

Blue Mud Bay and associated coastal floodplains

Location and Description

Blue Mud Bay is a large embayment in the western Gulf of Carpentaria, and 580 km east-south-east of Darwin. The Site is a composite of the coastline of Blue Mud Bay, the adjoining floodplains, and a number of small off-shore islands off Cape Shield. The Site encompasses a diverse coastline of many small bays and inlets, beaches, headlands and cliffs, and large saline flats and mangroves that gradually merge into the extensive freshwater floodplains associated with the rivers and creeks that drain into the bay.

Tenure and Land Use

Blue Mud Bay and the adjoining coastal floodplains are Aboriginal freehold land and held by the Arnhem Land Aboriginal Land Trust. The northern portion of the Site, 65% of the terrestrial area, is within the Laynhapuy Indigenous Protected Area and is used for Indigenous and conservation purposes. The remainder of the Site supports Indigenous use. Waters within the Bay support commercial (e.g. mud crab) and recreational fisheries.

Significance Rating

International Significance

Ecological Values

The coastal floodplains adjoining Blue Mud Bay support vast numbers of waterbirds, including seasonal gatherings of more than half a million Magpie Geese. Two other waterbird species (Wandering Whistling-Duck and Brolga) can occur in internationally-significant numbers. Many other waterbird species nest in colonies on the floodplain, while significant numbers of marine turtles and seabirds nest on small islands within the Bay. Large aggregations of migratory shorebirds use the extensive tidal flats around the bay for feeding over summer months. Five threatened species are reported from the Site, including two species of marine turtle, one bird, one mammal, and one plant.

Management Issues

The large numbers of water buffalo on the coastal floodplains around Blue Mud are having a significant impact on the wetlands. Pig are also present on the floodplains, but in smaller numbers. A lack of biological surveys in the area means that knowledge of the Site remains incomplete. The area is likely to be susceptible to further pressures from the impacts of sea-level rise and invasive plants in the future.

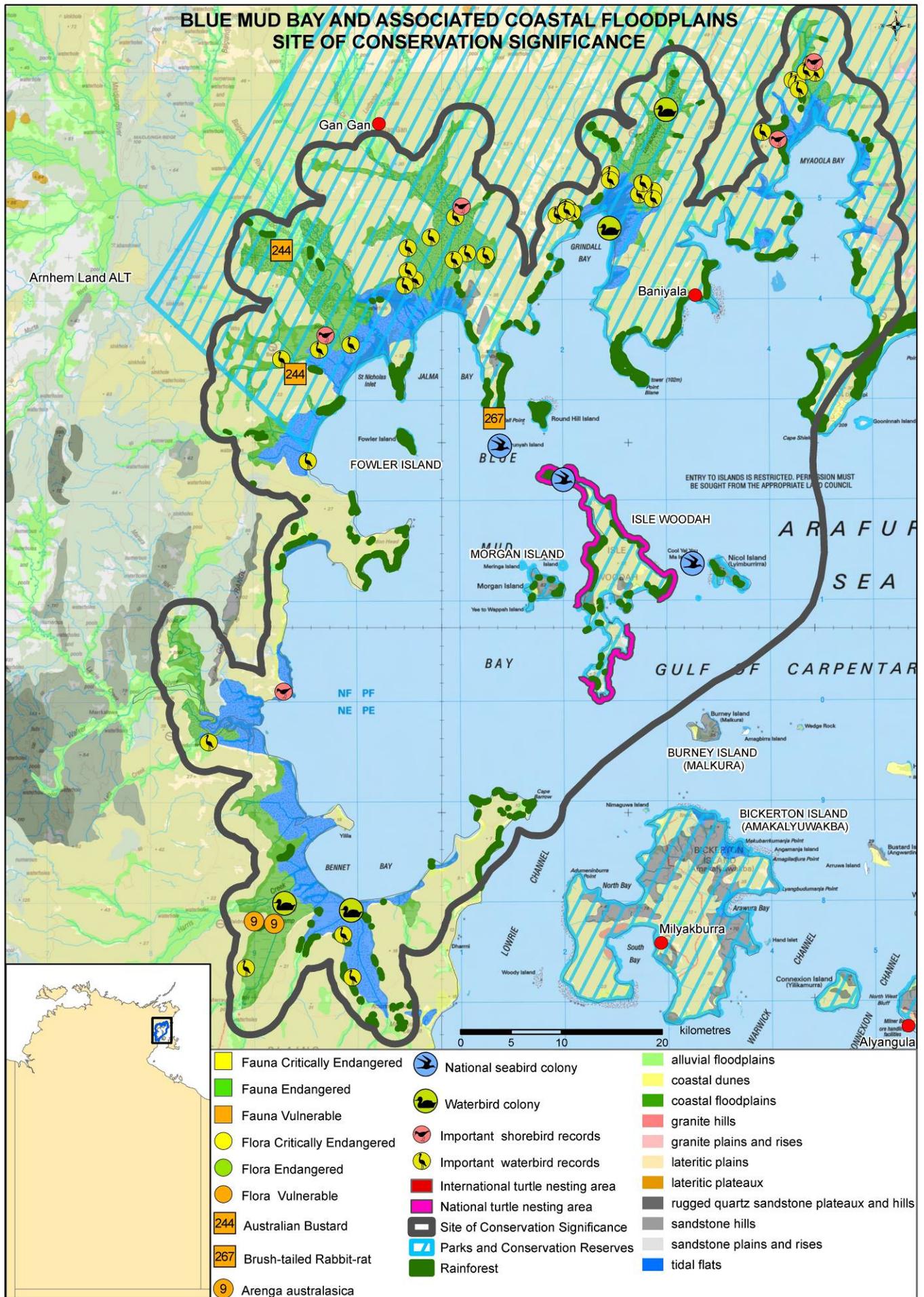


Condition

The condition of the Site is generally good, although feral animals have degraded some parts of the coastal floodplains and wetlands.

Current Conservation Initiatives

Land in the northern part of Blue Mud Bay is included within the Laynhapuy Indigenous Protected Area and a draft management plan identifying priority actions has been developed for this area. A future extension of the IPA is planned to encompass the coastal waters and islands. Aboriginal land and sea management activities around Blue Mud Bay are currently co-ordinated from Yilpara and Numbulwar. Recent activities include coastline patrols, marine debris surveys, and management of feral animals, weeds, and fire.



LOCATION	SOCS Number	25 (NT Parks and Conservation Masterplan Map Number 16)
	Latitude/Longitude	13° 23' South, 136° 4' East (at centre)
	Bioregion	Arnhem Coast (96%), Central Arnhem (4%)
	Description	<p>This site includes the coastline of Blue Mud Bay, the adjoining coastal floodplains, and the small sand and rock islands within the bay, and encompasses a terrestrial area of about 1915 km².</p> <p>Seasonally inundated coastal and alluvial floodplains (355 km² and 105 km² respectively) are associated with a number of named and unnamed rivers and creeks that drain into the bay and extensive intertidal areas of bare saline flats (260 km²) are also associated with the bay.</p> <p>The site abuts the Gove Peninsula and North East Arnhem Coast to the north, and the Groote Eylandt Group of islands is offshore. These sites are also recognised as sites of high conservation significance in the NT.</p>
THREATENED SPECIES	Significance Rating	Regional Significance
	Threatened plants and animals (Listings at National/NT level CR - Critically Endangered, EN - Endangered, VU - Vulnerable, NT - Near Threatened, LC - Least Concern, DD - Data Deficient)	Five threatened species are reported from this site. Plants <ul style="list-style-type: none"> ▪ Australian arenga palm <i>Arenga australasica</i> (VU/DD) Vertebrates <ul style="list-style-type: none"> ▪ Australian Bustard <i>Ardeotis australis</i> (-/VU) ▪ Brush-tailed Rabbit-rat <i>Conilurus penicillatus</i> (-/VU) ▪ Flatback Turtle <i>Natator depressus</i> (VU/DD) ▪ Green Turtle <i>Chelonia mydas</i> (VU/LC)
ENDEMIC SPECIES	Significance Rating	Not Significant
	Notes	<p>Endemic to the bioregion: One plant species recorded in this site is an NT endemic only known from the Arnhem Coast bioregion (<i>Triumfetta litticola</i>).</p> <p>Endemic to the NT: 34 plant and one vertebrate species (Douglas' Skink <i>Glaphyromorphus Douglasi</i>) recorded in this site are NT endemics.</p> <p>Other: Two plant species recorded in this site are restricted to the Arnhem Coast bioregion in the NT but are also found in other states.</p>
WILDLIFE AGGREGATIONS	Significance Rating	International Significance
	Marine turtles	The beaches on the Isle of Woodah and Nicole Island are highly significant for nesting Flatback Turtles (Chatto and Baker 2008). Smaller islands in the Bay have limited areas of beach for turtle nesting. Here we consider the site is of National significance to marine turtles.
	Seabirds	Five seabird breeding colonies are reported on rock and sand islands within this site (Chatto 2001), including three colonies (S045, S140, S141) considered nationally significant for their breeding populations of Little Terns, Black-naped Terns and Bridled Terns.
	Waterbirds	<p>Total numbers of waterbirds: The seasonally flooded coastal plains in this site support vast numbers of waterbirds. Highest counts include >560 000 on the northern floodplains in 1996 and 9000 on southern floodplains in 1999 (Chatto 2006), with counts dominated by Magpie Geese and Wandering Whistling-Ducks.</p> <p>Counts of individual species: Maximum counts of species that are internationally significant (> 1% global population; G. Dutson in prep.) include: 500 000 Magpie Geese; 40 000 Wandering Whistling-duck; and 3000 Brolga (Chatto 2006).</p> <p>As well as the significant counts of Magpie Geese, whistling-Ducks and Brolgas, Chatto (2006) notes a further 63 important waterbird records for this site are regionally significant.</p> <p>Breeding records: Four waterbird breeding colonies are reported in paperbarks and mangroves in this site (Chatto 2000a). Egrets, herons and spoonbills dominated colonies and the maximum colony count was 1250 birds.</p>
	Shorebirds	<p>Extensive areas of tidal flats in this site support large numbers of shorebirds. The highest reported count is 11 500 shorebirds from surveys of only part of the area (Chatto 2003) and higher numbers are likely from more complete counts of the area.</p> <p>Maximum counts of 4000 Black-tailed Godwits (Chatto 2003) at this site are internationally significant (> 1% East Asian-Australasian Flyway population; Bamford <i>et al.</i> 2008).</p> <p>Chatto (2003; R. Chatto, NRETAS, unpubl.) notes eight important shorebird records for this site including high counts of Lesser Sand Plovers and Red-necked Stints that are regionally important.</p>
Other aggregations	A large Little Red Flying Fox <i>Pteropus scapulatus</i> colony was noted by Chatto (2000) in mangroves in the northern part of Blue Mud Bay.	

WETLANDS	Significance Rating	National Significance (possible International)
	Ramsar criteria met	This site has not been formally assessed against Ramsar criteria but is likely to satisfy at least waterbird based criteria (criterion 5: important waterbird aggregation site with >20 000 waterbirds; criterion 6: regularly supports >1% of the individuals in a population) for listing as a wetland of international importance under the Ramsar Convention.
	DIWA criteria met	This site has not been assessed against the criteria for listing as a wetland of national significance in the Directory of Important Wetlands in Australia (DIWA).
	Notes	Coastal and alluvial floodplains, and extensive intertidal areas of bare saline flats and mangroves provide a range of wetland types within the site. This site has been nominated as a national High Conservation Value Aquatic Ecosystem (the finalised list of HCVAE will replace the DIWA list), and is a priority HCVAE in the Caring for our Country Business Plan 2009-2010 (Commonwealth of Australia 2008).
	Rivers	None known
FLORA	Significance Rating	National Significance
	Notes	Rainforest: About 5440 ha of dry rainforest (or 2% of the NT rainforest estate) occur within this site, mostly on islands and headlands within the bay or on floodplain margins. Many patches are small <100 ha, but 14 patches are >100 ha (Russell-Smith 1991).
OTHER ENVIRONMENTAL VALUES		Blue Mud Bay is proposed to be nominated by Birds Australia as an internationally-recognised <i>Important Bird Area</i> (G. Dutton in prep.) due to the occurrence of globally significant numbers of at least three waterbird species. Blue Mud Bay is identified as an internationally important site for migratory shorebirds in the East Asian-Australasian Flyway (Bamford <i>et al.</i> 2008). The northern portion of the site is within the Laynhapuy Indigenous Protected Area and a future extension of the IPA is planned to encompass the coastal waters and islands of this site. Forty-four species recorded from this site are listed under international conventions or bilateral agreements protecting migratory species. The marine areas within this site are likely to encompass significant biodiversity values and these are currently being explored and collated in a project by the Marine Biodiversity Group of NRETAS (K. Edyvane, NRETAS, pers. comm.).
MANAGEMENT ISSUES		Fire: In the period 1993-2004, 25% of the site was burnt in fewer than three years, and 17% was burnt in more than six years. Feral animals: Aerial surveys of pig and buffalo in the Laynhapuy Indigenous Protected Area in 2006 found buffalos concentrated on floodplains around Blue Mud Bay with higher densities than 1998 levels (Saalfeld 2006). Chatto (2006) also observed a large increase in the numbers of buffalo and pig in this area from previously small numbers. Weeds: 13 declared Category A and B weeds (<i>Acanthospermum hispidum</i> , <i>Alternanthera pungens</i> , <i>Cenchrus echinatus</i> , <i>Hyptis suaveolens</i> , <i>Jatropha gossypifolia</i> , <i>Senna alata</i> , <i>Senna occidentalis</i> , <i>Sida acuta</i> , <i>Sida cordifolia</i> , <i>Sida rhombifolia</i> , <i>Stachytarpheta cayennensis</i> , <i>Stachytarpheta jamaicensis</i> , <i>Tribulus cistoides</i>) and two other undeclared but problematic environmental weeds (high priority weeds: Smith 2001) (<i>Delonix regia</i> , <i>Gmelina arborea</i>) are recorded from this site. Other: There is a lack of biological data for the Blue Mud Bay area and further surveys are required to better assess the ecological values and management issues.
MANAGEMENT INFORMATION	NRM groups	Yirralka Rangers (Yilpara), Numbulwar Numburindi Amalahgayag Inyung Rangers (Numbulwar) (Northern Land Council 2006).
	Protected areas	Laynhapuy Indigenous Protected Area (1253 km ² / 65%).
	Current management plans	Site-specific plans: Laynhapuy Indigenous Protected Area Management Plan (draft) (Laynhapuy Homelands Association Incorporated 2006). Recovery plans for threatened species: Marine turtles (Environment Australia 2003). Other management plans: Australian Weeds Strategy (NRMMC 2007); Threat Abatement Plan for Predation, habitat degradation, competition and disease transmission by feral pigs (DEH 2005); FIREPLAN: Fire management for the savanna community (Russell-Smith <i>et al.</i> in press.).
	Monitoring programs and research projects	A biodiversity survey of Isle Woodah is planned in October 2008 in a collaborative project between local Indigenous rangers and scientific staff from NRETAS. Irregular aerial surveys of Dugongs are conducted along transects over coastal waters in the western Gulf of Carpentaria (Saalfeld 2000), with the most recent surveys in 2007. Annual surveys of marine debris on selected sandy beaches by Indigenous rangers as part of the NT Marine Debris Monitoring program (NRETA 2007). Irregular surveys and collection of fishing nets by Indigenous rangers under the Carpentaria Ghost Net Program http://www.ghostnets.com.au/index.html Fire in the tropical savannas is mapped continuously under the North Australia Fire Information Project http://www.firenorth.org.au/nafi/app/init.jsp

KEY REFERENCES	Management recommendations	In conjunction with the Northern Land Council, assist traditional owners and rangers to establish a ranger station and resource centre at Blue Mud Bay (NRETA 2005). Provide additional financial resources to increase the number of community-based rangers engaged in natural resource management in the area (NRETA 2005).
	Papers & reports	Laynhapuy Homelands Association Incorporated (2006). <i>Laynhapuy Indigenous Protected Area Management Plan (draft)</i> . Laynhapuy Homelands Association Incorporated, Nhulunbuy. Laynhapuy Homelands Association Incorporated (2006). <i>Laynhapuy Indigenous Protected Area Technical Information Document (draft)</i> . Laynhapuy Homelands Association Incorporated, Nhulunbuy.
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West coast of Isle Woodah, Blue Mud Bay (Photo: Kym Brennan)



Yilpra floodplain, Blue Mud Bay (Photo: Kym Brennan)