

# Cape Hillsborough, Pioneer Peaks, Mount Ossa, Mount Martin and Reliance Creek National Parks and adjoining State Waters

## Management Plan

2011



Central Mackay Coast Bioregion

Prepared by:

Planning Services Unit

Department of Environment and Resource Management

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This management plan does not intend to affect, diminish or extinguish native title or associated rights.

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Front cover photograph: Scenic view of Cape Hillsborough Beach, Cape Hillsborough National Park. Photo: John Augusteyn.

Top right photograph: Landscape, Cape Hillsborough National Park. Photo: John Augusteyn.

Centre right photograph: Diversity Boardwalk, Cape Hillsborough National Park. Photo: John Augusteyn.

Bottom right photograph: Landscape, Cape Hillsborough National Park. Photo: John Augusteyn.

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## Vision statement

Visitors to these parks are presented with views of broad sandy beaches, rugged landscapes with volcanic peaks, and rainforest with freshwater creeks flowing into Great Barrier Reef Coast Marine Park waters. The mountains and low hills of the hinterland and coast display an array of species representative of local native plants and animals.

Cape Hillsborough, Pioneer Peaks, Mount Ossa, Mount Martin and Reliance Creek national parks and adjoining State waters are managed with an increased understanding of their diverse natural environments, and significant species and communities are protected and impacts are minimised. Management of the area is supported by research and monitoring of natural systems.

Yuibera (Yuwi) cultural sites are known and protected, with key sites presented to visitors. Traditional Owners are active in the area's management.

The area's natural and cultural values are presented to visitors through a range of interpretation. Visitors enjoy the characteristic features of the area using public facilities that complement the remote, natural, relaxed setting. Diverse nature-based recreation attractions are available, including bushwalking, picnicking, fishing, bird-watching, photography and swimming.



Cape Hillsborough Beach. Photo: Marnie Augusteyn.

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## 1. Management intent

The primary purposes of management for Cape Hillsborough, Pioneer Peaks, Mount Ossa, Mount Martin and Reliance Creek national parks and adjoining State waters will be to:

- ensure that pests are managed, where possible, with control methods having no, or minimal, adverse impacts on the values of the management area
- protect regional ecosystems and species of conservation significance
- conserve and protect the management area's natural environment, cultural and aesthetic values
- incorporate the interests and rights of Traditional Owners and their affiliations to the area by cooperatively protecting and managing cultural heritage places of significance
- provide safe, sustainable, nature-based recreation opportunities in all parks, particularly at Cape Hillsborough National Park
- provide direction and actions to protect the natural, cultural and social values of the management area through appropriate research and monitoring
- inform visitors and the community of the management area's values and integrate directions with the regional tourism strategy
- continue to build on the cooperative broad scale land management activities with neighbours, stakeholders and the local community.

## 2. Basis for management

This plan sets out the considerations, outcomes and strategies guiding the management of five national parks: Cape Hillsborough (including Wedge Island), Pioneer Peaks, Mount Ossa, Mount Martin and Reliance Creek and the adjoining State waters (collectively referred to as the management area) (Appendix A, Map 1). This approach provides an opportunity to plan and implement a variety of recreation, commercial and nature conservation activities across the landscapes to protect natural and cultural values.

The Department of Environment and Resource Management (DERM) is responsible for the management of Cape Hillsborough, Pioneer Peaks, Mount Ossa, Mount Martin and Reliance Creek national parks in accordance with the *Nature Conservation Act 1992* and associated regulations to protect land, wildlife and cultural values. The Nature Conservation Act sets the management principles for national parks.

This plan also covers the adjoining tidal lands to Cape Hillsborough National Park in the Great Barrier Reef Coast Marine Park (Queensland). The national park joins the State marine parks at the mean high water springs. Tidal lands between the mean high water springs and mean low water springs are part of the State marine park. The State marine park is managed under the authority and provisions of the *Marine Parks Act 2004* and associated regulations. This legislation provides for management plans to apply to tidal lands.

The inclusion of tidal lands in this plan will help DERM manage the national parks and adjoining tidal areas consistently. The Marine Parks (Great Barrier Reef Coast) Zoning Plan 2003 provides management direction for the beaches and associated mangroves adjacent to Cape Hillsborough National Park (Appendix A, Map 2).

A fish habitat area has been declared over the waters and wetlands of Sand Bay and Wedge Island (Appendix A, Map 2). Fish habitat areas are administered under the *Fisheries Act 1994* by the Department of Employment, Economic Development and Innovation to protect the inshore and estuarine fish habitats, such as the mangroves, wetlands, sand bars and waters, from direct physical disturbance and development, helping to maintain local and regional fisheries.

In the Great Barrier Reef Coast Marine Park (Queensland), a conservation park zone has been declared over the waters at McBride's Point and provides opportunities for reasonable use and enjoyment, including extractive use (Appendix A, Map 2).

The State Coastal Management Plan describes how the surrounding waters will be managed in the statutory planning and development assessment framework of the *Coastal Protection and Management Act 1995*. It defines the national parks as areas of state significance for both their natural resources and scenic coastal landscapes. It identifies the waters for low-key, nature-based visitor opportunities.

The provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) and associated regulations apply to the management area because of the presence of migratory species listed under the Bonn Convention, the China–Australia Migratory Bird Agreement (CAMBA), Japan–Australia Migratory Bird Agreement (JAMBA) and Republic of Korea–Australia Migratory Agreement (ROKAMBA). Endangered and of concern regional ecosystems are described under the *Vegetation Management Act 1999* and endangered, vulnerable and near threatened species are listed under the Nature Conservation (Wildlife) Regulation 2006. DERM has a responsibility under the *Land Protection (Pest and Stock Route Management) Act 2002* to control declared pests on protected areas.

Traditional Owners have a strong affiliation with the management area and their involvement will form an important part of all management and interpretive activities. Native title claims by the Yuipera (Yuwi) people over the management area await determination. This plan is not intended to erode or extinguish any native title rights. The plan will help involve the Traditional Owners in managing the parks. Indigenous cultural heritage places are a custodial responsibility of Traditional Owners, and cultural heritage places in the parks are legislatively managed under the *Aboriginal Cultural Heritage Act 2003* and the *Queensland Heritage Act 1992*. Cultural resource management is in accordance with the Charter for the Protection and Management of Archaeological Heritage, Burra Charter and Queensland heritage strategy, which provide guidelines for managing cultural heritage places.

### 3. Location and regional context

The management area covers five national parks and the Great Barrier Reef Coast Marine Park adjoining the national parks. It supports significant landscape features and biological communities of the Central Mackay Coast biogeographic region. Other national parks and State forests in the area include Newry Island, Eungella National Park, Cathu State Forest and Bluff Hill National Park. Much of the adjacent country has been cleared for sugarcane, modified for grazing, or is being developed for housing.

The management area's scenic values are outstanding, with spectacular volcanic features rising out of the coastal plain, large areas of undeveloped bushland, panoramic views, gallery rainforests, streams, undeveloped beaches and mangroves represented. This area, particularly Cape Hillsborough National Park, is becoming a popular destination for people seeking nature-based recreation experiences, with many family groups coming to camp or for day visits.

Cape Hillsborough National Park conserves a rugged section of coastline north-west of Mackay. The park includes McBride's Point and a melaleuca wetland adjoining Ball Bay. The geology of Cape Hillsborough is unique and differs from everything else along the Mackay coast. The vegetation and associated wildlife is a unique combination found nowhere else in the region. Each year, more than 180 000 visitors are attracted to the broad sandy beaches, rugged landscapes and the diversity of plants and animals.

Pioneer Peaks National Park is north-west of Mackay and comprises Mount Blackwood (590 m), Mount Jukes (547 m), Mount Adder (380 m) and Mount Mandurana (308 m). Pioneer Peaks National Park features steep volcanic peaks, visible from the Bruce Highway, north of Mackay. These volcanic peaks were produced by volcanic eruptions approximately 32 million years ago and exposed by persistent erosion. The park is also known for its diversity of plants and animals.

Mount Ossa National Park and Mount Martin National Park are north-west of Mackay. These parks are situated on low granitic mountains that rise from the central Queensland coastal plain. These mountains and low hills form a semi-continuous link between the Clarke and Connors ranges uplands, the lowland plains and coastal areas. The significance of the parks reflects the elevated, remnant vegetation that lies across climatic, geological and other environmental gradients. While some other mountains in the area are also national parks, Mount Ossa and Mount Martin are significant as they represent the natural values of the coastal mountains.

Reliance Creek National Park is located between Pioneer Peaks National Park and Mackay. This park contains palm-dominated lowland rainforest, a rainforest type listed as endangered. This rainforest habitat is thought to have been common along lowland and riverine areas in the Mackay area, but has been extensively cleared. The rainforest contained in the park provides important seasonal feeding areas for bird life, including the migratory and other fruit-eating birds.

## 4. Protecting and presenting the area's values

### 4.1 Landscape

#### 4.1.1 Geology

The management area is notable for geologically diverse volcanic landscapes with distinct lava seams separated by layers of volcanic ash and pyroclastic materials.

Cape Hillsborough National Park's bulky hills are the remains of an old volcano that erupted approximately 34 million years ago (Willmott 2006). The volcano erupted over a land surface of sedimentary rocks and is visible at low tides near Wedge Island. Volcanic activity resulted in distinct lava seams inter-bedded with layers of volcanic ash. Pinnacle Rock, 5 km west of the main visitor area, is a trachyte plug—the core of an extinct volcano (Stephenson 1985). The main geology of the area is rhyolite, an acid volcanic rock that erodes to form relatively infertile and shallow stony soils. The parent rock contains significant quantities of mica, a grey material that produces the distinctive dark, fine sands of Cape Hillsborough.

The cliffs and rock outcrops overlooking the ocean contain caves, overhangs and limestone beds. These were laid down in shallow freshwater lakes and contain turtle and crocodile fossils.

The rock formations of Pioneer Peaks National Park, formed approximately 32 million years ago from volcanic activity, were once much larger but high rainfall has eroded the rock to form the landscape seen today. The most prominent mountains are Mount Jukes, a solid granite dome, and Mount Blackwood, composed of Blackwood quartz syenite. Separating these two mountains is a ring of more easily erodable rocks, the Neilson Leucogabbro, which has eroded to form the fertile, sheltered Mount Jukes Valley. Mount Mandurana is isolated from the Mount Blackwood and Mount Jukes complex and consists of trachyte lava flows and altered sediments, perhaps associated with the volcanic activity in the Mount Jukes area.

Mount Martin National Park (490 m) contains part of the catchments and headwaters of Macquarie and Jolimont creeks. Both Mount Martin and Mount Ossa have underlying geology comprised of intermediate and acid volcanics and pyroclastics, minor basalt, shale, lithic greywacke and conglomerate.

Reliance Creek flows through Reliance Creek National Park, the catchment and headwaters formed in part by Black Mountain, Mount Gabrovo, The Sisters and Mount Mandurana. Underlying geology is microdiorite and minor hornfelsed sediments. The national park contains low-lying, seasonally waterlogged alluvial flats and gullies.

#### 4.1.2 Scenic amenity

The management area contains a diverse landscape. Rugged mountains and picturesque valleys covered with native vegetation give the management area very high scenic landscape qualities, attracting visitors to the region.

Scenic landscape values and vegetation corridors that link the five national parks are slowly declining due to surrounding urban development. There are several parcels of public land directly adjacent to the management area with significant conservation values that can enhance the protected areas.

Pioneer Peaks National Park currently has powerlines and communication towers on Mount Blackwood. Infrastructure, such as powerlines, needs to be managed to ensure that scenic and biological values of the management area are maintained.

The existing amenity and landscape values attract visitors, making them socially and economically important to the local community. These values will be threatened by any activities and infrastructure not compatible with the existing relaxed, low-key atmosphere and natural setting.

Visitors particularly appreciate the lack of noise from surrounding urban environments and it is important that aerial activities do not impact upon this experience.

Coastal waters are a major attraction for many visitors. The beaches and waters adjoining Cape Hillsborough National Park add significantly to the scenic amenity and are valued recreation areas. Activities in the management area could impact on the amenity and quality of marine park waters. Disturbed soil can lead to sedimentation of the water courses that flow out into the marine park. Likewise, any pollution, both nutrient and physical, is likely to flow through the catchment and end up in the marine environment. Chemicals used for pest control can also adversely affect marine park water quality by contributing to algal blooms or damaging seagrass and reefs.



### 4.1.3 Climate change

Scientific research indicates that human use of resources will have an impact on the global climate. Changes could likely include a rise in global mean sea level, higher average air and sea temperatures and increased climate variability, the implications of which are being assessed by scientists around the world. Impacts upon the management area may include increased vulnerability of beach and dune systems to coastal erosion, inundation of coastal lowlands, more severe storm events such as cyclones, and reduced habitats due to changed rainfall and tides.

Desired outcomes 2021	Actions and guidelines
The management area is retained as a relatively undisturbed landscape.	<p>A1. Ensure activities and infrastructure are consistent with the high scenic landscape values and the relaxed, low-key amenity of the area. Activities or infrastructure that compromise these values, and cannot be mitigated or managed, will not be permitted.</p> <p>A2. Visual intrusion of existing and future developments in the management area are minimised, particularly the intrusion of transmission lines and telecommunications facilities.</p>
Land with high natural, cultural and/or landscape values will be identified and gazetted as protected area estate where practicable.	A3. Determine the suitability of the following parcels of unallocated State land adjacent to Cape Hillsborough National Park at McBride's Point. These include, but not limited to: 411CI3015, 9USL33755, FTY1874 and 15USL33755. If additional lands are added to the management area, the management plan will apply.
The area is managed to be as naturally resilient as possible to cope with the effects of climate change.	A4. Improve knowledge, understanding and modelling of climate change and potential impacts on the management area, particularly in the areas of vulnerable ecosystems and protecting vulnerable species.

## 4.2 Native plants and animals

### 4.2.1 Native plants

The management area is located in the Central Mackay Coast bioregion. The diverse geology and landforms, combined with a high rainfall, has contributed to the region's characteristic vegetation communities. The overall integrity of the plant communities is in good condition in the management area, due to the steep geological landforms that limit access and physical disturbance.

Fifteen regional ecosystems are mapped (Appendix B, Table 1) with 1161 vascular plant species identified. Twenty-one species are listed as near threatened, six species as vulnerable and one species as of concern under the Nature Conservation (Wildlife) Regulations (Appendix C, tables 2–3).

Plant species of particular note are the Mount Blackwood holly *Graptophyllum ilicifolium*, a localised shrub restricted to areas on Mount Blackwood, Mount Adder and Mount De Moleyns (8 km to the south). This species is not known to occur outside these areas. *Neisosperma kilneri* has only two known locations: one is a creek system on Mount Blackwood and the other is at Mount Dryander. Giant ironwood *Choricarpia subargentea* is at its most northern distribution at Mount Jukes.

The semi-deciduous notophyll/mesophyll vine forest at Reliance Creek National Park is considered endangered as it is estimated that less than 10 per cent of its pre-European extent remains in a natural to semi-natural condition. Rainforests found in the park are known to provide habitat for several near threatened and threatened plant species, including *Sarcotoechia heterophylla*, *Solanum sporadotrichum* and palm forest *Trigonostemon inopinatus*. Palm forests are being smothered by cat's claw creeper. The Department of Employment, Economic Development and Innovation continues to work with Queensland Parks and Wildlife Service (QPWS) to remove this invasive vine through biological control.

Mount Ossa National Park vegetation is predominantly notophyll/microphyll vine forest with emergent hoop pine *Araucaria cunninghamii*. Such vine forests typically occur in drier areas. Eucalypt woodlands partially cover ridgelines and lower slopes of the mountain. These woodlands are readily invaded by rainforest species in the absence of fire. This invasion degrades the habitat value of open woodlands, decreasing plant and animal diversity in the park.

Parts of the management area have been disturbed by past clearing, erosion and wind damage from tropical cyclones. Replanting naturally disturbed areas is appropriate where pressure from people and pest plants hinders natural revegetation processes.



Desired outcomes 2021	Actions and guidelines
Information on the management area's vegetation communities and plant species continues to increase.	<p>A5. Complete a detailed plant survey throughout the management area, particularly on Mount Ossa, Reliance Creek and Mount Martin national parks to guide management decisions.</p> <p>A6. Monitor the impacts of management actions and visitor activities to guide management decisions. Where necessary, use findings to amend management practices.</p>
Palm forests <i>Trigonostemon inopinatus</i> are in a healthy condition.	<p>A7. Implement and monitor pest plant and animal impacts to the palm forest and, where practicable, implement appropriate responses.</p> <p>A8. Continue to work in partnership with the Department of Employment, Economic Development and Innovation to monitor biological control trials of cat's claw creeper in Reliance Creek National Park.</p>

#### 4.2.2 Native animals

The diverse vegetation communities and topography in the management area provide a broad range of habitats. Not surprisingly, the management area also supports a diversity of native animals.

The overall integrity of native animal populations is in good condition throughout the management area, with animals of conservation significance recorded in WildNet, ParkInfo and other department databases.

One hundred and sixty-seven bird species have been recorded in the management area, seven listed as near threatened, vulnerable or endangered under the Nature Conservation (Wildlife) Regulation. The tropical species of bird orange-footed scrubfowl *Megapodius reinwardt* is at, or near, its southern-most limit of distribution. Twenty-one migratory bird species are listed in the China–Australia Migratory Bird Agreement, Japan–Australia Migratory Bird Agreement and/or Republic of Korea–Australia Migratory Bird Agreement. Many migratory birds reach their southern limit of natural distribution in the Mackay to Shoalwater Bay area, most of these associated with tropical rainforest communities and considered of significance to the management area. Species include pied imperial-pigeon *Ducula bicolor*, metallic starling *Aplonis metallica* and buff-breasted paradise-kingfisher *Tanysiptera sylvia*.

Forty-two reptiles, 11 amphibians and 27 mammals are currently identified in the management area (Appendix C, Table 3). Pioneer Peaks National Park has a gecko *Phyllurus isis*, which is a species of conservation significance inhabiting the rainforest surrounding Mount Blackwood and Mount Jukes. This species is only known from this area. *Mixophyes fasciolatus*, a rainforest stream-breeding frog with a disjunct population found at Eungella National Park and Mount Blackwood, and the *Antechinus flavipes*, a small carnivorous rainforest marsupial not collected from the Central Coast since 1995, have been located on Mount Blackwood.

A colony of the vulnerable ghost bats *Macroderma gigas* occupies some caves all year at Cape Hillsborough National Park. The total population of ghost bats for Queensland is declining and this colony is one of four known sites in the state. The coastal caves also provide roosts for the coastal sheath-tail bat *Taphozous australis*.

Six species of kangaroos and wallabies are found in Cape Hillsborough National Park, including eastern grey kangaroos *Macropus giganteus*, agile wallabies *Macropus agilis*, whiptail wallabies *Macropus parryi*, plain rock-wallabies *Petrogale inornata*, swamp wallabies *Wallabia bicolor* and red-legged pademelons *Thylogale stigmatica*. The park is significant for providing a secure refuge for these species.

The flat back turtle *Natator depressus* lays its eggs on the sandy beaches and the mangroves support populations of the false water-rat *Xeromys myoides*.

QPWS and the Mackay Regional Council entered into a Memorandum of Understanding for the cooperative response to marine animal strandings. This will ensure that marine animal strandings response and actions will be able to be delivered effectively.

Many of the significant species are associated with the rainforest areas. As the area continues to be cleared and broken up for development, the once larger pockets of rainforest gullies will become smaller and competition for survival will increase. This has seen the decline of species and will affect species' survival in the future. Open forest species tend to have a much wider distribution and are less affected by disturbance at any one location.

Desired outcomes 2021	Actions and guidelines
Detailed information on status and location of wildlife of conservation significance is available. Wildlife species and populations recognised as restricted or of conservation significance are protected.	A9. Undertake detailed native animal surveys throughout the management area. A10. Monitor known populations of near threatened, endangered and endemic native animals, such as golden tipped bat <i>Antechinus flavipes</i> , and record responses to disturbances and management actions
Relocation of native animals does not adversely impact the management area.	A11. Animals will not be relocated or liberated in the park without DERM approval. Such approval will be dependent on impacts to native populations and where animals are assessed by a vet to be healthy, pose no risk of introducing or spreading disease, and are known to occur naturally in the management area. A12. Provide information to wildlife carers on the values of the national parks and impacts that introduced wildlife can cause.
Response to marine strandings are timely and efficient.	A13. Continue to work with Mackay Regional Council to implement the Memorandum of Understanding for marine animal strandings.

### 4.3 Indigenous culture

Traditional Owners are an important part of effectively managing the area, as they have a strong desire for continued involvement in its cultural and sustainable use. A native title claim QUD6223/98 has been lodged with the National Native Title Tribunal on behalf of the Yuibera (Yuwi) people over the management area.

The Yuibera (Yuwi) people lived in, and used the rich natural resources of, an area extending from the O'Connell River in the north, Cape Palmerston in the south, and to the Clarke and Connors ranges in the west. Stone axes and hammer stones have been recovered from cane fields in Mount Jukes valley (Lampert 1983), and stone implements have been recovered from Mount Mandurana. Yuibera (Yuwi) people used the area's extensive marine resources, leaving behind large middens and fish traps. As the management area has outstanding landscape features, it holds spiritual and cultural significance to the Indigenous people.

In December 1876, a reserve of 14 000 acres was gazetted at Cape Hillsborough as a mission. In 1885 the mission was closed and the children were transferred to Rockhampton (Kennedy 2002). The mission site is now incorporated into Cape Hillsborough National Park.

A formal cultural heritage significance assessment and management strategy has not been completed for the management area. In 2010 QPWS and the Yuibera (Yuwi) people prepared protocols to guide the management of cultural sites in the management area.

Cape Hillsborough National Park has two walks that present Indigenous culture and knowledge. The Yuibera (Yuwi) trail at Hidden Valley and the Diversity Boardwalk are opportunities for visitors to understand Aboriginal use and appreciation of the management area.

Several middens and artefacts are located in the adjoining unallocated State lands. Inappropriate use of the area, such as riding motorcycles and four-wheel-driving on beaches and off designated tracks is having an impact on these sites.

Desired outcomes 2021	Actions and guidelines
Traditional Owners are active in the management area, particularly in relation to cultural heritage protection.	A14. Continue to liaise with Traditional Owners to ensure effective communication and protection of Traditional Owner cultural interests, including traditional use of coastal resources through implementing the Yuibera (Yuwi) cultural heritage protocols and continued involvement in the management of the area.

## 4.4 Shared-history culture

While no relics relating to shared cultural heritage are known to exist, the management area does have heritage values.

Several prominent geological features in the Mackay/Whitsunday area, including Cape Hillsborough, were named by Captain Cook in June 1770 as he sailed north along the coast. Cape Hillsborough was named after Wills Hill, who succeeded to the Irish title of Viscount Kilwarlin and the first Earl of Hillsborough in 1751. Captain Cook noted in his journal the prominent nature of the landscape. Non-Indigenous settlement of the area began in 1867 when McBride and Finlayson selected 4000 ha near the cape for breeding cattle.

The area was also known to attract fossickers searching for opals.

There is a plaque installed in memory of a State Emergency Service helicopter accident offshore from Cape Hillsborough in 2003.

Desired outcomes 2021	Actions and guidelines
Remembrance memorials are in keeping with the natural environment.	A15. Manage memorial plaques or other memorial structures in line with the memorial policy.

## 4.5 Tourism and visitor opportunities

The management area offers a wide range of nature-based recreation opportunities. A large part of the area is inaccessible due to the steep geological formations, which increases the remoteness and required degree of self-reliance.

A range of recreation zones have been established for the management area (Appendix A, Map 3 and Appendix D), which will guide the visitor opportunities available. Future development or activities must ensure that they are compatible with the expectations of the visitor and support conservation values. All day-use areas, walking tracks and vehicle tracks have been assessed and will be managed as outlined in Appendix A, Map 4 and Appendix C, tables 4–6.

There are no facilities provided at Pioneer Peaks, Mount Martin, Mount Ossa and Reliance Creek national parks. Self-reliant visitors are attracted to these areas as they provide an opportunity to explore the area's remote and natural setting, and they provide experienced bushwalkers places to improve their local orienteering skills.

Cape Hillsborough National Park is an accessible coastal national park. Its rugged landscape, sandy beaches and natural setting adds to its appeal to campers and day visitors and provides access to the Great Barrier Reef Coast Marine Park (Queensland), where fishing and water sports are popular.

Cape Hillsborough National Park has a small peninsula of land and adjacent beach, where the private tourist park, Cape Hillsborough Council Park and the national park day-use areas are located. During peak periods more than 2000 people a day visit or stay in this area. Careful planning is needed to ensure the area's intrinsic natural values are maintained, and that use is sustainable.

The day-use area has established car parks, toilets, reticulated water, grassed areas, picnic tables, gas barbecues, orientation and interpretive signs, as well as orientation at all walking track heads. Management challenges include soil compaction, trampling, littering and public safety. A visitor management strategy will be developed that will provide a framework for future opportunities, growth and management. Localised impacts in the day-use areas can be eliminated or minimised through careful site selection and appropriately designing and placing facilities.

Access to the management area and places of interest are provided through a network of roads, QPWS-managed tracks and boat ramps (Appendix A, Map 4). Boat ramps are provided for under the *Marine Parks Act 2004*. Vehicle use on the beach is permitted to use the boat ramp only. Vehicles are not permitted to traverse the beach.

Overnight accommodation is available at the QPWS-managed campground at Smalley's Beach, or at a privately owned tourist park at Cape Hillsborough. Commercial overnight accommodation is also provided at Halliday Bay and Seaforth.

Smalley's Beach campground caters for approximately 40 people (11 sites) with a hybrid toilet, water and orientation sign; however, no rubbish collection facilities exist. Permits are required to camp at Smalley's Beach camp ground and must be booked prior to arrival.

No open fires are permitted in the management area. Collecting wood for fires has denuded the camp ground of fallen timber and other materials, resulting in lost habitat for native animals.

Fire scars from camp fires and partially burnt rubbish is evident at the camp ground and on the beach. In addition, open fires pose safety hazards to visitors and turtles. Hot coals on the beach or in the camp area can result in burns to the body and a significant risk to the survival of female turtles and hatchlings. Light from the open fires and embers moving across the beach attract turtles and can potentially encourage the turtles to sit on hot coals. Spotlights and lighting from the camp ground are also known to disorientate turtles and hatchlings.

Bushwalking is popular, providing an opportunity to experience the natural and scenic values of the management area. There are several walking tracks at Cape Hillsborough National Park. These walking tracks provide access to beaches and lookouts.

Opportunities for cliff-based activities in the management area are minimal. The State Emergency Services and other groups have used sections of Pioneer Peaks National Park for these activities. The impacts of cliff-based activities are generally low and can vary depending on soil condition, landform, vegetation type and intensity of use. Where use levels are high, cliff-based activities can lead to the loss of cliff-line vegetation and localised loss of soil cover, leading to loose sand or soil compaction, erosion problems and pest plant introduction and spread.

Wind-driven recreation activities, such as land-surfing and kite-surfing, have potential to increase. There are many safety risks associated with wind-driven recreation activities and potential conflicts with other user groups. It is important that this activity does not interfere with other users on the beaches in the management area.

There are currently no aircraft-based commercial tourism operators using the management area, but private sight-seeing flights occur. The management area is a spectacular and expansive natural area that could attract these tourism opportunities in the future, but such activities can impact on the natural amenity for visitors.

Pilots must abide by the Air Services Australia regulations when flying over the management area, staying above 1500 feet (457 m) over Cape Hillsborough National Park, except in the course of take-offs and landings from locations outside the management area. Aircraft are not permitted to land or take-off in the management area, except for emergency or management purposes.

Information, interpretation and education services can help visitors orientate themselves and appreciate and understand how the area is managed, its values, and its recreation opportunities. Such services can also encourage and help visitors to have a safe visit without damaging the area. Visitor experience and knowledge of the management area can be enhanced with personal contact. Information-sharing is a valuable way to increase visitors' knowledge and appreciation of the management areas natural values. There is an information board at the entrance to the Smalley's Beach campground at Cape Hillsborough National Park to give visitors a broad knowledge of the area's values and places to visit. There are new orientation and interpretive signs in the day use area, at the car park near the resort, orientation signs at walk trackheads associated with the headlands, and new thematically-developed interpretive signs at the two major walking tracks, the Yuibera (Yuwi) Cultural Trail at Hidden Valley and the Diversity Boardwalk.

There is an interpretive strategy that underpins the development of on-site features at Cape Hillsborough National Park. The other parks are self-reliant and without facilities. Off-site information could raise potential visitors' understanding of the conservation status of the management area, activities allowed and warn of hazards. There is an opportunity to raise Cape Hillsborough National Park's cultural, natural and recreation profile in Tourism Queensland's strategies. A visitor survey conducted in 2007–08 indicated visitor numbers would increase at Hidden Valley and the Cape Hillsborough day-use areas.

There is a growing network of private accommodation and commercial opportunities in the area. Commercial tour operators have an important part to play in helping visitors appropriately use, appreciate and enjoy the area and its special features. QPWS, in association with Tourism Queensland, supports commercial activities in the management area where appropriate.

Desired outcomes 2021	Actions and guidelines
Public boat access is provided.	A16. In consultation with Mackay Regional Council, designate and sign boat launching on Cape Hillsborough Beach.
<p>Visitor use of the management areas does not impact on the natural and aesthetic values of the management area.</p> <p>A range of nature-based visitor experiences are available on the beaches adjoining Cape Hillsborough National Park.</p> <p>Visitors are able to enjoy a safe, nature-based activity with minimal conflict between users.</p>	<p>A17. Manage roads and tracks as outlined in Appendix C, tables 5–6.</p> <p>A18. Manage Smalley's Beach campground as a low-key camping area.</p> <p>A19. Minimise impacts from camping and restrict camping to the existing camp ground area.</p> <p>A20. Focus infrastructure management on maintaining existing access roads and camping facilities, mitigating impact and compliance.</p> <p>A21. Encourage use of portable gas stoves when camping.</p>



Desired outcomes 2021	Actions and guidelines
	<p>A22. Prohibit firewood collection and open fires in the management area.</p> <p>A23. Maintain the long-standing policy of not providing rubbish bins. Ensure visitors are aware of the need to take all rubbish out of the management area.</p> <p>A24. Finalise and implement the visitor management strategy for Cape Hillsborough National Park.</p> <p>A25. Manage the management area in accordance with the management zones in Appendix A, Map 3 and Appendix C, Table 4.</p> <p>A26. Continue to plan and conduct visitor surveys to measure visitor experience and use of the management area.</p> <p>A27. No new walking tracks will be constructed.</p> <p>A28. Maintain walking tracks to the appropriate standards in Appendix C, Table 6.</p>
<p>Visitors come prepared for a self-sufficient experience.</p> <p>Interpretive materials enrich visitor experiences and promote safe and responsible behaviour.</p>	<p>A29. Ensure visitor safety information is accurate, current and available to visitors through the DERM website and that visitors are aware of the remote nature and hazards of the management area.</p> <p>A30. Maintain site-based interpretation at visitor nodes including Smalley's Beach camp ground, Cape Hillsborough day-use area, Diversity boardwalk, Yuibera (Yuwi) trail, Andrew's Point and Beachcomber Cove.</p>
<p>Camping activities do not have a negative impact on the turtle population.</p>	<p>A31. Through interpretive materials and pro-active communication, inform visitors of the importance of nesting turtles in the area and encourage visitors to reduce the amount of light on Smalley's Beach between October and February each year, when tides are high at night.</p>
<p>DERM works collaboratively with the Mackay Regional Council to manage the Cape Hillsborough day-use area consistently.</p>	<p>A32. Develop a Memorandum of Understanding with Mackay Regional Council to work cooperatively to manage the Cape Hillsborough Beach foreshore visitor area.</p> <p>A33. QPWS to work with Mackay Regional Council to ensure appropriate signs are installed and maintained at Cape Hillsborough National Park.</p>
<p>Natural values are not compromised by cliff-based activities.</p>	<p>A34. Assess and monitor natural values and take appropriate management actions to remove impacts on the natural values.</p>
<p>Wind-based activities do not impact on the management areas values.</p>	<p>A35. Encourage safe, responsible recreation activities and behaviours to minimise impacts on values.</p> <p>A36. Consider allocating specific areas for different activities if conflicts between different nature-based recreation activities arise.</p>
<p>Commercial operators provide opportunities that complement the management area.</p>	<p>A37. Foster commercial tourism that allows visitors to experience the unique biodiversity of this area.</p> <p>A38. Maintain partnerships with local accommodation and tourism operators, including Mackay Tourism.</p> <p>A39. Ensure all commercial operators have access to contemporary and quality information about the natural and cultural values of the area and the importance of protecting those values to enable them to present these values to visitors.</p>
<p>The scenic amenity of the management area is maintained.</p>	<p>A40. Prohibit the landing and taking off of aircraft from the management area, except in emergency situations or for specific management purposes.</p> <p>A41. Aircraft are not permitted to fly below 1500 feet (457 m) at Cape Hillsborough National Park.</p>
<p>Natural, cultural and recreation values is a prominent feature of the region's tourism strategies and promotional publications.</p>	<p>A42. Liaise with state and regional tourism authorities to promote the natural and cultural values and recreation opportunities through publications and media releases.</p>

## 4.6 Education and science

### 4.6.1 Education

The management area offers learning opportunities in geology, biology and marine studies.

With easy access from Mackay, the management area can cater for primary, secondary and tertiary education and research. Public education increases community awareness of the area's values, conservation principles and practices, and promotes access to, and appropriate behaviour at, specific park sites.

Desired outcomes 2021	Actions and guidelines
Education opportunities are available to visitors and the local community.	A43. Provide nature-based education opportunities in the management area.
Managing and presenting Indigenous cultural resources are undertaken in conjunction with Traditional Owners.	A44. Investigate opportunities for Traditional Owners to undertake education programs at Cape Hillsborough National Park.

### 4.6.2 Science

The management area provides abundant opportunities for scientific research and monitoring. Any research conducted on the management area must be permitted under a permit to take, use, keep or interfere with a cultural or natural resource for scientific purposes. Results from research monitoring can benefit the area's management and educate staff and the community. It is important that knowledge is extended to the local community and included in the area's interpretation products.

As the management area comes under increased pressure to provide for all recreation pursuits, there is a need to collate and determine gaps in QPWS's understanding of visitor use, expectations and impacts on the natural and cultural values, particularly at Cape Hillsborough National Park

Desired outcomes 2021	Actions and guidelines
Research provides a greater understanding of the values of the area and the impacts of recreation and commercial uses on these values.	A45. Promote and support research, particularly into the area's impacts of recreation and commercial uses and impacts on native plants, wildlife and landscape, which will help inform management decisions.

## 4.7 Partnerships

While QPWS is directly responsible for managing the area, other agencies are responsible for planning, managing or regulating certain activities in, or directly adjacent to, the parks. QPWS works with these agencies to jointly deliver programs, such as pest, fire and road management and enforcement.

Sustainable use and enjoyment of the management area is the responsibility of government agencies that administer relevant legislation and neighbouring areas, including the Department of Employment, Economic Development and Innovation, the Great Barrier Reef Marine Park Authority and Mackay Regional Council.

A strong working relationship with the Yuibera (Yuwi) people is essential to ensure the views and aspirations of the Traditional Owners of the land can be encompassed in managing the area.

The management plan is part of the long-term process where park management is defined and improved with the help and participation of the community. The area's future depends on visitors, neighbouring landholders and local authorities cooperating to protect their special values.

Desired outcomes 2021	Actions and guidelines
Government agencies work collaboratively to manage common issues.	A46. Continue to build relationships with stakeholders to aid better cooperative management of the management area, especially in fire, pest and road management.  A47. Implement procedures and actions as outlined in the Memorandum of Understanding – Marine Strandings.
The area is managed as part of the broader environment, with a range of conservation strategies practised on neighbouring lands.	A48. Continue to engage with park neighbours and encourage them to participate in conservation initiatives on, and adjacent to, the management area.

## 5. Other key issues and responses

### 5.1 Pest management

Sixty pest plant species have been recorded in the management area. Priority pest plant species targeted by management include grader grass *Themeda quadrivalvis*, molasses grass *Melinis minutiflora* and guinea grass *Megathyrsus maximus var. maximus*, Lantana *Lantana camara* and cat's claw creeper *Macfadyena unguis-cati*.

Some of these pest plant species may be controlled or contained by using fire whilst others are promoted and enhanced by fire. Introduced pest plants, particularly lantana and invading pasture grasses, can significantly alter the biomass, timing and continuity of cured fuel and hence alter intensity, frequency and timing of fire events in an area. The timing of a fire event may provide a competitive advantage to native species over pest plant species, or vice versa, depending on seasonal conditions.

A control program for cat's claw creeper in Reliance Creek National Park is being conducted with Biosecurity Queensland.

Tree pest plants, such as penny leaf *Dalbergia sissoo* and guava *Psidium guajava* are common on surrounding land and could become a serious problem, displacing native vegetation. Mango trees *Mangifera indica* are displacing rainforest species near Neilson Creek in Pioneer Peaks National Park and are affecting natural regrowth in riverine closed forest.

Pest animals in the management area include dogs *Canis familiaris*, cats *Felis catus*, pigs *Sus scrofa* and cane toads *Rhinella marina*. These animals impact biodiversity, compete for habitat and resources, disperse pest plants, pollute waterways, cause erosion and fragment native animal populations.

Feral pigs occur seasonally throughout the management area. Pigs can be a significant problem as they dig up plants to eat their roots, wallow in water pools and dig up the soil in wetlands, often resulting in highly disturbed environments and reduced water quality. This, in turn, adversely impacts on native vegetation growth and habitat quality. Current control methods include coordinated trapping with neighbours.

Wild dogs and cats are known predators of native animals, but little data has been collected to quantify their impacts in the management area. Control actions have been undertaken by QPWS and the regional council when required.

A Level One Pest Management Strategy and Mackay Coast Bioregional Pest Animal Management Strategy exist for the management area outlining the presence, location, legislative status, threats and management. Pest plant reduction programs are conducted annually.

Desired outcomes 2021	Actions and guidelines
Pests posing a threat to the management areas natural values are controlled and, where possible, eradicated.	A49. Continue to implement a Level One Pest Management Strategy for the management area under the QPWS Pest Management System.

## 5.2 Fire management

Fire is a natural and necessary part of much of Australia's landscape, having both beneficial and adverse impacts. Most vegetation communities have evolved with fire and require it to maintain their diversity. Many plants and animals are well adapted to survive fire and some require fire to regenerate. However, some communities have a lower tolerance to fire and need protecting.

The management area conserves a representative section of the original landscape—supporting rainforest, shrubland, woodland, open forest and closed forest ecosystems. Managing fire is a high priority.

Any fire management for natural areas needs to give particular consideration to protecting life, property and commercial assets; and, protecting and managing the diversity of vegetation communities, habitats for wildlife populations and other values. Fire management will be planned and undertaken in accordance with principles for protected areas specified by the Nature Conservation Act and the *Fire and Rescue Service Act 1990*. A comprehensive QPWS fire management system guides the planning, implementing, monitoring, evaluating and reporting of fire management activities.

A Level One Fire Strategy exists for Cape Hillsborough and Pioneer Peaks national parks. A Level Two Fire Strategy has been prepared for Reliance Creek and Mount Ossa national parks and is being prepared for Mount Martin National Park.

Fire-adapted vegetation in the management area is, in most places, contiguous with that on neighbouring land. Due to the terrain, there are few tracks or control lines in the management area, and it is not feasible to construct fire control lines along most of the boundaries. Therefore, it is neither desirable nor possible to provide fire management for the management areas in isolation from surrounding lands.

Desired outcomes 2021	Actions and guidelines
Human life, property, cultural values, and the biological diversity and integrity of the management areas plant and animal communities are protected through the responsible management of fire.	<p>A50. Incorporate Mount Martin National Park and review the Level Two Fire Strategies for the management area.</p> <p>A51. Continue to implement actions in the approved fire strategies for the management area.</p> <p>A52. Continue to monitor vegetation to evaluate management actions, including the impact of fire (planned burns and wildfire) on plant and animal populations and diversity and review and update the fire management strategy as required.</p>

## 5.3 Infrastructure

Pioneer Peaks National Park has a major communication services site, with television, radio and telephone facilities located on Mount Blackwood summit. Infrastructure includes a 110 m communication tower and sealed access road. Authority has been given under section 37 authority issued under the provisions of the *Nature Conservation Act 1992* for these towers to exist until 2018.

The main high-voltage transmission line linking Mackay and Townsville passes through Mount Blackwood, and a smaller branch line provides power to the telecommunication facilities on Mount Blackwood.

Cape Hillsborough National Park has a discharge pipeline at Shoal Point and powerlines in some sections.

Desired outcomes 2021	Actions and guidelines
<p>Facilities on the management area are correctly authorised under the Nature Conservation Act and/or Marine Parks Act.</p> <p>Facilities will be managed to minimise impacts on the values of the area.</p>	<p>A53. Ensure all private infrastructure is authorised under the Nature Conservation Act and/or Marine Parks Act.</p> <p>A54. All owners of powerlines and associated infrastructure are to adhere to the Code of Practice for maintaining electricity corridors in Queensland's parks and forests dated 12 March 2010.</p> <p>A55. Mount Blackwood will be the only site for communication towers in the management area and the road will be maintained to the road standard as outlined in Appendix C, Table 5 and in accordance with the Nature Conservation Act authority.</p>



## 6. References

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- Sattler, P. and Williams, R. (eds) 1999, *The conservation status of Queensland's bioregional ecosystems*. Environmental Protection Agency, Queensland Government, Brisbane.
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- State of Queensland, Tourism Queensland. 2006, *Mackay Region Destination Management Plan*, State of Queensland, Brisbane, Queensland.
- Stephenson, P, J.1985, *Tertiary volcanic-Plutonic rocks of Cape Hillsborough – Mount Jukes area*. Department of Geology, James Cook University, Queensland.
- Willmott, W, 2006, *Rocks and Landscapes of the National Parks of Central Queensland*, Geological Society of Queensland, Brisbane, Queensland.

## 7. Hyperlinks

- Bonn Convention <[www.cms.int](http://www.cms.int)>
- China–Australia Migratory Bird Agreement <[www.austlii.edu.au](http://www.austlii.edu.au)>
- DERM website <[www.derm.qld.gov.au](http://www.derm.qld.gov.au)>
- Environmental Protection Act 1994* <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>
- Japan–Australia Migratory Bird Agreement <[www.austlii.edu.au](http://www.austlii.edu.au)>
- Key threatening process <[www.environment.gov.au](http://www.environment.gov.au)>
- Landscape Classification System for Visitor Management <[www.derm.qld.gov.au](http://www.derm.qld.gov.au)>
- Nature Conservation Act 1992* <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>
- Nature Conservation (Protected Areas) Regulation 1994 <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>
- Nature Conservation (Wildlife Management) Regulation 2006 <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>
- Nature Conservation (Wildlife) Regulation 2006 <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>
- Queensland Heritage Act 1992* <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>
- Republic of Korea–Australia Migratory Bird Agreement <[www.austlii.edu.au](http://www.austlii.edu.au)>

## **8. Appendixes**

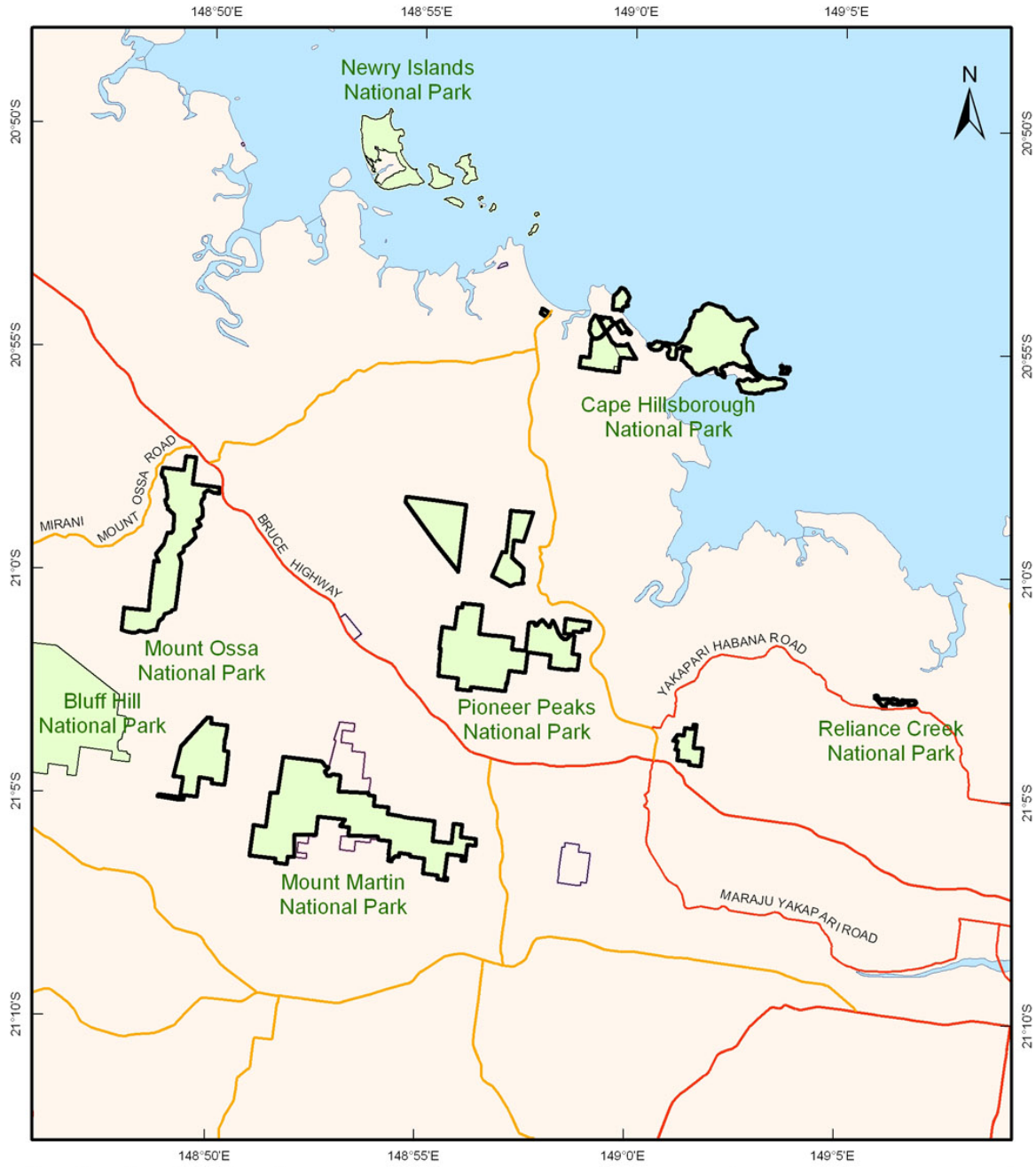
**Appendix A – Maps**

**Appendix B – Definitions**

**Appendix C – Tables**

## Appendix A – Maps

### Map 1 Location and management area



Map Projection:  
 Universal Transverse Mercator (MGA) zone 55  
 Horizontal Datum:  
 Geocentric Datum of Australia 1994 (GDA94)

Map Production:  
 Spatial Services - Brisbane,  
 Queensland Parks and Wildlife Service,  
 Department of Environment and Resource Management,  
 29 March 2011

Disclaimer:  
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Accuracy statement:  
 Due to varying source, accuracy or currency  
 of data layers used in this map, the spatial locations  
 of features may not coincide when overlaid.

- Legend**
- Road network
  - Highways
  - Secondary road
  - Connector
  - Management area
  - National park
  - State forest
  - Other lands

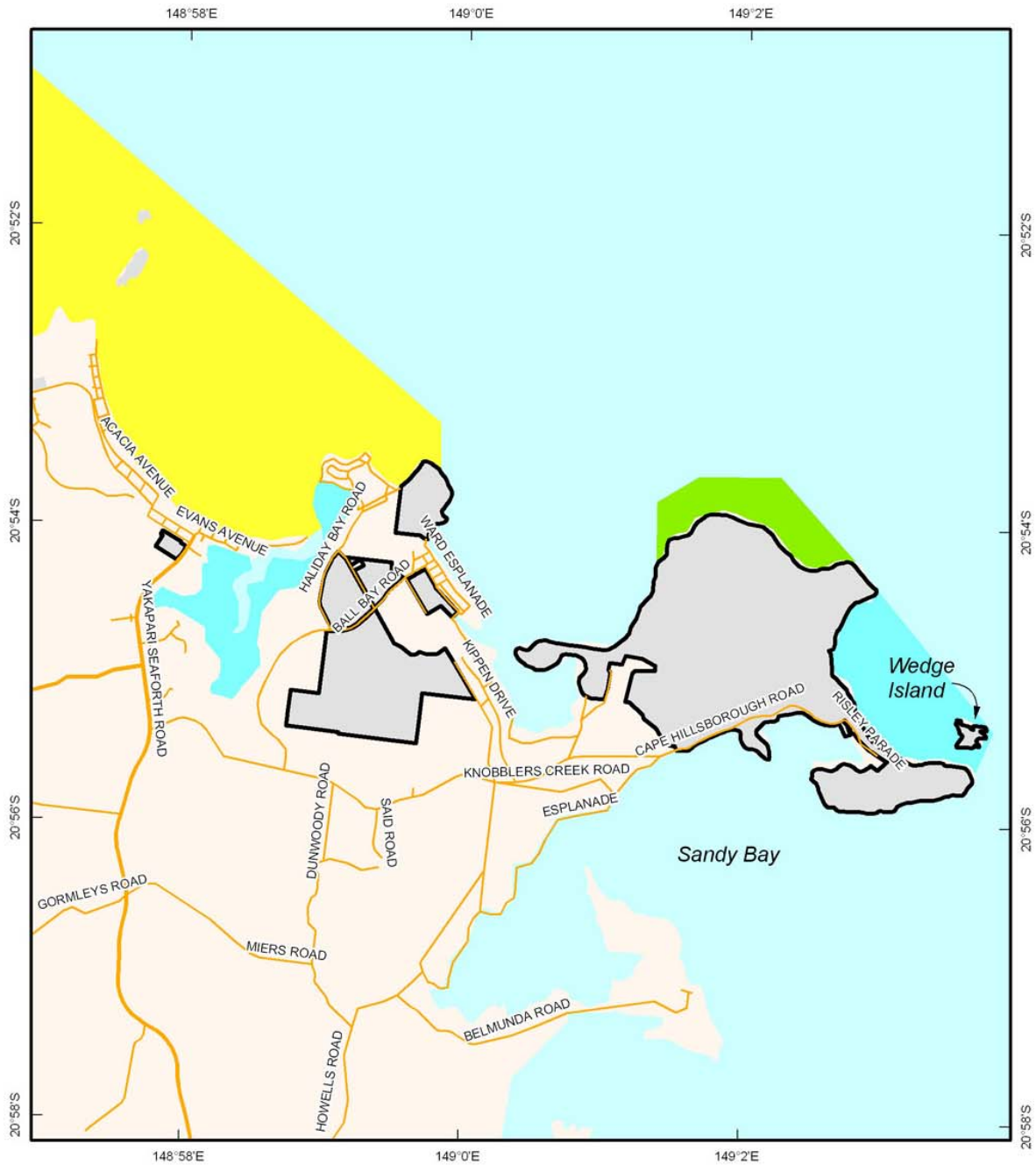
Source Material:  
 • CPWS Estate - DERM; June 2010  
 • Towns - DNRW; November 2008  
 • State Digital Road Network (SDRN); September 2010  
 • Pitney Bowes Business Insight 2010



Department of Environment and Resource Management 2010



## Map 2 Marine zones

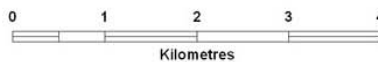


Map Projection:  
 Universal Transverse Mercator (MGA) zone 55  
 Horizontal Datum:  
 Geocentric Datum of Australia 1994 (GDA94)

Map Production:  
 Spatial Services - Brisbane,  
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### Legend

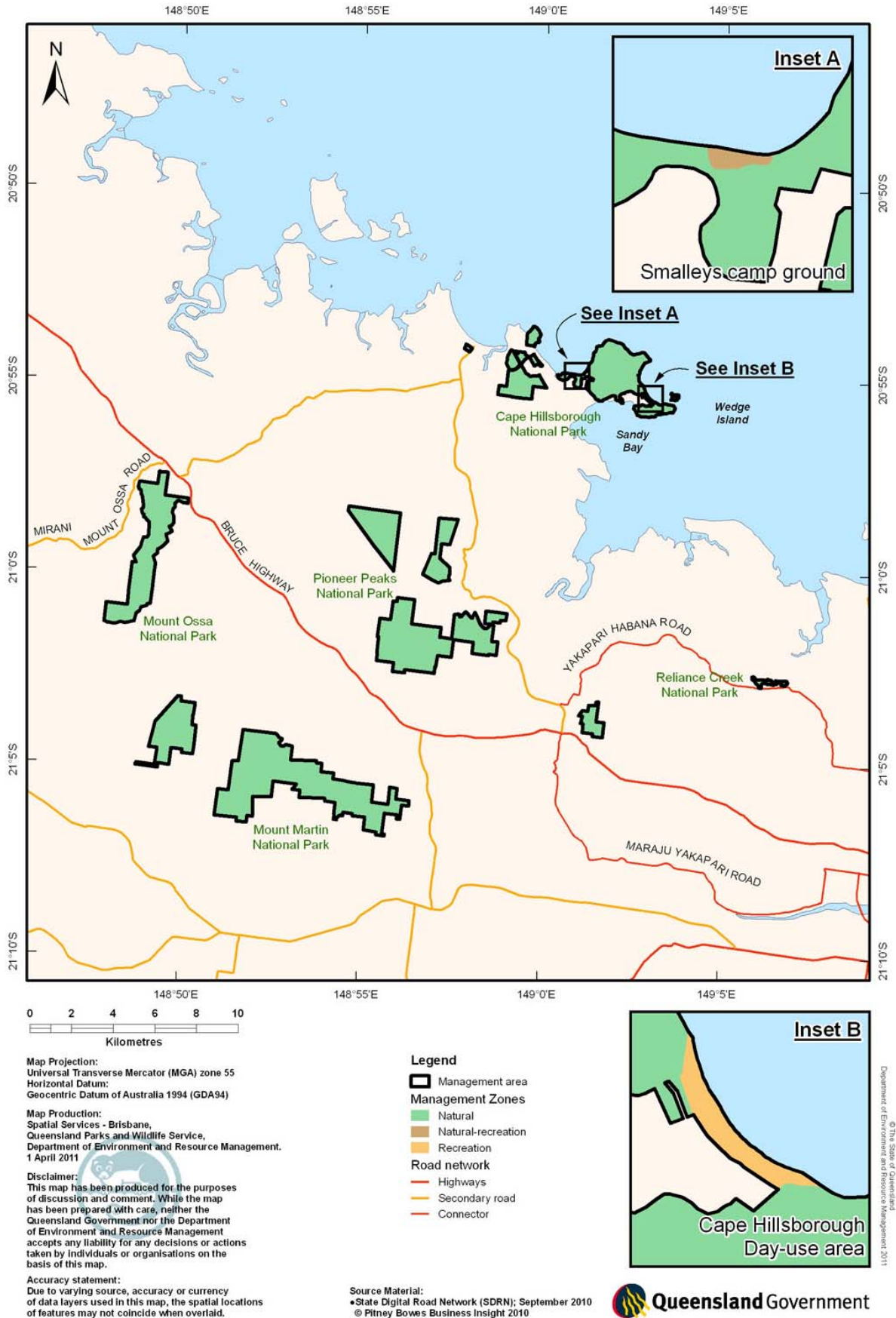
- Secondary road
- Sealed road
- Management area
- State Marine Parks (QLD)
- Conservation Park
- General Use
- Habitat Protection
- Marine National Park

Source Material:  
 •QPWS Estate - DERM; June 2010  
 •State Marine Parks - DERM; March 2009  
 •State Digital Road Network (SDRN); September 2010  
 © Pitney Bowes Business Insight 2010





### Map 3 Management zones



## Map 4 Visitor opportunities



Map Projection:  
 Universal Transverse Mercator (MGA) zone 55  
 Horizontal Datum:  
 Geocentric Datum of Australia 1994 (GDA94)

Map Production:  
 Spatial Services - Brisbane,  
 Queensland Parks and Wildlife Service,  
 Department of Environment and Resource Management,  
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 of data layers used in this map, the spatial locations  
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### Legend

- 2wd all weather
- 2wd dry weather
- walking track

- |  |          |  |                  |
|--|----------|--|------------------|
|  | Barbecue |  | Picnic area      |
|  | Camping  |  | Self-guided walk |
|  | Car park |  | Toilets          |
|  | Lookout  |  |                  |

Source Material:  
 •QPWS Roads; May 2008  
 •QPWS Estate; June 2010



## Appendix B – Definitions

### Conservation significance

Refers to native plant and animal species in the management area which are listed under the Nature Conservation (Wildlife) Regulation 1994, CAMBA, JAMBA, ROKAMBA and other relevant legislation.

### Fire management strategies

The Level One Fire Strategy is the major component of a fire plan and provides the overall framework and direction for fire management. It details the values of the reserve, the long-term fire management aims and how these relate to on-ground fire management.

The Level Two Fire Strategy or Statement of Fire Management Intent (SFMI) provides a lower level of guidance pending the completion of the more detailed Level One Fire Strategy, where required. These documents strategically guide preventative and emergency response decisions in relation to fire management activities.

### Landscape Classification System

The Landscape Classification System (LCS) is a standard classification system for characterising the biophysical, social and management attributes of sites and areas within QPWS managed areas, from a visitor management perspective.

The LCS framework for assessing a site or area systematically describes settings on the basis of biophysical, social and managerial features.

The LCS is a tool for assessing the naturalness of landscape settings from a visitor use and management perspective. Naturalness is expressed on a range from completely untouched, wild, natural or remote to completely modified, built or developed depending on the proportion of natural and human-modified elements (post 1788) in the landscape. However, naturalness is not an absolute condition. The naturalness of a particular site or area can vary over time and natural events do not change the degree of naturalness although they may change the natural look of an area.

See DERM Operational Policy Landscape Classification System for Visitor Management.

### Level One Pest Management Strategy

An option (at the regions discretion) planning document that provides an overview and strategic direction at the bioregion or other sub-regional level. They are not equivalent to a Level One Fire Strategy and should not be written for a single pest species or pest plants and pest animals or all reserves in a single management unit.

### Level Two Pest Management Strategy

The main system planning document that outlines what pests are present and guides on-ground pest management priorities and actions mostly within a single management unit. Although Level two strategies will typically be written to cover all reserves in a single management unit they may also be written for any other sub-management unit aggregation of reserves including, if appropriate, a single large and complex reserve. Level two pest management strategies are not to be written for a single pest species or as separate documents for pest plants and pest animals.

### Management principles for national parks

Under Section 17, *Nature Conservation Act 1992*:

(1) A national park is to be managed to—

- (a) provide, to the greatest possible extent, for the permanent preservation of the area's natural condition and the protection of the area's cultural resources and values
- (b) present the area's cultural and natural resources and their values
- (c) ensure that the only use of the area is nature-based and ecologically sustainable.

(2) The management principle mentioned in subsection (1)(a) is the cardinal principle for the management of national parks.

### Near threatened (species)

Near threatened species are those species listed as near threatened under schedule 4 of Queensland's Nature Conservation (Wildlife) Regulation 2006.

## **Regional ecosystems**

Regional ecosystems were defined by Sattler and Williams (1999) as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. Readers should refer to this publication for background information about regional ecosystems and the bioregional planning framework used in Queensland.

Compilation of the information about regional ecosystems presented in Sattler and Williams (1999) was derived from a broad range of existing information sources including land system, vegetation and geology mapping and reports. However, the framework is dynamic and is regularly reviewed as new information becomes available. During the past few years the Queensland Herbarium has developed a program for explicitly mapping regional ecosystems across Queensland. This has resulted, and will continue to result, in updates to the descriptions and status of regional ecosystems. Therefore, updated regional ecosystem descriptions in the format of Sattler and Williams (1999) are maintained in the Regional Ecosystem Description Database.

## **QPWS Pest Management System**

Adopted as the QPWS state-wide standard the system is a collection of two types of documents allowing QPWS to meet legislative obligations and achieve conservation outcomes: planning documents to facilitate pest management planning and operational documents to guide on-ground pest management.

## **Vulnerable (species)**

At the state level, vulnerable species are those species listed as vulnerable under schedule 3 of Queensland's Nature Conservation (Wildlife) Regulation 2006. At the national level, vulnerable species are those species listed as vulnerable under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*.

## Appendix C – Tables

**Table 1: Of concern or endangered regional ecosystems for the management area.**

Regional ecosystem number	Regional ecosystem name	DERM biodiversity status	Reason for status and the threats to ongoing sustainability	Location
8.1.2	Samphire open forbland to isolate clumps of forbs on salt pans and plains adjacent to mangroves. Estuarine wetlands.	Of concern	Occasionally subject to drainage changes and pest plant introduction due to adjacent agricultural activities (including ponded pastures). Vehicular damage by recreation lists has occurred in some areas.	Reliance Creek National Park
8.1.3	<i>Sporobolus virginicus</i> grassland on marine sediment. Estuarine wetland.	Of concern	This regional ecosystem occurs as small patches or linear margins adjacent to salt pan and mangroves, and is vulnerable to disturbance caused by vehicular use, which quickly kills off vegetation.	Cape Hillsborough National Park
8.2.1	<i>Casuarina equisetifolia</i> open forest to woodland with <i>Ipomoea pes-caprae</i> and <i>Spinifex sericeus</i> dominated ground layer on foredunes.	Of concern	Disturbance caused by vehicles, stock and human traffic readily causes erosion and invasion by pest plant species.  This regional ecosystem provides nesting sites for significant species including the flatback turtle <i>Natator depressus</i> and beach stone-curlew <i>Esacus magnirostris</i> . Habitat for the significant species sooty oystercatcher and eastern curlew.	Cape Hillsborough National Park
8.2.6	<i>Corymbia tessellaris</i> + <i>Acacia leptocarpa</i> + <i>Banksia integrifolia</i> + <i>Melaleuca dealbata</i> + beach scrub species open forest on coastal parallel dunes.	Of concern	Dune forests are naturally restricted communities that are vulnerable to erosion and pest plant invasion. Threatening processes include clearing for coastal residential and tourist development and for grazing or agricultural lands, and disturbance by recreation vehicles. Fire is also a threat.	Cape Hillsborough National Park
8.2.11	<i>Melaleuca</i> spp. woodland in parallel dune swales (palustrine wetlands).	Of concern	Susceptible to pest plant invasion, and erosion caused by recreation activities. Susceptible to hydrology changes caused by alteration of the surrounding terrain.  Provides wetland habitat for native plants and wildlife.	Cape Hillsborough National Park
8.3.1	Semi-deciduous notophyll or mesophyll vine forest fringing watercourses on alluvial plains.	Of concern	Threatened by fire, pesticide run-off, pest plant invasion and machinery damage to edges.  Habitat near threatened and vulnerable plant species, including <i>Sarcotoechia heterophylla</i> , <i>Solanum sporadotrichum</i> and <i>Trigonostemon inopinatus</i> . Critical habitat for fruit pigeons and rufous owl <i>Ninox rufa queenslandica</i> .	Reliance Creek National Park



Regional ecosystem number	Regional ecosystem name	DERM biodiversity status	Reason for status and the threats to ongoing sustainability	Location
8.3.5	<i>Corymbia clarksoniana</i> + <i>Lophostemon suaveolens</i> + <i>Eucalyptus platyphylla</i> woodland, or <i>E. platyphylla</i> woodland on alluvial plains.	Endangered	The fragmented nature of remnants increases their susceptibility to pest plants and, in the absence of fire, rainforest pioneer species.  A diverse vegetation unit that has been poorly surveyed for native plants and wildlife. The <i>E. platyphylla</i> woodland is indicative of higher moisture table and, therefore, a range of plants adapted to moist sites.	Cape Hillsborough National Park Mount Ossa National Park Mount Martin National Park Pioneer Peaks National Park
8.11.1	<i>Eucalyptus drepanophylla</i> and <i>E. platyphylla</i> woodland to open forest on hills.	Of concern	Many areas are invaded by pest plants, particularly guinea grass and lantana. Some areas have suffered topsoil loss.	Mount Ossa National Park
8.11.2	Notophyll microphyll vine forest ± <i>Araucaria cunninghamii</i> on low ranges.	Of concern	Fire is a major threat. Major rainforest type of coastal hills and ranges.  Habitat for near threatened and threatened flora species, including <i>Actephila sessilifolia</i> , <i>Actephila</i> sp. <i>Atalaya rigida</i> , <i>Bonamia dietrichiana</i> , <i>Choricarpia subargentea</i> , <i>Graptophyllum ilicifolium</i> , <i>Macropteranthes fitzalanii</i> and <i>Neisosperma kilneri</i> .	Mount Ossa National Park
8.11.3	Mixed eucalypt including <i>Corymbia intermedia</i> , <i>Eucalyptus portuensis</i> , <i>C. clarksoniana</i> , <i>E. platyphylla</i> and <i>E. drepanophylla</i> woodland to open forest on low hills.	Of concern		Mount Ossa National Park Mount Martin National Park Pioneer Peaks National Park
8.12.10	<i>Lophostemon confertus</i> ± <i>Leptospermum neglectum</i> ± <i>Hibiscus divaricatus</i> ± <i>Callistemon pearsonii</i> ± <i>Bertya sharpeana</i> shrubland or heathland on exposed plateaus.	Of concern	Fragmentation combined with inappropriate fire frequency (too frequent or infrequent) may be a threat to this regional ecosystems long term survival.	Pioneer Peaks National Park
8.12.11	Semi-deciduous microphyll vine forest or thicket with emergent <i>Araucaria cunninghamii</i> in coastal areas.	Of concern	Occurs in close proximity to areas being cleared for residential development.  Habitat for near threatened and threatened vegetation species, including <i>Actephila sessilifolia</i> , <i>Atalaya rigida</i> , <i>Austromyrtus pubiflora</i> , <i>Brachychiton compactus</i> , <i>Larsenaikia jardinei</i> , <i>Macropteranthes fitzalanii</i> , <i>Medicosma obovata</i> and <i>Neisosperma kilneri</i> .	Cape Hillsborough National Park

Regional ecosystem number	Regional ecosystem name	DERM biodiversity status	Reason for status and the threats to ongoing sustainability	Location
8.12.13	<i>Xanthorrhoea latifolia</i> subsp. <i>latifolia</i> or <i>Imperata cylindrica</i> grassland, including some areas recently colonised by <i>Timonius timon</i> shrubland, on slopes of islands and headlands.	Of concern	It is recommended that research into the ecology of these grasslands be undertaken to discern their age (how long they have been treeless) and to improve understanding of how they are maintained in a treeless state.  Some areas of grasslands on islands are being colonised by either <i>Timonius timon</i> shrubland or vine thicket. There is no evidence that any of the grasslands mapped had a tree cover in pre-clearing times.	Cape Hillsborough National Park
8.12.19	Complex notophyll feather palm vine forest with <i>Argyrodendron actinophyllum</i> subsp. <i>diversifolium</i> and subcanopy of <i>Myristica globosa</i> subsp. <i>muelleri</i> , on moist, low to moderate coastal and subcoastal ranges.	Of concern	Subject to pig damage.	Mount Ossa National Park  Mount Martin National Park
8.12.20	<i>Eucalyptus drepanophylla</i> and/or <i>E. platyphylla</i> ± <i>Corymbia clarksoniana</i> ± <i>C. dallachiana</i> woodland on low gently undulating landscapes.	Of concern	Otherwise extensively cleared for agriculture and pastoral lands.	Cape Hillsborough National Park
8.12.29	<i>Lophostemon confertus</i> ± <i>Acacia leptostachya</i> ± <i>Acacia aulacocarpa</i> ± <i>Corymbia dallachiana</i> ± <i>Eucalyptus</i> spp. ± <i>Melaleuca viridiflora</i> ± <i>Allocasuarina littoralis</i> shrubland to open forest on exposed hill slopes of islands with abundant rock at the surface.	Of concern	Habitat for the threatened species for <i>Leucopogon cuspidatus</i> .	Cape Hillsborough National Park

**Table 2: Vulnerable, endangered or near threatened native animals for the management area.**

Scientific name	Common name	Status under the <i>Nature Conservation Act 1992</i>	Status under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>	DERM Back on Track species prioritisation framework rank	Location
<i>Accipiter novaehollandiae</i>	grey goshawk	Near threatened	–	Low	Cape Hillsborough National Park
<i>Esacus magnirostris</i>	beach stone-curlew	Vulnerable	–	High	Cape Hillsborough National Park
<i>Accipiter novaehollandiae</i>	grey goshawk	Near threatened	–	Low	Mount Martin National Park
<i>Ephippiorhynchus asiaticus</i>	black-necked stork	Near threatened	–	Low	Cape Hillsborough National Park

Scientific name	Common name	Status under the <i>Nature Conservation Act 1992</i>	Status under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>	DERM Back on Track species prioritisation framework rank	Location
<i>Natator depressus</i>	flatback turtle	Vulnerable	Vulnerable	Critical	Cape Hillsborough National Park
<i>Taphozous australis</i>	coastal sheathtail bat	Vulnerable	–	High	Cape Hillsborough National Park
<i>Phyllurus isis</i>	–	Vulnerable	–	High	Pioneer Peaks National Park
<i>Haematopus fuliginosus</i>	sooty oystercatcher	Near threatened	–	Low	Cape Hillsborough National Park Mount Ossa National Park Mount Martin National Park
<i>Sternula albifrons</i>	little tern	Endangered	–	High	Cape Hillsborough National Park
<i>Macroderma gigas</i>	ghost bat	Vulnerable	–	Critical	Cape Hillsborough National Park
<i>Eulamprus amplus</i>	–	Near threatened	–	Low	Pioneer Peaks National Park Mount Ossa National Park
<i>Saproscincus spectabilis</i>	–	Near threatened	–	Low	Pioneer Peaks National Park Mount Ossa National Park
<i>Numenius madagascariensis</i> <sup>#</sup>	eastern curlew	Near threatened	–	Low	Cape Hillsborough National Park
<i>Ninox rufa queenslandica</i>	rufous owl (southern subspecies)	Vulnerable	–	Low	Cape Hillsborough National Park
<i>Kerivoula papuensis</i>	golden-tipped bat	Near threatened	–	Medium	Cape Hillsborough National Park
<i>Taphozous australis</i>	coastal sheathtail bat	Vulnerable	–	High	Cape Hillsborough National Park

<sup>#</sup> Species also listed under the Korea–Australia Migratory Bird Agreement.

**Table 3: Vulnerable, endangered or near threatened native plants for the management area.**

Scientific name	Common name	Status under the <i>Nature Conservation Act 1992</i>	Status under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>	DERM Back on Track species prioritisation framework rank	Location
<i>Graptophyllum ilicifolium</i>	holly-leaved graptophyllum	Vulnerable	Vulnerable	Low	Pioneer Peaks National Park Mount Ossa National Park Mount Martin National Park
<i>Neisosperma kilneri</i>	–	Vulnerable	Vulnerable	Low	Pioneer Peaks National Park
<i>Macropteranthes fitzalanii</i>	northern bonewood	Near threatened	–	Low	Pioneer Peaks National Park Mount Ossa National Park Mount Martin National Park
<i>Rourea brachyandra</i>	–	Near threatened	–	Low	Pioneer Peaks National Park
<i>Bonamia dietrichiana</i>	Dietrich's morning glory	Near threatened	–	Low	Pioneer Peaks National Park
<i>Lastreopsis silvestris</i>	–	Vulnerable	–	Low	Pioneer Peaks National Park
<i>Trigonostemon inopinatus</i>	–	Vulnerable	Vulnerable	Low	Pioneer Peaks National Park Reliance Creek National Park
<i>Rhodamnia glabrescens</i>	–	Near threatened	–	Low	Mount Ossa National Park Mount Martin National Park
<i>Rhodamnia pauciovulata</i>	–	Near threatened	–	Low	Mount Ossa National Park Mount Martin National Park
<i>Choricarpia subargentea</i>	giant ironwood	Near threatened	–	Low	Pioneer Peaks National Park
<i>Liparis simmondsii</i>	–	Near threatened	–	Low	Cape Hillsborough National Park
<i>Actephila sessilifolia</i>	–	Near threatened	–	Low	Pioneer Peaks National Park
<i>Paspalidium scabrifolium</i>	–	Near threatened	–	Low	Pioneer Peaks National Park

Scientific name	Common name	Status under the <i>Nature Conservation Act 1992</i>	Status under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>	DERM Back on Track species prioritisation framework rank	Location
					Cape Hillsborough National Park
<i>Atalaya rigida</i>	–	Least concern	–	Low	Pioneer Peaks National Park Cape Hillsborough National Park Mount Ossa National Park Mount Martin National Park
<i>Sarcotoechia heterophylla</i>	–	Near threatened	–	Low	Reliance Creek National Park
<i>Solanum sporadotrichum</i>	–	Near threatened	–	Low	Reliance Creek National Park

**Table 4: Cape Hillsborough National Park landscape settings.**

Site name	Site description	LCS
Smalley Beach day-use and camping area	A campground in a natural setting adjacent to Smalley's Beach. Basic camping facilities provided. Toilet, picnic table and drinking water supplied.	5
Cape Hillsborough day-use area	A developed site with large open spaces. Facilities provided are barbeques, toilet and picnic table.	6
Diversity boardwalk and car park	A formal car park adjacent to Cape Hillsborough road. Provides visitors access to an isolated coastal area with spectacular scenery.	5
Yuibera (Yuwi) trail car park	Informal car park at the Yuibera (Yuwi) trail.	5



**Table 5: Management area public access tracks.**

Track name	DERM road class	Current status as of 2010	Desired status	Future management (no change unless indicated below)
Smalley's Beach road	5C	Open to all public vehicles	Open to all public vehicles	Formed gravel road for safe all weather two-wheeled access.
Hidden Valley road	5C	Open to all public vehicles	Open to all public vehicles	Narrow gravel road with no intention to upgrade.

**Table 6: Management area walking tracks.**

Track name	Class	Current status as of 2010	Desired status	Future management (no change unless indicated below)
The diversity boardwalk (1.2 kilometres)	3	Walking	Walking	Manage as per AS2156
Beachcomber Cove track (2.2 kilometres)	3	Walking	Walking	Manage as per AS2156
Andrews Point track (2.8 kilometres)	4	Walking	Walking	Manage as per AS2156
Yuibera (Yuwi) trail (1.5 kilometres)	3	Walking	Walking	Manage as per AS2156
McBride's Point track	4	Walking	Walking	Manage as per AS2156
Smalley's Beach to Cape Hillsborough	5	Walking	Walking	Manage as per AS2156

## Appendix D – Management zones

Visitor management zones (extends to intertidal areas to lowest astronomical tide).

	Management criteria	Remote–natural zone 1	Natural zone 2	Natural–recreation zone 3	Recreation zone 4	Developed zone 5
<b>Landscape description and management</b>	Description	High level of protection of natural and cultural resources. Areas in this zone are wild, remote and managed primarily for conservation purposes where ecosystem integrity remains intact. Areas in this zone provide a very remote experience with no evidence of visitor impacts.	High level of protection/conservation of natural and cultural resources. Ecosystem integrity is essentially unmodified and remains resilient to impacts. Areas in this zone provide low-key nature-based recreation experiences. Evidence of visitors and their impacts are inconspicuous and localised.	Moderate level of recreation and protection of natural and cultural resources. Ecosystem integrity is slightly modified to accommodate sustainable visitor use and ensure key areas/resources are protected and remain resilient to impacts. These areas provide nature-based recreation experiences suitable for a range of visitors. Basic facilities are provided and evidence of visitors and their impacts may be obvious and semi-permanent.	Natural and cultural resources are conserved in ecosystems partly modified to accommodate a moderate to high level of sustainable visitor use. These areas provide accessible nature-based recreation experiences suitable for a wide range of visitors. Some facilities are provided and evidence of visitors and their impacts may be obvious and permanent.	High level of recreation, social interaction and presentation. Ecosystem is noticeably modified to accommodate intensive visitor use by a very broad range of visitors and abilities. Extensive facilities are provided, visitor activity is conspicuous and impacts are likely to be permanent.
	Level of QPWS management presence	Very infrequent management presence to achieve necessary obligations (e.g. planned burns, monitoring) only.	Infrequent management presence to achieve necessary obligations (e.g. planned burns and track maintenance) only.	Occasional management presence. Some site modification, barriers and hardening may be present.	Moderate management presence, site hardening and barriers. Facilities may be common and clustered.	Frequent management presence likely. A high degree of on-site management, including physical barriers to constrain movement of pedestrians and vehicles/boats.
<b>Visitor experiences</b>	Probable recreation experiences	Frequent opportunities for isolation, independence and total self-reliance through the application of outdoor skills in an environment that offers a very high degree of challenge.	Frequent opportunities for solitude, independence and high self-reliance through the application of outdoor skills in an environment that offers a high degree of challenge.	Moderate amount of opportunities for isolation, independence and self-reliance through the application of outdoor skills in an environment that offers a moderate degree of challenge.	Moderate levels of social contact and some opportunities for isolation.	High level of social interaction and infrequent opportunities for isolation. Facilities often support presentation of nature or access to nature-based opportunities in nearby areas.

	Management criteria	Remote–natural zone 1	Natural zone 2	Natural–recreation zone 3	Recreation zone 4	Developed zone 5
	Degree of self-reliance	Very high. Visitors must be totally self-reliant as support services are not provided.	High. Visitors must be totally self-reliant, as support services are minimal or non-existent.	Moderate. Visitors must be largely self-reliant as basic support services are provided in specific locations only.	Moderate to low. Self-reliance requirements are generally low where facilities are provided.	Very low due to high level of support services and facilities present.
	Social interaction	Interaction between visitors is minimal, and visitors unlikely to encounter other groups during a day. No other groups in sight or sound at undefined camping areas.	Little interaction between visitors, with few other groups encountered during a day, or in sight or sound at camping areas.	Moderate interaction between users, and encounters with several other groups likely along access routes and at camp grounds.	High level of contact and interaction with other users on roads, and in camp grounds and day-use areas, moderate to high interaction on walking tracks.	High level of contact and frequent interaction with many other groups.
Access	Access types	Restricted to walk-in, vessels and non-motorised vehicles only.	Restricted to walk-in, vessels and non-motorised vehicles only. Rough formed walking tracks may be provided.	Limited motorised access permitted. Formed walking tracks may be provided.	Motorised access with moderate levels of use. Well-built walking tracks with direction signs may be provided.	Motorised access with hardened or sealed walking tracks likely to be present.
	Walking track classification	Suitable for very fit and experienced bushwalkers only. Tracks are likely to be very rough, very steep and unmarked.	Suitable for fit and experienced bushwalkers only. Tracks may be long, rough and very steep.	A range of fitness levels and abilities may be catered for. Track types may range from hardened or compacted surfaces to rough and very steep.	Suitable for most ages and fitness levels. Tracks may range from flat even surfaces to tracks with short steep hill sections.	Suitable for a wide range of ages, fitness levels and mobility impairments. Even surface with flat surfaces or gentle hill sections. Occasional steps may be present.
	QPWS road classification	No roads or vehicle tracks permitted.	If roads/vehicle tracks present, restricted to authorised vehicles only.	Unsealed roads suitable for four-wheel-drives only.	Unsealed or sealed roads suitable for conventional vehicles.	Sealed roads suitable for conventional vehicles and larger vehicles such as buses.

	Management criteria	Remote–natural zone 1	Natural zone 2	Natural–recreation zone 3	Recreation zone 4	Developed zone 5
<b>Site impacts</b>	Site modification	No site modification and no facilities or structures. Any rehabilitation is unobtrusive, with no long-term or permanent marking/hardening of trails or sites.	Minimal site modification. Basic trail markers and signs may occur, but only in critical locations where alternative measures fail to address site degradation or safety concerns. Camping areas are undeveloped with no facilities. Any rehabilitation or repair is unobtrusive with minimal hardening.	Minor modification of specific sites. Camp sites in basic designated camp grounds and simple formed and marked trails may be provided in specific locations. Some site hardening may be required to minimise visitor impacts.	Modification of specific sites. Facilities such as car parks, toilets, camp grounds and day-use areas may be present yet sympathetic to the surrounding landscape. Site hardening may be required to minimise visitor impacts.	Modified site, with a range of facilities that may be complex and sophisticated. Accommodation facilities, major camp grounds, picnic areas, visitor centres, lookouts and walking tracks may be present.
<b>Visitor information</b>	Signs	Signs not permitted in setting/zone unless essential to fulfil legislative obligations. Signs (e.g. tenure signs) may be installed at zone boundaries only.	Limited to essential directional, safety and legislative signs where there is a high risk or history of incidents.	Minimal onsite signs restricted to safety, legislative, direction, orientation and interpretive purposes only.	Detailed onsite information provided. Sign types include interpretive, legislative, direction, orientation and entry signs.	Extensive onsite information provided. The full range of sign types permitted, such as welcome, traffic, safety, legislative, orientation, direction and interpretive signs.
	Level of information and interpretation	Safety information and interpretation provided off-site only, unless essential to fulfil legislative obligations.	Information and interpretation preferably provided off-site. Limited information provided on-site to fulfil legislative obligations or essential safety or regulatory purposes only.	Some on-site information and interpretation may be provided to enhance visitor experiences and ensure visitor safety and compliance.	On-site interpretation enhances visitor experiences and appreciation of the area's natural and cultural values. Comprehensive safety and regulatory information also provided.	Obvious on-site interpretation enhances visitor experiences and appreciation of the broader area's natural and cultural values. Obvious on-site information also ensures visitor safety and compliance.
* QPWS staff should refer to the facilities manual for further guidance on facilities appropriate to each LCS class.						

