

Swain Reefs National Park and adjoining State Marine Park Management Statement 2013

Park size:	58.15ha (national park)
Bioregion (IMCRA 4.0):	Pompey–Swains Mackay–Capricorn
QPWS region:	Great Barrier Reef
Local government estate/area:	Mackay Regional Council Issac Regional Council Rockhampton Regional Council
State electorate:	Mirani

IMCRA—Integrated Marine and Coastal Regionalisation of Australia



Roseate Tern on Price Cay. Photo: NPRSR.

Vision

The cays of Swain Reefs National Park and the adjoining Great Barrier Reef Coast Marine Park provide critical lifecycle habitat for globally significant animals including endangered seabirds and marine turtles. The State marine park supports remote calving grounds for vulnerable humpback whales *Megaptera novaeangliae* and is an important refugia for coral reefs.

The area supports world-leading research into coral cays, their wildlife, and their associated ecosystems. Management enhances the cay's natural biological resilience and protects them from pests.

Swain Reefs National Park continues to provide valuable scientific research opportunities in a location that is largely natural and unaltered. The park will remain free of infrastructure or invasive uses so that natural processes can continue unaffected by inappropriate human uses.

Legislative framework

✓	<i>Aboriginal Cultural Heritage Act 2003</i>
✓	<i>Environment Protection Biodiversity Conservation Act 1999 (Cwlth)</i>
✓	<i>Great Barrier Reef Marine Park Act 1975 (Cwlth)</i>
✓	Great Barrier Reef World Heritage Area
✓	<i>Marine Parks Act 2004</i>
✓	<i>Native Title Act 1993 (Cwlth)</i>
✓	<i>Nature Conservation Act 1992</i>

Plans and agreements

✓	Bonn Convention
✓	China–Australia Migratory Bird Agreement
✓	Humpback whale recovery plan
✓	Japan–Australia Migratory Bird Agreement
✓	Nature Conservation (Whales and Dolphins) Conservation Plan 1997
✓	Recovery plan for marine turtles in Australia
✓	Republic of Korea–Australia Migratory Bird Agreement

Thematic strategies

✓	Statement of fire management intent
✓	Level 1 pest strategy

The Great Barrier Reef Coast Marine Park continues to present the cays and reefs outstanding natural beauty, ecosystem integrity and the opportunity for remote viewing of abundant and globally significant wildlife.

Conservation purpose

Swain Reefs National Park was gazetted to protect the most remote sand cays on the Great Barrier Reef and provide protection for feeding, resting and breeding seabirds and turtles.

Swain Reefs National Park and the adjoining Great Barrier Reef Coast Marine Park will be managed to ensure breeding seabirds and cay habitats are protected from inappropriate human disturbance and to minimise disturbance from research and monitoring programs. Nature-based recreation activities consistent with protection of the area's values will be supported. Research with an emphasis on seabird population dynamics, ecological processes and the vulnerability of seabirds to environmental changes will be encouraged.

Ongoing strong and collaborative relations with the Great Barrier Reef Marine Park Authority (GBRMPA) and other key Australian and Queensland Government agencies will foster complementary management of the national park cays and surrounding marine park, and provide for the protection of lifecycle requirements for the area's wildlife.

Bell Cay was gazetted as a resources reserve under the *Land Act 1962* in 1987 and then under the *Nature Conservation Act 1992* in 1994. Swain Reefs National Park was first gazetted in 1995 and included eight sand cays—Bacchi, Bell, Bylund, Frigate, Gannett, Price, Riptide and Thomas. In 2005 Distant Cay was also included.

The national park and adjoining State marine park are part of the Great Barrier Reef World Heritage Area.

Protecting and presenting the area's values

Landscape

The Swain Reefs is a labyrinth of approximately 370 patches of reefs covering an area of approximately 16,900km² lying between 120km and 250km offshore from St Lawrence. They represent the most eastern and southern development of the Great Barrier Reef.

Swain Reefs National Park comprises nine cays, eight of which are located at the central area of the Swains Reef complex. Bell Cay is located some 30km west of the Swains Reef Complex. They are the most remote cays in the Great Barrier Reef World Heritage Area. The sand cays consist of coarse carbonate sand and bioclastic sediment of variable size, with minimal vegetation including native grasses and herbs. The major components are derived from coral, coralline algae, foraminiferans and molluscs (Flood & Heatwole 1986). There are also other nearby incipient islands that are currently only emergent at low tide and are not part of the national park.

Natural geological processes remain the major influence on the size and extent of the sand cays and their continued viability as roosting and nesting grounds for seabirds and turtles.

Native plants and animals

Plants

The cays simple vegetation communities are comprised of grasses and herbs, which can be transient. They are the only example of this type of vegetation community on sand cays in the southern Great Barrier Reef. There are similar vegetation communities on some cays in the outer Coral Sea. For plants to persist on these cays they need to have the ability to disperse to remote islands and then survive and reproduce under the stringent, unstable conditions of small, ephemeral sand cays (Flood & Heatwole 1986). Vegetation loss on the cays can be due to cyclones, island wash-over at high tide, erosion, disturbance by turtles and seabirds, extended periods of drought and human disturbance.

The vegetation of Bacchi, Bell, Bylund, Frigate, Gannett and Price cays were described in detail by Heatwole et al in 1996. At that time Riptide and Thomas had no vegetation and Distant Cay was not mentioned. Since being inundated by Tropical Cyclone Hamish in 2009, the vegetation has not recovered at Bacchi, Bylund, Frigate or Gannet cays, leaving only Bell and Price cays with vegetation cover.

The most commonly occurring plants are the tar vine *Boerhavia diffusa* and two grass species—stalky grass *Lepturus repens* and tropical beachgrass *Thuarea involuta*. Other established plants are *Lepidium englerianum* on Price Cay, and goats foot *Ipomoea pes-caprae* and bulls head vine *Tribulus cistoides* on Bell Cay (Heatwole et al 1996, Flood & Heatwole 1986).

Animals

Vegetation is an important stabilising factor on islands and is also a breeding prerequisite for some species of seabird such as the lesser frigatebird *Fregata ariel*, common noddy *Anous stolidus*, bridled tern *Onychoprion anaethetus* and sooty tern *Onychoprion fuscata*. Tree-nesting species are absent from the area and species requiring vegetative ground cover for nesting, such as the common noddy and bridled tern, are limited to the vegetated cays. Bacchi, Bylund and Thomas cays are considerably smaller and subject to more overwash reducing their suitability for nesting.

Swain Reefs National Park and the adjoining State marine park is of major significance to the conservation of endangered little tern *Sternula albifrons* and recently discovered fairy tern *Sternula nereis exsul*. The cays constitute one of six core seabird breeding areas identified in Queensland (King 1993). While none of the breeding seabirds recorded in the national park are listed as endangered or near threatened, the species are of international significance (Table 2).

The islands provide an important summer roosting area for an Asian population of roseate terns *Sterna dougalli* and support breeding populations of common noddy, bridled tern, crested tern *Thalasseus bergii* and lesser crested tern *T. bengalensis*. The area also supports the principal winter and summer breeding populations of masked boobies *Sula dactylatra* and brown boobies *S. leucogaster* and the only southern Great Barrier Reef breeding population of the lesser frigatebird. The isolation of these species from other populations may also increase their conservation importance. The seabird population in the Swain Reefs should be treated as geographic isolates and managed accordingly.

The national park and adjoining State marine park is of major significance to the conservation of endangered loggerhead turtle *Caretta caretta* and the vulnerable green turtle *Chelonia mydas*. The marine park waters also support remote calving grounds for vulnerable humpback whales.

The potential for direct human disturbance to seabirds and turtles is managed by restricting access through regulatory notices and marine zoning plans. The indirect impact from humans on these populations include washed up marine debris from private and commercial vessels causing entanglement and ingestion of plastics.

Sea levels are rising faster than expected and have been projected to rise 0.8m by 2100 (DERM 2010), which will potentially inundate the national park cays and impact on seabird food sources, roosting and breeding areas. Increasing temperature and declining rainfall would also pose significant threats to the cays and the wildlife that depend on them. Ocean acidification may also pose a future threat to the reef and cays (Fabricius et al 2007). It may be necessary to consider adaptive management to protect the national park from these threats.

Cyclones can profoundly affect coral reefs and cays and potentially obliterate them. An increase in cyclone severity and frequency would also lead to reduced breeding habitat for coastal birds and turtles.

Aboriginal and Torres Strait Islander culture

At the time of preparing this management statement there is no current native title claim over the national park or adjoining State marine park. There are active land and sea claims along the mainland, some of which include islands; however they do not extend out to Swain Reefs National Park.

The relationship of Traditional Owners with their traditional country is a special one with the whole landscape having important value.

The Great Barrier Reef including Swain Reefs National Park has long been known to and used by Aboriginal and Torres Strait Islander peoples, and is an important part of local groups' culture and spirituality. Indigenous people were often crew on bêche-de-mer fishing vessels visiting the Swain Reefs. Current and past management activities generally present a low risk to Indigenous cultural heritage.

Shared-history culture

The Swain Reefs area has a long history of fishing, shipping and tourism. These industries continue to be significant to the Central Queensland economy.

Tourism and visitor opportunities

There is little evidence of human influences on the cays and surrounding reefs. The sheer distance from the mainland and the complex structure of the reef restricts inexperienced vessel operators from exploring this area. However the Swain Reefs are visited by overnighting charter vessel tourist operators and recreational vessel operators. Over the years vessels have been challenged by the complex reef system and a number of vessels have sunk, grounded or been severely damaged. Oil spills and vessel groundings are a threat to the natural values

of this area. Significant resources are employed by the Australian and Queensland governments to educate the public, perform compliance patrols and undertake rescue and emergency response for grounded vessels and oil spills. The impacts of these incidences can be devastating and cause long-term impacts to the marine ecosystem.

There are seasonal closure areas under the Marine Parks (Great Barrier Reef Coast) Zoning Plan 2004 for the beaches on the cays, except Bell Cay. However, for most of the cays marine park zoning and all year national park restricted access areas further limit access to the cays and surrounding marine park.

Visitor access is restricted all year to Bacchi, Bell, Bylund, Frigate, Gannet, Price and Thomas cays by regulatory notice under the Nature Conservation Act. Additionally, the adjoining Commonwealth and State marine parks are zoned preservation (pink) zone, which excludes access. The cays are relatively small and even brief forays ashore by unknowing visitors can cause considerable disruption to the breeding of seabirds and turtles, especially during sensitive stages of the nesting cycle.

Visitor access is seasonally restricted (1 October to 1 April) to Distant and Riptide cays by regulatory notice under the Nature Conservation Act. Outside this seasonal closure period recreational visitors can access the cays, however tourism operators are not permitted. There is no visitor infrastructure on the cays. Visitors can access the surrounding Commonwealth and State marine park waters which are zoned marine national park (green) zone all year. Visitors can enter these waters and enjoy a range of recreation activities including boating, diving, snorkelling and photography; fishing is not permitted. Tourism operators may also access the surrounding marine park waters but they must not go ashore on the cays or access the intertidal area.

As the cays are the most remote sand cays in the Great Barrier Reef World Heritage Area they are beyond the range of vessel-based day trip tourist operators. Charter operations are typically conducted every week for nine months of the year outside of the summer months. While their primary charters are fishing-based, they also conduct dive and snorkel charters. Tourism operators are not permitted to access Swain Reefs National Park due to the conservation significance of these cays to breeding seabirds, which occurs all year round, and turtle nesting during summer. Tourist vessels sometimes undertake motorised water sports, such as jet skiing or tubing, which are typically fast and noisy activities that disturb birds. While tourist vessels are not permitted to access the preservation (pink) zone, they can access the marine national park (green) zone around Distant and Riptide cays where motorised water sports would cause disturbance to birds.

Private and commercial aircraft fly over the management area. Aircraft noise in national parks is an environmental management issue which is becoming more prevalent with tourism growth to natural areas. Landing of aircraft such as helicopters or seaplanes is not supported due to the size and fragile state of the cays and the disturbance to breeding and roosting birds and turtles. Aircraft flying over the national park should remain above 1500 feet to minimise disturbance to the cays and birds. These flying heights complement legislative flying heights in effect for nearby Capricornia Cays National Park and Capricornia Cays National Park (Scientific), which are the most significant seabird islands in the Great Barrier Reef World Heritage Area.

Education and science

Swain Reefs National Park and the associated reefs are particularly important scientific baseline sites with a long history of scientific discovery, monitoring and research.

The national park and marine park provide abundant opportunity for scientific research and monitoring. Any research must be conducted under the appropriate approvals. All efforts must be made to ensure scientific research is conducted in partnership between Queensland Parks and Wildlife Service (QPWS), other agencies and research institutions to promote sharing of information, resources and to limit the impact and frequency of human disturbance.

Swain Reefs National Park is identified as a key monitoring site in the Coastal Bird Monitoring Strategy for the Great Barrier Reef World Heritage Area. Minimal human disturbance has occurred on the cays compared with many other seabird breeding islands on the Great Barrier Reef. Trends in seabird populations observed in the Swain Reefs are a useful baseline with which to compare populations from more disturbed areas. Such comparisons are necessary to separate impacts on seabird populations caused by human factors from those that occur naturally.

QPWS, in partnership with GBRMPA and research institutions, have monitored the seabird populations on the cays at six monthly intervals since 1982. Since 2009, monitoring has included a feeding area assessment to determine the possible causes in the decline of breeding effort that was detected during this study of seabirds.

At the time of preparing this management statement there was no visitor information about the national park on the department's website.

Partnerships

A strong working relationship with GBRMPA assists with the operational management of the Great Barrier Reef World Heritage Area. The delivery of work programs under the Field Management Program is supported by Commonwealth and Queensland government departments.

A working relationship with the Traditional Owners, including the Darumbal people, is essential so that their views and aspirations for the land and sea can be included in planning and management. Traditional Owners have an important role in protecting cultural heritage and educating QPWS and visitors on cultural heritage management.

Other key issues and responses

Pest management

There are no known pest species on the national park cays. Seabird and coral monitoring twice a year includes a general inspection of the cay's vegetation. The arrival of pest species would be readily detected during these surveys considering the small and open area of the cays. The remote and harsh environment and the absence of surface fresh water are not conducive to the establishment of pest species.

Pest management strategies have been developed to prioritise regional pest plant and animal control, guide operational work plans and evaluate program effectiveness on managed estates. The QPWS Level 1 southern Great Barrier Reef island pest management strategy guides pest management programs for the park.

Private visitor or commercial use of the cays is minimal which aids in reducing the risk of introducing pest species—the greatest threat to the cay's integrity.

Development of an island bio-security communication strategy to support a reef-wide program is identified as the best proactive measure to combat the potential introduction of pests.

Fire management

The absence of ignition sources and combustible materials/vegetation types precludes fire events occurring on the cays. Ground nesting seabird colonies are vulnerable to fire events. A statement of fire management intent (2005) exists for Swain Reefs National Park. Significant within this statement is the restriction on campfires, which would threaten seabird colonies and reduces the likely introduction of pest species in wood. It also avoids the dark discolouration of sands by ash which can affect the incubation sex determination of turtle hatchlings—increased temperatures lead to higher percentages of female hatchlings.

Other management issues

Infrastructure

The Bureau of Meteorology has an automatic weather monitoring station in the marine park on Gannett Cay Reef. This automatic weather monitoring station is an aid to navigation and, under the Marine Park (Great Barrier Reef Coast) Zoning Plan 2004, Part 4, the preservation (pink) zone may be entered without permission for servicing, provided prior notification is given.

References

Fabricius K Hoegh-Guldberg O Johnson J McCook L and Lough J 2007, Chapter 17, Vulnerability of coral reefs of the Great Barrier Reef to climate change. In Johnson JE and Marshall PA (eds), *Climate Change and the Great Barrier Reef*. Great Barrier Reef Marine Park Authority and Australian Greenhouse Office, Australia.

Flood PG and Heatwole H 1986, Coral cay instability and species-turnover of plants at Swain Reefs, Southern Great Barrier Reef, Australia. *Journal of Coastal Research*, 2(4), pp 479–96.

GBRMPA 2002, *Coastal Bird Monitoring Strategy for the Great Barrier Reef World Heritage Area*.

Heatwole H O'Neill P Jones M and Preker M 1996, *Long-term population trends of seabirds on the Swain Reefs, Great Barrier Reef*. Technical Report 12. CRC Reef Research Centre, Townsville.

King B 1993, The status of Queensland Seabirds. *Corella*, 17(3), pp 65–92.

Management directions

Desired outcomes	Actions and guidelines
<p>Landscape</p> <p>The area offers a remote and isolated cays experience that is consistent with the marine parks zoning plan.</p>	<p>A1. Prohibit additional infrastructure from being installed on the cays other than required regulatory notices, and approved research and monitoring equipment.</p>
<p>Native plants and animals</p> <p>The national park and adjoining marine park continues to be a global stronghold for internationally significant species.</p>	<p>A2. Implement research programs and natural integrity assessments including reef health and impact surveys, coastal birds, turtle and pest monitoring and incorporate findings into plans and strategies.</p> <p>A3. Maintain all year and seasonal restricted access areas to protect nesting and roosting birds and turtles.</p>
<p>Tourism and visitor opportunities</p> <p>Tourism and visitor use does not impact on nesting and roosting birds and turtles.</p>	<p>A4. Confine tourism vessels to the waters around Distant and Riptide cays. Do not allow visitor access ashore on these cays or the conduct of motorised water sports or high-speed vessel activity in the State marine park.</p> <p>A5. Manage aircraft activity so that aircraft are not permitted to land in the national park and tourist flights remain above 1500 feet when over the national park and adjoining State marine park . Consider legislative mechanisms so that the limitations on aircraft also apply to recreational use.</p>
<p>Aboriginal culture</p> <p>Cooperative involvement of Traditional Owners in protected area management is supported and encouraged.</p>	<p>A6. Improve working relationships with Traditional Owners to facilitate enhanced involvement in park management.</p>
<p>Education</p> <p>QPWS works closely with research partners to investigate management priorities and the research results enhance the area's management.</p>	<p>A7. Work with research partners to participate and guide research into priority management areas and use results to enhance natural resilience and management.</p> <p>A8. Continue to conduct education and enforcement programs to facilitate compliance with the national park regulatory notices and marine park zoning plans.</p> <p>A9. Provide information about the national park on the department's website, including copies of restricted access area notices.</p>
<p>Partnerships</p> <p>QPWS and GBRMPA continue to jointly manage the area with complementary management arrangements.</p>	<p>A10. Maintain complementary management arrangements across the marine parks (Commonwealth and State) and national park.</p>
<p>Pest management</p> <p>Prevent the introduction of pests and diseases.</p>	<p>A11. Develop and implement an appropriate quarantine strategy to prevent introductions of potential pest plants and animal species, or diseases.</p>

Tables – Conservation values management

Table 1: Species of conservation significance

Scientific name	Common name	Nature Conservation Act 1992 status	Environment Protection and Biodiversity Conservation Act 1999 status	Back on Track status
<i>Caretta caretta</i>	loggerhead turtle	Endangered	Endangered	Critical
<i>Lepidochelys olivacea</i>	olive ridley turtle*	Endangered	Endangered	Critical
<i>Sternula albifrons</i>	little tern	Endangered	-	High
<i>Chelonia mydas</i>	green turtle	Vulnerable	Vulnerable	Critical
<i>Eretmochelys imbricata</i>	hawksbill turtle*	Vulnerable	Vulnerable	Critical
<i>Macronectes halli</i>	northern giant-petrel*	Vulnerable	Vulnerable	-
<i>Megaptera novaeangliae</i>	humpback whale*	Vulnerable	Vulnerable	Medium
<i>Natator depressus</i>	flatback turtle*	Vulnerable	Vulnerable	Critical
<i>Sternula nereis exsul</i>	fairy tern	Recent discovery not yet listed. However, listed as Vulnerable under the IUCN red list.	Recent discovery not yet listed. However, listed as Vulnerable under the IUCN red list.	-

* Species recorded in the Pompey–Swains Reefs complex of the Great Barrier Reef Marine Park, not recorded specifically in Swain Reefs National Park.

Table 2: Species listed in international agreements

Scientific name	Common name	Bonn	CAMBA	JAMBA	ROKAMBA
<i>Anous stolidus</i>	common noddy	-	✓	✓	-
<i>Ardenna pacifica</i>	wedge-tailed shearwater	-	-	✓	-
<i>Arenaria interpres</i>	ruddy turnstone	✓	✓	✓	✓
<i>Calidris acuminata</i>	sharp-tailed sandpiper	✓	✓	✓	✓
<i>Calidris alba</i>	sanderling	✓	✓	✓	✓
<i>Calidris ferruginea</i>	curlew sandpiper	✓	✓	✓	✓
<i>Calidris ruficollis</i>	red-necked stint	✓	✓	✓	✓
<i>Caretta caretta</i>	loggerhead turtle	✓	-	-	-
<i>Charadrius mongolus</i>	lesser sand plover	✓	✓	✓	✓
<i>Chelonia mydas</i>	green turtle	✓	-	-	-
<i>Egretta sacra</i>	eastern reef egret	-	✓	-	-

Scientific name	Common name	Bonn	CAMBA	JAMBA	ROKAMBA
<i>Eretmochelys imbricata</i>	hawksbill turtle*	✓	-	-	-
<i>Fregata ariel</i>	lesser frigatebird	-	✓	✓	✓
<i>Fregata minor</i>	great frigatebird	-	✓	✓	-
<i>Lepidochelys olivacea</i>	olive ridley turtle*	✓	-	-	-
<i>Limosa lapponica</i>	bar-tailed godwit	✓	✓	✓	✓
<i>Macronectes halli</i>	northern giant-petrel*	✓	-	-	-
<i>Megaptera novaeangliae</i>	humpback whale*	✓	-	-	-
<i>Natator depressus</i>	flatback turtle*	✓	-	-	-
<i>Numenius phaeopus</i>	whimbrel	✓	✓	✓	✓
<i>Oceanites oceanicus</i>	Wilson's storm-petrel	-	-	✓	-
<i>Onychoprion anaethetus</i>	bridled tern	-	✓	✓	-
<i>Pluvialis fulva</i>	Pacific golden plover	✓	✓	✓	✓
<i>Pluvialis squatarola</i>	grey plover	✓	✓	✓	✓
<i>Stercorarius parasiticus</i>	Arctic jaeger	-	-	✓	✓
<i>Sternula albifrons</i>	little tern	✓	✓	✓	✓
<i>Sterna dougallii</i>	roseate tern	-	-	✓	-
<i>Sterna hirundo</i>	common tern	-	✓	✓	✓
<i>Sterna sumatrana</i>	black-naped tern	-	✓	✓	-
<i>Sula dactylatra</i>	masked booby	-	-	✓	✓
<i>Sula leucogaster</i>	brown booby	-	✓	✓	✓
<i>Thalasseus bengalensis</i> syn <i>Sterna bengalensis</i>	lesser crested tern	-	✓	-	-
<i>Tringa brevipes</i>	grey-tailed tattler	✓	✓	✓	✓
<i>Tringa incana</i>	wandering tattler	✓	✓	✓	-

Bonn – Bonn Convention

CAMBA – China–Australia Migratory Bird Agreement

JAMBA – Japan–Australia Migratory Bird Agreement

ROKAMBA – Republic of Korea–Australia Migratory Bird Agreement