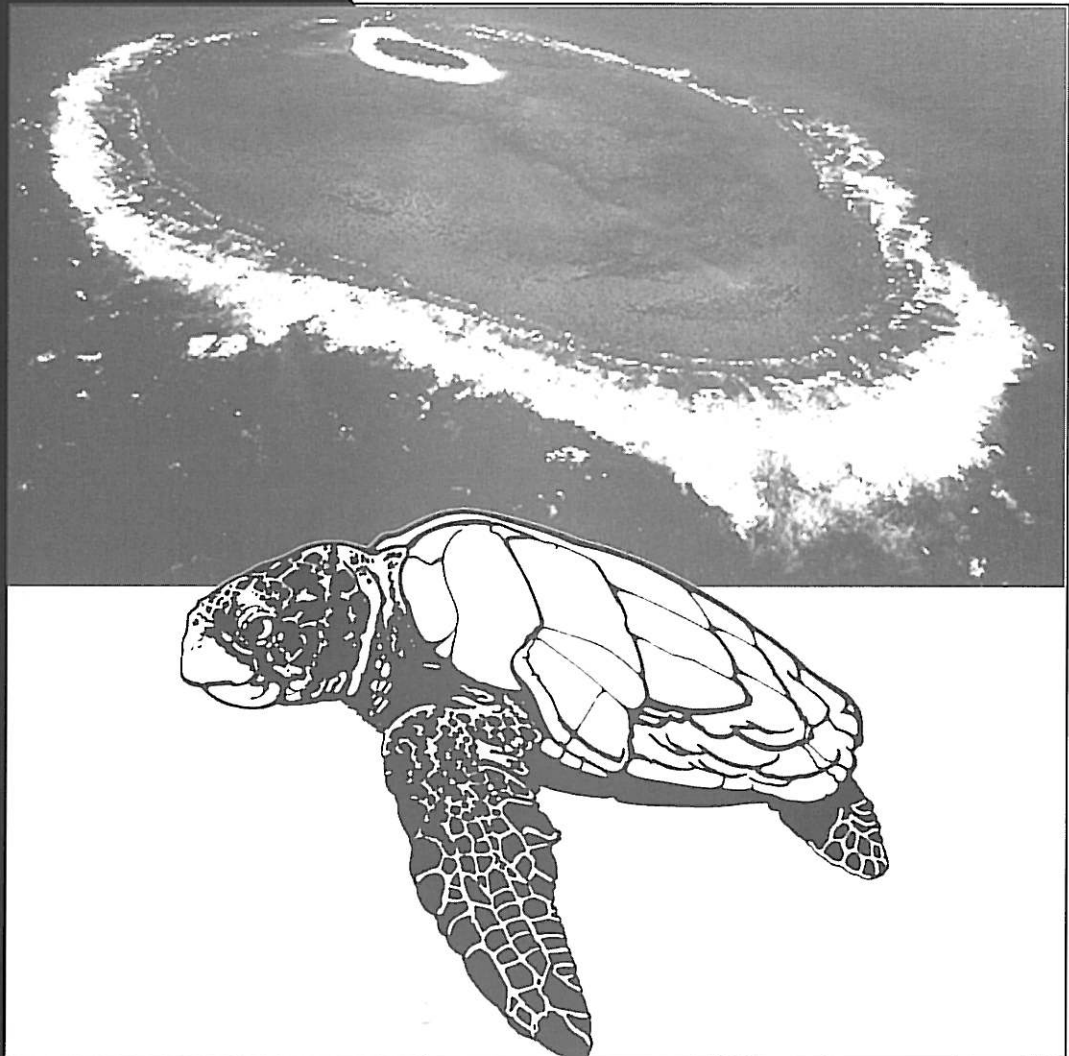


Capricornia Cays National Park and Capricornia Cays National Park (Scientific)

Management plan



Capricorn and Bunker Groups Planning Area

September 2000



Queensland Government
Queensland Parks and Wildlife Service

Summary

This management plan provides the framework and guidelines on how Capricornia Cays National Park and Capricornia Cays National Park (Scientific) will be managed. It sets out the considerations, outcomes and strategies that are proposed to form the basis on which day-to-day management decisions are made.

This plan was prepared in June 2000 and, in accordance with s 125 of the *Nature Conservation Act 1992*, will be reviewed not later than 10 years after its approval. For further information on this plan or the planning process, please contact the Queensland Parks and Wildlife Service's Central Regional Office in Rockhampton on (07) 4936 0561.

ISSN 1037-4698

The State of Queensland. Queensland Parks and Wildlife Service. 1999.

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I Introduction

This document contains management plans for Capricornia Cays National Park and Capricornia Cays National Park (Scientific).

These plans contain strategies to manage the national parks, which are administered by the Queensland Parks and Wildlife Service (QPWS). The management plans provide a regional approach to the management and planning for the islands of the Capricorn and Bunker groups.

The islands covered by the management plans have related values and share management resources

The islands have high natural values, notably breeding populations of seabirds, marine turtles and coral cay vegetation.

The past indigenous use of the cays is unknown. There is a significant European cultural history, including relics of turtle canneries and guano mining.

Capricornia Cays National Park provides for a range of visitor opportunities in coral cay environments, with settings largely free from human impact. The cays provide important local opportunities for recreation and tourism. Attractions include the coral cay camping experience, snorkelling, diving, boating, fishing and unique nature viewing opportunities. Visitor numbers to the islands are considered to be at or above maximum levels, if natural values and visitor experience levels are to be maintained. There is regular pressure to increase visitor levels to the cays.

Capricornia Cays National Park (Scientific) provides for a range of scientific research opportunities in locations as free as possible from human impact. As there has generally been minimal human use of these cays in the past and access is now restricted, this small group of islands also provides important opportunities for conserving coral cay ecosystems.

The cays of both parks lie between 45 and 75km from the adjacent departure ports and urban centres of Yeppoon, Gladstone, Town of 1770 and Bundaberg.

2 Management directions and purposes

The Capricornia Cays National Park and the Capricornia Cays National Park (Scientific) will be managed by QPWS to formally recognise their unique coral landforms, plant and animal species, and cultural values including native title claims. Complementary management of the waters adjacent to the national park cays is vital to protect the key natural values of the cays. This requires continued close co-operation between QPWS and the Great Barrier Reef Marine Park Authority (GBRMPA).

QPWS management will provide protection of the natural systems and other values of both parks, including threatened or unique species and ecosystem integrity, whilst maintaining a range of use opportunities. These opportunities are to be maintained where they do not conflict with the protection of park values.

To protect the diversity of cay habitats and significant species, in particular breeding areas for green and loggerhead turtles and nesting seabird species, East and West Fairfax Islands, East and West Hoskyn Islands, One Tree Island and Wreck Island are gazetted National Park (Scientific) under the *Nature Conservation Act 1992*. Protection for turtles, ground-nesting seabirds and other wildlife is provided in Capricornia Cays National Park through education programs, management of important nest sites and limiting or managing visitation.

The natural values of the cays of both parks are generally protected under the provisions of the *Nature Conservation Act 1992*.

3 Planning area

The Capricorn and Bunker groups (including Lady Elliot Island and Reef) are a distinct group of 22 reefs straddling the Tropic of Capricorn, at the southern end of the Great Barrier Reef. There are 16 permanent coral cays on these reefs, including twin cays on Hoskyn and Fairfax Reefs. North West Island (105 hectares) is the largest coral cay in the Great Barrier Reef Marine Park.

Eight of these cays comprise the Capricornia Cays National Park: Tryon, Broomfield, North West, Wilson, Heron (part), Erskine, Masthead and Lady Musgrave Islands, while a further six are the Capricornia Cays National Park (Scientific): Wreck, One Tree, East and West Hoskyn, and East and West Fairfax Islands. The cays comprising these two protected areas were amalgamated into Capricornia Cays National Park and Capricornia Cays National Park (Scientific) in 1994 under the *Nature Conservation Act 1992*. (Refer Map)

Lady Elliot and North Reef Islands are owned by the Commonwealth of Australia and are part of the Great Barrier Reef Marine Park. The adjacent waters are managed under the *Great Barrier Reef Marine Park Act 1975* (Cwlth) and the *Marine Parks Act 1982* (Qld).

4 Management obligations

The values of the area have been recognised in the declaration of the Capricornia Cays National Park and the Capricornia Cays National Park (Scientific) and surrounding State Marine Park and Great Barrier Reef Marine Park. Under the *Great Barrier Reef Park Act 1975*, the *Marine Parks Act 1982* and the *Nature Conservation Act 1992*, the responsible agencies are obliged to protect the natural and cultural values and ensure use is ecologically sustainable.

The following are some of the legislative obligations applying to the area:

Nature Conservation Act 1992

Capricornia Cays National Park will be managed according to the principles for the management of national parks set out in s 17.1 of the *Nature Conservation Act 1992*:

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

Section 17.2 sets out that the principle in subsection 17.1(a) is the cardinal principle for the management of national parks.

Capricornia Cays National Park (Scientific) will be managed in accordance with s 16.1 of the *Nature Conservation Act 1992* which sets out the following principles for the management of national parks (scientific):

- a) protect the area's exceptional scientific values and, in particular-
 - i) to ensure that the processes of nature continue unaffected in the area; and
 - ii) to protect the area's biological diversity to the greatest possible extent; and
- b) allow controlled scientific study and monitoring of the area's natural resources.

Section 16.2 of the *Nature Conservation Act 1992* sets out that if threatened wildlife is a significant natural resource of the area, management of the area may include:

- a) manipulation of the wildlife's habitat; and
- b) the control of threatening processes relating to the wildlife including threatening processes caused by other wildlife.

Under s 62 of the *Nature Conservation Regulation 1994*, a person must not enter or remain in a national park (scientific) unless that person holds a permit to enter that park.

Great Barrier Reef Park Act 1975 and Mackay/Capricorn Section Zoning Plan

The frame work for managing the Great Barrier Reef Marine Park area is provided by the zoning plan. This allows some activities to occur as of right while other activities require a permit from either the QPWS, GBRMPA, or both. The *Great Barrier Reef Marine Park Regulations 1983* specify that the Authority, when assessing an application for a permit, must include for consideration:

- a) the requirements for the conservation of natural resources;
- b) the existing use and the future or desirable use and amenity of the area and nearby areas; and
- c) the orderly and proper management of the area.

Marine Parks Act 1982, and the Mackay/Capricorn Marine Park Zoning Plan

The *Marine Parks Act 1982* requires that, in preparing a management plan:

- a) the encouragement and regulation of the use and enjoyment of the marine park area by the public; and
- b) the protection and conservation within the marine park zone or designated area of objects and sites of significance and marine products must be considered.

Management of the Mackay/Capricorn Marine Park is effected through the zoning plan, which is identical to the zones and objectives of the Mackay/Capricorn Section Zoning Plan.

World Heritage Convention (International Convention for the Protection of World Cultural and National Heritage) and the Australian Heritage Commission Act 1975

The Great Barrier Reef Region was inscribed on the World Heritage list in 1981, placing an obligation on managers to adopt policies and undertake specific actions to protect, conserve and present to the public areas of natural and cultural heritage. The *Australian Heritage Commission Act 1975* obliges GBRMPA to avoid allowing anything to occur in the Great Barrier Reef Marine Park which would adversely affect the area of the Great Barrier Reef listed on the register of the National Estate.

Lighthouse Act 1911

A lease for navigation purposes exists on Lady Musgrave Island. The navigation aids require regular maintenance. The Mackay/Capricorn Section Zoning Plan provides access for this maintenance, subject to notification to GBRMPA or its delegate.

Queensland Heritage Act 1992

This Act administered by the Environmental Protection Agency provides protection for cultural places such as historic buildings, places, ruins or other features listed under the Act.

The requirements of other legislation administered by the Service and other State and Commonwealth agencies will be met where necessary.

Commonwealth Endangered Species Protection Act 1992

The provisions of this Act, administered by Environment Australia, include the protection, conservation and recovery programs for endangered species.

5 Values of the Capricornia Cays National Park and the Capricornia Cays National Park (Scientific)

5.1 Nature Conservation

Island geomorphology and landscape

The Capricornia Cays National Park and the Capricornia Cays National Park (Scientific) form part of a distinct geomorphic province at the southern end of the Great Barrier Reef (Hopley 1982). The cays and their reefs lie on the western marginal shelf, and are separated from the mainland by the Curtis Channel. The cays are not generally visible from the mainland, although Masthead Island may be viewed from Mount Larcom on a clear day.

Geologically the cays are young, having developed during the Holocene period, they are mostly around 5000 years old. The sea level was much lower during the last Ice Age (at the end of the Pleistocene period) and the coastal plane on which today's reefs and cays developed was completely exposed. Early in the Holocene (around 10,000 years ago) the sea level began to rise, until it stabilised at its present level around 6000 years ago. Once the sea level stabilised, it was possible for reef flats to expand and provide potential sites for the formation of cays.

The cays occur on planar reefs of various sizes and with various levels of exposure to the prevailing winds. These factors have largely determined cay size and composition, which consists either of shingle, sand, or a mixture of both. Cay stability is profoundly affected by cyclonic disturbance. All cays except for the shingle types are located towards the leeward margin of the reef top. They vary in size, covering from one to 12 percent of the reef top surface area and there does not appear to be any correlation between island size, reef size, or stage of reef development (Mather & Bennett 1993).

These parks form one of the greatest concentration of coral cays on the Great Barrier Reef. While some have sustained significant human impacts over the past one hundred years, the general appearance of the cays indicates little evidence of those impacts. The exceptions are Heron and Lady Elliot Islands, which have been substantially modified.

Most of the cays of the two parks are heavily vegetated, and the contrast between clear reef waters, white coral sand beaches and the lush vegetation is visually impressive. The cays and reefs are often featured in Queensland tourist promotions.

Vegetation

Elements of the vegetation of the Capricornia Cays National Park and Capricornia Cays National Park (Scientific) represent a major conservation resource of international significance. Biogeographically the plant communities are closely related to the coral cay (atoll) vegetation of the tropical Indo-Pacific region, and partly to the coastal dune plant communities of Central Queensland (Batianoff & McDonald 1980; Batianoff per. comm. 1999). Some 70 percent of the Australian *Pisonia grandis*, rainforest community occurs on cays in Central Queensland. The Capricornia Cays National Park and the Capricornia Cays National Park (Scientific) are important for the long-term conservation, of globally important coral cay species, because of the level of protection afforded by their conservation status.

The southern geographic limit on the range of *Boerhavia albiflora*, *Pisonia grandis*, *Scaevola taccada* and *Trachymene* is Lady Elliott Island (just south of both parks), while *Commicarpus insularis*, *Cordia subcordata* and *Stenotaphrum micranthum* southern geographic range extends to Masthead Island.

The best developed and tallest *Pisonia grandis* forests in Australia occur on Heron, Masthead and North West Islands, where the canopy height reaches over 20 metres.

A total of 160 plant species have been recorded from the area (Batianoff and Dillewaard, 1988), however, at any one time this number is much lower due to the transient nature of some species (Chaloupka & Domm 1985; Batianoff, 1999b). On many cays there is an apparent trend of increasing species richness, due mainly to an increasing immigration ratio (42 percent) of alien species (Batianoff and Dillewaard, 1988; Batianoff, 1998). Human movement has been identified as the most important introduced plant dispersal mechanism (Chaloupka & Domm 1986, Batianoff, 2000). On high human impact cays such as Lady Elliot Island, naturalised plant species are as high as 76 percent of the total flora (Batianoff, 1998). Islands where there has been little human presence, such as Erskine, and East and West Hoskyn Islands, have fewer introduced plants and contain the best examples of natural cay plant communities.

During the past century the vegetation of some of the cays has sustained human impact such as clearing for guano mining, resort development, fire and camping. Natural impacts have also occurred and include the almost complete loss of the *P.grandis* at Tryon Island (Olds et al. 1996), and cyclone damage and erosion on most other cays. In most cases, vegetation recovery has continued as a natural process, to an extent where manipulative management has not been required other than for the control of introduced plant species and revegetation within developed areas.

Birds

The Capricornia Cays National Park and Capricornia Cays National Park (Scientific) contain 73-75 percent of all seabird biomass in the Great Barrier Reef World Heritage Area (Stokes et al. 1997). This primarily arises from the abundance of wedge-tailed shearwater *Puffinus pacificus* and black noddy *Anous minutus* breeding on North West, Masthead and Heron Islands (Hulsman et al. 1997). More than 70 percent of the total breeding population of wedge-tailed shearwaters on the east coast of Australia nests on North West Island (Hulsman & Walker 1996).

All the cays, except Broomfield Cay, have been identified as significant seabird breeding islands (Stokes et al. 1997). In recent years, a colony of lesser crested tern *Sterna bengalensis* has used Broomfield Cay for breeding. Up to eight seabird species breed on Masthead, One Tree and Wreck Islands, and seven species are recorded from Tryon, Erskine and West Fairfax Islands.

Apart from the wedge-tailed shearwater and black noddy, the cays support principal breeding populations of silver gull *Larus novaehollandiae* and brown booby *Sula leucogaster*, and significant colonies of roseate tern *Sterna dougalli*, black-naped tern *Sterna sumatrana* and bridled tern *Sterna anaethetus*.

The majority of seabird nesting occurs in summer, between the months of October and March. However, the white-bellied sea-eagle *Haliaeetus leucogaster* breeds during the winter months. While this species once nested on most of the cays, nest sites are now restricted to Tryon, North West, Wilson, Wreck, East Fairfax and West Hoskyn Islands. Ground-nesting tern species, such as roseate, black-naped and crested terns *Sterna bergii* generally nest in locations which make them particularly vulnerable to disturbance.

A subspecies of the silvereye *Zosterops lateralis chlorocephala* is endemic to the cays (Garnett 1992).

Many other species of bird, such as buff-banded rails *Gallirallus philippensis*, also use these cays.

Although not always used as nesting sites, the cays provide important roosting and feeding sites for many other species, including vulnerable little terns *Sterna albifrons*, rare sooty oyster catchers *Haematopus fuliginosus* and migratory shorebirds.

Turtles

The Capricornia Cays National Park and the Capricornia Cays National Park (Scientific) are of major international significance to the conservation of the vulnerable green turtle *Chelonia mydas* and the endangered loggerhead turtle *Caretta caretta*.

The cays and the adjacent mainland coast supports almost the entire breeding population of the loggerhead turtle in the South Pacific Ocean basin. This population is genetically isolated from those that breed in Japan and elsewhere in the world (Bowen et al. 1994). The southern GBR breeding populations provide the loggerhead turtles that feed throughout eastern Australia and the Gulf of Carpentaria and most loggerheads that feed in neighbouring countries of the Coral Sea. Wreck, Tryon and Erskine Islands support the most important nesting sites within the Capricornia cays. The eastern Australian loggerhead breeding population has declined substantially in the last two decades (Limpus and Reimer, 1994).

The green turtle breeding population of the cays is one of the few remaining large green turtle breeding populations world wide. This southern GBR population is genetically distinct from the large population that breeds in the northern GBR and those elsewhere (Bowen et al., 1992). This southern GBR stock supports most of the green turtles that feed throughout eastern Australia, south of Princess Charlotte Bay and in New Caledonia. A portion of this population feeds as far afield as western Arnhem Land and Fiji (Limpus et al., 1992). This population is displaying some characteristics consistent with excessive loss of adult turtles from the population. North West Island, West Hoskyn and Wreck Islands support the most important breeding populations for this species.

Turtles come up on the cay beaches to lay their eggs, from late October until the end of February, and turtle hatchlings emerge from their nests to make their way to the sea from late December to the end of April. These natural events provide a valuable educational opportunity to observe turtles in a range of settings from relatively undisturbed camping cays to resort developments.

5.2 Cultural values

Archaeological investigation to date has not revealed evidence of Aboriginal occupation or use of Capricornia Cays National Park or Capricornia Cays National Park (Scientific).

In 1803 Captain Eber Bunker of the whaling ship 'Albion' was the first European to discover the cays of both parks. The southern cays and reefs were first chartered between 1819 and 1821 by Lieutenant Phillip Parker King RN initially in the 'Mermaid' and later in the 'Bathurst'. The main charting exercise for all the islands and reefs was carried out in 1843 under the command of Captain Francis Blackwood in HMS 'Fly' which was accompanied by the 'Bramble'. The naturalist, Professor J. Beete Jukes, was on board the 'Fly' and his published journal provides valuable information on some of the cays.

The mining of guano (bird droppings) occurred on Lady Musgrave, Fairfax and North West Islands during the 1890s. This was an extension of a more substantial guano mining operation on Lady Elliot Island to the south. Some remains of these activities are still evident.

Turtle soup canneries operated on North West Island from 1904-14 and 1924-26, and on Heron Island from 1925-29. Old boilers and other remnants from these activities remain on site.

Historic and other shipwrecks, as well as an aircraft wreck, are located on several reefs surrounding the cays.

5.3 Recreation and tourism

The Capricornia Cays National Park offers a variety of recreation opportunities ranging from a large resort (on a portion of Heron Island, outside the gazetted extent of the park), to nature-based camping and day-visit experiences available on some of the national park islands. The major attraction for tourists are the small, relatively untouched cays, with their white beaches and outstanding coral reefs of world renown. These values and other activities are economically important both regionally and state-wide.

The total number of visitors to the Capricornia cays in 1997 is estimated at more than 31,000, which includes visitors to the resorts and the research stations, recreational boaties, campers and visitors on commercial tourism vessels.

Four islands; Lady Musgrave, North West, Masthead and Tryon, contain camp grounds. Toilet facilities are provided at Lady Musgrave and North West Islands.

Lady Musgrave Island is the most intensively used of the camping islands, due to its protected anchorage within a semi-enclosed lagoon and a regular ferry service. More than 10,000 day-visitors were brought to the island by commercial tourism operators during 1997. In addition, 1278 campers visited the island for 8008 camper nights and there were an estimated 5840 visitors from recreational boats during that year.

In good weather, the islands and reefs are popular destinations for visitors from the adjacent mainland travelling in small powerboats. Masthead and Lady Musgrave Islands, because of their proximity to Gladstone and the Town of 1770 may be the most regularly visited locations.

The Capricornia Cays National Park (Scientific) does not provide for any recreational or tourism opportunities.

5.4 Educational and scientific values

The Capricornia Cays National Park provides a range of opportunities for education and interpretation that are consistent with the enjoyment and protection of the natural environment.

The Heron Island Information Centre is situated within the Heron Island Resort lease area. The information centre provides an educational focus for visitors to the resort.

Educational groups camp regularly on Lady Musgrave and North West Islands, as an introduction for students to coral cay and reef environments, and to increase their appreciation of these diverse ecosystems. North West Island is more suitable for larger school groups because of its size.

Both parks provide opportunities for research of global significance. The Capricornia Cays National Park (Scientific) provides opportunities for research to be conducted in a situation as free as possible from human impact and interference.

There is a long history of research on these parks, beginning with the Great Barrier Reef Expedition in 1928 and the establishment of Heron Island Research Station by the Great Barrier Reef Committee in 1951. The research station was taken over by the University of Queensland in 1970, and currently accommodates up to 94 visitors.

One Tree Island also has a research station, which was established in 1976 and accommodates up to 10 visiting scientists. It is managed by the University of Sydney, and the island and reef are valued as a scientific benchmark. The island is part of the Capricornia Cays National Park (Scientific) and the reef and its surrounding waters are a Scientific Research Zone in the Mackay/Capricorn Section of the Great Barrier Reef Marine Park and the Mackay/Capricorn Marine Park.

Management strategies

6 Capricornia Cays National Park - management strategies

The Capricornia Cays National Park is a group of eight coral cays (Tryon, North West, Broomfield, Wilson, Heron, Erskine, Masthead and Lady Musgrave Islands) lying from 45 to 75km off the Queensland coast between Yeppoon and the Town of 1770. The largest is North West Island (105ha) and the smallest is Broomfield (less than 1ha).

6.1 Purpose of management

The major purposes of management will be to ensure that:

- biological diversity within plant and animal communities is conserved and natural ecological processes continue with minimum disturbance;
- sensitive habitats and rare and threatened species are conserved through appropriate management strategies;
- landscape values are retained at their present high levels;
- cultural resources and items of heritage significance are adequately conserved, and where appropriate, are interpreted;
- opportunities for ecologically sustainable and nature-based activities are provided, and where possible should complement activities in surrounding marine parks; and
- opportunities for appropriate scientific research are provided to help identify park resources and improve park management.

6.2 Natural resource management

Current situation

Significant declines in marine turtle populations, particularly the loggerhead turtle, are currently being recorded nationally. While many factors are probably contributing to these declines, impacts at nesting sites are considered a problem and must be minimised. Turtles nest, and hatchlings emerge, from the cays of the park during the summer months. Reduction of available nesting habitat on cays due to buildings and camping, disturbance to nesting females by visitors, interference with the emergence of turtle hatchlings with the inappropriate use of lights, the effects of harbour construction and maintenance at Heron Island, are of concern.

The cays of the park provide a range of habitats for many bird species; some species require management strategies to ensure these habitats remain relatively undisturbed and the bird populations continue to be viable. Strategies include, control of introduced plants and animals, and seasonally closing access to some of the park.

All cays within the park support seabird breeding colonies, mostly during the summer months from October to March. The population structure and status of seabirds in the park is not well understood. Many seabird species are easily disturbed from nests during breeding, and high egg and chick mortality often results. Silver gulls prey on the eggs and chicks of other seabirds, and this becomes significant when breeding colonies are disturbed and gull numbers are high. Gull numbers in the park are probably elevated above natural levels, due to the presence of artificial food sources.

The vegetation communities of these cays have limited occurrence outside the Capricornia Cays National Park and the Capricornia Cays National Park (Scientific). The recent, almost total loss of *Pisonia* forest on Tryon Island from scale insect attack, highlights the vulnerability of these communities. The

biological mechanisms behind this change are not fully understood. In addition the absence of large-scale regional vegetation maps limits the monitoring of spatial changes of unique island plant communities.

Currently, weeds are a problem on some of the cays. Heron and Lady Elliot Islands highlight the vulnerability of cays to environmental weeds. Weed control programs are implemented to eradicate introduced plants. Some successful weed control examples include significant reduction of *Opuntia* on Masthead Island (Batianoff, 1999b).

Fire is not a natural feature of cay environments, although an uncontrolled campfire devastated the forest at Wilson Island around 1972. All open fires have been prohibited from the park for a number of years. Campfires were darkening the white coral sand, resulting in a significant elevation of sand temperatures at the incubation depth of turtle eggs. Open fires also attracted turtle hatchlings and seabirds, often resulting in death or injury. The collection of firewood resulted in damage to trees and depletion of ground cover, and importation of firewood brought the danger of also importing unwanted exotic species.

A lease for a lighthouse tower exists at Lady Musgrave Island and there is a clear obligation to allow the navigation aid to continue to operate. Maintenance and construction activities associated with this structure must be carried out in such a way as to minimise impact on natural values.

Scientific research occurs in the park, some of which is undertaken by management and some by universities and other researchers. Research activities are controlled by permits to ensure minimal impact occurs on natural resources. Scientific research is a vital tool in understanding and managing the natural values of the Capricornia Cays National Park.

Desired outcomes

The current composition, distribution and condition of the park's natural terrestrial ecosystems are maintained.

The natural values of the park are conserved to the greatest possible extent.

Use of the park is nature-based and ecologically sustainable.

The turtle populations are protected and disturbance to nesting activities, hatchling dispersal and habitat is minimised.

The populations of birds are protected and remain at least at current levels.

Silver gull populations are maintained at levels no higher than current.

Naturalised (weed) plant populations are to be reduced on all cays or maintained at levels no higher than current.

Navigation aids and their maintenance will have minimal impact on the park.

Guidelines and actions

- Capricornia Cays National Park will be kept in as natural condition as possible; however, ecological sustainable use and development may occur on cays with designated camping and resort areas.
- Aircraft will not be allowed within 1500 feet of the vicinity of any cay, unless for the purposes of taking off and landing from a permitted landing area. Emergency situations and management activities are excluded from these restrictions.
- Continue to monitor the populations of plants and animals, and address any significant changes attributable to human factors by changing permitted use.

- Maintain the baseline research and monitoring programs for green and loggerhead turtles.
- Modify or remove all light sources on cays which change natural light horizons enough to disorientate turtles, by using intermittent, low pressure sodium vapour, shielded or reduced intensity lighting.
- Outside campgrounds and resorts encourage park users to use only three volt torches during the turtle nesting season of October to April inclusive.
- Continue annual monitoring and mapping of the park for introduced animals and plants, eradicate where feasible, and take steps to minimise the chance of introductions.
- Survey the population size of silver gulls at all cays on an annual basis, investigate significant population increases, and take steps to reduce their impact on other animals.
- In any future planting or revegetation work, use only seeds or other propagating material from the island on which the work is proposed.
- Revegetation of foredune areas will consider the natural mosaic of open and shaded areas that provide the variability in turtle nest temperatures.
- Open fires or ash producing fuels will not be permitted on any cay; fuel stoves only will be allowed.
- Maintain the current camping closure at Tryon Island until the cay and vegetation have stabilised and are suitable for camping activities.
- Agreements will be negotiated with AMSA to ensure that all navigation aids are designed, constructed and maintained to minimise impact on the natural resources of the park.

6.3 Landscape management

Current situation

The Capricornia Cays National Park consists of small isolated islands with largely unaltered visual appeal. Non-natural elements in the landscape are limited to: structures related to the resort, research station and QPWS complex on Heron Island and tourism facilities on Wilson Island, management infrastructure such as trails, toilet blocks, signs and navigation aids.

Desired outcome

The quality and integrity of the landscape values of the area are maintained.

Visual intrusion of existing or future developments is minimised.

Guidelines and actions

- Agreements will be negotiated and maintained with AMSA to ensure that all infrastructure associated with navigation aids is designed and maintained to minimise visual impact.
- All management infrastructure proposals will take into account visual amenity and minimise potential impacts.
- Future on-park development should be limited in type and should have minimal impact on the visual amenity of the park

- Natural, open areas on cays should not be altered as they are important to the natural temperature regime of turtle nesting habitat, and to maintain suitable nesting areas for ground-nesting seabird species.
- Spoil dumping from harbour maintenance activities at Heron Island should occur outside the turtle nesting season to avoid covering turtle nests and should not create habitat unsuitable for turtle nest construction.

6.4 Cultural heritage management

Current situation

Although past indigenous use of the Capricornia Cays National Park is unknown, the cays may have historical cultural significance to Aboriginal people.

There is a native claim by the Bailai native title claimant group for North West, Tryon, Wilson, Heron, Erskine, and Masthead Islands and Broomfield Cay.

Turtle soup canneries operated on North West Island from 1904 to 1914 and from 1924 to 1926 and on Heron Island from 1925 until 1929. Remnants of machinery associated with the canneries are still present on both islands, but have never been the subject of conservation or interpretative efforts.

A concrete slab is the only remnant of a resort which operated at Lady Musgrave Island during the 1930s.

The grave of the infant daughter of a guano ship's captain is located to the west of the camping ground on North West Island.

Desired outcomes

Items and places of cultural heritage significance are managed for their long-term protection, where possible.

Guidelines and actions

- Develop cultural resource conservation plans for items and places of cultural heritage significance in the park, and manage them accordingly.

6.5 Recreation, tourism and visitor use

Current situation

Visitors include: campers, recreational day visitors, commercial day visitors, researchers and management staff.

Camping in the Capricornia Cays National Park is permitted on four cays up to the following limits:

| | |
|----------------------|---------------------------------------|
| North West Island | 150 campers |
| Lady Musgrave Island | 50 campers |
| Masthead Island | 60 campers (30 from October to March) |
| Tryon Island | 30 campers. |

Available space and impacts on wildlife and vegetation are factors which limit the size and location of the camping grounds. Tryon Island is temporarily closed to camping due to the destruction of the *Pisonia* forest by a scale insect infestation.

Visitor impacts on natural values have occurred on the four camping islands, in particular, interruption of the breeding of turtles and seabirds has been observed.

Commercial Activity Permits for the park are:

| | |
|-----------------------|--|
| Lady Musgrave Island: | 2 x 50 persons (vessel day trip operations) |
| | 3 x 10 persons (aircraft day trip operations) |
| | 10 x 10 persons (access limited to no more than two days in seven - roving vessel operations). |
| North West Island | 10 x 10 persons (access limited to no more than two days in seven - roving vessel operations). |
| Erskine Island: | 2 x 10 persons (access limited to no more than two days in seven - roving vessel operations). |

At this time there is no commercial camping provided in the Capricornia Cays National Park.

It is recognised that the permitted numbers of visitors on Lady Musgrave Island at this time, have reached (and at times exceeded) an ecologically sustainable level.

There is a Special Purposes Lease held by P&O Resorts, Heron Island Pty Ltd for camping and day visitor use of Wilson Island. Constructed facilities include amenities block, open dining room and kitchen, and raised tent platforms. Visitor use by P&O guests is estimated at 40 to 50 day visitors per week; overnight camping has not occurred since 1994.

On Heron Island, within the P&O Resort and the University of Queensland Research Station leases, there are high levels of development and use. Significant impacts on natural values have occurred in these areas from intensive visitor use and construction of infrastructure. Many of the visitors to these leases extend their activities into the national park. Annually there is an estimated 20,000 visitors to Heron Island, the greater proportion of which are guests of P&O. There is no Commercial Activity Permit held by P&O Resorts, Heron Island Pty Ltd, nor fees collected for this use.

Guidelines, developed in conjunction with QPWS, P&O Resorts and University of Queensland, provide cohesive management and control of activities on Heron Island.

Recreational use of the park is limited by the physical constraints of distance, sea conditions, and tidal access. Day visitors travelling in small boats from the mainland access the closer cays infrequently, while cruising yachts and other larger private pleasure vessels access all cays more frequently.

Desired outcomes

Nature-based and ecologically sustainable recreation, tourism and visitor use will be provided for whilst maintaining the integrity of the Capricornia Cays National Park's ecosystems.

Impacts on natural values, particularly on nesting turtles and seabirds are minimised by managing recreational activities.

Camping opportunities are maintained on Lady Musgrave, North West, Tryon and Masthead Islands.

Vessel-based tourism activities are maintained, but limited and managed to minimise environmental impacts.

Nature-based tourism activities are maintained, but limited to current sites and managed to minimise environmental impacts.

Guidelines and actions

Camping will be permitted in the designated camping grounds on North West, Masthead, Lady Musgrave, and Tryon Islands. Camping limits apply and are based on environmental and social constraints. Further limits may apply from time to time for purposes of nature conservation.

The following limits apply to camper numbers (not day visitors):

| | |
|----------------------|-------------------------|
| North West Island | 150 |
| Masthead Island | 50 |
| Lady Musgrave Island | 40 |
| Tryon Island | 30 (temporarily closed) |

- All year access will be provided for day visitors at North West and Lady Musgrave Islands. Lady Musgrave and North West Islands will be open for camping from Easter to Australia Day inclusive. Between the Australia Day weekend and Easter, to minimise human impact on emerging turtle hatchlings, breeding seabirds and vegetation, the campgrounds will be closed.
- During the period 15 October until Easter the following year, access to Tryon, Erskine and Masthead Islands will not be permitted to minimise human impact on vegetation, breeding seabirds and turtles.

Commercial Activity Permits for day visitor use (not campers) will be limited to:

| | |
|-----------------------|--|
| Lady Musgrave Island: | 2 x 50 persons (vessel day trip operations) 3 x 10 persons (aircraft day trip operations) 10 x 10 persons (access limited to no more than two days in seven - roving vessel operations). |
| North West Island: | 2 x 50 persons (vessel day trip operations) 3 x 10 persons (aircraft day trip operations) 10 x 10 persons (access limited to no more than two days in seven - roving vessel operations). |
| Heron Island: | Commercial Activity Permit will be negotiated with P&O Resorts. |
| Erskine Island | (only between 1 April and 30 September): 2 x 10 persons (access limited to no more than two days in seven - roving vessel operations). |

- Guidelines are to be developed in conjunction with P&O Resorts, for the control of activities and management of the special lease at Wilson Island.
- All operators providing commercial activities on cays will be required to provide an accredited guide to accompany clients to cays. Accreditation may be granted on completion of the GBRMPA Tourism Staff Certificate Course, TAFE Heritage and Tourism Certificate, or other training considered by the QPWS to be equivalent.
- Commercial camping will be permitted in the park, only at North West Island, subject to the following limits and conditions:
 - 2 x 25 persons (including staff);
 - camping to occur at times other than Queensland and New South Wales school holidays;
 - maximum stay of 21 nights;
 - no equipment to be left on the island when not camping;
 - designated camp site to be used;
 - any fish caught by operators or their clients must be consumed on the island, and recreational bag limits under the Fisheries legislation must be observed;
 - no motorised vehicle may be used to tow or carry equipment over the exposed reef flat, beach or island;

- operators responsible for cleaning allocated toilet block must remove rubbish on a regular basis; and
 - permits will be probationary for 12 months, then assessed and may be then issued for three year periods.
- Two dedicated commercial camping sites will be constructed at North West Island to separate commercial camping from private camping.
 - Visitor facilities other than management signs (e.g. toilets), will only be considered on cays where camping is permitted, or where current leases allow for other structures.
 - Dive compressors will only be permitted in the compressor bunkers at North West and Lady Musgrave Islands and will be permitted to be used only between 0900 and 1800 hours.
 - 240 volt power, leads and generators will not be allowed in the park. They may only be used for management or approved research purposes.
 - Fuel storage will only be permitted in the fuel storage areas on North West and Lady Musgrave Islands.
 - Where multiple management agencies are involved in locations, such as Heron and Wilson Islands, management guidelines will be used to provide detailed and co-ordinated site management.
 - Options for improved human waste disposal methods at Tryon and Masthead Islands will be investigated.

6.6 Education and interpretation

Current situation

The Capricornia Cays provide a range of opportunities for education and interpretation that are consistent with the enjoyment and protection of the natural environment. Public contact strategies applicable to the cays have been identified in the Great Barrier Reef World Heritage Area Public Education Strategy and the QPWS Central Coast's Regional GBRWHA Public Education Plan. The level of interpretative and information services and facilities that are provided depend mainly on the type, number and needs of visitors, priority management issues, and the type of commercial operators which use the cays.

On-site facilities include a marine parks information centre on Heron Island, an interpretative display shelter near the main access point on Lady Musgrave Island, a seabird interpretative sign at Wilson Island and simple information displays attached to the wall of the camping ground toilet facilities at Lady Musgrave and North West Islands. Off-site, information and interpretative displays are maintained at the Gladstone airport and marina, Lady Elliot Island and boat ramps from 1770 to Gladstone.

Written materials include pre-visit information leaflets, interpretive island and reef guides, an interpretive booklet 'Exploring Capricornia', sundry wildlife information sheets and species lists. These are distributed with camping and education permits through Service offices, local information centres, with camping and education permits and at the Heron Island Information Centre.

Management staff provide face-to-face interpretive activities (guided walks or slide shows) to visitors on camping islands during public contact patrols. At Heron Island, management staff give introductory talks to educational groups at the Research Station and visitors at the P&O Resort. Interpretive workshops are provided periodically to resort staff at Heron Island and staff from other tour operators.

Queensland Turtle Research staff and volunteers provide visitors with interpretive information and assist in viewing turtles whilst present at Heron, Lady Musgrave and North West Islands.

Education groups from high schools and universities use the facilities at the Heron Island Research Station and campgrounds at Lady Musgrave and North West Islands. The maximum group size for this purpose is 25 at Lady Musgrave Island and 60 at North West Island.

Desired outcomes

Good quality, up-to-date information and interpretive materials/facilities which promote responsible use and enhance public understanding and enjoyment of the cay environment are provided on- and off-site.

Commercial tour guides and resort activities staff are well informed about the cays' natural and cultural values, are supportive of marine park management and are able to conduct low-impact, high quality, interpretive programs.

All commercial activity permittees will have at least one tour guide with formal accreditation to a standard acceptable to the QPWS.

Management staff are able to provide good quality, strategic interpretive presentations and activities to educational and recreational users of the cays.

Education programs permitted in the park are to be nature-based and ecologically sustainable, and provide students with an understanding and appreciation of coral cay ecosystems.

Guidelines and actions

- Maintain up-to-date stocks of interpretive and information materials and ensure that procedures are in place for their efficient distribution on- and off-site.
- Develop and provide a minimal impact code brochure which is to be distributed to all campers and made available to other visitors.
- Maintain up-to-date information displays at the Gladstone airport and marina.
- Provide and maintain information displays at other departure points from Bundaberg to Yeppoon.
- Include the minimal impact code of camping information in the displays at the above departure points.
- Ensure that interpretive services and facilities provided by the resort at Heron Island are good quality, low impact and supportive of marine park management.
- Conduct regular training workshops for commercial tour operators. These should cover reef and cay biology, interpretive techniques, minimal impact codes and marine park management.
- Conduct interpretive training for management staff so that all staff have the capacity and confidence to present activities and/or talks when needed.
- Review and update the Central Coast's Regional GBRWHA Public Education Plan on an annual basis to ensure that public contact and interpretive programs for the Capricornia Cays are consistent with public contact priorities and planning in the WHA, as well as being locally strategic.
- Education programs may be permitted in the park, subjected to the following conditions:
 - programs may occur at Heron, Lady Musgrave or North West Islands;
 - schools will provide a student:supervisor (parents and other responsible adults are considered supervisors) ratio of 15:1 for Heron Island and 8:1 for Lady Musgrave and North West Islands;
 - at any one time the total number (one or more groups) will be 25 for Lady Musgrave Island and 60 for North West Island;

- programs may occur at times other than Queensland and New South Wales school holidays; and
- programs will be aimed at increasing understanding and appreciation of the natural and cultural values of coral cays and have specific requirements to be conducted in the park.

6.7 Research and monitoring

Current situation

The unique natural and cultural values of the cays within the national park provide opportunities for research of global significance. The research facts and understanding accumulated over time, form an important source of information for management, interpretive and education purposes in Queensland and abroad.

Turtle research and monitoring at Heron Island has accumulated one of the few long-term, continuous data sets for green turtles globally.

Heron Island Research Station is a strategically located facility with a long history of documented research relating to reef and cay environments. This facility, operated by the University of Queensland, is located on a Priority Special Lease over part of Heron Island. Research may only be conducted in the park with a permit.

Numerous research and monitoring projects have been conducted in the park and some of the information collected from these projects has enhanced biological and resource knowledge. However, some vegetation/bird monitoring projects do require large-scale digitised maps which currently are not available.

Desired outcome

Maintain and enhance opportunities for nature-based and ecologically sustainable research, which contributes to resource information and/or the understanding of the biological processes and management of coral cay ecosystems.

Establish research/monitoring projects to investigate the ecological sustainability of human use of the national park.

Encourage research and monitoring projects that deal with specific management related issues

Applied and monitoring research providing spatial data on flora and fauna is to be supported.

Guidelines and actions

- Give priority to research dealing with threatened species and communities.
- Give priority to research into any natural and anthropogenic impacts with catastrophic effects (ie *Pisonia grandis* forest at Tryon Island).
- Promote and support research into human impacts on the biological diversity and natural values of the national park by establishing stronger links with research institutions including universities.
- Only consider scientific research that has a specific requirement to be conducted in coral cay environments.
- The findings of all research in the parks should be collated and reviewed to provide management with the best available information on the parks.

- Ensure turtle research and monitoring at Heron Island is allowed to continue uninterrupted by tourism activities.
- Provide large-scale air-photography suitable for future digitised large-scale mapping of vegetation, bird and turtle nesting.
- Renegotiate the Priority Special Lease for the Heron Island Research Station and develop a new Research Station Lease under the *Nature Conservation Act, 1992*.
- Ensure all research conducted on Heron Island is in accordance with the Heron Island Research Station's Integrated Environmental Management System.

6.8 Maintenance of navigation aids

Current situation

A marine navigation light on a Special Lease on Lady Musgrave Island is controlled and maintained by the Australian Maritime Safety Authority. Inspections of the light are undertaken by helicopter, and an area of the lease is set aside for landing purposes. The facility is maintained using an amphibious vehicle launched from a maintenance vessel. Both methods have caused significant environmental damage in the past.

Desired outcome

Operation of the light is not compromised by park management actions, and no unnecessary impact occurs to the natural ecosystems of Lady Musgrave Island from inspection and maintenance activities.

Guidelines and actions

- A Memorandum of Understanding will be maintained with the Australian Maritime Safety Authority which ensures that impacts on natural values from construction and maintenance activities associated with navigation aids are minimised.
- A permanent concrete heli-pad will not be permitted at Lady Musgrave Island.
- As far as practicable, inspections and maintenance are to be scheduled before October or after March to avoid nesting seabirds.
- Clearing is to be limited to within the lease area, and to that necessary for maintaining the structure or to allow access and helicopter landing.
- Precautions are to be taken to ensure that no weeds or feral animals are introduced during servicing or maintenance operations.

7 Capricornia Cays National Park (Scientific) - management strategies

The Capricornia Cays National Park(Scientific) consists of six cays (Wreck, One Tree, East and West Hoskyn, and East and West Fairfax Islands) lying between 60 and 80km off the Queensland coast between Yeppoon and Gladstone.

7.1 Purpose of management

The major purposes of management will be to ensure that:

- the loggerhead rookery at Wreck Island and green turtle rookeries at Wreck, West Fairfax and West Hoskyn Islands are maintained in a natural condition, free from human disturbance;
- the brown booby breeding colony at East and West Fairfax and East Hoskyn Islands is maintained in a natural condition free from human disturbance;
- all human access is restricted under the provisions of the *Nature Conservation Act 1992*;
- the unique cay plant and animal communities of the park are maintained in a natural condition, free from human disturbance.
- landscape values are retained at their present high levels;
- representative Capricornia cays remain undisturbed from human presence and serve as comparative reference sites;
- if threatened wildlife is a significant natural resource of the national park (scientific), management of the area may include:
 - manipulation of the wildlife's habitat; and
 - the control of threatening processes relating to the wildlife including threatening processes caused by other wildlife; and
 - opportunities for appropriate scientific research and monitoring are maintained.

7.2 Natural resource management

Current situation

Historically most of the cays of the park have had some human use. East and West Fairfax Islands have been used as a bombing range, Wreck Island has been used for oil exploration and as a private residence, and One Tree Island has an active research station. As some of these activities ceased over 20 years ago, the impacted areas of the cays have recovered almost completely and Capricornia Cays National Park (Scientific) is now relatively representative of natural coral cay ecosystems.

Research and monitoring projects are undertaken to provide information to help manage the endangered loggerhead, vulnerable green turtle, brown booby populations and other natural values of the park.

Wreck Island is the most important offshore rookery for the endangered loggerhead turtle on the east coast of Australia. The vulnerable green turtle breeding sites at Wreck, West Hoskyn and West Fairfax Islands are of international significance.

East and West Fairfax and East Hoskyn Islands support the second largest breeding colony of brown boobies on the Great Barrier Reef.

A population of black rats *Rattus rattus* was eradicated from Wreck Island in the late 1980s and goats were eradicated from East and West Fairfax Islands in the early 1970s. Until recently, East and West Fairfax Islands were also infested with black rats, but they have probably been eradicated through a recent baiting program.

At Wreck and One Tree Islands there are complementary GBRMPA and Queensland Marine Park zones which also restrict public access to their reefs and inter-tidal areas. East and West Fairfax and East and West Hoskyn Islands have no such restriction to their surrounding reefs and inter-tidal areas, therefore public access to these areas has greater potential to impact on their natural values.

Restricted access minimises human disturbance to the plant and animal communities within the park, and strategies are in place to eradicate introduced plants and animals.

Recreational and tourism use of the park is not allowed, thereby conserving to the greatest possible extent, the high natural values and fragile nature of the cays.

Fire is not a natural feature of the cays within the park and as access is restricted and camping not allowed, camp and other fires are non-existent.

The park provides opportunities to conduct scientific research on a range of cay related topics. Knowledge gained from this research may be useful for the conservation and management of the cays within both the parks. It is also internationally significant to the conservation of certain species, as research conducted in the park frequently provides the only available information on such species in situations as free as possible from human impact.

Desired outcomes

Turtle and seabird nesting populations will be maintained to at least current levels.

The current composition, distribution and condition of the islands' natural terrestrial ecosystems will be maintained in a natural state free from human impact.

Scientific research opportunities within the park will be maintained and provided only when research cannot be conducted elsewhere.

The special lease for the research station at One Tree Island, will be the only part of the park where permanent human habitation can occur.

Impacts on the values of the park will be reduced by restricting public access to the inter-tidal areas of East and West Fairfax and East and West Hoskyn Islands, including the intertidal part of the reefs surrounding these islands.

Guidelines and actions

- Public access will be restricted in the park.
- Human access to the park will only be provided (by permit) to people involved in approved scientific research and monitoring, or management projects.
- Impact from scientific research on the natural values of the park will be kept to a minimum.
- Continue to monitor the populations of plants and animals.
- Maintain the research programs into green and loggerhead turtles.
- Continue annual monitoring of the park for introduced animals and plants, eradicate where feasible, and take steps to minimise the chance of introductions.
- Restrict public access to the inter-tidal areas of East and West Fairfax and East and West Hoskyn

Islands, including the intertidal part of the reefs surrounding these islands, in any future zoning and/or management plans for these areas.

- For One Tree Island Research Station, develop a special lease that provides and ensures minimal impact on the natural values of the park.
- All waste will be removed from the park and returned to the mainland.

7.3 Landscape management

Current situation

The Capricornia Cays National Park (Scientific) comprises small isolated islands with largely unaltered visual appeal. Man-made elements in the landscape are limited to infrastructure related to the research station at One Tree Island and management signs on the islands. There is also a derelict hut at Wreck Island.

Desired outcome

The landscape values of the area are in as natural a state as possible.

Visual intrusion of existing or future infrastructure installations is minimised.

Guidelines and actions

- All management infrastructure and infrastructure on the One Tree Island Research Station special lease will take into account, and minimise, likely impacts on visual amenity.
- Scientific infrastructure is to be removed immediately following the termination of a research permit or the completion of a project, whichever comes first.
- The derelict hut at Wreck Island will be removed.

7.4 Cultural heritage management

Current situation

Although past indigenous use of the Capricornia Cays National Park (Scientific) is unknown, the cays may have historical cultural significance to Aboriginal people.

There is a native claim by the Bailai native title claimant group for One Tree and Wreck Islands.

There is a capped drill-hole at Wreck Island dating from oil exploration activities which occurred over 30 years ago. This well may present some problems for nesting seabirds and other wildlife on the island.

East and West Fairfax Islands were used as a bombing range by the Royal Australian Air Force. This ceased over 20 years ago, and the vegetation of these two cays has largely recovered.

Desired outcomes

Items and places of cultural heritage significance are managed for their long-term protection.

Guidelines and actions

- Develop cultural resource conservation plans for items and places of cultural heritage significance in the park, and manage them accordingly.
- The capped drill-hole at Wreck Island is to be maintained in a safe and environmentally acceptable state. If this is not possible then advice will be sought from DME on how to remove all traces of it.

7.5 Recreation, tourism and visitor use

Current situation

As public access is restricted, no recreation and tourism use of the park occurs.

Visitor use is restricted to managers and people conducting approved research programs or promoting the park's scientific values.

The untouched cays of the park offer high scenic values to recreational users and tourists transiting the adjacent marine park.

Bomb disposal experts have found and destroyed unexploded ordinance left from the bombing, however advice from the Australian Army suggest that many more unexploded ordinance will be on the park. This is considered a safety hazard.

Desired outcomes

Restrictions on use and access ensure that the cays of the park are free from human impacts caused by recreational and tourism use.

Filming and photography which promotes the park's scientific values will be the only commercial use of the park.

Remove unexploded ordinance as required.

Guidelines and actions

- Other than for management purposes, entry to the park will be by permit only, (unless accessing the One Tree Island Research Station lease).
- Commercial use of the park is only permitted for filming and photography, with specific approval and if it promotes the park's scientific values.
- Any additional unexploded ordinance at East and West Fairfax Islands will be dealt with by bomb disposal experts.

7.6 Education and interpretation

Current situation

Use of the park for education purposes is not permitted unless involved in an approved research and/or monitoring program.

Educational and interpretive material relating to the park is restricted to maps, data derived from scientific research and historic information. Most of this material does not show the area as national park (scientific) nor does it indicate the relevant public access restrictions.

Desired outcomes

Local residents, visitors, fishers and commercial operators are informed of the park's restricted access regulations as well as its natural and scientific values.

Off-site opportunities for education of the public regarding the park's restricted access regulations as well as its natural and scientific values are provided and maintained.

Guidelines and actions

- Off-park facilities, including the marine parks information centre on Heron Island, interpretive displays on other islands of the Capricornia Cays National Park and interpretive displays at departure points will indicate that public access is not allowed in the Capricornia Cays National Park (Scientific) without a permit.
- All documents relating to the park will indicate public access is not allowed and outline the values of the cays within the park and the reasons for the human access restrictions.
- Relevant map and book publishers will be alerted to the park's access restrictions.
- Maintain up-to-date stocks of interpretive and information materials and ensure that procedures are in place for their efficient distribution on- and off-site.
- No education permits will be issued for the park.

7.7 Research and monitoring

Current situation

The natural and cultural values of the cays within the national park (scientific) provide unique opportunities for research of global significance, as the information is collected from an environment where human impact is minimal.

Considerable research is conducted on the brown booby, loggerhead and green turtle populations. Research and monitoring projects are also conducted on the other natural values and ecological processes of the park.

One Tree Island Research Station is a strategically located facility with a long history of documented research relating to reef and cay environments, with particular relevance to research where the relative absence of human impact is important. The research station, operated by Sydney University, is located on a special lease over a small part of One Tree Island. One Tree Island is a rubble cay at the eastern end of a reef which is zoned for scientific research in a Zoning Plan under the *Great Barrier Reef Marine Park Act, 1975*. This situation provides an excellent opportunity to conduct research on a wide range of reef and cay related topics.

Desired outcomes

Opportunities for nature-based and ecologically sustainable research, which contributes to resource information and/or the understanding of coral cays are maintained.

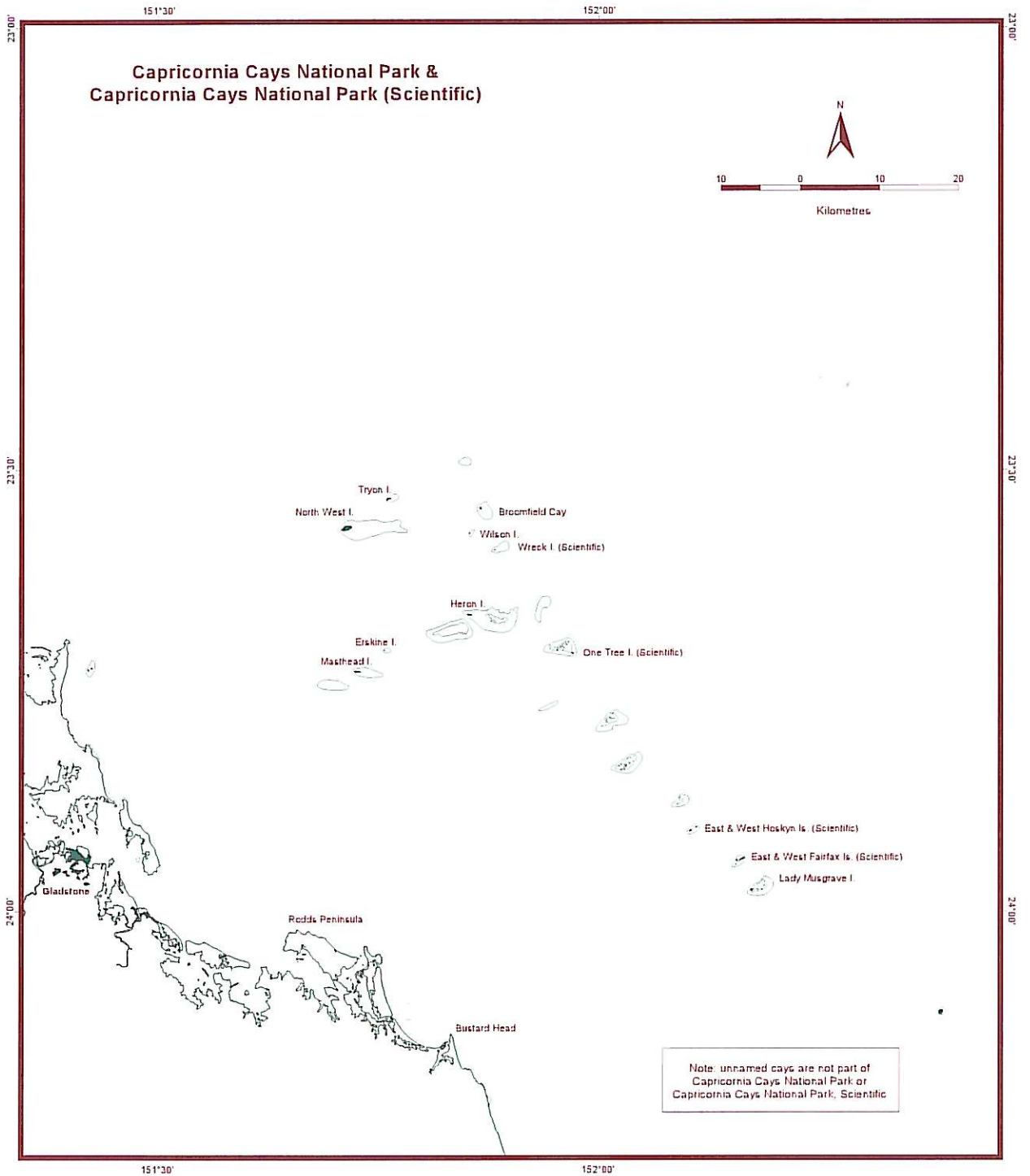
Establish research/monitoring projects to investigate the ecological sustainability of human use of the national park.

Scientific research in the park will be approved only if it is not feasible to conduct it either elsewhere or in the Capricornia Cays National Park or if it directly relates to the national park (scientific).

Guidelines and actions

- Only permit scientific research which cannot be conducted elsewhere.
- Only permit scientific research of a low-impact and non-destructive nature.
- Give priority to research into any natural and anthropogenic impacts with catastrophic effects (ie *Pisonia grandis* forest at Tryon Island).
- The findings of all research in the parks should be collated and reviewed to provide management with the best available information on the park.
- Promote and support research into human impacts on the biological diversity and natural values of the national park by establishing stronger links with research institutions including universities.
- Infrastructure related to scientific research in the park must be clearly labelled and be removed immediately following the completion of the project.
- The Special Purposes Lease at One Tree Island for the operation of the Research Station will be maintained. The guidelines associated with this Special Purposes Lease and annual permit will be adhered to.

8 National park map - two parks



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