

Magnetic Island National Park

Incorporates: Magnetic Island National Park, Horseshoe Bay Lagoon Conservation Park, Bolger Bay Conservation Park, Magnetic Island Conservation Park 1, Magnetic Island Conservation Park 2



Resource Information

2023

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The Wulgurukaba Yunbenun Aboriginal Corporation and the Wulgurukaba Aboriginal Corporation approve the current *Magnetic Island Management Statement* as a framework document for the Wulgurukaba People and QPWS to undertake our custodial obligations under the Commonwealth Government, Queensland Government, local government and Wulgurukaba traditions and customary lore.

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1. Magnetic Island National Park

The Department of Environment, Science, and Innovation recognises, respects and values

First Nations peoples and cultures. We recognise First Nations rights and interests in the Country on which we walk, work and live. We are committed to progressing self-determination by working in genuine partnerships with First Nations peoples to incorporate their priorities and perspectives across our decision-making and operations. The *Gurra Gurra Framework 2020–2026* prioritises and accelerates this commitment, guiding the agency to embed Country and people at the centre of all that we do.

Magnetic Island National Park is located about 8 kilometres north-east of Townsville, within the dry tropics region of north Queensland and the Great Barrier Reef World Heritage Area (GBRWhA). It is the largest continental island within the Northern Brigalow Belt Bioregion, and the seventh largest and fourth highest within the GBRWhA. It consists of rocky granite headlands, and towering hoop pines stand sentinel over tranquil sandy bays on this rugged, mountainous island covered with open eucalypt woodlands and surrounded by coral reefs. Magnetic Island is approximately 5,184 hectares in size, with just over three-quarters of the island being protected area—Magnetic Island National Park (3,940.65 hectares); Horseshoe Bay Lagoon Conservation Park (4.47 hectares); Bolger Bay Conservation Park (16.17 hectares); Magnetic Island Conservation Park 1 (67.10 hectares); Magnetic Island Conservation Park 2 (13.77 hectares). The protected areas will be identified as Magnetic Island National Park or 'the park' throughout this document. There is also a network of nature refuges in Horseshoe Bay and Bolger Bay that are managed in accordance with the *Nature Conservation Act 1992 (Qld)* (NCA).

Bolger Bay Conservation Park is managed under trusteeship by Magnetic Island Nature Care Association Inc (MINCA) through the NCA.

Magnetic Island Conservation Parks 1 and 2 are managed under trusteeship by Wulgurukaba Yunbenun Aboriginal Corporation (WYAC) through the NCA.

The Aboriginal Traditional Owners of Yunbenun (Magnetic Island), the Wulgurukaba People, the 'canoe people', have lived on the island and nearby mainland for thousands of years. Shell middens, stone tools and art sites are some of the physical reminders of their strong connection with the island. The Wulgurukaba People have stories, such as the Big Carpet Snake story, linking Magnetic and Palm islands and the mainland, which tell of the creation of this landscape during the Dreamtime.

Magnetic Island is located within Townsville City Council and has a permanent residential population of approximately 2,550 people (ABS 2022), primarily located within four locations—Nelly Bay, Arcadia, Horseshoe Bay and Picnic Bay.

The island is mostly covered by eucalypt woodland and low woodlands of acacias and mixed deciduous species, with small pockets of vine thicket occurring in sheltered gullies and on rock scree. Distinctive hoop pines *Araucaria cunninghamii* and native kapok *Cochlospermum gillivraei* are also characteristic of Magnetic Island.

The island is mostly granite, together with colluvium, alluvium, sand ridges (high dunes and swales) and marine deposits (estuaries). Much of the soil on the island comprises decomposed granite with little clay content. This soil type is highly prone to movement and erosion.

The protected areas within Magnetic Island contain a diverse range of ecosystems, including one 'endangered' and nine 'of concern' regional ecosystems. The island is also home to over 250 fauna species, including the largest colony of wild koalas *Phascolarctus cinereus* in northern Australia. There are 24 listed migratory bird species that may occur on and around Magnetic Island listed under the Convention on the Conservation of Migratory Species of Wild Animals – Bonn Convention (CMS), or the China–Australia, Japan–Australia or Republic of Korea–Australia migratory bird agreements. Threats to the ecosystems and biodiversity on the island include fragmentation, loss of connectivity of thicket due to development, and introduction of weed species.

The island offers a range of nature-based activities, including swimming, snorkelling, bushwalking, horse-riding, kayaking, sailing, water/surf/jet ski, sailboarding, paddle boarding and diving. There are a number of tour operators providing hire of facilities and guided tours for these activities, as well as bus tours, sailing and boat tours.

The Fort Complex is the most visited attraction on the island, showcasing WWII fortifications and affording excellent views across the island. This location is also a good place to spot koalas in the wild.

A number of organised competitive events are held on Magnetic Island, including a yacht regatta, walking, running, swimming, bike riding and multi-sports activities.

Magnetic Island is within the dry tropics. It has a wet season similar to other parts of the tropics—80% of the area’s rainfall is during the wet season between November and April—but is characterised by a dry season from May to October, with very little rain and lots of sunshine. The dry season is the best time to visit. Daytime temperatures vary between 25 °C and 32 °C throughout the year.

Bioregion	Brigalow Belt		
Area	4,042.96 ha		
Local government area	Townsville	State electorate	Townsville
Management obligations	Wulgurukaba People Indigenous Land Use Agreement Trustee Management Agreement—Bolger Bay Conservation Park Japan–Australia Migratory Bird Agreement (JAMBA) Convention on the Conservation of Migratory Species of Wild Animals (CMS) China–Australia Migratory Bird Agreement (CAMBA) Republic of Korea–Australia Migratory Bird Agreement (ROKAMBA)		



Map 1. Magnetic Island National Park location map

2. Wulgurukaba People

In Our Wulgurukaba language, Yunbenun is Magnetic Island. Our Country is very important to us as part of our wider homelands. This island and coastline are rich in natural resources and are Culturally and Spiritually significant to us. Our Ancestors lived here and Our Connection to Culture and Country remains strong. As custodians, we are committed to looking after our Country. We ask you to do the same.

2.1 Wulgurukaba People, Yunbenun Country and Culture

The Aboriginal Traditional Owners of Yunbenun are the Wulgurukaba People, the ‘canoe people’, have lived on the island and nearby mainland for thousands of years. Shell middens, stone tools and art sites are some of the physical reminders of their strong connection with the island. The Wulgurukaba People have stories, such as the Big Carpet Snake (Gabul) story, that link Yunbenun (Magnetic Island) and Dhanu mira (Palm islands) and the mainland and tell the creation of this landscape during the Dreamtime. Wulgurukaba People have multiple walking paths across Yunbenun Country for resources.

The Wulgurukaba People were able to maintain their traditional lifestyle until the mid-1890s when the Townsville port was established. As more European people moved into the area, the Wulgurukaba People were forced to move off their traditional lands, and confrontations with settlers, loss of traditional food sources and disease took their toll. They remained on Yunbenun until the 1920s and 30s, but were forcibly removed from their Country to areas across Queensland. A small group of Wulgurukaba People remain on or have returned to the island (DES 2019).

Yunbenun and the surrounding waters’ natural values are traditionally of great cultural significance to the Wulgurukaba People, and continue to be important sources of food, medicines and material resources.

2.2 The Wulgurukaba People’s governance

Wulgurukaba Yunbenun Aboriginal Corporation (WYAC and the Wulgurukaba Aboriginal Corporation (WAC) represent the Wulgurukaba People. An Indigenous Land Use Agreement (ILUA) was accredited in 2009 to facilitate land transfers to national park, conservation park (protected areas under the NCA) and Aboriginal freehold. The WYAC are legally responsible for implementing the ILUA.

The Yunbenun Advisory Group (YAG), with members from WYAC and WAC, was established in 2020 to develop a partnership between the Wulgurukaba People and QPWS, with the aim of improving the management of protected areas within Yunbenun and the surrounding Sea Country within the Great Barrier Reef Marine Park (GBRMP). The YAG is also closely working with a range of stakeholders to protect the island as a whole of Yunbenun Country approach.

QPWS and the Directors from WYAC and WAC meet annually. QPWS and YAG meet on a more regular basis to discuss and progress protected area management.

The *Magnetic Island National Park Management Statement* will provide the framework for shared management of the protected areas within Yunbenun by QPWS and the Wulgurukaba People. It builds on the provisions for cooperative management agreed to in the *2022 Memorandum of Understanding* to strengthen the partnership between QPWS and the Wulgurukaba People of Yunbenun. Cooperative management will include a greater role for Traditional Owners in decision-making for the protected areas within Yunbenun, as well as increased employment opportunities for Wulgurukaba People in protected area management (YAG Planning working group).



Figure 1. Directors from WYAC, WAC and family and QPWS staff on Yunbenun – Magnetic Island © DESI



A key demonstration of the partnership between QPWS and the Wulgurukaba People of Yunbenun is the formation of the Wulgurukaba Yunbenun Land and Sea Ranger Program. The badge for the Yunbenun Land and Sea Rangers was developed by YAG, Wulgurukaba Land and Sea Rangers and QPWS. It signifies acknowledgement and representation of the Wulgurukaba People looking after Land and Sea Country.

Wulgurukaba Gabul Creation Story*

The main creation story for this area describes the journey of Gabul. The Gabul story connects Yunbenun to Wulgurukaba Country on the mainland, particularly through the Ross River, and to other Aboriginal groups to the north, including the Manbarra, the custodians of the Palm Island group of islands.

According to the Dreaming, Gabul was a giant carpet python who carved the landscape while travelling from the Herbert River out to sea, forming the Hinchinbrook Channel and Palm Island group before coming to rest at Yunbenun. Gabul rested his head at Bremner Point before making his way across the water, forming the Ross River on his way into the mountains.

**There are different versions of the Gabul story, this is just one representation.*

Wulgurukaba language is an important part of the continuing connection. Table 1 provides some words that are important for Yunbenun Country. The utilisation of these words and language should be respected and are not used without the Wulgurukaba People's permission.

Table 1. Wulgurukaba language

Wulgurukaba word	Meaning
Gubul	echidna
Mangara	large rock-wallaby
Gabul	carpet snake
Bingali	death adder
Bargala	cockatoo
Gagugu	kookaburra
Buramu, gulambira	butterfly
Garwun	green ant
Gumu	mosquito
Nirbany	frog
Wubuw ubu	the cry of the frog
Naguba	Burdekin plum
Gawru	freshwater lily/lagoon
Aguny	mangrove
Yamun	dugong
Manggulanga	beach
Dugaru	whale
Burhi (boorhi)	fire
Murdaburhi	bushfire
Gunabura, gundimina, guyb	burn
Yamba	camp

(Donohue 2007)

3. World Heritage

Yunbenun and the surrounding marine waters are included in the internationally significant GBRWHA and are protected within the GBRMP. The resources of the seasonal freshwater creeks and the sea have sustained the Wulgurukaba People for thousands of years.

The World Heritage area extends from the top of Cape York in north-east Australia to just north of Bundaberg, and from the low water mark on the Queensland coast to the outer boundary of the marine park, which is beyond the edge of the continental shelf. As the world's most extensive coral reef ecosystem, the Great Barrier Reef (GBR) is a globally outstanding and significant entity. Practically the entire ecosystem was inscribed on the World Heritage list in 1981, covering an area of 348,000 square kilometres and extending across a contiguous latitudinal range of 14° (10°S to 24°S). This wide depth range includes vast shallow inshore areas, mid-shelf and outer reefs, and beyond the continental shelf to oceanic waters over 2,000 metres deep.



Figure 2. The surrounding reefs of Yunbenun protect significant species
© Alex Gorman

Within the GBR are some 2,500 individual reefs of varying sizes and shapes, and over 900 islands, ranging from small sandy cays and larger vegetated cays to large, rugged continental islands rising, in one instance, over 1,100 metres above sea level. Collectively, these landscapes and seascapes provide some of the most spectacular maritime scenery in the world.

The GBR was included on the National Heritage List on 21 May 2007.

The latitudinal and cross-shelf diversity, combined with diversity through the depths of the water column, encompasses a globally unique array of ecological communities, habitats and species. This diversity of species and habitats, and their interconnectivity, make the GBR one of the richest and most complex natural ecosystems on earth. There are over 1,500 species of fish, about 400 species of coral, 4,000 species of mollusc, and some 240 species of birds, plus a great diversity of sponges, anemones, marine worms, crustaceans and other species. No other World Heritage property contains such biodiversity. This diversity, especially the endemic species, means the GBR is of enormous scientific and intrinsic importance, and it also contains a significant number of threatened species. At time of inscription, the IUCN evaluation stated: '... if only one coral reef site in the world were to be chosen for the World Heritage List, the Great Barrier Reef is the site to be chosen.' (UNESCO 2021).

Many of the marine park's values are of global significance, and this is recognised by the park being included in the GBRWHA. The GBRWHA was inscribed on the World Heritage List of the *Convention Concerning the Protection of the World Cultural and Natural Heritage*. This listing confirms the Outstanding Universal Value of a cultural or natural property that deserves protection for the benefit of all humanity. Knowledge sharing of the health of the reef and the Sea Country is required to enable the Wulgurukaba People to manage, monitor and protect Yunbenun Country.

Table 2. UNESCO World Heritage Convention criteria for the GBRWHA

UNESCO World Heritage Convention criteria		Magnetic Island associated key value
<p>Criterion 7</p>	<p>The Great Barrier Reef World Heritage Area (GBRWHA) contains superlative natural phenomena or area of exceptional natural beauty and aesthetic importance.</p> <ul style="list-style-type: none"> The GBRWHA is of outstanding natural beauty above and below the water, and provides some of the most spectacular scenery on earth. It is one of a few living structures visible from space, appearing as a complex string of reefal structures along Australia's northeast coast. From the air, the vast mosaic patterns of reefs, islands and coral cays produce an unparalleled aerial panorama of seascapes comprising diverse shapes and sizes. This contrasts with the vast mangrove forests in Hinchinbrook Channel, and the rugged vegetated mountains and lush rainforest gullies that are periodically cloud-covered on Hinchinbrook Island. On many of the cays there are spectacular and globally important breeding colonies of seabirds and marine turtles, and Raine Island is the world's largest green turtle breeding area. On some continental islands, large aggregations of over-wintering butterflies periodically occur. Beneath the ocean surface, there is an abundance and diversity of shapes, sizes and colours; for example, spectacular coral assemblages of hard and soft corals, and thousands of species of reef fish provide a myriad of brilliant colours, shapes and sizes. The internationally renowned Cod Hole near Lizard Island is one of many significant tourist attractions. Other superlative natural phenomena include the annual coral spawning, migrating whales, nesting turtles, and significant spawning aggregations of many fish species. 	<p>Coastal communities – wetlands, fringing woodlands and agony (mangroves)</p>
<p>Criterion 8</p>	<p>The Great Barrier Reef World Heritage Area (GBRWHA) has outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features.</p> <ul style="list-style-type: none"> The GBRWHA, extending 2,000 kilometres along Queensland's coast, is a globally outstanding example of an ecosystem that has evolved over millennia. The area has been exposed and flooded by at least four glacial and interglacial cycles, and over the past 15,000 years reefs have grown on the continental shelf. During glacial periods, sea levels dropped, exposing the reefs as flat-topped hills of eroded limestone. Large rivers meandered between these hills and the coastline extended further east. During interglacial periods, rising sea levels caused the formation of continental islands, coral cays and new phases of coral growth. This environmental history can be seen in cores of old massive corals. 	<p>Vine thickets and forests on dunes and alluvial plains</p> <p>Hoop pine communities</p> <p>Mixed low woodland to shrubland</p> <p>Coastal communities – wetlands, fringing woodlands and agony (mangroves)</p>
<p>Criterion 9</p>	<p>The Great Barrier Reef World Heritage Area (GBRWHA) outstanding examples representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals.</p> <ul style="list-style-type: none"> The globally significant diversity of reef and island morphologies reflects ongoing geomorphic, oceanographic and environmental processes. The complex cross-shelf, longshore and vertical connectivity is influenced by dynamic oceanic currents and ongoing ecological processes such as upwellings, larval dispersal and migration. Ongoing erosion and accretion of coral reefs, sand banks and coral cays combine with similar processes along the coast and around continental islands. Extensive beds of Halimeda algae represent active calcification and accretion over thousands of years. 	<p>Vine thickets and forests on dunes and alluvial plains</p> <p>Hoop pine communities</p> <p>Mixed low woodland to shrubland</p> <p>Coastal communities – wetlands, fringing woodlands and agony (mangroves)</p>
<p>Criterion 10</p>	<p>The Great Barrier Reef World Heritage Area (GBRWHA) contains the most important and significant habitats for in-situ conservation of biological diversity, including those containing threatened species of Outstanding Universal Value from the point of view of science or conservation.</p> <ul style="list-style-type: none"> The enormous size and diversity of the GBRWHA means it is one of the richest and most complex natural ecosystems on earth, and one of the most significant for biodiversity conservation. The amazing diversity supports tens of thousands of marine and terrestrial species, many of which are of global conservation significance. As the world's most complex expanse of coral reefs, the reefs contain some 400 species of corals in 60 genera. There are also large ecologically important inter-reefal areas. The shallower marine areas support half the world's diversity of mangroves and many seagrass species. The waters also provide major feeding grounds for one of the world's largest populations of the threatened dugong. At least 30 species of whales and dolphins occur here, and it is a significant area for humpback whale calving. Six of the world's seven species of marine turtle occur in the GBRWHA. As well as the world's largest green turtle breeding site at Raine Island, the GBRWHA also includes many regionally important marine turtle rookeries. Some 242 species of birds have been recorded in the GBRWHA. Twenty-two seabird species breed on cays and some continental islands, and some of these breeding sites are globally significant; other seabird species also utilize the area. The continental islands support thousands of plant species, while the coral cays also have their own distinct flora and fauna. 	<p>Vine thickets and forests on dunes and alluvial plains</p> <p>Hoop pine communities</p> <p>Mixed low woodland to shrubland</p> <p>Coastal communities – wetlands, fringing woodlands and agony (mangroves)</p>

Source: <http://whc.unesco.org/en/list/154>

4. Ecosystems and biodiversity

The protected areas within Magnetic Island contain a diverse range of ecosystems, including one 'endangered' and nine 'of concern' regional ecosystems.

The plateau and hills around Mt Cook occur at 300 metres and carry distinct vegetation communities. Cooler temperatures and frequent cloud cover encourages growth of cabbage tree palms and forest she-oak forests. These high communities are significant habitat for the jewel butterfly and a significant food source for the glossy black cockatoo. The West Point vegetation is low scrub from the point, around the coastline to Huntingfield Bay. The Araucaria forest and mixed low coastal forest occur on rocky headlands and hills.

Areas of poplar gum and bloodwood woodland and Moreton Bay ash flats occur on the foothills of Nelly Bay and Arcadia. The majority of the Moreton Bay ash flats are located along the western side of the island. The Bolger Bay Conservation Park and some adjacent nature refuges capture this vegetation type.

Along the eastern coastline, windswept low coastal scrub with frequent emergent hoop pine predominates, especially in areas of high boulder cover. Some of the most windswept areas are covered only by grass (Sandercoe 1990). Vine forest occurs on hills around the island, and includes small pockets of vine thickets in sheltered gullies and low vine forest among boulders. Steep talus slopes or rock boulder scree slopes are common along the north-eastern and north-western coastlines. These are sometimes covered by vegetation rich in vines and fig species, some that are dry season deciduous. Rainforest grows along some moist creek gullies in Gustav Creek and other gullies sloping into Nelly Bay and behind Bolger Bay. Where conditions are drier, mixed semi-deciduous woodlands with many species in common with the rainforest occur. Canopy height and cover varies depending on environmental conditions such as wind exposure and fire occurrence (Sandercoe 1990).

The vegetation of the granite hillsides contains a diverse array of mixed eucalypt woodlands and grey ironbark communities on the lower hillslopes, and stringybark and bloodwood communities predominantly on the lower slopes (Sandercoe 1990).

Beach scrub communities occur within the national park, directly neighbouring semi-evergreen vine thicket and microphyll vine forest on igneous rocks. The beach scrub communities include species such as butterflies, orange-footed scrubfowl and bush stone-curlew. The stranded beach sand ridges behind Bolger and Horseshoe bays are vegetated with grasslands and open woodlands. Most other bays are lined by beach ridge, with coastal she-oak and other strand vegetation commonly found. Littoral closed forest (scrub) is found at Florence Bay and on a small area at the southern end of Nelly Bay (Sandercoe 1990).

Wetlands and coast vegetation occur in low-lying areas and coastal fore dunes and beaches. Significant bulkuru swamps occur in the Horseshoe Bay Conservation Park. Freshwater wetlands support a wide range of flora and fauna, including aquatic plants, invertebrates, frogs, fish and birds. Gustav Creek holds more water and typically supports more freshwater fish than other parts of the island. Seasonal frog habitat is provided by the sand dune systems on the west coast.

Estuarine wetlands support mangroves, saltmarsh and seagrass, and are significant habitat for shorebirds, marine turtles, marine mammals and fish species. These systems are also adjacent to extensive sandy beach and coral reef ecosystems. Shorebirds feed and roost along the western side of the island, and also in several bays on the east coast, such as Geoffrey Bay.

5. Species

5.1 Native animals

Over 200 species of birds, 17 mammals, 38 reptiles and 3 amphibians have been recorded within protected areas of Magnetic Island. A considerable number are species listed as of conservation significance under the *Nature Conservation Act 1992* ((NCA) Qld) and *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC) (Appendix 4).

Twenty-four listed migratory bird species may occur on and around Magnetic Island. Of these, 11 species may occur in large numbers and could be significantly affected by activities on the island (Commonwealth of Australia 2010).

The rocky terrain and dense vegetation of Magnetic Island is home to allied rock-wallabies *Petrogale assimilis*. Their subtle colouring camouflages these animals, making them difficult to see among the rocks. Allied rock-wallabies move quickly and surely around their rocky habitat, helped by short toenails on their hind feet.

A population of the agile wallaby *Macropus agilis* also inhabits the island. Agile wallabies are not endemic to the island, and the population has continued to expand following the escape of around four wallabies from the former koala park in Horseshoe Bay prior to 2003. It is now common to see agile wallabies throughout Horseshoe Bay and other locations.

Koalas *Phascolarctos cinereus* were introduced to the island, with 16 koalas originally introduced in 1931–32 as part of an attempt to provide island sanctuaries in response to drastic declines in mainland populations. The species is listed as 'vulnerable' under the NCA and 'endangered' under the EPBC. The Fort Complex and walking track is a popular location for visitors to view koalas in the wild.

A number of snakes and skink species are found on the island's protected area, including species of conservation significance. The Magnetic Island dwarf skink *Pygmaeascincus sadleri* is listed as 'vulnerable' under the NCA. It is endemic to Queensland and is known only on Magnetic Island. The species may occur on parts of the nearby mainland, but no targeted surveys have been conducted to confirm this. Basic habitat requirements are poorly understood. Most surveyed species have been from the low-lying areas on Magnetic Island. Within the lowland areas, Magnetic Island dwarf skink appear to prefer seasonally dry melaleuca swamps and areas with thick leaf litter. The common death adder *Acanthophis antarticus*, listed as 'vulnerable' under the NCA, is found in leaf litter. The venom of the common death adder contains a highly toxic neurotoxin that causes paralysis. The snake can deliver the fastest strike of all the venomous snakes in Australia.

In 1995, a specimen of the bare-rumped sheath-tail bat *Saccolaimus saccolaimus nudicluniatus*, listed as 'endangered' (NCA), was collected from Magnetic Island and lodged with the Queensland Museum. While this is the only recorded sighting of the species on Magnetic Island, it has been recorded elsewhere in ecosystems containing poplar gum *Eucalyptus platyphylla*, which provides roosting and nesting habitat. It is likely that the species occurs on Magnetic Island.

The coastal sheath-tail bat *Taphozous australis*, listed as 'near threatened' in Queensland (NCA), has been recorded on Magnetic Island within the Fort Complex area. This species depends on coastal roosts, preferring sea caves and rocky clefts. It is also known to roost in disused mines, boulder piles, rock fissures, concrete bunkers and occasionally in buildings. Roost conditions vary from warm (26–28 °C) and humid (84–92%) in the north to cool and airy, with cave temperatures below outside air temperatures in the south (Churchill 2008). It may roost under fortifications not normally accessed by visitors.

Magnetic Island also supports great aggregations of over-wintering butterflies. Aggregations typically remain in wetter areas between the early and late dry season.

Sea turtles are known to have nested on the beaches of Magnetic Island, including the green turtle *Chelonia mydas*, and flatback turtle *Natator depressus*, both listed as 'vulnerable' under the NCA and EPBC. Sightings of the hawksbill turtle *Eretmochelys imbricata* have been recorded in the waters around Magnetic Island, and it is listed as 'vulnerable' under the NCA and EPBC.

Native animals face a number of threats on Magnetic Island, including clearing and habitat degradation, domestic animals and feral cats, wildlife feeding and bushfires.

5.2 Native plants

Magnetic Island is home to a variety of plant species that have adapted to the island's unique climate and soils. Many of these plant species are important for the park's ecological health and provide habitat and food for a variety of wildlife.

One of the most iconic plant species found on Magnetic Island is the hoop pine *Araucaria cunninghamii*, a tall evergreen tree that is endemic to eastern Australia. The hoop pine is an important species in the upland rainforest ecosystem found in the mountainous regions of the park, providing habitat for a variety of wildlife, including birds and possums. Other important tree species found in the park include the she-oak *Casuarina equisetifolia*, paperbark *Melaleuca quinquenervia*, and eucalyptus communities *Eucalyptus* spp.

The park's open woodland ecosystem is dominated by eucalyptus trees, with species such as the forest red gum *Eucalyptus tereticornis* and the pink bloodwood *Corymbia intermedia* being particularly common. These trees provide important habitat for grazing animals such as wallabies and kangaroos, and also support a range of bird species, including parrots and cockatoos.

The park's coastal ecosystems are home to a variety of plant species that have adapted to the salt and wind exposure of the shoreline. One such species is the beach hibiscus *Hibiscus tiliaceus*, a shrub or small tree with large yellow flowers that is commonly found on sandy beaches. Other coastal plant species found in the park include the saltwater couch *Sporobolus virginicus*, which forms extensive salt flats, and various species of mangroves *Rhizophora* spp, *Avicennia* spp and *Sonneratia* spp.

Other important plant species found in Magnetic Island National Park include the grass tree *Xanthorrhoea johnsonii*, a unique plant that has adapted to bushfires and is found in the heathland ecosystem; and the swamp oak *Casuarina glauca*, which is found in the wetlands ecosystem and provides important habitat for waterbirds.

6. Geophysical features

The unique position of Magnetic Island within the GBRWHA is strengthened by its geological and geomorphological diversity. This diversity includes bedrock, alluvial, aeolian, estuarine and marine components.

The bedrock geologies on Magnetic Island include:

- Permian volcanic rocks (Julago volcanics), typical of a wide belt of similar rocks between central and northern Queensland
- Permian intrusive rocks (Magnetic Island granites), one of a wide suite of similar granitic intrusions in north Queensland
- exposures showing the relationship between the volcanic and granitic rocks, and demonstrating that the Magnetic Island granite and related Permian granites are younger, and intrusive into the volcanics
- dolerite dykes intruding the granites.

Generally speaking, the volcanic rocks form low-domed hills with skeletal soils, and the granitic rocks form ranges and low hills with much rock outcrop, including tors and deeper, coarser textured soils. The dykes weather more easily to form valleys and saddles within the granitic landscape. Other landforms include perched valleys, captured watercourses, boulder scree and talus slopes. Mudslides are an irregular but continuing occurrence, demonstrating a major form of mass movement in the wet/dry tropics.

The island also has a wide range of more recent unconsolidated alluvial and aeolian geologies. These include:

- alluvial landscapes derived from the previous bedrock geologies, with at least three different age sequences, each having distinctive soils and landforms
- wetlands, including a diversity of freshwater systems lying between alluvial fans and dune systems, swales in dunes, and wetlands that alternate between fresh, brackish and saline, depending on seasons and tides
- coastal aeolian landscapes, including at least three different age sequences of sand dune systems, varying in number and form according to the aspect and scale of each bay around the island.

These landscapes include old shorelines, reflected in the different aged dune systems, cut benches in higher alluvial systems, and in silicified, calcified or ferruginised beach rock. Magnetic Island is particularly unusual in eastern Australia in having a western shoreline with a diversity of dunal systems. Remnants of an older, laterised surface also occur in some areas.

Estuarine and marine geomorphological diversity includes:

- tidal flats, with zones of frequency and duration of inundation expressed by salt couch or samphire communities, algal or bare saline flats, various mangrove forest zones, and offshore tidal sand and mudflats with extensive sea grass beds
- reef flats, with associated landforms, and fringing reefs, varying in form and extent according to aspect and prevailing environmental conditions
- a wide variety of beaches, varying in width and slope according to aspect and relative wave energies.

(Taken directly from Morgan 2004)

7. Recreational opportunities

Magnetic Island, with its close proximity to Townsville, is easily accessed by visitors. It can be reached by passenger and car ferry services or private vessel. Magnetic Island is a major national tourism destination, attracting over 350,000 visitors annually, and contributing over \$30 million to the regional economy (MICDA 2013).

Tourism has been present on Magnetic Island since 1899, when a hotel was erected, with a jetty, dance hall and cruising service developed. A Townsville tourist guide (1924) described the island as ideal for surf bathing and a picnic resort, 'nestling in the bosom of Cleveland Bay ... where brain fog is quickly dispelled and highly-strung nerves are soothed'. Both Picnic Bay and Nelly Bay had dance pavilions, the latter including the thatched Mandalay guest house (1912) and Dutch-design cottages. Alma Bay at Arcadia was a favoured swimming spot. All three places had jetties (Centre for the Government of Queensland 2018).

Today, Magnetic Island has a number of accommodation options, including backpacker hostels, holiday homes, luxury resorts and quaint B & Bs. It also has a number of tourism activities, including events such as the weekly toad races (Townsville Enterprise 2019).

Magnetic Island provides opportunities for nature-based recreation in a predominantly natural setting close to an urban centre. The majority of park visitor sites are generally free from human modification of the environment. With the island being so accessible, it provides a range of activities for a large number of visitors as well as residents. Many adventure-based opportunities exist on the island and surrounding waters, including walking, bike riding, climbing/bouldering, swimming, kayaking, jet ski tours, horseriding, snorkelling and underwater diving. These activities can be undertaken individually or with a number of tourism operators that provide services.

A number of organised competitive events are held on Magnetic Island, including a yacht regatta, walking, running, swimming, bike riding and multi-sports activities. A network of walking tracks allows visitors to appreciate the island's natural environment protected within the national park. Walking tracks range from easy, short walks to longer tracks with a moderate level of difficulty. There are approximately 20 kilometres of walking track across the protected area managed by QPWS.

8. Post-contact cultural heritage

8.1 Shared history

As Townsville developed through the mid-19th century, Magnetic Island became a valuable location for the gathering of hoop pine, coral, sand, stone and granite for building materials. The island was a popular picnic spot for European tourists from the mainland during the 19th century, and the first resort was established in 1890.

Development continued and the island now supports a number of residential communities, resorts and tourism infrastructure. Some parts of the island were lightly grazed over 30 years ago and remnant vegetation generally shows no sign of impacts. Such a situation is rare for lowland ecosystems, with similar areas on the mainland usually having a long and continuing history of cattle grazing (MICDA and MINCA 2004). Historically, residents also carried out mixed farming, fruit growing and dairying. Grazing and farming did result in the introduction and spread of pest plants, many of which still persist and have spread into new areas.

A number of other shared-history cultural sites are known on the island, including scar trees left by early surveyors, bottle dumps, the pink granite quarry site used as a source for materials to build the Customs House on the mainland, the Florence Bay scout camp site, and the West Point quarantine station site, which includes marked and unmarked gravesites. European historical sites of Nelly Bay include the cemetery, school, Magnetic Island Memorial Gardens, plus a number of unmarked gravesites.

8.2 Fort Complex

Listed on the Queensland Heritage Register as 'State Heritage' and protected under the *Queensland Heritage Act 1992*, the Fort Complex was built on a heavily timbered, mountainous point behind Florence Bay in 1942–43, during World War II. The construction on a remote and rugged headland and the installation of the guns were wartime engineering feats of some magnitude.

Established to protect Townsville's harbour against Japanese attack, the complex was armed with United States Army 155 mm M1917A1 field artillery pieces on circular Panama mounts. Also part of the complex were command posts, a searchlight tower, ammunition stores, a radar station, signal station, direction finders, accommodation huts, administrative offices, a workshop, kitchen, mess and ablutions buildings. The structures were anchored into the granite boulders and some were covered with artificial rock and camouflage. The four guns on Magnetic Island had been enroute to Bhutan until it fell to the Japanese. They were redirected to Townsville to protect its vital port against the expected rapid advance of the Japanese. History shows that they were not needed, and after the war, the guns were returned to the American forces. At this time, the fort was stripped of its fittings and left to return to nature.

The site now contains only six main fortifications—command post, signal station, reserve magazine, searchlight tower and two gun emplacements—and remnants of other structures. QPWS has recently completed preservation work on the remaining structures, upgraded the walking track to the Fort Complex and installed high-quality interpretation along the walk. The Fort Complex is one of the best examples of such fortifications on Queensland's east coast.

The Fort Complex meets three of the significance indicators and state threshold indicators for the criteria 'State Heritage Place' specified under the provisions of the *Queensland Heritage Act 1992*.

Criterion A

The place is important in demonstrating the evolution or pattern of Queensland's history.

This is a significant site which highlights the role of Townsville and the region in the Allied struggle to protect Australia from the advancing Japanese forces during the crucial war years of 1942–43.

Criterion B

The place demonstrates rare, uncommon or endangered aspects of Queensland's cultural heritage.

Its significance is further highlighted because this site, together with those at Kissing Point, Townsville and on Cape Marlow at Pallarenda, are rare wartime fortifications of unique value.

Criterion F

The place is important in demonstrating a high degree of creative or technical achievement at a particular period.

Its construction on a rugged headland and the installation of the guns were wartime engineering achievements of some magnitude.

The Fort Complex is the most visited site in the park. In addition to the heritage value, the site also offers visitors sweeping views over Magnetic Island, the mainland and surrounding GBR waters. It is also the most popular location on the island to spot koalas in the wild.

8.3 Shipwrecks

Although not within the boundaries of Magnetic Island National Park, there are more than 20 known shipwrecks within the waters around Magnetic Island, and 12 wrecks in Magnetic Island waters are considered historic (under national maritime heritage legislation) as they are over 75 years old.

9. Partnerships

Queensland's parks, forests and reserves provide sustainable environmental, economic and social benefits. The agency is committed to working with the community and its partners to ensure activities and infrastructure are ecologically sustainable and continue to benefit Queensland's economic and social wellbeing as outlined in *A Master Plan for Queensland's parks and forests to 2025* (Queensland Government 2014). Permitted activities are administered in accordance with the requirements of the NCA and other relevant legislation.

Magnetic Island National Park is an important park for tourism, recreation and nature-based activities for both visitors and island residents.

QPWS is represented on the Bolger Bay Conservation Park Steering Committee. The State of Queensland (acting through QPWS) entered into a trustee management agreement with the Magnetic Island Nature Care Association (MINCA) (acting through the Bolger Bay Sub Committee) in 2005 for Bolger Bay Conservation Park. The conservation park of 16 hectares was secured as protected area as a result of a combined initiative between the Commonwealth, state and MINCA to purchase and protect the land. As part of these arrangements, MINCA was to become sole trustee, a steering committee with Commonwealth, state and MINCA representatives was established.

The trustee of Magnetic Island Conservation Park 1 is WYAC.

The conservation park is located within tidal mangrove wetlands between West Point Road and the coastline. Currently, there is no visitor infrastructure within the park. There have been reports of unauthorised vehicles driving on the tidal wetlands within the park, damaging sensitive saltmarsh habitats. Regulatory signs have since been installed to discourage vehicle use within in the park.

Volunteers also provide assistance with park management.

QPWS also works closely with a number of other not-for-profit, community-based organisations, including the Magnetic Island Community Development Association (MICDA), Magnetic Island Fauna Care Organisation, Magnetic Island Resident and Rate Payers Association and Magnetic Island Network for Turtles. Additionally, QPWS is represented on the Tourism Operators and Businesses Magnetic Island Association.

With a permanent residential population of over 2,500 people, the national park shares its boundary with a large number of properties. These include housing, businesses, sports facilities, roads and service facilities. Management issues shared with neighbours of Magnetic Island National Park include fire management, pest management and water quality. Cooperation with these landholders is vital for the effective and efficient management of the park, as well as good neighbour relations.

In 2018, QPWS&P developed a *Magnetic Island National Park Newsletter*. The purpose of this newsletter is to provide the community and stakeholders with updates on activities occurring within QPWS&P protected areas. It is intended that this newsletter be distributed quarterly, content dependent.

QPWS will continue to work with partners, including Magnetic Island National Park Volunteers, Australian Defence Force, MICDA, Magnetic Island Nature Care Association, TCC and Traditional Owners to protect the natural and cultural values of Magnetic Island National Park.

10. Scientific research

A number of scientific research permits are issued for the protected area, including research on the distribution, abundance and biology of a number of native plant and animal species. The permits are issued to both individual researchers and Queensland Government departments.

11. Fire

Fire management has an important role within Magnetic Island National Park and is core business for QPWS&P to protect life and property, mitigate bushfires and maintain natural diversity in accordance with the NCA and the *Fire and Emergency Services Act 1990* (Qld) for the control and prevention of fires.

The 'normal' fire season is characterised by a gradual curing of fuels, coinciding with decreases in rainfall during June to December. Flammability of fuels increases as rainfall and average relative humidity decrease. Due to the maritime influence, humidity remains fairly high throughout the year, but will drop in the mid to late dry season. The critical level for cured fuel combustion is reached at a humidity of 60% or lower. This level is commonly reached during the heat of the day between June and November. Heavy dews can occur from April through to September and are extremely important when planning prescribed burns. The majority of wildfires occurring on the island have originated in the north and north-east, fanned by moderate to strong northerly winds.

Summer and autumn are prone to cyclonic activity, with Magnetic Island having a probability of experiencing severe cyclonic effects in one of every three years (Sandercoe 1990). Most cyclones bring torrential rain and hurricane force winds, which respectively promote lush growth and strip leaves and branches from trees and shrubs. This accumulation of debris and increase in grass growth create a huge mass of available fuel during the following dry season.

Temperatures remain relatively constant throughout the year. As the dry season progresses, the maximum and minimum temperatures steadily increase. The temperature at Mt Cook (493 metres above sea level) can be up to 5 degrees cooler than in the lowland areas. This mountainous plateau area of the island is often either covered or shaded by cloud, with a resulting higher relative humidity. In the dry season, plant communities at these altitudes are usually less drought-stressed, and are therefore less flammable.

Wind velocities are moderate all year round. During times of steep pressure gradients along the Queensland coast, strong winds are common. At ground level, wind velocities may fluctuate widely due to variations in topography. During the dry season, winds from the south-east to north predominate. As the season progresses, winds usually originate from the east, north-east and north in the afternoon.

Again, local variations in topography can have a significant effect on wind direction in the short term, with winds commonly deviating through 180 degrees. These variations are extremely important considerations during back-burning operations, and when planning ignition sites for prescribed burning.

Planned burns within the reserve have focused on fuel reduction for property protection.

12. Pests

Pest management has an important role within Magnetic Island National Park and is core business for QPWS&P. In accordance with the NCA, QPWS&P is responsible for protecting and conserving the natural, cultural, productive and social values within its parks and forests. Consistent with all other landholders, QPWS&P has a responsibility under the *Biosecurity Act 2014* to take all reasonable and practical steps to minimise the risks associated with plant and animal pests on lands under its control.

12.1 Pest plants

A number of invasive weed species are found across Magnetic Island, including pink periwinkle *Catharanthus roseus*, lantana *Lantana camara* and rubber vine *Cryptostegia grandiflora*, all which can have adverse impacts on the key values.

Pest plants are a significant management issue on Magnetic Island, particularly in the urban interface where the protected area meets neighbouring properties, and garden escapees have an adverse effect on native vegetation. Roadsides, walking tracks and fire access tracks also harbour pest plants, particularly exotic grasses. Some vegetation assemblages are particularly vulnerable to pest invasion in the urban interface, including wetlands and coastal vegetation, littoral scrub, poplar gum and bloodwood woodland, Moreton Bay ash flats, and mixed eucalypt woodland, grasslands and acacia shrubland.

Pest plants are also an issue in areas where community services infrastructure is present in the protected area, such as roads or tracks, water tanks, pipelines and helipads. These sites are managed through authority conditions and environmental management plans, but resources for enforcement are limited and pest plants continue to be a problem in and around infrastructure footprints.

A table of identified pest plants on Magnetic Island National Park are listed within Appendix 6.

12.2 Pest animals

Two primary animal pests are present on Magnetic Island—feral cats *Felis catus* and cane toads *Rhinella marina*, which both have adverse impacts on native fauna.

Domestic cats and dogs impact the native species within the park.

A table of identified pest animals on Magnetic Island National Park are listed within Appendix 6.

The pest management thematic strategy developed under the QPWS Values-Based Management Framework will guide future pest management on the island.

13. Appendices

Appendix 1. Legal, policy and management commitments

Gazettal details

Magnetic Island National Park was gazetted in 1954.

Applicable Acts and statutory powers

- *Nature Conservation Act 1992* (Qld)
- *Native Title Act 1993* (Cth)
- *Environment Protection Biodiversity Conservation Act 1999* (Cth)
- *Biosecurity Act 2014* (Qld)
- *Aboriginal Cultural Heritage Act 2003* (Qld)
- *Queensland Heritage Act 1992* (Qld)
- *Great Barrier Reef World Heritage Area*
- *Great Barrier Reef Marine Park Act 1975* (Cth)

Management obligations

- Great Barrier Reef Intergovernmental Agreement 2009
- Reef Joint Field Management Program
- China–Australia Migratory Bird Agreement (CAMBA)
- Japan–Australia Migratory Bird Agreement (JAMBA)
- Convention on the Conservation of Migratory Species of Wild Animals – Bonn Convention
- Republic of Korea–Australia Migratory Bird Agreement (ROKAMBA)
- Agreement on the Conservation of Albatrosses and Petrels
- Trustee Management Agreement – Bolger Bay Conservation Park
- Wulgurukaba People Indigenous Land Use Agreement

Recovery plans and guides

- Recovery Plan for Albatrosses and Giant-Petrels
- National Recovery Plan for the Northern Quoll *Dasyurus hallucatus*
- Recovery Plan for Marine Turtles in Australia

Appendix 2. Regional ecosystems

Regional ecosystem	Description	Biodiversity status
Broad Vegetation Group 29 Open shrublands to open heaths in montane frequently rocky locations		
11.12.16d	Grassland with scattered shrubs or trees or very open shrubland/low woodland with <i>Triodia stenostachya</i> , <i>Heteropogon contortus</i> , <i>H. triticeus</i> , <i>Cymbopogon bombycinus</i> , <i>C. ambiguus</i> +/- <i>Cochlospermum gillivraei</i> +/- <i>Araucaria cunninghamii</i> +/- <i>Corymbia dallachiana</i> +/- <i>C. tessellaris</i> . Not a wetland	Of concern
Broad Vegetation Group 24 Low woodlands to tall shrublands dominated by <i>Acacia</i> spp. On residuals		
11.12.16	Mixed low woodland to shrubland on igneous rocks. Coastal hills	Of concern
11.12.16a	<i>Acacia julifera</i> shrubland +/- <i>Eucalyptus drepanophylla</i> . Not a wetland	
Broad Vegetation Group 32 Closed tussock grasslands and associated open woodlands on undulating clay plains, upland areas and headlands		
11.12.16x1	Tussock grassland with scattered shrubs to low very open scrub. Various grasses may dominate: <i>Heteropogon contortus</i> , <i>H. triticeus</i> , <i>Themeda triandra</i> , <i>Sarga plumosum</i> , <i>Cymbopogon bombycinus</i> , <i>C. ambiguus</i> , <i>Eriachne mucronata</i> and <i>Triodia stenostachya</i> . Occurs on rhyolite or granite hills, headlands and islands. Not a wetland	
Broad Vegetation Group 34 Palustrine wetlands. Freshwater swamps on coastal floodplains dominated by sedges and grasses		
11.2.4	Lagoons in coastal dune swales	Of concern
11.1.3	Sedgeland on marine clay plains	Of concern
11.3.27	Freshwater wetlands	Of concern
Broad Vegetation Group 27 Low open woodlands dominated by a variety of species including <i>Grevillea striata</i> (beefwood), <i>Acacia</i> spp., <i>Terminalia</i> spp. Or <i>Cochlospermum</i> spp.		
11.12.15	<i>Corymbia intermedia</i> +/- <i>Eucalyptus acmenoides</i> open forest to low woodland with lower tree layer of <i>Allocasuarina torulosa</i> , <i>Livistona decora</i> on igneous rocks. Coastal hills	Of concern
Broad Vegetation Group 5 Notophyll to microphyll vine forests, frequently with <i>Araucaria cunninghamii</i> (hoop pine), on ranges of central coastal bioregions		
11.12.12	<i>Araucaria cunninghamii</i> woodland on igneous rocks. Coastal hills	Of concern
Broad Vegetation Group 10 <i>Corymbia citriodora</i> (spotted gum) dominated open forests to woodlands on undulating to hilly terrain		
11.12.13a	<i>Eucalyptus crebra</i> , <i>Corymbia</i> spp., <i>E. acmenoides</i> woodland on igneous rocks. Coastal hills	Least concern
Broad Vegetation Group 28a Complex of open shrubland to closed shrubland, grassland, low woodland and open forest, on strand and foredunes. Includes pure stands of <i>Casuarina equisetifolia</i> (coastal sheoak)		
11.12.14	<i>Lophostemon</i> spp. low closed forest on igneous rocks. Coastal hills	Of concern
11.2.2	Complex of <i>Ipomoea pes-caprae</i> subsp. <i>brasiliensis</i> and <i>Spinifex sericeus</i> and <i>Casuarina equisetifolia</i> low woodland and herbland on fore dunes	Of concern
Broad Vegetation Group 28e Low open forest to woodlands dominated by <i>Lophostemon suaveolens</i> (swamp box) or <i>Lophostemon confertus</i> (brush box) or <i>Syncarpia glomulifera</i> (turpentine) frequently with <i>Allocasuarina</i> spp. On rocky hilly slopes		
11.2.1	<i>Corymbia tessellaris</i> woodland on flat coastal dunes	Of concern
Broad Vegetation Group 3 Evergreen to semi-deciduous, notophyll to microphyll vine forest/thicket on beach ridges and coastal dunes, occasionally <i>Araucaria cunninghamii</i> (hoop pine) microphyll vine forest on dunes. <i>Pisonia grandis</i> on coral cays		
11.2.3	Microphyll vine forest ('beach scrub') on sandy beach ridges and dune swales	Of concern
Broad Vegetation Group 7 Semi-evergreen vine thickets on wide range of substrates		
11.3.11x1	Semi-evergreen vine thicket. Common tree species include <i>Canarium australianum</i> , <i>Falcataria toona</i> , <i>Pleiogynium timorensis</i> , <i>Cochlospermum gillivraei</i> , <i>Terminalia porphyrocarpa</i> , and <i>Chionanthus ramiflorus</i> . <i>Araucaria cunninghamii</i> is absent	Endangered
11.12.4	Semi-evergreen vine thicket and microphyll vine forest on igneous rocks	Least concern

Regional ecosystem	Description	Biodiversity status
Broad Vegetation Group 9e Open forests woodlands and open woodlands dominated by <i>Corymbia clarksoniana</i> (grey bloodwood) (or <i>Corymbia novoguineensis</i> or <i>Corymbia intermedia</i> (pink bloodwood) or <i>Corymbia polycarpa</i> (long-fruited bloodwood)) frequently with <i>Erythrophleum chlorostachys</i> (red ironwood) or <i>Eucalyptus platyphylla</i> (poplar gum) predominantly on coastal sandplains and alluvia		
11.3.9	<i>Eucalyptus platyphylla</i> , <i>Corymbia</i> spp. woodland on alluvial plains	Least concern
11.3.35	<i>Eucalyptus platyphylla</i> , <i>Corymbia clarksoniana</i> woodland on alluvial plains	Least concern
Broad Vegetation Group 9b Moist to dry woodlands dominated by <i>Eucalyptus platyphylla</i> (poplar gum) and/or <i>Eucalyptus leptophleba</i> (Molloy red box)		
11.12.9	<i>Eucalyptus platyphylla</i> woodland on igneous rocks	Least concern
Broad Vegetation Group 22 Open forests dominated by <i>Melaleuca</i> spp. (<i>Melaleuca argentea</i> (silver tea-tree), <i>Melaleuca leucadendra</i> (broad-leaved tea-tree), <i>Melaleuca dealbata</i> (swamp tea-tree) or <i>Melaleuca fluviatilis</i>), fringing major streams with <i>Melaleuca saligna</i> or <i>Melaleuca bracteata</i> (black tea-tree) in minor streams		
11.3.12a	<i>Melaleuca viridiflora</i> , <i>Melaleuca argentea</i> +/- <i>Melaleuca dealbata</i> woodland on alluvial plains	Least concern
Broad Vegetation Group 16 Woodlands and open woodlands dominated by <i>Eucalyptus coolabah</i> (coolabah) or <i>Eucalyptus microtheca</i> (coolabah) or <i>Eucalyptus largiflorens</i> (black box) or <i>Eucalyptus tereticornis</i> (blue gum) or <i>Eucalyptus chlorophylla</i> on floodplains		
11.3.25b	<i>Eucalyptus tereticornis</i> or <i>Eucalyptus camaldulensis</i> woodland fringing drainage lines	Of concern
11.3.4	<i>Eucalyptus tereticornis</i> and/or <i>Eucalyptus</i> spp. woodland on alluvial plains	Of concern
Broad Vegetation Group 35 Closed forests and low closed forests dominated by mangroves		
11.1.4	Mangrove low open forest and/or woodland on marine clay plains	Least concern
11.1.4a	<i>Rhizophora</i> spp. open forest on Quaternary estuarine deposits	Least concern
11.1.4c	<i>Ceriops australis</i> , +/- <i>Avicennia marina</i> open forest on Quaternary estuarine deposits	Least concern
11.1.4d	Dominated by a range of species from genera such as from <i>Avicennia</i> sp., <i>Ceriops</i> sp., <i>Rhizophora</i> sp. and <i>Bruguiera</i> sp. which form a low closed forest	Least concern
11.1.1	<i>Sporobolus virginicus</i> grassland on marine clay plains	Least concern
11.1.2	Samphire forbland on marine clay plains	Least concern

Appendix 3. Species listed in international agreements

Scientific name	Common name	CMS	JAMBA	ROKAMBA	CAMBA
<i>Apus pacificus</i>	Forked-tailed swift		✓	✓	✓
<i>Hirundapus caudacutus</i>	White-throated needletail		✓	✓	✓
<i>Charadrius mongolus</i>	Lesser sand plover	✓	✓	✓	✓
<i>Pluvialis fulva</i>	Pacific golden plover	✓	✓	✓	✓
<i>Cuculus optatus</i>	Oriental cuckoo		✓	✓	✓
<i>Fregata ariel</i>	Lesser frigatebird		✓	✓	✓
<i>Anous stolidus</i>	Brown noddy		✓		✓
<i>Gelochelidon nilotica</i>	Gull-billed tern				✓
<i>Onychoprion anathetus</i>	Bridled tern		✓		✓
<i>Sterna hirundo</i>	Common tern		✓	✓	✓
<i>Sterna sumatrana</i>	Black-naped tern		✓		✓
<i>Sternula albifrons</i>	Little tern	✓	✓	✓	✓
<i>Actitis hypoleucos</i>	Common sandpiper	✓	✓	✓	✓
<i>Arenaria interpres</i>	Ruddy turnstone	✓	✓	✓	✓
<i>Calidris acuminata</i>	Sharp-tailed sandpiper	✓	✓	✓	✓
<i>Calidris ruficollis</i>	Red-necked stint	✓	✓	✓	✓
<i>Limonsa lapponica baueri</i>	Western Alaskan bar-tailed godwit	✓	✓	✓	✓
<i>Numenius madagascariensis</i>	Eastern curlew	✓	✓	✓	✓
<i>Numenius minutus</i>	Little curlew	✓	✓	✓	✓
<i>Numenius phaeopus</i>	Whimbrel	✓	✓	✓	✓
<i>Tringa brevipes</i>	Grey-tailed tattler	✓	✓	✓	✓
<i>Tringa nebularia</i>	Common greenshank	✓	✓	✓	✓
<i>Tringa stagnatilis</i>	Marsh sandpiper	✓	✓	✓	✓
<i>Xenus cinereus</i>	Terek sandpiper	✓	✓	✓	✓
<i>Sula leucogaster</i>	Brown booby		✓	✓	✓
<i>Hydroprogne caspia</i>	Caspian tern		✓		
<i>Thalasseus bergii</i>	Crested tern		✓		
<i>Ardenna pacifica</i>	Wedge-tailed shearwater		✓		
<i>Gallinago hardwickii</i>	Latham's snipe	✓	✓	✓	
<i>Charadrius bicinctus</i>	Double-banded plover	✓			
<i>Monarcha melanopsis</i>	Black-faced monarch	✓			
<i>Myiagra cyanoleuca</i>	Satin flycatcher	✓			
<i>Symposiachrus trivirgatus</i>	Spectacled monarch	✓			
<i>Pandion haliaetus cristatus</i>	Eastern osprey	✓			

Appendix 3 cont.

Scientific name	Common name	CMS	JAMBA	ROKAMBA	CAMBA
<i>Macronectes giganteus</i>	Southern giant petrel	✓			
<i>Rhipidura rufifrons</i>	Rufous fantail	✓			

Notes: This list includes local and migratory birds that regularly use the park for feeding, nesting or breeding. Species that may visit intermittently have not been included in this 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 4. Species of conservation significance

Scientific name	Common name	NCA status	EPBC Act status
Plants			
<i>Leichhardtia brevifolia</i>		Vulnerable	Vulnerable
<i>Livistona drudei</i>	Halifax fan palm	Vulnerable	
<i>Croton magneticus</i>		Vulnerable	
<i>Solanum sporadotrichum</i>		Near threatened	
<i>Corchorus hygrophilus</i>		Vulnerable	
Animals			
<i>Haliaeetus leucogaster</i>	White-throated needletail	Vulnerable	Vulnerable
<i>Esacus magnirostris</i>	Beach stone-curlew	Vulnerable	
<i>Charadrius mongolus</i>	Lesser sand plover	Vulnerable	Vulnerable
<i>Macronectes giganteus</i>	Southern giant petrel	Endangered	Endangered
<i>Limosa lapponica baueri</i>	Western Alaskan bar-tailed godwit	Vulnerable	Vulnerable
<i>Numenius madagascariensis</i>	Eastern curlew	Endangered	Critically endangered
<i>Dasyurus hallucatus</i>	Northern quoll	Critical	Endangered
<i>Dugong dugon</i>	Dugong	Vulnerable	
<i>Phascolarctos cinereus</i>	Koala	Endangered	Endangered
<i>Taphozous australis</i>	Coastal sheath-tail bat	Near threatened	
<i>Chelonia mydas</i>	Green turtle	Vulnerable	Vulnerable
<i>Acanthophis antarcticus</i>	Common death adder	Vulnerable	
<i>Lampropholis mirabilis</i>	Saxicoline sunskink	Near threatened	

Appendix 5. Places of historic value

Site name	Description
Fort Complex	The site contains derelict concrete structures with some timber and concrete remnants of the fabric, such as the water pipeline, command post, searchlight tower, ammunition store, radar station, signal station, gun sites and direction finder. The remainder of the accommodation area can be seen in the form of concrete slabs on flat land near the pathway to the Fort Complex proper.
Shipwrecks	Within the waters surrounding Magnetic Island there are more than 20 known ship wrecks—12 in Magnetic Island waters are considered historic (under national maritime heritage legislation) as they are over 75 years old.

Appendix 6. Pests

Scientific name	Common name	Biosecurity Act 2014 status	Historic Notes
Plants			
<i>Agave spp.</i>	sisal hemp		Sisal plants occur at various locations around the island. There is a significant infestation on council land in Horseshoe Bay Lagoon. The sisal on the conservation park side has been controlled.
<i>Ageratum houstonianum</i>	blue top/billy goat weed		The only record on park is on the Nelly Bay side of the pipeline fire track and start of the walk. This weed occurs extensively on freehold and council land, especially at Bolger Bay along West Point Road, and Horseshoe Bay.
<i>Cascabela thevetia</i>	yellow oleander	Restricted category 3	Yellow oleander has occurred in dense stands at various locations on and adjacent to the national park, including Bremner Point, the old Acadia barge landing road, and behind the Horseshoe Bay sports oval.
<i>Catharanthus roseus</i>	pink periwinkle		Pink periwinkle is particularly invasive on Magnetic Island's granitic soils, forming a monoculture and allelopathically inhibiting other plants.
<i>Chromolaena odorata</i>	Siam weed	Restricted category 3	Siam occurs on the mainland adjacent to the island. Siam weed was first identified on Magnetic Island in October 2014.
<i>Cryptostegia grandiflora</i>	rubber vine	Restricted category 3	Rubber vine is established at several sites around the island. These locations are well mapped and treatments recorded. Listed as a 'Weed of National Significance'.
<i>Crotalaria spp.</i>	rattle pod		Rattle pod occurs around the island on freehold and council land. Infestations are not widespread on protected area, occurring on some fire access tracks and walking tracks.
<i>Jatropha gossypifolia</i>	belly-ache bush	Restricted category 3	Belly-ache bush only occurs at limited locations and has been successfully controlled in the past. Listed as a 'Weed of National Significance'.
<i>Lantana camara</i>	lantana	Restricted category 3	Lantana is widely distributed across Magnetic Island. Lantana infestations also occur on the basalt soils around the top of Mt Cook. Listed as a 'Weed of National Significance'.
<i>Leucaena leucocephala</i>	leucaena		Leucaena has not yet been recorded as occurring on the protected area. The weed does, however, occur at various locations around Magnetic Island, including freehold and council land.
<i>Megathyrsus maximus</i>	Guinea grass		Very little Guinea grass actually occurs on protected area, being controlled in the past around the Nelly Bay beach scrub dunes, Curlew Flats and Fort car park areas.
<i>Mesosphaerum suaveolens</i>	hyptis		This weed occurs extensively on freehold and council land. The main infestations on protected area include the some fire access tracks, Telstra Tracks, Nelly Bay beach scrub dunes, Horseshoe Bay Lagoon Conservation Park, Curlew Flats, Fort car park and along the Nelly–Arcadia track.
<i>Praxelis clematidea</i>	praxelis		Praxelis was highlighted as a new introduction to Magnetic Island in 2016. This highly invasive weed has the potential to spread throughout the national park.
<i>Stachytarpheta urticifolia</i>	snakeweed		Snakeweed is widespread throughout the urban and bush block areas of the island, especially Horseshoe Bay, forming dense stands. The weed has occurred on several fire tracks and some walking tracks.
Animals			
<i>Felis catus</i>	feral cat and domesticated cats	Restricted status 3, 4, 6	Feral cats are known to be widespread on Magnetic Island, evident from numerous and regular reports provided by locals, and signs including scats and paw prints. The impact of feral cats is exacerbated by a large domestic cat population from the residential areas. While there are records of where feral cats have been sighted, little is known about the cat population or their impacts on island wildlife.
<i>Rhinella marina</i>	cane toad		Cane toads are well established and widespread on Magnetic Island. They consume a wide variety of insects, frogs, small reptiles, mammals and even birds, and produce toxic venom from skin glands. Native predators die after eating, or attempting to eat, cane toads.

14. References

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