

# Hyland Bay and associated coastal floodplains

## Location and Description

Hyland Bay and associated coastal floodplains lie about 200 km south-west of Darwin, and are at the southern end of a linked series of coastal floodplains and tidal flats in the west of the Top End. These floodplains differ in character from the better known floodplains of the Adelaide-Mary-Alligator Rivers system. Hyland Bay is lined with tidal flats and the coastline to the north has long beaches, rocky headlands and low cliff-lines, and sand dunes. The floodplains of the Moyle and Little Moyle Rivers, also within the Site, are dominated by seasonally-inundated grassland and sedgeland with areas of paperbark swamp. Mangroves occur along the lower stretches of the rivers, creeks and other channels, often backed by saline flats.

## Tenure and Land Use

This Site is entirely Aboriginal freehold land and lies within the Daly River/Port Keats Aboriginal Land Trust lands. The land mainly supports Indigenous uses, but Palumpa Station is managed as a pastoral property and used for pastoral operations. Commercial fisheries occur in coastal areas of the Site.

## Significance Rating

International Significance

## Ecological Values

The floodplains of the Moyle and Little Moyle Rivers periodically support vast numbers of Magpie Geese, with more than 500 000 reported in 1990. The floodplains are also a major breeding area for this and other colonial nesting waterbird species, including herons, egrets and cormorants. The extensive tidal mudflats that line Hyland Bay provide a major migration stop-over area for shorebirds, with counts of 20 000 in some years. The lower reaches of the main rivers and estuaries are a major breeding area for Saltwater Crocodiles.

## Management Issues

The weed *Mimosa pigra* occurs over large areas of the Moyle coastal floodplains and represents the most significant management issue for this Site. *Salvinia molesta* is also a problem in some waterways and feral pigs are damaging floodplain and riparian areas. Access to resources to manage priority issues and build capacity of local land managers is difficult in this Site.

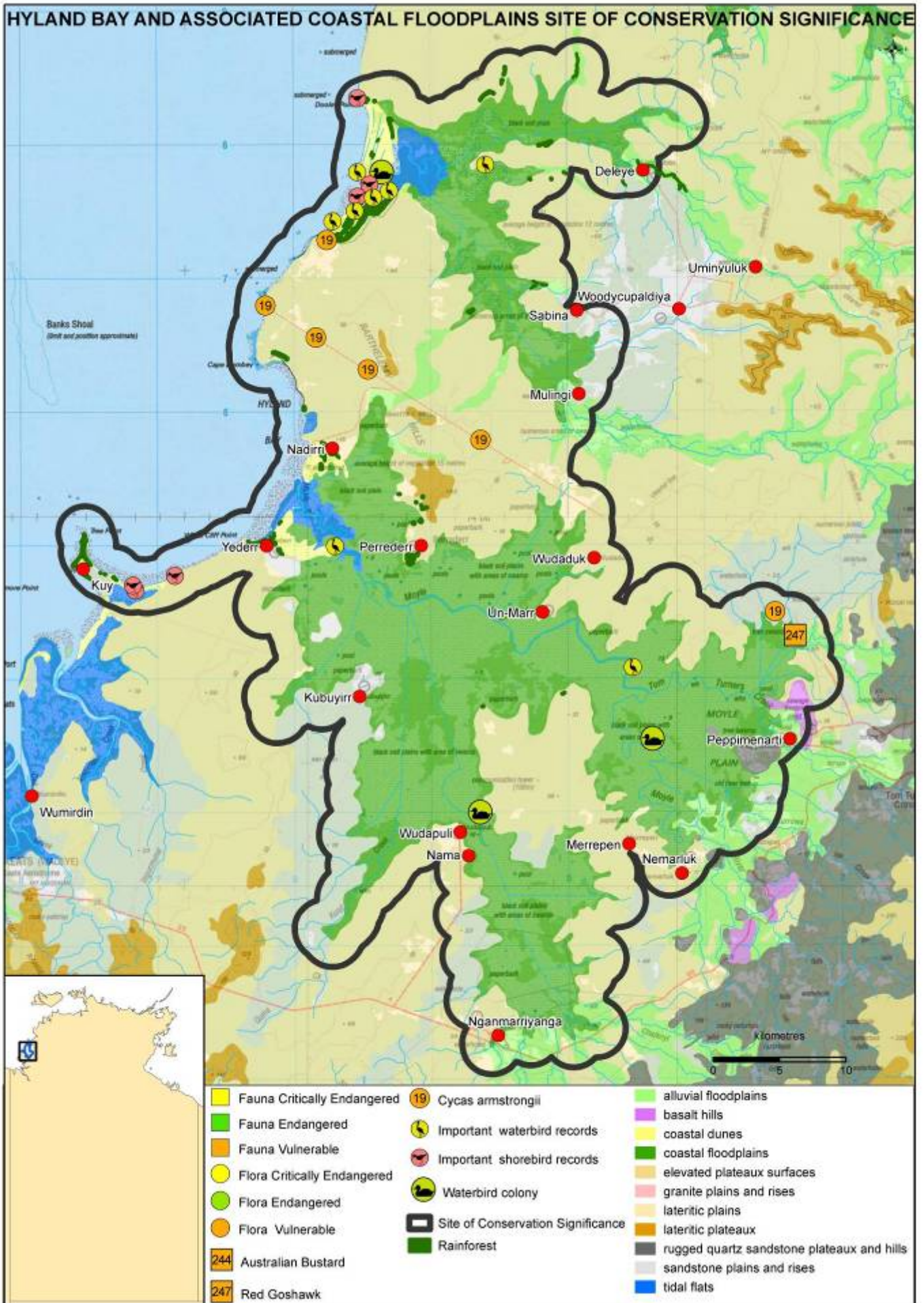


## Condition

Large areas of floodplain have been invaded by *Mimosa pigra* and degraded by pig and other exotic species, but other parts are relatively weed-free and undisturbed.

## Current Conservation Initiatives

Land and weed management plans have been developed by the Thamarrurr Regional Government Council for the southern portion of this Site. Management of *Mimosa pigra* is a major focus for Indigenous ranger groups based at Wudikapildiyerr, Peppimenarti and Wadeye, and a control program is also being implemented on Palumpa pastoral station. Fire management and control of feral animals are also priorities for local ranger groups.



|                       |   |   |
|-----------------------|---|---|
| LOCATION              | <b>SOCS Number</b>  | 1 (NT Parks and Conservation Masterplan Map Number 21)  |
|                       | <b>Latitude/Longitude</b>   | 14° 2' South, 129° 52' East (at centre)   |
|                       | <b>Bioregion</b>  | Darwin Coastal (96%), Victoria Bonaparte (4%)   |
|                       | <b>Description</b>  | <p>This site includes the entire floodplains of the Moyle and Little Moyle Rivers, and extends from near the small communities of Peppimenarti and Palumpa, downstream to the tidal flats and coast of Hyland Bay, and north to Dooley Point.</p> <p>The site encompasses an area of 1927 km<sup>2</sup> and is dominated by seasonally inundated coastal floodplains (801 km<sup>2</sup>). The lower reaches of the Moyle and Little Moyle Rivers are tidal (34 km<sup>2</sup>) and coastal dunes (37 km<sup>2</sup>) are also characteristic of the coastline.</p> <p>Anson Bay and its associated coastal floodplains, immediately north of the site, are also recognised as a site of high conservation significance in the NT.</p>   |
| THREATENED SPECIES    | <b>Significance Rating</b>  | <b>Regional Significance</b>  |
|                       | <b>Threatened plants and animals</b><br>(Listings at National/NT level<br><b>CR</b> - Critically Endangered,<br><b>EN</b> - Endangered,<br><b>VU</b> - Vulnerable,<br><b>NT</b> - Near Threatened,<br><b>LC</b> - Least Concern,<br><b>DD</b> - Data Deficient) | <p>Four threatened species are reported from this site.</p> <p><b>Plants</b></p> <ul style="list-style-type: none"> <li>▪ <i>Cycas armstrongii</i> (-/VU)</li> </ul> <p><b>Vertebrates</b></p> <ul style="list-style-type: none"> <li>▪ Australian Bustard <i>Ardeotis australis</i> (-/VU)</li> <li>▪ Red Goshawk <i>Erythrotriorchis radiatus</i> (VU/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 from this site is endemic to the Darwin Coastal bioregion (<i>Hibbertia muelleri</i>).</p> <p><b>Endemic to the NT:</b> 14 plant species found in the site are endemic to the NT.</p>  |
| WILDLIFE AGGREGATIONS | <b>Significance Rating</b>  | <b>International Significance</b>   |
|                       | <b>Marine turtles</b>   | Low density nesting of Flatback Turtles occurs in coastal areas in this site (Chatto and Baker 2008).   |
|                       | <b>Seabirds</b>   | Few seabird colonies are known to occur on the western coast of the NT and none are known from coastal areas in this site (Chatto 2001).  |
|                       | <b>Waterbirds</b>   | <p><b>Total numbers of waterbirds:</b> This site comprises large areas of freshwater wetlands and supports large numbers of waterbirds. Populations fluctuate between years and seasons but counts are often dominated by Magpie Geese (545 000 in 1990) and whistling-ducks (39 362 in 1983) (DIWA). Separate surveys of other waterbird species in part of the site report numbers around 7000 (1995) dominated by egrets, Pied Herons and Glossy Ibis (Chatto 2006).</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: 545 000 Magpie Geese (DIWA); and 1000 Pied Heron (Chatto 2000a).</p> <p>Chatto (2006; R. Chatto, NRETAS unpubl.) notes ten important waterbird records for this site including high counts of ducks and egrets that are regionally important.</p> <p><b>Breeding records:</b> Three waterbird colonies are reported from this site including a large (5600) mixed species colony (W004) dominated by herons and egrets in mangroves near the mouth of the Little Moyle River (Chatto 2000a; Chatto 2006). Two smaller colonies of spoonbills, cormorants and darters are in the upper parts of the Moyle floodplain (Chatto 2006).</p> <p>The Moyle floodplains are a significant breeding area for Magpie Geese with up to 10 000 nests reported in 1984 (DIWA).</p> |
|                       | <b>Shorebirds</b>   | <p><b>Total numbers of shorebirds:</b> Surveys of coastal mudflats in this site suggest they periodically support at least 20 000 shorebirds, with numbers dominated by Great Knots, Lesser Sand Plovers and Grey-tailed Tattlers (Chatto 2003).</p> <p><b>Counts of individual species:</b> Maximum estimated counts of Great Knots at this site (Chatto 2003) are internationally significant (&gt; 1% global population; G. Dutson in prep.).</p> <p>Chatto (2003; R. Chatto, NRETAS unpubl.) notes six important records for this site, including high counts of mixed wader species that are regionally important.</p>   |
|                       | <b>Other aggregations</b>   | None known  |
| WETLANDS              | <b>Significance Rating</b>  | <b>National Significance (possible International)</b>   |
|                       | <b>Ramsar criteria met</b>  | 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.   |
|                       | <b>DIWA criteria met</b>  | This site is listed as a wetland of national significance in the Directory of Important Wetlands in Australia (DIWA: NT027 Moyle floodplain and Hyland Bay system). The site meets criteria 1, 2, 3, 4, 6 and includes DIWA wetland types: A6, A7, A9, B1, B2, B4, B10, and B14.  |

|                                   |  |  |
|-----------------------------------|--|--|
|                                   | <b>Notes</b>                                     | This site has been nominated as a national High Conservation Value Aquatic Ecosystem (the finalised list of HCVAE will replace the DIWA list).<br>It is a good example of a Top End floodplain system associated with a small river and a mudflat-fringed bay (DIWA).  |
|                                   | <b>Rivers</b>                                    | The Moyle and Little Moyle Rivers are among the smaller NT rivers, rising in the low hills to the east. Large seasonal flows feed the important floodplain wetland system in the site.   |
| <b>FLORA</b>                      | <b>Significance Rating</b>                       | <b>Regional significance</b>   |
|                                   |  | <b>Rainforest:</b> This site comprises about 680 ha of mostly dry rainforest. Rainforest patches are located in coastal areas around the margin of the floodplain and are mostly small (<10 ha), but one patch is >100 ha (Russell-Smith 1991).  |
| <b>OTHER ENVIRONMENTAL VALUES</b> |  | One site on the Moyle River floodplain (Daly River Wildlife Sanctuary former) is listed on the Register of the National Estate for its natural values (Australian Heritage Council).<br>The floodplains of the Moyle and Little Moyle Rivers are proposed to be nominated by Birds Australia as an internationally-recognised <i>Important Bird Area</i> due to the occurrence of globally significant numbers of Magpie Geese, Pied Herons and Great Knots (G. Dutson in prep.).<br>The Moyle River support high densities of Saltwater Crocodiles (Fukuda <i>et al.</i> 2007).<br>36 species recorded from this site are listed under international conventions or bilateral agreements protecting migratory animals.<br>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.).  |
| <b>MANAGEMENT ISSUES</b>          |  | <b>Fire:</b> Traditional burning regimes are still practiced in this area but fire needs to be managed more effectively (Northern Land Council 2004). In the period 1993-2004, 23% of the site was burnt in fewer than three years, and 35% was burnt in more than six years.<br><b>Feral animals:</b> Feral pigs are a significant problem and are damaging floodplains and riparian zones in this site (Northern Land Council 2004).<br><b>Weeds:</b> Two Weeds of National Significance are reported from this site: large infestations of mimosa <i>Mimosa pigra</i> occur on the north side of the Moyle River plus small outliers on the south side; and significant infestations of <i>Salvinia molesta</i> occur on the floodplain north-east of Wadeye (Smith 2001). Para grass <i>Urochloa mutica</i> is an undeclared but problematic environmental weeds (high priority weeds: Smith 2001) recorded from this site.<br><b>Other:</b> There are far fewer resources or planning mechanisms directed at this site, than elsewhere in the Darwin Coastal bioregion, however, many of the management issues are the same as for elsewhere in the bioregion. Access to management resources and building capacity of land managers remains an important management concern for the site (Woinarski 2002).<br>All coastal areas in northern Australia are at risk of degradation from sea-level rise resulting from climate change (Hyder Consulting 2007).<br>A project to extract natural gas in the Timor Sea and process it near Wadeye is currently being developed (Woodside Energy 2005), but it is situated outside this site and is not expected to impact on it. |
| <b>MANAGEMENT INFORMATION</b>     | <b>NRM groups</b>                                | Asyrikarrak Kirim Rangers (Peppimenarti), Thamarrurr Sea and Land Rangers (Wadeye), Yantjarwu Rangers (Wudikapildiyerr) (Northern Land Council 2006).  |
|                                   | <b>Protected areas</b>                           | The site does not fall within the NT system of protected areas.  |
|                                   | <b>Current management plans</b>                  | <b>Site-specific plans:</b> Thamarrurr Regional Land and Sea Management Plan (Thamarrurr Regional Council 2007); Thamarrurr Rangers Regional Weed Management Plan (Thamarrurr Regional Council 2005).<br><b>Recovery plans for threatened species:</b> marine turtles (Environment Australia 2003); Red Goshawk (Baker-Gabb in prep.).<br><b>Other management plans:</b> Australian Weeds Strategy (NRMMC 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.).  |
|                                   | <b>Monitoring programs and research projects</b> | A biodiversity survey was conducted near Palumpa in September 2008 in a collaborative project between Thamarrurr rangers and scientific staff from NRETAS (T. Griffiths, NRETAS, unpubl.).<br>Magpie Goose populations and nests are surveyed regularly in core habitat areas in the NT including the Moyle floodplain (PWCNT 2003).<br>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>  |
|                                   | <b>Management recommendations</b>                | In conjunction with the Northern Land Council, assist landholders and community-based ranger groups to survey and monitor conservation values, and develop and implement natural resource management programs (NRETA 2005).<br>Provide financial and technical support to landholders and community ranger groups to undertake natural resource management programs (Woinarski 2002, NRETA 2005).<br>Develop a regional fire management plan to help manage fire more effectively (Northern Land Council 2004).<br>Survey weeds in the area and develop a management plan that identifies weed management priorities, training and resourcing (Smith 2001).  |

|                       |                           |   |
|-----------------------|---------------------------|---|
| <b>KEY REFERENCES</b> | <b>Papers and reports</b> | Smith, N. (2001). <i>Not from here: Plant invasions on Aboriginal lands of the Top End</i> . Tropical Savannas CRC. Darwin, NT.<br>Thamarrurr Regional Council (2005). <i>Thamarrurr Rangers Regional Weed Management Plan</i> . Thamarrurr Regional Council, Wadeye.<br>Thamarrurr Regional Council (2007). <i>Thamarrurr Regional Land and Sea Management Plan</i> . Thamarrurr Regional Council, Wadeye. |
|                       | <b>Contributors</b>       | Tony Griffiths, Biodiversity Conservation, NRETAS, Darwin   |



**Melaleuca woodland, Moyle River floodplain  
(Photo: Tony Griffiths)**



**Egret colony, Top End coastal site (Photo: Ray Chatto)**