Coral Sea Marine Park

Australian Marine Parks Access Guideline

For activities on and adjacent to islands
in the Coral Sea Marine Park

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1 Introduction

The Coral Sea Marine Park (Marine Park) is a largely pristine and untouched region, known for its exceptional natural beauty and biodiversity. It remains relatively undisturbed, offering a rare glimpse into a well-preserved marine environment. Within the marine park are more than 60 islands with unique flora, fauna, and habitats.

The marine park natural, cultural and heritage values are protected and conserved under the Coral Sea Marine Park Management Plan 2018.

The marine park is home to diverse marine life, coral reefs, seabird foraging areas and rookeries, marine turtle foraging and nesting areas, unique vegetation communities and many other ecosystems, making it a critical location for conservation and scientific study. These remote ecosystems are sensitive and vulnerable to disturbances from events including severe weather, human activities, and the growing presence of invasive species, making management of and response to these pressures complex (Appendix 1 – Supporting Information).

Islands in the marine park are exposed to natural disturbance from severe weather events such as cyclonic, wet and drought conditions. These events place pressure on island ecosystem health and are predicted to increase under climate change.

Additional pressure from unmanaged human use and activities can easily disturb the natural balance. Islands in the marine park have historically been less exposed to human use and impacts due to their isolation. However, any human visitation to these remote islands, and the potential for increasing numbers of visitors, requires proactive and adaptive management to reduce the acute and cumulative impacts on their natural values.

The key impacts addressed in this access guideline include:

a) human presence disturbing habitats and the breeding success of seabirds and marine turtles

b) light pollution from vessels affecting the breeding success of seabirds and marine turtles and

c) biosecurity impacts (disease transmission and invasive pest species) introduced by human use that can affect native vegetation and influence the survival and breeding success of seabirds and marine turtles.

2 Scope

The Coral Sea Marine Park Management Plan 2018 sets out the allowable activities for the marine park. This access guideline sits under the management plan as a Park Protection and Management Program resource and provides marine park user guidance when seeking authorisation for allowable activities (camping, non-commercial remote piloted aircraft use, commercial media, commercial tourism, research and monitoring, and structures and works). It identifies best practice for all marine park users, including recreational use such as nature watching and boating.

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3 Definitions

Definitions included in this access guideline are for words and terms not already defined in relevant legislation and may be included in authorisations where appropriate.

authorisation holder – licence and permit holders, such as commercial tour operators and researchers.

authorisation holder's clients – all persons, other than the authorisation holder or their personnel, who perform or participate in the authorised activities.

high-water mark – the mark on the shore left by the water at high tide, and/or a permanent mark that indicates the maximum observed level of tide.

island – refers to Coral Sea Marine Park islands and includes permanent and transitional islands, cays and islets.

Marine Park users – all recreational users, authorisation holders and their personnel, including their clients, employees, agents, contractors and invitees using the Coral Sea Marine Park.

natural values – habitats, species and ecological communities within the marine park, and the processes that support their continued connectivity, productivity and function.

personnel – in the case of the authorisation holder, every person who performs, or is otherwise involved in undertaking or facilitating the authorised activities, or operation of the authorisation holder's organisation, including employees, contractors, subcontractors, agents, representatives, advisors and volunteers.

water sports – any of the following activities:

a) irregular driving of a motorised vessel – driving a vessel other than in a straight line by the most direct and reasonable route between two places, including:

   (i) driving in a circle or other pattern

   (ii) weaving or diverting or

   (iii) surfing down, jumping over or across any wave, swell or wash (e.g. jet skiing)

b) use of a vessel to tow a person on top of the water or in the air (e.g. waterskiing or parasailing);

c) kitesurfing; or

d) use of hovercraft or hydrofoil.

vehicle – an object used for transporting people or goods, such as a car, quadbike, beach trolley or cart.

4 Authorisation conditions applicable to activities on and adjacent to islands

4.1 Biosecurity

To help ensure biosecurity risks are reduced as far as practicable, the advice below encourages all marine park users to take reasonable steps to prevent the introduction of pests into the Marine Park and the transfer of pests between locations within and outside the Marine Park, including to other islands and the Australian mainland.

4.1.1 Marine park users accessing marine park islands should:

a) ensure the clothes they wear are freshly washed before accessing each island

b) clean and check all clothing, footwear, hats, bags and equipment for soil, seeds, sand, spores, plant material and pests

c) spray items that are going ashore with an insecticide

d) only take pre-packaged snacks onto an island, as fresh or uncooked food may carry pathogens

e) take all waste products back to the vessel – it is an offence to discharge, dispose or release waste on or in the vicinity of marine park islands

f) not take animals onto islands and

g) abide by all island signage—'No Unauthorised Access' means no access to any part of the island.

4.1.2 Marine park users should ensure that before accessing an island, all are briefed on relevant biosecurity requirements as outlined in the Be Pest Free in the Coral Sea Biosecurity Information Sheet.

4.1.3 Marine park users should ensure that all vessels have been antifouled in accordance with Australian Maritime Safety Authority (AMSA) and Department of Agriculture, Fisheries and Forestry (DAFF) requirements and are generally free from fouling. Vessels cannot be cleaned of fouling inside the marine park.

4.1.4 Marine park users should ensure that all vessels manage ballast in accordance with the Australian Ballast Water Management Requirements.

4.1.5 Marine park users should ensure that a licensed pest controller conducts a pest treatment of all vessels before accessing an island and annually thereafter. This must include:

a) a broad-spectrum insecticide treatment to control ants, spiders, cockroaches, bird mites, etc. and

b) long-term treatment for cockroaches, ants and rodents (e.g. cockroach gels, ant gels, lethal rodent bait traps).

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4.2 Island access

The islands are home to globally significant seabird populations and serve as nesting sites for the endangered and migratory green turtle. Green turtles nest above the high-water mark, and while most seabirds nest in the vegetated areas, nests/eggs are often found on open sand and can be hard to see. The advice below aims to minimise human disturbances by avoiding access to key nesting areas, reducing the risk of establishing introduced invasive pests and weeds, and reducing noise and light pollution.

4.2.1 Marine park users accessing marine park islands should not:

a) access islands between sunset and sunrise

b) access areas of vegetation on islands

c) access land above the high-water mark at any time

d) use a vehicle of any sort on islands

e) camp on islands

f) erect any structure on islands

g) feed, touch, chase, harass or disturb wildlife, or impede their movements

h) light fires on any area of the islands

i) conduct water sports within 500 m of islands

j) leave any industrial or domestic waste on islands

k) exceed 15 persons (including authorisation holder personnel) at any one time, up to a maximum of 30 persons per day on any island or

l) use a device or equipment that produces loud noise such as a generator or sound equipment.

4.2.2 Between sunrise and sunset, all non-essential lighting on vessels, including outdoor or deck lights, must be extinguished when not necessary for human safety or navigation. This includes using block-out blinds on all portholes and windows.

4.2.3 Marine park users should not access South Islet (Willis Islets) in Habitat Protection Zone (Reefs) 7 (Coral Sea Marine Park), which is the location of an occupied Bureau of Meteorology weather station. Generally, access is denied for any unauthorised activity at this location.

4.3 Commercial tourism and commercial media

4.3.1 If access to marine park islands is requested, authorisation may be issued pending assessment.

4.3.2 For authorisation holders, commercial tourism group size on islands must not exceed 15 persons (including authorisation holder personnel) at any one time, up to a maximum of 30 persons per day on any island.

4.3.3 The authorisation holder's clients must always be supervised by authorisation holder personnel during any access to islands.

4.3.4 The authorisation holder must not conduct water sports or commercial aviation tours within 500 metres of islands.

4.3.5 Commercial tourism must be conducted in accordance with all relevant provisions under Part 8 of the *Environment Protection and Biodiversity Conservation Regulations 2000* (EPBC Regulations).

4.4 Operation of remote piloted aircraft (RPA/drones)

4.4.1 RPA/drones must not be operated in the marine park without authorisation.

4.4.2 When an RPA/drone is being operated under authorisation, the authorisation holder must ensure that an observer is always present to monitor for the presence of, disturbance to, and potential collisions with wildlife.

4.4.3 The authorisation holder must ensure that an RPA/drone operated by personnel or clients:

a) is not operated within 100 metres of the shore of, or over an island

b) does not chase or harass wildlife, alter their course of direction, or restrict their movement or landing and

c) is immediately withdrawn from an area if wildlife exhibit signs of disturbance – for example, fleeing, leaving a nest, sudden alteration of a course or direction, attacking the RPA/drone or being put to flight.

4.5 Research and monitoring

4.5.1 Parts 4.1, 4.2 and 4.4 of this access guideline apply to research and monitoring activities on marine park islands. However, they may be varied subject to assessment. Informed detail should be provided to Parks Australia on application to enable assessment.

4.6 Structures and works

4.6.1 Parts 4.1, 4.2 and 4.4 of this access guideline apply to a range of activities including excavating (including dredging), erecting a structure, or maintenance of structures, and associated activities (including disposal of dredged material) on islands and placing moorings. However, they may be varied subject to satisfactory assessment. Informed detail should be provided to Parks Australia on application to enable assessment.

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5 Legislation and other regulatory materials

The Coral Sea Marine Park Management Plan 2018 is a legislative instrument and relevant to the implementation of this access guideline. General use, access, commercial media and commercial tourism activities are managed under Part 4 of this plan.

Other legislation, guidelines and advice relevant to the implementation of this access guideline include:

1) Schedule 6 – Australian Ramsar management principles in the EPBC Regulations, which requires that management plans must state mechanisms to deal with the impacts of actions that individually or cumulatively endanger its ecological character, including risks arising from

(i) physical loss, modification or encroachment on the wetland

(ii) loss of biodiversity

(iii) pollution and nutrient input

(iv) changes to water regimes

(v) utilisation of resources

(vi) introduction of invasive species.

2) Part 8 of the EBPC Regulations regulates access to genetic resources within Commonwealth areas for research and development purposes.

3) Part 12 of the EBPC Regulations addresses activities that may impact islands in Australian Marine Parks, which commercial tourism operators should be made aware of. For example, it is an offence to leave industrial or domestic waste on an island, to take a domestic animal onto an island, and to use equipment that produces loud noise on an island.

4) The National Light Pollution Guidelines for Wildlife includes recommendations for managing impacts from vessel lighting including:

(i) outdoor/deck lights are extinguished when not necessary for human safety

(ii) restrict lighting at night to navigation lights and

(iii) use block-out blinds on all portholes and windows.

5) The Be Pest Free in the Coral Sea Biosecurity Information Sheet (Director of National Parks) provides information on practical ways to ensure pests (such as plants, insects or rodents) are not introduced onto islands. The information sheet is provided to all Coral Sea Marine Park authorisation holders.

6) The Guidelines for Managing Visitation to Seabird Breeding Islands include various recommendations regarding reducing impacts on seabird rookeries from human visitation.

6 Monitoring and review

This access guideline will be reviewed annually. To further address potential impacts or new considerations that may contribute to further issues with biosecurity, work, health and safety of visitors or health of island and associated reef ecosystems, additional or modified conditions and/or other management tools may be applied. Management options may include limits on the number and timing of visitors accessing islands as well as park/area closures.

7 Reporting illegal activity

Illegal activity within an Australian Marine Park, can be reported by:

a) calling 1800 852 975 or

b) emailing Marine.Compliance@dcceew.gov.au.

Appendix 1 – Supporting Information

A1.1 Coral Sea Marine Park

The Coral Sea Marine Park (Marine Park) includes more than 60 islands managed under the Coral Sea Marine Park Management Plan 2018. Each island is zoned in accordance with the zone assigned to the surrounding waters. The zoning focuses mainly on the marine values whereas this access guideline aims to ensure the natural values of the islands are considered and management responses are proactive. The islands in the marine park are assigned National Park Zone (IUCN II) or Habitat Protection Zone (Reefs) (IUCN IV).
The Bureau of Meteorology (the Bureau) have a weather station on South Islet (Willis Islets) where Bureau staff are stationed. This is the only island in the marine park that has human occupation and is not open to public access. Several other islands have infrastructure including Bureau automatic weather stations, and Australian Maritime Safety Authority (AMSA) aids to navigation.

Twenty-one islands are vegetated and consist of rare ecosystem habitats, and 24 islands are within the Coringa-Herald and Lihou Reefs and Cays Ramsar site; these are identified as Biologically Important Areas (BIAs) for seabirds and marine turtles and have been highly protected since 1989.

Forest, shrubland and grassland communities found on the marine park islands support important breeding and roosting habitat for migratory seabird and shorebird populations, including globally significant seabird populations.

New Caledonian fairy tern (*Sternula nereis exsul*) have been observed nesting on Georgina Cay (Lihou Reef), Paget Cay (Marion Reef) and North Magdelaine Cay (Magdelaine Cays). There are only 350 birds (of this subspecies) known to exist, with approximately 50 breeding pairs observed in the marine park. This colony represents an estimated 30-50% of the global population. The New Caledonian fairy tern does not build nests, instead laying their sand-coloured eggs directly onto the sand/rubble (Figure 1).

The Herald petrel (*Pterodroma heraldica*) is classified critically endangered within Australia, with only 50 mature birds recorded breeding across two locations – Central Diamond Islet (Diamond Islets) and Raine Island (Great Barrier Reef). Raine Island is inaccessible to the public and has strict biosecurity quarantine requirements (*Queensland Government, 2024*).

The marine park islands include relatively undisturbed sand-cay habitat that is used for nesting by the globally endangered and migratory green turtle (*Chelonia mydas*).

Figure 1. A New Caledonian fairy tern nest on fine sand next to a marine turtle nesting pit. Two eggs can be seen in a small scrape in the middle foreground. Andrew McDougall © Queensland Government

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Appendix 2 – Pressures

A1.2.1 Human presence

Human presence on or adjacent to islands can have detrimental impacts on habitats, biosecurity and the breeding success of seabirds and marine turtles. On South Islet (Willis Islets) human occupation of the Bureau's weather station since 1921 has seen habitats and species impacted, including the introduction of many declared weed species.

Human presence has been confirmed as a major cause of reduced seabird nesting success and increased mortality in breeding adult birds and chicks, although different species have different levels of tolerance to disturbance (GBRMPA 1997; BirdLife International 2012). Human presence and associated noise pollution can disturb or flush out birds, leading to injury or mortality, particularly to chicks and eggs which are left exposed and vulnerable if abandoned by the parents (BirdLife International 2012).

For burrow-nesting bird species, humans may inadvertently walk on top of burrows collapsing them, which may damage, trap and kill adults, chicks and eggs. Humans can also trample eggs that are laid on the sand/rubble and are cryptic and difficult to see (Figure 1). Associated impacts can cause chicks to suffer stress that can impair immunity or reduce body mass at fledging. These effects can have long-term repercussions for the stability of bird populations (BirdLife International 2012).

The impact of human presence and disturbance on breeding seabird populations in the marine park has not been thoroughly researched, but impacts are consistent with those determined in the adjacent Great Barrier Reef Marine Park (GBRMP) where research indicates the decline of seabird populations is partially due to human disturbance (GBRMPA 2011). Benoit and Bretagnolle (2002) suggest human disturbance was the principal factor in the decline of populations of red-footed booby, black-naped tern and crested tern in New Caledonia. Dunlop (1996) cites a study which notes that the bridled tern was "prone to abandon colonies if subjected to human presence".

The environmental context can also influence how a breeding site will be affected. Borsa et al. (2010) reported that given the small surfaces of the islets and high densities of seabirds at the Chesterfield Islands in New Caledonia, even a few hundred visitors a year is likely to constitute a significant level of human disturbance. Typically, major natural losses in seabirds are episodic events which are well spaced in time and allow populations to recover their numbers. However, human disturbance can decrease the recovery time available by causing additional major (episodic) losses, or can reduce or prevent recovery by adding ongoing, cumulative, small (chronic) losses (WBM Oceanics and Claridge 1997).

Water sports may involve a vessel/craft/board that is moving rapidly at high speeds close to shore, producing noise and often changing course unpredictably. Whether it be from noise pollution or visual distraction, water sport activities such as jet ski use or kitesurfing close to an island may evoke escape or hiding responses in marine animals resulting in breeding and foraging disturbance, reduced vigilance, or abandonment of nests impacting breeding success (Brooker et al., 2023).

Camping activities prolong disturbance from human presence and noise pollution on islands. Camping structures such as tents and marquees reduce the area available for birds and turtles to nest, create barriers for turtles, pose entanglement risks, and pose a high biosecurity risk of introducing pest species, including seeds, ants and other invertebrate pests. Island ecosystems are also at significant risk from fire.

For the Coringa-Herald and Lihou Reefs and Cays Ramsar site, pressures and information gaps were identified in the Ramsar Ecological Character Description (Department of the Environment, Water, Heritage and the Arts 2006). Any change that includes further loss of the plant *Pisonia grandis*, and a difference of up to 20 % between any two 5-year periods in mean number of breeding pairs of red-footed booby or masked booby must be reported. This access guideline focuses on reducing human-induced impacts that may contribute to these declines.

Annual marine park health voyages by marine park managers and relevant experts have noted that the islands are not big enough to accommodate high tourism loads and impacts to the ecosystems are likely to be negative and significant. This access guideline aims to ensure proactive and preventative management of island access to reduce human disturbance on these unique island habitats while allowing for appropriate and sustainable use.

A1.2.2 Light pollution

Light pollution is artificial light that alters the natural patterns of light and dark in ecosystems and may adversely affect many species and ecological communities. It can change behaviour and/or physiology, reducing survivorship or reproductive output.

Light pollution can also have the indirect effect of changing the availability of habitat or food resources. Many seabirds spend most of their lives at sea, only coming ashore to nest, and all species are vulnerable to the effects of light pollution. Seabirds that are active at night while migrating, foraging or returning to colonies are most at risk to the effects of light pollution. Fledglings (chicks) are more affected by light pollution than adults due to the synchronised mass exodus of fledglings from their nesting sites. They can be affected by lights up to 15 km away (Department of Environment and Energy 2019).

The main human disturbance element that impacts on the success of turtle nesting relates to light pollution: adult female turtles may be deterred from nesting where artificial light is visible on a nesting beach, and hatchlings may become disoriented and be unable to find the sea. The effect of light up to 18 km away has been observed to affect turtle behaviour (Department of Environment and Energy 2019).

Most of the historic commercial tourism use in the marine park, including large cruise ships, have higher potential for significant light pollution effects if these vessels stop/anchor or use 'dynamic positioning' adjacent to islands between sunset and sunrise. This access guideline helps protect these sensitive seabird and turtle habitats from vessel light pollution.

A1.2.3 Pest species and biosecurity

The introduction of disease and pest species through human presence on islands is a significant threat to native vegetation, breeding seabird populations *(*Croxall et al. 2012*)* and marine turtles.

Seabirds are especially vulnerable to introduced predators (e.g. rodents or cats) causing impacts such as reduced reproductive success (through disturbance and predation of chicks and eggs), direct mortality through predation of adults, and ecosystem degradation (through invasive plants and herbivores modifying habitat structure) (Olsen et al. 2006).

Currently, there are no reported introduced predators on islands in the marine park. Historically, introduced species have been implicated in the decline of breeding seabird populations in the marine park. In the 1900s, mariners introduced the black rat, *Rattus rattus*, to the Coringa-Herald islands, which was linked to the decline of the brown booby and common noddy populations (Department of the Environment 2014).

Seabirds feeding in the open ocean transport large quantities of nutrients onto islands. This nutrient flows between pelagic, island, and coral reef ecosystems, enhancing the productivity of island fauna and flora and adjacent coral reefs. Research has demonstrated that the higher nutrient values associated with seabird populations results in herbivorous damselfish growing faster, and fish communities having higher biomass across trophic feeding groups (Graham et al. 2018). Therefore, any decrease in seabird populations can have a significant flow-on impact on a range of ecosystem functions.

Exotic ant species, *Tetramorium bicarinatum* (tramp ant) and *Pheidole megacephala* (African bigheaded ant) have been recorded on several marine park islands. These species can lead to an ecosystem imbalance on islands. This imbalance has led to outbreaks of the scale insect, *Pulvinaria urbicola*, which affected *Pisonia grandis* forests between 1991 and 2002. *Pisonia grandis* communities are a key natural value within the marine park. This vegetation community provides high-density nesting habitat for a wide variety of bird species, including the black noddy, which nest almost exclusively in *Pisonia* branches.

The roots of *Pisonia* trees also help to stabilise both wedge-tailed shearwater burrows and the cay/island during cyclone events. Prior to a scale outbreak, *Pisonia* occupied most of the interior on South West Coringa Islet. Post-outbreak, the *Pisonia* forest on this island has been completely lost and this is known to have impacted a range of seabird species (Batianoff et al. 2010). The significance of *Pisonia* is recognised internationally as scale outbreak events leading to a loss of *Pisonia* has been recorded globally. *Pisonia*

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communities within the marine park are currently now only found on North East Cay (Herald Cays) and Magdelaine Cay South (Magdelaine Cays). Research in the Capricornia region of the Southern Great Barrier Reef has confirmed *Pheidole megacephala* have been introduced to 11 coral cays, with establishment mainly attributed to the frequency of human visitation (Burwell et al. 2012).

To date, weeds have been recorded on two marine park islands – Bird Islet (Wreck Reefs) and South Islet (Willis Islets). The detected weeds have been introduced by human activity and may now be spreading within the affected islands through bird and human activity.

These weeds are replacing areas of geographically restricted native cay vegetation and if they continue to spread, habitat of sooty terns (and possibly other bird species) will be reduced or lost in entirety. All weeds are considered both a biosecurity and fire risk to the marine park.

Parks Australia and the Bureau of Meteorology have initiated a weed management project on South Islet to help restore the natural vegetation communities on the island and prevent further weed distribution throughout the marine park. A similar weed management project has started on Bird Islet.

The introduction of diseases, fungi and parasites through human visitation all pose a significant threat to the ecosystem on these remote islands. High Pathogenicity Avian Influenza (HPAI) virus, commonly known as H5 bird flu, is extremely contagious amongst birds. Since 2021, there have been outbreaks of HPAI H5N1 clade 2.3.4.4b in every continent other than Oceania. Outbreaks overseas have led to mass mortality events in poultry, wild birds and some mammals, particularly marine mammals. There is a small, but serious, risk of humans catching the H5 bird flu virus from close contact with infected birds. Simultaneously, people can spread the virus by exposing birds to contaminated clothing, equipment, or food. This creates an additional biosecurity risk associated with humans accessing islands in the marine park if an outbreak were to occur. If/when the virus does arrive in Australia, Parks Australia will implement the necessary precautions to protect both humans and wildlife, potentially including park/area closures.

While islands in the marine park are relatively isolated, visitation is likely to increase with an associated significant potential for the introduction of disease and pests. The resources needed to effectively monitor, reduce or eradicate disease and pests can be extremely costly. Therefore, this access guideline should help to ensure proactive and preventative management of human use of marine park islands to reduce risks of introduced/expansion of disease and pests.

A1.2.5 Climate change

The impacts of climate change on the marine and terrestrial environment are complex and may include changes in temperature, sea level, ocean acidification, sea currents, increased storm frequency and intensity, species range extensions or local extinctions, all of which have the potential to impact on marine park natural values. Impacts from these changes can be seen through increased weather and climate extremes such as severe fires, droughts, flooding, and storms (Commonwealth of Australia, 2021).

The most recent report of the Intergovernmental Panel on Climate Change finds the Earth is likely to reach global warming of 1.5°C from pre-industrial levels in the 2030s. This will result in further changes with increased temperatures and unprecedented extreme weather events.

The sex of sea turtle hatchlings is determined by the temperature of the sand the eggs are incubated in. Warmer temperatures create female hatchlings and cooler temperatures create males. Increasing global temperatures have caused the temperature of green turtle nests at Raine Island (Great Barrier Reef) to be too high for male hatchlings to develop since the 1990s. This means nearly all hatchlings since then have been female (DCCEEW, 2024). It is assumed that similar scenarios are playing out for green turtles on the marine park islands. Decreasing numbers of males will eventually impact the longevity of the species (DCCEEW, 2024).

Rising sea levels, more frequent sea-level extremes and more intense rainfall events occurring under changing climatic conditions may result in flooding of low-lying turtle nests, further negatively impacting hatchling success. Also, there is potential for human use to disturb or cave in turtle nests, affecting the sand temperature of the nests.

Reducing impacts from global climate change on the marine park islands is a difficult task and thus it is critical that impacts from the other identified pressures be alleviated. This access guideline takes a proactive approach in implementing management arrangements that will reduce the cumulative pressures on marine park islands identified above.

References

Batianoff, G.N, Naylor, G.C., Olds, J.A., Fechner, N.A. & Neldner, V.J. (2010). Climate and Vegetation Changes at Coringa-Herald National Nature Reserve, Coral Sea Islands, Australia. Pacific Science, 64 (1): 73-92.

Benoit, M.P. & Bretagnolle, V. (2002). Seabirds of the southern lagoon of New Caledonia; distribution, abundance and threats. Waterbirds, 25(2): 202-213.

BirdLife International (2012). Human disturbance at seabird colonies has a range of impacts. Presented as part of the BirdLife State of the world's birds website.

Borsa, P., Pandolfi, M., Andréfouët, S. & Bretagnolle, V. (2010). Breeding Avifauna of the Chesterfield Islands, Coral Sea: Current Population Sizes, Trends, and Threats. Pacific Science, 64(2):297-314.

Brooker, R. M., Carnell, P. E., Pocklington, J. B., Antos, M. J., & Weston, M. A. (2023). A review of the potential effects of recreational wind-powered craft on coastal habitats and wildlife. Journal of Environmental Planning and Management, 1-25.

Burwell C, Nakamura A, McDougall A, Neldner V, 2012, 'Invasive African bigheaded ants, Pheidole megacephala, on coral cays of the southern Great Barrier Reef: Distribution and impacts on other ants', Journal of Insect Conservation, vol. 16, pp.777-789.

Chapman F., Brushe J. and McDougall A. (Eds.) (2022) Environmental assessment of islets and cays of Tregrosse and Lihou Reefs, Coral Sea Marine Park, July 2021. Report to Parks Australia Division, Department of Agriculture, Water and the Environment. Queensland Parks and Wildlife Service and Partnerships, Department of Environment and Science.

Croxall, J.P, Butchart, S.H.M., Lascelles, B., Stattersfield, A.J., Sullivan, B., Symes, A. & Taylor, P. (2012). Seabird conservation status, threats and priority actions: a global assessment. Bird Conservation International, 22: 1-34.

Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2024), Raine Island, Australia Government.

Department of the Environment (2014). Species Profile and Threats Database [Online] http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl. Last accessed 12 May 2014.

Department of Environment and Energy (2017). Recovery Plan for Marine Turtles in Australia

'Recovery Plan for Marine Turtles in Australia, Commonwealth of Australia

Department of Environment and Energy (2019). National Light Pollution Guidelines for Wildlife, Commonwealth of Australia

Department of the Environment, Water, Heritage and the Arts (2006). Coral Sea National Nature Reserves (Coringa-Herald and Lihou Reefs and Cays) Ramsar Wetland Ecological Character Description, Commonwealth of Australia.

Director of National Parks (2023) Coral Sea Marine Park Environmental Assessment of Islands, Islets and Cays of the Southern and Central Reef Systems – 2023.

Dunlop, J.N. (1996). Habituation to Human Disturbance by Breeding Bridled Terns, *Sterna anaethetus*. Corella, 20(1): 13-16.

Environment Australia (2001). Coringa-Herald National Nature Reserve & Lihou Reef National Nature Reserve Management Plan *(Second Management Plan prepared for the Coral Sea National Nature Reserves)*, Commonwealth of Australia

Graham, N.A., Wilson, S.K., Carr, P., Hoey, A.S., Jennings, S. and MacNeil, M.A.(2018). Seabirds enhance coral reef productivity and functioning in the absence of invasive rats. *Nature, 559* (7713), pp.250-253.

Great Barrier Reef Marine Park Authority (GBRMPA) (1997). Guidelines for Managing Visitation to Seabird Breeding Islands, Prepared by WBM Oceanics Australia and Gordon Claridge for the Great Barrier Reef Marine Park Authority and Environment Australia-Biodiversity Group

Great Barrier Reef Marine Park Authority (GBRMPA) (2011). Vulnerability Assessment – Offshore and foraging pelagic seabirds. Townsville, Queensland.

Hemson G., Melzer R. and Russell M. eds (2020) Environmental Assessment of the Coringa Islets and Herald Cays in the Coral Sea Marine Park, December 2019. Queensland Parks and Wildlife Service and Partnerships, Queensland Department of Environment and Science.

McDougall A., Brushe J. (Eds.) (2023) Coral Sea Marine Park. Environmental assessment of islands, islets and cays of the southern and central reef systems. Coral Sea Islands Health Project. May-June 2022. Report to Parks Australia Division, Department of Climate Change, Energy, the Environment and Water. Ecological Assessment Unit, Queensland Parks and Wildlife Service and Partnerships, Department of Environment and Science.

Olsen, P, Silcocks, A & Weston, M. (2006). 'The state of Australia's birds 2006: invasive species', supplement to Wingspan, vol. 16, no. 4.

Queensland Government (2024). Herald petrel. The State of Queensland.

Queensland Parks and Wildlife Service (QPWS) (2010). Managing scale insect outbreaks in the Capricornia Cays, Queensland Government.

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