



الطبيعة والتراث العالمي في الدول العربية

# Tabe'a

Nature and World Heritage in the Arab States:  
towards future IUCN priorities



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IUCN is the world's oldest and largest global environmental organization, with more than 1,000 government and NGO members and almost 11,000 volunteer experts in some 160 countries. IUCN's work is supported by over 1,000 staff in 60 offices and hundreds of partners in public, NGO and private sectors around the world.

# Table of Contents

<b>List of Acronyms</b>	2
<b>Preface</b>	3
<b>Acknowledgments</b>	4
<b>1 Introduction</b>	5
1.1 IUCN's role in the World Heritage Convention	6
<b>2 Natural World Heritage in the Arab States</b>	8
<b>3 Conservation of Natural and Mixed World Heritage Sites in the Arab States</b>	10
3.1 Banc d'Arguin National Park (Mauritania)	12
3.2 Ichkeul National Park (Tunisia)	14
3.3 Socotra Archipelago (Yemen)	16
3.4 Tassili n'Ajjer (Algeria)	18
3.5 Wadi Al-Hitan (Egypt)	20
<b>4 World Heritage Tentative Lists</b>	22
4.1 Current state of the Arab States' Tentative Lists	22
4.2 Identification of potential sites for Tentative Lists	23
4.3 Key issues	24
<b>5 Conclusions and Recommendations</b>	27
<b>Annexes</b>	29
Annex 1. Assessment Tables	29
Banc d'Arguin National Park (Mauritania)	30
Ichkeul National Park (Tunisia)	33
Socotra Archipelago (Yemen)	35
Tassili n'Ajjer (Algeria)	37
Wadi Al-Hitan (Whale Valley) (Egypt)	38
Annex 2. Assessment criteria for (vii), (viii), (ix) and (x)	40
Annex 3. Additional sources of information	42

## List of Acronyms

Acronyms from languages other than English are spelled out in their English translation for this list.

<b>COM</b>	World Heritage Committee Meeting
<b>CZP</b>	Conservation Zoning Plan
<b>EEAA</b>	Egyptian Environmental Affairs Agency
<b>EEZ</b>	Economic Exclusion Zone
<b>EPA</b>	Environmental Protection Agency
<b>EU</b>	European Union
<b>FIBA</b>	International Foundation for Banc d'Arguin
<b>GEF</b>	Global Environmental Facility
<b>GIZ</b>	German International Cooperation (formerly GTZ)
<b>GTZ</b>	German Technical Cooperation
<b>IAS</b>	Invasive and Alien Species
<b>ICOMOS</b>	International Council on Monuments and Sites
<b>IUCN</b>	International Union for Conservation of Nature
<b>MAB</b>	Man and Biosphere (a UNESCO Programme)
<b>NGO</b>	Non-Governmental Organization
<b>OUV</b>	Outstanding Universal Value
<b>PA</b>	Protected Area
<b>PNBA</b>	Banc d'Arguin National Park
<b>PNI</b>	Ichkeul National Park
<b>PSSA</b>	Particularly Sensitive Sea Area
<b>SOC</b>	State of Conservation
<b>SP</b>	State Party
<b>UAE</b>	United Arab Emirates
<b>UNDP</b>	United Nations Development Programme
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>WHC</b>	World Heritage Convention
<b>WHF</b>	World Heritage Fund
<b>WRPA</b>	Wadi El-Rayan Protected Area
<b>WWF</b>	World Wide Fund for Nature

## Preface

At a crucial time of rapid socio-economic change, Nature and World Heritage in the Arab States provides an assessment of World Heritage in the Arab States region. This includes the conservation outlook for the five existing natural and mixed World Heritage sites in the region, as well as an analysis of the regions' potential natural heritage sites included in the Tentative Lists.

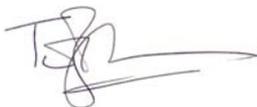
The report has been produced by IUCN as a contribution to supporting the World Heritage Convention in the Arab States, recognizing the need to strengthen the identification, conservation and presentation of natural heritage in the region. It is intended to help identify future IUCN priorities for work on World Heritage.

As the world's largest environmental network and the Advisory Body on nature to the World Heritage Committee, IUCN is in a unique position to contribute on World Heritage. The independent desk-based assessments presented in this report are based on information and data mobilized through IUCN's World Heritage Programme and through its network of 12,000 experts, particularly the IUCN World Commission on Protected Areas (WCPA) and the Species Survival Commission (SSC).

This report is a pilot project for a future, more extensive report, on the state of conservation of all natural and mixed World Heritage sites. Thus, it is as much a consultation document as a knowledge tool for those Government institutions responsible for World Heritage in the Arab States, World Heritage site managers, NGOs and wider civil society, IUCN member organizations, and international agencies. It is also part of a wider discussion relating to how natural World Heritage will feature in the new IUCN programme to be launched in 2012. IUCN welcomes feedback on this report and its assessment framework. An address for comments is provided in the introduction.

The assessment and analysis provided in this report will also help guide IUCN's programme of work on natural World Heritage in the Arab States, delivered through its Regional Office for West Asia (ROWA) and its Centre for Mediterranean Cooperation, and with additional support from the two IUCN regional offices for Africa. In essence, IUCN's regional offices serve as a bridge between the national and global levels, including in relation to the World Heritage Convention. They aim to provide capacity building on natural heritage that takes into account regional national priorities and needs, create a regional natural heritage network that exchanges information, experience and knowledge, and support the harmonization of the Arab States' Tentative Lists. Contact details are provided on the back cover of this report.

IUCN looks forward to supporting the Arab States in realizing the potential of the World Heritage Convention, and hopes that this report will not only raise awareness of the importance of natural World Heritage sites, but also contribute to the further development of the role of the Convention in supporting the conservation of ecosystems and biodiversity, and sustainable development, throughout the region.



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It is appropriate to recognize the valuable contributions of the many individuals who contributed to this report, including colleagues working within the Arab States World Heritage network, scientists undertaking research of relevance to these sites, IUCN member organisations in the Arab States, and members of IUCN's World Commission on Protected Areas (WCPA) and the Species Survival Commission (SSC). Special thanks are also due to Malek A. Abdulaziz, Tarek Abulhawa, Antonio Araujo, Mohammed Sameh, Maher Majoub, Veronique Dauge, Bastian Bomhard, Tilman Jaeger, Christelle Perruchoud and Yichuan Shi.

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# 1 Introduction

**N**ature and World Heritage in the Arab States has been produced by IUCN as a contribution to its work supporting the World Heritage Convention in the Arab States<sup>1</sup>, recognizing the need to strengthen the identification, conservation and presentation of natural heritage. Its purpose is twofold:

**To provide a comprehensive overview of natural World Heritage in the Arab States:** By undertaking independent desk-based assessment of the state of conservation of the five existing natural and mixed World Heritage sites in the Arab States, the report identifies a number of key issues requiring action to maintain or improve the protection, conservation and management of these sites.

**To encourage nominations that reflect the natural heritage of the Arab States:** By assessing the status of the Arab States' Tentative Lists and the underlying processes for their development, the report derives recommendations on how available knowledge about natural heritage in Arab States can be used more widely, and how Tentative Lists could become more effective tools for successful nominations.

This report consists of a general introduction to World Heritage in the Arab States (**Section 2**), which is followed by two principal sections:

In **Section 3**, the five existing natural and mixed World Heritage sites in the Arab States are discussed, based on an independent desk-based assessment of their conservation status and current management, based on a systematically structured framework. Key issues for the future management of these sites are identified based on this assessment.

In **Section 4**, the Arab States' Tentative Lists are analyzed with respect to their functionality as precursors of successful natural and mixed World Heritage nominations. Current Tentative Lists – and current listing practice – are compared to available information about the natural heritage of the Arab States and to the tentative listing guidance provided by the World Heritage *Operational Guidelines*<sup>2</sup>. Recommendations for a more effective Tentative List development process are formulated on this basis.

This report is a pilot project for a future, more extensive report, on the state of conservation of all natural and mixed<sup>3</sup> World Heritage sites. As such, it is as much a consultation document as a knowledge tool for those Government institutions responsible for World Heritage in the Arab States, World Heritage site managers, NGOs and wider civil society, IUCN member organizations, and international agencies. It is also part of a wider discussion relating to how natural World Heritage will feature in the new IUCN programme to be launched in 2012. IUCN welcomes feedback on this report and its assessment framework. Please send all comments to the following address:

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<sup>1</sup> Throughout this report, the reference 'Arab States' refers to the UNESCO Arab States Region, since this is the geographical region used within the World Heritage Convention. It includes the following countries: Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, and Yemen. Four IUCN offices cover parts of this region. Their contact details are provided on the back cover of the report.

<sup>2</sup> <http://whc.unesco.org/en/guidelines/>

<sup>3</sup> Mixed World Heritage Sites are those listed by UNESCO for both cultural and natural values.

## 1.1 IUCN's role in the World Heritage Convention

The World Heritage Convention, created in 1972, is one of the most important global conservation instruments and has almost universal adoption amongst the nations of the world. The Convention embodies a visionary idea – that some places of Outstanding Universal Value are so important that their protection is not only the responsibility of a single nation, but is also the duty of the international community as a whole; and not only for this generation, but for all those to come.

The primary mission of the Convention is to identify and conserve the world's natural and cultural heritage sites considered to be of 'Outstanding Universal Value' (see Box 1). As of January 2011, 911 sites were inscribed on the World Heritage List, including 207 natural sites. These sites include many household conservation names, such as the Serengeti, the Galápagos Islands and the Great Barrier Reef. The Convention is governed by the World Heritage Committee, supported by the UNESCO World Heritage Centre, the secretariat of the Convention, and three technical advisory bodies to the World Heritage Committee: IUCN, ICOMOS<sup>1</sup> and ICCROM<sup>2</sup>.

### Box 1: Outstanding Universal Value

The concept of Outstanding Universal Value is central to the World Heritage Convention and is defined in the *Operational Guidelines* as "cultural and/ or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole." (Section II. A. paragraph 49)

IUCN is the technical advisory body on nature. We provide the UNESCO World Heritage Committee with independent assessments of potential new World Heritage Sites and of the state of conservation of listed sites. Our advisory role includes:

1. **Evaluating all natural heritage sites nominated for inscription** on the World Heritage List, and also advising ICOMOS on nominations of cultural landscapes.
2. **Monitoring the state of conservation of existing natural World Heritage sites** through our worldwide network of specialists and member organizations.
3. **Undertaking training and capacity building** for site managers, governments, scientists and communities.
4. **Promoting practical on-the-ground conservation action** in natural World Heritage sites.

To be included on the World Heritage List, sites must meet at least one of the ten World Heritage criteria as well as requirements concerning their integrity, protection and management. Four criteria recognise sites in relation to their natural values, including aesthetics, earth science, ecosystems and species:

**Criterion (vii)** contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance

**Criterion (viii)** be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features

**Criterion (ix)** to be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals

**Criterion (x)** to contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of Outstanding Universal Value from the point of view of science or conservation

It is important to understand that, to be included on the World Heritage List, sites must not only meet one or more of the World Heritage criteria but also requirements concerning their integrity, and protection and management (see Figure 1). Sites must have adequate long-term protection as well as an appropriate and effective management plan or other documented management system. The integrity of a site is a measure of its wholeness and intactness. A biodiversity site, for example, is expected to include the biodiversity elements essential to express its Outstanding Universal Value, and to be of sufficient size to be able to sustain its key habitats and species.

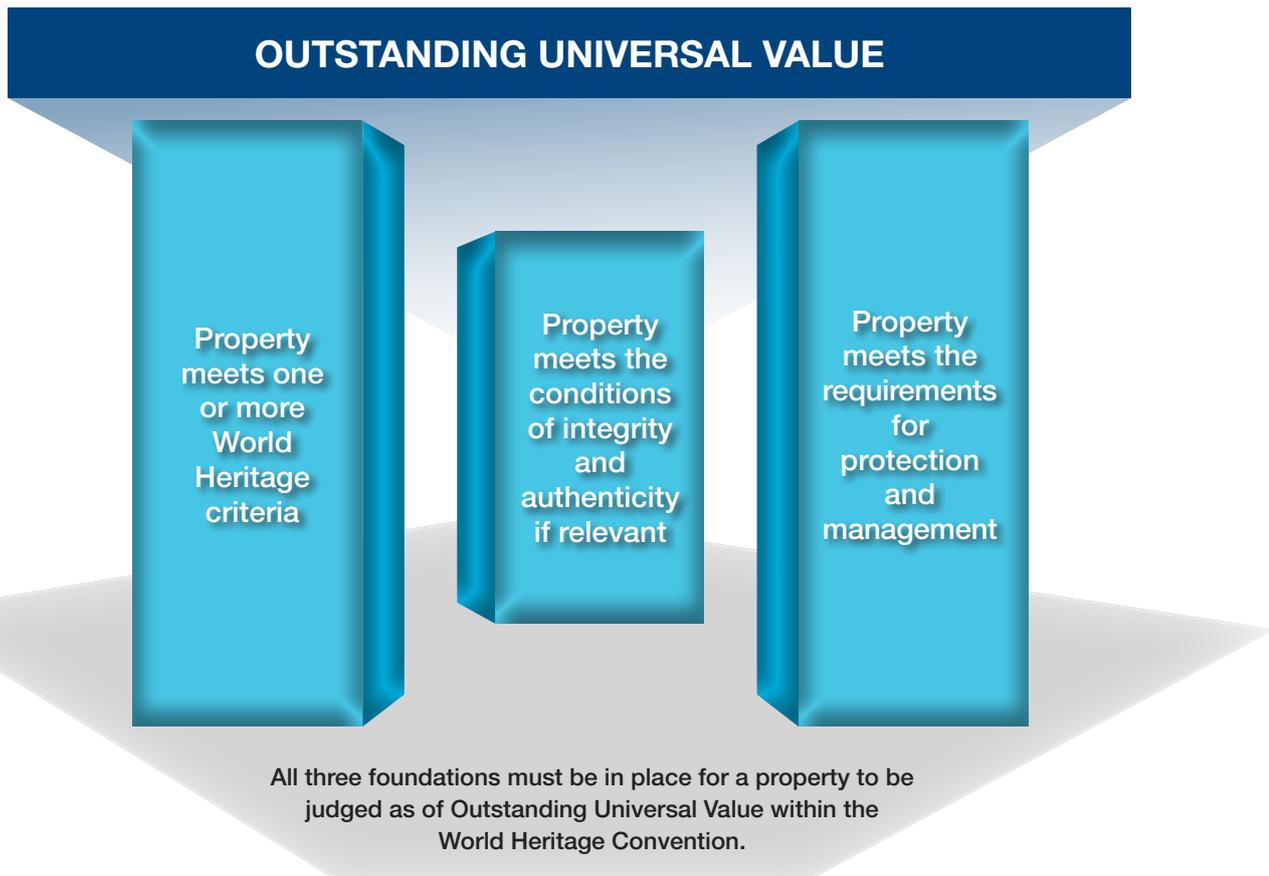
While only States Parties to the World Heritage Convention can submit nominations for sites on their territory to be considered for inclusion on the World Heritage List, other stakeholders such as NGOs often play a key role in initiating and supporting the nomination process, and their support can be critical for the success of nominations. Before a site can be nominated, it must be included on the State Party's Tentative List, an inventory of important properties that the country might consider for nomination in the near future. Once

<sup>1</sup> International Council on Monuments and Sites, <http://www.icomos.org/>

<sup>2</sup> International Centre for the Study of the Preservation and Restoration of Cultural Property, <http://www.iccrom.org/>

a State Party wishes to nominate a site from its Tentative List, it must prepare a nomination file following the standard format available on the webpage of the World Heritage Centre. The process of preparing a nomination file can take several years and should involve all relevant stakeholders, including local communities within and surrounding the site. Once completed, the nomination file is submitted to the World Heritage Centre, from where it is sent to the appropriate advisory bodies for their evaluation.

Figure 1: The three pillars of Outstanding Universal Value



## 2 Natural World Heritage in the Arab States

The Arab States are home to a wealth and diversity of natural heritage, with desert landscapes and marine sites being particularly noteworthy. The number of natural sites currently listed is, however, the smallest of any of the UNESCO regions by a considerable margin. There are currently (May 2011) only four natural and one mixed<sup>1</sup> World Heritage sites in the Arab States Region (Table 1, Figure 2).

**Table 1. Natural and mixed World Heritage sites in the Arab States (see Section 1.1. for an explanation of the World Heritage criteria)**

Site	Country	Type (criteria)	Year of inscription
<b>Banc d'Arguin National Park</b>	Mauritania	Natural (ix, x)	1989
<b>Ichkeul National Park</b>	Tunisia	Natural (x)	1980
<b>Socotra Archipelago</b>	Yemen	Natural (x)	2008
<b>Tassili n'Ajjer</b>	Algeria	Mixed (i, iii, vii, viii)	1982
<b>Wadi Al-Hitan (Whale Valley)</b>	Egypt	Natural (viii)	2005

At present, a total of 35 natural and mixed sites appear on the Tentative Lists of 12 Arab States Parties. These Tentative Lists are discussed in more detail in Section 4 of this report. The potential for additional natural World Heritage sites in the Arab States was highlighted by representatives of the Arab States as early as 1997<sup>2</sup>. Accordingly, UNESCO, in its report on the First Periodic Reporting Cycle<sup>3</sup> for the Arab States 2000-2003, called for a better representation of the wealth and diversity of cultural and particularly natural heritage of the Arab region on the World Heritage List.

There is a general recognition of the need to enhance the engagement of natural heritage institutions and specialists in the Arab States, particularly given the limited recognition of nature within the region. According to the first cycle of the UNESCO Periodic Report in 2003, 91% of the States Parties in the region that possessed an inventory of cultural heritage did not have a corresponding inventory of natural heritage. This report further noted that one of the deficits of the management of World Heritage sites (including natural and mixed sites) was that few of these were given a function in the life of the community through national policies and plans. The report highlighted that *"natural heritage did not always benefit from institutionalized structures in several States Parties"*. While there has been a strong tradition and dedicated institutions for the management and investigation of cultural heritage, these institutions have sometimes not been well-equipped for managing natural heritage. Nor have institutions and agencies responsible for environment and nature protection been included in the processes of the World Heritage Convention. The same was noted for national legislation. Research on natural aspects of World Heritage was often considered inadequate. The report concluded that *"the harmonization of Tentative Lists for the Arab Region and the identification of sites of natural heritage value for this region are of primary importance."*

There have been marked improvements in the recognition and management of natural and mixed heritage sites between the first and the second cycle of periodic reporting in the Arab States, but significant challenges remain. The 2010 Report on the Second Cycle of Periodic Reporting (WHC-10/34.COM/10A) states that the Arab States *"...remain largely under-represented in terms of natural properties and transboundary nominations thereby not adequately reflecting the diversity of heritage in the Arab region on the World Heritage List... the need to focus more actively on presenting nominations of natural sites in the Arab region was considered a priority."* Six State Parties had finalized inventories of natural heritage at the national or sub-national level as a step to informing Tentative List entries of such sites by 2010.

<sup>1</sup> Mixed World Heritage sites are inscribed under both natural and cultural criteria.

<sup>2</sup> Ghabbour 1997: Identification of potential World Heritage sites in Arab countries. National MAB Committee of the Arab Republic of Egypt.

<sup>3</sup> Every six years, the States Parties to the Convention are invited to submit to the World Heritage Committee a periodic report on the application of the *World Heritage Convention*, including the state of conservation of the World Heritage properties located on its territories. For more information on Periodic Reporting see <http://whc.unesco.org/en/periodicreporting/>

Figure 2: Natural and mixed World Heritage sites in the Arab States\*



\*The UNESCO Arab States Region includes the following countries: Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, and Yemen. Four IUCN offices cover parts of this region. Their contact details are provided on the back cover of this report.

In terms of the management of existing natural and mixed sites, States Parties have reported pressures arising from a range of issues, including:

- inadequate water infrastructure
- land conversion for agriculture and unsustainable grazing
- insufficient coordination between national institutions responsible for cultural and natural heritage
- lack of mainstreaming of the protection and sustainable use of natural heritage
- shortcomings of legislative framework and enforcement
- lack of targeted research of relevance to natural resources management
- budget, equipment and institutional capacity constraints.

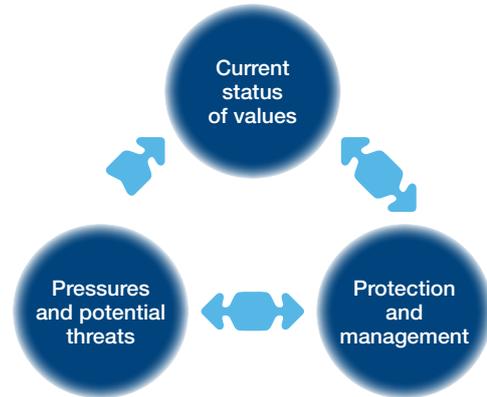
Another issue that is raised is the participation of local stakeholders in the planning, management and use of natural and mixed World Heritage sites.

These general statements on natural and mixed World Heritage sites in Arab States from the second cycle of Periodic Reporting show that a more in-depth analysis of the current status of their values, pressures and potential threats as well as protection and management – on a site by site basis – could contribute significantly to an improved understanding and, ultimately, management of these sites. This is the focus of the following section.

### 3 Conservation of Natural and Mixed World Heritage Sites in the Arab States

The conservation status of the five natural and mixed World Heritage sites in the Arab States has been assessed using a standardized approach and the conclusions are presented in this section of the report. The use of a standardized approach allows a consistent, transparent and reproducible assessment of the current status of a site's values, pressures and potential threats to those values, its protection and management and existing knowledge gaps (see Figure 3). This facilitates the identification of the most pressing issues requiring management action and the transfer of best practice solutions developed for one site to other sites. The methodological approach used in this report is based in part on the assessment framework developed for the Great Barrier Reef Outlook Report (2009).<sup>1</sup> It is anticipated that this approach could be further developed and become a reporting format for IUCN to use more generally in its advice to IUCN's wider network, including its members and World Heritage specialists, and to track the conservation status of all natural and mixed<sup>2</sup> World Heritage sites over time.

Figure 3: Assessment framework



For each site, the current status of its values, the pressures and potential threats to those values, and the site's protection and management are assessed. This assessment is based on best-available information from a wide range of sources including: World Heritage Committee decisions; IUCN/ UNESCO State of Conservation Reports, IUCN/ UNESCO Mission Reports, IUCN's network of experts, management plans and monitoring reports, as well as other available publications and reports (Annex 3).

The analysis for each site is summarized in 'Conservation Outlook' tables (Boxes 3 to 8) which build on a set of four additional tables for each site which are included in Annex 1: one table each on the values of each World Heritage site, the current status of those values, pressures and potential threats to the values, and the effectiveness of protection and management of the site. The assessment is based on information presented in the 'Summary' column and the assessment criteria (see Box 2), which are used to assign assessment categories. The current status of values is assessed on a scale from 'Good' to 'Critical'. Pressures and potential threats are assessed on a scale from 'Very Low Risk' to 'Very High Risk', whereas protection and management are assessed on a scale from 'Highly Effective' to 'Significant Concern' (see Box 2). Note that pressures are defined as factors that negatively affect the conservation status of the site, whereas potential threats are defined as factors that are currently not significantly affecting the site but may do so in the future, depending on management responses. The category 'Data Deficient' was applied whenever sufficient information for assessment was unavailable.

In the 'Conservation Outlook' box for each site, a summary analysis of the current status of values, pressures and potential threats, and protection and management is reported together with an evaluation of the site's conservation outlook.

Based on the analysis and assessment in the tables, key issues and needs for action were derived for each site and are listed at the end of the specific sections on the five natural and mixed sites of the Arab States. It should be noted that these recommendations relate to each individual site. It is important to note that IUCN does not consider that these should be seen as an overall ranking system between sites, since each site is important, different and should be supported. In addition, the list of key issues is not exhaustive, but reflects the most evident and urgent needs for action as identified by the analysis of status and management. This method is a pilot for a larger report, and thus comments on it are welcomed.

<sup>1</sup> Great Barrier Reef Outlook Report, [http://www.gbrmpa.gov.au/corp\\_site/about\\_us/great\\_barrier\\_reef\\_outlook\\_report](http://www.gbrmpa.gov.au/corp_site/about_us/great_barrier_reef_outlook_report)

<sup>2</sup> Only the natural values of mixed natural/ cultural sites are assessed.

**Box 2: Assessment criteria and categories**

The assessment criteria and categories used to assess the current status of a site's values, pressures and potential threats to those values and the effectiveness of protection and management are listed below (see Annex 2 for a full list of the assessment criteria under (vii), (viii), (ix), (x)).

**Current status of values (example for criterion (x))**

Assessment categories	Assessment criteria
<b>Good</b>	All major habitats are essentially intact and able to support dependent species. Available evidence indicates that populations of key species (species that are identified as major biodiversity values of the site) are stable and under low pressure.
<b>Low Concern</b>	Some habitat loss or alteration has occurred in some areas, but is not causing persistent or substantial effects on populations of dependent species. Available evidence indicates that populations of some key species are under low levels of pressure, and that some signs of decline are being observed.
<b>High Concern</b>	Habitat loss or alteration has occurred in a number of areas and is causing or is likely to cause significant declines in populations of dependent species. The populations of many key species have declined significantly.
<b>Critical</b>	Widespread habitat loss or alteration such that dependent species cannot be adequately supported, causing severe declines in a majority of dependent species. Populations of a majority of key species have declined significantly.

**Pressures and potential threats**

Assessment categories	Assessment criteria
<b>Very Low Risk</b>	Few or no impacts have been observed and accepted predictions indicate that future impacts on the site's values are likely to be minor.
<b>Low Risk</b>	Some minor impacts have already been observed and there is concern that, based on accepted predictions, there may be some localised impacts on the site's values.
<b>High Risk</b>	Current and/ or predicted future impacts are likely to significantly affect the site's values. Concern about serious detrimental effects to the site's values over the long term.
<b>Very High Risk</b>	Current and/ or predicted future impacts are likely to irreversibly destroy the majority of the site's values. Widespread and serious detrimental effects to the site's values likely in the medium or short term.

**Protection and management**

Assessment categories	Assessment criteria
<b>Highly Effective</b>	Protection and management are effective and adequate and able to maintain the site's values.
<b>Adequate</b>	Protection and management are mostly effective and adequate and, if sustained, are likely to be able to maintain the majority of the site's values over the long term.
<b>Some Concern</b>	Protection and management are mostly effective over the short term, but unless improved are unlikely to be able to maintain the majority of the site's values over the long term.
<b>Significant Concern</b>	Protection and management show major deficiencies and may be unable to maintain the site's values over the short or long term.

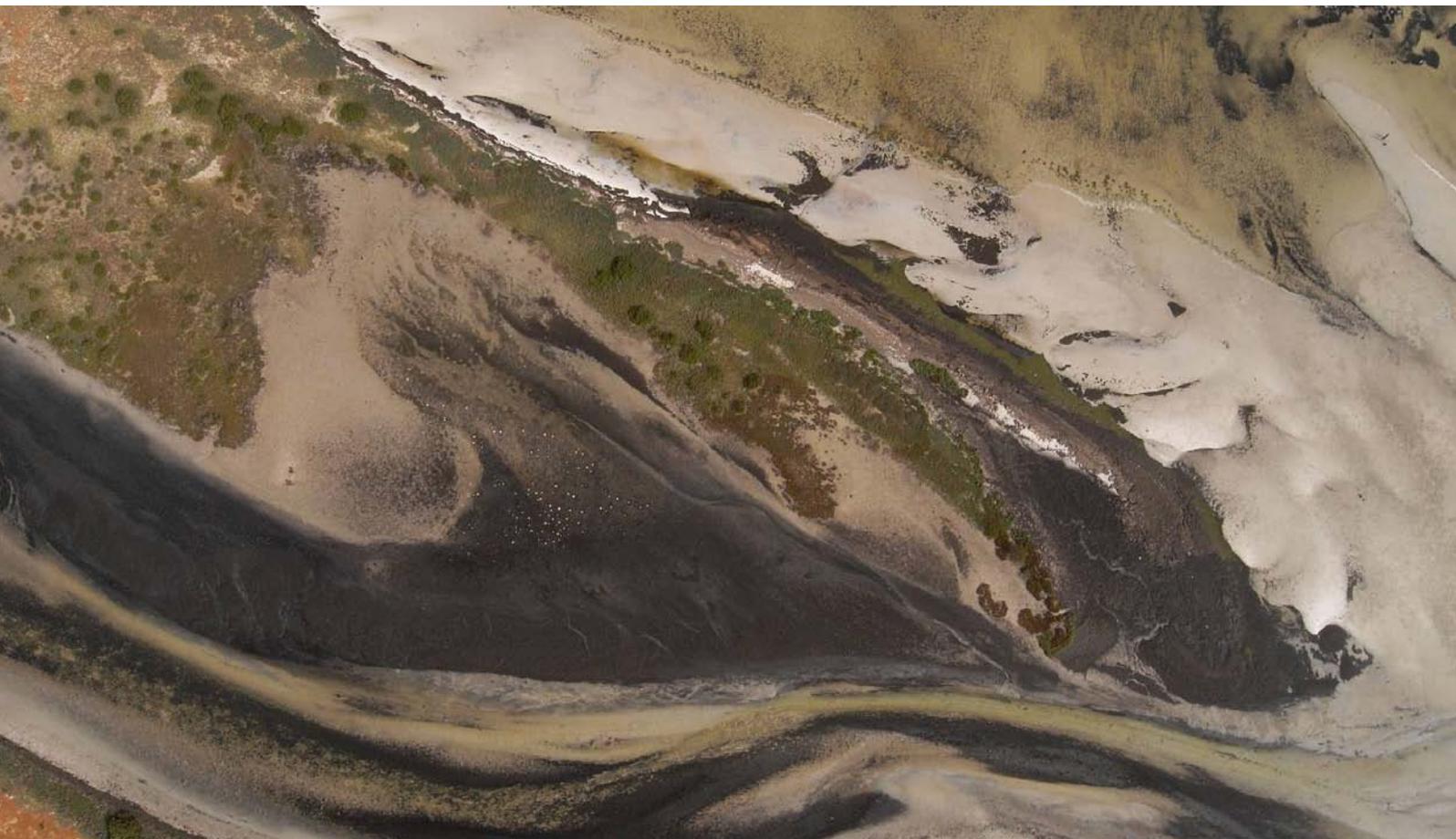
### 3.1 Banc d'Arguin National Park (Mauritania)

► Inscribed in 1989 as a natural site (criteria ix and x), area 1,200,000 ha.

Banc d'Arguin National Park, an extensive series of terrestrial, tidal and subtidal ecosystems along the northern part of the Atlantic coast of Mauritania, is home to one of the very largest congregations of wintering waterbirds worldwide and important breeding populations of fish-eating and other aquatic birds. There are also important populations of terrestrial and marine mammals, including the critically endangered Mediterranean Monk Seal (*Monachus monachus*). The Site has a significant cultural dimension as the local Imraguen people have established a long-standing tradition of natural resource use there. At the same time, this highly productive coastal zone supports large fish stocks and internationally and locally important fisheries, which contribute the majority of Mauritania's national income.

The rich ecosystem and biodiversity values of Banc d'Arguin National Park (PNBA) are primarily threatened by unsustainable fishing (outside and potentially inside the park) and the risks of oil exploration, exploitation and transport in its vicinity. While unsustainable fishing inside the park is being considered through the park's management system, some important fish populations (e.g. those of Yellow Mullet *Mugil cephalus* and Meagre *Agrynosomus regius*) depend on areas outside the park for part of their lifecycle, and hence cannot be completely protected inside the park. This means that effective protection of PNBA's values requires consideration of pressures outside its boundaries. The same is true for potential threats that are connected to oil extraction, which also remain significant.

The legal framework, political support, institutional setup and financial sustainability of the PNBA are strong, particularly in regional comparison. There has been strong external support over many years, which is continuing, including through the *Fondation Internationale du Banc d'Arguin* (FIBA). The local Imraguen people have exclusive fishing rights within the park, based on their traditional methods, and are both benefiting from the park and contributing to its protection. The lack of effective measures to control the risk of accidental oil spills, the unresolved issue of the designation of the vicinity of the park as Particularly Sensitive Sea Area (PSSA), and the deteriorating status of the terrestrial ecosystems of the Park remain serious concerns.



**Box 3. Conservation Outlook for Banc d'Arguin National Park**

The values of Banc d'Arguin National Park consist of a wide range of relatively undisturbed marine, coastal and terrestrial ecosystems which support the world's largest concentration of wintering waterbirds, the largest bird breeding area along the eastern Atlantic, productive fishing grounds and the largest colony worldwide of the critically endangered Mediterranean Monk Seal (*Monachus monachus*).

Topic	Summary	Assessment
<b>Current status of values</b>	The values of PNBA were nearly undisturbed until the end of the 20 <sup>th</sup> Century, but are increasingly under pressure and have begun to deteriorate. However, there is no systematic monitoring system for fish populations, the status of which is data deficient. The status of the critically endangered Monk Seals, and terrestrial ecosystems and their fauna, remains of high concern.	<b>High Concern</b>
<b>Pressures and potential threats</b>	Unsustainable fishing (including fishing for sharks and rays) outside PNBA is the main current pressure. Fishing inside the park has also increased, but is relatively well-controlled. Fishing as a pressure is closely monitored. Accidental oil spills from oil platforms or tankers near PNBA are an increasing potential threat. Unsustainable resource use and climate change are degrading the terrestrial part of the site. Disturbance and the reduced food base for Mediterranean Monk Seal and pressures on terrestrial ecosystems and mammals remain of high concern.	<b>High Risk</b>
<b>Protection and management</b>	The legislative, institutional and financial framework for the protection and management of PNBA is strong, but the wider protection of the surrounding seas needs to be developed further in order to meet emerging challenges to the site, principally from unsustainable fisheries and hydrocarbon exploitation.	<b>Some Concern</b>

**Conservation outlook**

*While the protection and management framework for the Banc D'Arguin National Park is strong, the conservation outlook for site is uncertain due in large part to emerging challenges originating outside its boundaries, principally from unsustainable fisheries and hydrocarbon exploitation.*

The values of PNBA have attracted major efforts by the Government of Mauritania and international partners for the protection and sustainable management of the site. These efforts have created a legal, institutional and financial basis for the management of the park, which should be used to its full potential in order to avert significant emerging pressures and threats from unsustainable fishing, hydrocarbon exploitation and the degradation of terrestrial ecosystems.

**Key issues:**

The following non-exclusive list of key issues for the future management of the site can be derived from the systematic analysis of the status and management of the site as presented in Box 3 and in Annex 1.

- Continue efforts to control the potential threat from accidental oil spills to the values of PNBA, by designating a Particularly Sensitive Sea Area around the park, developing an Oil Spill Emergency response Plan and the capacity to implement it should the need arise, excluding or regulating oil exploitation in sectors immediately adjacent to the site and other appropriate measures.
- Continue and intensify engagement of the Imraguen community to further support the sustainable and equitable use of the fish resources inside PNBA. Continue monitoring of key fish stocks, particularly sharks and rays, and adjust management according to monitoring results. Study the effects of fishing outside PNBA on fish stocks inside the park and regulate fishing effort in the immediate vicinity of the park to safeguard the latter.
- Increase the management effectiveness of PNBA, particularly by strengthening its staff complement and enforcement/ management capacity on site as opposed to in the capital. This should also include additional management efforts to improve the status of the Mediterranean Monk Seal population and of the terrestrial ecosystems of the site with their fauna and flora.

### 3.2 Ichkeul National Park (Tunisia)

► Inscribed in 1980 as a natural site (criterion x), area 12,600 ha.

Ichkeul National Park in Tunisia is one of the most important resting and wintering areas for migratory waterbirds in the western Mediterranean; it also holds significant populations of breeding waterbirds. Apart from this, the lake is one of the few remaining examples of coastal lakes that used to fringe the southern (North African) coast of the Mediterranean. There are also some internationally important Pleistocene (Villafranchian) fossil deposits in late Tertiary and early Quaternary outcrops on the lake's northern shore.

Ichkeul National Park has experienced a serious ecological crisis since the 1990s. Following the construction of dams on the tributaries of the lake, water influx was reduced dramatically, salinity increased, and the typical vegetation of the lake was degraded and partly replaced by halophytic communities. This led to a food shortage for herbivorous waterbirds, dramatic reductions in migratory waterbird numbers and ultimately to the inscription of the site on the List of World Heritage in Danger in 1996. Local resource users were equally hit, because of a dramatic drop in fish production. Following a series of exceptional precipitation-rich years and the introduction of targeted hydrological management by the State Party, these effects were largely reversed. The site was removed from the List of World Heritage in Danger in 2006 but some concerns about the sustainability of the recovery of Lake Ichkeul remain.



**Box 4. Conservation Outlook for Ichkeul National Park**

The values of Ichkeul National Park lie primarily in its function as a resting and wintering area for migratory waterbirds, and secondarily in its importance as a waterbird breeding site. Before the salinization crisis of the last 20 years, Ichkeul hosted one of the largest migratory waterbird concentrations in the western Mediterranean. The lake is also important as one of the last intact examples of coastal lakes near the Mediterranean coast of North Africa.

Topic	Summary	Assessment
<b>Current status of values</b>	The main values of Ichkeul National Park underwent a severe crisis starting in the early 1990's due to critically reduced water supply. Since 2002, these values have partially recovered, partly due to increased precipitation. The effects of this recovery have been sustained through sluice water provision even during the low-precipitation season 2007/08. However, the recovery of the site's values could be reversed in the future by a series of several consecutive low-precipitation seasons.	<b>Low Concern</b>
<b>Pressures and potential threats</b>	By far the greatest pressure on Ichkeul National Park has been insufficient water supply due to dam construction, with salinization, partial desiccation and shifts in the vegetation to halophytic forms of low food value to waterbirds. Recent activities aimed at hydrological management have contributed to reducing this pressure. Secondary pressures and potential threats to the park's values are poaching, agricultural encroachment, and unsustainable grazing.	<b>High Risk</b>
<b>Protection and management</b>	Significant efforts aimed at hydrological management of Ichkeul National Park have contributed to its recovery since 2004. A management plan was developed with GEF support in 2005-2008. At the same time, there is still no sufficiently broad consensus, adequate institutional setup and strong local participation for the sustainable long-term management of the site.	<b>Some Concern</b>

**Conservation outlook**

*The conservation outlook for Ichkeul National Park is good overall, but the site remains vulnerable with regards to its hydrological management and the recovery of its values could be reversed in coming years by a series of low-precipitation seasons.*

Following the water supply crisis of the 1990s and early 2000s, and thanks in part to unusually rich rainfalls in 2004-06, Lake Ichkeul has recovered a significant part of its outstanding value as a waterbird resting and breeding site and as one of the last intact examples of coastal lakes along the southern Mediterranean. Since the sustainable development of this ecosystem cannot rely on favourable weather conditions alone, there is now an urgent need to mainstream and strengthen the institutional setup, local support and management of Ichkeul National Park.

**Key issues:**

The following non-exclusive list of key issues for the future management of the site can be derived from the systematic analysis of status and management of the site as presented in Box 4 and in Annex 1.

- Strengthen the existing hydrological management of the site in order to safeguard its values, by submitting Environmental Impact Assessments for three new dam projects in the vicinity of the lake (including how they can be used to ensure water supply to the lake). Make a commitment to a minimum water supply (either annual or averaged over an appropriate period), and further research the limits of hydrological functionality of the Lake Ichkeul ecosystem.
- Improve cooperation with local stakeholders of the National Park by developing the system of alternative grazing areas, identifying and developing additional means of sustainable income generation and strengthening consultation mechanisms aimed at participatory park management.
- Mobilize funds from both the State Budget and international donors in order to ensure the financial sustainability of PNI, particularly with regard to an adequate operational budget for general running costs and threat management.
- Continue the development of an autonomous, permanent management authority for Ichkeul National Park, by creating the necessary legal and policy framework and developing institutional capacity for effective enforcement and conservation management.

### 3.3 Socotra Archipelago (Yemen)

► Inscribed in 2008 as a natural site (criterion x), area 410,460 ha.

Since Socotra Archipelago was inscribed in the World Heritage list in 2008, its values and management as a World Heritage site have not been monitored within the World Heritage Convention since inscription. An IUCN monitoring mission has been requested by the World Heritage Committee before its meeting in 2012.

However, considerable information about the general conservation status of the site, including recent trends, is available from other projects. This information indicates that Socotra as an ecosystem is now at a crossroads: due to its isolation and long-established, stable systems of land management by Socotra pastoralists, the island has preserved exceptional biodiversity values including rich endemic biota and a unique landscape until the late 20<sup>th</sup> Century. A recent rapid development push – including infrastructure and tourism development and an erosion of traditional, sustainable land management practices following socio-economic changes – has created unprecedented pressures and threats to the island's values.

The current management regime needs to be strengthened and provided with sustainable funding in order not to be overwhelmed by these emerging pressures and potential threats (Box 5). Creating a sustainable development framework for Socotra will need the support not only of the Ministry of Water and Environment and its Environmental Protection Agency but also of other Ministries and national as well as local stakeholders.



**Box 5. Conservation Outlook for Socotra Archipelago**

The values of Socotra Archipelago consist of high species numbers of endemic plants, reptiles, birds and terrestrial invertebrates, as well as additional high conservation value terrestrial vertebrates and marine fauna, which together form a unique set of terrestrial and marine ecosystems.

Topic	Summary	Assessment
<b>Current status of values</b>	Most of the existing key values have enjoyed a stable and satisfactory conservation status until the late 20th Century (mainly due to Socotra's isolation). The status of some values, particularly endemic plants, has begun to deteriorate since, with further deterioration predicted, following rapid ongoing socio-economic changes. The conservation status of reptiles and invertebrates is Data Deficient.	<b>Low Concern</b>
<b>Pressures and potential threats</b>	Pressures and potential threats to Socotra's value are increasing rapidly. Infrastructure development, tourism and unsustainable natural resource management (following the breakdown of traditional management) are already affecting the island. Additional future threats include invasive species and climate change.	<b>High Risk</b>
<b>Protection and management</b>	A management framework for Socotra's values is under development. It should be improved to deal with the rapidly increasing pressures and threats to the archipelago's values, including projected further increases in tourism, infrastructure development, and unsustainable natural resource use. Priority areas include the creation of an Island Wide Authority, visitor management and the participation of local people in management.	<b>Significant Concern</b>

**Conservation outlook**

*The conservation outlook for Socotra Archipelago is uncertain due to increasing infrastructure development and unsustainable natural resource management (following the breakdown of traditional management), and given the potential impacts of future threats such as climate change.*

Socotra's values are exceptional on a global scale and have been comparatively well preserved until very recently. Therefore, much is at stake currently, as the island is undergoing rapid development that brings about unprecedented pressures and threats. The management regime of Socotra needs to be strengthened (in terms of legislative basis, cross-sector mainstreaming, capacity, science-based decision making and use of traditional knowledge), in order to ensure sustainable development, and control pressures and threats.

**Key issues:**

The following non-exclusive list of key issues for the future management of the site can be derived from the systematic analysis of status and management of the site as presented in Box 5 and in Annex 1.

- Support the development of an enabling institutional framework for the sustainable development of Socotra Archipelago, through the establishment of an Island Wide Authority with a mandate to oversee development (including tourism development) planning and to coordinate the activity of the various de-concentrated government institutions active on the island.
- Enhance local participation in conservation management and ensure equitable sharing of benefits from resource use – including tourism – with the population of Socotra.
- Cooperate with traditional pastoralists on Socotra to jointly develop a sustainable grazing regime that is informed by studies of carrying capacities and builds on the traditional knowledge on livestock management systems, which have ensured a relatively stable coexistence of humans and nature over centuries.
- Ensure a sustainable financing regime for nature protection and sustainable development at the archipelago for the medium-term, when international donor support may recede. Mobilize funding from the State Budget, from sustainable natural resource use including tourism, and other sources to achieve financial sustainability.
- Continue research (including international research cooperation) into marine and terrestrial natural values of Socotra, particularly regarding reptiles, invertebrates and research relevant to practical conservation management and sustainable natural resource use.

### 3.4 Tassili n'Ajjer (Algeria)

► Inscribed in 1982 as a mixed site (criteria i\*, iii\*, vii, viii), area 7,200,000 ha.

\* Cultural values are not discussed in this report

Tassili n'Ajjer is famous as one of the world's largest and best collections of prehistoric cave paintings, but it also includes spectacular evidence of the climatological, geographical and ecological changes of the area since the Pleistocene, which constitutes its natural values under criterion (viii). The site also comprises unusual rock formations including "rock forests" and rock arches which qualify it for criterion (vii). The natural values are closely linked to the cultural values of the site as the art reflects the same palaeo-ecological developments as the geo-morphological features. A further corresponding value that is not covered by the criteria under which the site was inscribed is its wide range of relict species of flora and fauna, including the Saharan cypress (*Cupressus dupreziana*) and other important biodiversity.

It is difficult to evaluate the current status and management of the natural values of Tassili n'Ajjer because very little information on them has become available since inscription. However, it appears that the natural values for which the site is inscribed are not very sensitive to short-term human impact, and hence may not be acutely threatened. In contrast, some of the biodiversity values of the site have declined and one iconic species (Scimitar-horned Oryx *Oryx dammah*) has become locally extinct. Thus there are wider concerns for the site, even though not related to the values for which it has been included on the World Heritage List. A need for more systematic and effective management may arise in the future if visitor interest develops further.



**Box 6. Conservation Outlook for Tassili n'Ajjer**

While the main value of Tassili n'Ajjer lies in its unique collection of prehistoric art, the site also presents outstanding geo-morphological evidence of the climatic, geographical and ecological development of the Sahara area since the Pleistocene, and rock formations of outstanding scenic beauty.

Topic	Summary	Assessment
<b>Current status of values</b>	<p>The geo-morphological values of Tassili n'Ajjer appeared relatively well-preserved at the time of inscription, because of the remoteness and difficulty of access to the area. Little information on their status has become available since. Some additional natural values that are not covered by the inscription under World Heritage criteria vii and viii (e.g. endemic and threatened fauna and flora) have reportedly been degraded.</p> <p><i>(Note: In this pilot methodology we assess the values for which a site was inscribed on the World Heritage List. However, if Tassili n'Ajjer's wider biodiversity values were assessed, the site would meet the criteria for High Concern)</i></p>	<b>Low Concern</b>
<b>Pressures and potential threats</b>	The main pressures and potential threats to the site are being caused by damage and littering by visitors. These pressures appear limited, although detailed recent information is unavailable.	<b>Low Risk</b>
<b>Protection and management</b>	The site has been protected as Cultural Park under the Law on Protection of Cultural Heritage since 2004. Management planning was still in progress in 2010, and management was based on ad-hoc annual plans in 2010. The legal and policy framework for the site's protection was improved until 2010, but the immense size of the site and the relatively low staff complement remain a challenge. Financial support is reportedly sufficient. There is little information about ongoing monitoring and research activities although the protection of the site may be sufficient to control the limited current pressures on its geo-morphological values.	<b>Data Deficient</b>

**Conservation outlook**

*The conservation outlook for Tassili n'Ajjer is good overall regarding its World Heritage status, but there are significant wider conservation concerns.*

The main issue regarding the conservation status of the natural values of Tassili n'Ajjer is that relatively little recent information about them is available. The information that is available suggests that pressures and threats to the natural values of the site under criteria (vii) and (viii) are limited and that the current management is therefore adequate for the sites values under the Convention, but that it does not appear to be conserving wider biodiversity values. There may be a need to continue developing the management system of the Site, in order to be prepared for potential increases of threats in the future.

**Key issues:**

The following non-exclusive list of key issues for the future management of the site can be derived from the systematic analysis of status and management of the site as presented in Box 6 and in Annex 1.

- Continue ongoing efforts to evaluate, update and improve the management regime of the site and consider making use of international best practice in participatory management planning for Tassili n'Ajjer. Include management actions and staff training that are specifically aimed at the geo-morphological values for which the site is inscribed, in addition to conservation of cultural values and biodiversity conservation measures.
- Consider the establishment of core zones in areas where most values are concentrated, in order to manage this very large site with the limited staff available.
- Continue providing information about the current status of the site's natural values, pressures and potential threats to them, further progress regarding the update of the management plan, financial aspects and ongoing research and monitoring programmes.
- Continue and strengthen efforts to provide appropriate protection for the significant biodiversity values of the site, which complement the overall natural values for which Tassili n'Ajjer is inscribed.

### 3.5 Wadi Al-Hitan (Egypt)

► Inscribed in 2005 as a natural site (criterion viii), area 20,105 ha.

Wadi Al-Hitan, which is managed as part of Wadi El-Rayan Protected Area, is one of the most iconic sites worldwide representing the record of life on Earth. It contains an extremely rich and well-preserved assemblage of fossilized early whale skeletons, which illustrate the transition of this mammal group from terrestrial to marine life. There are also fossilized skeletons of other vertebrates. The site appears relatively well preserved, although the increasing visitor interest over recent years calls for continued efforts in the areas of visitor management and protection. In addition, there were reports early in 2011 about attempts to establish illegal quarries on the site, which were foiled by the area's staff.

There is an overall management plan for the Wadi El-Rayan Protected Area, which was updated in 2010, and a specific management plan for the site itself is in preparation. The Eocene-Oligocene Gebel Qatrani site next to Wadi Al-Hitan is also exceptionally rich in fossils, as it contains the *"most complete record of palaeogene mammals for the whole of Africa"* (Wells 1996). It has been suggested at several occasions – including the 2005 IUCN evaluation – that this site be joined to Wadi Al-Hitan, either as a continuous extension or as a serial site. The State Party has initiated efforts to nominate this site as a separate World Heritage site.



**Box 7. Conservation Outlook for Wadi Al-Hitan (Whale Valley)**

The values of Wadi Al-Hitan (Whale Valley) consist of an iconic assemblage of many well-preserved fossilized Eocene whale skeletons and other fossils that document the transition of cetaceans from terrestrial to marine life. The site is one of the globally outstanding records of mammal evolution.

Topic	Summary	Assessment
<b>Current status of values</b>	Overall status of whale skeletons and other fossils very good. Different stages of weathering and some limited impact of damage/removal by visitors observed.	<b>Low Concern</b>
<b>Pressures and potential threats</b>	Damage, theft and vandalism by rapidly increasing numbers of visitors (including damage by 4x4 vehicles) are the main threat. Natural wind erosion also affects exposed fossils.	<b>Low Risk</b>
<b>Protection and management</b>	Strong framework for protection and significant progress regarding management of threats from visitors and interpretation since nomination in 2005. Potential room for further improvement regarding 4x4 vehicle access management. Financing and resource allocation remain a challenge to management.	<b>Adequate</b>

**Conservation outlook**

*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. vehicle access, resourcing). An as yet unresolved issue is the possible inclusion of the Gebel Qatrani site, which would considerably complement the values already comprised by Wadi Al-Hitan. This site is close to the requirements for the highest rating in relation to its management, and this would be achieved if the key issue of sustainable finance were resolved.

**Key issues:**

The following non-exclusive list of key issues for the future management of the site can be derived from the systematic analysis of status and management of the site as presented in Box 7 and in Annex 1.

- Continue the preparation of and approve the independent management plan for Wadi Al-Hitan within the context of the Wadi Al-Rayyan Protected Area. Further develop the capacity of the management authority on the ground to implement the management plan, and secure sustained finance for its long term management.
- Take targeted measures (in terms of enforcement, political support and communication) to protect Wadi Al-Hitan against the recently emerged threat of illegal quarrying operations.
- Consider the extension of the Wadi Al-Hitan site to include the Gebel Qatrani site, either as a continuous extension or as a serial site.

## 4 World Heritage Tentative Lists

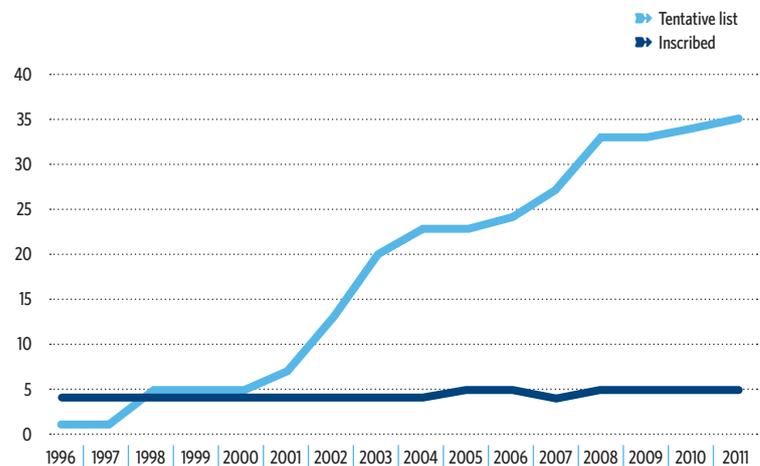
According to the World Heritage Operational Guidelines (§§ 62–76), Tentative Lists of State Parties are an essential and mandatory first step for State Parties towards the nomination and ultimately inscription of new World Heritage sites: “A *Tentative List* is an inventory of those properties situated on its territory which each State Party considers suitable for inscription on the World Heritage List. States Parties should therefore include, in their Tentative Lists, the names of those properties which they consider to be cultural and/or natural heritage of outstanding universal value and which they intend to nominate during the following years” (WHC Operational Guidelines 2008, §62). Paragraph 66 of the Operational Guidelines states that Tentative Lists should contain – among other information – a justification of the ‘Outstanding Universal Value’ of the listed sites.

This is further developed in the 2010 manual on preparing World Heritage Nominations<sup>1</sup>: “The first step a country must take is to make an ‘inventory’ of its important natural and cultural heritage sites located within its boundaries which are considered to be cultural and/or natural heritage of potential outstanding universal value, and therefore suitable for inscription on the World Heritage List (see Chapter II.C of the Operational Guidelines). This ‘inventory’ is known as the Tentative List, and includes properties that a State Party may decide to submit for inscription in the next five to ten years. Tentative Lists are not expected to be exhaustive of all possible properties. They may be updated at any time, and States Parties are encouraged to re-examine and resubmit their Tentative List at least every ten years.”

### 4.1 Current state of the Arab States’ Tentative Lists

The need for a revision and updating of Tentative Lists – including entries of tentative natural and mixed sites – has been noted as a common theme at the final regional meeting of State Parties in the framework of the Second Cycle of Periodic Reporting in the Arab States in 2010. In order to further inform this revision, it is useful to analyze the effectiveness of Tentative Lists as precursors of successful nominations of natural and mixed sites in Arab States. Currently, there are 35 natural and mixed sites included in the Tentative Lists of 12 Arab States. Figure 4 below shows that while the number of sites on the Tentative Lists has grown steadily over the last 15 years, the number of inscribed sites has remained almost constant. It thus appears that the Tentative List process has not been fully effective in supporting new nominations from the Arab States. In other words, Tentative Lists have not been coupled with successful inscriptions over this period. They have not functioned as an effective first step towards successful nominations, for a variety of reasons.

**Figure 4. Cumulative number of tentative list entries and inscribed sites of natural and mixed sites from Arab States between 1996 and 2011. Only tentative list entries that had not been removed by State Parties until 2011 are included.**



Source: World Heritage Centre

<sup>1</sup> UNESCO 2011 - <http://whc.unesco.org/uploads/activities/documents/activity-643-1.pdf>

There are a number of reasons for this trend, which have become evident through a desk analysis of the Tentative List sites in the Arab States Region. Issues include:

- Insufficient analysis of the potential Outstanding Universal Value (OUV) of sites on the Tentative Lists, arising from insufficient consideration of World Heritage criteria, and often inadequate consideration of integrity and management/ protection requirements as indispensable components of OUV.
- Lack of comparative analysis: In order to show how sites included in the tentative lists stand out as being of Outstanding Universal Value on a global level, they should be compared to other sites. Existing Tentative List entries often lack an in-depth (or indeed any) comparative analysis. This shortcoming is often also occurs at the nomination stage.
- Lack of focus of Tentative List entries on specific criteria with a high probability of meeting the Outstanding Universal Value threshold (too many listings under too many criteria at once, with insufficient justification for each of them).
- Inclusion of some sites as natural and/ or mixed sites in Tentative Lists that might be listed more appropriately as cultural landscapes under cultural criteria.
- Lack of geographical focus that is reflected in the inclusion of sets of sites (e.g. "Mountain Chains") rather than individual sites in some Tentative Lists, without clarifying the added value of serial nominations (significance of the series vs. individual sites, functional links between component sites providing landscape, ecological, evolutionary or habitat connectivity) in line with the *Operational Guidelines* and additional guidance offered by IUCN.

The above list indicates that the upcoming revision and updating process of Tentative Lists should aim to include a critical reassessment of the potential OUV of sites already currently on Tentative Lists, to identify those sites that are likely to meet OUV requirements. Tentative Lists also need to include a clearer focus and better articulation of potential OUV for each site that is included. This should be expressed in terms of criteria, integrity and protection and management in each case. It should also be noted that some sites on Tentative Lists have already been nominated and considered by the World Heritage Committee. In these cases past decisions of the Committee, supported by the advice of IUCN's evaluation reports provide important guidance on the potential for sites meet the requirements of OUV. Examples of such sites include the Hawar Islands (Bahrain), which were deferred by the World Heritage Committee in 2004, with the recommendation to reconsider the proposal as a transboundary marine site, and Sanganeb Atoll (Sudan) which was also recommended for resubmission with additional areas and improvements to protection and management in 1983.

## 4.2 Identification of potential sites for Tentative Lists

An equally important part of this revision and updating exercise might be the identification and inclusion of sites that are currently not included in Tentative Lists but do have potential to demonstrate OUV. Several studies suggest that there is a significant number of such sites.

IUCN has produced a number of studies on various categories of potential natural World Heritage sites. Some of them have included explicit lists of potential sites whereas others have suggested general criteria for the inclusion of sites into Tentative Lists and subsequent nominations. Table 7 shows that a limited but significant number of potential new natural or mixed World Heritage sites in the Arab States have been identified by IUCN. Some of them are included in Tentative Lists of State Parties while others are not. The majority of the recommended sites (or wider areas) are either marine/ wetland sites (criteria (ix) and/or (x)) or geological sites of some description (criterion (viii)).

Apart from these IUCN studies, there are further studies and international conservation site prioritization schemes that may be used by Arab State Parties to identify search areas for potential sites of OUV, particularly in relation to World Heritage criteria (ix) and (x) (Tables 8 & 9). Udvardy Ecoregions are broad ecoregions which are characterized by specific ecosystems. Outstanding examples of so far underrepresented ecoregions may qualify as natural World Heritage sites in some cases. The WWF 200 Priority Ecoregions for Global Conservation are a selection of regions of particular importance for biodiversity conservation. Conservation International's Global Biodiversity Hotspots, WWF/ IUCN Centres of Plant Biodiversity and BirdLife International's Endemic Bird Areas and Important Bird Areas identify sites of particular importance to all or parts of biodiversity, and are therefore particularly useful for identifying search areas related to World Heritage criterion (x). Recently developed map compendia and online tools (e.g. the Integrated Biodiversity Assessment Tool) integrate some of the prioritization schemes above (as well as additional schemes) and can thus provide further guidance. The same is true for national and regional protected area gap analyses and prioritization exercises (e.g. in the context of national protected areas system development or the implementation of the Programme of Work on Protected Areas of the Convention on Biological Diversity) which may exist in some parts of the Arab region.

**It is important to note that none of these schemes automatically justifies the OUV of a site.** Some of the schemes use a lower threshold than the World Heritage criteria (e.g. Important Bird Areas), some focus on broad regions rather than individual sites (e.g. Biodiversity Hotspots) and none of them apply the condition of integrity and management/protection in the same way as the requirements for OUV. Nevertheless, these schemes are useful tools to identify potential areas for inclusion in Tentative Lists, which can then be narrowed down further based on site-specific information. Additional sources of information on these schemes are listed in Annex 2. Much of this information is only available in English language publications at the present time.

**Table 2. Gaps in the existing network of natural and mixed World Heritage sites in Arab States as identified by IUCN thematic studies – only sites that have not been inscribed to date are included in the table**

Publication	Scope of study	Sites noted with potential OUV in the Arab States	Comments
Dingwall et al. (2005)	Geological sites (criterion (viii))	No sites recommended – thematic approach	13 themes that may qualify for OUV
Goudie & Seely (2011)	Desert landscape sites (criterion (viii))	Chott el Jerid (Tunisia)	Included in current TL of Tunisia
		Sabkha (JAE)	Best developed example of marine salt flats
Smith & Jakubowska (2000)	High biodiversity value sites (criteria (ix), (x))		
Thorsell (2004)	Natural and mixed sites (criteria (vi), (viii), (ix), (x))	Red Sea (Egypt, Jordan, Saudi Arabia, Sudan, Yemen)	Some Red Sea sites included in TLs of State Parties
		Sudd-Sahelian Savannah (Sudan)	Only marginal representation in Sudan
Thorsell et al. (1997)	Sites with wetland and/or marine values (criteria (ix), (x))	Red Sea (Egypt, Jordan, Saudi Arabia, Sudan, Yemen)	Some Red Sea sites included in TLs of State Parties
		The Sudd (Sudan)	One of the World's largest wetlands
Thorsell & Hamilton (2002)	Mountain sites (all criteria)		
Williams (2008)	Cave and karst sites (criterion (viii))	Great Desert Landscapes (Egypt)	Included in current TL of Egypt. Author: cave/karst features alone do not justify OUV
		Talassetane (Morocco)	Included in current TL of Morocco
Wood (2009)	Volcano sites (criterion (viii))		

### 4.3 Key issues

Based on the above assessment there appear to be significant issues that require attention, to enable the Tentative Lists in the region to be more effective.

Only by following the recommendations of the *Operational Guidelines*, making full use of the accompanying best practice guidance, can State Parties ensure that tentative list entries as the first step towards nomination of natural and mixed sites are based on the best available knowledge and judgment (both nationally and internationally), and involve only sites with a realistic inscription prospect. At the same time, involvement of key local stakeholders at the tentative listing stage is needed, to ensure that the necessary consensus for the management as World Heritage is build, and that a participative management planning process is initiated from the start. This is a crucial first step towards meeting the integrity and management/protection requirements for inclusion on the World Heritage List at the subsequent nomination stage.

The crucial need to consider both the World Heritage criteria and the integrity and management/ protection requirements of the Convention, and to conduct a global comparative analysis of the values of potential sites as early as possible in the pre-nomination process, is also emphasized in a number of additional methodological guidelines and manuals on nominations and the concept of OUV, which have been produced by UNESCO and IUCN. Some of these guidelines are listed in Annex 3.

It is evident that not all of the above requirements/ recommendations of the *Operational Guidelines* and the corresponding secondary guidance have been fulfilled during the preparation of the current Tentative Lists of Arab States. According to the Report on the Second Cycle of Periodic Reporting in the Arab States (WHC-10/34.COM/10a), systematic inventories have been used consistently by only eight out of 14 State Parties to compile Tentative Lists, while four State Parties used them sometimes. Only one State Party used the IUCN thematic studies to compile its Tentative List, although this is generally encouraged by the *Operational Guidelines*. Tentative Lists are typically compiled by national Government Institutions, sometimes together with site managers and consultants. In contrast, NGOs,

industries, landowners and indigenous people are only rarely involved in the process, in spite of §64 of the *Operational Guidelines*. The 2010 Report on the Second Cycle Periodic Reporting in the Arab States further stated that “*there is need for countries to come together and learn from each other. There is need to discuss opportunities for trans-boundary properties*”. This implies that the recognition and management of natural World Heritage would benefit from improved regional cooperation between State Parties.

More focused support needs to be provided within the Region, to meet its needs. Many of the abovementioned guidelines are available only in English but not in Arabic, or French. There is often a lack of qualified national experts to compile tentative Lists and nominations for natural World Heritage sites. The necessary requirements for successful nominations (in terms of documentation of values, integrity and management/protection, as well as global comparative analysis) are perceived as high by some State Parties, particularly relative to the amount of data and information available for potential sites. One potential way for State Parties to address these challenges is to make more use of the “preparatory assistance” financial instrument that is available from the World Heritage Fund to support the preparation of successful nominations. These are key capacity development needs, and the conclusions of this report make observations on options to address them.

**Table 3. Distribution of Udvardy ecoregions and WWF 200 priority ecoregions of potential relevance to natural World Heritage nominations under Criteria (ix) and (x) among the Arab States**

Scheme	Area	AE	AL	BH	EG	EH	IQ	JO	KW	LB	LY	MA	MR	OM	PT	QA	SA	SD	SY	TN	YE	
<b>Udvardy Ecoregions</b>	Warm deserts/ semideserts		×		×	×	×	×	×		×	×	×	×			×	×	×	×	×	×
	Cold winter deserts	×		×			×		×					×		×	×		×			
	Evergreen sclerophyllous forests		×		×					×	×	×			×					×	×	
	Mixed mountain systems		×				×				×	×						×			×	
	Tropical dry forests												×									
<b>WWF 200 Priority Ecoregions</b>	199 Mediterranean Sea <sup>1</sup>		×		×					×	×	×			×					×	×	
	216 Canary Current <sup>1</sup>					×						×	×									
	231 Red Sea <sup>1</sup>				×			×									×	×				×
	232 Arabian Sea <sup>1</sup>													×		×	×					×
	158 Mesopotamian Marshes <sup>2</sup>						×															
	123 Mediterranean Woodlands		×		×	×		×		×	×	×			×					×	×	
	126 Socotra																					×
127 Arabian highland woodlands													×			×					×	

Source: See Annex 3.

<sup>1</sup> Marine ecoregion.

<sup>2</sup> Freshwater ecoregion.

Country codes: AE/United Arab Emirates, AL/Algeria, BH/Bahrain, EG/Egypt, EH/Western Sahara, IQ/Iraq, JO/Jordan, KW/Kuwait, LB/Lebanon, LY/Libya, MA/Morocco, MR/Mauritania, OM/Oman, PT/Palestinian Territories, QA/Qatar, SA/Saudi Arabia, SD/Sudan, SY/Syria, TN/Tunisia, YE/Yemen.

**Table 4. Distribution of Conservation International Biodiversity Hotspots, Centres of Plant Diversity, BirdLife International Endemic Bird Areas and Important Bird Areas of potential relevance to natural World Heritage nominations under criterion (x) among Arab States**

Scheme	Area	AE	AL	BH	EG	EH	IQ	JO	KW	LB	LY	MA	MR	OM	PT	QA	SA	SD	SY	TN	YE	
<b>Conservation International Biodiversity Hotspots</b>	Mediterranean Basin		x		x					x	x	x			x				x	x		
	Horn of Africa													x			x	x				x
	Eastern Afromontane																x	x				x
	Irano-Anatolian						x															
<b>Centres of Plant Diversity</b>	Af 84 High Atlas											x										
	SWA1 Dhofar Fog Oasis													x								x
	SWA4 Socotra																					x
	SWA5 Highlands of SW Arabia																x					x
	SWA14 Mountains of N. Iraq <sup>1</sup>						x															
	SWA 17 Levantine Uplands							x		x					x				x			
<b>BirdLife Endemic Bird Areas</b>	Mesopotamian Marshlands <sup>2</sup>						x															
	Socotra																					x
	SW Arabian Mountains																x					x
<b>Marine Centres of Endemism</b>	Red Sea <sup>3</sup>					x	x											x	x		x	
<b>BirdLife Important Bird Areas</b>	Total Number	19	31	4	34	0	42	17	8	15	8	46	24	33	4	5	39	22	24	46	57	

Sources and country codes: See Annex 3.

<sup>1</sup> Mountains of South-eastern Turkey, North-western Iran and North Iraq.

<sup>2</sup> Freshwater Endemic Bird Area.

<sup>3</sup> Marine centre of endemism.

Country codes: AE/United Arab Emirates, AL/Algeria, BH/Bahrain, EG/Egypt, EH/Western Sahara, IQ/Iraq, JO/Jordan, KW/Kuwait, LB/Lebanon, LY/Libya, MA/Morocco, MR/Mauritania, OM/Oman, PT/Palestinian Territories, QA/Qatar, SA/Saudi Arabia, SD/Sudan, SY/Syria, TN/Tunisia, YE/Yemen.

This account of the current tentative listing practice in Arab States shows that the limited functionality of their Tentative Lists as a first step towards successful nominations of natural and mixed sites is caused by internal shortcomings of the underlying process, as well as external challenges. Internal shortcomings can be addressed by re-aligning the process of Tentative List compilation and the preparation of nominations with the best practice recommendations of the Operational Guidelines, and additional guidance by UNESCO and IUCN. External challenges can be minimized through continued training and nomination support, as well as advice to State Parties from UNESCO and IUCN as the Advisory Body for natural heritage, based on existing tools, methods and guidelines.

## 5 Conclusions and Recommendations

This section focuses on recommendations that are relevant to the general development of the management of natural and mixed World Heritage in the Arab States. Specific recommendations on individual sites are included in Section 3. The discussion of the protection and management of natural heritage of Arab States within the framework of the World Heritage Convention can be divided into an analysis of the possibilities to improve the management of existing sites, and an exploration of ways to extend the instrument of the Convention to new properties. Although the pressures, threats and management challenges differ from site to site – as shown in Section 3 – and require different and locally relevant approaches to tackle them, there are a number of common themes and activities at the regional level that can contribute to such approaches.

- The detailed analysis in Section 3 of this report and a comparison of the reports on the first and second cycle of periodic reporting in the Arab States show that significant progress has been made recently regarding the introduction of management plans and the strengthening of the institutional basis for the management of natural and mixed World Heritage sites. However, there is room for improvement of institutional arrangements and capacity for the effective management of such sites. Management authority should be assigned to independent, permanent, effective institutions that are located at on-site, adequately funded and equipped. Since most natural and mixed World Heritage sites (particularly those inscribed under criteria (ix) and (x)) are essentially protected areas, the application of best practice in protected area management and the integration of such sites with national protected areas systems (and the corresponding institutional framework) offers significant additional benefits for the future. Achieving sustainable finance for sites is a critical issue.
- Several of the sites that have been analyzed are examples of successful local stakeholder participation in World Heritage management. However, there is still room for intensified participation and benefit sharing, both regarding conservation management and the sustainable use of natural resources from natural and mixed World Heritage sites. Most natural and mixed sites have a place in the economic life of the community and sometimes even depend on sustainable exploitation in order to maintain their values. This is reflected in the formal management of some but not all sites currently.
- While dedicated State Agencies that are tasked with the management of natural heritage are generally highly committed to its protection and sustainable management, many sites – and particularly larger sites such as Banc d’Arguin, Socotra and Tassili n’Ajjer – are subject to multiple interests and interventions from a wide range of Government and other entities. Therefore, there is a need to mainstream the conservation of natural heritage and sustainable development across all institutions that affect management of the sites and to agree on a strong mandate for formal management authorities.
- A considerable body of experience concerning most aspects of natural and mixed World Heritage management has been accumulated in the Arab States. This offers an opportunity for intensified mutual learning and exchange of best practice experience between management authorities at the regional level.

Improved management of existing natural and mixed World Heritage sites, and intensified communication and cooperation between State Parties, promises great benefits to natural heritage throughout the Arab region. The general analysis of natural heritage in Arab States in relation to the World Heritage Convention (Section 2) and the analysis of Tentative Lists show that there is a strong potential for a number of additional sites in the Arab countries. However, although there are currently 35 sites on the Tentative Lists of Arab States, only two sites have been inscribed in the last 15 years. The analysis of Tentative Lists (Section 4) shows that this situation could be changed if a number of measures are taken by the State Parties:

- Revise and update natural and mixed site entries in the Tentative Lists of Arab States Parties. This revision and updating should involve the prioritization of sites that are likely to meet the OUV requirements, and the rationalization of Lists to remove sites that do not have this potential. For sites that are retained there is the need for a clearer definition of values in relation to specific World Heritage criteria, an explicit indication of geographical scope (either as single or as well-defined serial sites), and the global comparative analysis in preparation of nomination.
- Strengthen the national consultation, planning and inventory process preceding the listing of sites on the Tentative List by involving local stakeholders and resource users, municipalities and regional government, NGOs, all relevant Government institutions and the business sector. Conduct a participatory analysis of appropriate management options according to the requirements of the World Heritage Convention prior to inclusion of sites on the Tentative List.

- Use the guidance available from thematic IUCN studies and other sources as listed in Section 4 (Tables 7–9) and Annex 3 to jointly conduct a gap analysis of additional natural and mixed sites of potential Outstanding Universal Value for inclusion in Tentative Lists and eventual nomination. Communicate and collaborate with other State Parties to jointly identify the best examples of geological features, ecosystems, biodiversity and other outstanding values typical of the Arab region (e.g. desert sites) for prioritization, and support their establishment and management. This may include support to the management of properties in neighbouring States (e.g. through coordinated hydrological management).
- Use the methodological advice offered by recent UNESCO and IUCN manuals on OUV and the nomination process (see Annex 3) to guide the entire pre-nomination and nomination process from the compilation of national site inventories onwards. The earlier the requirements for an eventual nomination are considered in the preparation process, the easier it will be for the State Party to move from the Tentative List stage to the nomination and eventually to the inscription. Early consideration of criteria, integrity and management/protection requirements will also ensure that resources are focused on those sites that have the highest potential for inscription.
- Collaborate to jointly establish marine natural World Heritage sites in the Seas shared by Arab States where warranted by their natural values (e.g. Red Sea). Collaborate to establish transboundary natural and mixed sites including transboundary serial sites where appropriate to protect Outstanding Universal Value.

Following these recommendations would likely result in Tentative Lists of Arab States that contains much fewer natural and mixed candidate properties than the current lists. However, these properties would have a much higher probability of eventual inscription and effective management. To facilitate the above process there are key needs to engage nature focal points within the Arab States in the work of the World Heritage Convention, and to provide information in the languages of the region related to the nomination processes and protection and management requirements of the World Heritage Convention. These are basic and essential capacity building needs, which should be a priority for IUCN to work on, in partnership with the UNESCO World Heritage Centre, and the other Advisory Bodies to the World Heritage Convention: ICCROM and ICOMOS. There may be a particular opportunity to build on the work that has been done already in the region by ICCROM through the capacity building programme ATHAR. A further key opportunity is to work in support of the development of regional centres of expertise in nature conservation and World Heritage. IUCN has been fully engaged in supporting the proposed Arab Regional Centre for World Heritage (ARC-WH), which is being launched as a category 2 UNESCO Centre with the support of the Kingdom of Bahrain. The development of the capacity of IUCN's regional offices and programmes supporting the Arab States is a key priority within IUCN's World Heritage Programme.

The current rapid development of the political and socio-economic framework of Arab States creates both significant challenges and new opportunities for the conservation of natural heritage and the promotion of sustainable development. Concerted efforts of Arab State Parties to improve the management of existing natural and mixed sites and to coordinate the establishment of additional properties in the most valuable places will contribute to overcoming these challenges while making the most of the opportunities. IUCN looks forward to supporting the region to realize the potential of the World Heritage Convention and welcomes feedback on this report. Please send all comments to the following address:

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## Annex 1. Assessment Tables

Annex 1 contains four analytical assessment tables for each of the five natural and mixed World Heritage sites in the Arab region:

1. A table on the values that justify inscription of the site in the World Heritage List under the appropriate criteria.
2. A table summarizing the current conservation status of the values of each site and the trends of its conservation status.
3. A table on pressures and potential threats to the site's values. Pressures are defined as factors that negatively affect the conservation status of the site, whereas potential threats are defined as factors that are currently not significantly affecting the site but may do so in the future, depending on management responses.
4. A table summarizing the various aspects of the protection and management of the site and trends affecting these aspects.

These tables underpin the summary table that is presented for each site in the main body of the report (Boxes 3–7), and the key issues identified in these sections.

## Banc d'Arguin National Park (Mauritania)

Key values of Banc d'Arguin National Park		
Criterion	Value	Summary
(ix)	1. Intertidal ecosystems	Relatively undisturbed shallow tidal coast with high ecosystem diversity and productivity: extensive salt marshes, 3,100 ha of mangrove swamps, 63,000 ha tidal mudflats, channels and creeks. Supports extensive fish nursery areas and large aggregations of migratory waterbirds.
(ix)	2. Subtidal ecosystems	630,000 ha marine areas within PNBA. Submarine bank/shelf extending up to 80 km from coast, with 60,000 – 80,000 ha seagrass beds. Exceptionally productive marine ecosystem due to coastal upwelling. Rich invertebrate communities. WWF 200 priority marine ecoregion. Supports richest fishery in West Africa, contributing 2/3 to Mauritania's national income. 145 species of fish targeted.
(ix)	3. Terrestrial ecosystems	570,000 ha terrestrial lands within PNBA. Landscapes consist of dunes, sand hills, sandstone cliffs, islands with their typical ecosystems and Saharan vegetation with some Mediterranean influences. Area testifies to ongoing ecological processes, primarily desert ecosystem succession.
(x)	4. Migratory and breeding waterbirds	> 2 million waterbirds (30% of those using the eastern Atlantic Flyway) winter at PNBA – one of the world's largest concentration of wintering waterbirds. Most important breeding area on the Atlantic seaboard, with 15 breeding species of fish eating birds. Several species of global conservation concern, endemic subspecies.
(x)	5. Fish fauna	Biggest fish feeding, nursery and spawning area off West Africa. Three distinct fish communities with high abundance and species richness. Important spawning and nursery area for sharks and rays.
(x)	6. Marine mammals and turtles	Largest breeding population worldwide of ca. 130 critically endangered Mediterranean Monk Seal (2008), occurrence of various species of whales and dolphins. Breeding site for two species of marine turtles, three additional species visiting.
(x)	7. Terrestrial mammals	Globally vulnerable ungulates, e.g. Dorcas Gazelle and other desert mammals.

Current status of the key values of Banc d'Arguin National Park		
Value	Summary	Assessment
1. Intertidal ecosystems	Considered generally intact, threatened by accidental oil spills from hydrocarbon extraction/transport. Intertidal mangrove forests, which are at the margin of distribution range, considered generally viable in 2001.	Low Concern
2. Subtidal ecosystems	Considered generally intact, but threatened by mechanical shellfish harvesting, dredging, accidental oil spills.	Low Concern
3. Terrestrial ecosystems	Deteriorating, due to land degradation/desertification, fuel wood collection, overgrazing, possibly climate change impacts since 2000 (2009).	High Concern
4. Migratory and breeding waterbirds	Recent trend data missing, but bird populations generally considered stable. Abundance of some fish-eating bird species declined (2001).	Low Concern
5. Fish fauna	No monitoring data on trends in fish populations available. Signs of overfishing outside and also inside PNBA: Fishing effort within PNBA increased threefold in recent years. Overall incl. shark and ray catches increased from 1997 to 2008, but marine surveillance system effective.	Data Deficient
6. Marine mammals and turtles	Deteriorating, namely Mediterranean Monk Seal habitat, due to disturbance and food competition from shore-based fisheries (2008). Catastrophic decline of Mediterranean Monk Seal population to 30% in 1996, population since stable, but at very low abundance.	High Concern
7. Terrestrial mammals	Deteriorating, due to land degradation and poaching (2009).	High Concern

Pressures and potential threats to Banc d'Arguin National Park's values			
Pressures	Values affected	Summary	Assessment
Unsustainable fishing inside NP	5 (4, 6, 1, 2)	Reduction in catch following overfishing by external poachers made local fishermen use unsustainable fishing methods (2002). Illegal fishing within PNBA strongly reduced by 2009, owing to improved patrolling capacity and effective surveillance scheme. Legal fishing effort within PNBA increased threefold, and legal catches increased sevenfold from 1998 to 2007 (partly due to switch of efforts from sharks to bony fish). Targeted shark fishing commercially interesting and reported from PNBA, but unsustainable techniques effectively banned in PNBA since 2004. 2008 legal catch estimate of pelagic rays/sharks 1,500 t. Fisheries also affect Mediterranean Monk Seal, reduce habitat, abandoned nets cause mortality (2006).	Low Risk
Legal unsustainable fishing outside NP	5 (4, 6, 1, 2)	Strong pressure from international (including European) fleets – 334 foreign trawlers licensed to fish in waters surrounding PNBA in 2001. Effect on fish species inside PNBA unclear as importance of areas outside park for lifecycle stages of most fish not known.	High Risk
Pollution from terrestrial sources	1, 2, 4, 5, 6	Senegal River brings agricultural runoff (2008). Nuadhibou-Nouakchott road construction may have resulted in pollution (2003). Effects on biological values unclear.	Data Deficient
Poaching	7	Negative effects on migratory waterbirds and terrestrial mammals noted (2008). Easy access via Nuadhibou-Nouakchott road may contribute to pressure.	High Risk
Overgrazing/fuel wood collection	3 (7)	Noted as increasing problem 2009.	Low Risk
Invasive and Alien Species (IAS)	1-3	Several terrestrial plant IAS detected, competing with native plants for water (2008).	Low Risk
Garbage accumulation	1-3 (4, 6)	Reportedly an increasing problem 2010.	Low Risk
Potential threats	Values affected	Summary	Assessment
Unsustainable fishing inside NP	5 (4, 6, 1, 2)	Reduction in catch following overfishing by external poachers made local fishermen use unsustainable fishing methods (2002). Illegal fishing within PNBA strongly reduced by 2009, owing to improved patrolling capacity and effective surveillance scheme. Legal fishing effort within PNBA increased threefold, and legal catches increased sevenfold from 1998 to 2007 (partly due to switch of efforts from sharks to bony fish). Targeted shark fishing commercially interesting and reported from PNBA, but unsustainable techniques effectively banned in PNBA since 2004. 2008 legal catch estimate of pelagic rays/sharks 1,500 t. Fisheries also affect Mediterranean Monk Seal, reduce habitat, abandoned nets cause mortality (2006).	Low Risk
Legal unsustainable fishing outside NP	5 (4, 6, 1, 2)	Strong pressure from international (including European) fleets – 334 foreign trawlers licensed to fish in waters surrounding PNBA in 2001. Effect on fish species inside PNBA unclear as importance of areas outside park for lifecycle stages of most fish not known.	High Risk
Pollution from terrestrial sources	1, 2, 4, 5, 6	Senegal River brings agricultural runoff (2008). Nuadhibou-Nouakchott road construction may have resulted in pollution (2003). Effects on biological values unclear.	Data Deficient
Poaching	7	Negative effects on migratory waterbirds and terrestrial mammals noted (2008). Easy access via Nuadhibou-Nouakchott road may contribute to pressure.	High Risk
Poaching	7	Negative effects on migratory waterbirds and terrestrial mammals noted (2008). Easy access via Nuadhibou-Nouakchott road may contribute to pressure.	High Risk

Protection and management of Banc d'Arguin National Park WH site		
Management area	Summary	Assessment
Boundaries	PNBA comprises a sufficiently large area of key ecosystems, but zoning and buffer zones not finalized by 2011. Boundaries defined based on administrative rather than ecosystem basis. Size and integrity of 210 ha Cape Blanc satellite reserve (Mediterranean Monk Seal) doubtful.	Some Concern
Legal framework and enforcement	<p>Strong legal and institutional framework – special PNBA law adopted by 2 Government Decrees 2009. Ratification by State Party of 1992 Convention on Compensation and Liability and some other legislative improvements 2007, but Law 2000/25 prohibiting dragnets in EEZ not being applied (at least until 2005).</p> <p>PNBA administration set up as semi-independent entity under Ministry of Environment. 95 staff including 42 on-site in 2010. Guarded entry points and patrolling guards in place. Strengthening of marine surveillance capacity and fleet and establishment of camel patrol until 2009. Capacity of field presence of PNBA not sufficient to achieve full enforcement on the ground, field enforcement still challenged by logistic constraints (lack of food, water, communications) 2010.</p>	Some Concern
Management plan and effectiveness	<p>First preliminary management plan in 1984. Master Plan for the Development of PNBA 1994–2003 adopted in 1995, but was never operational. Management Plans 2004–2009 and 2010-2014 developed with German Technical Cooperation (GTZ)/FIBA assistance, Management Plan 2010-14 approved and being implemented. Management plans have included business plans. Institutional setup of PNBA prescribed by Decree No. 2006-058 (2006). Management effectiveness improved until 2008. Sustainable pasture management plan under development 2009.</p> <p>Challenge to adapt management to emerging pressures and threats. Approval of law restricting non-traditional activities 2001. Institutional modernization 2005-09. Room for improvement of management (e.g. human resources) noted in 2010. Localization of administration in Nouakchott, concentration of staff there and lack of communication/coordination limits management effectiveness (2010).</p>	Adequate
Stakeholder involvement	<p>Generally good relations with Imraguen communities which have exclusive fisheries access since 2000. Local participation through annual workshops and fisheries committees. However, fishermen are economically dependent on local merchants. Economic benefit of fisheries resources not fully realized by Imraguen which had become poorer by 2010. Fisheries related decision making by PNBA questioned by Imraguen in 2010.</p> <p>Administrative Council to integrate PNBA across sectors, with representation of other ministries (e.g. tourism, fisheries, rural development). However, some key external stakeholders not supportive. Scientific Council exists but does not provide broad and strategic orientation.</p>	Some Concern
Financial support	2010 annual budget of PNBA ca. € 2 million, half of which is sourced from fisheries agreements with EU (2010). Trust fund of €5 million has been created, with first dividends (€00-500,000 per yr) expected for 2011 (2010). \$2.29 million raised by FIBA in support of PNBA by 2001. Reportedly more financial investment in human capital needed; room for improvement on donor coordination (2010).	Adequate
Knowledge	Scientific observatory established at PNBA in 2007. Research on fish stocks and fisheries' impact (2009). Information on fauna diversity of PNBA still characterized as limited in 2009. Understanding of ocean currents off PNBA noted as insufficient in 2009. Limited management relevance of research by observatory noted 2010.	Some Concern
Visitor management	Ecotourism Development Strategy since 2007. National ecotourism strategy prepared for 2010-14 to encourage sustainable tourism in PNBA. Still few visitors.	Adequate
Monitoring	Fisheries monitoring methodology developed with Mauritanian Institute of Oceanography and Fisheries Research. Plans to develop remote sensing approach to monitoring of the site with French Remote Sensing Centre. Still insufficient information to evaluate status of fish stocks within PNBA (2009). Establishment of global monitoring system (bio-physical, socioeconomic and governance) planned for 2011.	Some Concern
Threat management	Establishment decree prohibits most threatening activities in PNBA. Management of threats from oil exploration appeared insufficient 2008. Marine surveillance system to control illegal fishing established by 2006, strengthened by 2009, effective. Oil Spill Emergency Response Plan not approved by 2010. Pasture management plan in preparation in cooperation with Centre for International Agricultural Research for Development 2009.	Some Concern
Implementation of Committee recommendations	Most but not all recommendations were followed by State Party in the past: Request to adopt two decrees to implement Special Law for PNBA at 30.COM fulfilled by 31.COM; Requests for provision of EIA reports and mitigation measures and precautions for road construction and oil exploration from 27.COM not followed by SP until 33.COM; PSSA status designation request at 29.COM not fulfilled by 34.COM; Request to apply Law 2000/25 at 29.COM not followed by 32.COM; Invitation to establish Biosphere Reserve at 29.COM not followed until 34.COM. Request to implement MEC and MARPOL at 30.COM not implemented by 32.COM. Request to establish Oil Spill Emergency Response Plan at 31.COM not followed until 34.COM. Request to report on the monitoring of the state of values of PNBA at 31.COM not fully met by 34.COM. Recommendation to finalize PNBA zoning at 32.COM not implemented until 34.COM.	Some Concern

## Ichkeul National Park (Tunisia)

Key values of Ichkeul National Park		
Criterion	Value	Summary
(x)	1. Wintering area for palaeartic waterfowl	Up to 300,000 – 400,000 wintering waterfowl (mainly ducks, geese and coots) from Palaearctic present in the past – most productive wetland for waterfowl and one of the four top wintering sites in the western Mediterranean at that time. Lake is included in WWF's global 200 priority ecoregions and belongs to CI's Mediterranean Biodiversity Hotspot.
(x)	2. Breeding area for waterbirds of global conservation concern	Several species of global conservation interest (e.g. the globally vulnerable Marbled Teal).
(x)	3. Freshwater and wetland vegetation	Complex assemblage of reeds, tamarisks, submerged macrophytes (mainly <i>Potamogeton</i> ), cord grasses, bulrush ( <i>Scirpus</i> ), halophytes, typical for coastal lakes along the southern Mediterranean.

Current status of the key values of Ichkeul National Park		
Value	Summary	Assessment
1. Migratory waterbirds	Abundances reduced to 25% of original numbers by 2000. Reduction of Greylag Geese ( <i>Anser anser</i> ) numbers to 5%. Post 2003 recovery much slower than for submerged macrophytes (2005), but recovery to levels at inscription by 2010. Reportedly 300,000 wintering waterbirds in 2007/08.	Low Concern
2. Breeding waterbirds	Limited recent information on status of breeding (as opposed to migratory) waterbirds.	Data Deficient
3. Wetland vegetation	Strongly altered/degraded following shift in species composition and vegetation structure in response to salinization. Ecologically crucial <i>Potamogeton</i> submerged macrophyte area reduced from 3,000 to 500 ha in 1989. Recovery from 2003 onwards. Re-appearance of reed beds observed from 2007.	Low Concern

Pressures and threats to Ichkeul National Park's values			
Pressures	Values affected	Summary	Assessment
Construction of dams and resulting salinization, partial desiccation and vegetation shifts	1, 2	1996–2006 listed as World Heritage in danger because of damming, resulting in salinization and degradation of vegetation. Inclusion of site in World Heritage in Danger list already suggested by IUCN in 1985 and in 1987.  Reduction of water inflow from 350 to 230–270 million m <sup>3</sup> following dam construction and salinity increase to 80 g/l lead to shift in vegetation to halophytes and dramatic reduction in waterbird numbers. Exceptionally abundant rainfall in 2002/03–2005/06 winters replenished water resources of lake and contributed to desalinization to acceptable levels. This replenished the water table and reduced salinity to 5–6 g/l, resulting in partial ecosystem recovery, but threat from potentially insufficient water input remains. Positive trend maintained through sluice water release in 2006/07. Site removed from World Heritage in Danger list 2006. Highly fluctuating water inflow of 6–345 million m <sup>3</sup> (average 140 million m <sup>3</sup> ) between 2003 and 2009. Reportedly late onset of rainy season and late arrival of water resources in 2009–2010.	High Risk
Sedimentation	1, 2, 3	Sedimentation might eventually lead to the drying-up of the lake. High sedimentation rates observed 1994–2004. Partly a natural process, but exacerbated by dams, and requires further monitoring.	Very Low Risk
Livestock grazing	2	2,500 head of livestock within PNI in 2007. 1,000 people living inside PNI until 2004, 400 in 2008. Overgrazing most serious at Jebel Ichkeul, but park generally little used according to 2008 information.	Very Low Risk
Poaching, unsustainable hunting and commercial fishing	1, 2	Poaching considered a pressure in 2004, and (to a lesser degree) in 2008. Hunting permitted in periphery of PNI 2008. Illegal fishing considered a significant but manageable problem in 2008.	Low Risk
Agricultural encroachment	1, 2, 3	800 ha (ca. 6%) of land within PNI cultivated in 2007.	Low Risk
Disturbance by human activity	1, 2	Area moderately populated and not a major tourism destination, but some disturbance by local inhabitants and visitors. Disturbance by uncontrolled visitors noted 2004. Disturbance by military helicopters noted 2008.	Low Risk
Pollution from agricultural runoff	1, 2, 3	Mentioned as pressure 2008. Exact current significant unclear.	Data Deficient
Potential threats	Values affected	Summary	Assessment
Climate change	1, 2, 3	Likely to aggravate existing pressures in the future. Detailed effects still unclear.	Data Deficient

Protection and Management of Ichkeul National Park WH site		
Management area	Summary	Assessment
Boundaries	Boundaries and zoning (including core, buffer, and peripheral zones) of Ichkeul National Park mapped in draft Management Plan 2008. Some fences installed to protect core zone by 2010. Boundaries and zoning likely to be adequate if implemented and respected by all stakeholders.	Some Concern
Legal framework/enforcement	Most of site ceded to Direction de Forêts for conservation (1974). Recognized as UNESCO Biosphere Reserve 1977. National Park status since 1980, but administration not independent, under Regional Commissariat for Agricultural Development/ Department of Forestry Bizerte and other State institutions. Need for clear institutional setup, mandate and strengthening of PNI Administration noted 2000, 2003, and corresponding steps initiated by SP in 2007. PNI Director still lacking sufficient authority, limited staff capacity noted in 2004 and 2008. 38 staff 2008, among them 25 guards. Additional enforcement infrastructure and equipment planned 2008. Stepwise establishment of autonomous, permanent management authority ongoing 2010.	Some Concern
Management plan and effectiveness	First management plan approved 1977. Need for updating of management plan noted 2000, 2004. A GEF supported management planning project (\$2.2 million, including hydrological management) was implemented 2003–2008. Scientific Management Council established 2007. Draft 5-year participatory management plan (GEF project output) finalized 2008. This draft management plan aims at sustainable hydrological management, zoning, conservation management, institutional strengthening, staff development, monitoring, participation and local community development and ecotourism development. Complex responsibilities, inter-institutional conflict and lack of mainstreaming a challenge to management of PNI.	Some Concern
Stakeholder involvement	400 persons living on southern Jebel Ichkeul 2008. Locals reportedly felt disenfranchised after the creation of PNI because of loss of economic opportunities and livelihoods (grazing, timber, fish). Poor communication with farmers around the park and little involvement noted in 2008. Community livelihood projects and public outreach and information campaigns implemented until 2010. Agenda 21 process for participative environmental management in the PNI area initiated 2008. Areas for sustainable natural resource use foreseen in 2008 draft management plan, as compensation areas. Agenda 21 activities to be coordinated with larger local/regional development programmes 2010. A community-based organization has been involved in a community development plan and trainings for PNI since 2007.	Some Concern
Financial support	Annual budget (excluding project funds) of ca. \$11,600 considered insufficient in 2004. Necessary annual budget defined 2008 – at this time no independent budget provided, but allocations from budget of Directory of Forestry Bizerte. Support of GEF project and various donors in the past, e.g. WWF for monitoring workshop (\$50,000). Total WHF assistance \$140,000 between 1981 and 2002.	Significant Concern
Knowledge	Considerable ornithological and ecological research has been carried out at Ichkeul. A hydrological model was developed 1996 and is in need of updating, in order to guide hydrological management in a sustainable way.	Some Concern
Visitor management	Establishment of some visitor interpretation facilities (network of trails, Museum/visitor centre) since 1989. Extended exploitation of tourist area of park, aimed at improving living conditions of local populations, included in draft management plan 2008, and some facilities rehabilitated 2009. Visitor management considered weak in 2008.	Some Concern
Monitoring	Waterfowl monitoring programme with international collaboration since 1963. 5-year hydrological monitoring programme developed with the World Heritage Centre and IUCN in 1999. Need for systematic monitoring programme noted 2000. Monitoring programme developed jointly with IUCN 2002, generally continued until 2010. Need for centralized storage of scientific and monitoring data (including bird data) noted 2008, some steps in this direction 2009/10. Annual monitoring reports published online 2002–2008.	Adequate
Threat management	Dams erected 1983, 1995 for irrigation and drinking water provision in spite of objectives of 1977 management plan. As mitigation measure, Oued Tindja sluice established 1996. Restoration of Jouime Marsh in 2008. Planning workshop and rehabilitation programme 2002. Some additional hydrological mitigation measures established by 2002. Still insufficient water allocation (20–25 million m <sup>3</sup> /yr) but sluice rehabilitation finalized 2004 (80–100 million m <sup>3</sup> /yr needed). Improved government support to hydrological management since 2004 (acknowledgement of role of lake as net water user). Proactive hydrological management and planned water provision first tested 2007, with satisfactory success (2008). Tindja Lock allowed satisfactory management of water supply even in low-precipitation year 2007/08. Concern about use of water from Sidi Barrak Dam and planned construction of three additional dams expressed 2008, 2010. Project on integrated water resource management (Wetlands International) started 2009. Grazing management and provision of alternative grazing areas for local resource users since 2007–10.	Some Concern
Implementation of Committee recommendations	Programme of corrective measures for freshwater supply requested from SP at 20.COM and 21.COM, and provided by the SP at 23.COM (threat mitigation report). Progress report on 5-yr monitoring requested at 23.COM, submitted by 25.COM. Five requests of SP Reports on conservation status of PNI between 28.COM and 32.COM generally followed within 1–2 years. Commitment to provide 80–100 million m <sup>3</sup> /yr of water to the lake requested at 27.COM – discussion about management of water supply on year-to-year basis at 30.COM, which resulted in the removal from the List of World Heritage in Danger without a formal commitment. Water allocation 2006/07 unclear and request to commit to minimum allocation renewed at 31.COM. Establishment of a participatory management plan and permanent/ independent management authority for PNI requested at 27.COM-30.COM, draft plan submitted at 32.COM; steps to strengthen and clarify PNI Administration 2007–09, still ongoing by 34.COM. Request to launch Agenda 21 Committee in PNI area at 30.COM met by 32.COM. Request to submit EIAs for three additional dams and to use these dams to ensure water supply to site at 34.COM, implementation thus far unclear.	Some Concern

## Socotra Archipelago (Yemen)

Key values of Socotra Archipelago		
Criterion	Value	Summary
(x)	1. Complex assemblage of unique ecosystems	“The Galapagos of the Indian Ocean”: eight unique main types of vegetation/ecosystems with rich endemic biota.
(x)	2. Endemic flora and vegetation	308 endemic plant species (37%), 15 endemic genera.
(x)	3. Endemic reptiles with their habitats	26 endemic reptile species.
(x)	4. Endemic and endangered birds with their habitats	7 endemic and additional globally threatened bird species.
(x)	5. Endemic invertebrates with their habitats	High endemism in terrestrial mollusks (95%), isopods (73%) and arachnids (ca. 60%).
(x)	6. Coastal/marine biodiversity and habitats	High marine diversity and some regional endemism, 283 species of coral, 730 species of fish, 2 nesting species of sea turtle, many whale and dolphin species in vicinity.

Current status of the key values of Socotra Archipelago		
Value	Summary	Assessment
1. Ecosystem assemblage	Relatively pristine in comparison to other islands. Increasingly affected by degradation of vegetation and soil erosion through overgrazing, fragmentation.	Low Concern
2. Endemic flora	Possibly four species lost over 20 <sup>th</sup> century, some key species declining (e.g. <i>Draceana cinnabari</i> ), 148 plant species listed as threatened, 33 data deficient.	High Concern
3. Endemic reptiles	No species lost over 20 <sup>th</sup> century apparently. Conservation status of most species not assessed by IUCN, and unknown.	Data Deficient
4. Endemic birds	No species lost over 20 <sup>th</sup> century. 2 endemic species classed as vulnerable, 1 as near-threatened, 3 as least concern by IUCN.	Low Concern
5. Endemic invertebrates	No endemic mollusk species lost over 20 <sup>th</sup> century. Conservation status not assessed (except dragonflies, freshwater crabs).	Data Deficient
6. Coastal/marine biodiversity	Marine communities reportedly still comparably healthy. Increasingly affected by unsustainable use in some areas.	Low Concern

Pressures and potential threats to Socotra Archipelago's values			
Pressures	Values affected	Summary	Assessment
Habitat degradation through unsustainable natural resource use	1, 6 (2–5)	Livestock including goat numbers reportedly increasing. Timber demand increasing due to building boom. Increased fuel wood demand. Mangroves also affected. Increase of pressure caused by breakdown of traditional land management, particularly transhumance.	High Risk
Habitat destruction and fragmentation through road construction	1, 2, 3, 5 (4, 6)	> 900 km of roads constructed since 2001. Decree to sustainably manage road construction 2008 has reduced this pressure. Indirect effects include habitat fragmentation, potentially wildlife mortality, waste and invasive species dispersal, disturbance, enhanced access for natural resource use (partly unsustainable)	Low Risk
Insecticide use	5 (3, 4, 1)	Use of insecticide Temephos in anti-malaria campaigns since 2000. Localised effects on invertebrate fauna observed. No effects beyond affected areas observed to date.	Low Risk
Agriculture development	1, 2 (3–5)	Increasing number of home-garden projects for food (locally concentrated). Increased water demand, biocide pollution, exotic plant import, habitat loss to garden creation and fragmentation.	Low Risk
Unsustainable use of marine resources	6	Localized illegal hunting of sea turtles, collection of sea cucumbers, lobsters and shark fins on recently reported.	Low Risk

Potential threats	Values affected	Summary	Assessment
Unsustainable tourism	1 (2–6)	Tourist number increased > 30-fold since 2000 but absolute numbers still low (ca. 5,000 in 2009). Lack of tourism development planning, concentration of tourists at high natural value sites, increase in road/infrastructure development, water and timber demand, accelerated breakdown of traditional land management, increased risk of invasive species. Accelerating trend in absence of strong regulatory framework warrants classification has High Risk in spite of low overall numbers.	High Risk
Invasive species	2, 4, 5 (3, 1)	87 exotic (mostly non-invasive) plant species found (80% since 2000), still mostly restricted to home gardens and requiring active cultivation. Several invasive species also introduced. All mammal and freshwater fish species alien (but not threatening current values), two introduced reptiles reportedly displacing endemic species. Invasive Indian House Crow eradicated in 2009.	High Risk
Pollution/waste	1, 6	25% increase in macro-waste production estimated until 2015.	Low Risk
Climate change	1–6	Increasingly dry conditions expected, but exact predictions still impossible. Many Socotra endemics depend on wet areas. Coastal areas sensitive to sea level rise.	Data Deficient

### Protection and Management of Socotra Archipelago WH site

Management area	Summary	Assessment
Boundaries	Boundaries and buffer zones as in Conservation Zoning Plan (CZP) adequate but not always respected. Revision of CZP planned for 2011.	Adequate
Legal framework/enforcement	Basic framework in place, but need for strengthening of legal framework and enforcement capacity noted in Decision 32COM 8 B.5. Unclear responsibility for CZP implementation (both EPA and Ministry of Public Works and Roads). Legal status of Socotra Administration itself (no Island Wide Authority) a major obstacle to conservation enforcement. Creation authority in preparation (April 2011). Deputy Governor (under Hadramout Governor) for Socotra appointed by Government of Yemen for interim period.	Some Concern
Management plan and effectiveness	CZP approved 2000, revision planned for 2011. 5 component PAs of the site implement management plans as of April 2011, 1 plan prepared but not being implemented yet, 2 in preparation. Buffer zone management not sufficiently aligned with core zone management. Capacity of EPA representation at Socotra to manage site limited.	Some Concern
Stakeholder involvement	Insufficient mainstreaming of sustainable development among all stakeholders (e.g. line ministries, tourism industry, traditional users) a main obstacle to effective conservation management. Intense involvement of national and international scientists in demarcation and management planning. Local stakeholders, who have been stewards and managers of the area for centuries, do not benefit sufficiently, e.g. from tourism development.	Significant Concern
Financial support	Financing still largely donor dependent, with several donors (UNDP, GIZ, Italian Development Cooperation) committed to continue financial support for the coming years. Sustainable long-term financing beyond this period not secured. No sustainable financing strategy/business plan in place. Socotra Conservation Fund established 2002, small contribution to conservation funding. No clear understanding of potential economic benefits of sustainable tourism among local stakeholders.	Some Concern
Knowledge	Knowledge on conservation status of values satisfactory for plants and birds, lacking for most reptiles and invertebrates, some plants. Need for more management-orientated knowledge. Limited application and erosion of traditional knowledge about environmental management among local population.	Some Concern
Visitor management	Limited local visitor management at places of particular interest has lead to damage. Lack of overall tourism and visitor management planning a major future challenge if rapid increase of tourism, which currently is completely unregulated, continues.	Significant Concern
Monitoring	Ad-hoc observation of conservation status of the site but currently no systematic planned monitoring of state of values, pressures, threats and management effectiveness.	Some Concern
Threat management	Management of pressures from road construction 2008 improved successes in IAS management. Need for improved management of pressures from resource use, grazing, road/infrastructure development, and of threats from tourism development, insecticide use, port/airport controls for IAS, collection/trade.	Significant Concern
Implementation of Committee recommendations	Recommendations/requests from Decision 32.COM 8 B.5 to be assessed in 2012.	Not applicable

## Tassili n'Ajjer (Algeria)

Key values of Tassili n'Ajjer		
Criterion	Value	Summary
(viii)	1. Geological records of transition of hydrographic system from fluvial to hyper-arid conditions	Signs of intense fluvial erosion on sandstone plateau. Geological conformation includes Precambrian crystalline elements and sedimentary sandstone successions of great palaeo-geographical, palaeo-climatological and palaeo-ecological interest.
(vii)	2. Exceptional scenic beauty of deeply eroded north-facing cliffs, gorges and valleys	"Lunar landscapes", "rock forests" created by erosion, about 300 natural rock arches and many other spectacular relief forms.

Current status of the key values of Tassili n'Ajjer		
Value	Summary	Assessment
1. Geological records	Relatively well protected by its geographic isolation and difficulty of access at time of inscription, and no changes reported since.	Low Concern
2. Exceptional scenic beauty	As above; apparently no major construction projects that might affect exceptional scenic beauty ongoing, and no changes reported since inscription.	Low Concern

Pressures and potential threats to Tassili n'Ajjer's values			
Pressures	Values affected	Summary	Assessment
Damage and littering by visitors	1, 2	Tourist numbers growing until 1990s, may increase again given improved transport infrastructure (Djanet Airport, north-south roads). Currently low tourist numbers and consequently limited effects.	Low Risk
Natural erosion	1, 2	A natural process that has formed the current landscape and will continue to do so.	Very Low Risk
Pollution	2	One report of a moss-formed travertine in pools of Azarif near Iherir being affected by pollution in 1980s. No recent information available. Strong pollution effects appear highly unlikely.	Low Risk

Protection and Management of Tassili N'Ajjer WH site		
Management area	Summary	Assessment
Boundaries	Boundaries and size adequate to ensure the maintenance of the geological process integrity of the site, but size and border location of site make it difficult to manage it effectively with the staff available.	Highly Effective
Legal framework/enforcement	Site is reportedly protected as Cultural Park under Law on Protection of Cultural Heritage since 2004. Park Office established in accordance with this designation. Rangers/wardens controlling the few key access points to the NP. Legal framework strengthened and new guardian system established 2010. Excellent enforcement capacity reported in 2010, but few staff relative to size of site.	Adequate
Management plan and effectiveness	Management plan in preparation 1987 and still in 2010. Management system based on annual plans reported 2010. 150 staff 2010, but wardens mainly untrained. No specific conservation activities relevant to criteria vii and viii reported until 2010. Plans to update and improve management plan reported 2010.	Some Concern
Stakeholder involvement	Ministerial and local representatives involved in Advisory Board. Local stakeholders intensely involved in management 2010. Education programme reported in 2010. Involvement of institutional stakeholders (e.g. other ministries) could be improved.	Adequate
Financial support	National Park financially independent. Conservation resources sufficient. Some nature conservation projects on Saharan Cypress in 1980s by IUCN and WWF. UNDP-GEF programme on biodiversity conservation 2004–2011. \$86,871 WHF financial support between 1984 and 1998.	Adequate
Knowledge	Some research into Saharan Cypresses and natural resources in 1980s. Some ongoing research (without specification) reported 2010.	Data Deficient
Visitor management	Increased visitor influx through Djanet Airport expected but still only 7,500 visitors in 2009. NP Administration issues permits and guiding to tourists wishing to cross the plateau on 4x4 tours. All tourists are supposed to be accompanied by guides. Efforts to develop sustainable tourism underway 2010.	Adequate
Monitoring	Monitoring has helped to develop an action plan for the site but no effective monitoring system of geo-morphological values in place in 2010.	Data Deficient
Threat management	See visitor management (damage by visitors appears main threat to natural values).	Adequate
Implementation of Committee recommendations	No recommendations made by Committee.	Not applicable

## Wadi Al-Hitan (Whale Valley) (Egypt)

Key values of Wadi Al-Hitan (Whale Valley)		
Criterion	Value	Summary
(viii)	1. > 400 skeletons of a wide variety of fossilized Eocene whales and other marine fossils	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.

Current status of the key values of Wadi Al-Hitan (Whale Valley)		
Value	Summary	Assessment
1. Whale and other fossil skeletons	Whale and vertebrate skeletons generally well-preserved. 40% of known fossils in good condition, 42% weathered, 18% severely weathered in 2009. Reports of attempted (unsuccessful) illegal quarrying on parts of the site in 2011.	Low Concern

Pressures and potential threats to Wadi Al-Hitan's values			
Pressures	Values affected	Summary	Assessment
Vandalism, theft and/or damage by visitors	1	Whale skeletons are physically fragile. Threefold increase of annual visitor numbers to ca. 12,000 between 2005 and 2009. Visitation expected to increase (2005).	Low Risk
Damage by 4x4 cars	1	Some unofficial access tracks to site (e.g. from northern Baharia road) lead through areas containing fossils, may lead to destruction. Destruction case documented in 2007.	Low Risk
Physical degradation of exposed fossils through wind erosion	1	Destruction by natural erosion is slow and overall not significant. Exposed parts have been protected through polymer embedding by site managers in the past.	Very Low Risk
Potential threats	Values affected	Summary	Assessment
Destruction by illegal quarries	1	Unsuccessful attempts to establish illegal quarries reported 2011. Significance unclear.	Low Risk

Protection and management of Wadi Al-Hitan WH site		
Management area	Summary	Assessment
Boundaries	Boundaries generally adequate but were poorly manageable – adjusted based on natural features in 2010. Extension of buffer zone (of currently 5,885 ha) has been recommended. Potential added value of inclusion of Gebel Qatrani and Gebel Abiad site (west of site) noted 2010.	Adequate
Legal framework/enforcement	Site protected as part of Wadi El-Rayan Protected Area (WRPA) under Egyptian Law No. 102 (1983) for Protected Areas. Enforced by Nature Protection Sector of Egyptian Environmental Affairs Agency. 28 rangers and guards 2007 in overall WRPA. 8 staff on-site in 2009. Logistics challenging due to remote location of site.	Adequate
Management plan and effectiveness	Managed as special protection zone within WRPA – no separate plan or administration. WRPA management plan prepared 2002 and revised in 2010. Separate management plan for Wadi Al-Hitan in preparation 2011. Business plan prepared but not endorsed by 2007. Resources (electricity, water, communications, vehicles etc.) still a challenge to management effectiveness 2010.	Some Concern
Stakeholder involvement	Locals involved as guards, in management and tourism. Plans to involve local stakeholders more in ecotourism business making progress – 15 families benefiting from site (related to tourism activities) in 2010.	Adequate
Financial support	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. Italian-Egyptian Environment Programme had committed \$518,000 for 2004-08, continuation past 2008 unclear. Conservation fund planned and "Friends of Wadi Al-Hitan" NGO tested as part of sustainable funding by 2007 – status unclear.	Some Concern
Knowledge	Strong scientific interest since 1980s. Exploration continuing; more fossils expected to be discovered in the future. One geologist employed on-site (2007). Exemplary research collaboration between EEAA, Egyptian Geological Survey and University of Michigan, with site staff training component, agreed 2005 and ongoing.	Highly Effective
Visitor management	Visitors restricted to pre-arranged tours along prescribed trail by foot or camel. Extensive interpretation and visitor guiding facilities established by 2010. Additional visitor facilities (camping site, Bedouin style eco-lodge) planned 2007. Cooperation with interested tourism/trekking companies offers added value. Possible need to further improve 4x4 access management was noted 2010, but unauthorized access from north reduced to non-significant levels 2010.	Adequate

Monitoring	Inventory works since 1980s, monitoring programme since 1998: photo-monitoring of state of whale skeletons twice a year (2007). Documentation and monitoring of new finds ongoing. More extensive geological survey twice a year. Visitor monitoring since 2005.	Adequate
Threat management	Main threats from visitors – see visitor management. Threats from illegal quarrying activities 2011 may remain significant, depending on framework development.	Some Concern
Implementation of Committee recommendations	Recommendations from 28.COM regarding visitor infrastructure and vehicular traffic management mostly met by 34.COM. Recommendations from 28.COM regarding inclusion of Gebel Qatrani and extension of buffer zone still pending at 34.COM.	Some Concern

## Annex 2. Assessment criteria for (vii), (viii), (ix) and (x)

**Criterion (vii): contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance**

**Good:** All superlative natural phenomena are essentially intact, and areas of exceptional natural beauty and aesthetic importance are not impacted by human intervention. Views crucial to the appreciation of the superlative natural phenomena or areas of exceptional natural beauty are essentially unaffected by human intervention.

**Low Concern:** Some alteration to superlative natural phenomena or areas of exceptional natural beauty has occurred in some areas, and/or some crucial views are altered through human intervention. These alterations are not causing persistent or substantial effects on the appreciation of the superlative natural phenomena or areas of exceptional natural beauty.

**High Concern:** Alteration to superlative natural phenomena or areas of exceptional natural beauty has occurred in a number of areas, and/or crucial views are much altered through human intervention. These alterations cause significant depreciation of the superlative natural phenomena or areas of exceptional natural beauty.

**Critical:** Widespread alteration to or loss of superlative natural phenomena or areas of exceptional natural beauty. Crucial views are almost completely obstructed or altered through human intervention, causing severe depreciation of the superlative natural phenomena or areas of exceptional natural beauty.

**Criterion (viii): be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms , or significant geomorphic or physiographic features**

**Good:** Landforms, geomorphic or physiographic features remain essentially unaltered. Available evidence indicates that only minor, if any, disturbance to examples of major stages of earth's history the record of life has occurred.

**Low Concern:** Some loss or alteration of geomorphic or physiographic features has occurred in some areas. Significant. Some disturbance to the record of life has occurred in some areas.

**High Concern:** Loss or alteration of geomorphic or physiographic features has occurred in a number of areas. Significant disturbance to the record of life has occurred in a number of areas.

**Critical:** Widespread loss or alteration of geomorphic or physiographic features has occurred. Widespread disturbance to the record of life has occurred.

**Criterion (ix): be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals**

**Good:** All elements necessary to maintain ecological and biological processes are essentially intact. Available evidence indicates that only minor, if any, disturbance to ecosystems or communities of plants and animals has occurred.

**Low Concern:** Loss or alteration of some elements necessary to maintain ecological and biological processes has occurred, but is not causing persistent or substantial effects on ecosystems and communities of plants and animals.

**High Concern:** Loss or alteration of many elements necessary to maintain ecological and biological processes has occurred and is causing significant effects on ecosystems and communities of plants and animals. Severe disturbance to ecosystems and communities of plants and animals is occurring.

**Critical:** Loss or alteration of a majority of elements necessary to maintain ecological and biological processes has occurred and is causing a collapse of ecosystems and communities of plants and animals.

Criterion (x): contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation

**Good:** All major habitats are essentially intact and able to support dependent species. Available evidence indicates that populations of key species (species that are identified as major biodiversity values of the site) are stable and under low pressure.

**Low Concern:** Some habitat loss or alteration has occurred in some areas, but is not causing persistent or substantial effects on populations of dependent species. Available evidence indicates that populations of some key species are under low levels of pressure, and that some signs of decline are being observed.

**High Concern:** Habitat loss or alteration has occurred in a number of areas and is causing or is likely to cause significant declines in populations of dependent species. The populations of many key species have declined significantly.

**Critical:** Widespread habitat loss or alteration such that dependent species cannot be adequately supported, causing severe declines in a majority of dependent species. Populations of a majority of key species have declined significantly.

## Annex 3. Additional sources of information

### Sources of information on potential additional candidate sites for inclusion in the World Heritage List:

**Conservation International** (2007) Global Biodiversity Hotspots. <http://www.biodiversityhotspots.org/>

**Davis, S.D., V.H. Heywood and A.C. Hamilton (eds.)** (1994) Centres of Plant Diversity: A Guide and Strategy for their Conservation. Volume 1: Europe, Africa, South West Asia and the Middle East. WWF, Gland, Switzerland and IUCN, Cambridge, UK.

**Dingwall, P., Weighell, T. & Badman, T.** (2005): Geological World Heritage: a Global Framework. IUCN, Gland, Switzerland. <http://cmsdata.iucn.org/downloads/geology.pdf>

**Evans, M. I.** (1994) Important Bird Areas in the Middle East. In: Birdlife Conservation Series No. 2, p. 410 pp. Cambridge, UK: BirdLife International. See also <http://www.birdlife.org/datazone/site/search>.

**Fishpool, L. D. C. and M. I. Evans (Eds.)** (2001) Important Bird Areas in Africa and Associated Islands: Priority Sites for Conservation. Pisces Publications and BirdLife International, Newbury and Cambridge, UK. See also <http://www.birdlife.org/datazone/site/search>.

**Goody, L. and M. Seely** (2011) World Heritage Desert Landscapes: Potential Priorities for the Recognition of Desert Landscapes and Geomorphological Sites on the World Heritage List. IUCN, Gland, Switzerland.

**IBAT Alliance** (2008) Integrated Biodiversity Assessment Tool. <https://www.ibat-alliance.org/ibat-conservation/>.

**Magin, C. & Shape, S.** (2004) Review of the World Heritage Network: Biogeography, Habitats and Biodiversity. In: p. 180. UNEP-WCMC, Cambridge, UK, and IUCN, Gland, Switzerland. [http://cmsdata.iucn.org/downloads/global\\_review.pdf](http://cmsdata.iucn.org/downloads/global_review.pdf)

**Olson, D. A. & Dinerstein, E.** (2002) The global 200: Priority ecoregions for global conservation. *Annals of the Missouri Botanical Garden* 89: 199-224.

**Roberts, C. M., McClean, C. J., Veron, J. E. N., et al.** (2002) Marine biodiversity hotspots and conservation priorities for tropical reefs. *Science* 295: 1280 – 1284.

**Smith, G. & Jakubowska, J.** (2000) A Global Overview of Protected Areas on the World Heritage List of Particular Importance for Biodiversity. UNEP-WCMC, Cambridge, UK and IUCN, Gland, Switzerland. <http://cmsdata.iucn.org/downloads/biodiversity.pdf>

**Thorsell, J.** (2004) The World Heritage List: Future priorities for a credible and complete list of natural and mixed sites. Paper prepared by IUCN for the 2004 World Heritage Committee IUCN, Gland, Switzerland. [http://cmsdata.iucn.org/downloads/ouv2004\\_english.pdf](http://cmsdata.iucn.org/downloads/ouv2004_english.pdf)

**Thorsell, J. & Hamilton, L.** (2002) A Global Overview of Mountain Protected Areas on the World Heritage List. IUCN, Gland, Switzerland. <http://cmsdata.iucn.org/downloads/mountains.pdf>

**Thorsell, J., Levy, R. F. & Sigaty, T.** (1997) A global overview of wetland and marine protected areas on the World Heritage list. In: p. 47. IUCN, Gland, Switzerland. <http://cmsdata.iucn.org/downloads/wetlands.pdf>

**Udvardy, M.D.F.** (1975) A Classification of the Biogeographical Provinces of the World. IUCN Occasional Paper No. 18, IUCN, Morges, Switzerland. <http://cmsdata.iucn.org/downloads/udvardy.pdf>

**Wells, R.T.** (1996) Earth's Geological History: a Contextual Framework for Assessment of World Heritage Fossil Site Nominations. IUCN, Gland, Switzerland. <http://cmsdata.iucn.org/downloads/fossils.pdf>

**Williams, P.** (2008) World Heritage Caves and Karst: a Thematic Study. IUCN, Gland, Switzerland. <http://data.iucn.org/dbtw-wpd/edocs/2008-037.pdf>

**Wood, C.** (2009) World Heritage Volcanoes. IUCN, Gland, Switzerland. <http://data.iucn.org/dbtw-wpd/edocs/2009-065.pdf>

### Methodological guidelines and manuals relevant to the concept of Outstanding Universal Value, the nomination process and the preparation of Tentative Lists:

**Badman, T., B. Bomhard, et al.** (2008) Outstanding Universal Value. Standards for Natural World Heritage. Gland, Switzerland, IUCN. <http://data.iucn.org/dbtw-wpd/edocs/2008-036.pdf>

**Badman, T., P. Dingwall, et al.** (2008) World Heritage Nominations for Natural Properties: A Resource Manual for Practitioners. Gland, Switzerland, IUCN. <http://cmsdata.iucn.org/downloads/nominations.pdf>

**Hockings, M., James, R., Stolton, S. et al.** (2008) Enhancing our Heritage Toolkit. Assessing management effectiveness of natural World Heritage sites. World Heritage Papers 23. Paris, UNESCO. [http://whc.unesco.org/documents/publi\\_wh\\_papers\\_23\\_en.pdf](http://whc.unesco.org/documents/publi_wh_papers_23_en.pdf)

**IUCN** (2008) Management Planning for Natural World Heritage Properties: A Resource Manual for Practitioners. Gland, Switzerland, IUCN. <http://cmsdata.iucn.org/downloads/whmanagement.pdf>

**Hockings, M., James, R., Stolton, S. et al.** (2008) Enhancing our Heritage Toolkit. Assessing management effectiveness of natural World Heritage sites. World Heritage Papers 23. Paris, UNESCO. [http://whc.unesco.org/documents/publi\\_wh\\_papers\\_23\\_en.pdf](http://whc.unesco.org/documents/publi_wh_papers_23_en.pdf)

**UNESCO** (2011) Preparing World Heritage Nominations. First Edition 2010. Paris, UNESCO. <http://data.iucn.org/dbtw-wpd/edocs/2008-036.pdf>

### General information sources on World Heritage in Arab States:

**Ghabbour, S. I.** (1997) Identification of potential natural Heritage sites in Arab countries. Cairo: Arabic Republic of Egypt National MAB Committee.<sup>1</sup>

**UNESCO** (2004) Periodic Report and Regional Programme Arab States 2000 – 2003. World Heritage Reports. Paris: UNESCO. [http://whc.unesco.org/documents/publi\\_wh\\_papers\\_11\\_en.pdf](http://whc.unesco.org/documents/publi_wh_papers_11_en.pdf)

**UNESCO** (2010) Report on the Second Cycle of Periodic Reporting in the Arab States. Paris: UNESCO. <http://whc.unesco.org/archive/2010/whc10-34com-10Ae.pdf>

<sup>1</sup> This publication uses criteria other than the World Heritage criteria for the identification of potential new sites. Many of the sites listed therein do therefore not qualify as natural World Heritage. However, the document is useful for general reference.



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Cover: Critically endangered Mediterranean Monk Seals (*Monachus monachus*) on Cap Blanc in Banc d'Arguin World Heritage Site. ©Hellio and Van Ingen/Photoshot.

Page 12: Interplay of land and sea in Banc d'Arguin National Park. Photograph taken with a kite. ©www.enhaut.org.

Page 14: A Cattle Egret (*Bubulcus ibis*) in Ichkeul National Park. ©IUCN/Hichem Azafaf.

Page 16: Dragon Blood Tree (*Dracaena cinnabari*) on Socotra. ©Abdulraqeb Al-Okaishi/Socotra.

Page 18: Sandstone rock formation in a canyon in Tassili n'Ajjer. ©Hemis/Corbis.

Page 20: Scattered boulders in Wadi Al-Hitan. ©Tim Badman.

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