Croker Island group

Location and Description

Croker Island is a relatively large island (310 km²), located off the north coast of west Arnhem Land, about 260 km north-east of Darwin. The Croker Island groups included at least eight small islands that lie 30-50 km to the east of Croker Island, including Grant, Lawson, McClure, Oxley, and New Year islands. The small islands are mostly sand and coral, and each is less than about 20 km², and surrounded by clear blue seas. Croker Island is dominated by eucalypt woodland, but also support a mix of other habitats, including coastal dunes, seasonal floodplain, tidal flats and a significant area of monsoon vine thicket.

Tenure and Land Use

The islands of the Croker Group are Aboriginal freehold land, held by the Arnhem Land Aboriginal Land Trust. The land mainly supports Indigenous use, but waters surrounding the islands are also used by commercial fisheries. The islands are sparsely populated, and the largest community is Minjilang (population 200) on Croker Island. Smaller islands are mostly only inhabited temporarily.

Significance Rating

International Significance

Ecological Values

Many of the islands in the east of the Croker Island group support large breeding populations of three species of marine turtles (Olive Ridley, Green and Flatback Turtles). The small islands also support numerous colonies of breeding seabirds, some colonies supporting a number of Tern species. Many patches of monsoon rainforest are found on Croker Island, including one very large patch which is about 1400 ha in size. The islands offer important refuge from threatening processes that affect the mainland, and eight threatened species are reported from the Site.

Management Issues

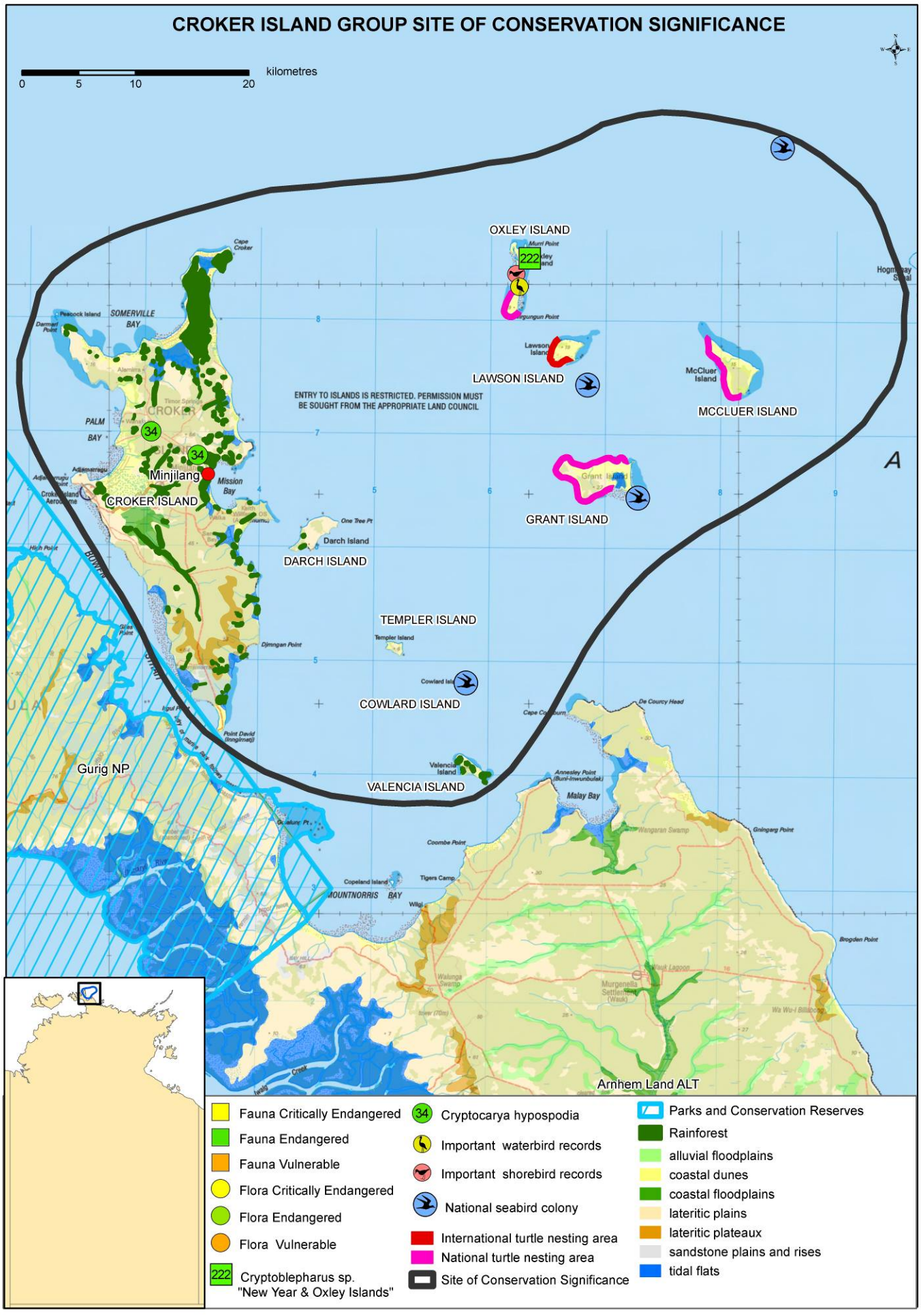
Large feral pig, horse and cattle populations are affecting floodplain and rainforest environments on Croker Island and are a major management concern. Numerous weeds are present on Croker Island, and inundation of low-lying islands and habitats will be of increasing concern with predicted rising sea levels associated with climate change. The lack of comprehensive information on the biodiversity of Croker Island and associated islands may also restrict effective conservation planning and management.

Condition

The remote islands are in near-pristine condition, although introduced plants and animals are degrading floodplain and wetland habitats.

Current Conservation Initiatives

The Indigenous ranger group on Croker Island is not currently operating, but in past years it was active managing weeds and feral pig and horse populations, and removing marine debris from beaches. The Traditional Owners of Croker Island are currently considering the options for a land and sea reserve.


CROKER ISLAND GROUP SITE OF CONSERVATION SIGNIFICANCE
kilometres
0
5
10
20
OXLEY ISLAND
222
LAWSON ISLAND
MCCLUER ISLAND
ENTRY TO ISLANDS IS RESTRICTED. PERMISSION MUST BE SOUGHT FROM THE APPROPRIATE LAND COUNCIL
GRANT ISLAND
DARCH ISLAND
TEMPLER ISLAND
COWLARD ISLAND
VALENCIA ISLAND
CROKER ISLAND
Minjilang
34
Gurig NP
Arnhem Land ALT
Fauna Critically Endangered
Fauna Endangered
Fauna Vulnerable
Flora Critically Endangered
Flora Endangered
Flora Vulnerable
222 Cryptoblepharus sp. "New Year & Oxley Islands"
34 Cryptocarya hypospodia
Important waterbird records
Important shorebird records
National seabird colony
International turtle nesting area
National turtle nesting area
Site of Conservation Significance
Parks and Conservation Reserves
Rainforest
alluvial floodplains
coastal dunes
coastal floodplains
lateritic plains
lateritic plateaux
sandstone plains and rises
tidal flats

LOCATION	**SOCS Number**	11 (NT Parks and Conservation Masterplan Map Number 1)
	Latitude/Longitude	11º 7´ South, 132º 46´ East (at centre)
	Bioregion	Tiwi – Cobourg (92%), Arnhem Coast (8%)
	Description	This site includes Croker Island and at least eight small islands to the east of it (up to 50 km away) including Grant, Lawson, McClure, Oxley and New Year islands. It encompasses a terrestrial area of about 365 km². Cobourg Peninsula, to the west of Croker Island, is also recognised as a site of high conservation significance in the NT.
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)	Eight threatened species are reported from this site. **Plants** ▪ *Cryptocarya hypospodia* (-/EN) **Vertebrates** ▪ Australian Bustard *Ardeotis australis* (-/VU) ▪ Arafura Snake-eyed Skink *Cryptoblepharus gurrmul* (-/EN) ▪ Flatback Turtle *Natator depressus* (VU/DD) ▪ Green Turtle *Chelonia mydas* (VU/LC) ▪ Hawksbill Turtle *Eretmochelys imbricata* (VU/DD) ▪ Leatherback Turtle *Dermochelys coriacea* (VU/VU) ▪ Olive Ridley Turtle *Lepidochelys olivacea* (EN/DD) The small skink *Cryptoblepharus gurrmul* is locally common amongst rocks, coral rubble and beach sands in coastal areas on New Year and Oxley islands (Woinarski *et al.* 2007).
ENDEMIC SPECIES	**Significance Rating**	**Not Significant**
	Notes	**Endemic to the bioregion:** One plant species recorded in the site is only known from the Tiwi-Cobourg bioregion (*Spermacoce protrusa*). The skink *Cryptoblepharus gurrmul* is an NT endemic and is only known from North Goulburn, New Year and Oxley islands. **Endemic to the NT:** 13 plant and three vertebrate species recorded in the site are endemic to the NT. **Other:** Two plant species recorded in the site are restricted to the Tiwi-Cobourg bioregion in the NT, but also occur in other states.
WILDLIFE AGGREGATIONS	**Significance Rating**	**International Significance**
	Marine turtles	The small islands to the east of Croker Island support significant numbers of nesting Flatback, Green and Olive Ridley Turtles. Of all the islands in this group, Lawson Island supports the densest nesting with high counts of these three species. Hawksbill Turtles have also been confirmed nesting on other islands within the site (Chatto and Baker 2008). Here we consider the site of international significance to marine turtles.
	Seabirds	Seven seabird breeding colonies are reported on islands within this site, including four (S011, S110, S111, S112) considered to be of national significance for high numbers of Black-naped and Bridled Terns and other tern species (Chatto 2001).
	Waterbirds	Large numbers of waterbirds are not known from this site, but Chatto (2006) notes two important waterbird records that are regionally important.
	Shorebirds	This site comprises limited shorebird habitat but counts of Ruddy Turnstone and Sand Plover species are of regional importance (R. Chatto, NRETAS unpubl.).
	Other aggregations	None known
WETLANDS	**Significance Rating**	**Regional Significance**
	Ramsar criteria met	Not assessed
	DIWA criteria met	Swamp habitat identified in a vegetation map of Croker Island (Woinarski and Baker 2002) is included in the Directory of Important Wetlands in Australia as part of the Cobourg Peninsula site listed in DIWA (DIWA: ID NT023).
	Notes	Large areas of mangroves and tidal flats occur in the site, as well as the swamp on Croker Island indicated above.
	Rivers	There are few large watercourses on Croker or the associated islands.
FLORA	**Significance Rating**	**Regional Significance**
	Notes	**Rainforest:** More than 100 patches of monsoon rainforest are scattered across Croker Island, comprising 3400 ha or 1% of the NT rainforest estate. Most patches are <100 ha but one large patch (1400 ha) occurs on the northern tip of the island (Russell-Smith 1991).

OTHER ENVIRONMENTAL VALUES		Islands within this site have refugial value because they offer some protection to plants and animals from threatening processes affecting populations on the mainland (Woinarski and Baker 2002). Three places within this site are listed on the Register of the National Estate for their natural values including: Jumbo Jungle, Baniwurrldak Jungle, and part of the Cobourg Peninsula (Gurig) National Park and Cobourg Marine Park (Australian Heritage Council). 44 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.).
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:** Croker Island has very high densities of cattle and feral pig, and an estimated 2000 feral horses (B. Panton pers. comm. In Woinarski and Baker 2002). Firth & Panton (2006) also recorded feral cat and Sambar Deer and noted that buffalo occasionally swim to the island, though have never established a population there. Pigs are likely to be causing extensive damage to the floodplain and rainforest habitats (Woinarski and Baker 2002). **Weeds:** Eight declared Category B weeds (*Cenchrus echinatus, Hyptis suaveolens, Senna occidentalis, Sida acuta, Sida cordifolia, Stachytarpheta cayennensis, Stachytarpheta jamaicensis,* and *Tribulus cistoides) and* two undeclared but problematic environmental weeds (high priority Weeds: Smith 2001) (*Calopogonium mucunoides, Clitoria ternatea)* are recorded from this site. There are also relatively small infestations of para grass *Urochloa mutica* and mimosa *Mimosa pigra* (Weed of National Significance) on the floodplain on Croker Island (Woinarski and Baker 2002) and lion's tail *Leonotis nepetifolia* and mission grass *Pennisetum polystachion* occur near settlements (Smith 2001). **Other:** There is little recorded information on the biodiversity of Croker and adjacent islands, and this represents a significant constraint for future planning and management of biodiversity (Woinarski and Baker 2002, but see Firth and Panton 2006). All coastal areas in northern Australia are at risk of degradation from sea-level rise resulting from climate change (Hyder Consulting 2007) and the small and low-lying islands within this site are particularly vulnerable. There is also a quarantine risk when these remote islands are visited by illegal fishing boats. Croker and the neighboring islands are also vulnerable to severe damage from cyclones (K. Brennan, NRETAS, pers. comm.).
MANAGEMENT INFORMATION	**NRM groups**	Garngi Rangers, Minjilang (Croker Island) (Northern Land Council 2006).
	Protected areas	These islands are not within the reserve system of the NT.
	Current management plans	**Site-specific plans:** No information located. **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); Threat Abatement Plan for Predation by Feral Cats (Biodiversity Group Environment Australia, 1999); FIREPLAN: Fire management for the savanna community (Russell-Smith *et al.* in prep.).
	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	In conjunction with the Northern Land Council and the Fisheries Group (PIFM), support landholders and community based ranger groups to assess the conservation and cultural values, and develop and implement appropriate natural resource management programs (NRETA 2005). Support capacity development of community-based rangers engaged in conservation management including support to increase the number of community based rangers where required (Woinarski and Baker 2002; NRETA 2005). Conduct a biodiversity inventory of Croker Island (Woinarski and Baker 2002). Additional conservation management actions and priorities are summarized in Woinarski and Baker (2002; Table 8 p.47).
KEY REFERENCES	**Papers and reports**	Firth, R.S.C. and Panton, W.J. (2006) The mammals of Croker Island, Northern Territory, Australia. *Australian Mammalogy* 28(1), 121-123. Woinarski, J. and Baker, B. (2002). *Biodiversity Audit - bioregional case study: Tiwi-Cobourg bioregion, Northern Territory*. In J. Woinarski (ed.) Biodiversity Audit - bioregional summaries. A report to the National Land & Water Audit. Parks and Wildlife Commission of the Northern Territory, Darwin.
	Contributors	Bryan Baker, Senior Policy Unit, NRETAS, Darwin