

Groote Eylandt group

Location and Description

Groote Eylandt, which is located off eastern Arnhem Land in the Gulf of Carpentaria, is the third largest island in Australia, and the associated archipelago includes over 40 smaller islands. Groote Eylandt is characterised by extensive lateritic plains, rugged sandstone plateaux and hills in the central and southern parts of the island, and large dunefields and sand plains in coastal areas. Savanna woodland dominated by Darwin stringybark and woollybutt cover much of Groote Eylandt, but there is a diversity of habitats including sandstone heathlands, dune shrublands, monsoon vine forests, riparian woodlands and paperbark swamps. The smaller islands and islets are mostly low sand and coral islands, rugged sandstone or granite outcrops.

Tenure and Land Use

Groote Eylandt and the numerous associated smaller islands are Aboriginal freehold land (part of the Arnhem Land Aboriginal Land Trust lands). In addition to Indigenous land uses, mining, tourism and recreational and commercial fishing occur in the Site. The whole Site is within the Anindilyakwa Indigenous Protected Area.

Significance Rating

International Significance

Ecological Values

Groote Eylandt and its satellite islands have outstanding conservation values, including internationally and nationally significant sites for nesting marine turtles and colonial seabirds. The islands support the densest areas of marine turtle nesting in the Northern Territory, and are especially significant for Green and Hawksbill Turtles. One islet supports more than 1% of the world's Roseate Terns. Approximately 900 plant species and 330 vertebrate species are recorded from the Site, including twelve threatened species (amongst them the Northern Hopping-mouse, Brush-tailed Rabbit-rat and Northern Quoll). Many of the threatening processes operating on the Northern Territory mainland are absent from, or at low levels in, the Groote archipelago, offering a rare opportunity to maintain a virtually intact biota in this Site.

Management Issues

Seven feral animal species (Rusa Deer, Asian House Gecko, Eurasian Tree Sparrow, House Mouse, Black Rat, cat, and dog) are recorded from Groote Eylandt, although feral cattle, horse, donkey, Water Buffalo and pig are absent, and the islands are currently free of Cane Toads. Preventing the establishment and spread of these pests, as well as possibly removing cats from Groote Eylandt, is



Google Earth imagery

important to maintain the value of the Site as a refuge. Similarly, minimising the spread of significant weeds and maintaining beneficial fire regimes are important management priorities.

Condition

Outside of the mining leases, environmental pressures on Groote Eylandt and the associated islands appear to be generally more subdued than for most of mainland Northern Territory, with relatively low richness and density of feral animals, a restricted distribution of weeds and apparently relatively benign fire regimes.

Current Conservation Initiatives

The islands within this Site are part of the Anindilyakwa Indigenous Protected Area and are managed through a management plan developed in 2006. Indigenous rangers based at Alyangula, Umbakumba and Angurugu undertake a range of management activities including survey and removal of marine debris, protection of turtle nesting areas, collaborative biodiversity surveys with scientific staff from NRETAS, spraying weeds, Cane Toad awareness, and trapping feral cats. Rehabilitation of areas affected by mining operations is guided by the mine's rehabilitation program.

GROOTE EYLANDT GROUP - SITE OF CONSERVATION SIGNIFICANCE

LOCATION	SOCS Number	26 (NT Parks and Conservation Masterplan Map Number 30)
	Latitude/Longitude	13° 59' South, 136° 41' East (at centre)
	Bioregion	Arnhem Coast
	Description	This site is off the southeastern coast of Arnhem Land in the Gulf of Carpentaria, approximately 650 km from Darwin. It includes Groote Eylandt and numerous small named and unnamed islands scattered around it. The total terrestrial area of the site is 2378 km ² . Some islands generally considered to be part of the Groote Eylandt Group (notably Bickerton I.) are not included within the boundaries of this site of conservation significance.
THREATENED SPECIES	Significance Rating	International significance
	Threatened plants and animals <small>(Listings at National/NT level CR - Critically Endangered, EN - Endangered, VU - Vulnerable, NT - Near Threatened, LC - Least Concern, DD - Data Deficient)</small>	<p>12 threatened species are reported from this site.</p> <p>Plants</p> <ul style="list-style-type: none"> ▪ Australian arenga palm <i>Arenga australasica</i> (VU/DD) ▪ <i>Hernandia nymphaeifolia</i> (-/VU) <p>Both species occur in monsoon rainforest on Groote Eylandt, as well as a small number of scattered localities elsewhere in the NT.</p> <p>Vertebrates</p> <ul style="list-style-type: none"> ▪ Australian Bustard <i>Ardeotis australis</i> (-/VU) ▪ Brush-tailed Rabbit-rat <i>Conilurus penicillatus</i> (-/VU) ▪ Northern Hopping-mouse <i>Notomys aquilo</i> (VU/VU) ▪ Northern Quoll <i>Dasyurus hallucatus</i> (EN/CR) ▪ Merten's Water Monitor <i>Varanus mertensi</i> (-/VU) ▪ Yellow-spotted Monitor <i>Varanus panoptes</i> (-/VU) ▪ Flatback Turtle <i>Natator depressus</i> (VU/DD) ▪ Green Turtle <i>Chelonia mydas</i> (VU/LC) ▪ Hawksbill Turtle <i>Eretmochelys imbricata</i> (VU/DD) ▪ Olive Ridley Turtle <i>Lepidochelys olivacea</i> (EN/DD) <p>The Australian Bustard is known from only a single old record from one of the islands in the site, and may no longer occur there. The Brush-tailed Rabbit-rat has undergone substantial declines on mainland NT but persists on a number of NT islands; the species' abundance on Groote Eylandt is uncertain. Groote Eylandt has the largest and best-known population of Northern Hopping-mouse, which occupies both acacia-dunefield communities and sandy eucalypt woodland areas (S. Ward, NRETAS, pers. comm.).</p> <p>The Northern Quoll has been severely impacted by cane toads in mainland NT, but remains abundant on Groote Eylandt and also occurs on some of the smaller islands in the archipelago. The two monitor species are also susceptible to Cane Toad impacts, but Cane Toads are currently absent from this site. The Groote archipelago is extremely significant for marine turtles (see below).</p>
ENDEMIC SPECIES	Significance Rating	Not Significant
	Notes	<p>Endemic to the bioregion: The blind snake <i>Rhamphotyphlops minimus</i> is recorded from the site and is endemic to the Arnhem Coast bioregion.</p> <p>Endemic to the NT: Five vertebrate and 42 plant species recorded from the site are endemic to the NT.</p> <p>Other: Eight plant species recorded in this site are only known from the Arnhem Coast bioregion within the NT, but are also found in other states. Two vagrant bird species (Short-tailed Shearwater, Spectacled Monarch) have, as yet, been recorded in the NT only from Groote Eylandt.</p>
WILDLIFE AGGREGATIONS	Significance Rating	International Significance
	Marine turtles	<p>Parts of the coastline of Groote Eylandt and many of the small islands off the north and south of the Eylandt, support the densest areas of marine turtle nesting in the NT. Four species are confirmed nesting here, but the site is especially significant for Green and Hawksbill Turtle, with lower numbers of Olive Ridley and Flatback Turtle (Chatto and Baker 2008).</p> <p>The most significant nesting areas include Hawk Island and North East Isles to the north-east of Groote Eylandt, where nesting is dominated by Hawksbill Turtle; and the south-east and southern coast of Groote Eylandt, where nesting is mostly dominated by Green Turtle (Chatto and Baker 2008). Here we consider the site of International significance to marine turtles.</p>
	Seabirds	17 seabird breeding colonies are confirmed within this site, including one colony on a small unnamed islet off the north-east tip of Groote Eylandt, which supports internationally significant numbers (>1% global population; Dutson in prep.) of Roseate Terns (5000+) (Chatto 2001; S048). Numerous other colonies occur on islets and small islands within the site, including eight colonies considered of national significance (Chatto 2001).
	Waterbirds	Groote Eylandt has limited wetland habitat and relatively low numbers of waterbirds. Chatto (2006) notes three waterbird records from the site that are regionally important.
	Shorebirds	There are few extensive intertidal areas in this site and relatively low numbers of shorebirds (Chatto 2003).
	Other aggregations	None known

GROOTE EYLANDT GROUP - SITE OF CONSERVATION SIGNIFICANCE

WETLANDS	Significance Rating	Not Significant
	Ramsar criteria met	Not assessed
	DIWA criteria met	Not assessed
	Notes	Although not systematically assessed, there is a series of dune lakes and freshwater swamps on Groote Eylandt. No international or nationally significant wetlands are reported from the site.
	Rivers	A number of permanent streams occur on Groote Eylandt including the Emerald and Angurugu Rivers.
FLORA	Significance Rating	National Significance
	Notes	Rainforest: Almost 9800 ha of mostly dry vine thickets occur on Groote Eylandt (4% of the NT rainforest estate) within the sandstone plateau and in coastal areas abutting dunefields and sandplains. Small patches of riparian and spring-fed rainforest also occur. The majority of the rainforest patches are small (<10 ha) but 17 patches are >100 ha (Russell-Smith 1991).
OTHER ENVIRONMENTAL VALUES		<p>Approximately 900 plant and 330 vertebrate species have been recorded from the Groote archipelago, reflecting the large size of Groote Eylandt and the diversity of habitats present. As with most islands, some plants and animal species that are common and widespread on mainland NT are absent from Groote Eylandt, despite the presence of suitable habitat.</p> <p>The importance of island groups as refugia for threatened and declining species and as areas that are insulated against many of the threatening processes present on the Australian mainland is well recognised, and the size, environmental diversity and low level of most threatening processes on Groote Eylandt makes it outstanding in this respect.</p> <p>Fifty seven species recorded from this site are listed under international conventions or bilateral agreements protecting migratory animals.</p> <p>The unnamed islet off north-east Groote Eylandt 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 Roseate Terns.</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: Recent fire histories derived from satellite imagery suggest there is a relatively low fire frequency over much of the Archipelago - in the period 1993-2004, 99% of the site was burnt in fewer than three years (ALC 2006c). The abundance of the fire-sensitive cypress pine <i>Callitris intratropica</i> throughout the eucalypt communities on Groote also suggests that fire frequency is relatively low and/or fires are generally not of high intensity (ALC 2006c).</p> <p>Feral animals: There are relatively few species of feral animals within the Groote Archipelago, and they are generally low abundances, compared to both the NT mainland and some other island groups. Cattle, horse, donkey, buffalo and pig are currently absent from the site and Cane Toads are still thought to be absent from all islands in the archipelago (ALC 2006c). There is a substantial population of Rusa Deer on North East Isles, and these have had a significant impact on the vegetation on this island. Six other exotic species are known from the site including the Asian House Gecko, Eurasian Tree Sparrow, House Mouse, Black Rat, feral cat, and domestic dog (ALC 2006c). Fisherman and recreational boaters could potentially spread some feral animals (such as House Gecko and Black Rat) to smaller islands in the archipelago.</p> <p>Weeds: Ten declared Category B weeds and seven undeclared but problematic environmental weeds (high priority weeds; Smith 2001) are recorded from this site, but these are mostly restricted to around settlements.</p> <p>Other: There is a large manganese mine near Angurugu in western Groote Eylandt, and strip-mining has acute, localised impacts (ALC 2006c). Planned expansion of the GEMCO mine will potentially impact the habitat of some threatened species.</p> <p>Tourism development in the site will potentially facilitate the spread of feral animals and weeds.</p> <p>Successful environmental management on Groote Eylandt is largely dependent on resources and capacity of the Anindilyakwa rangers.</p>
MANAGEMENT INFORMATION	NRM groups	Anindilyakwa Rangers (Alyangula, Umbakumba, Angurugu).
	Protected areas	Anindilyakwa Indigenous Protected Area (2312 km ² / 97% of site).
	Current management plans	<p>Site-specific plans: Anindilyakwa Indigenous Protected Area Groote Eylandt Archipelago Management Plan 2006 (Anindilyakwa Land Council 2006a); Anindilyakwa Indigenous Protected Area Groote Eylandt Archipelago Management Action Plan 2006 (Anindilyakwa Land Council 2006b).</p> <p>National recovery plans for threatened species: marine turtles (Environment Australia 2003); Northern Hopping Mouse (Woinarski 2004b); Northern Quoll (Hill and Ward in prep.).</p> <p>Other management plans: Australian Weeds Strategy (NRMMC 2007); Threat Abatement Plan for Predation by Feral Cats (Environment Australia, 1999); FIREPLAN: Fire management for the savanna community (Russell-Smith <i>et al.</i> in prep.).</p>

KEY REFERENCES	Monitoring programs and research projects	<p>Biological surveys were carried out on 14 smaller islands of the Groote archipelago in 2006 and habitat mapping and wildlife surveys on Groote Eylandt are ongoing (A. Fisher, NRETAS unpubl.).</p> <p>Comprehensive surveys of flora and fauna have been conducted in association with mining development on the western side of Groote Eylandt (G. Webb Pty Ltd 1992). Biological information is sparser for the eastern and, particularly, southeastern parts of Groote Eylandt.</p> <p>A protocol for survey and monitoring of hopping-mice has been developed, and a set of permanent quadrats has been established in two vegetation types that can be monitored to improve knowledge of the status of the Northern Hopping Mouse on Groote Eylandt (S. Ward, NRETAS, pers. comm.).</p> <p>Marine turtle populations are monitored by Indigenous rangers as part of the NAILSMA Dugong and Marine Turtle Management Program http://www.nailsma.org.au/projects/dugong_turtle.html</p> <p>Regular surveys of marine debris are conducted on selected beaches in the Groote Eylandt Archipelago by Indigenous rangers as part of the NT marine debris monitoring program (NRETA 2007) and 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>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>
	Management recommendations	<p>Continue to provide scientific expertise and assistance with the development of a natural resource inventory and management plan for the islands where requested (NRETA 2005).</p> <p>Continue to build awareness in local communities about cane toads and other pests and weeds through the Island Ark project (NRETA 2005).</p> <p>In conjunction with Anindilyakwa Land Council and traditional owners build land-based natural resource management capacity of community based ranger groups through provision of financial and other resources (NRETA 2005).</p> <p>Monitor the numbers of nesting seabirds in internationally significant colonies within the archipelago (G. Dutton in prep.).</p> <p>Complete a systematic survey of the conservation values of Groote Eylandt (Woinarski 2002).</p>
	Papers and reports	<p>Anindilyakwa Land Council (2006c). <i>Anindilyakwa Indigenous Protected Area Groote Eylandt Archipelago Technical Information Document 2006</i>.</p> <p>Chatto, R. and Baker, B. (2008). <i>The distribution and status of marine turtle nesting in the Northern Territory</i>. Technical Report 77. Parks and Wildlife Service, Northern Territory Department of Natural Resources, Environment & the Arts, Darwin.</p> <p>Chatto, R. (2001). <i>The distribution and status of colonial breeding seabirds in the Northern Territory</i>. Technical Report 70, Parks and Wildlife Commission of the Northern Territory, Darwin. 206pp.</p>
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Angarbulumardja Island, Groote Eylandt group (Photo: Kym Brennan)