

McArthur River coastal floodplain

Location and Description

The McArthur River coastal floodplain is located in the south-west of the Gulf of Carpentaria, about 30 km north-east of Borroloola. The floodplain encompasses a vast area of open saline flats that are amongst the most extensive around the coast of the Northern Territory. The coastal flats are dissected by a series of tidal channels that form a large delta system around the mouth of the McArthur River. The mud flats support low chenopod shrublands, are dry for much of the year, and extend beyond extensive mangrove systems for up to five kilometres in places.

Tenure and Land Use

This Site is predominantly pastoral leasehold land and encompasses three pastoral leases (McArthur River, Manangoora, and Greenbank). Small portions in the west of the Site are Crown lease. The main land use within the Site is pastoral operations, and other uses include recreation, tourism and commercial fisheries. The McArthur River mine shipping dock is on the coast at Bing Bong in the western part of the Site.

Significance Rating

International Significance

Ecological Values

The McArthur River coastal floodplain has outstanding conservation values and attracts very large aggregations of migratory shorebirds, including internationally significant numbers of many species.

Waterbirds breed in mangroves in the Site and colonially-breeding seabirds use coastal sand spits for nesting. Large concentrations of some waterbird species are also known to occur on the extensive tidal flats within the Site.

Management Issues

Industrial developments associated with the McArthur River mine pose a potential risk of altered sedimentation, pollution or changed flow conditions for parts of the wetlands of this site. Management of grazing on the floodplain needs to consider excluding stock from sensitive areas, and reduce the risk of spread of exotic pasture weeds. Rises in sea-level associated with global climate change are likely to impact on the Site due to its flat and coastal nature.

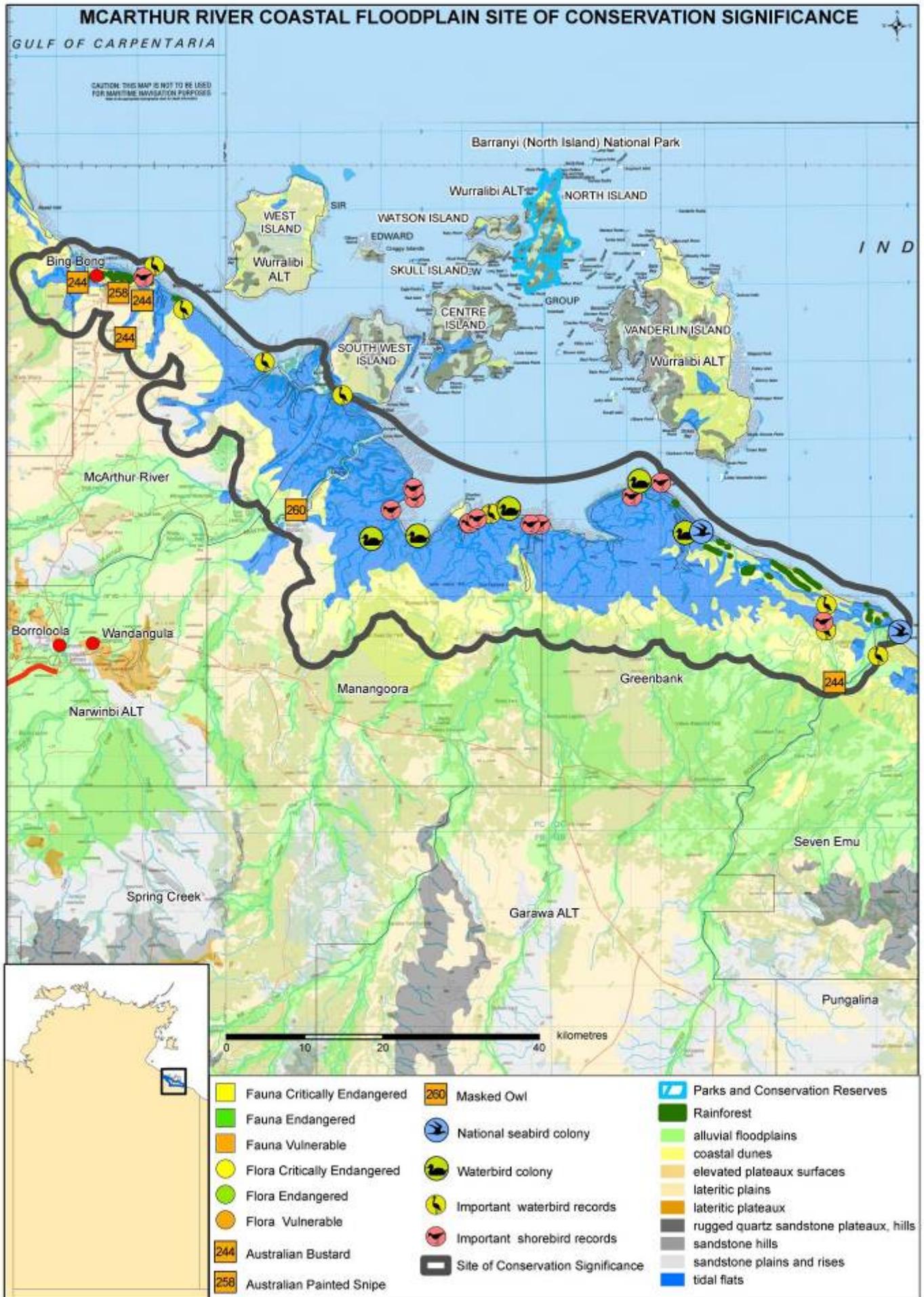
Condition

The McArthur River floodplain is generally intact and in good condition.



Current Conservation Initiatives

Indigenous rangers based in Borroloola regularly survey and collect marine debris along this stretch of coast and undertake river and coastal patrols in the area. Monitoring programs for migratory shorebirds and fish populations in tidal reaches of the McArthur River are proposed as part of expansion of the McArthur River mine.



LOCATION	SOCS Number	34 (NT Parks and Conservation Masterplan Map Number 122)
	Latitude/Longitude	15° 54' South, 136° 46' East (at centre)
	Bioregion	Gulf Coastal
	Description	<p>The McArthur River coastal floodplain extends along the coast of the Gulf of Carpentaria from Bing Bong Creek in the west to Robinson River in the east.</p> <p>The site encompasses an area of 1831 km² which is predominantly tidal flats (906 km²), but with large areas of coastal dunes (486 km²). Only a limited area of alluvial floodplain is associated with this site.</p> <p>The Sir Edward Pellew group of islands lies at the mouth of the McArthur River and immediately north of this site, and is also recognised as a site of high conservation significance in the NT.</p>
THREATENED SPECIES	Significance Rating	National 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)	<p>Six threatened species are reported from this site.</p> <p>Vertebrates</p> <ul style="list-style-type: none"> ▪ Australian Bustard <i>Ardeotis australis</i> (-/VU) ▪ Australian Painted Snipe <i>Rostratula australis</i> (VU/VU) ▪ Masked Owl <i>Tyto novaehollandiae kimberli</i> (VU/VU) ▪ Flatback Turtle <i>Natator depressus</i> (VU/DD) ▪ Green Turtle <i>Chelonia mydas</i> (VU/LC) ▪ Loggerhead Turtle <i>Caretta caretta</i> (EN/EN) <p>The Freshwater Sawfish <i>Pristis microdon</i> (VU/VU) is recorded from the lower reaches of the McArthur River and is known to breed in estuarine and coastal marine areas (Bowman Bishaw Gorman 2006). The species is assumed to also occur within this site.</p>
ENDEMIC SPECIES	Significance Rating	Not Significant
	Notes	<p>Endemic to the NT: Eight plant species recorded from the site are endemic to the NT.</p> <p>Other: Two aquatic herbs (<i>Triglochin multifructum</i> and <i>Vallisneria caulescens</i>) are only known in the NT from this site, but are also distributed in eastern Australia.</p>
WILDLIFE AGGREGATIONS	Significance Rating	International Significance
	Marine turtles	Marine turtles frequent the waters adjacent to this site and around the Sir Edward Pellew Islands but they are not known to breed on the mainland coast in this area (Chatto and Baker 2008).
	Seabirds	Four seabird breeding colonies have been confirmed in this site. Colonies mostly occur on sand spits at the mouths of small coastal creeks and rivers and are relatively small (<80 birds), but two colonies (colonies S091 and S135) are considered of national significance for numbers of nesting Little Terns (Chatto 2001). Here we consider the site of National significance to seabirds.
	Waterbirds	<p>There are no large freshwater floodplains in this site and waterbird numbers are not especially high. The highest count is about 6000 waterbirds in 1994 (Chatto 2006). Chatto (2006) does note ten important waterbird records for this site, which includes regionally important counts of a range of species.</p> <p>Five waterbird breeding colonies are reported from mangroves in this site (Chatto 2000a). Most colonies were small, but two colonies dominated by egrets had over 2000 birds each.</p>
	Shorebirds	<p>This site encompasses some of the most extensive tidal flats in the NT and supports high numbers of shorebirds, including some of the highest counts of individual species recorded in the NT. Highest total counts are from the Port McArthur area with over 27 000 shorebirds in 1996 and almost 25 000 in 1993 (Chatto 2003).</p> <p>Maximum counts of species that are internationally significant (> 1% East Asian-Australasian Flyway population; Bamford <i>et al.</i> 2008) include: 407 Far Eastern Curlew; 976 Common Greenshank; 1841 Sharp-tailed Sandpiper; 1786 Grey-tailed Tattler; 5230 Black-tailed Godwit; 1094 Marsh Sandpiper (Chatto 2000b).</p> <p>Chatto (2003; R. Chatto NRETAS unpubl. data) notes 28 important shorebird records for this site, including the significant counts identified above.</p>
	Other aggregations	None known
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 waterbird-based criteria (criterion 5: >20 000 waterbirds; criterion 6: >1% of the individuals in a population) for listing as a Wetland of International Importance under the Ramsar Convention.
	DIWA criteria met	A large part of this site is listed as a wetland of national significance in the Directory of Important Wetlands in Australia (DIWA: NT008 Port McArthur Tidal Wetlands System). The site meets criteria 1, 2, 3, 4, 5 and includes DIWA wetland types: A1, A2, A6, A7, A8, A9, and B5.
	Notes	<p>This site has been nominated as a national High Conservation Value Aquatic Ecosystem (the finalised list of HCVAE will replace the DIWA list).</p> <p>The McArthur River coastal floodplain is a good example of a tidal wetland system typical of the Gulf of Carpentaria, including the only substantial area of mangrove swamp and the widest and largest area of intertidal mudflats in the south-west of the Gulf (DIWA).</p>

	Rivers	The McArthur River is the second largest of the five major rivers flowing into the NT part of the Gulf of Carpentaria, and it has a catchment of more than 20 000 km ² (URS 2006). The River is a highly seasonal system which, unlike other southern Gulf systems such as the Roper, Towns and Gregory Rivers, ceases to flow for much of the year. Within the site the McArthur River is tidal, forming an extensive delta system.
FLORA	Significance Rating	Regional Significance
	Notes	Rainforest: Almost 520 ha of dry vine forest occur in coastal areas in the eastern and western portions of this site. The vine thickets are mostly small patches (<10 ha or <100 ha) but two patches are each >100 ha (Russell-Smith 1991).
OTHER ENVIRONMENTAL VALUES		<p>Three places within this site are listed on the Register of the National Estate for their natural values including: Rosie Creek/ Pine Creek Little Tern Breeding Site, an Unnamed Creek Little Tern Breeding Site, and the Sir Edward Pellew Group and Surrounds (Australian Heritage Council).</p> <p>Port McArthur is identified as an internationally important site for migratory shorebirds in the East Asian-Australasian Flyway (Bamford <i>et al.</i> 2008). It is also proposed to be nominated by Birds Australia as an internationally-recognised <i>Important Bird Area</i> (G. Dutton in prep.).</p> <p>Forty eight species recorded from this site are listed under international conventions or bilateral agreements protecting migratory animals.</p> <p>The Chestnut Rail is a range-restricted species which is reported to occur and breed in mangroves in this site (CSIRO 1976).</p> <p>Ten species of fish are reported from surveys of the lower reaches of the McArthur River (Bowman Bishaw Gorham 2006).</p> <p>Numerous roosts of Little Red Flying-fox <i>Pteropus scapulatus</i> occur in this site (CSIRO 1976).</p> <p>The ecological values of the Port McArthur area are recognised in other reports (NT Department of Lands and Housing 1991; Page and Reynolds 1997).</p> <p>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.).</p>
MANAGEMENT ISSUES		<p>Fire: In the period 1993-2004, 42% of the site was burnt in fewer than three years, and 27% was burnt in more than six years.</p> <p>Feral animals: No reports of feral animals in the site were found, but pigs are known from the area, in unknown numbers (NRETAS unpub. data).</p> <p>Weeds: One Weed of National Significance (<i>Parkinsonia aculeata</i>) and five Category B weeds (<i>Hyptis suaveolens</i>, <i>Sida acuta</i>, <i>Sida cordifolia</i>, <i>Sida rhombifolia</i>, <i>Tribulus terrestris</i>) are recorded from this site.</p> <p>Other: Recent developments associated with the McArthur River mine, including a barge loading facility, diversion of the river channel, and construction of tailings dams on the floodplain (URS 2006), may risk pollution and increased siltation in the river and adjacent areas.</p> <p>All coastal areas in northern Australia are at risk of degradation from sea-level rise resulting from climate change (Hyder Consulting 2007).</p> <p>Further research is needed to assess the threats to the site (G. Dutton in prep.).</p>
MANAGEMENT INFORMATION	NRM groups	li'Anthawirriyarrra Sea Rangers (Borroloola) (Northern Land Council 2006).
	Protected areas	The site is not included within the NT system of protected areas.
	Current management plans	<p>Site-specific plans: None known.</p> <p>National recovery plans for threatened species: Masked Owl (Woinarski 2004a); marine turtles (Environment Australia 2003).</p> <p>Other management plans: Australian Weeds Strategy (NRMCC 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 prep.).</p>
	Monitoring programs and research projects	<p>A number of monitoring programs have been proposed or developed within this site as part of expansion of the McArthur river mine including regular surveys of migratory shorebirds around the Bing Bong barge loading facility and monitoring of fish populations in tidal reaches of the river (URS 2006).</p> <p>Irregular surveys and collection of fishing nets along the coast by Indigenous rangers under the Carpentaria Ghost Net program http://www.ghostnets.com.au/index.html</p> <p>Irregular aerial surveys of Dugongs are conducted along transects over coastal waters in the western Gulf of Carpentaria (Saalfeld 2000), with most recent surveys in 2007.</p> <p>There are two Tier 1 rangeland monitoring points within this site (Karfs and Bastin 2001).</p> <p>Fire in the tropical savannas is mapped continuously under the North Australia Fire Information Project http://www.firenorth.org.au/nafi/app/init.jsp</p>

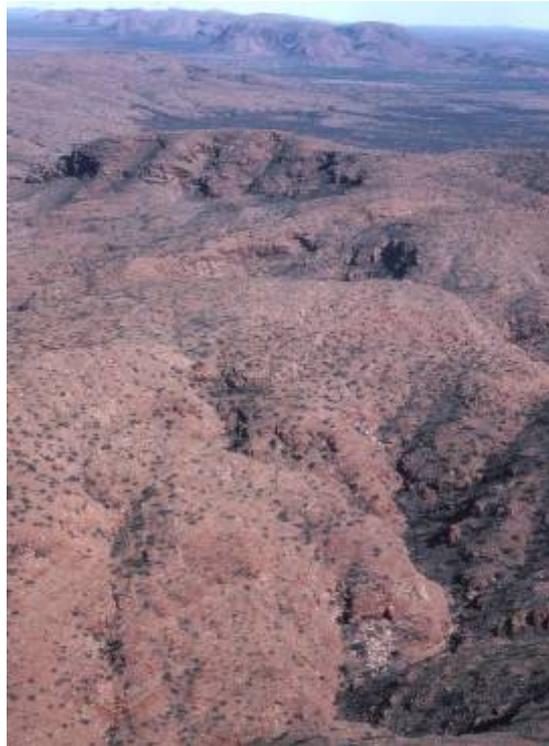
KEY REFERENCES	Management recommendations	<p>Finalise and implement the Dugong management plan in conjunction with stakeholders (NRETA 2005).</p> <p>Assist the Northern Land Council, landholders and the Indigenous community in developing capacity of Aboriginal community and community-based rangers in land and sea-based natural resource management activities (NRETA 2005).</p> <p>Provide financial and extension services to community-based ranger groups and landholders to undertake conservation management programs (NRETA 2005).</p> <p>Continue to develop appropriate conservation management programs under the conservation agreement with landholder for Managoora pastoral station, possibly expanding the area covered by the existing conservation agreement (NRETA 2005).</p>
	Papers and reports	<p>Chatto, R. (2003). <i>The distribution and status of shorebirds around the coast and coastal wetlands of the Northern Territory</i>. Technical Report 73, Parks and Wildlife Commission of the Northern Territory, Palmerston. 257pp.</p> <p>DIWA (A Directory of Important Wetlands in Australia). <i>Australian Wetlands Database</i>. Department of Environment, Water, Heritage & the Arts, Canberra ACT (accessed July 2008).</p>
	Contributors	Simon Ward, Biodiversity Conservation, NRETAS, Darwin



Saline flats in the McArthur River area (Photo: Ray Chatto)



Mt Leibig (Photo: Jeff Cole)



The Peterman Ranges (Photo: Jeff Cole)



Stoney deserts of the Rodinga Range (Photo: Jeff Cole)