IUCN Conservation Outlook Assessment 2017 **(archived)**
Finalised on 09 November 2017

Please note: this is an archived Conservation Outlook Assessment for Banc d'Arguin National Park. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Banc d'Arguin National Park

SITE INFORMATION

Country:
Mauritania
Inscribed in: 1989
Criteria:
(ix) (x)

Site description:
Fringing the Atlantic coast, the park comprises sand-dunes, coastal swamps, small islands and shallow coastal waters. The contrast between the harsh desert environment and the biodiversity of the marine zone has resulted in a land- and seascape of outstanding natural significance. A wide variety of migrating birds spend the winter there. Several species of sea turtle and dolphin, used by the fishermen to attract shoals of fish, can also be found. © UNESCO

SUMMARY

2017 Conservation Outlook

Significant concern

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. While the marine and avian values of are largely intact and the protection and management framework for the Banc D’Arguin National Park is strong, its conservation outlook is of significant concern due in large part to emerging challenges originating within and outside its boundaries, principally from unsustainable fisheries and increasing industrial activities.

Current state and trend of VALUES

Low Concern
Trend: Deteriorating

The values of PNBA were nearly undisturbed until the late 20th Century, but are increasingly under pressure and some values have begun to deteriorate. While there is a good follow up of fish landing in the park, fish stocks are not evaluated and the importance of the park as a nursery zone is not well documented. Knowledge on this subject should be improved at least in regard to species of commercial value. The status of terrestrial ecosystems and their fauna remains of high concern and overall the status of the property appears to be deteriorating despite intensive management efforts. However, the property continues to host significant numbers of overwintering birds.

Overall THREATS

High Threat

Unsustainable fishing (including fishing for sharks and rays) within and outside PNBA is the main current pressure. Fishing effort and captures inside the park have steeply increased, but seem stable and are relatively well-controlled. The increasing commercialization of artisanal fishing is a real concern. Accidental oil spills from oil platforms or tankers near PNBA are an increasing potential threat. Mining activities are likely to expand in the near future and may cause negative impacts on fresh water resources. Climate change related increases in flooding are negatively affecting some coastal parts of the site. Pressures on terrestrial ecosystems may increase in the short term due to new urban developments under construction outside of the park’s eastern boundary in Chami and in Mamghar, inside of the park. All of these developments will require a thorough assessment of their impacts on the park, including their cumulative impacts.

Overall PROTECTION and MANAGEMENT

Some Concern

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 exploration and increasing shipping of hydrocarbons. The management effectiveness and capacity of the park to raise sustainable funding are also in need of further improvement. Most of the staff is located in Nouakchott and field work activities and support to communities are currently insufficient, although this situation is expected to improve when the park headquarters are moved to Chami.

FULL ASSESSMENT

Description of values

Values

World Heritage values

► Intertidal ecosystems
Criterion:(ix)

Relatively undisturbed nutrient-rich shallow tidal coast with high ecosystem diversity and productivity: extensive seagrass beds of Zostera noltii, salt marshes, 3,100 ha of mangrove swamps, 63,000 ha of mudflats, channels and creeks. Supports extensive fish nursery areas, occurrence of marine mammals (eg hump-back dolphin) and large aggregations of migratory waterbirds (UNEP-WCMC, 2012). The intertidal ecosystems of the site are also a main focus of a Ramsar site there (Wetlands International, 2013).(SOUV)

► Subtidal ecosystems
Criterion:(ix)

630,000 ha marine areas within PNBA. Submarine bank/shelf extending up to 80 km from coast, with some extensive seagrass beds of Cymodocea nodosa with Halodule wrightii. Exceptionally productive marine ecosystem due to coastal upwelling. Rich invertebrate communities (UNEP-WCMC, 2012). Belongs to a WWF 200 priority marine ecoregion (WWF, 2013).

► Terrestrial ecosystems
Criterion:(ix)

570,000 ha of terrestrial lands within PNBA. Landscapes consist of dunes, sand hills, sandstone cliffs, islands with their typical ecosystems and Saharan

vegetation with some Mediterranean influences. The area testifies to ongoing ecological processes, primarily desert ecosystem succession (UNEP-WCMC, 2012) (SOUV).

► Migratory and breeding waterbirds

Criterion:(x)

More than 2 million waterbirds (30% of those using the eastern Atlantic Flyway) winter at PNBA – one of the world's largest concentrations of wintering waterbirds. PNBA is the most important breeding area on the Atlantic seaboard, with 15 breeding species of fish-eating birds. Several species of global conservation concern and endemic subspecies make this an outstanding Important Bird Area (BirdLife International, 2013) (SOUV).

► Fish fauna

Criterion:(x)

Banc d'Arguin provides the biggest fish feeding, nursery and spawning area in West Africa. Three distinct fish communities with high abundance and species richness. Important spawning and nursery area for sharks and rays (UNEP-WCMC, 2012) (SOUV).

► Marine mammals and turtles

Criterion:(x)

Marine mammals regularly recorded include killer whale, Atlantic Humpbacked Dolphin, Common Dolphin, Rough-toothed Dolphin, Bottlenose Dolphin and Risso'sDdolphin. Fin Whale (or Common Rorqua)l and Common Porpoise have also been sighted. A small population of about 150 Monk Seal is found north of Nouadhibou, which is outside the property at the Cap Blanc reserve. Four species of turtles frequent the area: Green, Loggerhead, Hawksbill and Leatherback. The shallow tidal flats act as important breeding and nursery areas. The site is an important feeding area for adult and immature Green Turtle due to the pristine and extensive seagrass beds. (UNEP-WCMC, 2012) (SOUV).

► Terrestrial mammals

Criterion:(x)

Among terrestrial mammals, there are still some remnant populations of Dorcas gazelle (Gazella dorcas) (SoOUV, 2010).

Assessment information

Threats

Current Threats

High Threat

Unsustainable fishing (including fishing for sharks and rays) inside and outside PNBA, both large scale commercial and artisanal, is the main current pressure. Fishing inside the park requires improved control and the rules agreed with the fishermen implemented, which is not presently the case. A number of other threats remain of high concern, including poorly managed tourism activities, accumulation of solid waste, and recently completed infrastructure and other developments that have not been subject to Environmental Impact Assessments.

▶ **Fishing / Harvesting Aquatic Resources**

High Threat
Outside site

Strong pressure from international (including European) fleets – in 2012, 334 foreign trawlers were licensed to fish in waters surrounding PNBA (UNEP-WCMC, 2012).In addition, artisanal fishing catch in the immediate vicinity of the property has increased by more than a factor of ten between 1994 and 2010. The effect on fish species inside PNBA is unclear as the importance of areas outside park for lifecycle stages of most fish is not known, however, significant impacts on the OUV of the property are likely (UNESCO/IUCN, 2010). The development of a new commercial fishing port at Tanit, 100 km south of the park, could further increase pressure on the marine resources around and inside the park.

► Water Pollution

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

Senegal River brings agricultural runoff (IUCN, 2008). The Taziast gold mine at 60 km from the site uses water from important underground watersheds connected to the park, but pollution may be limited as the mine is reported to use a closed water loop. Surveys have revealed high concentrations of cadmium in the park's marine waters, however these are not necessarily a result of pollution (UNESCO / IUCN Mission Report, 2014). The 2014 UNESCO / IUCN mission also noted an unacceptable amount of plastic and other waste (including micro-filament fishing nets) accumulating in the park.
Significant water pollution with high concentrations of cadmium in the marine waters, as well as an unacceptable amount of plastic and other waste have been also confirmed more recently (ARC-WH & IUCN, 2016).

► Tourism/ visitors/ recreation

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

The 2014 UNESCO / IUCN mission encountered two rallies during its 7-day visit to the park. It also noted that the park is riddled with off-road tracks. There is no signage to warn drivers that they are in a national park. The 2014 mission further noted tourism-related pollution from abandoned solid waste, and considered that as the new city of Chami becomes populated, there may be an increasing demand for beach tourism (UNESCO / IUCN Mission Report, 2014). The 2016 technical mission to PNBA provided updated status on the ecotourism in the Park, and developed a set of recommendations to support the livelihood of the locals through encouraging local infrastructure and training of women in the field of ecotourism (Salim, and Abdulhalim, 2016)

► Fishing / Harvesting Aquatic Resources

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

Reduction in catch following overfishing by external poachers made local fishermen use unsustainable fishing methods (UNEP-WCMC, 2012). Illegal

fishing within PNBA strongly reduced by 2009, owing to agreement with local Imraguen fishermen, improved patrolling capacity and effective surveillance scheme. Artisanal fishing is becoming increasingly commercial, and the increasing number of non-Imraguen fishermen in the park, as well as the increasing targeted fishing of sharks and rays, which reaches an estimated 1,750 tonnes per year, are a significant concern (UNESCO / IUCN Mission Report, 2014). Illegal motorised fishing is effectively repressed but local fishing pressure has increased and in 2012 was estimated at 3,400 tonnes. Fisheries also affect Mediterranean Monk Seal (outside the site), reduce habitat, and abandoned nets cause mortality (IUCN, 2008).
While the Mauritanian Institute of Oceanographic Research and Fisheries (IMROP) considers the current fishing effort in the park is sustainable, changing fishing practices and increasing catches of sharks and rays are a real concern (UNESCO / IUCN Mission Report, 2014).
The recent State of Conservation report presented by the Mauritanian Government has demonstrated a set of measurements that ensure accepted level of sustainable fishing; however, the results are not obvious or available up to the time of the current assessment (Repub. Isl. Mauritania, 2015).

► Roads/ Railroads

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

The construction of the road to Mamghar, through the park, was nearly completed before an EIA was carried out, and has resulted in significant damage to Neolithic shell mounds (which are not part of the World Heritage values). Other developments at Mamghar (a small wind park, ice factories and desalinization plants) have also been completed in the absence of an EIA. The mission held at 2014 provided updated information on the status of the infrastructure within the area along with the planned and the existing roads (UNESCO/IUCN, 2014). The mission concluded that while the Nouakchhott-Nouadhibou road diverted regular traffic outside the boundaries of the property, it also had negative impacts by opening up the region to other potential developments which could have negative impacts on the World Heritage property (UNESCO/IUCN, 2014).

Potential Threats

High Threat

Accidental oil spills from oil platforms or tankers near PNBA are an increasing potential threat. The same is true for planned extensions of mining/quarrying operations and exploration. Ongoing and planned development projects which are contributing to the site becoming less isolated and more easily accessible, are likely to increase human pressures on the site, and the coming years will be decisive to ensure that its OUV will not be compromised (UNESCO / IUCN Mission Report, 2014). Unsustainable resource use and climate change may increasingly be degrading the terrestrial part of the site.

► Other

Very Low Threat

First described as a threat in 2005 (IUCN, 2005) - destructive to seabed and benthic biota. Currently not practiced.

► Oil/ Gas exploration/development

Very High Threat
Outside site

Oil exploration is banned within PNBA. Oil/gas exploration and exploitation to the southwest of PNBA is ongoing, without appropriate safeguards in place. Increased tanker traffic is an additional threat. Insufficient oil spill risk management capacity in place (IUCN, 2009, 2013). No oil exploration concessions overlap with the property and a buffer zone of 5 km around it; however, a number of exploration areas are located in its surroundings (UNESCO/IUCN, 2014). Increasing offshore oil exploration and exploitation increases the risks of an oil spill which, even occurred, would have catastrophic impacts on the property and on the fisheries in the region (UNESCO/IUCN, 2014).

► Mining/ Quarrying

High Threat
Outside site

Plans (currently subject to EIA) to further develop mining

exploration/exploitation and quarrying near the property at Taziast gold mine and Tanoudert area, as well as expansion of iron ore production at Cap Blanc, with potentially serious impacts related to pollution, water use and habitat destruction (IUCN, 2013). There are concerns that the planned expansion of the Taziast mine may cause more significant pollution, as it may contaminate groundwater with seawater pumped from a location 5 km north of the park, from the Baie du Levrier. This water will be treated at its source with biocides, which are likely to be discharged into the bay, with potential negative impacts on its marine life (UNESCO / IUCN Mission Report, 2014). A mining project is currently being developed near the Park that might harm the aquatic and terrestrial environments (ARC-WH & IUCN, 2016).

► Housing/ Urban Areas

High Threat

There is an increasing number of development projects within the park and its wider area, all of which will have to be subject to Environmental Impact Assessment prior to their implementation, including an assessment of their cumulative impacts. The planned construction of a high-voltage electricity line along the Nouakchott-Nouadhibou road could have negative impacts on the park’s bird populations (resident and migratory). (UNESCO / IUCN Mission Report, 2014).

► Marine/ Freshwater Aquaculture

Data Deficient
Inside site, extent of threat not known

Aquaculture development was identified as a potential threat for Cap Blanc area and the Mediterranean Monk Seal in 2008 (IUCN, 2008), but impact not assessed yet. No recent information is available as of 2017.

► Storms/Flooding

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

Landscape changes triggered by climate change may affect birds (IUCN, 2008). PNBA ecosystem crucially depends on climate sensitive East Atlantic upwelling and currents, but the exact response of upwelling to future climate

change is unknown. Areas rarely flooded before are at present flooded frequently threatening breeding colonies of endemic sub-species. For the local spoonbill, the threat is very high and park management has artificially raised their nesting sites on the island of Nair to provide refuge from rising water levels. A decline in the reproductive success of this species has been recorded, which may be related to a rising sea level (UNESCO / IUCN Mission Report, 2014). Some areas, for example Neroumi island, have been flooded almost permanently. Submersion of islands and islets leads to the loss of suitable habitat areas for some species (IUCN Consultation, 2017).

Protection and management

Assessing Protection and Management

► Relationships with local people

Some Concern

Generally good relations with Imraguen communities which have exclusive fisheries access since 2000 (IUCN, 2008). Local participation through annual workshops and fisheries committees. However, fishermen are economically dependent on local merchants (UNEP-WCMC, 2012). Fisheries related decision making by PNBA questioned by Imraguen in 2010 (Sidi Sheikh & Al Dhafer, 2010).
The 2014 UNESCO / IUCN mission to the site noted a feeling of distrust between local people and park administration, and not a single consultation meeting, which is essential to participatory management, had taken place in 2013. Tabe’a Report II (2015) has indicated to the positive level of the relationships among the partners (including the locals), and a stakeholders meeting was held in March 2016 which gathered different stakeholders and locals and provided a good forum to discuss the issues and the difficulties facing each of the stakeholders.

► Legal framework

Mostly Effective

Important progress has been made with the establishment of a legal framework for the site since its inscription. A special law on PNBA (2000) and

two government decrees (2006) are very important for sustainable development and the conservation of the site (UNESCO / IUCN Mission Report, 2014)..
PNBA administration set up as semi-independent entity under Ministry of Environment. 95 staff including 42 on-site in 2010 (Sidi Sheikh & Al Dhafer, 2010). Guarded entry points and patrolling guards in place. Strengthening of marine surveillance capacity and fleet and establishment of camel patrol until 2009 (IUCN, 2009). Capacity of field presence of PNBA is not sufficient to achieve full enforcement on the ground, and field enforcement is still challenged by logistic constraints (lack of food, water, communications) 2010 (Sidi Sheikh & Al Dhafer, 2010). The headquarters of the park administration are due to move to the new city of Chami, which should facilitate an increase in field presence (UNESCO / IUCN Mission Report, 2014). According to the recent SOC report by the Mauritanian Government, a set of legal measurements and revisions were made to reinforce the legal framework, including, expansion of the National Committee, revision of the local management structure and expansion of the list of local stakeholders, signing of two important agreements (AEWA and MoU with the Wadden Sea) (Repub. Isl. Mauritania, 2015).

► Enforcement

Data Deficient

Data deficient

► Integration into regional and national planning systems

Some Concern

PNBA is well supported by national legislation (Sidi Sheikh & Al Dhafer, 2010), and reportedly also by national plans on artisanal fishing development (IUCN, 2013). However, there is concern about the due consideration of the parks interests in infrastructure and other development projects, including mining (IUCN, 2013). A number of developments have been completed inside the site without having been subject to an EIA. A “prospective territorial diagnosis” is ongoing, which should include an evaluation of cumulative impacts on the site of developments in its wider area (UNESCO / IUCN Mission Report, 2014).

► Management system

Mostly Effective

First preliminary management plan in 1984 (UNEP-WCMC, 2012). 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 (PNBA, 2009b) approved. Management plans have included business plans. Institutional setup of PNBA prescribed by Decree No. 2006-058 (2006). Sustainable pasture management plan under development 2009 (IUCN, 2009). Two important agreements have recently been signed by the Government (AEWA and an MoU with the Wadden Sea) (Repub. Isl. Mauritania, 2015).

► Management effectiveness

Some Concern

Management effectiveness improved until 2008 (IUCN, 2008). Challenge to adapt management to emerging pressures and threats. 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 (Sidi Sheikh & Al Dhafer, 2010). A management effectiveness evaluation carried out with IUCN in 2013 revealed that the effectiveness of management is between “good” and “medium” depending on the management aspect evaluated, but that the management plan is suffering from a low level of implementation (UNESCO / IUCN Mission Report, 2014). One of the pressing issues regarding the day-to-day management was the location of the field management being located remotely; however, it seems that it was relocated closer to the property where the necessary infrastructures were prepared (Salim and Abdulhaleem, 2016).

► Implementation of Committee decisions and recommendations

Some Concern

Most but not all recommendations were followed by the State Party in the past: Request to adopt two decrees to implement Special Law for PNBA at 30.COM (2006) fulfilled by 31.COM (IUCN, 2007); Requests for provision of

EIA reports and mitigation measures and precautions for road construction and oil exploration from 27.COM (2003) not followed by SP until 33.COM (IUCN, 2009); PSSA status designation recommended since 28.COM (2004) not yet fulfilled, but preparations are underway (UNESCO / IUCN Mission Report, 2014); Request to apply Law 2000/25 at 29.COM not followed by 32.COM (IUCN, 2008); Invitation to establish Biosphere Reserve at 29.COM not followed until 37.COM. Request to implement MEC and MARPOL at 30.COM not implemented by 32.COM (IUCN, 2008). Request to establish Oil Spill Emergency Response Plan at 31.COM apparently not followed until 2011 (Conf. pers. comm., 2011). Request to report on the monitoring of the state of values of PNBA at 31.COM not fully met by 34.COM (but see PNBA, 2009a). Recommendation to finalize PNBA zoning at 32.COM not implemented until 2011 (Conf. pers. comm.., 2011). The recent State of Conservation report that was prepared by the Mauritanian Authority indicated that the Mauritanian Government had directed all of the responsible authorities to work on the WH Committee decisions and the 18 of the reactive monitoring mission to PNBA. (Repub. Isl. Mauritania, 2015).

► Boundaries

Some Concern

PNBA comprises a sufficiently large area of key ecosystems, but zoning and buffer zones not finalized by 2011 (Conf. pers. comm.., 2011). Boundaries defined based on administrative rather than ecosystem basis.

► Sustainable finance

Mostly Effective

2010 annual budget of PNBA ca. € 1.2 million (Conf. pers. comm., 2011), half of which is sourced from fisheries agreements with EU (Sidi Sheikh & Al Dhafer, 2010). Trust fund (BaCoMaB) has been created in 2009, and currently 10.7 million euros have already been mobilized. The target is to capitalize 55 million euros by 2020 (UNESCO / IUCN Mission Report, 2014). $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 (Sidi Sheikh & Al Dhafer, 2010). If at the time of inscription the site depended mostly on funding from external sources, it currently receives a significant budget allocation from the government, while financial and

technical support from partners remains important (UNESCO / IUCN Mission Report, 2014).
Due to the changes in financial policies, it seems that PNBA has no clear long-term plans to ensure financial sustainability (ARC-WC & IUCN, 2015).

► Staff training and development

Some Concern

Many training courses for PNBA staff have reportedly been conducted but an overall vision and strategy has been missing, and the proficiency of staff to perform their tasks has reportedly not risen in spite of training efforts. This has been true particularly for field staff (Sidi Sheikh & Al Dhafer, 2010)

► Sustainable use

Some Concern

The traditional use agreements with Imraguen fishermen are an example of a generally successful reconciliation of traditional use interests inside the property and conservation objectives (UNEP-WCMC, 2012). However, it should be noted that the rules agreed concerning fishing inside the park are not adequately implemented. While the Mauritanian Institute of Oceanographic Research and Fisheries (IMROP) considers the current fishing effort in the park is sustainable, artisanal fishing is becoming increasingly commercial, and many Imraguen employ non-Imraguen Mauritanians on their fishing vessels. The use of mono-filament is also reported, and targeted fishing of sharks and rays is increasing (UNESCO / IUCN Mission Report 2014).

There are concerns about the sustainability of fisheries outside the property and of terrestrial resource use and a strategy to address these was under preparation in 2009 (IUCN, 2009). A study on pastoralism was also ongoing in 2011 (Conf. pers. comm., 2011).

► Education and interpretation programs

Serious Concern

An ecological education programme is part of the 2010-2014 management plan of the property (PNBA, 2009b) and some information and educational materials are available from the PNBA and FIBA websites. There is only

limited information about the effectiveness of existing programmes. Recently constructed Youth Centres (2006) appear not to be used by most villagers and are in an advanced state of disrepair. Interpretation panels with glass covers have been placed in the park but have filled up with sand and are now illegible (UNESCO / IUCN Mission Report, 2014).

► Tourism and visitation management

Some Concern

Ecotourism Development Strategy since 2006 (IUCN, 2007), and part of 2010-2014 management plan (PNBA, 2009b). Reportedly national ecotourism strategy prepared for 2010-14 to encourage sustainable tourism in PNBA. Still few visitors. Village Camps were constructed in 2008 to promote ecotourism, but are now falling in disrepair due to a lack of maintenance (UNESCO / IUCN Mission Report, 2014)

► Monitoring

Some Concern

Fisheries monitoring methodology developed with Mauritanian Institute of Oceanographic Research and Fisheries (IMROP). 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 (PNBA, 2009a). Establishment of global monitoring system (bio-physical, socioeconomic and governance) planned for 2011 (Conf. pers. comm., 2011).

► Research

Some Concern

Scientific observatory established at PNBA in 2007. Research on fish stocks and fisheries' impact. Information on fauna diversity of PNBA still characterized as limited in 2009 (PNBA, 2009a).
Limited management relevance of research by observatory noted in 2010 (Sidi Sheikh & Al Dhafer, 2010).

Overall assessment of protection and management

Some Concern

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 exploration and increasing shipping of hydrocarbons. The management effectiveness and capacity of the park to raise sustainable funding are also in need of further improvement. Most of the staff is located in Nouakchott and field work activities and support to communities are currently insufficient, although this situation is expected to improve when the park headquarters are moved to Chami.

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

Some Concern

Management of threats from oil exploration appeared insufficient 2008 (IUCN, 2008). Oil Spill Emergency Response Plan apparently not approved by 2010 (Conf. pers. comm., 2011). Pasture management plan in preparation in cooperation with Centre for International Agricultural Research for Development 2009 (IUCN, 2009).

▶ Best practice examples

The collaboratively developed management system of the PNBA, including the participation of the local Imraguen fishermen, and the current management plan (2010-2014) are examples of a strong management framework that might be applicable elsewhere. The PNBA Trust Fund is another useful example of an approach to sustainable financing of natural World Heritage Properties. The maritime surveillance scheme is the most effective in the region.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ Intertidal ecosystems

Low Concern
Trend:Data Deficient

Considered generally intact, threatened by potential accidental oil spills from hydrocarbon extraction/transport (PNBA, 2009a), and illegal overfishing. Intertidal mangrove forests, which are at the margin of their distribution range, are considered generally viable in 2001 (Dahdou-Guebas & Koedam, 2001).

▶ Subtidal ecosystems

Low Concern
Trend:Data Deficient

Considered generally intact, but threatened by potential accidental oil spills (UNEP-WCMC, 2012).

▶ Terrestrial ecosystems

Low Concern
Trend:Deteriorating

Already relatively degraded and deteriorating, due to land degradation/desertification, fuel wood collection, overgrazing, possibly climate change impacts since 2000 (IUCN, 2009).

▶ Migratory and breeding waterbirds

Low Concern
Trend:Stable

Bird populations have been generally considered stable, although abundance of some fish-eating bird species declined as a result of decline in fish stocks (BirdLife International, 2013). The local Spoonbill is vulnerable due to flooding of nest sites as a result of climate change, and is reported to have shown a decline in reproductive success (UNESCO / IUCN Mission Report,

2014). The most recent (January 2017) bird count of overwintering avifauna resulted in an estimate of about 2 million individuals which represents an increase compared to 1,4 million in 2014 (IUCN Consultation, 2017).

► Fish fauna

High Concern
Trend:Deteriorating

No monitoring data on trends in fish populations inside the property are available. Signs of overfishing outside the property along the Mauritanian coast (Gascuel et al., 2007) and probably also inside PNBA for some species. Fishing effort within PNBA increased threefold in recent years. While the Mauritanian Institute of Oceanographic Research and Fisheries (IMROP) considers the current fishing effort in the park is sustainable, changing fishing practices and increasing catches of sharks and rays are a real concern (UNESCO / IUCN Mission Report, 2014). On the other hand, Seret and Naylor have recently described new Genus and species of fish fauna within the marine shallow waters of PNBA, and this discovery is considered as good indicator of the richness of the fauna diversity (specifically marine fauna), and the possibility of discovering more species in the region (Seret. B, Naylor, G.J., 2016).

► Marine mammals and turtles

High Concern
Trend:Stable

The 2014 UNESCO / IUCN reactive monitoring mission to the property observed a large number of turtle shells on the beach, and there was no sign of any nesting activity.
The property remains an important sanctuary for dolphins, thanks to the strict implementation of the ban on motorised boats within the property.
The breeding colony of Monk Seals is now established in Guerguerat area, North of Nouadhibou, and outside the World Heritage Site at Cap Blanc. The Monk Seal is probably decreasing due to external factors outside the site, including habitat disturbance and food competition from shore-based fisheries (IUCN, 2008). Recently, the population of the Monk Seal has been estimated at 220 individuals and was assessed to be in good condition (Data provided by the park manager, IUCN Consultation, 2017).

► Terrestrial mammals

High Concern
Trend:Deteriorating

There is no information on the status of terrestrial mammals, but this is probably not deteriorating due to good rainy seasons in recent years which has resulted in a positive shifting in terrestrial habitats. Striped hyena is still present, as are fennec fox and jackal, the latter of which has an increasing population (UNESCO / IUCN Mission Report, 2014). The population of Dorcas Gazelle is now restricted to Tidra island as a combined result of hunting pressure and drought (UNESCO / IUCN Mission Report, 2014). There is a concern that the population of the Dorcas Gazelle has suffered genetic impoverishment due to its geographic isolation and its reduction to about 80 individuals, although this figure has recently remained stable (IUCN Consultation, 2017).

The 2014 UNESCO / IUCN reactive monitoring mission observed that there is extensive grazing of dromedaries and goats in the property, but that this is currently not a problem due to all indigenous herbivores, with the exception of the Dorcas Gazelle, already having been locally extinct.

Summary of the Values

► Assessment of the current state and trend of World Heritage values

Low Concern

Trend: Deteriorating

The values of PNBA were nearly undisturbed until the late 20th Century, but are increasingly under pressure and some values have begun to deteriorate. While there is a good follow up of fish landing in the park, fish stocks are not evaluated and the importance of the park as a nursery zone is not well documented. Knowledge on this subject should be improved at least in regard to species of commercial value. The status of terrestrial ecosystems and their fauna remains of high concern and overall the status of the property appears to be deteriorating despite intensive management efforts. However, the property continues to host significant numbers of overwintering

birds.

Additional information

Benefits

Understanding Benefits

► Fishing areas and conservation of fish stocks

PNBA protects not only local artisanal fisheries, but is also a key spawning and nursery area for a wide range of fish, which supplies recruitment to stocks in the wider upwelling area. These are a crucial global fisheries resource, including and particularly for EU countries.

► Outdoor recreation and tourism

The property has a considerable, as yet strongly underused potential for nature based tourism, such as birding tours. There is also accepted level of infrastructure to receive the tourists from inside and outside the country after rehabilitating the sustainable tourism industry in PNBA (Salim and Abdulhalim, 2016).

► Importance for research

The National Park comprises a wide range of phenomena, which in turn support global knowledge generation on bird migration, ichthyology, coastal ecology and oceanography. It also supports long-lasting traditional knowledge system, such as those of the Imraguen. Seret and Naylor have recently described new Genus and species of fish fauna within the marine shallow waters of PNBA, and this discovery is considered as good indicator of the richness of the fauna diversity (specifically marine fauna), and the possibility of discovering more species in the region (Seret. B, Naylor, G.J., 2016).
Additionally, the Environmnetal Educational Center in Chami will play a key role in shading more light on the values of PNBA and raising long-term

awareness.

▶ Carbon sequestration

Carbon sequestration by intertidal vegetation is important. The areas occupied by this type of habitat extend some 450 km2 (IUCN Consultation, 2017).

Summary of benefits

The conservation and socio-economic benefits of the property reach far beyond its boundaries, as illustrated by its pivotal role in bird migration and as a spawning and nursery area for commercially exploited fish. There are also significant potential benefits, which could be developed further, such as those related to tourism.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Fondation Internationale du Banc d’Arguin		Wide range of research and conservation projects focused on PNBA.
2	GIZ		Management of Natural Resources 2011-2013 (national level, including fisheries sector)
3	WWF WAMER		Inclusion of Mauritania and PNBA in a number of regional projects on fisheries and related issues

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years

1	.	Community development projects to anchor local populations to the park and avoid replacement through inmigration. Based on the observations of the site visit of PNBA at 2016, the following recommendations were listed: Paying more scientific attention to the terrestrial areas of Banc d'Arguin National park; Planning for re-introducing the extinct Gazelle species in (and around) Richat and valley-bed through well-designed project; and Studying and developing the ecotourism in Tagarit ecocamp. (Source: Salim and Abdulhalim, 2016).

REFERENCES

№	References
1	African Natural Heritage. Banc d'Arguin – Mauritania - African Natural Heritage. Maps and Satellite Images of Banc d'Arguin National Park (World Heritage Site). (http://www.africannaturalheritage.org/banc-darguin-mauritan...).
2	BirdLife International (2013). 'Datazone-IBA search: Mauritania. Banc d'Arguin National Park. [Electronic reference] . Accessed 3 June 2013.
3	Common Wadden Sea Secretariat (2014). 'Visit from World Heritage Site Banc d'Arguin, Mauritania'.
4	Dahdouh-Guebas, F. and Koedam, N. (2001). 'Are the northernmost mangroves of West Africa viable? a case study in Banc d'Arguin National Park, Mauritania'. Hydrobiologia 458: 241-253.
5	GIZ (2009). 'Evaluation de la stratégie et de la performance du Parc National du Banc d'Arguin - Mission d'appui à la préparation du PAG 2010-2014'. Nouakchott: GTZ Mauritania. 79 pp. (In French)
6	Gascuel, D., Labrosse, P., Meissa, B., Sidl, M. O. T. and Guenette, S. (2007). 'Decline of demersal resources in North-West Africa: an analysis of Mauritanian trawl-survey data over the past 25 years'. African Journal of Marine Science 29: 331-345.
7	IUCN (2004). 'State of Conservation Report: Banc d'Arguin National Park (N 506)'. [Electronic reference] . Accessed 5 June 2013.
8	IUCN (2005). 'State of Conservation Report: Banc d'Arguin National Park (N 506)'. [Electronic reference] . Accessed 5 June 2013.
9	IUCN (2006). 'State of Conservation Report: Banc d'Arguin National Park (N 506)'. [Electronic reference] . Accessed 5 June 2013.
10	IUCN (2007). 'State of Conservation Report: Banc d'Arguin National Park (N 506)'. [Electronic reference] . Accessed 5 June 2013.
11	IUCN (2008). 'State of Conservation Report: Banc d'Arguin National Park (N 506)'. [Electronic reference] . Accessed 5 June 2013.
12	IUCN (2009). 'State of Conservation Report: Banc d'Arguin National Park (N 506)'. [Electronic reference] . Accessed 5 June 2013.

№	References
13	IUCN (2012). ‘In trouble and in need: West Africa’s World Heritage’. (24 June 2012). . Accessed 26 May 2015.
14	IUCN (2012). ‘The IUCN Red List of Threatened Species’. [Electronic reference] . Accessed 10 May 2013.
15	IUCN (2013). ‘State of Conservation Report: Banc d’Arguin National Park (Mauritania) (N506)’. (17 May 2013). . Accessed 26 May 2015.
16	IUCN (2013). ‘State of Conservation Report: Banc d’Arguin National Park (N 506)’. [Electronic reference] . Accessed 5 June 2013.
17	IUCN (2014). ‘Conservation Outlook: Banc d’Arguin National Park’. (25 May 2014). . Accessed 26 May 2015.
18	IUCN (2014). ‘State of Conservation Report: Banc d’Arguin National Park (Mauritania) (N 506)’. (16 May 2014). . Accessed 26 May 2015.
19	Knapp, S., Heij, C., Henderson, R. and Kleverlaan, E. (2013). ‘Ship incident risk in the areas of Tubbataha and Banc d’Arguin: A case for designation as Particular Sensitive Sea Area’. EI Report 2013-16. Rotterdam, The Netherlands: Econometric Institute, Erasmus University Rotterdam. . Accessed 26 May 2015.
20	Osipova, E., Shi, Y., Kormos, C., Shadie, P., Zwahlen. C., Badman, T. (2014). IUCN World Heritage Outlook 2014: A conservation assessment of all natural World Heritage sites. Gland, Switzerland: IUCN. 64pp.
21	Parc National du Banc d’Arguin (2009a). ‘Etat de Conservation’. Nouakchott: Ministere Delegue Aupres Du Premier Ministre Charge De L’Environnement Et Developpement Durable. (In French)
22	Parc National du Banc d’Arguin (2009b). ‘Plan d’Aménagement et de Gestion 2010-2014’. Nouakchott: Ministere Delegue Aupres Du Premier Ministre Charge De L’Environnement Et Developpement Durable. 115 pp. (In French)
23	RÉPUBLIQUE ISLAMIQUE DE MAURITANIE. (2015) Rapport de l’Etat de Conservation du Parc National du Banc d’Arguin (PNBA) et la mise en œuvre des recommandations du Comité du Patrimoine de L’UNESCO. Novembre 2015.
24	Salim, M.A., and Abdulhaleem, H.S. (2016) Technical Report on a mission to Mauritania 25th of March - 2nd of April, 2016. The Arab Regional Center for World Heritage and International Union for Conservation of Nature. Internal technical report.

№	References
25	Seret. B, Naylor, G.J., (2016) Rhynchorhina mauritaniensis, a new genus and species of wedgefish from the eastern central Atlantic (Elasmobranchii: Batoidea: Rhinidae). Zootaxa. 2016 Jul 15; 4138(2):291-308. doi: 10.11646/zootaxa.4138.2.4.
26	Sidi Cheikh, M. A. and Al Dhafer, A. A. M. (2010). ‘Assessment of a modernization reform in a public administration in Mauritania: The National Park of Banc d’Arguin’. Dubai: Dubai School of Government . [Electronic reference] . Accessed 5 June 2013.
27	Strahm, W., Debonnet, G. and Abdulhalim, H. (2014). ‘Mission de suivi réactif Parc national du Banc d’Arguin (Mauritanie)’. Rapport de mission, mars 2014. (in French).
28	UNEP-WCMC (2012). ‘Banc d’Arguin national Park, Mauritania’. UNEP-WCMC World Heritage Information Sheets. [Electronic reference] . Accessed 7 June 2013.
29	UNEP. ‘Action Plan for the Management of the Mediterranean Monk Seal (Monachus monachus)’. Tunis, Tunisia:Regional Activity Centre for Specially Protected Areas. www.rac-spa.orgsitesdefaultfilesactionplansmonkap.pdf. Accessed 26 May 2015.
30	WWF (2013). ‘List of Priority Global 200 Ecoregions: Canary Current’. [Electronic reference] . Accessed 3 June 2013.
31	Wetlands International (2013). ‘Ramsar Sites Information Service’. [Electronic reference] . Accessed 7 May 2013.
32	whc.unesco.org/en/events/1052/. ‘Two Marine World Heritage sites set the stage for a new twinning arrangement’. Working meeting to discuss twinning arrangement between Wadden Sea and Banc d’Arguin. Accessed 26 May 2015.
33	whc.unesco.org/en/news/1103. Banc d’Arguin National Park and Wadden Sea sign historic Twinning Arrangement. Accessed 22 May 2014.
34	whc.unesco.org/en/soc/3460. Banc d'Arguin National Park (Mauritania) (N 506). Decision: 40 COM 7B.85. (http://whc.unesco.org/en/soc/3460).