

# Naree Budjong Djara

## Resource Information

Incorporates: Naree Budjong Djara National Park,  
Naree Budjong Djara Conservation Park, Myora Conservation Park,  
Main Beach Conservation Park and Minjerribah Recreation Area



This Resource Information document has been prepared jointly by Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) and Queensland Parks and Wildlife Service and Partnerships (QPWS&P), Department of Environment and Science.

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**Front cover photo:** Jagun (Rainbow Serpent) Billabira (Lightning) Jalo (Fire) © Joshua Walker, Quandamooka, 2020

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# 1. Resource information

The Queensland Parks and Wildlife Service (QPWS) is the operational stream of the Queensland Parks and Wildlife Service and Partnerships (QPWS&P) division within the Department of Environment and Science (DES). QPWS’s management planning process aligns with the Values-Based Management Framework, an adaptive management cycle that incorporates planning, prioritising, doing, monitoring, evaluating and reporting into all areas of our business (Figure 1). It is based on international best practice and targets management focusing upon the most important features of each park: their key values. In acknowledging QPWS as a good partner for the protection of their lands’ high cultural and natural values, Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC), representing the Quandamooke People, have agreed to adopt this joint management planning approach as the landowners and joint managers.

Management plans and statements set the strategic management direction, guiding the next tier of planning and the development of thematic strategies, which in turn inform and prioritise our on-ground operations.

Resource information is a compendium of park information and a supporting document for management plans and management statements. It contains background information about a park’s purpose, values, resources, and legal and administrative framework.

Information about the Values-Based Management Framework is available on the website at [www.des.qld.gov.au](http://www.des.qld.gov.au).

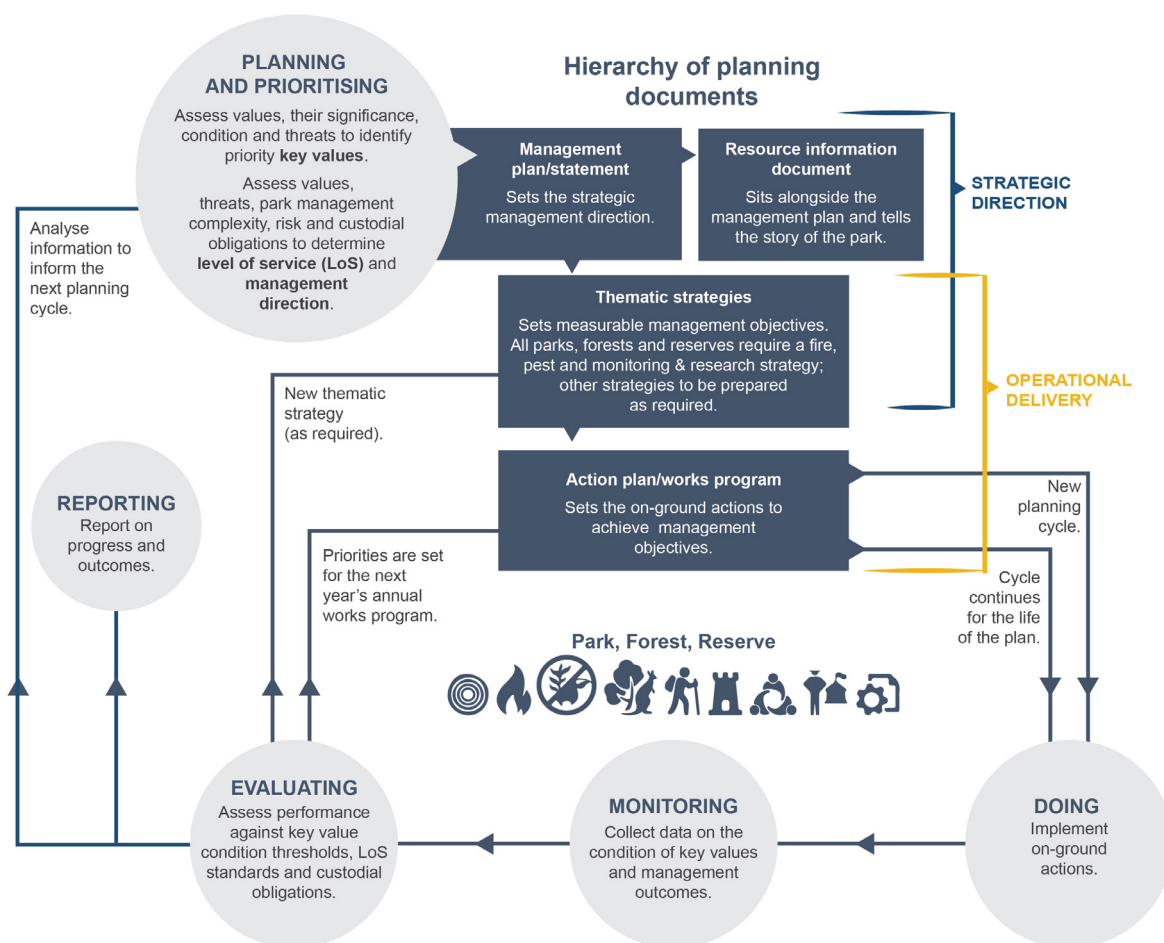


Figure 1. Phases of the VBMF cycle for planning and the hierarchy of planning documents



## 2. Naree Budjong Djara

Nunagal, Goenbal and Ngugi People have always protected our Quandamookadjara (Quandamooka Country) and managed the health of the ecosystems to allow all species to flourish. QYAC and QPWS aim to provide best practice joint management of Naree Budjong Djara to ensure lands and culture stay healthy for our children and for the benefit of all the people of Queensland. We pay our respects to the Elders past, present and emerging, for their wisdom and knowledge of land and sea on which we work, live and walk.

### 2.1 Indigenous joint management arrangement

In recognition of strong and continuing cultural connections, the Quandamooka People and Queensland Government have established perpetual partnerships ensuring that both the natural and cultural values of protected areas are conserved for the benefit of all. On Quandamooka Country, this includes the joint management of designated protected areas as Indigenous Joint Management Areas (IJMAs), managed in accordance with an Indigenous Management Agreement (IMA) and other agreements between the QYAC and the State of Queensland.

The Naree Budjong Djara IJMAs were created during the negotiations with the Queensland Government to protect the native title lands of the Quandamooka People as an agreed approach for the future use of those areas of high conservation and cultural significance. Quandamooka People continue to use these areas for cultural activities, and have ongoing rights, interests, commitments and cultural obligations to the park’s care and management. The continued connection to Country, and ongoing use, knowledge and protection of cultural resources, is an exercise of their native title rights. An Indigenous Land Use Agreement (ILUA) over Naree Budjong Djara recognises the continuing rights and interests of the Quandamooka People. Joint management arrangements are further explained in the draft Naree Budjong Djara Management Plan.

### 2.2 Naree Budjong Djara

Naree Budjong Djara means ‘My Mother Earth’ in Jandai language, and refers to the planning area in this document and its accompanying management plan. It is located in Moreton Bay, South East Queensland, in the state electorate of Oodgeroo and the local government area of Redland City Council. The area is a popular tourist destination, attracting local, interstate and international visitors, particularly during school holidays, and provides island visitors with a variety of natural and cultural visitor experiences, including nature walks, wildlife watching, nature photography, cultural education opportunities, beach camping, fishing and four-wheel driving.

Naree Budjong Djara National Park was declared on 25 March 2011 and includes the area previously known as Blue Lake National Park. The Naree Budjong Djara planning area (Map 1) covers the terrestrial IJMAs on Minjerribah that are jointly managed by QYAC and QPWS within Quandamooka Country. This includes:

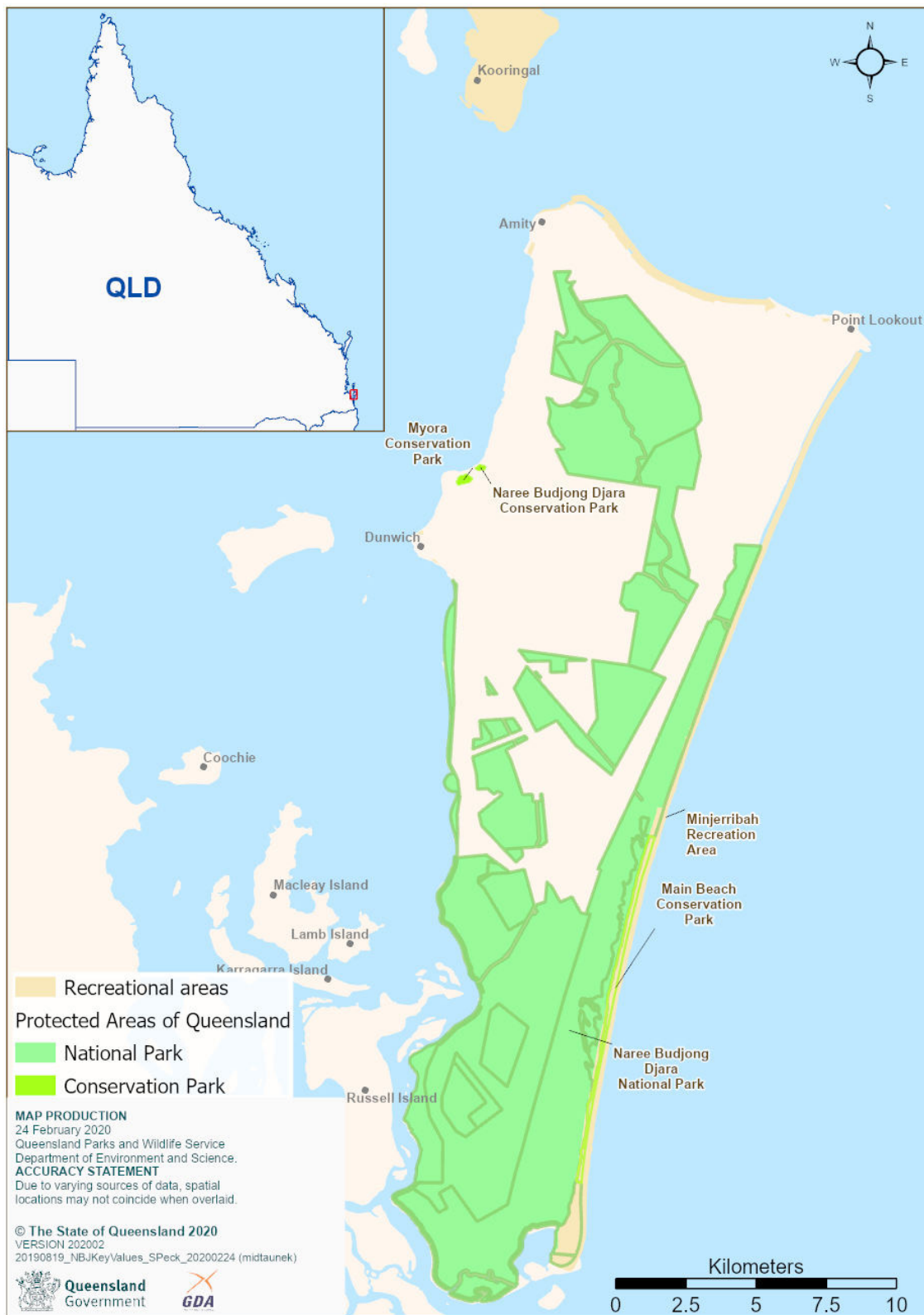
- Naree Budjong Djara National Park
- Naree Budjong Djara Conservation Park
- Myora Conservation Park
- Main Beach Conservation Park

As well as natural coastal areas managed under service agreement with QPWS by Minjerribah Camping Pty Ltd within:

- Minjerribah Recreation Area

See Appendix 1 for legal, policy and management commitments.

<b>Bioregion</b>	South East Queensland
<b>Area</b>	13 000 hectares
<b>Local government area</b>	Redland City
<b>State electorate</b>	Oodgeroo
<b>Management obligations</b>	QCD2011/001, QCD2011/002, QC2017/004 Quandamooka Yoolooburrabee Aboriginal Corporation QI2011/038 ILUA Directory of Important Wetlands in Australia (DIWA) Convention on Wetlands (Ramsar) Convention on the Conservation of Migratory Species of Wild Animals Japan–Australia Migratory Bird Agreement China–Australia Migratory Bird Agreement Republic of Korea–Australia Migratory Bird Agreement



Map 1. Naree Budjong Djara National Park location map. Naree Budjong Djara includes Naree Budjong Djara National Park, Naree Budjong Djara Conservation Park, Myora Conservation Park, Main Beach Conservation Park and Minjerribah Recreation Area



## 2.3 Quandamooka People

The Quandamooka People have managed and protected Naree Budjong Djara, the surrounding lands and waters of Minjerribah and Quandamooka (Moreton Bay) since time immemorial. The Quandamooka People consist of three groups, Noonuccal, Ngugi and Goenpul, all speakers of Jandai language dialects.

Quandamooka Country extends beyond the scope of the Naree Budjong Djara Management Plan and this resource information document to other areas that are currently under claim.

Naree Budjong Djara contains a wide range of Quandamooka cultural heritage sites, the type, size and densities varying across the area. The Quandamooka People have the oldest published archaeological occupation site on the east coast of Australia, substantiating their continual relationship with the environment since the Pleistocene epoch approximately 26 000 years before the present. The importance of cultural sites to the Quandamooka People varies, with some specific to men, women and children, and containing valued natural and cultural resources. These may include plants, animals, carefully managed landscapes, shell and bone middens, artefact scatters, occupation and camp sites, scar trees, burial sites, fish traps, ceremonial grounds, pathways and important resource environments, both the physical and living evidence of long-term and continuing occupation. The Quandamooka People are progressively recording these sites through the QYAC Cultural Heritage Unit.

The Quandamooka People have a long history of managing their land and sea Country while providing the resources to sustain their communities and trade with other groups on the mainland, such as the Yuggera, Turrbal and Yugembah peoples. Natural resources key to the Quandamooka community through times past and present include *jin/tjin* (yugari/pipis), *quampi* (pearl oysters), *nyandaygal* (sea mullet), *kinyinggarra* (oysters), *yangang* (dugong), *bunbiya* (turtle), *sugarbag* (honey), *dubay* (mudcrab), *juwahnduwan* (birds), *girraman* (flying-fox), *mari* (kangaroo) and *giwa* (monitors).

The extensive and continued management of Quandamooka Country through *jarlo* (fire) has ensured the maintenance of landscapes to facilitate movement, stimulate flowering, enhance ecosystem function and diversity, reduce wildfire risk by clearing thick regrowth, and favour desired environments such as an open woodland with large, old trees in locations of heritage significance such as historical occupation sites.

The Quandamooka People will continue to manage and protect Naree Budjong Djara.

### 2.3.1 Native title

In January 1995, the Quandamooka People lodged a native title claim over land and sea encompassing much of Minjerribah, a southern portion of Mulgumpin (Moreton Island), Teerk Roo Ra (Peel Island), Muppanbillawah (Bird Island) and Goat Island, covering state land comprising national parks, unallocated state land, council reserve and lease lands—all lands not identified as freehold tenure. This native title claim, Quandamooka People #1, was registered in September 1995. A second claim was lodged with the Federal Court over land parcels in the north and a large area in the south of Minjerribah in September 1999, and registered as Quandamooka People #2 with the National Native Title Tribunal in June 2000.

On 4 July 2011, the Federal Court made consent determinations for Quandamooka People #1 and #2 claims at Goompi (Dunwich), Minjerribah, and recognised the continuing native title rights over approximately 54 000 hectares of Quandamooka land and sea Country. These determinations took effect upon registration of the ILUA on 9 December 2011. His Honour Judge Dowsett noted that the determination did not give the Quandamooka People anything, merely recognised formally that which they have always had.

The Quandamooka People have non-exclusive possession rights over the majority of the determination area. The Quandamooka People also have areas of exclusive possession lands (approx. 2 264 ha) that have underlying Crown title (radical title) and recognise their rights to possession, occupation, use and enjoyment to the exclusion of all others from entering lands and controlling access.

The Quandamooka People's native title rights over exclusive and non-exclusive lands include:

- the right to live and be present on the area
- the right to conduct ceremonies
- the right to maintain places of importance and areas of significance to the native title holders
- the right to teach on the area about the physical and spiritual attributes of the area
- the right to light fires for the domestic purposes such as cooking
- the right to take, use, share and exchange traditional natural resources and seawater for any non-commercial purpose.



Map 2. Quandamooka native title determination over Minjerribah and parts of Moreton Bay 2011, which covers the Naree Budjong Djara planning area, within Quandamooka Country





Traditional natural resources include animals and plants as defined within the *Nature Conservation Act 1992* (NCA), seaweed, charcoal, shells and resin, any clay, soil, sand, ochre, gravel or rock on or below the surface of the determination area.

As part of the Quandamooka People's native title rights and in retaining a connection to Country, the IMA provides for the establishment of temporary and permanent living areas within the existing, and any future additions to, Naree Budjong Djara. This management plan recognises these rights and confirms their importance as a component of a number of Naree Budjong Djara's key values. Future living areas will be authorised through an NCA authority where required, while existing living areas are provided for in this management plan and within the IMA. Public access into these living areas is restricted and are managed exclusively by QYAC.

The Quandamooka People's Country extends beyond the scope of this management plan. A native title consent determination for Mulgumpin (Moreton Island) (Quandamooka People #4 claim) was handed down to the Quandamooka People on 27 November 2019, with registration expected in 2020. Other claims have been lodged within the southern Moreton Bay areas.

### 2.3.2 Quandamooka Yoolooburrabee Aboriginal Corporation

Prior to the determination in July 2011 and subsequent ILUA, QYAC was formed as the Registered Native Title Body Corporate under the *Corporations (Aboriginal and Torres Strait Islander) Act 2006* (Cwlth) to act as agent for the native title interests of the Quandamooka People across recognised Quandamooka land and sea Country for both the 2011 and 2019 determinations. QYAC holds in trust the underlying Aboriginal freehold of IJMA tenure, as well as maintaining responsibilities as the registered cultural heritage body.

The Jandai word 'Quandamooka' represents Moreton Bay and the islands within it, with 'Yoolooburrabee' meaning the 'people of the sand and the sea'. QYAC is agent and legal entity for the native title interests of the Quandamooka People, land rights, cultural heritage matters and agreements, and holds joint responsibilities with QPWS for planning and works within the IJMAs.

It remains key to joint management that, with their continuing connection to Country, the Quandamooka People continue to be empowered through the joint management process and IMA to manage Quandamooka Country for its cultural and natural values.



## 2.4 Wetlands of International Importance (Ramsar)

Australia is a signatory to the Convention on Wetlands of International Importance (Ramsar Convention) and has listed 66 wetland sites under the Convention, including five in Queensland. The Convention seeks to stop the global loss of wetlands and to conserve remaining wetlands through wise use and site-appropriate management. As a signatory to the Convention, Australia agrees to manage these wetlands to protect their unique ecological character. The *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) provides legislative protection for the Australian-listed Ramsar wetland sites. The Australian Ramsar management principles are outlined in Schedule 6 of the *Environment Protection and Biodiversity Conservation Regulations 2000* and cover the preparation of a Ramsar site management plan and community consultation processes (Australian Government n.d.).

Australia is also a signatory to other international migratory bird agreements, including:

- Japan-Australia Migratory Bird Agreement,
- China-Australia Migratory Bird Agreement,
- Republic of Korea-Australia Migratory Bird Agreement, and
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).

Migratory species identified in these agreements are also identified under the EPBC, which provides further support for the protection of the critical services and benefits of the Moreton Bay Ramsar site.

The Quandamooka People are the custodians and native titleholders of the Moreton Bay Wetland of International Importance and have been responsible for managing the land and sea environments for many thousands of years. The wetlands—freshwater and estuarine—are of particular importance to the Quandamooka People’s tangible and intangible cultural heritage. The wetland environments are integral to creation stories, traditional food gathering, processing and land management techniques. The distinct traditions, natural resource management, technical innovation and expertise in processing food, fibre and other materials associated with these wetlands should be considered and recognised in any review or updates of the listing, as noted at the 12th Meeting of the Conference of the Parties to the Convention on Wetlands, June 2015, and outlined in Resolution XII.2 of *The Ramsar Strategic Plan 2016–2024* (Ramsar 2015).

Moreton Bay was listed under the Ramsar Convention on 22 October 1993.

The Moreton Bay Ramsar Area within Naree Budjong Djara National Park provides critical ecological services and environmental benefits including:

- a unique diversity of habitats, with many different wetland types including window lakes, perched lakes, surface expressions and wet heathlands
- Quandamooka cultural heritage values (including significant places, resources, stories)
- a wildlife refuge in drought conditions for amphibians, fish, reptiles, birds and mammals
- wetland bird and shorebird diversity, abundance and habitat values
- habitat for threatened wetland-dependent fauna (such as eastern curlew, Oxleyan pygmy-perch, water mouse)
- notable diversity of native wetland fauna of the bioregion
- rare and threatened species (such as the lesser swamp orchid, yellow swamp orchid, swamp daisy)
- opportunities for education and research on wetlands
- clean drinking water for south-east Queensland
- cultural and ecological recreation, education and research opportunities.

Naree Budjong Djara satisfied nine of the nomination criteria available at the time of listing. Appendix 2 sets out the wetland assessment and key values, which cover and protect these wetland features.



## 2.5 Ecosystems and biodiversity

The diversity of aquatic habitats provides excellent examples of largely undisturbed artesian window lakes, spring-fed creeks, perched lakes and groundwater-dependent vegetated wetlands. Bummiera (Brown Lake) is the largest lake with a surface area of 24 hectares. Karboora (Blue Lake) is a window lake, an opening to the aquifer, with a surface area of 9ha. The lakes, along with the numerous swamps and lagoons such as Eighteen Mile Swamp, which stretches almost the entire length of the eastern coastline, provide major freshwater habitats for a variety of migratory bird species. These wetlands, foreshore swamps and interconnecting land are listed as part of the Moreton Bay Ramsar site. Threatened fauna species protected through conservation of these wetland habitats include Cooloola sedgefrog *Litoria cooloolensis* (including the Minjerribah sub-population), wallum sedgefrog *Litoria oblongurensis*, wallum rocketfrog *Litoria freycineti*, wallum froglet *Crinia tinnula*, grey-headed flying-fox *Pteropus poliocephalus*, water mouse *Xeromys myoides* and the Oxleyan pygmy perch *Nannoperca oxleyana*, with flora species including the swamp daisy *Olearia hygrophila*, lesser swamp orchid *Phaius australis*, yellow swamp orchid *Phaius bernaysii*, soft water fern *Duringtonia paludosa* and hair spike rush *leocharis difformis*.

### 2.5.1 Regional ecosystems

Naree Budjong Djara contains 15 regional ecosystems (REs) (Map 3, Appendix 4), two of which are ‘endangered’, five are ‘of concern’ and eight are ‘not of concern’. Naree Budjong Djara contains the largest contiguous remnant patch of the ‘endangered’ open heath on dunes (RE 12.2.13). This naturally rare RE covers over 240 hectares of Naree Budjong Djara, accounting for approximately 70 per cent of the total remnant area of this RE in Queensland. Naree Budjong Djara also contains a significant area of the ‘of concern’ stringybark *Eucalyptus planchoniana*, scribbly gum *Eucalyptus racemosa*,

red bloodwood *Corymbia gummifera* and banksia *Banksia aemula* woodland on coastal dunes and sandplains (RE 12.2.10), and sand plains (RE 12.2.6) (Naree Budjong Djara, Comprehensive, Adequate and Representative Report (assessed 28 August 2019)).

### 2.5.2 Important wetlands

Naree Budjong Djara is contained wholly within the North Stradbroke Island Important Wetland, QLD191 (27 424 hectares), listed on the Directory of Important Wetlands (Department of the Environment and Energy n.d.) (Map 4). The North Stradbroke Island Important Wetland is contained within the Moreton Bay aggregation, QLD134 (254,364ha), and contains both marine and coastal zone (A) and inland (B) wetland types (Figure 2).

### 2.5.3 Wetlands

Minjerribah is unique in the number of wetlands dating to the Last Glacial Maximum. The persistence of these wetland systems suggests that the Minjerribah has experienced a positive water balance for more than 40 000 years (Tibby et al. 2017).

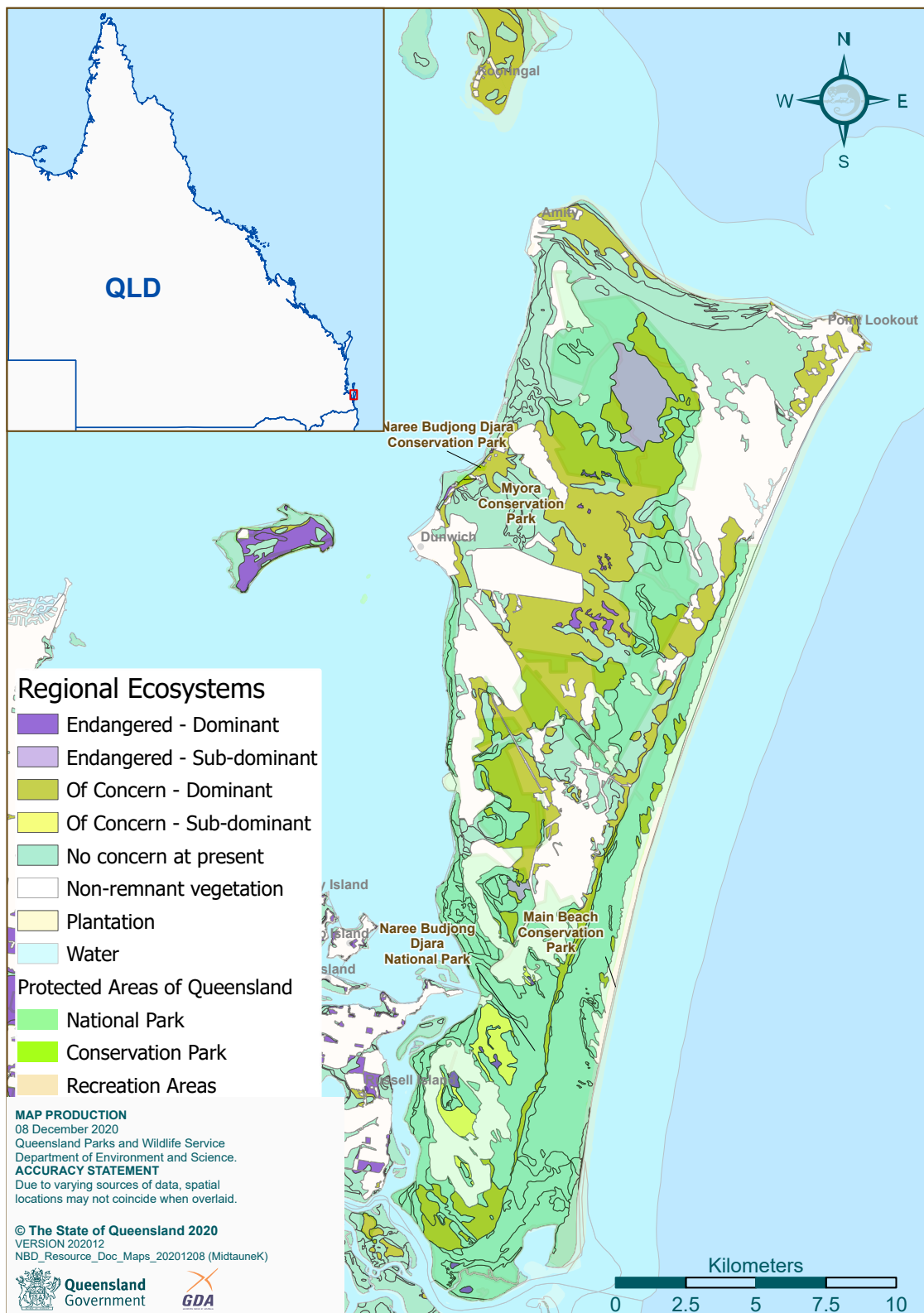
On Minjerribah, the most important processes influencing the formation and maintenance of inland wetlands is aquifer discharge (expression wetlands and springs), aquifer recharge (window lakes), rainfall, and peat accumulation (perched lakes). Lateral groundwater expressions maintain a freshwater lens, preventing seawater intrusion into Minjerribah’s aquifer. Minjerribah’s perched coastal lakes on sand are of global importance as there are only 80 of these systems worldwide.

Some wetlands have been impacted by modified hydrology, interference with layers of induration (hardening) and a changing climate. Other threats to wetlands include pest plants, pollution and inappropriate fire, which negatively

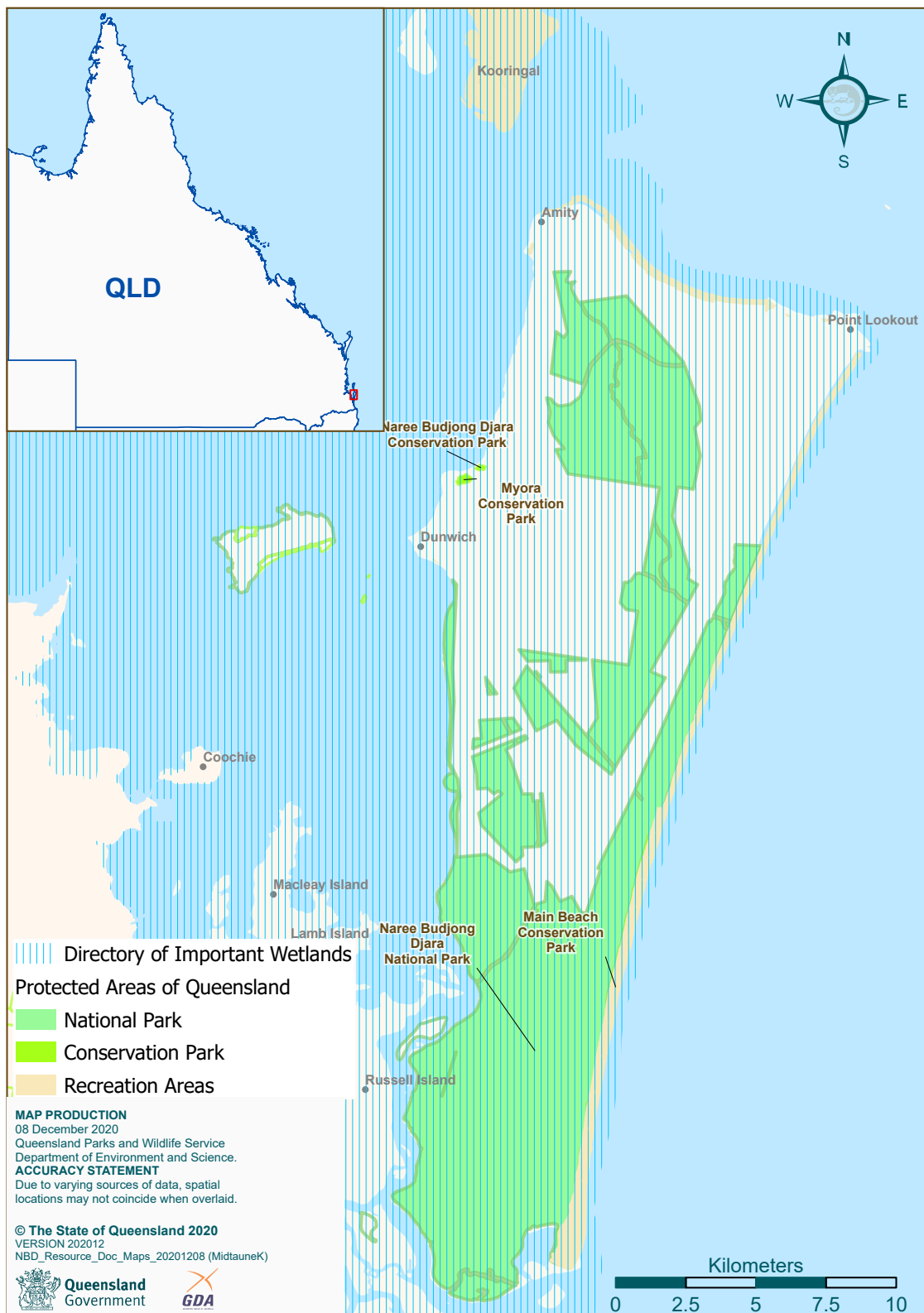
impact vegetation and peat foundations. Partnerships with various research bodies continue to improve joint management’s understanding of the importance, sensitivity, history and roles that wetlands play in Quandamooka Country.



Figure 2. Naree Budjong Djara wetlands have high plant diversity and support several threatened species, Canalpin Swamp © QYAC 2019



Map 3. Regional ecosystems by status, Naree Budjong Djara



Map 4. North Stradbroke Island Important Wetland area (QLD191), Directory of Important Wetlands

## 2.6 Ecosystems services

### 2.6.1 Water resources

Minjerribah's reliable groundwater resources currently provide the South East Queensland water grid with water supply from a series of extractive bores. It is currently not known whether drawdown upon this resource is sustainable in the medium to long term, with increasing demand both evident and forecast from an increasing mainland population and growing development along the Quandamooka coast. Community concern about the water level at Bummiera (Brown Lake) has increased in recent years. It is understood that Bummiera's water level as of 2018 is the lowest on record, with a limited understanding of the cause of the reduced level.

Groundwater-fed creeks along the western coast of Minjerribah supply several unserviced dwellings in the Moopi Moopi Pa (One Mile), Moongalba and Myora area with a back-up water supply when rainwater tanks are low.

### 2.6.2 Aesthetic values

While presenting much more than scenic amenity in the way of cultural and natural landscape values, Naree Budjong Djara features long surf beaches, vegetated sand dunes and exposed sand blows, dry to wet sclerophyll forest, heathlands and sedge-dominated swamplands. Visitors walking the Neembeeba lookout track can see stunted eucalypts south towards the Gold Coast and the Pacific Ocean.

Figure 3. Naree Budjong Djara supports a disjunct population of the heath shadeskink *Saproscincus oriarus* © H.B. Hines 2019, QPWS



## 2.7 Species

### 2.7.1 Native animals

Naree Budjong Djara supports a variety of native animals typical of the South East Queensland Bioregion, including 16 species of frogs, 11 species of fish, 30 species of reptiles, 127 species of birds and 21 species of mammals. There are 17 conservation significant species, including four frogs, one fish, seven birds and five mammals (Appendix 6 & 7). Twenty-two are listed on international agreements; Convention on the Conservation of Migratory Species of Wild Animals, Japan–Australia Migratory Bird Agreement, China–Australia Migratory Bird Agreement and Republic of Korea–Australia Migratory Bird Agreement.

Minjerribah and Naree Budjong Djara support four conservation significant frog species, which are dependent on the high number of geologically stable acid lakes and swamps that occur on the island. These wetlands are important Quandamooka People cultural values and the Quandamooka People believe that by looking after Country, these and other important species will be protected. The Minjerribah and Naree Budjong Djara population of the Cooloola sedgefrog *Litoria* sp. cf. *cooloolensis* (North Stradbroke Island population) is considered genetically distinct from the mainland population.

A disjunct population of the heath shadeskink *Saproscincus oriarus* (Figure 3) occurs on Minjerribah and Naree Budjong Djara, with the nearest mainland population occurring in northern New South Wales. Other significant reptile species is the death adder *Acanthophis antarcticus*, which has declined in other areas, most likely resulting from poor fire management.

Minjerribah, including Naree Budjong Djara, is renowned for its significant koala population. The Minjerribah–Naree Budjong Djara koala population appears to be stable and does not face the threats experienced by the adjacent mainland population. In an effort to protect the Minjerribah–Naree Budjong Djara koala population, QYAC enforces a strict quarantine protocol where sick or injured koalas removed from the island for veterinary treatment are not to be returned to the island after treatment.

### 2.7.2 Native plants

Over 599 native species of plants have been recorded on Naree Budjong Djara (K. Stephens & D Sharp (2009)). There are eight conservation significant species, including several species with restricted distributions (Appendix 6). *Eleocharis difformis* and *Olearia hygrophila* are considered to have evolved as a result of the age and stability of the island's wetlands (Tibby et al. 2017).



## 2.8 Geophysical features

### 2.8.1 Geological process of sand island formation

Minjerribah and Naree Budjong Djara represent a significant, ongoing geological and biological process of accumulative quartz sand deposits. The sand dunes present on Minjerribah today result from the formation of sandbanks running south from the Mooloomba headland during low sea levels of the Early Pleistocene period and high sea levels prior to the Middle Pleistocene period. Migrating sands accumulated against the rhyolite formations of Mooloomba and greenstones outcrops approximately 15 km south of Dunwich. These sandbanks were formed by ocean currents when they were submerged a number of times through glacial periods, with mineral-rich deposits forming across the banks. The north-western migration and accumulation of sand was aided by windblows when sandbanks emerged during low sea-level periods during the late Pleistocene. A final recession of sea level following this period resulted in the emergence of stable, high-dune landform systems present across the majority of Minjerribah. The active north-trending dunal formation on the eastern beaches that are present today, and enclose the Eighteen Mile Swamp, began to form at this time.

### 2.8.2 Coastal non-floodplain sand lakes

Minjerribah's lake systems consist of a range of classifications including perched lakes, lowland lakes on leached dunes, freshwater lakes with marine contact, ponds in frontal dunes, and a water table window lake. The freshwater systems are typically characterised by acidic chemistry, low levels of suspended solids and nutrients, and beds of humic accumulation. Perched lakes on Minjerribah are formed on an indurated layer of cemented organic material and sand within the soil profile. This creates a semi-permeable perching layer, which infiltrating groundwater and rainfall can fill rapidly. Perched lakes, such as Bummiera, may be characterised by their 'tea' colouration due to the tannin content of the water leached from the organic materials present in high levels. Window lakes present on Minjerribah, such as Karboora, are systems between dunes that intercept the groundwater table, thus forming a 'window' into the aquifer. Karboora is a highly stable system with a constant water level, and displays a high degree of resilience to climatic variation over millennia.

Groundwater expressions along the eastern coastline are confined by frontal dune systems, forming the Eighteen Mile Swamp, a vegetated system varying in depth. Fire exclusion, inappropriate fire and fluctuating water levels have seen an intrusion of *ngudjur* (broad-leaved paperbark) *Melaleuca quinquenervia* and an altered composition of sedge and rush communities.



## 2.9 Recreational and ecotourism opportunities

Minjerribah is about 40 km south-east of Brisbane and is a popular tourism destination, with between 320 000 and 380 000 people visiting in 2017. Visitors are encouraged to enjoy learning about Quandamooka culture, landscapes, values and knowledge while visiting, beach camping at Flinders Beach and Main Beach, bushwalking, appreciating nature, and enjoying the four-wheel-drive beach experience.

Through joint management, QYAC and QPWS wish to promote, enhance and elevate Quandamooka cultural awareness among visitors to further enrich the eco-cultural experience on offer. Joint management seeks to encourage culturally appropriate and respectful behaviour when visiting or conducting commercial activities on Naree Budjong Djara.

### 2.9.1 Camping

Beach camping is available at Flinders Beach and Main Beach within the Minjerribah Recreation Area. These are self-sufficient unallocated camping sites accessible only by four-wheel-drive vehicles. Four-wheel-drives require an access permit available from Minjerribah Camping. Flinders Beach, a north-east to north-facing beach stretching for 8 km, features 200 sites across 12 zones, accessible by four-wheel-drive along beach and bush tracks. Main Beach extends 38 km along the eastern side of Minjerribah, and features 160 sites across 15 zones, also accessible by four-wheel-drive along the beach. The camping zones begin 17 km south of Point Lookout. Dogs are permitted and must be on a lead at all times.

### 2.9.2 Day-use areas

The Bummiera day-use area is located 3.5 km from Goompi (Dunwich) and features several wood-fired barbecues, picnic facilities and toilets.

Myora Springs Conservation Park offers a boardwalk along Capemba (Myora) Creek, and features interpretive signage telling the story of this significant Quandamooka site, winding through the endangered littoral scrub out to the mangrove forest and Moreton Bay.

### 2.9.3 Beach touring

Four-wheel driving along Flinders Beach and Main Beach is a popular attraction of Minjerribah. Access is restricted to designated areas and requires a vehicle access permit. Driving on the beach is not permitted one hour either side of high tide. Access may be restricted or closed for safety or environmental reasons. Restrictions and closures are clearly signed.

### 2.9.4 Beach fishing

Fishing is prohibited within the inland water bodies of Minjerribah and Naree Budjong Djara. However, Main Beach and Flinders Beach offer more than 40 km of coastline for recreational beach fishing and are accessible by four-wheel-drive with a vehicle access permit. Surf gutters along Main Beach and the South Passage from Flinders Beach provide fishing opportunities for species such as tailor, whiting and dart.

### 2.9.5 Walking

There are five walking tracks within the Kaboora section of Naree Budjong Djara. All tracks are accessible from the Kaboora car park, about 9 km from Goompi (Dunwich) along Alfred Martin Way.

#### **Neemeemba track**

The Neembeeba ('to see') lookout track is a 6 km return walk. The track departs the car park and winds uphill through coastal wallum woodland to a sandy ridge where views of the ocean can be seen through the trees. The vegetation is stunted with distinctive scribbly gums. The lookout provides views over the southern part of Minjerribah, the Pacific Ocean and the Gold Coast. The track is a gradual climb and is sandy in places.

#### **Dakabin track**

The Dakabin ('grass tree') track is a 1.8 km section of walking track that connects the Neembeemba lookout to the shores of Kaboora. It winds through tall grass trees, heath, pockets of ferns and native grasses.

#### **Kaboora track**

The Kaboora (meaning 'deep silent pool') track is a 5.2 km return walk. Kaboora is a place of significant cultural value to the Quandamooka People and they request that visitors respect





the significance of the area by not swimming in the lake.

The walk to Kaboora passes through wallum woodlands with stunted eucalypt trees, wallum banksias and a heath understorey. The edges of the lake are thickly vegetated with eucalypts, banksias and sedges, with many birds such as honeyeaters and lorikeets. The lake supports waterbirds, such as grebes and ducks, as well as several species of native freshwater fish including ornate rainbowfish and gudgeons. Visitors may catch sight of a golden wallaby *Wallabia bicolor*, a form of swamp wallaby found only on Teerk Roo Ra (also known as Peel Island), Minjerribah and South Stradbroke Island. In wet times, you can hear the call of the near-threatened Cooloola sedgefrog *Litoria coolooensis*.

#### **Kabul track**

The Kabul (carpet snake) track starts from the western side of the day-use area. It is a 3 km section of track that follows the ridgeline south-east then drops downhill to connect with the Kaboora track, passing through dwarfed eucalypts and offering spectacular views to Mount Vane and the ocean.

#### **Jarlo Beetle track**

The Jarlo beetle (fire beetle) track starts after the steepest section of the Kabul track. It is a 6 km return walk that follows the ridgeline west through twisted scribbly gums and forest boronia, then up to the summit where there are views south to the Gold Coast, west to Brisbane and north to the Glass House Mountains and Sunshine Coast.

## **2.10 Mining**

Commencing in the 1950s, sand mining has played a key role in Minjerribah's economic history. Through negotiation between the State, QYAC and mining operators, and with legislative change, sand mining ended substantially by late 2019, and is due to be phased out by 2025.

Large areas of Minjerribah, portions of Naree Budjong Djara, and new additions through the *Minjerribah Protected Area Expansion Strategy* have been subject to mineral sands exploration and mining, followed by rehabilitation. Rehabilitated areas present a range of management considerations from a fire, species composition, pest, landform and hydrology perspective.

## **2.11 Historic cultural heritage**

There are no sites on Naree Budjong Djara listed on the Queensland Heritage Register or the Australian National Heritage list.

## **2.12 Scientific research**

QPWS and QYAC have several long-term monitoring programs. Research programs such as koala population monitoring, limnology and cultural heritage surveying inform and guide decision-making and management to prioritise the protection of natural and cultural values.

Naree Budjong Djara offers great opportunities for research into geomorphological processes associated with perched lake and window lake systems, swamps and wetlands, and the values of Minjerribah as a refuge for climate change.

Through the joint management process, a return to a traditional burning regime is being implemented. This change in management has research potential for a greater understanding of traditional land management practices.

The University of Queensland Moreton Bay Marine Research Station, QYAC and QPWS have developed a strong working relationship through natural resource monitoring and research projects.

Researchers from other universities and organisations continue to collaborate with QYAC to gain a greater understanding of the island and species that depend on it.



## 2.13 Education

Naree Budjong Dara offers visitors the chance to enjoy and learn through nature-based recreational activities, and gain knowledge and a greater understanding of the rich history of the Quandamooka People and their culture, use and management of native plants and animals, and natural processes associated with Minjerribah and Naree Budjong Djara.

Public appreciation of the cultural importance of Minjerribah to the Quandamooka People can be greatly enhanced through emphasising Quandamooka culture and story places such as Mooloomba, Bummiera and Karboora.

Naree Budjong Djara provides an ideal natural resource for formal and informal education. School groups, tertiary institutions, local community members and interest groups use Naree Budjong Djara to study the processes associated with coastal dune systems, lakes, swamps, and wetlands, and native plant and animal ecology. Organised educational group activities within Naree Budjong Djara require the consent of QYAC and QPWS.

QYAC plans to establish a cultural and visitor centre at Goompi to enhance visitor appreciation and understanding of Quandamooka culture upon their arrival at Minjerribah and Naree Budjong Djara.

## 2.14 Fire

To date, fire management has occurred through planned hazard reduction burns and wildfire response. Long-term fire management seeks to adopt a collaborative traditional burning regime across Minjerribah and Naree Budjong Djara by implementing the Quandamooka Jarlo (Fire) Project. The aim of the Jarlo Project is to reintroduce traditional fire management to re-create the pre-colonisation cultural landscape, in turn achieving the Quandamooka People's vision of Caring for Country, and reducing fire risk to cultural and natural values, townships, settlements and recreation areas.

The South East Queensland Bioregion of Queensland Planned Burn Guidelines (NPRSR 2012) outlines the strategies for implementing appropriate fire management regimes in the various vegetation types within the protected area estate of the South East Queensland Bioregion. The QYAC and QPWS joint management unit undertakes planned burns in accordance with these guidelines, with a focus on integrating Quandamooka *jarlo* knowledge into planned burn operations.

A history of lack of *jarlo* fire practice across Minjerribah and Naree Budjong Djara has resulted in regular occurrences of high-intensity wildfire events. Subsequent thickening of she-oak regrowth in open forest, melaleuca in swamps and edges, and obligate-seeder species has elevated fuel loads and the likelihood of high-intensity fires, increasing the difficulty in applying the appropriate burning regime during optimal conditions. Increased fuel loads threaten cultural landscapes, precincts, sites and natural key values.

The Quandamooka Jarlo (Fire) Project presents a rationale and strategy to implement tradition burning while the *Minjerribah Township Fire Management Strategy* considers the fire risk proximate to the townships on Minjerribah. To achieve a traditional burning regime, the strategy classifies areas surrounding the townships as hazard reduction zones at varying degrees and identifies overall fuel loads as triggers for fire management. These township protection zones are to allow a traditional fire regime to occur across Naree Budjong Djara and the rest of Minjerribah and minimise the risk of fire impacting on the townships. A reduced risk of wildfire allows for greater participation of the wider Quandamooka community in *jarlo* practices, achieving the overall goals of Healthy Country, Healthy People throughout the Quandamooka community. A fire management trail network is being developed across Naree Budjong Djara and adjoining tenure to provide maintained access and management infrastructure throughout the estate.

Fire management across Minjerribah and Naree Budjong Djara seeks to involve a wide range of partners and stakeholders. Primarily, fire management is undertaken by the QYAC and QPWS joint management unit. Assistance is sought from other agencies when required for planned burns and wildfire response, including Queensland Fire and Emergency Services, Queensland Rural Fire Service, Department of Natural Resources, Mines and Energy, Seqwater, Redland City Council, Minjerribah Camping and Sibelco.



## 2.15 Pests

### 2.15.1 Pest plants

Environmental weeds have the potential to impact the key values of Naree Budjong Djara. These include widespread species such as basket asparagus *Asparagus aethiopicus* ‘Sprengeri’, lantana *Lantana camara*, guava *Psidium guajava*, groundsel bush *Baccharis halimifolia*, Easter cassia *Senna pendula* var. *glabrata*, Singapore daisy *Sphagneticola trilobata*, umbrella tree *Schefflera actinophylla*, mile a minute *Ipomoea cairica*, red ochra *Ochna serrulata* and broad-leaf pepper-tree *Schinus terebinthifolius*. As many of these species are well established throughout Naree Budjong Djara, management focuses on infestations that impact the key values (Appendix 8).

Pest plants that threaten the integrity of the numerous wetlands include groundsel bush *Baccharis halimifolia*, a wind-dispersed shrub capable of establishing where saltwater intrusion may occur and where native species may have a lower threshold of resilience. The ability of ecosystems to recover following intrusion is hampered by the establishment of groundsel populations, resulting in an environment that allows further establishment of groundsel bush. Appropriate burning practices and management of wetland outflows and estuarine inflows are necessary to manage groundsel bush.

Some areas are a legacy of sand mining, now rehabilitated through remedial earthworks and revegetation. Coastal tea-tree *Leptospermum laevigatum*, a native species to south-eastern Queensland, is now considered naturalised in parts of the region. Coastal tea-tree was used extensively for stabilisation in sand mining rehabilitation. It has potential to hybridise with the endemic *Leptospermum* species and outcompetes the endemic species, not only through growth on sand mine rehabilitation areas, but through dispersal into natural areas such as wetlands. The potential to alter fuel loads may also pose a threat to invaded environments.

Historically, several exotic pine plantations have been established across Minjerribah and Naree Budjong Djara. Mature slash pine *Pinus elliotti* and stands of pine wildings are present and pose a threat to biodiversity through shading understorey species, increasing fuel loads and altering fire regime.

Whiskey grass *Andropogon virginicus* occurs across Minjerribah and Naree Budjong Djara. Typically an invader of disturbed areas such as roadsides, the presence of whisky grass along

constructed firebreaks has the potential to not only reduce the effectiveness of firebreaks and increase maintenance requirements, but also increase fuel loads and alter the fire regime when spreading into natural areas.

### 2.15.2 Pest animals

Eleven terrestrial vertebrate pests, including feral cat *Felis catus*, wild dog *Canis lupus*, fox *Vulpes vulpes*, house mouse *Mus musculus*, black rat *Rattus rattus*, cane toad *Rhinella marina*, spotted dove *Streptopelia chinensis*, common myna *Acridotheres tristis*, house gecko *Hemidactylus frenatus*, mosquitofish *Gambusia holbrooki* and tilapia *Oreochromis mossambicus*, have been recorded on Minjerribah and Naree Budjong Djara (Appendix 8).

Feral cats and foxes impact on marine turtle nests, and small mammal and bird populations across Minjerribah and Naree Budjong Djara. They have been identified as a significant risk to several threatened species including water mouse and several migratory shorebirds. A multi-agency/tenure approach to fox management across Minjerribah has reduced fox numbers through a 1080 baiting, shooting and trapping program coordinated by the Straddie Pest Management Group. Feral cat management is currently limited to trapping and seeks to identify priority target areas for feral cat management.

Mosquitofish are established in several creeks, lakes and swamps across Minjerribah and Naree Budjong Djara. Mosquitofish present a threat to native fish and amphibians in water bodies, including being highly competitive for resources with the vulnerable Oxleyan pygmy perch *Nannoperca oxleyana*. The population of Cooloola sedgefrog *Litoria coolooensis* within Bummiera has been impacted considerably following the introduction of mosquitofish to the lake in 2003, with the wallum sedgefrog *Litoria oblongurensis* and wallum rocketfrog *Litoria freycineti* being predated through introductions to other aquatic systems on Minjerribah. Additionally, reported sightings of the noxious Mozambique mouthbrooder or tilapia *Oreochromis mossambicus* have occurred in the Kounpee Trench, an artificial water source to service sand mining, south of Goompi. Tilapia’s ability to occur at high density and consume resources, from detritus to live fish, presents a significant threat to the aquatic ecology of Minjerribah.

An emerging threat to biodiversity on Minjerribah and Naree Budjong Djara is wild domestic dogs. Some dogs accompanying visitors and local residents have become ‘wild’ and killed large mammals such as koalas and grey kangaroos. QYAC and QPWS are working with Redland City Council to manage wild domesticated dogs.



# Appendices

## Appendix 1. Legal, policy and management commitments

### Gazettal details

Blue Lake National Park was gazetted in 1980 to protect the area's cultural and natural values. Blue Lake National Park is now part of Naree Budjong Djara National Park. In July 2011, the Federal Court of Australia handed down its determination of native title to the Quandamooka People, delivering an ILUA and IMA. Following the native title determination and the gradual extinguishment of sand mining leases across the island, Naree Budjong Djara National Park has become an Indigenous Joint Management Area.

### Applicable Acts and statutory powers

- *Aboriginal Cultural Heritage Act 2003* (Qld)
- *Biosecurity Act 2014* (Qld)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)
- *Mining and Quarrying Safety and Health Act 1999* (Qld)
- *Mineral Resources Act 1989* (Qld)
- *Native Title Act 1993* (Cwlth)
- *Nature Conservation Act 1992* (Qld)
- *Queensland Heritage Act 1992* (Qld)
- *Recreation Areas Management Act 2006* (Qld)

### Management obligations

- *Quandamooka Indigenous Land Use Agreement* June 2011
- *Moreton Bay Ramsar Site Agreement* 1993

### Recovery plans and guides

- *National recovery plan for the wallum sedgefrog and other wallum-dependent frog species*, 2006.
- *National recovery plan for the littoral rainforest and coastal vine thickets of Eastern Australia ecological community*, 2019.

### Other management commitments

- CMS – Convention on the Conservation of Migratory Species of Wild Animals
- CAMBA – China–Australia Migratory Bird Agreement
- JAMBA – Japan–Australia Migratory Bird Agreement
- ROKAMBA – Republic of Korea–Australia Migratory Bird Agreement

## Appendix 2. Wetlands of International Importance criteria and corresponding Quandamooka country values

Wetland of International Importance criteria	Associated Quandamookadjara values
Contains a representative, rare, or unique examples of a natural or near-natural wetland type found within the appropriate biogeographical region	Wetlands a. Estuarine clay plains and wetlands b. Gahnia closed sedgeland in coastal swamps c. <i>Melaleuca quinquenervia</i> open woodlands
Supports vulnerable, endangered, or critically endangered species or threatened ecological communities (listed nationally or under international frameworks)	Mixed microphyll/notophyll rainforest Wetlands a. Estuarine clay plains and wetlands b. Gahnia closed sedgeland in coastal swamps c. <i>Melaleuca quinquenervia</i> open woodlands
Supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region	Open heath on dunes Mixed microphyll/notophyll rainforest Wetlands a. Estuarine clay plains and wetlands b. Gahnia closed sedgeland in coastal swamps c. <i>Melaleuca quinquenervia</i> open woodlands
Supports plant and/or animal species at a critical stage in their life cycles or provides refuge during adverse conditions	Open heath on dunes Mixed microphyll/notophyll rainforest Wetlands a. Estuarine clay plains and wetlands b. Gahnia closed sedgeland in coastal swamps c. <i>Melaleuca quinquenervia</i> open woodlands
Regularly supports 20 000 or more waterbirds	Open heath on dunes Mixed microphyll/notophyll rainforest Wetlands a. Estuarine clay plains and wetlands b. Gahnia closed sedgeland in coastal swamps c. <i>Melaleuca quinquenervia</i> open woodlands
Regularly supports one per cent of the individuals in a population of one species or subspecies of waterbird	Wetlands a. Estuarine clay plains and wetlands b. Gahnia closed sedgeland in coastal swamps c. <i>Melaleuca quinquenervia</i> open woodlands
Significant and representative fish	Wetlands a. Estuarine clay plains and wetlands b. Gahnia closed sedgeland in coastal swamps c. <i>Melaleuca quinquenervia</i> open woodlands
Fish spawning grounds, etc.	Wetlands a. Estuarine clay plains and wetlands b. Gahnia closed sedgeland in coastal swamps c. <i>Melaleuca quinquenervia</i> open woodlands
Non-avian animal populations	Open heath on dunes Mixed microphyll/notophyll rainforest Wetlands a. Estuarine clay plains and wetlands b. Gahnia closed sedgeland in coastal swamps c. <i>Melaleuca quinquenervia</i> open woodlands



## Appendix 3. Wetland management

### **WetlandInfo, Queensland Government**

WetlandInfo provides information regarding wetland identification and management.

Accessed at <http://wetlandinfo.des.qld.gov.au/wetlands/>

### **Information Sheet on Ramsar Wetlands (RIS) – Moreton Bay Ramsar site, 16 September 2019**

The RIS provides essential data on each designated Wetland of International Importance.

Australian Government Department of the Environment and Energy 2018, *Information Sheet for site no. 631, Moreton Bay, Australia*

Accessed at <http://www.environment.gov.au/water/wetlands/publications/ris-moreton-bay>

### **Ramsar Management Summary**

There is no current Ramsar Management Summary for the Moreton Bay Ramsar site, site no. 631, Moreton Bay, Australia.

### **Ecological Character Description – Moreton Bay Ramsar site**

The Ecological Character Description identifies the critical services, processes and components of the wetland and identifies limits of acceptable change, knowledge gaps and monitoring recommendations in relation to these critical elements.

Ecological Character Description of Moreton Bay Ramsar site is being reviewed and is currently unavailable.

## Appendix 4. Regional ecosystems

Regional ecosystem	Description	Biodiversity status
12.2.7	<i>Melaleuca quinquenervia</i> or rarely <i>M. dealbata</i> open forest on sand plains	No concern at present
12.2.14	Foredune complex	No concern at present
12.2.15	<i>Gahnia sieberiana</i> , <i>Empodisma minus</i> , <i>Gleichenia</i> spp. closed sedgeland in coastal swamps	No concern at present
12.2.8	<i>Eucalyptus pilularis</i> open forest on parabolic high dunes	No concern at present
12.2.6	<i>Eucalyptus racemosa</i> subsp. <i>racemosa</i> open forest on dunes and sand plains. Usually deeply leached soils	No concern at present
12.2.9	<i>Banksia aemula</i> low open woodland on dunes and sand plains. Usually deeply leached soils	No concern at present
12.1.2	Notophyll vine forest on parabolic high dunes	No concern at present
12.1.3	Mangrove shrubland to low closed forest on marine clay plains and estuaries	No concern at present
12.2.5	<i>Corymbia intermedia</i> +/- <i>Lophostemon confertus</i> +/- <i>Banksia</i> spp. +/- <i>Callitris columellaris</i> open forest on beach ridges, usually in southern half of bioregion	Of concern
12.3.20	<i>Melaleuca quinquenervia</i> , <i>Casuarina glauca</i> +/- <i>Eucalyptus tereticornis</i> , <i>E. siderophloia</i> open forest on low coastal alluvial plains	Endangered
12.2.12	Closed heath on seasonally waterlogged sand plains	Of concern
12.2.1	Notophyll vine forest on parabolic high dunes	Of concern
12.2.16	Sand blows largely devoid of vegetation	Of concern
12.2.10	Mallee <i>Eucalyptus planchoniana</i> +/- <i>Corymbia gummifera</i> , <i>E. racemosa</i> subsp. <i>racemosa</i> , <i>Banksia aemula</i> woodland on dunes and sand plains, especially southern sand mass islands. Usually deeply leached soils	Of concern
12.2.13	Open or dry heath on dunes and beaches	Endangered

## Appendix 5. Species of Quandamooka cultural significance

Jandai	Scientific name	Common name	Cultural use
	<i>Carpobrotus glaucescens</i>	pigface	Edible fruit, leaves
<i>juntchi</i>	<i>Avicennia sp., Rhizophora sp.,</i>		
	<i>Exoecaria sp.</i>	mangrove species	Timber, food species habitat, edible fruit, medicinal sap
	<i>Mucuna gigantea</i>	burney bean	Edible seed
	<i>Ficus coronta</i>	sandpaper fig	Leaves used for finishing of products, edible fruit
<i>ganin</i>	<i>Ficus obliqua</i>	small-leafed fig	Edible fruit
<i>midjam</i>	<i>Austromyrtus dulcis</i>	midgem berry	Edible fruit
	<i>Acmena sp., Syzigium sp.</i>	lilly pilly	Edible fruit
	<i>Archontophoenix cunninghamiana</i>	piccabeen palm	Fibre, flower sheaths as vessels, edible fruit, young shoots
	<i>Livistona australis</i>	cabbage-tree palm	Edible growth point
<i>ngudjur</i>	<i>Melaleuca quinquenervia</i>	swamp paperbark	Bark, blossoms are species indicator
	<i>Podocarpus spinulosus</i>	dwarf plum pine	Edible fruit
<i>winnam</i>	<i>Pandanus sp.</i>	screw palm	Fibre, edible fruit
	<i>Cymbidium sp.</i>	tree orchid	Medicinal
	<i>Spiranthes sp.</i>	lady's tresses	Edible tuber
<i>dungal (word for banksia 'cone')</i>	<i>Banksia aemula</i>	wallum banksia	Honeysuckle
<i>minti</i>	<i>Banksia integrifolia</i>	coast banksia	Honeysuckle
	<i>Banksia oblongifolia</i>	dwarf banksia	Honeysuckle
<i>bambari</i>	<i>Banksia serrata</i>	red banksia	Honeysuckle
<i>gumbal</i>	<i>Persoonia sp.</i>	geebungs	Edible fruit
	<i>Rubus parvifolius</i>	small-leaf raspberry	Edible fruit
<i>gadarraba</i>	<i>Styphelia viridis</i>	five corners	Edible fruit
	<i>Timonius timon</i>	tim tim	Edible fruit, medicinal
	<i>Smilax glyciphylla</i>		Tonic against scurvy
<i>burogari</i>	<i>Callitris columellaris</i>	white cypress	Cultural landscape indicator, resin, timber
	<i>Callitris rhomboidea</i>	dune pine	Resin
	<i>Hibiscus tiliaceus</i>	cotton tree	Bark for twine, edible flower





## Appendix 5. *continued*

Jandai	Scientific name	Common name	Cultural use
	<i>Alocasia brisbanensis</i>	cunjevoi	Roots eaten
	<i>Acacia sophorae</i>	coastal wattle	Edible seed
	<i>Stephania japonica</i>	tape vine	Fish poison
	<i>Amyema sp., Lysiana sp.</i>	mistletoe	Edible berries
<i>jiman-jiman</i>	<i>Exocarpus cupressiformis</i>	native cherry	Edible fruit stalk
	<i>Typha orientalis</i>	bullrush	Young shoots and roots edible, fibre
<i>dakabin (small)</i>	<i>Xanthorrhoea sp.</i>	grass tree	Inner leaf base edible, resin
	<i>Lomandra sp.</i>	mat rush	Fibre
	<i>Alpinia caerulea</i>	native ginger	Fibre, edible fruit
	<i>Pteridium esculentum</i>	bracken	Edible rhizome
<i>bungwall</i>	<i>Blechnum indicum</i>	bungwall fern	Edible rhizome a staple
	<i>Melastoma sp.</i>	native lasiandra	Edible fruit blackens tongue
<i>yeral</i>	<i>Flagellaria indica</i>	supplejack	Fibre
<i>nyunggeh</i>	<i>Baumea rubiginosa</i>	freshwater reed	Fibre
	<i>Alphitonia excelsa</i>	red ash	Fish poison, soap
<i>bila</i>	<i>Casuarina glauca</i>	swamp oak	Timber
	<i>Boronia falcifolia</i>	heather	Cut flowers, funerary
	<i>Boronia saffrolifera</i>	boronia	Cut flowers, funerary
<i>jim/tjin</i>	<i>Donax deltoides</i>	yugari/pipi	Meat, shell
<i>yangang</i>	<i>Dugong dugon</i>	dugong	Meat, oil, bone
<i>quampi</i>	<i>Ostreidae sp.</i>	pearl oyster	Meat, shell
	<i>Melo georginae</i>	bailer	Shell for digging, carrying, bailing
	<i>Corymbia sp.</i>	bloodwood	Cultural landscape indicator, kino
	<i>Eucalyptus tereticornis</i>	forest red gum	Cultural landscape indicator
<i>bombebi</i>	<i>Phascolarctos cinereus</i>	koala	
<i>tharuk</i>	<i>Ipomoea pes-caprae</i>	goats foot	

## Appendix 6. Species of conservation significance

Scientific name	Common name	NC Act status	EPBC Act status	Back on Track
<b>Plants</b>				
<i>Thelypteris confluens</i>	fern	Vulnerable	-	Low
<i>Acacia bauera subsp. bauera</i>	tiny wattle	Vulnerable	-	Medium
<i>Durringtonia paludosa</i>	Durringtonia	Near threatened	-	High
<i>Eleocharis difformis</i>	sedge	Endangered	-	-
<i>Phaius australis</i>	lesser swamp orchid	Endangered	Endangered	Critical
<i>Phaius bernaysii</i>	yellow swamp orchid	Endangered	Endangered	Critical
<i>Olearioa hygrophila</i>	swamp daisy	Endangered	Endangered	Low
<i>Blandfordia grandiflora</i>	Christmas bells	Endangered	-	High
<b>Animals</b>				
<i>Litoria sp. Cf. cooloolensis (North Stradbroke Island population)</i>	Cooloola sedgefrog	Near threatened	-	Medium
<i>Litoria oblongurensis</i>	wallum sedgefrog	Vulnerable	Vulnerable	Medium
<i>Litoria freycineti</i>	wallum rocketfrog	Vulnerable	-	Medium
<i>Crinia tinnula</i>	wallum froglet	Vulnerable	-	High
<i>Esacus magnirostris</i>	beach stone-curlew	Vulnerable	-	High
<i>Hirundapus caudacutus</i>	white-throated needletail	Vulnerable	Vulnerable	Low
<i>Calyptorhynchus lathami lathami</i>	glossy black-cockatoo (eastern)	Vulnerable	-	High
<i>Charadrius mongolus</i>	lesser sand plover	Endangered	Endangered	Low
<i>Limosa lapponica baueri</i>	Western Alaskan bar-tailed godwit	Vulnerable	Vulnerable	Low
<i>Numenius madagascariensis</i>	eastern curlew	Endangered	Critically endangered	Low
<i>Calidris tenuirostris</i>	great knot	Endangered	Critically endangered	Low
<i>Megaptera novaeangilae</i>	humpback whale	Vulnerable	Vulnerable	Medium
<i>Dugong dugon</i>	dugong	Vulnerable	-	Critical
<i>Xeromys myoides</i>	water mouse	Vulnerable	Vulnerable	High
<i>Phascolarctos cinereus</i>	koala	Vulnerable	Vulnerable	Low
<i>Pteropus poliocephalus</i>	grey-headed flying-fox	Least concern	Vulnerable	Critical
<i>Nannoperca oxleyana</i>	Oxleyan pygmy perch	Vulnerable	Endangered	Critical

## Appendix 7. Species listed in international agreements

Scientific name	Common name	CMS	JAMBA	ROKAMBA	CAMBA
<i>Ardea alba</i>	white egret				
<i>Calidris acuminata</i>	sharp-tailed sanderling		✓		
<i>Calidris alba</i>	sanderling			✓	
<i>Calidris ruficollis</i>	red-necked stint		✓		
<i>Calidris tenuirostris</i>	great knot	✓	✓	✓	
<i>Charadrius mongolus</i>	lesser sand plover	✓	✓	✓	✓
<i>Falco peregrinus</i>	peregrine falcon	✓			
<i>Gallinago hardwickii</i>	Latham's snipe		✓	✓	✓
<i>Gelochelidon nilotica</i>	gull-billed tern	✓			
<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle				✓
<i>Himantopus himantopus</i>	black-winged stilt				
<i>Hirundapus caudacutus</i>	white-throated needletail			✓	
<i>Hydroprogne caspia</i>	Caspian tern				
<i>Limosa lapponica</i>	bar-tailed godwit		✓	✓	✓
<i>Megaptera novaeangliae</i>	humpback whale				
<i>Numenius madagascariensis</i>	eastern curlew	✓	✓	✓	✓
<i>Numenius phaeopus</i>	whimbrel	✓	✓	✓	✓
<i>Phalaropus lobatus</i>	red-necked phalarope		✓		
<i>Pluvialis squaterola</i>	grey plover	✓			
<i>Sternula albifrons</i>	little tern	✓			
<i>Thalasseus bergii</i>	crested tern	✓			
<i>Tringa nebularia</i>	common greenshank	✓		✓	✓

### Notes:

This list includes local and migratory birds that regularly use the park for feeding, nesting and/or breeding. Species that visit from time to time but are not regular users have not been included in the table.

CMS – Convention on the Conservation of Migratory Species of Wild Animals

CAMBA – China–Australia Migratory Bird Agreement

JAMBA – Japan–Australia Migratory Bird Agreement

ROKAMBA – Republic of Korea–Australia Migratory Bird Agreement

## Appendix 8. Pests

Scientific name	Common name	Biosecurity Act 2014 status	Historical notes
<b>Plants</b>			
<i>Salvinia molesta</i>	salvinia	Restricted invasive	Still and slow-moving water bodies, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces light penetration into water column</li> <li>• Deoxygenates water when decomposition follows death</li> <li>• Salvinia weevil <i>Cyrtobagous salviniae</i> is a biocontrol agent</li> </ul>
<i>Justicia betonica</i>	shrimp plant	-	Riparian and disturbed areas including roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> <li>• Significant threat to waterways</li> </ul>
<i>Sphagneticola trilobata</i>	Singapore daisy	Restricted invasive	Riparian areas, wetlands and disturbed areas including roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> <li>• Significant threat to waterways</li> </ul>
<i>Praxelis clematidea</i>	praxelis	-	Forested sites, riparian areas, disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Eclipta prostrata</i>	white eclipta	-	Forested sites, riparian areas, disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Erechtites valerianifolius forma valerianifolius</i>	Brazilian fireweed	-	Forested sites, riparian areas, disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Baccharis halimifolia</i>	groundsel bush	Restricted invasive	Forested sites, open areas, disturbed sites, wetlands, coastal areas, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Ageratina adenophora</i>	crofton weed	-	Forested sites, riparian areas, disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Hypochoeris radicata</i>	catsear	-	Disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Tecoma stans var. velutina</i>	yellow bells	Restricted invasive	Forested sites, riparian areas, disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>



## Appendix 8. *continued*

<i>Crotalaria incana subsp. incana</i>	woolly rattlepod	-	Forested sites, open areas, disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Crotalaria lanceolata subsp. lanceolata</i>	lance-leaved rattlepod	-	Forested sites, open areas, disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Lupinus cosentinii</i>	sandplain lupin	-	Forested sites, open areas, riparian areas, coastal areas, disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> <li>• Harms humans and animals</li> </ul>
<i>Leptospermum laevigatum</i>	coast tea-tree	-	Forested sites, open areas, riparian areas, coastal areas, disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> <li>• Harms humans and animals</li> </ul>
<i>Psidium guineense</i>	cherry guava	-	Forested sites, riparian areas, disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Passiflora suberosa</i>		-	Forested sites, riparian areas, disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Passiflora subpeltata</i>	white passion flower	-	Forested sites, riparian areas, disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Richardia brasiliensis</i>	white eye	-	Forested sites, riparian areas, wetlands, open areas, disturbed sites, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Gomphocarpus physocarpus</i>	balloon cottonbush	-	Disturbed areas including roadsides, adjacent to residential areas, grasslands, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Plectranthus verticillatus</i>	Swedish ivy	-	Forested sites, wetlands, open areas, disturbed sites, coastal areas, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Nymphaea caerulea</i>	blue lotus	-	Still and slow-moving waterbodies <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces light penetration into water column</li> <li>• Deoxygenates water when decomposition follows death</li> </ul>



## Appendix 8. *continued*

<i>Lantana camara</i>	lantana	Restricted invasive	<p>Forested sites, open areas, disturbed sites, roadsides, adjacent to residential areas, impacts:</p> <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> <li>• Alters fire regime</li> <li>• A significant issue in Endangered RE 12.2.2 where fire regime is altered and outcompetes native species regeneration</li> </ul>
<i>Syagrus romanzoffiana</i>	queen palm	-	<p>Forested sites, wetlands, open areas, disturbed sites, coastal areas, roadsides, adjacent to residential areas, impacts:</p> <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> <li>• Poses a threat to flying-fox populations through indigestible fruit</li> </ul>
<i>Cyperus brevifolius</i>	Mullumbimby couch	-	<p>Forested sites, open areas, disturbed sites, coastal areas, roadsides, adjacent to residential areas, impacts:</p> <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Poa annua</i>	annual poa	-	<p>Forested sites, open areas, disturbed sites, roadsides, adjacent to residential areas, impacts:</p> <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Melinis minutiflora</i>	molasses grass	-	<p>Disturbed areas including roadsides, adjacent to residential areas, impacts:</p> <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> <li>• Alters fire regimes</li> <li>• An issue in natural areas where fire regime is altered and poses a threat to high-intensity fire-sensitive species</li> </ul>
<i>Cynodon dactylon var. dactylon</i>	green couch	-	<p>Forested sites, open areas, disturbed sites, coastal areas, roadsides, adjacent to residential areas, impacts:</p> <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Cortaderia selloana</i>	pampas grass	-	<p>Forested sites, open areas, disturbed sites, wetlands, coastal areas, roadsides, adjacent to residential areas, impacts:</p> <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Asparagus aethiopicus 'Sprengeri'</i>	basket asparagus	Restricted invasive	<p>Forested sites, open areas, disturbed sites, coastal areas, roadsides, adjacent to residential areas, impacts:</p> <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Sporobolus fertilis</i>	giant Parramatta grass	Restricted invasive	<p>Forested sites, open areas, disturbed sites, coastal areas, roadsides, adjacent to residential areas, impacts:</p> <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Eragrostis tenuifolia</i>	elastic grass	-	<p>Forested sites, open areas, disturbed sites, coastal areas, roadsides, riparian areas, adjacent to residential areas, impacts:</p> <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Paspalum urvillei</i>	Vasey grass	-	<p>Forested sites, open areas, disturbed sites, coastal areas, roadsides, riparian areas, adjacent to residential areas, impacts:</p> <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>



## Appendix 8. *continued*

<i>Hyparrhenia rufa subsp. rufa</i>	thatch grass	-	Forested sites, open areas, grassed areas, disturbed sites, coastal areas, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> <li>• An issue in natural areas where fire regime is altered and poses a threat to high-intensity fire-sensitive species</li> </ul>
<i>Sporobolus africanus</i>	Parramatta grass	-	Forested sites, open areas, grassed areas, disturbed sites, coastal areas, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Paspalum notatum</i>	Bahia grass	-	Forested sites, open areas, disturbed sites, coastal areas, roadsides, riparian areas, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Megathyrsus maximus var. maximus</i>	green panic	-	Disturbed areas including roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> <li>• Alters fire regimes</li> <li>• A significant issue in Endangered RE 12.2.2 where fire regime is altered and poses a threat to fire-sensitive species</li> </ul>
<i>Digitaria violascens</i>	bastard summer grass	-	Forested sites, open areas, disturbed sites, coastal areas, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>
<i>Schefflera actinophylla</i>	umbrella tree	-	Forested sites, open areas, disturbed sites, riparian areas, wetlands, coastal areas, roadsides, adjacent to residential areas, impacts: <ul style="list-style-type: none"> <li>• Outcompetes native species</li> <li>• Reduces the natural values of the park</li> <li>• Reduces visitor appreciation of visitor amenities</li> </ul>

### Animals

<i>Rhinella marina</i>	cane toad	-	Widespread, impacts: <ul style="list-style-type: none"> <li>• Toxic to predators when ingested.</li> <li>• Implicated in local declines in several snake species and goanna populations</li> </ul>
<i>Gambusia holbrooki</i>	mosquitofish	Restricted noxious	Introduced into Bummiera in 2003, widespread, impacts: <ul style="list-style-type: none"> <li>• Reduces the natural values of the park</li> <li>• Threatens native amphibians and fish including Cooloola sedgefrog, wallum rocketfrog, wallum froglet and Oxleyan pygmy perch</li> </ul>
<i>Oreochromus mossambicus</i>	Mozambique mouthbrooder, (tilapia)	Restricted noxious	Reported sightings in the Kounpee Trench, south of Goompi, impacts: <ul style="list-style-type: none"> <li>• Potential to occur at high density</li> <li>• Consumes resources throughout food chain, from detritus to live fish</li> </ul>
<i>Hemidactylus frenatus</i>	house gecko	-	Widespread, impacts: <ul style="list-style-type: none"> <li>• Reduces the natural values of the park</li> <li>• Potential to cause a decline in local native insect and spider populations</li> <li>• May compete with native gecko species for resources</li> </ul>
<i>Streptopelia chinensis</i>	spotted dove	-	Locations proximate to human settlement, impacts: <ul style="list-style-type: none"> <li>• Nuisance at visitor amenities reducing visitor appreciation</li> <li>• Reduces the natural values of the park</li> </ul>
<i>Acridotheres tristis</i>	common myna	-	Locations proximate to human settlement, impacts: <ul style="list-style-type: none"> <li>• Nuisance at visitor amenities reducing visitor appreciation</li> <li>• Reduces the natural values of the park</li> </ul>



## Appendix 8. *continued*

<i>Mus musculus</i>	house mouse	-	Widespread, impacts: <ul style="list-style-type: none"> <li>• Reduces the natural values of the park</li> <li>• Provides food resource for other pest animals</li> </ul>
<i>Rattus rattus</i>	black rat	-	Widespread, impacts: <ul style="list-style-type: none"> <li>• Reduces the natural values of the park</li> <li>• Provides food resource for other pest animals</li> </ul>
<i>Canis familiaris</i>	wild dog	Restricted invasive	Widespread, impacts: <ul style="list-style-type: none"> <li>• Reduces the natural values of the park</li> <li>• Predation of small to large birds and mammals including water mouse, koala and grey kangaroo</li> <li>• Threat of negative human–dog interactions in recreation areas</li> <li>• Potential to spread parasitic and exotic disease</li> </ul>
<i>Felis catus</i>	feral cat	Restricted invasive	Widespread, impacts: <ul style="list-style-type: none"> <li>• Reduces the natural values of the park</li> <li>• Predation of critical weight-range mammals and birds</li> </ul>
<i>Vulpes vulpes</i>	fox	Restricted invasive	Widespread, impacts: <ul style="list-style-type: none"> <li>• Reduces the natural values of the park</li> <li>• Predation of marine turtle eggs and hatchlings</li> <li>• Predation of frogs, reptiles and birds</li> <li>• Predation of mammals including water mouse, koala and grey kangaroo</li> </ul>





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