

## Anson Bay and associated coastal floodplains

### Location and Description

Anson Bay and the associated coastal floodplains are located 130 km south-west of Darwin. This Site includes the Peron Islands, the tidal flats along the coastline of Anson Bay, and the three adjoining coastal floodplains associated with the Daly and Reynolds rivers and Docherty's Creek. The Daly-Reynolds floodplain system is one of the largest floodplains in the Northern Territory and has the largest catchment of any major freshwater floodplain system in the Northern Territory. The floodplains are subject to seasonal inundation and support mixed open habitat.

### Tenure and Land Use

Almost half of the Anson Bay Site is Aboriginal freehold land, which is held by a number of Aboriginal Land Trusts, the largest are being held by the Daly River/Port Keats Aboriginal Land Trust. Most of the remainder of the Site is pastoral leasehold land and includes six pastoral properties (Tipperary, Daly River, Elizabeth Downs, Litchfield, Labelle Downs, and Welltree). The main land uses within the Site are Indigenous and pastoral operations. Waters in the Bay support commercial and recreational fisheries.

### Significance Rating

International significance

### Ecological Values

The vast coastal floodplains of the Daly and Reynolds Rivers form one of the largest floodplains in the Northern Territory. They support numerous waterbird breeding colonies and internationally significant numbers of waterbirds, particularly Magpie Geese and Wandering Whistling-Ducks. The tidal mudflats adjacent to the Anson Bay coastline support substantial aggregations of migratory shorebirds; and sandy beaches on the Peron Islands and at Cape Ford provide important nesting sites for marine turtles. Ten threatened species are reported from this Site.

### Management Issues

Control of invasive species is the major management issue at the Site. Control of *Mimosa pigra*, as well as other pasture weeds, is an issue on the floodplains, and feral pigs are degrading some wetland areas. Development within the catchment and grazing pressure in the Site also require management. The area is popular for fishing and



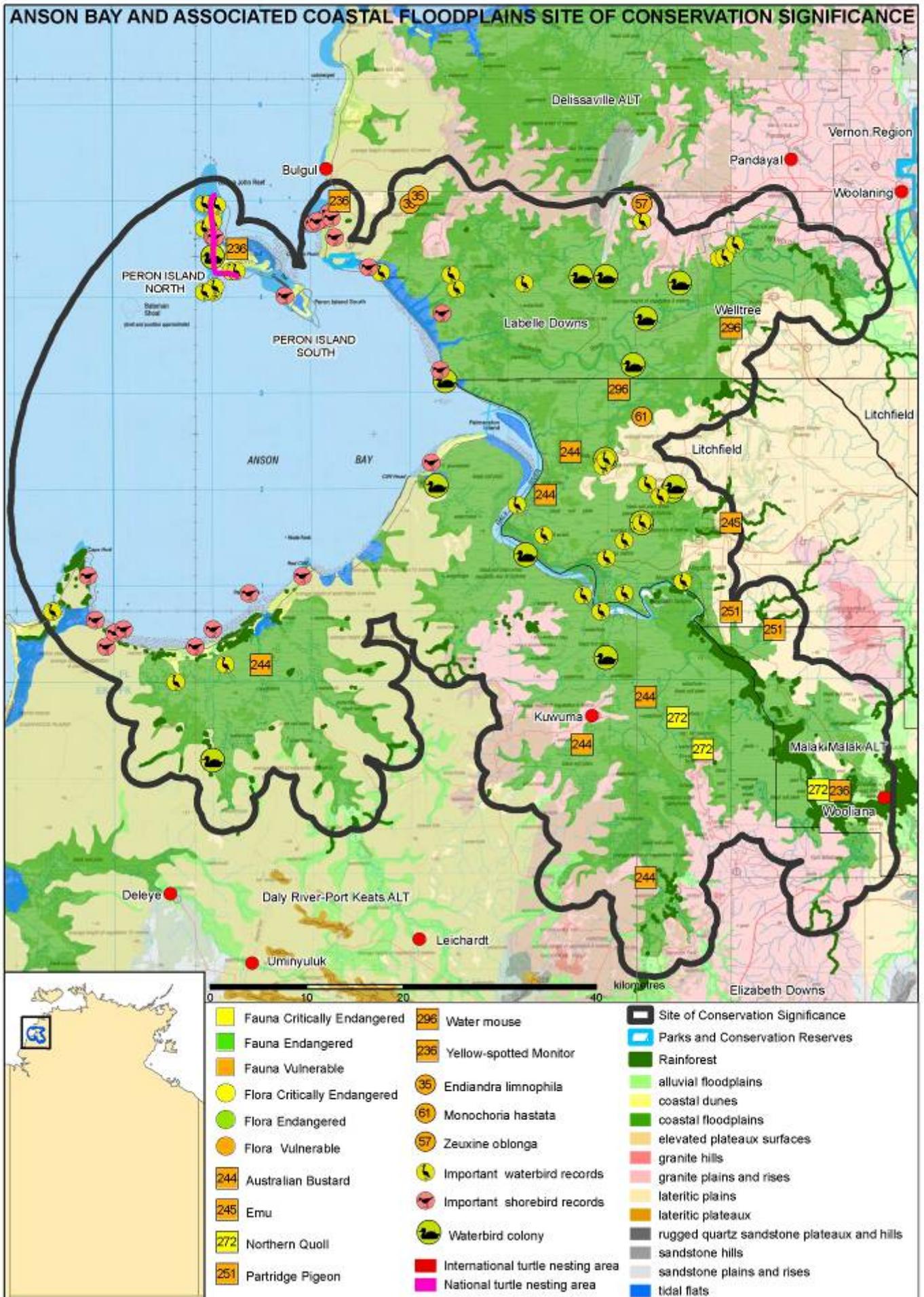
recreational access needs to be managed. Saltwater intrusion, associated with global climate change and sea-level rise, will be an issue in the future.

### Condition

Weeds and feral animals have degraded some of the wetland and rainforest areas of the Site, and cattle grazing on the floodplains have had some impacts.

### Current Conservation Initiatives

Indigenous ranger groups based at Wudikapildiyerr, Wooliana and Woodcupaldiya are managing infestations of *Mimosa pigra* and outbreaks of exotic ants within the Site. The Tipperary Group of Stations (owners of the Litchfield and Elizabeth Downs leases) have an extensive *Mimosa pigra* control program and has fenced off part of Glasswater Swamp to protect crocodile breeding habitat. The Wangamaty (Lower Daly) Landcare Group has received Natural Heritage Trust funding for weed management activities. A draft conservation plan for the Daly Basin bioregion was completed in 2003 and highlights conservation priorities and management actions. A catchment-wide conservation plan for the Daly River is currently being prepared.



LOCATION	<b>SOCS Number</b>	2 (NT Parks and Conservation Masterplan Map Number 17)
	<b>Latitude/Longitude</b>	13° 25' South, 130° 15' East (at centre)
	<b>Bioregion</b>	Darwin Coastal (88%), Victoria Bonaparte (12%)
	<b>Description</b>	<p>This site encompasses a number of coastal landscapes including the tidal flats along Anson Bay, the adjacent coastal floodplains, and the Peron Islands which lie near Channel Point in the north of the bay. The site covers a terrestrial area of 3480 km<sup>2</sup> and is dominated by the extensive seasonally inundated freshwater floodplains associated with the Daly and Reynolds Rivers and Docherty Creek (1991 km<sup>2</sup>). The coastline of the bay extends for 80 km from Channel Point in the north to Cape Ford in the south, and is fringed by tidal flats (59 km<sup>2</sup>), with some beaches, coastal dunes and cliffs.</p> <p>The site abuts the Finniss River coastal floodplain to the north, and the Daly River middle reaches. These are also recognised as sites of high conservation significance in the NT, as is the nearby Hyland Bay and associated floodplains site to the south.</p>
THREATENED SPECIES	<b>Significance Rating</b>	<b>National Significance</b>
	<b>Threatened plants and animals</b> (Listings at National/NT level <b>CR</b> - Critically Endangered, <b>EN</b> - Endangered, <b>VU</b> - Vulnerable, <b>NT</b> - Near Threatened, <b>LC</b> - Least Concern, <b>DD</b> - Data Deficient)	Ten threatened species are reported from this site. <b>Plants</b> <ul style="list-style-type: none"> <li>▪ <i>Endiandra limnophila</i> (-/VU)</li> <li>▪ <i>Monochoria hastate</i> (-/VU)</li> <li>▪ <i>Zeuxine oblonga</i> (-/VU)</li> </ul> <b>Vertebrates</b> <ul style="list-style-type: none"> <li>▪ Australian Bustard <i>Ardeotis australis</i> (-/VU)</li> <li>▪ Emu <i>Dromaius novaehollandiae</i> (-/VU)</li> <li>▪ Partridge Pigeon <i>Geophaps smithii</i> (VU/VU)</li> <li>▪ Northern Quoll <i>Dasyurus hallucatus</i> (EN/CR)</li> <li>▪ Water Mouse <i>Xeromys myoides</i> (VU/DD)</li> <li>▪ Yellow-spotted Monitor <i>Varanus panoptes</i> (-/VU)</li> <li>▪ Flatback Turtle <i>Natator depressus</i> (VU/DD)</li> </ul>
ENDEMIC SPECIES	<b>Significance Rating</b>	<b>Not Significant</b>
	<b>Notes</b>	<p><b>Endemic to the bioregion:</b> One plant species recorded in the site is an NT endemic only found in the Daly Basin bioregion (<i>Cycas canalis</i> subsp. <i>Carinata</i>).</p> <p><b>Endemic to the NT:</b> 27 plant and five vertebrate species recorded from this site are NT endemics.</p> <p><b>Other:</b> Six plant species found in this site are only known from the site or the Darwin Coastal bioregion within the NT, but are also found in other states.</p>
WILDLIFE AGGREGATIONS	<b>Significance Rating</b>	<b>International Significance</b>
	<b>Marine turtles</b>	North Peron Island is one of the better areas for nesting marine turtles along the west coast of the NT and is highly significant for nesting Flatback Turtles (Chatto and Baker 2008). Here we consider the site of National significance to marine turtles.
	<b>Seabirds</b>	Few colonies of breeding seabirds are identified on the western coast of the NT and none are recorded in the Anson Bay area (Chatto 2001). Maximum counts of 15 000 White-winged Black Terns roosting on North Peron Island (Chatto 2006) represent the largest single record of this species in the NT.
	<b>Waterbirds</b>	<p><b>Total numbers of waterbirds:</b> This site regularly supports large numbers of waterbirds in both the breeding (late wet season) and non-breeding (dry season) periods. Counts are dominated by Magpie Geese with a maximum estimated population of 332 000 in 1985 (DIWA). Separate surveys of other waterbird species report highest counts of 30 000 and 10 000 in part of the site in 1995 (Chatto 2006). These counts were dominated by egrets, whistling-ducks and Magpie Geese.</p> <p><b>Counts of individual species:</b> Maximum counts of species that are internationally significant (&gt;1% global population; G. Dutson in prep.) include: 332 000 Magpie Geese; 40 000 Wandering Whistling-duck (DIWA); 2500 Pied Heron (Chatto 2000a).</p> <p>High counts of other species such as Grey Teal, Glossy Ibis, Straw-necked Ibis, Great Egret, Intermediate Egret (Chatto 2006) are likely to be nationally significant (&gt;1% Oceania population; Wetlands International 2006).</p> <p>Chatto (2006) notes 62 important waterbird records in this site including high counts of egrets and ducks that are regionally important.</p> <p><b>Breeding records:</b> 14 confirmed waterbird breeding colonies are reported on the Daly-Reynolds floodplains and this is the largest cluster of colonies in the Top End and includes some of the largest colonies ever recorded in Australia for some species (Chatto 2000a). Colonies are dominated by Pied Herons, Australasian Darters and Great and Intermediate Egrets.</p> <p>The only regular colony of Australian Pelicans in coastal areas of the NT is on North Peron Island with a maximum count of 2500 pairs in May 1995 (Chatto 2006).</p> <p>The site is one of the most reliable areas in the NT for breeding by large numbers of Magpie Geese; the highest reported count of nests is 94 896 in 1984 (DIWA).</p>

	<b>Shorebirds</b>	<p><b>Total numbers of shorebirds:</b> Tidal flats around Anson Bay and North Peron Island support large numbers of shorebirds. The highest total counts of shorebirds are &gt;27 000 in 1995 and 22 000 in 1991 (Chatto 2003).</p> <p><b>Counts of individual species:</b> Maximum counts of species that are internationally significant include: 5000 Great Knots (Chatto 2003) (&gt; 1% global population; G. Dutton in prep.); and 1600 Black-tailed Godwits (Chatto 2003) (&gt; 1% East Asian-Australasian Flyway population; Bamford <i>et al.</i> 2008). Chatto (2003) notes 26 important shorebird records for this site including high counts of Great Knots, Black-tailed Godwits and other species that are important regionally.</p>
	<b>Other aggregations</b>	<p>Large numbers of Brolga, Jabiru and Pelicans were also observed on the floodplains of Elizabeth Downs and Litchfield during 2008 (estimates of 100-500 individuals; B. Rankmore, pers comm.).</p> <p>Large roosts of fruit bats <i>Pteropus</i> spp. occur in paperbark forests associated with the floodplain (DIWA).</p>
<b>WETLANDS</b>	<b>Significance Rating</b>	<b>National Significance (possible International)</b>
	<b>Ramsar criteria met</b>	<p>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 &gt;20 000 waterbirds; criterion 6: regularly supports &gt;1% of the individuals in a population) for listing as a wetland of international importance under the Ramsar Convention.</p> <p>Chatto (2006) also notes that the Daly River estuary and lower floodplain area is likely to qualify for Ramsar listing based on waterbird numbers.</p>
	<b>DIWA criteria met</b>	<p>This site is listed as a wetland of national significance in the Directory of Important Wetlands in Australia (DIWA ID: NT024 Daly-Reynolds Floodplain-Estuary System). The site meets criteria 1, 2, 3, 4, 5 and includes DIWA wetland types B4, A6, A8, A9, A7, B1, B2, B9, B10, and B14.</p>
	<b>Notes</b>	<p>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).</p> <p>This site is a good example of a major floodplain-tidal wetlands system with substantial areas of all the principal features (including a major river) of such a system in the Top End. It has one of the largest floodplains in the NT and has the largest catchment of any major freshwater floodplain system (DIWA). Reynolds River and Docherty Creek do not drain to the coast via a mouth but the catchment area disperses out across the floodplain (ASRIS 2006).</p>
	<b>Rivers</b>	<p>Of the few perennial rivers in the NT, the Daly River has the highest end-of-dry-season flow (approximately 12 cubic metres/second at Mt Nancar) (Begg <i>et al.</i> 2001 in Blanch 2005), five times that of any other NT river.</p> <p>The Daly River has the second highest annual average discharge of rivers in the NT (6730 GL/year) after the East Alligator River (6900 GL/year), and the fourth largest discharge of tropical rivers occurring between Cairns and Broome (NLWRA 2000 in NGIS Australia 2004, Table 6, p17).</p> <p>Water from the limestone aquifers feeding the Daly is dominated by calcium and magnesium salts (most Australian river water is dominated by sodium and chloride ions) (Blanch <i>et al.</i> 2005).</p> <p>The Reynolds River is smaller than the Daly River. It rises in the Litchfield plateau and feeds an important floodplain within the site.</p>
<b>FLORA</b>	<b>Significance Rating</b>	<b>National Significance</b>
	<b>Notes</b>	<p><b>Rainforest:</b> This site comprises almost 5 500 ha of rainforest, which equates to about 2% of the NT rainforest estate. Most of the rainforest is spring-fed, and occurs close to the southern coastline of Anson Bay or along the Daly River. Most of the rainforest occurs as small patches &lt;10 ha, but of significance are 12 patches &gt;100 ha (Russell-Smith 1991).</p>
<b>OTHER ENVIRONMENTAL VALUES</b>		<p>Anson Bay and the Daly and Reynolds rivers floodplains are proposed to be nominated by Birds Australia as an internationally-recognised Important Bird Area (G. Dutton in prep.).</p> <p>Anson Bay (south) is identified as an internationally important site for migratory shorebirds in the East Asian-Australasian Flyway (Bamford <i>et al.</i> 2008).</p> <p>The Daly and Reynolds Rivers support high densities of Saltwater Crocodiles (Fukuda <i>et al.</i> 2007). 53 species recorded from this site are listed under international conventions or bilateral agreements protecting migratory animals.</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> <p>A number of sites on the Daly and Reynolds Rivers floodplains are included on the Register of the National Estate for their natural values including: the Daly River Wildlife Sanctuary (former), Finnis and Reynolds Rivers Floating Grass Mats, Chanel Point Jungle, Reynolds River/ Tabletop Range, Channel Point Beach Area, Billawock Hill Vine Thicket, Greenwood Jungle, Glasswater Jungle, and Woolbannah Jungle (Australian Heritage Council).</p>

<b>MANAGEMENT ISSUES</b>		<p><b>Fire:</b> In the period 1993-2004, 35% of the site was burnt in fewer than three years, and 22% was burnt in more than six years.</p> <p><b>Feral animals:</b> Pigs are a problem in some wetland and rainforest areas. Feral horse and buffalo are in relatively low densities (DIWA). Big-headed Ants have been a problem in the Daly catchment, but have now been eradicated.</p> <p><b>Weeds:</b> Three Weeds of National Significance (<i>Mimosa pigra</i>, <i>Salvinia molesta</i>, <i>Hymenachne amplexicaulis</i>), ten category A and B weeds and two other undeclared but problematic environmental weeds (high priority weeds: Smith 2001) are recorded from this site. Para grass <i>Brachiaria mutica</i> is planted by pastoralists to support large numbers of domestic cattle and is extensive. <i>Mimosa pigra</i> is also widespread. There is an infestation of <i>Salvinia molesta</i> on the Reynolds River floodplain (DIWA).</p> <p><b>Other:</b> Grazing of cattle on the floodplains in the wet season results in heavy tracks through the area. All coastal areas in northern Australia are at risk of degradation from sea-level rise resulting from climate change (Hyder Consulting 2007).</p>
<b>MANAGEMENT INFORMATION</b>	<b>NRM groups</b>	Yantjarrwu Rangers (Woodycupaldiya), Wangamaty (Lower Daly) Landcare Group (Wooliana), Yantjarrwu Rangers (Wudikapidiyerr) (Northern Land Council 2006).
	<b>Protected areas</b>	Channel Point Coastal Reserve (2.4 km <sup>2</sup> / 0.1% of site).
	<b>Current management plans</b>	<p><b>Site-specific plans:</b> A Conservation Plan for the Daly Basin Bioregion (Draft for public consultation; Price <i>et al.</i> 2002) is currently being updated. In 2004, the Daly Region Community Reference Group developed a planning and adaptive management process for development and conservation across the broader Daly catchment (<a href="http://www.nt.gov.au/nreta/water/drmac/pdf/draftreport.pdf">http://www.nt.gov.au/nreta/water/drmac/pdf/draftreport.pdf</a>).</p> <p><b>Recovery plans for threatened species:</b> Partridge Pigeon (Woinarski 2004a); Northern Quoll (Hill and Ward in prep.); marine turtles (Environment Australia 2003).</p> <p><b>Other management plans:</b> Australian Weeds Strategy (NRMMC 2007); FIREPLAN: Fire management for the savanna community (Russell-Smith <i>et al.</i> in press.).</p>
	<b>Monitoring programs and research projects</b>	<p>Fire in the tropical savannas is mapped continuously under the North Australia Fire Information Project <a href="http://www.firenorth.org.au/nafi/app/init.jsp">http://www.firenorth.org.au/nafi/app/init.jsp</a></p> <p>Regular surveys of Saltwater Crocodiles are conducted in the Daly River (PWSNT 2005) with the next survey scheduled for 2009.</p> <p>Maggie Goose populations and nests are surveyed regularly in core habitat areas in the NT including the lower Daly floodplain (PWCNT 2003).</p> <p>There are 24 Tier 1 rangeland monitoring points within this site (Karfs and Bastin 2001).</p> <p>A number of research projects are currently being conducted in the Daly region (Tropical Rivers and Coastal Knowledge Consortium <a href="http://www.track.gov.au/">http://www.track.gov.au/</a>).</p>
<b>KEY REFERENCES</b>	<b>Management recommendations</b>	<p>Assist landholders, community ranger groups and Northern Land Council, to survey conservation values and develop natural resource management programs for Anson Bay, Lower Daly and Peron Islands (NRETA 2005)</p> <p>Establish a coastal park at Channel Point to protect coastal monsoon vine thicket and provide recreational fishing access (NRETA 2005). Prepare management plan for the coastal park in consultation with stakeholders (NRETA 2005)</p> <p>Provide financial and technical support to landholders and community ranger groups to undertake conservation management programs (NRETA 2005)</p> <p>In conjunction with the Northern Land Council and landholders, investigate options for inclusion of coastal wetlands in reserve system by agreement or through establishing an Indigenous Protected Area (NRETA 2005).</p>
	<b>Papers &amp; reports</b>	<p>DIWA (A Directory of Important Wetlands in Australia). <i>Australian Wetlands Database</i>. Department of Environment, Water, Heritage &amp; the Arts, Canberra ACT <a href="http://www.environment.gov.au/water/publications/environmental/wetlands/database/">http://www.environment.gov.au/water/publications/environmental/wetlands/database/</a> (accessed June 2007).</p> <p>NRETA (2005). <i>Draft Northern Territory Parks &amp; Conservation Masterplan</i>. Department of Natural Resources, Environment and the Arts, Darwin.</p> <p>Price, O., Milne, D., Connors, G., Harwood, B., Woinarski, J.C.Z. &amp; Butler, M. (2002). <i>A Conservation Plan for the Daly Basin Bioregion. Draft for public consultation</i>. Parks and Wildlife Commission of the Northern Territory, Darwin.</p>
	<b>Contributors</b>	Tony Griffiths, Biodiversity Conservation, NRETAS, Darwin