State Party of Chad (2015). Proposition d'inscription du Massif de l'Ennedi, Tchad. Site soumis à l'inscription sur la Liste du patrimoine mondial de l'UNESCO.
3	World Heritage Committee (2016). Decision 40COM 8B.15. Ennedi Massif: Natural and Cultural Landscape. Accessed 27 October 2016.
4	World Heritage Committee (2017). Decision: 41 COM 8B.32 Ennedi Massif: Natural and Cultural Landscape, Statement of Outstanding Universal Value (Chad). Accessed 26 October 2017.