

## SHARK BAY WORLD HERITAGE AREA ASSESSMENT AND REFERRAL OF PROPOSALS

### PREAMBLE

World Heritage Listing does not prevent development; however development proposals and actions are carefully evaluated from an environmental perspective and only proceed if implementation does not compromise the World Heritage (WH) values.

Research and development proposals within or adjacent to the Shark Bay World Heritage Area (SBWHA) which have the potential to adversely impact on the Outstanding Universal Value (OUV) for which the area has been World Heritage Listed, will be subjected to evaluation by the SBWH Advisory Committee.

A proposal can be any project, undertaking or development. It may be a physical structure (such as a jetty) an extractive or productive industry (such as mining or fishing) or an enterprise (such as a tourism charter). Proposals can potentially have impacts which affect values, species, ecosystems or ecological processes.

The SBWHA is a matter of National Environmental Significance under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Therefore, proponents are responsible for referring to the Commonwealth Minister for the Environment any proposal (termed an 'action' under the Act) that has, or is likely to have, a significant impact on the WH values of the property.

Among other triggers for an EPBC referral, the Act defines an 'action' as one that will have a significant impact if it is likely to result in;

- One or more of the WH values being lost, or
- One or more of the WH values being degraded or damaged, or
- Notably altered, modified, obscured or diminished, or
- Impacting the integrity of the property. \*

\*Integrity is a measure of the wholeness and intactness of the natural heritage and includes; all elements necessary to express OUV, how adequate the size is to ensure the complete representation of the features and processes of the property's significance and the extent to which it suffers from adverse effects of development/neglect.

If there is a **HIGH RISK** that the action will result in any of the above, referral is advised. If there is **UNCERTAINTY** in regard to the action, referral or contact with the Commonwealth department is recommended. If a **LOW RISK**, then referral may not be required, however it is recommended that the proposal be discussed with the department.

Where the proponent has not referred a proposal to the Commonwealth for assessment under the EPBC, the SBWH Advisory Committee may do so and also request a briefing by the proponent.

## GUIDELINES

This guidance statement provides advice in regard to proposals for development within, or adjacent to, the Shark Bay World Heritage Property.

Proponents are advised to pay particular attention to the;

- **four natural WH criteria** that Shark Bay is WH listed for - Attachment 1
- **Statement of Outstanding Universal Value (SOUV)** – Attachment 2
- **values or attributes** which relate to these criteria – Attachment 3.\*\*

\*\*World Heritage values/attributes are specific elements or features of a WHP that contribute to its OUV and collectively link to one or more of the WH listing criteria.

### Conservation Values

- Shark Bay is Australia's largest enclosed marine embayment and its unusual geomorphology has produced a diverse range of marine communities including corals, seagrass meadows, mangroves and hypersaline communities. Assemblages of marine fauna and flora are rich and diverse, often with an overlap of tropical and temperate species. Shark Bay is an example of a relatively undisturbed ecosystem which displays significant geological and biological processes in its functioning.
- The largest seagrass meadows in the world occur at Shark Bay and the diversity of seagrass species is unusually high (12 species). Seagrass is the foundation and dominant organism of Shark Bay. It has modified the physical, chemical and biological characteristics of the Bay and provides food, habitat and nursery grounds for many species.
- Shark Bay represents a modern example of ecosystem types which were dominant early in Earth's history. It has a secure population of about 10 000 dugongs (Dugong dugon) which is one of the largest populations in the world.
- The marine system is a major nursery area for commercially important fish resources. The wide sheltered bays provide habitat for a diverse and as yet little studied mollusc, crustacean and other invertebrate fauna.
- Shark Bay is the most important loggerhead turtle (*Caretta caretta*) nesting area in Western Australia and is a minor nesting ground for the green turtle (*Chelonia mydas*). It is utilised by at least 12 species of marine mammals and is a gathering site for migrating humpback whales, and supports significant populations of sharks, rays, manta rays and sea-snakes.
- The waters of Shark Bay are differentiated into three quite distinctive ecosystems according to salinity; that is, oceanic, metahaline and hypersaline. The hypersaline embayments are characterised by unique microbial communities (including those which form stromatolites) and massive deposits of coquina shell (*Fragum erugatum*).
- Shark Bay has a rich birdlife with a high occurrence of migratory and breeding seabirds.
- Hamelin Pool is the most significant known occurrence of shallow marine and intertidal benthic microbial ecosystems living on Earth.
- The biota inhabiting hypersaline waters are of special interest to marine biologists because of physiological adaptations necessary for life in waters of these high salt concentrations.
- The marine reserves' stunning and diverse visual resources include sea cliffs, headlands, dunes, shell beaches, sandy shallows, tidal flats, mangroves, seagrass beds, lagoons, channels and reefs.
- The marine reserves contain a diverse range of ecosystems which exhibit diverse fauna, flora and ecological processes.

## KEY CONSIDERATIONS FOR ASSESSMENT

Impacts or potential impacts will depend on the sensitivity, value and quality of the environment which is to be impacted and upon the intensity, duration, magnitude and geographic extent of the impacts.

Consideration should be given to the **direct, consequential** and **cumulative** impacts of a proposed action.

**Direct Impacts** are caused by the proposed action and usually occur at the same time and place. Examples of direct impacts include the removal of habitat for the construction of infrastructure or impacts to water quality as a result of dredging.

**Consequential Impacts** are usually secondary effects of the action- either later in time and/or at a further distance from the proposed action. These may include; weed or species invasion, facilitation of further development such as construction of transport infrastructure (roads, etc.).

**Cumulative Impacts** are the incremental impacts of the action, combined with the effects of past, present and reasonably foreseeable future actions. These can result from individually minor, but collectively significant actions taking place over a period of time. Cumulative impacts may include changing landscape character or altering water quality through accumulation of toxins and bacteria.

### Examples of Development with High Impact Potential

#### Coastal Development

Coastal development may impact on feeding, breeding and refugia for many species and connectivity to the marine and terrestrial environments. Other associated impacts include increased erosion, which releases nutrients and sediments into the marine environment.

#### Coastal Reclamation

This may involve the creation of new land for residential, commercial (including marinas) or industrial developments and may affect water quality of adjacent waters, alter ocean currents, impede natural drainage, alter groundwater levels and expose acid sulphate soils.

#### Dredging

This is usually associated with marine facilities, shipping channels, marinas and boat ramps and may have direct effects on water quality and organisms and cause species avoidance of breeding and feeding areas (from turbidity and noise).

#### Dredge Material

The disposal and resuspension of dredge material may impact on water quality and smother and/or bury habitats and organisms, affect structure and function of habitats including reefs and seagrass meadows and alter physical and biological processes.

#### Substantive Land Use Change

Agricultural and/or grazing activities may result in soil degradation, soil erosion and the transport of eroded materials, fertilizers and pesticides.

#### Aquaculture Developments

These may result in the discharge of high concentrations of suspended solids and nutrients with potential impacts on water quality. It may also lead to the introduction of pathogens from introduced species.

## **UNESCO Policy of Integrated Sustainable Development**

The WH Convention recognises that conservation and management strategies should incorporate a sustainable development perspective which embraces not only the protection of the OUV, but also the well-being of present and future generations.

The policy aims to ensure an appropriate and equitable balance between conservation, sustainability and development so that WH properties are protected through appropriate activities which contribute to the social and economic development and the quality of life of local communities, whilst not compromising the property's OUV.

**Environmental Sustainability** involves responsible interaction with the environment in WH properties to avoid depletion or degradation of natural resources and to ensure long-term environmental quality which strengthens resilience to disasters and climate change. A long-term perspective should be applied to all processes of decision-making, taking into account the value of needs and benefits of current and future generations.

Where possible, avoid or mitigate negative impacts on the environment when conserving and managing WH properties and adjacent areas, including promotion and use of renewable energy sources.