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

Lakes of Ounianga

SITE INFORMATION

Country:
Chad
Inscribed in: 2012
Criteria:
(vii)

Site description:
The site includes eighteen interconnected lakes in the hyper arid Ennedi region of the Sahara desert covering an area of 62,808 ha. It constitutes an exceptional natural landscape of great beauty with striking colours and shapes. The saline, hyper saline and freshwater lakes are supplied by groundwater and are found in two groups 40 km apart. Ounianga Kebir comprises four lakes, the largest of which, Yoan, covers an area of 358 ha and is 27 m deep. Its highly saline waters only sustain algae and some microorganisms. The second group, Ounianga Serir, comprises fourteen lakes separated by sand dunes. Floating reeds cover almost half the surface of these lakes reducing evaporation. At 436 ha, Lake Teli has the largest surface area but is less than 10 m deep. With their high quality freshwater, some of these lakes are home to aquatic fauna, particularly fish. © UNESCO

SUMMARY

2017 Conservation Outlook

Good

The values of the site are in good condition and there have been no signs of decline since inscription of the site in 2012. The level of threats remains low and there are no immediate threats to the Outstanding Universal Value of the site. Natural processes such as the siltation of the small two eastern lakes of Ounianga Kebir and dune encroachment into most of the other lakes persist, of course, in this hyperarid environment, but actions are being undertaken to address dunes encroachment. In its most recent Decision the World Heritage Committee welcomed the progress achieved by the State Party in a number of areas, including participation of local communities in the management of the site, as well as its efforts aimed at addressing the threats to the property. An annual budget has been committed by the Government, however, the amount remains rather low. Sustaining efforts aimed at the implementation of the management plan, including ensuring sufficient levels of funding, will be crucial for long-term preservation of this site.

Current state and trend of VALUES

Good
Trend: Stable

No evidence of any deterioration of the values of the site can be stated. To date the site is in a well preserved state. There have also been various improvements in site management, education, monitoring, tourist facilities, sanitation, waste disposal and therefore the situation has even been improving.

Overall THREATS

Low Threat

Overall the level of threats remains low and there are no immediate threats to the Outstanding Universal Value of the site. Natural processes such as the

siltation of the small two eastern lakes of Ounianga Kebir and dune encroachment into most of the other lakes persist, of course, in this hyperarid environment. Actions are being undertaken to address dune encroachment, but need to be continued in a way that does not impact on the outstanding natural beauty of the site, recognized as part of its OUV. Increase in tourism remains of the main potential threats, however, to date there are no indications that this is of concern.

Overall PROTECTION and MANAGEMENT

Mostly Effective

A new management plan (for 2014-2023) was finalized in 2014 and there appears to have been certain improvement in the management of the site. In its most recent Decision the World Heritage Committee welcomed the progress achieved by the State Party in a number of areas, including participation of local communities in the management of the site, as well as its efforts aimed at addressing the threats to the property. An annual budget has been committed by the Government, however, the amount remains rather low. Sustaining efforts aimed at the implementation of the management plan, including ensuring sufficient levels of funding, will be crucial for the long-term preservation of this site.

FULL ASSESSMENT

Description of values

Values

World Heritage values

► **An exceptional example of permanent lakes in a desert setting**
Criterion:(vii)

The site provides an exceptional example of permanent lakes in a desert setting, a remarkable natural phenomenon which results from an aquifer and associated complex hydrological system which is still to be fully understood. Located in north-eastern Chad, in a hot and hyperarid desert setting with less than 2mm of average rainfall per year, the Ounianga area comprises a total of 18 lakes, displaying a variety of sizes, depths, water coloration and chemical composition. The hyper saline, brackish and freshwater lakes are supplied by fossil (not currently replenished) groundwater and are found in two groups 40 km apart. Ounianga Kebir comprises four lakes, the largest of which, Yoan, covers an area of 358 ha and is 27 m deep. Its hyper saline waters only sustain algae, other micro organisms and salt-tolerant instect larvae; larger aquatic fauna such as fish and toads are restricted to spring pools and narrow stretches along the shoreline where fresh groundwater flows into the lake. To the east, Ounianga Serir comprises fourteen lakes separated by sand dunes (SoOUV, 2012), and is the largest known lake complex in a hyper arid environment (IUCN Evaluation, 2012).

► **Exceptional natural landscape of great beauty**
Criterion:(vii)

The aesthetic beauty of the Ounianga area results from a landscape mosaic which includes the lakes with blue, green and /or reddish coloured waters

depending on their chemical composition and algal community, surrounded by palms, dunes and spectacular sandstone landforms, all of it in the heart of a desert that stretches over thousands of kilometres. In addition, about one third of the surface of the freshwater lakes at Ounianga Serir is covered with floating reed carpets whose intense green colour contrasts with the adjacent blue open water. Rock exposures dominating the site offer a breathtaking view on all the lakes, of which the colours contrast with the sand dunes separated by bare rock structures (SoOUV, 2012).

Assessment information

Threats

Current Threats

Low Threat

Overall the level of threats remains low and there are no immediate threats to the Outstanding Universal Value of the site. Natural processes such as the siltation of the small two eastern lakes of Ounianga Kebir and dune encroachment into most of the other lakes persist, of course, in this hyperarid environment. Actions are being undertaken to address dune encroachment, but need to be continued in a way that does not impact on the outstanding natural beauty of the site, recognized as part of its OUV.

► Erosion and Siltation/ Deposition

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

Natural processes, such as silting-up of the small two eastern lakes of Ounianga Kebir and dune encroachment into most of the other lakes persist in this hyperarid environment (Kröpelin, 2013). Local staff has been hired to be responsible for activities aimed at preventing dune encroachment, including through establishment and maintenance of fences (State Party of Chad, 2015). In its recent Decision the World Heritage Committee, however,

noted that the installation of fences needs to be undertaken in a way that does not negatively impact on the outstanding natural beauty of the site which is part of the site's OUV (World Heritage Committee, 2015).

► Water Pollution

Very Low Threat
Inside site, extent of threat not known

The measures undertaken during the past years to prevent the eutrophication of Lake Yoan by the ban to use detergents at the shore appear to have clearly reduced the former hyper-abundance of floating algae; it still occurs, however, during rare longer windless periods (Kröpelin, 2013).

► Household Sewage/ Urban Waste Water

Low Threat
Inside site, extent of threat not known
Outside site

Measures have been undertaken to address the waste situation, including organization of "clean-up" days in the two villages of the site and along the lakes' shores and the situation has been improving (State Party of Chad, 2015). Signs reminding that it is prohibited to leave solid waste around the lakes have been installed (State Party of Chad, 2016).

Potential Threats

Low Threat

Increase in tourism remains one of the main potential threats, however, to date there are no indications that this is of concern.

► Tourism/ visitors/ recreation

Low Threat
Inside site, localised(<5%)

It is yet difficult to foresee the impact of the expected increase in tourism which might be associated with the inscription of this site on the World Heritage List. The only risk for any substantial increase in tourist numbers would be a real or perceived deterioration of the security situation in the

region as a consequence of conflicts in other Saharan countries. This, however, would not imply any danger to the site itself (Kröpelin, 2013). To maintain the site's integrity, in agreement with administrative and traditional authorities, it has been decided that any future touristic facility or hotel must blend in with the local architectural features such as height, colour, materials, shape of buildings, etc. Moreover, these facilities must meet eco-touristic and environmental principles and uses (IUCN Evaluation 2011). Restrictions on vehicle access to the lakes' shores and camping have been recently introduced (State Party of Chad, 2015).

► Crops

Very Low Threat
Outside site

The main potential threat is linked to potential development of intensive agriculture in this area. The Government has addressed this potential threat by the recently adopted Decree No. 095 which aims to maintain traditional agricultural practices in the area instead of intensive agriculture as this could lead to impacts on the values of the site (IUCN Evaluation 2011).

► Roads/ Railroads

Low Threat
Outside site

Cross-border road traffic may have negative impacts on the site (SOC report, 2014).

Protection and management

Assessing Protection and Management

► Relationships with local people

Mostly Effective

Although a good number of people live around lakes Yoan and Teli, local initiatives are assuring the compatibility between human activities and conservation of the site's values. Activities planned in the management plan strengthen and complement these initiatives. In addition the recently

adopted Decree No. 095 which aims to maintain traditional agricultural practices in the property instead of intensive agriculture will enhance the conservation of the property (SoOUV, 2012). The local communities and associations of Ounianga Kebir and Ounianga Serir already benefit from the national and beginning international attention as well as from the funds provided by the Chadian government (120 mio. FCFC or ~185,000 €). In its most recent Decision the World Heritage Committee recognized the progress achieved by the State Party in a number of areas, including in “ensuring the participation of local communities in the management of the property and the respect of local knowledge and their rights to maintain sustainable traditional use of resources” (World Heritage Committee, 2015).

► Legal framework

Mostly Effective

Decree n° 1077/PR/PM/MCJS/2010 of 15.12.2010 designated the Lakes of Ounianga as a “Natural site”. The protected area system of Chad, as established in Law n°14/PR/2008, focuses on fauna and flora conservation and, alone, is not fully suited to Ounianga. Thus, responsibility for the property is vested in the Ministry of Culture. Under the decree, all activities that could threaten the integrity of the property, including mining, are forbidden. This decree is complemented by the Decree No. 630 which regulates the need to prepare Environmental Impact Assessments for development projects (SoOUV, 2012). Overall, the protection of the property is adequate. However, the legislation is very recent and, consequently, its application has not really been tested (IUCN Evaluation, 2011).

► Enforcement

Mostly Effective

A certain improvement has been achieved in the field of enforcement, particularly with regards to regulations around solid waste and restrictions on vehicles access to the lakes (State Party of Chad, 2015).

► Integration into regional and national planning systems

Data Deficient

Data deficient

► Management system

Mostly Effective

Conservation efforts focus on factors that could impact the site's integrity, which include effective measures to regulate urban development, address litter and waste management, support sustainable agriculture and ensure that traffic, tourism and other uses is maintained at levels that do not impact the Outstanding Universal Value of the property. Several local associations created at the initiative of the local governmental authorities and the local communities are also responsible for the conservation of the property. These activities are implemented with the support of a Local Management Committee, which provides input for improving the existing management plan (SoOUV, 2012). The management plan referred to in the nomination document is in fact more of an operational plan for the period 2010-2012 (IUCN Evaluation 2012). A new management plan (for 2014-2023) was finalized in 2014. A Local Committee for Organization and Implementation responsible for the implementation of activities set out by the management plan has been established and has been operational (State Party of Chad, 2015).

► Management effectiveness

Mostly Effective

A new management plan (for 2014-2023) was finalized in 2014 and there appears to have been certain improvement in the management of the site. The most recent State of Conservation report and the most recent World Heritage Committee Decision recognize the progress achieved by the State Party in improving the management of the site and addressing a number of issues (UNESCO, 2015; World Heritage Committee, 2015). The implementation of the management plan and ensuring that a functioning management system is in place will be crucial for the long-term preservation of this site. A recent visit by experts from the African World Heritage Fund allowed to further strengthen the management capacity and to develop a risk assessment and risk management plan for the property (State Party of Chad, 2016).

► Implementation of Committee decisions and recommendations

Mostly Effective

In its most recent Decision the World Heritage Committee welcomed the progress achieved by the State Party in a number of areas, including participation of local communities in the management of the site, as well as its efforts aimed at addressing the threats to the property (World Heritage Committee, 2015).

► Boundaries

Highly Effective

The boundaries of the 62,808 ha property have been designed to ensure its integrity. The property includes the area situated below the 450m contour line within the immediate lake watershed. The 4,869 ha buffer zone includes the village of Ounianga Kebir beside Lake Yoan. Zoning for management of the site takes into account pressures which are now mainly concentrated on Lake Yoan. Ounianga Serir, the smallest village (population of c. 1,000 in 2012) is next to Lake Teli, inside the property (SoOUV, 2012). The property is large enough to ensure visual integrity. The boundaries offer an appropriate degree of protection for the natural functions.

► Sustainable finance

Mostly Effective

To implement the action plan, an annual budget has been prepared and its funding has been guaranteed by Order of the Prime Minister, Head of Government (Order N°2893/PR/PM/MC/2011 dated 6 September 2011). A budget of 120 Million CFA francs (about 183’000 €) has been allocated for 2012 and 2013 by the Ministry of Culture to the management committees of the Lakes of Ounianga.
Recent information shows that an annual budget of the same has been allocated by the Government (State Party of Chad, 2015). However, concerns remain that this amount is insufficient (IUCN Consultation, 2017).

► Staff training and development

Data Deficient

Data deficient

► Sustainable use

Highly Effective

The local communities' use of natural resources, in particular of the date palms and the groundwater, is as sustainable as it has been for centuries in this traditional "date culture". The impact of the very limited fishing is difficult to assess (Kröpelin, Survey, unpublished, 2013).

► Education and interpretation programs

Some Concern

There have been some awareness activities organized in schools and for visitors (including the importance of protecting the lake waters), However education activities need to be continued and increased (IUCN Evaluation 2011). A number of awareness raising activities have been ongoing (State Party of Chad, 2016).

► Tourism and visitation management

Data Deficient

Data deficient

► Monitoring

Mostly Effective

Scientific research needs to be increased (i.e. no data is available on fauna and flora); simple monitoring actions established (regular photo surveys, monitoring of lake level and of silting up, water quality, visitor counts and traffic monitoring coming from Libya, etc.) (IUCN Evaluation, 2011). Regular monitoring of the lakes' hydrology is being undertaken by a hydrologist from the Ministry of Water (State Party of Chad, 2016).

► Research

Highly Effective

A number of international research institutes have been conducting research

in the area.

Overall assessment of protection and management

Mostly Effective

A new management plan (for 2014-2023) was finalized in 2014 and there appears to have been certain improvement in the management of the site. In its most recent Decision the World Heritage Committee welcomed the progress achieved by the State Party in a number of areas, including participation of local communities in the management of the site, as well as its efforts aimed at addressing the threats to the property. An annual budget has been committed by the Government, however, the amount remains rather low. Sustaining efforts aimed at the implementation of the management plan, including ensuring sufficient levels of funding, will be crucial for the long-term preservation of this site.

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

Data Deficient

Data deficient

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **An exceptional example of permanent lakes in a desert setting**

Low Concern
Trend:Stable

The hydrological system of the Ounianga lakes is functioning and the water level is stable apart from slight seasonal variation, thanks to a groundwater supply which compensates evaporation losses (IUCN Evaluation, 2012). These values of the property remain in good condition (IUCN Consultation,

2017).

▶ **Exceptional natural landscape of great beauty**

Good

Trend:Stable

The beauty and aesthetic values of the property have been well conserved. Although a good number of people live around lakes Yoan and Teli, local initiatives are assuring the compatibility between human activities and conservation of the site's values. (SoOUV, 2012). A number of actions have been undertaken to address issues such as waste management and therefore the situation has been improving (State Party of Chad, 2015). These values remain intact (IUCN Consultation, 2017).

Summary of the Values

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

Good

Trend: Stable

No evidence of any deterioration of the values of the site can be stated. To date the site is in a well preserved state. There have also been various improvements in site management, education, monitoring, tourist facilities, sanitation, waste disposal and therefore the situation has even been improving.

Additional information

Benefits

Understanding Benefits

▶ **Importance for research**

Knowledge – The site is an important area for research with a number of

international experts conducting research activities.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Association pour le développement socioculturel d’Ounianga (ADSCO)		data deficient
2	Association pour le développement du Borkou, Ennedi et Tibesti		data deficient
3	Association pour la protection de l’environnement et la lutte contre la désertification		data deficient
4	Association des femmes pour le développement et la protection de l’environnement d’Ounianga		data deficient

REFERENCES

№	References
1	IUCN, 2012. Advisory Body Evaluation.
2	Kröpelin, 2013. Report from a research visit to the site.
3	Nomination File, 2012.
4	Stat Party report 2016
5	State Party report 2015
6	UNESCO (2015). State of Conservation report
7	World Heritage Committee (2015). Decision 39COM 7B.3. Lakes of Ounianga (Chad). Bonn, Germany.-
8	World Heritage Committee Decision 36COM 8B.7.