IUCN Conservation Outlook Assessment 2017 **(archived)**
Finalised on 10 November 2017

Please note: this is an archived Conservation Outlook Assessment for Ningaloo Coast. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Ningaloo Coast

SITE INFORMATION

Country:
Australia
Inscribed in: 2011
Criteria:
(vii) (x)

Site description:
The 604,500 hectare marine and terrestrial property of Ningaloo Coast, on the remote western coast of Australia, includes one of the longest near-shore reefs in the world. On land the site features an extensive karst system and network of underground caves and water courses. Annual gatherings of whale sharks occur at Ningaloo Coast, which is home to numerous marine species, among them a wealth of sea turtles. The terrestrial part of the site features subterranean water bodies with a substantial network of caves, conduits, and groundwater streams. They support a variety of rare species that contribute to the exceptional biodiversity of the marine and terrestrial site © UNESCO

SUMMARY

2017 Conservation Outlook

Good

This relatively recently (2011) inscribed property including an important marine element as well as terrestrial element remains in good condition with strong protection and management in place. The greatest threats are from increasing visitation and associated pressures, such as recreational fishing and there are always risks which cannot be predicted, such as an accidental oil spill or extreme weather events. Climate change induced temperature anomalies had already caused damage to coral reef areas in the past; however, Ningaloo coral reefs appear to have escaped the coral bleaching which affected many other areas in 2016. As for the terrestrial component of the property, tourism, grazing and feral species are having some impacts on some terrestrial values; however, these impacts remain small in scale and localized. Although the Ningaloo Coast remains well-protected, including by its relative remoteness, it will be important to ensure that the management programmes addressing these various threats are sustained and if necessary supported by additional resources.

Current state and trend of VALUES

Low Concern
Trend: Data Deficient

Due primarily to the relative remoteness of the property and the moderate visitation rates, the key World Heritage values are being largely maintained and their condition remains good. Tourism, grazing and feral species are having some impacts on some terrestrial values of the property; however, these impacts remain small in scale and localized. As for marine areas, the coral reefs within Ningaloo Reef appear to have escaped the latest coral bleaching event which affected many other coral reef areas in 2016; however, concerns are high regarding their future. Some concerns also exist with regards to the aggregations of whale sharks as this species is under pressure from different threats, especially in areas outside Australian waters. As these values are complex and

only six years have passed since the inscription of the property on the World Heritage List, it is yet difficult to determine an overall trend.

Overall THREATS

Low Threat

The Ningaloo Coast benefits from its relative remoteness affording it a high degree of natural protection. However, increase in seawater temperatures has already had some impact on the site, although coral reefs within Ningaloo Reef appear to have escaped the coral bleaching which affected many other areas in 2016. Some fish species might be under pressure from recreational fishing, particularly as visitation in general and recreational fishing are increasing. As the area is exposed to sporadic cyclones and with oil drilling not far from the property, risks of oil spills remain a threat, as well as associated shipping. However, careful management with risk assessment and emergency plans are in place thus the threats to the property are currently of low concern, but future impacts of climate change and increasing visitation are hard to predict.

Overall PROTECTION and MANAGEMENT

Highly Effective

The Ningaloo Coast has an excellent range of management plans and qualified staff. Programmes ensuring that invasive species are controlled, that emergency preparation in the case of an accidental oil spill is kept up, and that any increase in tourism will not have an impact on natural values need to be continued. At the time of inscription some concerns were expressed with the regards to the adequacy of staff numbers and available funding compared to the scale of management activities. It is unclear whether funding have been increased. DBCA’s Parks and Wildife Service has a total of 37 staff (equivalent FTE) operating out of the Exmouth District and throughout the property.

FULL ASSESSMENT

Description of values

Values

World Heritage values

▶ **Exceptional landscape combining arid terrestrial and marine features**
Criterion:(vii)

The landscapes and seascapes of the property are comprised of mostly intact and large-scale marine, coastal and terrestrial environments. The lush and colourful underwater scenery provides a stark and spectacular contrast with the arid and rugged land (SoOUV, 2011; Nomination, 2010; IUCN, 2011).

▶ **One of the largest documented aggregation of whale sharks in the world**
Criterion:(vii)

The property supports rare and large aggregations of whale sharks (Rhincodon typus) along with important aggregations of other fish species and marine mammals. The mass coral spawning and seasonal nutrient upwelling cause a peak in productivity that leads to aggregations along the Ningaloo Coast of approximately 300-500 whale sharks, making this one of the largest documented aggregation in the world (SoOUV, 2011; Nomination 2010; IUCN, 2011).

▶ **High diversity of marine fish**
Criterion:(x)

High marine diversity of more than over 700 reef fish species and large number of marine pelagic species including whale sharks (SoOUV, 2011; Nomination, 2010; IUCN, 2011). Manta rays are abundant in the reserve and

are found on the outer reef. Nineteen species of shark including the black-tip reef shark, white-tip reef shark, hammerhead shark, tawny nurse shark, oceanic white tip shark, tiger shark, blue shark- and grey reef shark - occur in the lagoon and deeper waters. The open ocean supports large aggregations of fish, including trevally, tuna, mackerel, marlin and sailfish, many of which are found much closer to shore than in other parts of the world due to the narrow continental shelf (Nomination, 2010; IUCN, 2011).

► High diversity of reptiles

Criterion:(x)

Situated at an ecotone between tropical and temperate waters, the Ningaloo Coast hosts an unusual diversity of marine turtle species with an estimated 10,000 nests deposited along the coast annually (SoOUV, 2011; Nomination, 2010; IUCN, 2011). Marine reptiles include six recorded marine turtle species (with 4 species recorded nesting, although only 3 species nest in significant numbers), and the olive sea snake. The Carnarvon Xeric Scrub ecoregion is recognized for its high levels of species richness and endemism, particularly for birds and reptiles (SoOUV, 2011; Nomination, 2011; IUCN, 2011).

► High diversity of marine mammals

Criterion:(x)

A total of 20 cetacean species have been recorded in the property with frequent observations of dugong and dolphins (Humpback and Indo-Pacific) in the lagoons and other marine areas, and eight species of whales: Notable are the presence of humpback whales migrating through twice a year on their annual migration between calving grounds off the Kimberley coast and feeding grounds in Antarctica. Blue and sperm whales have been observed in the offshore regions of the nominated area, as have minke, bryde's, southern right and killer whales (Nomination, 2010; IUCN, 2011).

► High diversity of cave (troglomorphic) diversity

Criterion:(x)

The combination of relict rainforest fauna and small, fully aquatic invertebrates within the same cave system is exceptional. The subterranean fauna of the peninsula is highly diverse and has the highest cave fauna (troglomorphic) diversity in Australia and one of the highest in the world

(SoOUV, 2011; Nomination, 2010; IUCN, 2011).

► **Noteworthy arid-zone vascular flora**
Criterion:(x)

Terrestrial arid-zone vascular plant diversity is noteworthy (SoOUV, 2011; Nomination, 2010).

► **High diversity of marine invertebrates and algae**
Criterion:(x)

More than 50 per cent of Indian Ocean coral species (over 300 species in 54 genera), roughly 650 mollusc species, around 600 crustacean species, 155 sponge species and an undocumented number of echinoderms including 25 new to science together provide an exceptional diversity of marine invertebrates, supplemented by more than 1,000 species of marine algae (SoOUV, 2011; Nomination, 2010; IUCN, 2011).

Other important biodiversity values

► **Noteworthy birds**

With about 200 bird species in the property, eleven of these are at the northern or southern limits of their range, or are otherwise isolated from their main populations. Examples include the western bowerbird (Chlamydera guttara), rufous-crowned emu-wren (Stipiturus ruficeps) and the painted firetail finch (Emblema picta) (Nomination, 2010). The Cape Range Peninsula belongs to an arid ecoregion recognized for its high levels of species richness and endemism, particularly for birds and reptiles (SoOUV, 2011; IUCN, 2011).

Assessment information

Threats

Current Threats

Low Threat

Increase in seawater temperatures has already had some impact on the site; however, coral reefs within Ningaloo Reef appear to have escaped the most recent coral bleaching event which affected many other areas in 2016. Some fish species might be under pressure from recreational fishing, particularly with recreational fishing activities increasing. As the area is exposed to sporadic cyclones and with oil drilling not far from the property, risk of oil spills remains a high threat. However, overall as the property appears to be experiencing limited impact so far from these threats, mainly due to good management, the area can be assessed as under low threat.

► Mining/ Quarrying

Low Threat
Inside site

Limestone quarrying currently taking place in an extraction lease at a modest scale is not posing a risk (IUCN, 2011). Proposed activities that have a significant impact on values are subject to assessment process (Nomination, 2010).

► Commercial/ Industrial Areas

Very Low Threat
Outside site

The Ningaloo Coast is situated in an isolated location with a small regional population and insignificant urban development, so direct threats from human activities are low. The arid climate results in extremely low levels of runoff. In addition, the Ningaloo Coast Regional Strategy Carnarvon to Exmouth, a 30-year strategic land-use plan, limits significant development to the towns of Exmouth and Carnarvon, both of which are outside the nominated area (Nomination, 2010).

► Storms/Flooding

High Threat

Inside site, throughout(>50%)
Outside site

Risk preparedness strategies for natural disasters are in place, with extensive monitoring and strategies to ensure resilience of plant and animal communities (Nomination, 2010). However, there is a risk from the increasing intensity and frequency of cyclones with decreasing recovery times for corals between them (IUCN Consultation, 2017).

► Invasive Non-Native/ Alien Species

High Threat
Inside site, extent of threat not known

Invasive alien species, most importantly foxes, cats, goats and weeds on land and some marine species are satisfactorily monitored and controlled (IUCN, 2011) and the management regime has resulted in large reduction in pest numbers (Nomination, 2010). Nonetheless, feral animals continue to pose a risk through predation on native species such as black-flanked rock-wallabies (Petrogale lateralis lateralis) and grazing (IUCN Consultation, 2017).

► Fire/ Fire Suppression

Low Threat
Inside site, extent of threat not known

Fire, historically part of local indigenous management, is a potential threat to the terrestrial vegetation and must be monitored and controlled (IUCN, 2011). Cape Range National Park management plan details the fire management regime (Nomination, 2010; CALM, 2005). Fires from artificial sources, increased severe weather (lightning strikes) and burning through altered landscapes remain a threat (IUCN Consultation, 2017).

► Oil/ Gas exploration/development

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

Oil pollution could result from accidents, including accidents provoked by natural disasters or human or technical errors. There are important off-shore oil and gas resources near the property. Offshore petroleum incidents, such as accidental discharge of oil or other pollutants pose a threat to the marine

life and ecosystems of the Ningaloo Coast. The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) carefully assess the environmental impacts and risks from petroleum activities through Environment Plans and Oil Pollution Emergency Plans prepared by titleholders. Also, a integrated national contingency plan is in place to mitigate the threat of an oil spill. However, because the coastline is long and remote, widespread extent is possible and containment potentially difficult. Cumulative effects include sound impacts from seismic testing, drilling, and operations combined with the impacts of minor or major oil leaks (IUCN Consultation, 2017). Risks of collisions of vessels with reefs and marine wildlife are also of concern (IUCN Consultation, 2017). The 2013 ‘Area to be Avoided’ established by the International Maritime Organisation seeks to minimise the threat from shipping activities in the Ningaloo area (https://apps.amsa.gov.au/MOReview/Attachment/ShowAttachment/406).

► Tourism/ Recreation Areas

High Threat
Outside site

Although tourism is on the increase, associated threats (damage to vegetation, illegal fishing, sewage and waste disposal and disturbance to wildlife) are mitigated via comprehensive management programs and an overall tourism development strategy. Recreational boat launching facilities are limited and strictly controlled. Future concerns include increased water demand leading to water abstraction with effects on the fragile subterranean aquatic habitats, but alternatives are under investigation (Nomination, 2010; IUCN, 2011). Since the last assessment, visitors numbers have continued to increase together with associated pressures, such as increased recreational fishing and direct impacts on sensitive coastal ecological communities (IUCN Consultation, 2017).

► War, Civil Unrest/ Military Exercises

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

Learmonth Air Weapons Range Facility covering about 18,954 hectares within the property is used as a defence training area. It includes an ancient reef-complex and cave fauna of exceptional importance (IUCN, 2011).

► Ocean acidification, Temperature extremes

High Threat
Inside site, throughout(>50%)
Outside site

Sea level rise and increases in seawater temperatures associated with climate change have had some negative impact on the property. However, the good overall integrity suggests a higher resilience than in disturbed systems under additional stress. Still, careful monitoring is highly recommended (IUCN, 2011). Strategies to increase resilience of ecosystems underway, but risk is expected to increase (Nomination, 2010). While coral bleaching was observed in Ningaloo during the 2011 bleaching events, a recent 2016 survey found that Ningaloo was largely unaffected by the recent bleaching event that affected other reefs in Australia (http://www.theaustralian.com.au/national-affairs/climate/csiro-finds-ningaloo-corals-untouched-by-bleaching/news-story/893c4aa8875bf13198fa9dc165e4995e). Nonetheless, the risk of future bleaching events remains high and therefore strategies and ongoing investment are required to improve understanding and –developing resilience within natural systems to anticipated incremental climate changes (IUCN Consultation, 2017).

► Fishing / Harvesting Aquatic Resources

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

Recreational coastal and boat fishing is currently one of the most important and widespread human use of this region (Sumner et al 2002; Ryan et al 2013). Recreational fishing can potentially have significant ecological impacts (Stevens et al 2000; McPhee et al 2002; Lewin et al 2006). Some more recent studies note that recreational fishing in Ningaloo Marine Park is extensive (Davies et al., 2016). Recreational fishing effort and potential impacts on the marine environment are managed through a suite of measures including: Ningaloo marine park sanctuary zones which prohibit recreational fishing, and recreational catch and bag limits which are enforced by the Western Australian Government. The same recreational fishing rules apply in Ningaloo Marine Park (Commonwealth waters) (IUCN Consultation,

2017).

Potential Threats

High Threat

The greatest potential threat is the further unknown effects of climate change that could result in sea level rise-, change in cyclone frequency, drought, or change in the temperature of seawater, all of which would impact WH values greatly. Increasing number of oil drilling sites or future expansion of military activities also represent potential threats. Fires from artificial sources and increased severe weather remain a threat.

▶ War, Civil Unrest/ Military Exercises

Low Threat
Inside site, localised(<5%)

Future bombing activities on the Learmonth Air Weapons range, in particular to the Bundera sinkhole which is located on Defence Land were identified as a potential threat at the time of inscription of the property (IUCN, 2011).

▶ Storms/Flooding

High Threat
Inside site, throughout(>50%)
Outside site

The greatest potential threat is the further unknown effects of climate change that could result in sea level rise, the risk of catastrophic fire, change in cyclone frequency, drought, or change in the temperature of seawater, and coral bleaching all of which would impact World Heritage values greatly.

Protection and management

Assessing Protection and Management

▶ Relationships with local people

Mostly Effective

The Ningaloo Coast World Heritage Advisory Committee established in 2014

consists of stakeholders from the local and broader community (IUCN Consultation, 2014). It provides advice to the State and Commonwealth Governments on matters related to the protection, conservation, presentation and management of the property, as well as identification of research priorities (IUCN Consultation, 2017).

► Legal framework

Highly Effective

The entire, mostly state-owned property is comprehensively protected and managed, including by an overarching strategic management framework. (SoOUV, 2011; Nomination, 2010; IUCN, 2011). The relevant legislation includes the Environment Protection Biodiversity Conservation Act 1999 (EPBC Act) which provides a legal framework to protect and manage nationally and internationally important heritage places, including World Heritage sites (http://www.environment.gov.au/epbc). Any new development proposal in the property will be subject to assessment and approval under the EPBC Act if an action is considered likely to have significant impacts on World Heritage values and other protected matters, such as threated species. At the State level, the Environmental Protection Act 1986 (Western Australia) provides a framework for considering potential environmental impacts of developments which may affect World Heritage values (IUCN Consultation, 2017).

► Enforcement

Highly Effective

Enforcement of relevant regulations is considered effective (IUCN Consultation, 2017).

► Integration into regional and national planning systems

Mostly Effective

While overall the integration into regional and national planning systems appears effective, some studies indicated that consideration of climate change might not be adequately integrated into management planning (Davies et al 2016).

► Management system

Mostly Effective

Given the various governmental levels and agencies involved and the differentiation between terrestrial and marine parts of the property, effective coordination of the multiple plans in an overall management framework is critical. The individual management plans and their respective governance arrangements are combined under the Ningaloo Coast Strategic Management Framework (IUCN, 2011; SoOUV, 2011). The Director of National Parks is responsible for the Ningaloo Marine Park (Commonwealth waters) and works cooperatively with the Western Australian Government. The Department of Biodiversity, Conservation and Attractions (DBCA) (formally the Department of Parks and Wildlife) is the lead State Government agency for the management of the property (IUCN Consultation, 2017).

► Management effectiveness

Mostly Effective

A need for ongoing management of fisheries and visitation and careful planning of resource extraction with corresponding monitoring and disaster preparedness to protect the values of the property has been recognized at the time of inscription of the property (SoOUV, 2011). (IUCN, 2011).Currently, the Ningaloo Coast has comprehensive management plans and staff in place to guide management and address these issues. Emergency preparation in the case of an accidental oil spill is kept up to date (IUCN Consultation, 2017).

► Implementation of Committee decisions and recommendations

Mostly Effective

No decisions have been taken by the World Heritage Committee with regards to this property since its inscription (http://whc.unesco.org/en/list/1369/documents/).
Recommendations made by the World Heritage Committee at the time of inscription (2011) have been considered, for example, an increase in overall management resources has been implemented (IUCN Consultation, 2017). The World Heritage Committee also referred some of the areas proposed in the original nomination back to the State Party, which required further consultation with stakeholders, particularly holders of private leases, noting

that they could be considered again via a subsequent minor boundary modification (World Heritage Committee, 2011).
DBCA are in consultation with the Gnulli native title claim group to negotiate an Indigenous Land Use Agreement (ILUA) for the creation of conversation and recreation reserves along the Ningaloo Coast (adjacent to the property), as well as an extension to Cape Range National Park and intertidal portions of Ningaloo Marine Park. Additionally DBCA and the Gnulli native title claim group are negotiating a Joint Management Agreement (JMA) for the management of the proposed conversation and recreation reserves along the Ningaloo Coast, Ningaloo Marine Park and Cape Range National Park (IUCN Consultation, 2017).

► Boundaries

Mostly Effective

Boundaries are sufficient to ensure integrity of the property. Some areas of the nominated property were referred back to the State Party to allow further collaboration with stakeholders, including holders of private leases within these areas. The World Heritage Committee noted that these areas could be considered via a subsequent minor boundary modification (World Heritage Committee, 2011). The Committee also recommended that the State Party "Consider inclusion of the Exmouth Gulf on the grounds of ecological linkages between the Ningaloo Reef and the gulf, in particular the extensive mangrove stands and other shallow water habitats that function as nurseries and adult foraging grounds for many species" (World Heritage Committee, 2011).

► Sustainable finance

Mostly Effective

At the time of inscription of the property is was noted that funding from federal and state levels and staffing would benefit from increases (SoOUV, 2011). State government expends approximately AU$ five million annually on staff, offices, maintenance, enforcement, monitoring, research and general management. A further AU$ 700,000 is allocated yearly to promote tourism and once-off funding is occasionally provided for specific projects, such as the goat eradication program. The Department of Environment and Energy (DoEE) through the Director of National Parks provides approximately AU$

60,000 annually for the day-to-day management of the Ningaloo Marine Park (Commonwealth waters). On 27 September 2017 the Australian Government announced funding of AUD $140,000 per annum for five years from July 2018 to provide the continuation of the World Heritage Executive Officer and Advisory Committee for The Ningaloo Coast (IUCN Consultation, 2017). The Department of Defence occasionally allocates funding for special conservation projects (e.g. protection of Bundera sinkhole).

► Staff training and development

Some Concern

At the time of inscription, the Department of Environment and Conservation (DEC), currently DBCA, employed 33 staff members in the Exmouth district, with a key focus in the northern portions and lower management presence in the southern portions of the reserve. It was noted that unless staff numbers and funding were significantly augmented, the additional management responsibility of the eastern foothills of the Cape Range, and particularly the 2 km coastal strip, could exceed the management capacity in the foreseeable future (IUCN, 2011).
DBCA has recently reconfigured staffing to dedicate a marine ranger and a conservation employee to southern portions of the property, based in Coral Bay. A senior operations officer has been appointed to oversee southern operations. Additionally an operations officer and three aboriginal conversation employees have also been appointed to work across the district including southern portions of the property.
The Director of National Parks (Parks Australia) employs staff to manage Ningaloo Marine Park (Commonwealth waters) (IUCN Consultation, 2017).

► Sustainable use

Mostly Effective

There is a need for ongoing management of fisheries to protect the values of the property (SoOUV, 2011).

► Education and interpretation programs

Highly Effective

Visitor education programmes are well developed (Nomination, 2010; IUCN, 2011). Opportunities for community education and involvement are high,

with significant volunteer programmes involving people in the management and monitoring of the property. There are significant local education and interpretation programmes that inform local community members and visitors of World Heritage values, management strategies and research outcomes (IUCN Consultation, 2017).

► Tourism and visitation management

Highly Effective

DBCA, formally the Department of Parks and Wildlife has been working with the Shire of Exmouth and commercial tourism operators to begin developing and incorporating World Heritage interpretive and promotional material into brochures, websites and tourist signage at major tourist attractions including the Vlamingh lighthouse (IUCN, 2011, IUCN consultation, 2013 and 2014). Tourism in the area is highly focused on nature based or World Heritage values based tourism (IUCN Consultation, 2017).

► Monitoring

Highly Effective

DBCA has a monitoring program through the Western Australian Marine Monitoring Program (WAMMP) with sites at Ningaloo (IUCN consultation, 2014).
The Ningaloo Turtle Program (NTP) was established in 2002, as a collaborative initiative between the Department of Biodiversity, Conservation and Attractions Parks and Wildlife Service - Exmouth District, Cape Conservation Group Inc. (CCG), Murdoch University and the World Wildlife Fund - Australia (WWF). The mission statement of the program is to predict long-term trends in marine turtle populations along the Ningaloo coast. This is accomplished through the collection of turtle nesting information such as nesting abundance and disturbance data. This data assists Parks and Wildlife in the reduction of disturbance levels to nesting turtles and therefore improves the conservation of the species breeding in the area.
Volunteers are essential to the maintenance of the program. Based in Exmouth, Western Australia, the NTP provides an opportunity for local community, interstate and international volunteers to take part in turtle conservation. Participating volunteers gain practical experience with turtle

monitoring, turtle rescues and other related activities.

▶ **Research**

Highly Effective

A long list of research projects is provided in the nomination (2010). Research activities continue in and around the property.

Overall assessment of protection and management

Highly Effective

The Ningaloo Coast has an excellent range of management plans and qualified staff. Programmes ensuring that invasive species are controlled, that emergency preparation in the case of an accidental oil spill is kept up, and that any increase in tourism will not have an impact on natural values need to be continued. At the time of inscription some concerns were expressed with the regards to the adequacy of staff numbers and available funding compared to the scale of management activities. It is unclear whether funding have been increased. DBCA’s Parks and Wildife Service has a total of 37 staff (equivalent FTE) operating out of the Exmouth District and throughout the property.

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

Mostly Effective

The greatest threats from outside the site are oil and gas extraction, with some concerns relating to commercial fishing both of which appear to be effectively controlled as legislation is in place to ensure activities outside of the site will not threaten WH values. The difficulty is analysing levels of risk, for example the likelihood that an off-shore drilling rig could have an accident.

State and trend of values

Assessing the current state and trend of values

World Heritage values

► Exceptional landscape combining arid terrestrial and marine features

Good
Trend:Data Deficient

Overall the values of the property remain in good condition (IUCN Consultation, 2017). The outstanding aesthetic attributes of the property remain well preserved and the property continue to feature an exceptional combination of unique marine, coastal and terrestrial environments of striking contrast.

► One of the largest documented aggregation of whale sharks in the world

Low Concern
Trend:Deteriorating

Intentional and unintentional mortality outside Australian waters is the most significant threat to the whale sharks (Rhyncodon typus). In Australia, boat strikes from large vessels and habitat disruption constitute the most significant threats. International fishing pressure has led to a significant decline in the single, globally connected population of this species (Threatened species scientific committee, 2015). Within Australia, a number of conservation programmes have been developed to minimize threats to whale sharks within Australian waters, including minimising offshore developments and vessels transit in areas close to sharks aggregations and along their northward migration route defined in the Conservation Values Atlas (DotE, 2014).
In 2013 the International Maritime Organization endorsed an establishment of an Area to be avoided (ATBA) off the Ningaloo Coast.
The Western Australia DBCA (formally the Department of Parks and Wildlife) has also implemented a number of measures to manage encounters between operators, tourists and whale sharks, thereby mitigating potential impacts on the animals (Sanzogni et al., 2015).

► High diversity of marine fish

Low Concern
Trend:Data Deficient

With increase in recreational fishing (IUCN Consultation, 2017), there are concerns over short term impacts on populations of some species and longer term impacts on the complex ecosystem overall.

► High diversity of reptiles

Good
Trend:Data Deficient

No detailed information is available on the status of key reptile species, but it can be considered that these values have remained well preserved since the inscription of the property (IUCN Consultation, 2017).

► High diversity of marine mammals

Good
Trend:Data Deficient

No detailed information is available on the status of key mammal species, but it can be considered that these values have remained well preserved since the inscription of the property (IUCN Consultation, 2017).

► High diversity of cave (troglomorphic) diversity

Good
Trend:Data Deficient

No detailed information is available, but it can be considered that these values have remained well preserved since the relatively recent inscription of the property (IUCN Consultation, 2017).

► Noteworthy arid-zone vascular flora

Low Concern
Trend:Stable

Some coastal vegetation communities suffer impacts of increased visitation. Weeds, overgrazing and feral animals also have impacts, particularly on some species. However, all these impacts are small in scale and localized (IUCN Consultation, 2017).

► High diversity of marine invertebrates and algae

Low Concern
Trend:Data Deficient

Overall the values of the property remain in good condition (IUCN Consultation, 2017). While a number of areas in Western Australia have recently been affected by the 2016 coral bleaching event, the corals of Ningaloo appear to have escaped bleaching, although some coral reef mortality not related to heat stress was observed (Le Nohaïc et al., 2017).

Summary of the Values

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

Low Concern

Trend: Data Deficient

Due primarily to the relative remoteness of the property and the moderate visitation rates, the key World Heritage values are being largely maintained and their condition remains good. Tourism, grazing and feral species are having some impacts on some terrestrial values of the property; however, these impacts remain small in scale and localized. As for marine areas, the coral reefs within Ningaloo Reef appear to have escaped the latest coral bleaching event which affected many other coral reef areas in 2016; however, concerns are high regarding their future. Some concerns also exist with regards to the aggregations of whale sharks as this species is under pressure from different threats, especially in areas outside Australian waters. As these values are complex and only six years have passed since the inscription of the property on the World Heritage List, it is yet difficult to determine an overall trend.

► Assessment of the current state and trend of other important biodiversity values

Good

Trend: Data Deficient

Noteworthy birds. Although birds were not included in the SoOUV for criterion x, they were assessed as noteworthy in the evaluation and merit monitoring in future.

Additional information

Benefits

Understanding Benefits

► Outdoor recreation and tourism

Beneficiaries include local and regional businesses that rely on tourism, and the tourists themselves.

► Fishing areas and conservation of fish stocks

Area of mangroves provides a nurse site for fish within and outside the protected area. Well-established sanctuary zones can have a positive effect on maintaining populations of fished species.

► Access to drinking water, Commercial wells

The water supply for Exmouth is obtained from extraction from an aquifer underneath the WHA. Uses bottling and municipal drinking water.

► Sacred natural sites or landscapes

There are Aboriginal burial grounds and mythological and numerous midden sites in the site which are considered sacred.

► Sustainable extraction of materials (e.g. coral, shells, resin, rubber, grass, rattan, etc)

Coral and specimen shell collecting is allowed in certain areas with a permit.

► Importance for research, Contribution to education

Important area for research, both marine and terrestrial, as well as archaeological. Opportunities for community education and involvement are

high, with significant volunteer programs operating involving people in the management and monitoring of the property. There are significant local education and interpretation programs that inform local community members and visitors of World Heritage values, management strategies and research outcomes (IUCN Consultation, 2017).

► **Soil stabilisation, Coastal protection, Flood prevention, Water provision (importance for water quantity and quality)**

Large natural terrestrial and marine areas provide important environmental services including coastal protection, soil stabilisation, wetland protection, and groundwater renewal.

► **Tourism-related income, Provision of jobs**

Provision of revenue and employment through tourism and park management. Beneficiaries include local and regional businesses that rely on tourism, and the tourists themselves. Tourism in the area is highly focused on nature based or World Heritage values based tourism. Industries revolve around camping, diving and interacting with the marine megafauna within the World Heritage area. For example, 27000 people undertook a Whale Shark interaction tour in 2016 within the WHA, resulting in tens of millions of dollars of revenue for the local community (IUCN Consultation, 2017).

Summary of benefits

The property benefits the local and global community for protecting wildlife and wilderness values and providing environmental services. Its mangrove areas and no-fish sanctuary zones provide a nursery for fisheries outside of the property, and tourism provides important benefits to the tourist as well as revenue and jobs to the local population. Park management also provides jobs, and research undertaken in the property increases scientific knowledge and education.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	ECOCEAN Inc.		Conservation of whale sharks around the world, working in collaboration with other nongovernmental organisations such as Earthwatch, individual volunteers in the community, and DEC in Australia, as well as scientists in the United States.
2	The Department of Defence		Project to protect Bundera Sinkhole noted in Nomination (2010). See http://www.cavedivers.com.au/bundera-sinkhole for notes on importance of this sinkhole.
3	Department of Biodiversity, Conservation and Attractions		Goat and feral cat control programmes.
4	Department of Parks and Wildlife		Regional turtle conservation project.
5	Department of Biodiversity, Conservation and Attractions		Extensive research
6	Cape Conservation Group Ltd Department of Biodiversity, Conservation and Attractions		North West Cape Feral Animal Trapping Program .
7	Department of Biodiversity, Conservation and Attractions Cape Conservation Group Ltd		Ningaloo Turtle Program (community based monitoring program).
8	Gnaraloo Wilderness Foundation		Gnaraloo Turtle Conservation Program (adjacent to the property).
9	Director of National Parks (Parks Australia)	From: 2016 To: 2018	Preparation of a management plan for Ningaloo Marine Park as part of the North-west Marine Parks Network Management Plan’.

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	N.A.	Increased interpretation and education – both on the ground and online	
2	N.A.	Further research into impacts of fishing	

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