

Chambers Bay

Location and Description

Chambers Bay is a 90 km stretch of coastline situated in the Van Diemen Gulf, about 80 km north-east of Darwin. The Bay is dominated by tidal flats and lies at the lower end of the extensive Adelaide and Mary River coastal floodplains. Neither the Adelaide nor Mary Rivers empty into the sea at Chambers Bay but numerous small mangrove-lined tidal channels occur along it. The Site also supports large patches of mangroves and grassy sand dunes.

Tenure and Land Use

Approximately half of the Chambers Bay Site is freehold land, including Aboriginal freehold land. Remaining portions are pastoral leasehold land encompassing one pastoral property (Woolner), and Crown lease. The main land use within the Site is pastoral operations, and other uses include conservation, Indigenous, recreation, tourism, horticulture, commercial fisheries and aquaculture. Almost 70% of this Site is managed as conservation reserves.

Significance Rating

International Significance

Ecological Values

The coastal flats of Chambers Bay support large concentrations of migratory shorebirds, with more than 20 000 shorebirds regularly reported during their non-breeding season. Counts of at least eight shorebird species are known to exceed globally and regionally (East Asian – Australasian Flyway) significant population thresholds, including Eastern Curlew, Sharp-tailed Sandpiper, Black-tailed Godwit, Common Greenshank, Grey Plover, Marsh Sandpiper, Terek Sandpiper and Whimbrel.

Management Issues

Feral Water Buffalo have overgrazed and trampled the Site in the past, causing saltwater intrusions, but their numbers have been substantially reduced in recent decades. Pig occur in unknown numbers, and several weeds have been recorded at the Site. Rises in sea level associated with climate change are likely to cause further saltwater inundation on coastal habitats in the future.

Condition

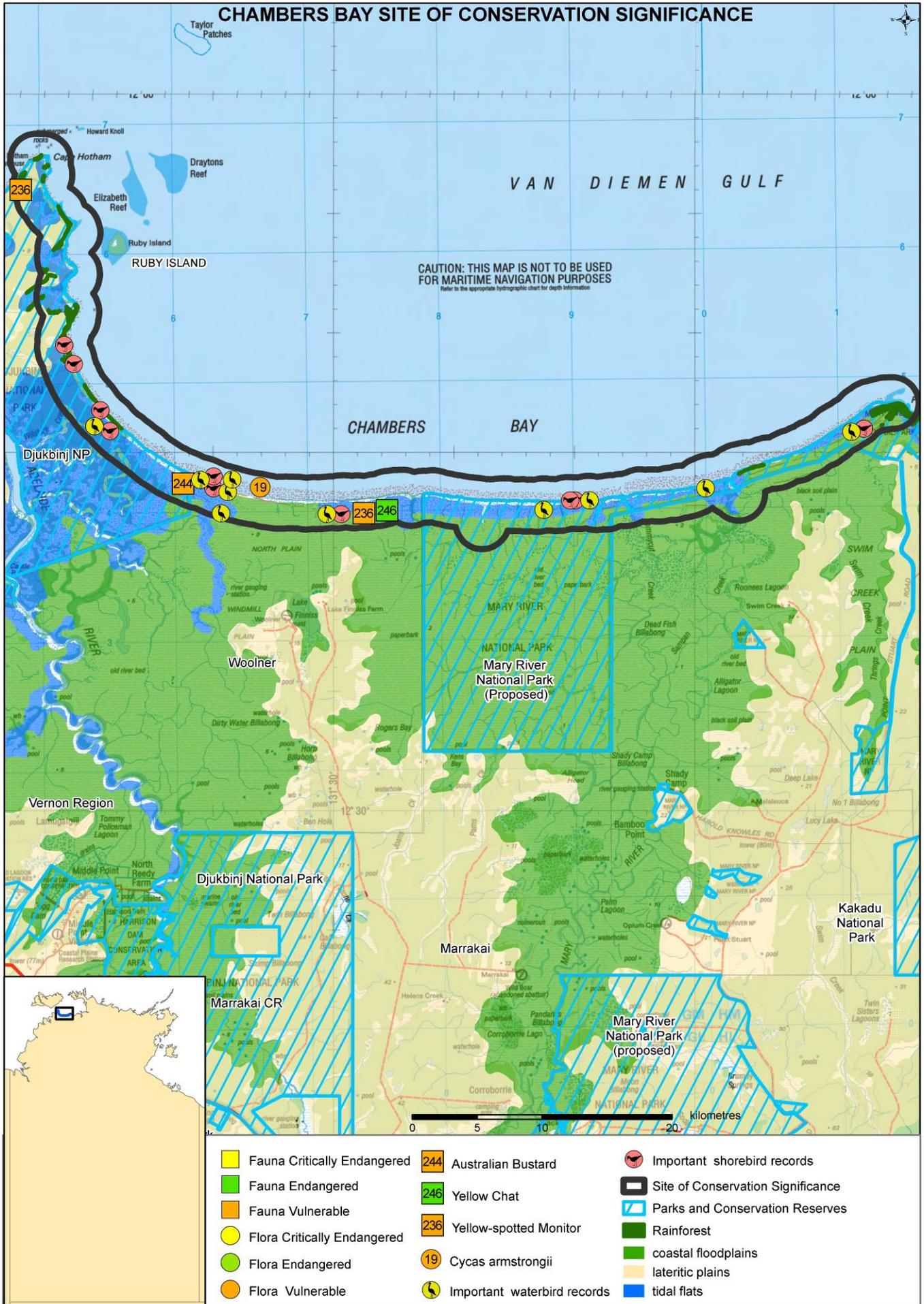
Parts of the Site are degraded due to historical overgrazing and trampling by feral buffalo and saltwater intrusion.



Current Conservation Initiatives

Since 1987, a major saltwater control programme has been implemented in the lower Mary River floodplain area and coastal fringe. Numerous earthen barriers have been constructed to minimize tidal flow and saltwater intrusion.

CHAMBERS BAY - SITE OF CONSERVATION SIGNIFICANCE



CHAMBERS BAY - SITE OF CONSERVATION SIGNIFICANCE

LOCATION	SOCS Number	14 (NT Parks and Conservation Masterplan Map Numbers 10 & 11)
	Latitude/Longitude	12° 17' South, 131° 35' East (at centre)
	Bioregion	Darwin Coastal
	Description	This site extends from Cape Hotham in the west to Point Stuart in the east. It encompasses a terrestrial area of 206 km ² and is dominated by tidal flats (89 km ²). The extensive Adelaide and Mary River coastal floodplains that lie adjacent to this site are also recognised as sites of high conservation significance in the NT.
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)	Six threatened species are reported from this site. Plants <ul style="list-style-type: none"> ▪ <i>Cycas armstrongii</i> (-/VU) Vertebrates <ul style="list-style-type: none"> ▪ Australian Bustard <i>Ardeotis australis</i> (-/VU) ▪ Yellow Chat (Alligator River subspecies) <i>Epthianura crocea tunneyi</i> (VU/EN) ▪ Blue Whale <i>Balaenoptera musculus</i> (EN/-) ▪ Yellow-spotted Monitor <i>Varanus panoptes</i> (-/VU) ▪ Flatback Turtle <i>Natator depressus</i> (VU/DD) Both the Speartooth Shark <i>Glyphis</i> sp. A (CR/VU) and Northern River Shark <i>Glyphis</i> sp. C (EN/EN) are present in the Adelaide River and are likely to also use the coastal waters of Chambers Bay. There is one record of a Blue Whale in Chambers Bay, but the area is not considered of special importance to the species.
ENDEMIC SPECIES	Significance Rating	Not Significant
	Notes	Endemic to the NT: Four plant and two vertebrate species recorded in the site are NT endemics. Other: One plant species is only known from the Darwin Coastal bioregion in the NT but is also found in other states.
WILDLIFE AGGREGATIONS	Significance Rating	International Significance
	Marine turtles	The majority of the mainland coast within Van Diemen Gulf, including Chambers Bay, has few sandy beaches or other habitat suitable for marine turtle nesting (Chatto and Baker 2008).
	Seabirds	No seabird breeding colonies are known from Chambers Bay or Van Diemen Gulf (Chatto 2001).
	Waterbirds	The adjacent Adelaide and Mary River coastal floodplains provide habitat for low thousands of waterbirds (mainly ducks) (Chatto 2006). The saline habitats of the Chambers Bay site are of less importance to waterbirds.
	Shorebirds	Total numbers of shorebirds: The tidal mudflats of Chambers Bay support large numbers of shorebirds during their non-breeding season. The highest total count for the site is 22 000 shorebirds in 1993, with numbers dominated by Black-winged Stilts, Black-tailed Godwits and a mix of sandpiper species (Chatto 2000b). Counts of individual species: Maximum counts of species that are internationally significant (> 1% East Asian-Australasian Flyway population; Bamford <i>et al.</i> 2008) include: 1960 Black-tailed Godwit; 1050 Far Eastern Curlew; 1200 Marsh Sandpiper (Chatto 2000b); 2500 Sharp-tailed Sandpiper; 1650 Grey Plover; 1500 Whimbrel; 1525 Terek Sandpiper; 875 Common Greenshank (Chatto 2003). Chatto (2003; R. Chatto, NRETAS, unpubl.) notes 31 important shorebird records for this site, including the significant counts identified above and other counts that are regionally important.
	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 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 is included in the Directory of Important Wetlands in Australia as part of the two neighboring floodplain sites (DIWA: ID NT020 Adelaide River floodplain system and NT026 Mary River Floodplain System).
	Notes	The importance of the extensive tidal mudflats to migratory shorebirds comprise the site's major wetland values.
	Rivers	Tommycut and Sampan Creeks drain the Mary River floodplain and traverse the Chambers Bay site. Both are tidal and mangrove-lined. They are separated from the floodplains by a series of parallel narrow sandy chenier ridges (a legacy of the receding shoreline over the last 6,000 years) and are the only examples of their type in the NT.

CHAMBERS BAY - SITE OF CONSERVATION SIGNIFICANCE

FLORA	Significance Rating	Regional Significance
	Notes	Rainforest: Chambers Bay includes 340 ha of dry rainforest thicket which occurs as small patches (<10 ha) on each end of the bay around Cape Hotham and Point Stuart. One patch is >100 ha (Russell-Smith 1991).
OTHER ENVIRONMENTAL VALUES		Chambers Bay is identified as an internationally important site for migratory shorebirds in the East Asian-Australasian Flyway (Bamford <i>et al.</i> 2008). Chambers Bay and the Adelaide and Mary River floodplains are proposed to be nominated by Birds Australia as an internationally-recognised <i>Important Bird Area</i> (G. Dutton in prep.). Two sites in Chambers Bay are included on the Register of the National Estate for their natural values including the Cape Hotham Forest Reserve and Point Stuart Area (Australian Heritage Council). This site supports high densities of coastal raptors (Brahminy Kite, Osprey, White-bellied Sea Eagle) (Chatto 2000b). 41 species recorded from this site are listed under international conventions or bilateral agreements protecting migratory animals. 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.).
		Fire: In the period 1993-2004, 99% of the site was burnt in fewer than three years, and none was burnt in more than six years. Feral animals: Historical overgrazing of the coastal fringe (especially the chenier ridges and channels) primarily by feral buffalo has contributed to degradation of the area, changed water flow, and saltwater intrusion (Armstrong <i>et al.</i> 2002). Buffalo numbers have been considerably reduced in the last two to three decades. Pigs also occur in the area. Weeds: Three declared Category B weeds (<i>Senna obtusifolia</i> , <i>Sida acuta</i> , <i>Stachytarpheta cayennensis</i>) and two other undeclared but problematic environmental weeds (high priority weeds: Smith 2001) (<i>Calopogonium mucunoides</i> , <i>Urochloa mutica</i>) are recorded from this site. Other: Saltwater intrusion has substantially modified and degraded a considerable area (240 km ²) of the lower Mary coastal floodplain (Woinarski 2002). Future rises in sea-level associated with global warming are likely to exacerbate the present situation.
MANAGEMENT ISSUES		Fire: In the period 1993-2004, 99% of the site was burnt in fewer than three years, and none was burnt in more than six years. Feral animals: Historical overgrazing of the coastal fringe (especially the chenier ridges and channels) primarily by feral buffalo has contributed to degradation of the area, changed water flow, and saltwater intrusion (Armstrong <i>et al.</i> 2002). Buffalo numbers have been considerably reduced in the last two to three decades. Pigs also occur in the area. Weeds: Three declared Category B weeds (<i>Senna obtusifolia</i> , <i>Sida acuta</i> , <i>Stachytarpheta cayennensis</i>) and two other undeclared but problematic environmental weeds (high priority weeds: Smith 2001) (<i>Calopogonium mucunoides</i> , <i>Urochloa mutica</i>) are recorded from this site. Other: Saltwater intrusion has substantially modified and degraded a considerable area (240 km ²) of the lower Mary coastal floodplain (Woinarski 2002). Future rises in sea-level associated with global warming are likely to exacerbate the present situation.
		Fire: In the period 1993-2004, 99% of the site was burnt in fewer than three years, and none was burnt in more than six years. Feral animals: Historical overgrazing of the coastal fringe (especially the chenier ridges and channels) primarily by feral buffalo has contributed to degradation of the area, changed water flow, and saltwater intrusion (Armstrong <i>et al.</i> 2002). Buffalo numbers have been considerably reduced in the last two to three decades. Pigs also occur in the area. Weeds: Three declared Category B weeds (<i>Senna obtusifolia</i> , <i>Sida acuta</i> , <i>Stachytarpheta cayennensis</i>) and two other undeclared but problematic environmental weeds (high priority weeds: Smith 2001) (<i>Calopogonium mucunoides</i> , <i>Urochloa mutica</i>) are recorded from this site. Other: Saltwater intrusion has substantially modified and degraded a considerable area (240 km ²) of the lower Mary coastal floodplain (Woinarski 2002). Future rises in sea-level associated with global warming are likely to exacerbate the present situation.
MANAGEMENT INFORMATION	NRM groups	Mary River Landcare Group.
	Protected areas	Djukbinj National Park (71 km ² / 34% of site), Mary River National Park (Proposed) (67 km ² / 33% of site).
	Current management plans	Site-specific plans: A Plan for the Conservation of Biodiversity in the Mary River Catchment, Northern Territory (Armstrong <i>et al.</i> 2002); Djukbinj National Park Draft Plan of Management (PWCNT 2000); Revised Integrated Catchment Management Plan Mary River (NTG 2001). National 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).
	Monitoring programs and research projects	Fire in the tropical savannas is mapped continuously under the North Australia Fire Information Project http://www.firenorth.org.au/nafi/app/init.jsp
	Management recommendations	Provide continuing NT government financial and technical support for the integrated catchment management process under the Mary River Integrated Catchment Management Plan (NRETA 2005). Declare the Mary River National Park and establish the joint management arrangements in accordance with the Parks and Reserves (Framework for the Future) Act. (NRETA 2005).
KEY REFERENCES	Papers & reports	Armstrong, M., Woinarski, J., Hempel, C., Connors, G., & Beggs, K. (2002). <i>A Plan for the Conservation of Biodiversity in the Mary River Catchment, Northern Territory</i> . Parks and Wildlife Commission of the Northern Territory: Darwin. Chatto, R. (2000b). <i>A management strategy and protected areas system for coastal wildlife</i> . (Documentation of selected sites in the Northern Territory of Australia that would qualify for nomination under the East Asian-Australasian shorebird site network). Parks and Wildlife Commission of the Northern Territory, Darwin.
	Contributors	