



Environment Protection and Biodiversity Conservation Act 1999

INCLUSION OF A PLACE IN THE NATIONAL HERITAGE LIST

The Ningaloo Coast

I, Peter Robert Garrett AM, Minister for the Environment, Heritage and the Arts having considered, in relation to the place specified in the Schedule of this instrument:

- (a) the Australian Heritage Council's assessment whether the place meets any of the National Heritage criteria; and
- (b) the comments given to the Council under sections 324JG and 324JH of the *Environment Protection and Biodiversity Conservation Act 1999*; and

being satisfied that the place described in the Schedule has the National Heritage values specified in the Schedule, pursuant to section 324JJ of the *Environment Protection and Biodiversity Conservation Act 1999*, include it in the National Heritage List.

Dated: 5 January 2010

[signed]

Peter Robert Garrett AM
Minister for the Environment,
Heritage and the Arts

SCHEDULE**STATE / TERRITORY**

Local Government

Name

Location / Boundary

Criteria / Values

WESTERN AUSTRALIA**Exmouth Shire, Carnarvon Shire, Ashburton Shire****The Ningaloo Coast:**

About 710,000ha, in northwest Western Australia, being: (1) a coastal strip including Cape Range extending from North West Cape about 260km south-south-west to Red Bluff, and (2) adjacent marine areas, reefs and islands. The area generally comprises:

- Ningaloo Marine Park (Commonwealth Waters),
- Ningaloo Marine Park (State Waters),
- Muiron Islands Marine Management Area (including the Muiron Islands),
- Jurabi Coastal Park,
- Bundegi Coastal Park,
- Cape Range National Park,
- Learmonth Air Weapons Range,
- Northern and western parts of Vacant Crown Land west of Learmonth town,
- North-west part of Exmouth Pastoral Lease,
- Northern part and western coastal strip of Ningaloo Pastoral Lease,
- Western coastal strips of Cardabia, Warroora and Gnarlaloo Pastoral Leases, and
- North-west coastal strip on Quobba Pastoral Lease.

Major Exclusions:

- North West Cape Area A, excepting the part of the Point Murat Naval Pier that lies seaward of Mean High Water,
- Coral Bay town area, and
- Cardabia, Warroora and Gnarlaloo Homesteads.

The area is bounded by a line commencing at the south east corner of Ningaloo Marine Park (Commonwealth Waters), then westerly and northerly via the western boundary of Ningaloo Marine Park (Commonwealth Waters) to its intersection with the western most point of the Muiron Islands Marine Management Area (approximate MGA point Zone 50 214360mE 7599010mN), then north easterly, south easterly and westerly via the boundary of the Muiron Islands Marine Management Area to its intersection with the Ningaloo Marine Park (State Waters) boundary (approximate MGA point 219460mE 7592750mN), then southerly and westerly via the Ningaloo Marine Park (State Waters) boundary to its intersection with the eastern boundary of Bundegi Coastal Park, then southerly, westerly and northerly via the eastern, southern and western boundary of Bundegi Coastal Park to its intersection with the eastern alignment of the northern boundary of Lot 96 P182062 (approximate MGA point 204130mE 7578440mN), then westerly and southerly via the alignment and the northern and western boundaries of Lot 96 P182062 to its intersection with the northern boundary of Lot 43 P209471, then westerly and southerly via the boundary of Lot 43 P209471 to its intersection with the northern boundary of Lot 78 P211955, then westerly, southerly and easterly via the northern, western and southern boundary of Lot 78 P211955 to its intersection with the north west corner of Water Supply Reserve 34055, then southerly via the western boundary of Water Supply

Reserve 34055 and its alignment to its intersection with the northern boundary of Lot 164 P220081, then westerly via the northern boundary of Lot 164 P220081 to its intersection with the 2015 Pastoral Lease Exclusion Area boundary (data produced by Landgate and current on 10 November 2009) at approximate MGA point 198860mE 7557300mN, then southerly and westerly via the eastern boundary of the 2015 Pastoral Lease Exclusion Area to its intersection with the north east corner of Lot 97 P213189, then southerly via the eastern boundary of Lot 97 P213189 to its intersection with the 2015 Pastoral Lease Exclusion Area boundary, then southerly via the eastern most boundary of the 2015 Pastoral Lease Exclusion Area with MGA northing 7339530mN at approximate MGA point 749860mE 7339530mN (note that Coral Bay township and areas around Cardabia Homestead, Warroora Homestead and Gnarlaloo Homestead are excluded from The Ningaloo Coast area), then north westerly to the intersection of the 2015 Pastoral Lease Exclusion Area boundary with MGA northing 7339930mN (approximate MGA point 749277mE 7339930mN), then north easterly, north westerly and south westerly via the 2015 Pastoral Lease Exclusion Area boundary to its intersection with the Ningaloo Marine Park (State Waters) boundary at approximate MGA point 749630mE 7341070mN, then westerly and northerly via the southern and western boundary Ningaloo Marine Park (State Waters) to the point of commencement. Note: all excluded roads located within the outer boundaries of the 2015 Pastoral Lease Exclusion Area are included in The Ningaloo Coast area unless specifically excluded in the items 1-5 below.

The following areas are excluded:

1. All that part of Lot 44 P209471 (North West Cape Area A) extending to the Mean High Water Mark. Note: that the part of Point Murat Navy Pier lying east of mean HWM is included in The Ningaloo Coast.
2. Lot 197 P190306.
3. Lot 160 P217418 and Lot 161 P217418.
4. An area bounded by a line joining the following MGA points consecutively: Zone 50 193571mE 7544828mN, 196174mE 7544417mN, 195714mE 7541771mN, 193124mE 7542183mN, then directly to the point of commencement.
5. An area bounded by a line joining the following MGA points consecutively: Zone 50 198710mE 7564982mN, 198752mE 7562899mN, 197782mE 7562899mN, 197743mE 7565178mN, then directly to the point of commencement.

(a)	Criterion the place has outstanding heritage value to the nation because of the place's importance in the course, or pattern, of Australia's natural or cultural history.	Values Natural Values
		Demonstrating late Quaternary deformation at a passive continental margin, the uplifted Neogene wave-cut terraces and fossil reefs which fringe Exmouth Peninsula and the submerged fossil reef terraces which form the substrate of the modern reef, in immediate juxtaposition with the undeformed modern Ningaloo Reef, and late Pleistocene Tantabiddi terrace, have outstanding heritage value to the nation under criterion (a) for their contribution to understanding mechanisms which led to the modern character of the west coast of Australia (van de Graaff et al. 1976; Veeh et al. 1979; Stirling et al. 1998).
		The story of Australia during the Neogene period (beginning about 25 million years ago) is a story of increasing post-Gondwanan isolation and the expansion of aridity. The subterranean faunas and rangeland communities of Exmouth Peninsula exemplify both these evolutionary drivers and

accentuate the intimate ties between ecology and geological history more vividly than any other place in Australia. Demonstrating speciation and adaptation since the break up of the supercontinent Gondwana and the opening of the ancient Tethys sea more than 250 million years ago, the expansion of aridity in Australia and continued biogeographic isolation during the Quaternary (the last 2.6 million years), the subterranean and terrestrial ecosystems of Exmouth Peninsula help translate a complicated biogeographical story. These communities have outstanding heritage value to the nation under criterion (a) for their importance in demonstrating the pattern of Australia's natural history (Humphreys and Collis 1990; Kendrick 1993; Jaume et al. 2001; Russell 2004; Humphreys 2006; Spate 2006).

Indigenous Values

Elsewhere in Australia records of early human occupation have been drowned with the post-glacial return of the sea over the broad coastal areas exposed during the last glacial maximum. Exmouth Peninsula's proximity to the continental shelf during the harsh climatic conditions of the last ice age, when sea levels were lower, means that Cape Range was never far from marine resources (Morse 1993c).

Archaeological deposits in the rock shelters on Cape Range show Aboriginal people had a comprehensive and sophisticated knowledge of edible and non-edible marine resources between 35,000 and 17,000 years BP (Morse 1993a; Przywolnik, 2005). The rock shelters of Exmouth peninsula have outstanding heritage value to the nation under criterion (a) because they provide the best evidence in Australia for the use of marine resources during the Pleistocene including their uses as food and for personal adornment.

Natural Values

- (b) the place has outstanding heritage value to the nation because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.

Anchialine communities characterised by the presence of remipede crustaceans are internationally rare, limited to Bundera Sinkhole on the Ningaloo Coast, the volcanic anchialine setting of Lanzarote in the Canary Islands, and some sites in the Caribbean Sea, Cuba and Mexico (Gillieson, Humphreys and Spate 2006). The taxonomic composition of the anchialine community of Bundera Sinkhole, while characteristic of remipede communities, is unique in the southern hemisphere and Indo-West Pacific. Bundera Sinkhole is outstanding for its unique anchialine community, reflecting its unusual hydrology, geological history, and stable environment over thousands of millennia.

The presence of active karst solution as a result of seawater incursion is rare in Australia. The Ningaloo Coast is one of the best examples in Australia of this globally significant process (Gillieson, Humphreys and Spate 2006). As the only example in Australia of a Tertiary orogenic karst and a rare example of active marine karst solution, the Ningaloo Coast contains rare aspects of Australia's natural history.

Natural values

- (c) the place has outstanding heritage value to the nation because of the place's potential to yield information that will contribute to an understanding of Australia's natural or cultural history.

Anchialine and groundwater ecosystems are of considerable scientific interest globally, yielding important information about the evolution of life on earth. The Exmouth Peninsula subterranean estuary has outstanding heritage value to the nation for supporting the most diverse and the richest anchialine and groundwater fauna in Australia, among the richest in the world. These ecosystems and the troglobites and stygofauna they support have the potential to yield information about biogeography, evolution and changing climates in Australia over hundreds of millions of years, from the late Palaeozoic to the present (AHDB 2002; Humphreys and Danielopol 2005; Humphreys 2006; Spate 2006).

Indigenous Values

Research on the freshwater subterranean fauna of the Ningaloo Coast (Humphreys and Adams 1991; Poore and Humphreys 1992) suggests that even in times of greater aridity than the present day semi-desert terrestrial environment, freshwater may have been widely available across the emergent coastal plain bordering Cape Range. The steep topography of Cape Range has protected Pleistocene occupation sites from the destructive effects of rising sea levels; while the alkaline environment of the limestone geology has acted to preserve archaeological evidence of human occupation.

Given that only a handful of the caves and rock shelters of the Exmouth Peninsula region has been investigated (O'Connor, 2007) the place has outstanding heritage value to the nation under criterion (c) because of its potential to provide further insights into marine resource use by Aboriginal people in the Pleistocene and the less well understood last glacial maximum.

- (d) the place has outstanding heritage value to the nation because of the place's importance in demonstrating the principal characteristics of: (i) a class of Australia's natural or cultural places; or (ii) a class of Australia's natural or cultural environments.

Natural Values

Biologically unique in the southern hemisphere and the Indo-Pacific region, characteristic of the remipede crustacean-type of anchialine community, the Ningaloo Coast has outstanding heritage value to the nation under criterion (d) for demonstrating the principal characteristics of a Tertiary karst environment in Australia, including a high concentration of karst features and subterranean ecosystems of global importance, unparalleled in Australia (Humphreys 2006; Spate 2006).

The integration of the Ningaloo Reef and Exmouth Peninsula karst system as a cohesive limestone structure is at the heart of the natural heritage significance of the Ningaloo Coast. The modern Ningaloo Reef, Exmouth Peninsula karst, and the wave-cut terraces, limestone plains, Pleistocene reef sediments of Exmouth Peninsula and associated marine, terrestrial and subterranean ecosystems, including the Muiron Islands, have outstanding heritage value to the nation under criterion (d) for demonstrating a geological, hydrological and ecological unity which harmonises the region's present ecosystem functions with its evolutionary history as a time-series of coral reefs and an evolving karst system (Carter 1987; Allen 1993; Wyrwoll et al. 1993; Hamilton-Smith et al. 1998; EPA 1999; Humphreys 2006; Spate 2006).

- (f) the place has outstanding heritage value to the nation because of the place's importance in demonstrating a high degree of creative or technical achievement at a particular period.

Indigenous Values

The evidence for standardisation in size and manufacture of the shell beads found at Mandu Mandu Creek rock shelter, coupled with the fact they provide the earliest unequivocal evidence for the creation of personal ornaments in Australia, demonstrates a high degree of creative and technical achievement. On this basis, Exmouth Peninsula and the shell beads that were found in association with the place have outstanding heritage value to the nation under criterion (f).

For a description of any references quoted above, and more information on each of the places please search the Australian Heritage Database at <http://www.environment.gov.au/cgi-bin/ahdb/search.pl> using the name of the place.