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

Wadi Al-Hitan (Whale Valley)

SITE INFORMATION

Country:
Egypt
Inscribed in: 2005
Criteria:
(viii)

Site description:
Wadi Al-Hitan, Whale Valley, in the Western Desert of Egypt, contains invaluable fossil remains of the earliest, and now extinct, suborder of whales, Archaeoceti. These fossils represent one of the major stories of evolution: the emergence of the whale as an ocean-going mammal from a previous life as a land-based animal. This is the most important site in the world for the demonstration of this stage of evolution. It portrays vividly the form and life of these whales during their transition. The number, concentration and quality of such fossils here is unique, as is their accessibility and setting in an attractive and protected landscape. The fossils of Al-Hitan show the youngest archaeocetes, in the last stages of losing their hind limbs. Other fossil material in the site makes it possible to reconstruct the surrounding environmental and ecological conditions of the time. © UNESCO

SUMMARY

2017 Conservation Outlook

Good with some concerns

The conservation outlook for Wadi Al-Hitan is good overall.
Wadi Al-Hitan comprises exceptionally rich values related to the record of life, in a generally very good state of conservation. An appropriate management framework is in place and could be further strengthened (e.g. update of the management plan, control of vehicle access, financial resources). An as yet unresolved issue is the possible inclusion of the Gebel Qatrani site (its inclusion in a boundary extension has been in preparation since 2011) which would considerably complement the values already comprised by Wadi Al-Hitan. Wadi Al-Hitan is close to the requirements for the highest assessment rating in relation to its management, and this would be achieved if the key issues of the management plan update and sustainable finance were resolved.

Current state and trend of VALUES

Good
Trend: Stable

Overall status of whale skeletons and other fossils very good. Different stages of weathering (from natural erosion) and some limited impact of damage/removal by visitors observed.

Overall THREATS

Low Threat

Damage, theft and vandalism by visitors (including damage by 4x4 vehicles) are the main threat. Natural wind erosion also affects exposed fossils, and there is a potential threat from illegal quarrying operations.

Overall PROTECTION and MANAGEMENT

Some Concern

A management framework is in place, but could be further strengthened (e.g. update of the management plan, control of vehicle access, financial resources). An as yet unresolved issue is the possible inclusion of the Gebel Qatrani site (its inclusion in a boundary extension has been in preparation since 2011) which would considerably complement the values already comprised by Wadi Al-Hitan.Financing and resource allocation remain a challenge to management.

FULL ASSESSMENT

Description of values

Values

World Heritage values

► > 400 skeletons of a wide variety of fossilized Eocene whales and other marine fossils

Criterion:(viii)

Wadi Al-Hitan is the most important site in the world to demonstrate one of the iconic changes that make up the record of life on Earth: the evolution of the whales. It portrays vividly their form and mode of life during their transition from land animals to a marine existence. It exceeds the values of other comparable sites in terms of the number, concentration and quality of its fossils, and their accessibility and setting in an attractive and protected landscape (SoOUV, 2012). Iconic assemblage of fossilized skeletons of Archaeoceti (primitive whales documenting cetacean transition to marine life), sirenians and reptiles, as well as shark teeth from Gehannam Formation (40-41 million years ago). Additional whale skeletons from Birket Qarun Formation. 4 classes, 15 families and 25 genera of vertebrates represented. Largest concentration of intact skeletons worldwide. Qasr El-Sagha Formation (39-40 million years old), with fossilized marine and shallow marine invertebrate remains (UNEP-WCMC, 2011).

Assessment information

Threats

Current Threats

Low Threat

Damage, theft and vandalism by visitors (including damage by 4x4 vehicles) are the main threat. Natural wind erosion also affects exposed fossils.

▶ Tourism/ visitors/ recreation

High Threat
Inside site, extent of threat not known

Threefold increase of annual visitor numbers to ca. 12,000 between 2005 and 2008 (UNEP-WCMC, 2011), but a subsequent drop in numbers by almost 50% after January 2011 (El-Kholei, 2013). Fossil collection for the purpose of selling or keeping as souvenirs has been characterized to be widespread, severe, and of high threat according to Paleczny et al (2007). While the impact from theft on the whale skeletons remains low (IUCN, 2010) due to their size and weight, they are physically fragile and sensitive to impacts from vandalism.

▶ Tourism/ visitors/ recreation

Low Threat
Inside site, extent of threat not known

Some inofficial access tracks to the site (e.g. from northern Baharia road) lead through areas containing fossils, which may lead to damage or destruction. One case of fossil destruction was documented in 2007. Enforcement logistics are challenging due to the site's remote location (UNEP-WCMC, 2011).

▶ Erosion and Siltation/ Deposition

Very Low Threat

Inside site, extent of threat not known

Damage by natural erosion is slow and overall not significant (UNEP-WCMC, 2011). It is a natural process that is part of the dynamics of the site, but the fragility of the whale skeletons requires that they are protected against additional destruction, e.g. from cars. Exposed parts have been protected through polymer embedding by site managers in the past.

Potential Threats

Data Deficient

There have been reports of unsuccessful attempts to establish illegal quarries on-site. This may continue posing a potential threat although specific information is not available.

► Mining/ Quarrying

Data Deficient
Inside site, extent of threat not known

There have been reports of unsuccessful attempts to establish illegal quarries on-site. This may continue posing a potential threat although specific information is not available (IUCN Consultation, 2011).

Protection and management

Assessing Protection and Management

► Relationships with local people

Mostly Effective

No one lives on the site, but there is an effective relationship with locals, who are employed as guards, in management and tourism. Plans to involve local stakeholders more in ecotourism business are making progress – in 2010 15 families were benefiting from 28 conservation jobs (related to tourism activities) in this area that offers few other sources of income (IUCN Consultation, 2011). The site management has worked with the local communities to build their capacity in regards to the site but also with regards to building their skills for offering these services to the tourists

(Borges et al, 2011). Although an earlier report (Paleczny et al, 2007) produced by the Nature Conservation Sector of the EEAA found that local communities around the Wadi El-Rayan Protected Area had limited awareness of the benefits the protected area provided to their communities, Wadi Al-Hitan has been identified as a good example of how well planned tourism development can provide local benefits (Borges, Carbone et al., 2011). Considering the decline of tourism in Egypt and the current political challenges, involvement of local communities might need to include other mechanisms such as allowing for a stronger role in decision making and management planning of the site. For this reason, the relationship with local people is assessed as being Mostly Effective, rather than Highly Effective.

► Legal framework

Mostly Effective

The property is protected as part of Wadi El-Rayan Protected Area (WRPA) under Egyptian Law No. 102 (1983) for Protected Areas, and enforced by Nature Conservation Sector (NCS) of Egyptian Environmental Affairs Agency (EEAA) (SoOUV, 2012). In 2011 there were 28 rangers and guards in the overall WRPA. Logistics are challenging due to the remote location of the property (UNEP-WCMC, 2011).

► Enforcement

Some Concern

Enforcement logistics are challenging due to the Site's remote location (UNEP-WCMC, 2011).

► Integration into regional and national planning systems

Some Concern

Site protection supported by Prime ministerial Decree No. 2954/1997 (SoOUV, 2012). The impacts of changing governance system and high turnover rates need to be addressed on the site management effectiveness and long term protection.

► Management system

Some Concern

Managed as special protection zone within WRPA – no separate plan or administration. WRPA is managed under national regulatory law on Nature Protectorates (SoOUV, 2012). The WRPA management plan was prepared in 2002 and revised in 2010. A separate management plan for Wadi Al-Hitan was in preparation in 2011 (IUCN Consultation, 2011). Business plan prepared but not endorsed by 2007 (Debonnet, 2007). A planning team is responsible for day-to-day management, preparation of annual plans, and monitoring of management effectiveness (SoOUV, 2012). The current status of the site management plan is not known. There is no evidence that an active plan is in place.

► Management effectiveness

Mostly Effective

No formal management effectiveness assessment has been published but overall management of key aspects appeared to be effective and improving at least until 2010 (IUCN, 2010). The status of the Management Plan needs to be clarified. No evidence is available on an active management plan for the site. For this reason, management effectiveness is assessed as being Mostly Effective, rather than Highly Effective.

► Implementation of Committee decisions and recommendations

Mostly Effective

Recommendations from Committee Decision 29 COM 8B.5 regarding visitor infrastructure, strengthening management capacities, and vehicular traffic management were mostly met by the 34th session of the Committee in 2010 (IUCN, 2010). In response to Committee Decision 32 COM 7B.5, there was significant progress in the management of the property, including in relation to monitoring and the development of sustainable tourism (IUCN, 2010). Recommendations from Committee Decision 34 COM 7B.8 regarding developing a proposal for changing the property boundary remain to be implemented. However, a boundary extension has been in preparation since 2011 (IUCN, 2014).

► Boundaries

Some Concern

Boundaries are generally adequate but were poorly manageable - they have been adjusted based on natural features in 2010 (IUCN Consultation, 2011). The extension of the buffer zone (of currently 5,885 ha) has been recommended. A boundary extension including Gebel Qatrani (recommended by IUCN and World Heritage Committee Decision 29 COM 8B.5) and Gebel Abiad site (west of the property) was in preparation in 2011 (IUCN, 2014). No evidence of any follow up on the recommended buffer zone development is available.

► Sustainable finance

Some Concern

Budget funding from EEAA in 2007 ca. $28,220, together for overall WRPA and Lake Qarun PA. No visitor income retention to support sustainable financing by 2010 (Debonnet, 2007). Italian-Egyptian Environment Programme had committed $518,000 for 2004-08 (UNEP-WCMC, 2011), with Phase III to begin at the end of 2016 (El-Kholei, 2013). Conservation fund planned and “Friends of Wadi Al-Hitan” NGO tested as part of sustainable funding by 2007 – status unclear (Debonnet, 2007). Future funding is expected from government grants, entry fees, donations, and eventually from a Conservation Fund but money is needed both to supply vehicles, electricity and water now, and over the long term. The projected total expenses for the whole WRPA are given but sums for Wadi Al-Hitan are not stated separately (UNESCO, 2010).

► Staff training and development

Mostly Effective

The staff capacity development does seem to be systematic during the last five years. However, there is no evidence of a structured program for staff training and capacity development.

► Sustainable use

Mostly Effective

No significant resource use other than tourism. Due to noted impacts from illegal fossil collection, sustainable use at the property is assessed as being

Mostly Effective, rather than Highly Effective.

► Education and interpretation programs

Highly Effective

Adequate education and interpretation facilities (visitor centre, signposting, information panels, leaflets, brochures and video) in place (Debonnet, 2007, El-Hennawy et al., 2010). A Fossils Climate Change Museum has newly opened in January 2016, featuring the Basilosaurus (of which a fully intact fossil was recently discovered) as it's main figure (IUCN, 2015).

► Tourism and visitation management

Mostly Effective

About 12,000 people visit per year (UNESCO, 2010). Vehicle access is not permitted (SoOUV, 2012), with vehicular traffic regulated in the open air museum (UNESCO, 2010), and visitors are restricted to pre-arranged tours along prescribed trails by foot or camel (UNEP-WCMC, 2011). There are specialized eco-tourism zones, with others for research and study (SoOUV, 2010). Extensive interpretation and visitor guiding facilities were established by 2010. There is limited on-site accommodation (SoOUV, 2012), including possibly a camping site and eco-lodge which were planned in 2007 (Debonnet, 2007). Cooperation with interested tourism/trekking companies offers added value. A possible need to further improve 4x4 access management was noted in 2010, but unauthorized access from the north was reduced to non-significant levels by 2010 (IUCN Consultation, 2011, IUCN, 2010). The previous increase in visitor numbers had been facilitated by a significant investment in well designed tourism facilities outside the main fossil bearing layers.

► Monitoring

Highly Effective

Inventory works have been ongoing since the 1980s, and a monitoring programme has been in place since 1998 (2007). Documentation and monitoring of new finds is ongoing. More extensive geological surveys are undertaken twice a year. Visitor monitoring since 2005 (El-Hennawy et al., 2010). The site is patrolled daily to catch illegal visitors and twice a week a team monitors the condition of the fossils, photographing them and when

necessary repairing damage (UNEP-WCMC, 2011).

▶ Research

Highly Effective

Strong scientific interest since 1980s. Exploration continuing; more fossils expected to be discovered in the future (UNEP-WCMC, 2011). One geologist employed on-site (2007). Exemplary research collaboration between EEAA, Egyptian Geological Survey and University of Michigan, with a site staff training component agreed in 2005 and ongoing (Debonnet, 2007, IUCN Consultation, 2011). The world's only intact fossil of an early whale – the Basilosaurus dating to about 40 million years ago – was uncovered during a recent excavation. The discovery reveals for the first time the creature's complete skeleton and includes fossilized remains of other sea creatures inside its stomach (IUCN, 2015).

Overall assessment of protection and management

Some Concern

A management framework is in place, but could be further strengthened (e.g. update of the management plan, control of vehicle access, financial resources). An as yet unresolved issue is the possible inclusion of the Gebel Qatrani site (its inclusion in a boundary extension has been in preparation since 2011) which would considerably complement the values already comprised by Wadi Al-Hitan.Financing and resource allocation remain a challenge to management.

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

Some Concern

Areas outside of the site fall within the Wadi Rayan Protected Area (WRPA), which is managed under a national regulatory law on Nature Protectorates (SoOUV, 2012). Resources of WRPA are generally under threat due to human use, and there are challenges to be dealt with if the values are to be maintained at satisfactory levels (Paleczny et al, 2007). The status of the WRPA management effectiveness is not known and needs to be addressed in future reporting and monitoring missions.

► **Best practice examples**

The visitor and interpretation facilities established at Wadi Al-Hitan have not only made this site more attractive and informative to visitors, but also greatly contributed to reducing unregulated access with potential negative impacts on the site. These facilities and the underlying plans and concepts are a best practice example for other similar sites. (Abulhawa et al, 2014) The successful and early involvement of local stakeholders in Site conservation was instrumental in maintaining its values even during times of political and socio-economic stresses in the country (Abulhawa et al, 2014).

State and trend of values

Assessing the current state and trend of values

World Heritage values

► **> 400 skeletons of a wide variety of fossilized Eocene whales and other marine fossils**
Good
Trend:Stable

Whale and vertebrate skeletons generally well-preserved. 40% of known fossils in good condition, 42% weathered, 18% severely weathered in 2009 (El-Hennawy et al., 2010).

Summary of the Values

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

Overall status of whale skeletons and other fossils very good. Different stages of weathering (from natural erosion) and some limited impact of damage/removal by visitors observed.

Additional information

Benefits

Understanding Benefits

► Importance for research

The outstanding paleontological values of the site are recognized by its inscription on the World Heritage List under criterion viii.

► Outdoor recreation and tourism

Visitation of the site still limited (ca. 12,000 visitors in 2008) but increasing, and attractiveness of the site supports potential further growth in visitation.

► Contribution to education

The number and diversity of fossil remains at the site offer an impressive insight into evolution and the history of Earth, which is of high educational value and has potential to be realized to a greater extent as visitation increases. Specimens from Wadi Al-Hitan are currently displayed in several institutions: 56 specimens are preserved in the Cairo Geological Museum; others are held in London, Berlin, Stuttgart and the University of Michigan where there is a complete Dorudon atrox skeletal mount on exhibit (UNEP-WCMC, 2011), and the world’s only intact fossil of an early whale was uncovered during a new excavation (IUCN, 2015).

► Tourism-related income, Provision of jobs

28 direct conservation jobs and 15 families benefiting from tourism and visitation of site, in an area with little other income sources. In Wadi Al-Hitan, tourism development has occurred mainly at small scale and through local communities who offer most of the services available to the visitors. The site management has worked with the local communities to build their capacity

in regards to the site but also with regards to building their skills for offering these services to the
tourists. Economic development of local communities has been another outcome of well-planned tourism at Wadi Al Hitan (Borges et al, 2011). Members of the local community have also been trained on restoration and conservation of the site's fossils, and are hired as rangers and guards.

The impacts of the fluctuation of benefits derived from the site by local communities due to tourism decline need to be carefully monitored.

Summary of benefits

The rich benefits of the site are based on its paleontological values and are mainly in the area of tourism, knowledge building and education. However, given the remoteness and desert environment of the property, it also provides significant socio-economic benefits to the local population. Efforts need to be made to monitor this relationship to ensure the site's ability to remain inclusive and participative.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Egyptian Italian Environmental Cooperation Program (EIECP)	From: 2016 To: 2019	Phase III of the Egyptian Italian Environmental Cooperation Program (EIECP) was to begin at the end of 2016 and continue for three years. The EIECP consists of seven projects, one of which is the Wadi El-Rayan and Wadi Al-Hitan Protected Area (El-Kholei, 2013).

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	Long-term funding	No visitor income retention to support sustainable financing by 2010, and funding from other sources in unclear (Debonnet, 2007). There is a need to establish long-term funding (IUCN, 2010). A financing strategy should be prepared, sources of funding could be further diversified, and alternative mechanisms for retaining funding at sustainable levels should be found (Paleczny et al, 2007).	
2	Case study prepared on engaging local stakeholders	A detailed case study (nationally led) needs to be prepared highlighting the lessons learned from engaging local stakeholders in World Heritage Site conservation. This could include a regional activity held on-site aimed at sharing regional knowledge and facilitating peer coaching and shared learning (Abulhawa et al, 2014)	
3	Expansion of research of site values	There is a need to support the expansion of scientific research related to the site values, including the provision of formal and informal training of local human resources (Abulhawa et al, 2014).	
4	Buffer zone advice and backstopping	Technical advice and backstopping needs to be provided for establishment of the Site buffer zone. This could be done including the involvement of other regional experts and practitioners (Abulhawa et al, 2014).	
5	Effective visitor managment	Visitor management is crucial to both a positive experience of visitors and the minimization of damage to the property. While significant improvements have been made in this regard, further efforts are needed to maintain and increase standards (IUCN, 2014)	
6	Up-to-date information on ongoing projects	Specific information needs to be provided regarding the finalization of the management plan, and there should be up-to-date survey information (IUCN, 2010)	

№	Site need title	Brief description of potential site needs	Support needed for following years
7	Monitoring of management and protection programs	A suite of indicators should be established to enable focused monitoring in support of management and protection programs. This will support decision making (Paleczny et al, 2007).	
8	Outreach to local communities	There is a possible need for an increase in outreach to local communities, as there is varying confirmation regarding level of involvement of local peoples. This could include the establishment of collaborative management forums for the PA, including community heads, and implementation of regular meetings with stakeholders (Paleczny et al, 2007).	
9	Widespread promotion as a tourist destination	Most visitors are foreigners, and in light of a 50% drop in tourist numbers since 2011, there is a need for promotion of the site as a tourist destination for both Egyptians and foreigners (El-Kholei, 2013).	
10	Well-maintained tourist amenities	Tourist amenities should be better maintained. For example, the 34km road from WRPA is not maintained, the visitor water tank cannot serve large numbers of people, the diesel generator powering the gift shop is disruptive, and fee signs are only written in Arabic (El-Kholei, 2013).	

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