

Orpheus Island Research Station

Environmental Management Plan

2026 - 2030





**ORPHEUS ISLAND RESEARCH STATION
ENVIRONMENTAL MANAGEMENT PLAN
2026 – 2030**

Prepared for:

**Queensland Parks and Wildlife Service and Partnerships (QPWS&P)
To satisfy condition 10 of a S34 Authority
under the *Nature Conservation Act 1992*.**

***Version 6
June 2026***

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1. INTRODUCTION

1.1 Aims, Scope and Implementation

This Environmental Management Plan (EMP) is a revision of the Orpheus Island Research Station Environmental Management Plan 2020–2025 and aligns with the *Nature Conservation Act 1992 (NCA)*, *Environmental Protection Act 1994 (EPA)*, and *Environment Protection and Biodiversity Conservation Act 1999 (EPBC)*. It serves as the primary environmental management guide for all staff, students, contractors and guests of Orpheus Island Research Station (OIRS).

The EMP provides guidance for all projects, activities, and operations at OIRS that may impact the environment. It aims to minimise the environmental effects of research and station activities through effective management, communication, and client engagement. However, it is not a step-by-step substitute for a project-specific Environmental Impact Statement (EIS) or management plan. Instead, it offers a framework to help clients and staff understand and comply with legislation, regulations, and restrictions.

The EMP supports the management of limited-impact research (both extractive and non-extractive), permitted research, and education programs conducted on Orpheus Island and in the surrounding Marine Park, with a focus on the Orpheus Island Scientific Research Zone (SRZ) (SR-18-2007) (see Appendix 1). It outlines legislative responsibilities for university staff, students, and visitors and provides a clear reporting process for environmental incidents.

Additionally, the EMP consolidates procedures, permit information, and best practices to minimise environmental impacts while ensuring compliance with regulatory requirements. It also serves as a key reference document, linking to other faculty policies, procedures, and manuals governing site activities at OIRS.

As a working document, the EMP is regularly reviewed by OIRS, Research Division and Estate Division. For comments or inquiries, please contact the OIRS Manager.

1.2 EMP Revision History

Version	Date	Author	Reviewer	Authorised	Published Date
Draft	14/07/2025	JCalcraft	OIRS Manager	OIRS Manager	-
Final	2/06/2026	JCalcraft	OIRS Manager	OIRS Manager	21/07/2026
Version 1					
Version 2					
Version 3					

2. ABOUT ORPHEUS ISLAND RESEARCH STATION

2.1 Location and Zoning

Orpheus (Goolboddi) Island (18°37'S, 146°30'E) is located 16 kilometres (8 nautical miles) east off the mainland coast from Lucinda, within the Hinchinbrook Shire local government area. The island, part of the granitic continental Palm Islands group, is the second largest after Palm Island measuring at 12 kilometres long and comprising of 1368 hectares of dry woodlands, with Moreton Bay ash and acacias dominating, scattered rainforest gullies featuring Figs and Macaranga trees, grasslands, granite outcrops, beaches and bays, which are surrounded by fringing reefs. Travel to Orpheus Island takes approximately 45 minutes by boat from Lucinda.

Orpheus Island Research Station (OIRS) is situated on the shores of Pioneer Bay, on the island's western side, at the site of a former sheep station homestead. The station occupies a 2.692-hectare parcel of land leased from Queensland Parks and Wildlife Service and Partnerships (QPWS&P) within Orpheus Island National Park. Approximately 30% of the leased area has been developed, while the remainder remains in a natural or near-natural state. The adjacent marine environment is part of the Great Barrier Reef Marine Park (GBRMP) and State Marine Park. The marine environment is managed under a joint permit agreement between the Commonwealth and State governments. The boundary of the Great Barrier Reef Marine Park Family Island section lies at the low water mark.

Orpheus Island falls within several marine zones managed by the Great Barrier Reef Marine Park Authority (GBRMPA) being Marine National Park Zone (Green Zone), Conservation Park Zone (Yellow Zone), Habitat Protection Zone (Blue Zone), General Use Zone (Light Blue Zone) and a Public Appreciation area. The area directly adjacent to OIRS is zoned as a Scientific Research Zone which facilitates the activities of researchers. The Great Barrier Reef Marine Parks Zoning MAP 7 can be found for reference on the GBRMPA website.

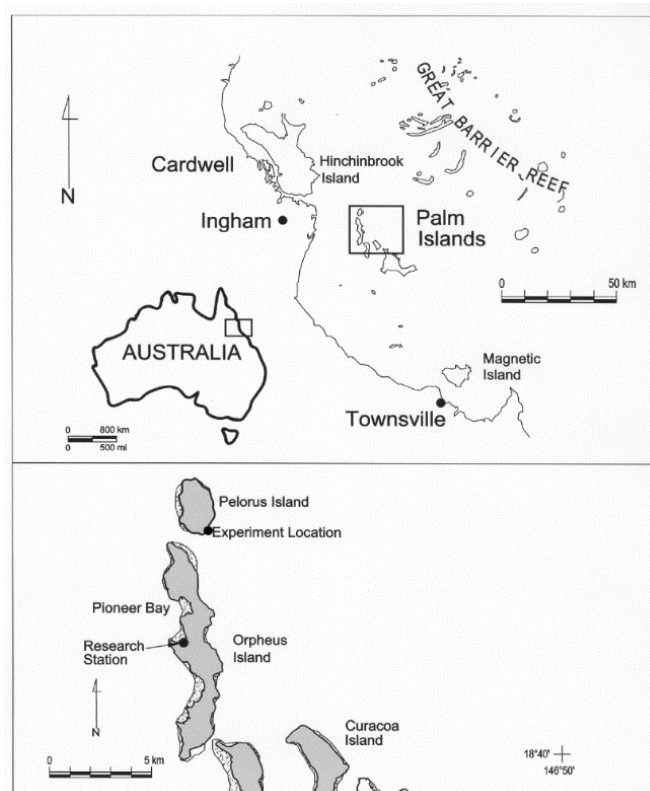


Figure 1. Location map of Orpheus Island Research Station, Central Great Barrier Reef, Australia

2.2 Tenure

The OIRS site lease was transferred to James Cook University on 14 February 1978. It was immediately operated as a Research Station under a special lease under Section 203(b) of the then *Lands Act* and now operates as a Section 34 lease under the *Nature Conservation Act 1992*. Since 1978 infrastructure has been developed with the current infrastructure of the OIRS comprising:

- Staff accommodation and workshop utilities to the northern end of the leased area.
- Research facilities including lecture theatre, wet and dry laboratories, library and dive facilities centrally located at the main beachfront arrival point near the office
- Share type visitor accommodation for researchers, students and guests at the southern end of the leased area.
- Tracks and service lines constructed throughout the area of leased land occupied by the Station.

OIRS is the only research station within the Central Section of the Great Barrier Reef Marine Park (GBRMP).

2.3 Climate

The climate on OIRS is strongly seasonal with wet and dry seasons. Because of the location of the island, the wet season elicits significantly more rainfall than the Dry Tropics Belt in Townsville, but considerably less than the Wet Tropics in Ingham. OIRS has access to local weather data from the BOM weather

station located at the end of Lucinda sugar wharf and its own weather stations on the Western and Eastern sides of the research station.

2.4 Cultural Recognition and Heritage

The Orpheus Island Research Station (OIRS) acknowledges the deep cultural significance of Orpheus Island and the surrounding Great Palm Group of Islands. For tens of thousands of years, these lands and waters have been cared for by the Manbarra people, the Traditional Owners whose enduring connection to Country is embedded in its stories, one of which is the MinggaMingga (Manta Ray Dreaming) story, landscapes, and seascapes.

In 2018, Palm Island commemorated 100 years since the placement of people on the island from their homelands and the beginning of the Bwgcolman people, which means 'one people from many groups'. The Manbarra people lead the MinggaMingga Land and Sea Ranger Program which seeks to work in collaboration with Bwgcolman historical people and together, the Manbarra and Bwgcolman peoples hold a shared responsibility for preserving and passing on the cultural heritage, knowledge, and traditions that continue to shape the identity of both people groups in this region.

We respectfully acknowledge their enduring spiritual, cultural and ecological connections to Goolboddi (Orpheus Island) Yanooa (Pelorus), Noogoo (Curacoa), Eumilli (Fantome) and other nearby islands within the Great Palm Group.

The Pioneer Bay area holds significant cultural heritage sites including shell middens and a rock-walled fish trap, as documented in Cultural Heritage Reports by Rasmussen and Cuff (2003) and O'Keefe (1991) and through consultation with Manbarra Elder, Walter Palmisland. These sites reflect the enduring cultural and historical presence of the Manbarra people to Goolboddi (Orpheus Island).

Shell Middens: Five shell midden sites have been identified within Pioneer Bay. While some of these sites have experienced disturbances due to natural erosion and wildlife activity, one particular midden, located on the northern foreshore, has been designated as a Cultural and Heritage Area by the EPA. Access to this site is restricted and permitted only under the supervision of a qualified person.

Fish Trap: A rock-walled fish trap in the southern sector of Pioneer Bay underscores the area's long-standing cultural significance, demonstrating the potential sustained use of this site by the Manbarra people.

OIRS is committed to ensuring that all operations respect cultural values and heritage. During site inductions, all staff, students, and visitors are informed of the significance of Manbarra people custodianship and the importance of respecting cultural protocols, sacred sites, and designated boundaries. If cultural materials are discovered during research or operational activities, work must cease immediately to allow for assessment and mitigation of potential impacts.

OIRS maintains strong, ongoing relationships with the Manbarra Elders Council (MEC) and the MinggaMingga Land and Sea Rangers, working collaboratively to ensure that all station activities are culturally informed, environmentally responsible, and aligned with the broader values of land and sea country stewardship. The continued involvement of the Manbarra and Bwgcolman peoples in research

and education planning and environmental management is vital to the protection of cultural heritage and the health of the surrounding ecosystems.

2.5 Marine environment

Orpheus Island is surrounded by a well-developed fringing coral reef, in close proximity to mid-shelf reef systems. Directly in front of the Orpheus Island Research Station (OIRS), Pioneer Bay features a 400-metre-wide intertidal reef flat of sand and rubble, supporting a diverse array of marine flora and fauna. A known 1,100 species of fish and 340 of the 350 known species of reef coral can be found in the underwater gardens of the surrounding fringing reef and adjacent mid shelf reefs.

The shoreline around OIRS includes sandy beaches with strand vegetation, cobble and boulder-strewn shores, and steep rocky outcrops. Stands of mangrove forests, dominated by red mangrove (*Rhizophora stylosa*), with populations of grey mangrove (*Avicennia marina*) and myrtle mangrove (*Osbornia octodonta*), provide critical habitat and feeding grounds for elasmobranchs and serve as nursery areas for migratory reef dwelling juveniles, including blacktip reef sharks (*Carcharhinus melanopterus*), shovelnose rays (*Glaucostegus typus*), and other fish species. Mangrove stands act as natural water filters and are key components in reducing shoreline erosion and encouraging sedimentation.

The Palm Island Group, including Orpheus Island, is recognised as a biodiversity "hot spot" within the Great Barrier Reef. Despite its proximity to the mainland, the region supports unusually high species richness in key indicator groups such as corals and sponges, highlighting its ecological importance. The fringing coral reefs around the island are well documented as sites of mass coral spawning. Ongoing research facilitated by OIRS continues to advance understanding of the region's diverse marine flora and fauna (Appendix 1).

2.6 Terrestrial environment

Orpheus Island spans the Wet Tropics and Brigalow Belt Bioregions, featuring diverse vegetation across different terrains and volcanic rocks. The OIRS lease site and surrounding National Park host a number of rare and threatened species. Common trees in undisturbed areas include Geijeras, Jasminum (native jasmine), Terminalia, Casuarinas, Red Tulip Tree, Hibiscus, and Vitex. Ground cover within the forests are minimal, and often naturally cleared by the site's megapodes.

The natural environments of the tenure are divided between four primary regional ecosystems, all of which are fire sensitive:

- 1) Regional ecosystem 7.1.1 - Mangrove closed scrub to open forest. Biodiversity Status; Endangered.
- 2) Regional ecosystem 7.3.10 - Simple-complex mesophyll to notophyll vine forest. Biodiversity Status; Endangered.
- 3) Regional ecosystem 7.2.7 - *Casuarina equisetifolia* and *Corymbia tessellaris* open forest. Biodiversity Status; Endangered.
- 4) Regional ecosystem 7.2.2 - Notophyll to microphyll vine forest on sands of beach origin.

To date, 52 plant species have been identified within the OIRS tenure. This includes five species listed as "*special least concern*" and one "*vulnerable*" species under the *QLD Nature Conservation Act 1992*. The five "*special least concern*" species are.

- *Livistona australis*
- *Cycas media* subsp. *Media*,
- *Dendrobium discolor*,
- *Geodorum densiflorum*,
- *Platyserium bifurcatum*.

A well-established population of the "*Endangered*" species, *Buchanania mangoides*, has also been recorded on site, consisting of two large specimens, six additional mature trees and 21 immature individuals. Within the OIRS tenure, this species flowers and fruits between October and February, and seedling recruitment is moderately high, though natural mortality occurs through the year. This population represents the southernmost known occurrence of *B. mangoides*, which is typically found in lowland coastal rainforest. Native species from the Palm Island Group are preferred for any rehabilitation of cleared areas. Revegetation efforts and the presence of threatened flora are tracked using the HORTIS database.

An Orpheus Island flora list was compiled in 2003 and The Qld Herbarium recorded 30 floral records from Orpheus Island. Most were collected by either M.J.O'Keefe (20 in 1988/89) or Barbara Waterhouse (AQIS). Flora and fauna surveys are ongoing and continue to expand botanical and ecological knowledge of the area. Updated species lists are available online and in hard copy at the Research Station. Data captured through these surveys is managed by the JCU Estate Directorate using the HORTIS database, which records species names, locations, and conservation status under the *Nature Conservation Act (NCA)* and the *Environment Protection and Biodiversity Conservation Act (EPBC)*. Any interaction with flora, fauna, listed threatened species, or species of special least concern, on JCU managed tenure is assessed by a JCU endorsed, suitably qualified ecologist or botanist. Interaction with fauna may require additional ethics, state or federal approval. Speak to OIRS staff for further guidance.

In addition to its botanical richness, the site supports diverse fauna, including 15 species of mammal, 31 species of reptile, 7 species of amphibian, and up to 135 species of bird. These are transient through the site, with the vast majority, in particular birds, being migratory. Many of these are also aquatic species.

3.0 USE OF ORPHEUS ISLAND RESEARCH STATION

3.1 Internal and external users

Internal users of OIRS encompass researchers, students and faculty members associated with JCU. External users range from various accredited and non-accredited educational and research institutes and government departments.

It is the responsibility of all users of OIRS to obtain appropriate permits, authorities and assessments before arriving at OIRS to perform their proposed projects or activities.

Research or education projects or activities conducted in and around Orpheus Island but not by clients of or in collaboration with OIRS are not the responsibility of OIRS.

3.2 User Days

Total User Days								
	2018	2019	2020	2021	2022	2023	2024	2025
January	55	30	0	0	32	60	87	35
February	208	0	306	163	90	527	432	12
March	292	379	344	206	84	280	402	798
April	547	409	0	460	366	690	515	86
May	449	617	0	59	215	735	1060	764
June	804	335	15	113	414	354	472	548
July	538	605	28	209	598	627	528	546
August	220	237	26	100	230	263	644	666
September	621	532	240	310	655	669	920	522
October	428	331	259	82	667	650	582	402
November	392	471	179	325	488	289	263	362
December	151	89	69	131	74	31	64	155
Year Total	4705	4035	1466	2158	3913	5178	5969	4896

Table 1. User days are calculated by multiplying the number per group and the nights on station. This number does not include contractors or volunteers engaged by OIRS, only research and education clients.

3.3 OIRS Fees

OIRS charges accommodation and equipment fees to cover the costs of running and maintaining the facility. JCU staff and students participating in coursework and research receive highly subsidised rates when an internal JCU cost code can be provided. Additional charges apply for additional serves such as gear hire, scuba cylinder fills, fuel, vessel use, mainland transfers, staff assistance and other specialised

support. The OIRS fee schedule is reviewed and updated annually and is available upon request from OIRS staff.

4.0 MANAGEMENT STRATEGIES

4.1 Biodiversity management

The OIRS biodiversity management strategy focuses on fostering a culture of biodiversity awareness and practise in identifying and mitigating threats to native species, such as invasive weeds, cane toads, rats and pathogens. All OIRS clients are sent guidelines via email prior to travelling to OIRS which includes compulsory biosecurity measures to be implemented before packing equipment brought to OIRS and again before boarding OIRS vessels. Vessel pre-departure checks and briefings emphasise best practice biosecurity checks per the QPWS&P and GBR&MP Biosecurity Risk Prevention Protocols. The research station manages biodiversity on Orpheus Island through targeted weed control, revegetation efforts, and the humane removal of faunal species that threaten native flora and fauna.

Routine grounds maintenance at OIRS also includes mowing, pruning, and tree surgery. Tree removal is only considered when absolutely necessary such as for fire safety and compliance, infrastructure preservation, or biosecurity management. Tree removal is permitted when necessary, such as for medical evacuation helipad clearing (2017) and new infrastructure projects (2021). Any clearing or tree removal for maintenance is performed only after site surveys and after consultation with a suitably qualified ecologist or botanist and the Director, Estate, Estate Directorate at JCU.

OIRS follows best-practice methods, prioritising the prevention of pest introduction, control of existing infestations and preventing further spread into the Orpheus Island National Park. Weed and pest species including Lantana (*Lantana camara*), Prickly Pear (*Opuntia cf. Stricta*), Mother of Millions (*Bryophyllum sp.*), and various ornamental plants are actively managed under the *Biosecurity Act 2014* and are guided by the Queensland Parks and Wildlife Service and Partnerships (QPWS&P) and the Department of Agriculture and Fisheries (DAF). Continuous monitoring and surveillance ensure early detection and outbreak prevention.

The biodiversity management program addresses invasive species such as Weeds of National Significance (WONS), Declared Plants, Environmental Weeds, and Cane Toads. This initiative is led by OIRS staff, supported by volunteers and JCU's TropEco initiative. Volunteers receive training in identifying and removing invasive species to enhance the native ecosystem.

4.2 Wildlife management

All visitors must adhere to the *Nature Conservation (Wildlife) Regulation 2006*, ensuring the protection of native Australian animals and their habitats.

Five mound nests up to 2 m high, belonging to the orange-footed scrubfowl (*Megapodius reinwardt*), are mapped within the lease area, visible as steep conical hillocks.

A database of rare, threatened, and endangered species is maintained by Environment Australia, while WildNet (EPA) and iNaturalist records species data from Orpheus Island, with visitors encouraged to contribute knowledge to aid in research and conservation efforts.

Invasive species management includes humane euthanasia of cane toads per RSPCA QLD guidelines, with a tadpole trap in place during the wet season. Ant and cockroach baits are periodically placed in buildings, and termite control follows QPWS&P approved chemical applications of Bifenthrin (expected to last up to 8 years) or other chemicals such as Fipronil.

4.3 Noise pollution management

Staff and clients of OIRS are made aware of noise pollution guidelines, with a number of strategies in place to protect sensitive wildlife habitat and the community.

To minimise overall noise pollution, visitors are encouraged to limit high-noise activities and a 10pm noise curfew is in place for all clientele. Research activities requiring sound-based or drone monitoring must consult with OIRS staff to assess their potential impact. OIRS staff can provide advice regarding breeding and nesting seasons for native wildlife, marine life, client movements and consideration of local helicopter operations (Orpheus Lodge Resort). All drone operations must comply with Civil Aviation Safety Authority (CASA), Queensland National Parks/QPWS&P and James Cook University regulations.

4.4 Energy management and light pollution

In February 2019, JCU installed a solar array and battery bank, significantly reducing diesel consumption. The facility now primarily operates on solar power during the day, shifting to battery storage and generator backup as needed. Generator use varies with weather conditions but is typically required once per night to recharge batteries.

Energy consumption is monitored daily, with ongoing efforts to improve efficiency. These include upgrading to more energy-efficient appliances, air conditioners, and equipment, as well as encouraging best practices such as using high-energy-demand equipment on sunny days and minimizing unnecessary energy use.

To reduce light pollution and energy consumption, JCU and OIRS are progressively installing light-sensitive switches, timers, and low-energy bulbs to minimise impacts on native wildlife, reduce energy consumption and enhance sustainability.

4.5 Air Quality Management Program

The Air Quality Management Program at OIRS monitors and manages air emissions throughout the facility. This program specifically addresses emissions from fume cupboards and scrubbers, refrigerant management, and odorous emissions. Indoor air quality and vehicle emissions are not included in this program; however, the outdoor air quality and the presence of mercury is passively monitored in collaboration with researchers from CSIRO and the University of Queensland (UQ).

The Air Quality Management Program is subject to regular audits conducted in accordance with the James Cook University auditing manual. When scrubbers or other emission control devices are installed,

audits will assess their effectiveness. The Workplace Health, Safety, and Environment Unit, Estate Directorate, maintains the auditing schedule, and air monitoring programs are established at their discretion to ensure ongoing compliance with air quality standards.

4.5.1 Fume Cupboards and Scrubbers

OIRS operates a fume cupboard in the laboratory area, which exhausts to the atmosphere via a rooftop stack. Before discharge, all exhaust is passed through a scrubber to minimise emissions.

To maintain operational integrity:

- Fume cupboard exhausts must be scrubbed before discharge.
- Scrubbers shall be maintained in good working order, and the fume cupboard must not be used if the scrubber is inoperable.
- All fume cupboard exhaust stacks must extend at least 3 meters above any roof penetration or access walkway, in compliance with AS2243.8 (2001)
- Optimally, stacks should be 3 meters above the highest access point or roofline within a 20-meter radius.

4.5.2 Refrigerant Management

To minimize environmental impact, refrigerants used on site should be carefully selected to reduce ozone depletion and greenhouse gas emissions. The following measures are advised:

- CFC refrigerants (e.g., CFC-11 and CFC-12) are strictly prohibited.
- All newly installed refrigeration systems must use at least HCFC (e.g., R22) or other lower-impact refrigerants.
- Existing systems operating on CFCs must be refitted with environmentally compliant refrigerants upon re-gassing.
- Refrigerant losses must not be addressed by merely topping up; instead, the entire system must be re-gassed in compliance with the above policies.
- No refrigerants are to be released into the atmosphere, in accordance with the *Environmental Protection Act 1994*.

4.5.3 Odour Management

Certain sources at OIRS, such as Clivus Multrum composting toilets and greywater grease traps, may emit odours at specific times of the year. To mitigate this regular maintenance schedules are in place and extraction fans have been installed to improve air circulation and reduce odour accumulation.

4.6 Erosion management

Erosion can occur within the OIRS lease due to several factors, including beach/sand movement, track erosion, changes to foreshore vegetation, and stormwater runoff. While beach erosion from wind and wave action, particularly during severe weather and heavy rainfall events also contribute to coastal changes, OIRS acknowledges that anthropogenic activities, such as vessel and vehicle movement, foot traffic mangrove loss, and weed infestations, can exacerbate erosion. To mitigate these impacts, OIRS has implemented several erosion control measures.

In 2012, a stormwater control system was established to reduce the intensity and velocity of stormwater from main access tracks to the beach. OIRS staff continue to maintain shallow drains, removing accumulated sand as needed. Energy absorption materials are placed adjacent to large, paved surfaces throughout the station to minimise stormwater flow and prevent erosion.

Vehicle access is strictly minimized, with drivers required to stay on designated tracks and avoid beach travel to prevent unnecessary sand displacement. All visitors are to use the designated foot traffic paths to reduce further erosion.

The 2012-2015 Environmental Management Plan (EMP) outlined that the Facilities Management Office is responsible for setting up monitoring programs across university-managed sites and budgeting for ongoing erosion assessments. To further monitor environmental impacts, OIRS plans to reinstate erosion monitoring programs to assess the stabilization or degradation of dunes and tracks.

Access to Pioneer Bay is restricted to high tides to preserve marine and terrestrial ecosystems. Construction of a jetty and more suitable access tracks on the southern end of Pioneer Bay is desirable from an environmental, safety and operational perspective. Consultation with QPWS&P and GBRMPA will be sought when JCU is able to move forward with this project in future.

By implementing these erosion control measures, OIRS aims to protect sensitive coastal ecosystems, ensure safe access, and maintain the long-term sustainability of research activities.

4.7 Waste and Chemical Management

The research station follows strict protocols to manage biological, chemical and general waste, fuel, and sewage, ensuring safety, environmental compliance and sustainable operations. No on-site disposal or burning of waste material is undertaken.

4.7.1 Biological Waste Management

Biological waste must be managed in an environmentally responsible manner that ensures compliance with relevant legislation and safeguards human and ecological health. This procedure applies specifically to non-infectious animal biological waste generated through research or instructional activities at the Orpheus Island Research Station (OIRS). Infectious, clinical, or cytotoxic wastes are excluded and must be managed under separate protocols. All biological waste must be sealed in non-hazardous plastic bags, clearly labelled, and stored in a dedicated freezer not used for food. Waste is to be held until the next scheduled barge waste transfer and then disposed of on the mainland by a licensed contractor.

4.7.2 Chemical and Battery Management

Chemicals on-site are listed in ChemWatch, with Material Safety Data Sheets (MSDS) stored in the office and appropriate chemical storage areas. Flammable chemicals are stored in a non-vented storage cabinet to contain combustible vapours whilst corrosive chemicals are stored in vented storage cabinets to evacuate hazardous vapours.

Researchers inform station staff of any dangerous goods they intend to bring to OIRS and ensure they can safely transport chemical waste after their visit. Chemical waste must be labelled, documented, and

never discharged into sinks, sewage systems, or the environment. Spills must be contained immediately and treated as hazardous waste.

Batteries associated with solar power and environmental monitoring equipment will be appropriately housed, secured and inspected periodically for evidence of deterioration, leakage, corrosion or contamination.

4.7.3 General Waste Management

OIRS makes every effort to recycle where possible and encourages individual users to sort and dispose of their recyclables thoughtfully. General waste is disposed of in large bins with lids to reduce access from wildlife, meat scraps and cooking oils are stored in a freezer for off-site disposal, organic waste is composted on-site and currently removed off-site. Waste oils and fuel filters are stored in bunded drums and removed off-site for appropriate disposal.

Grease traps are opened and inspected regularly. The levels of grease and oils are noted, and if buildup is excessive, it is pumped into a storage container and disposed of on the mainland by a licensed contractor, as this is regulated waste.

Palm Island Barge Company is contracted to remove all waste approximately every 2-3 months.

Additionally, OIRS and the JCU TropEco program aspires to further utilise organic food and compost to develop a small herb and vegetable garden plot. This initiative creates a circular economy, reduces emissions associated with food waste, food mileage and the transportation of compost off the island. This initiative also presents an opportunity to improve staff wellbeing, increases sustainability and presents an opportunity for teaching. Raised, fully contained garden beds over pavers will be used in conjunction with sterile growing media to prevent root, soil, or seed escape. Food gardens will be physically separated from the surrounding National Park and will not be in contact with native soils. Only QPWS&P-approved edible plant species will be cultivated, with no ornamental plants introduced. Plants will be managed to prevent flowering and seed set, and all plant waste will be securely composted or disposed of in accordance with biosecurity requirements. The garden will be regularly inspected and monitored by OIRS, with documented inspections and immediate corrective action taken if any risk of plant escape or spread is identified.

4.7.4 Sewage Waste Management

The facility discharges no sewage to land. All toilets on site are the Clivis Multrum continuous composting toilets which use no chemicals or water and have no polluting discharge to land. Composted and liquid waste is transported via barge to the mainland annually or when required for licensed disposal.

4.8 Fuel Management

Up to 20,000L of diesel and 12,000L of unleaded petrol are stored in above ground bunded tanks equipped with emergency safety features. These tanks are inspected annually to ensure compliance

with safety and environmental standards. Maintenance of the fuel emergency shut off valve and other equipment associated with the fuel storage area is carried out in accordance with maintenance schedules provided by the manufacturers.

Fuel is transferred to OIRS using multiple portable 1900L bunded tanks delivered by the re-supply barge (Palm Island Barge Company). Once fuel is transferred to the above-ground storage tanks, the empty portable tanks are returned to the mainland along with other waste via this barge. Station staff refuel vessels using a portable 500L refuelling tank at low tide to minimise spills associated with over-water fuel transfer.

In the event of a land-based spill, immediate containment and treatment as hazardous waste are mandatory, with strict measures to prevent discharge into water sources. On-site emergency spill kits are strategically placed at OIRS and on vessels for rapid response. Water-based spills are addressed by the vessel operator.

4.9 Asbestos

JCU is committed to ensuring a safe environment for staff, students, and visitors by managing asbestos-containing materials (ACMs) in accordance with its Asbestos Management and Control Policy. This policy aims to reduce ACMs across JCU assets and avoid acquiring new assets with asbestos. The supporting Asbestos Management Procedure outlines processes for identifying, monitoring, and managing asbestos hazards.

The Estate Directorate oversees an Asbestos Management Plan (AMP), which includes an asbestos register, priority removal works, air monitoring, and a scheduled asbestos survey. At OIRS, asbestos is progressively removed and replaced with safe alternatives as funding permits or when structures are damaged, ensuring risks to people and the environment are managed effectively.

4.10 Fire safety and mitigation

Unplanned or induced fires at OIRS may stem from two primary sources; 1) Natural Wildfires due to high fuel loads on the southwest boundary of the lease area and the fuel, generator and lithium battery storage sheds and; 2) Human Activities: Kitchens, BBQs, and the designated firepit.

4.10.1 Bushfire Risk Management Program

Whilst Orpheus Island Research Station is located in an area that could be at risk of a dangerous fire (<https://www.fire.qld.gov.au/postcode-checker>), the duration of a bushfire is dependent on weather conditions, vegetation and fuels available. The speed of onset or warning for OIRS is generally timely, as bushfires are relatively slow-moving due to the typically sparse to medium-density scrub and vegetation. Two creeks surround OIRS, providing additional protection, as does the rainforest vegetation, which itself acts as a natural fire break.

Regular trimming and maintenance of the surrounding vegetation is conducted to maintain existing fire breaks of approximately 2-4 metres around infrastructure thus reducing fuel loads and debris across the grounds (See Appendix 2 – OIRS Site Plan).

A controlled fire is permitted in a designated firepit one to two times per week to reduce and manage fuel loads (Appendix 2). This is lit and closely monitored by OIRS staff and conducted only in suitable weather conditions. No other open fires are allowed at OIRS, this rule is strictly enforced.

As mentioned in 4.8 (Fuel Management), fuels and flammable chemicals are stored in appropriate containers within designated, bunded and ventilated storage areas.

Additionally, OIRS works closely with the QPWS&P to ensure seasonal mitigation measures, such as planned burns, are supported to reduce fuel loads as part of the hazard reduction/conservation management program for parks and forests.

4.10.2 Fire Response Equipment and Preparedness

Residences and labs are equipped with electronic and battery-operated smoke detectors connected to a central fireboard. However, no heat or smoke detectors are currently installed in the fuel or chemical storage areas.

Fire reels are located at the Northern, Central and Southern areas of the lease near all buildings and residences. Fire extinguishers are readily available throughout the Research Station, and fire blankets are provided in all kitchens.

A mobile fire truck with a 500L water capacity is stationed next to the centrally located office and is ready to be deployed for medium to large fires, asset or building protection and to wet down vegetation margins if a nearby fire is approaching from surrounding slopes. The mobile fire truck can also be plumbed into the network of freshwater storage tanks across the site.

Staff training drills covering the use of fire response equipment, emergency and evacuation procedures and communication protocols are conducted at least annually. Fire response equipment is tested at the recommended intervals.

Safe escape from the site is available at all tidal heights with an emergency vessel moored at the reef crest at all times

Orpheus Island Research Station - Site Plan

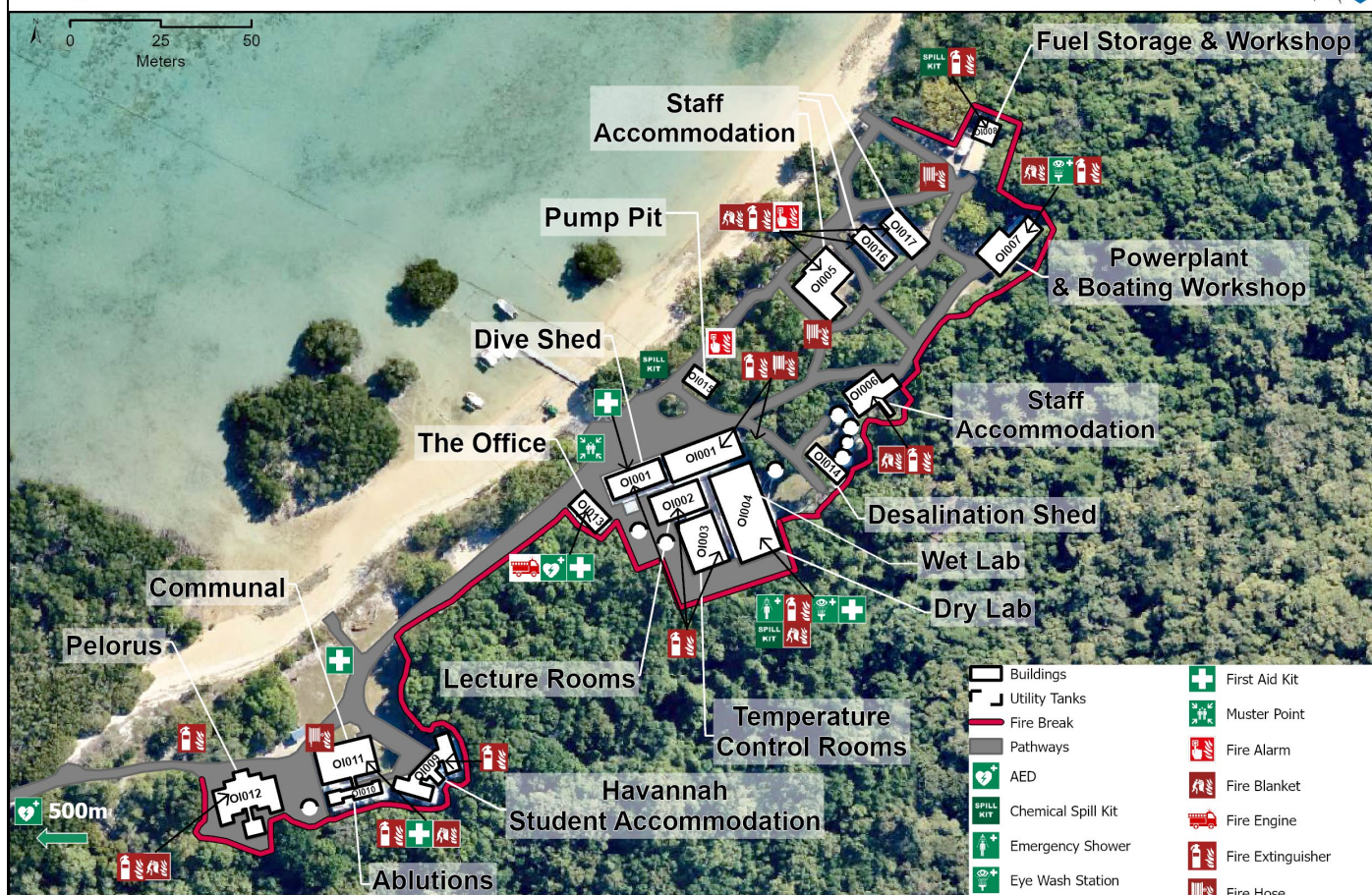


Figure 2. OIRS Site Plan 2026

4.11 Water Management

Water management at OIRS complies with environmental, health, and safety regulations, ensuring sustainability. Key principles include minimising freshwater use across all operations where possible and ensuring efficient wastewater management for environmental protection. Clients are encouraged to minimise freshwater use during their stay.

Following an incident in 2006, JCU upgraded the freshwater collection system with UV sterilisation to prevent contaminants from affecting human health and ensuring potable water meets ANZECC drinking water guidelines. A maintenance and testing schedule (6 and 12 monthly) is in place to ensure potable water quality.

OIRS does not extract groundwater; instead, rainwater is collected and stored in a network of freshwater storage tanks (See Figure 3 and Figure 4 OIRS Site Plan – Freshwater) across the site and is supported by a desalination system when required.

Each laboratory has designated wastewater streams:

- **Laboratory wastewater** – Three sinks drain into a grease trap and soaker trench.

- **Return seawater** – Spill drains via discharge pipe through an outlet at the mangroves. No chemicals or hormones are permitted to be disposed of at OIRS.
- **Dry lab wastewater** – Currently discharges into the sand.

There are no facilities for machinery or equipment washdowns. Servicing and repairs must be conducted on a concrete surface or sufficient ground protection put in place to contain spills and prevent ground contamination, such as; oil pans, oil absorber pads, tarpaulin etc. Any oil spills must be cleaned up and waste disposed of appropriately.

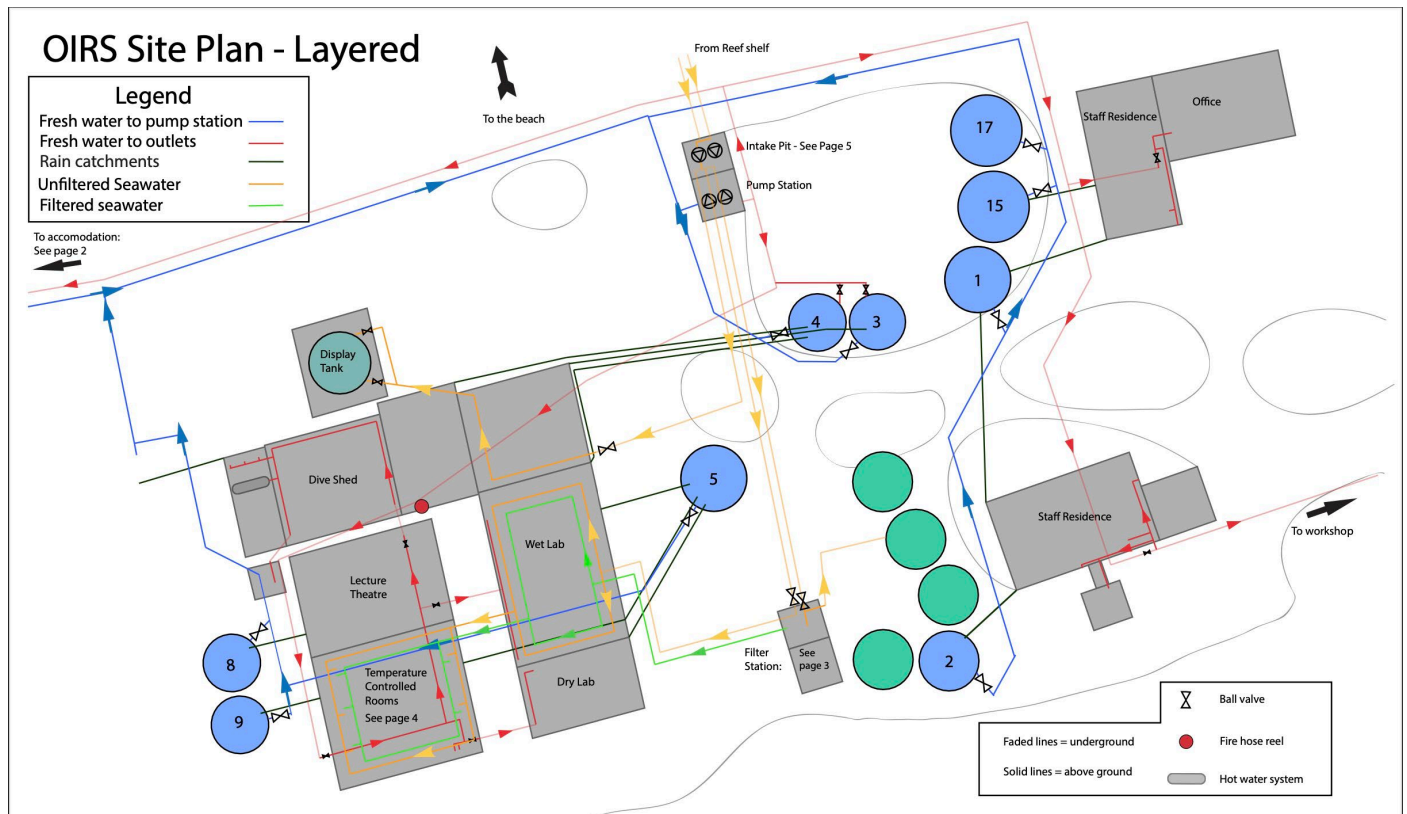


Figure 3. OIRS site plan – Freshwater - Central and Northern Section

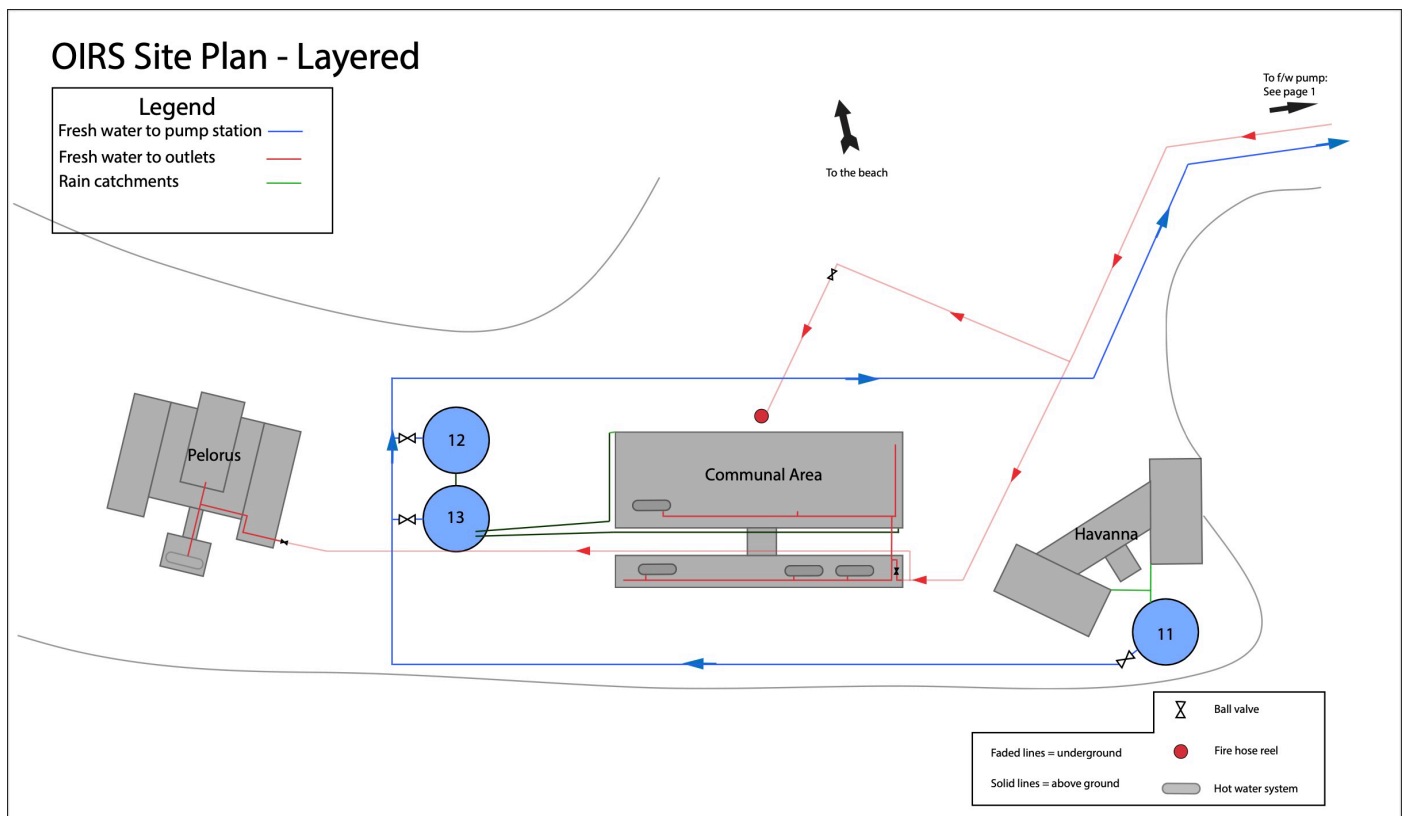


Figure 4. OIRS Site Plan – Freshwater - Southern Section

4.11.1 Saltwater Intake System

OIRS operates a Saltwater Intake system that draws seawater directly from the reef crest within Pioneer Bay, Orpheus Island. The intake pipelines run in a westerly direction across the reef flat west of the pump pit on the research station. The seawater is then distributed between the tank farm, display tank, wet laboratories, research aquariums and desalination plant. This Saltwater Intake system feeds all the aquaria facilities (display tank, wet laboratories, research aquaria) on-site as well as the desalination unit and the emergency firefighting equipment. This system consists of two (2) seawater intake pipelines, one (1) saltwater/brine discharge pipeline and two (2) emergency discharge pipes. The Saltwater Intake system draws between 1.6 -6 litres per second with the average intake being 2.9 litres per second.

In accordance with GBRMPA Permit (G21/42208.1), seawater samples of the pipeline's discharge are taken every 6 months and analysed for the following parameters:

- Surface water temperature
- Salinity
- pH level
- Total Dissolved Solids (TDS)
- Dissolved Oxygen levels (DO)

Inspections and necessary maintenance of the seawater intake lines are carried out monthly when the intake lines are alternated. OIRS notifies GBRMPA in writing prior of any planned installation, removal or modification of any part of the saltwater intake system.

4.12 Display Tank and Aquaria

OIRS maintains a large display tank at the front of the dive facility, designed for visitor enjoyment and educational purposes. The tank showcases local marine life from Orpheus Island Reefs, housing only GBRMPA - permitted species, with no protected species included.

All marine life is ethically collected under GBRMPA and Fisheries permit conditions, housed, and released in accordance with Section 2.2.33 (ii) of the Australian Code for the Care and Use of Animals for Scientific Purposes reporting to the JCU Animal Ethics Committee annually and at the completion of the project approval (currently 2027).

The display tank and aquaria operate on an open flow-through system, ensuring only uncontaminated seawater is returned to the environment. Any contaminated seawater is collected by the responsible person and disposed of appropriately. Where necessary, the responsible person will transport contaminated seawater off the island. Aquaria is manually cleaned without chemicals and remain empty when not in use.

4.13 Moorings

Under Permit G21/42208.1, OIRS is authorised to operate 15 mooring facilities and 7 marker buoys (Table 2) in Pioneer Bay, Orpheus Island. All moorings are inspected annually, and compliance certificates are obtained to confirm they are maintained in accordance with approved specifications and remain fit for purpose under the conditions of the permit.

OIRS encourages the use of moorings to minimise the risk of anchor related damage to the reef. Anchoring is only permitted on sand or bare rock to ensure sensitive marine habitats are not impacted.

Table 2: List of OIRS Buoys and Moorings

Buoy/Mooring #	Site Name	Depth (m)	DGPS Co-ordinates
B1	West Cardinal Mark - Northern	6.5	18°36.454' S 146°29.234' E
B2	West Cardinal Mark - Middle	12	18°36.516' S 146°29.157' E
B3	West Cardinal Mark - Southern	15	18°36.664' S 146°29.061' E
B4	5 Knot Buoy	6	18°36.682' S 146°29.177' E
B5	Swimmers Buoy	13	18°36.683' S 146°29.025' E
B6	No Anchor Buoy	12	18°36.733' S 146°29.956' E
B7	UW Pipeline - No Anchor Buoy	6	18°36.663' S 146°29.138' E
GM0518	Reef Mooring 1 - Site M1	7	18 36.681'S 146 29.090'E
GM0519	Reef Mooring 2 - Site M2	8	18 36.665'S 146 29.131'E
GM0731	Reef Crest Mooring - Site M3	8	18 36.700'S 146 29.069'E
GM0785	Reef Flat Mooring 2 - Site RM1	1/Dry	18 36.736'S 146 29.246'E
GM0786	Reef Flat Mooring 3 - Site RM2	1.5/Dry	18 36.726'S 146 29.223'E
GM0787	Mangrove Mooring - Site RM4	1.5/Dry	18 36.767'S 146 29.317'E
GM0788	Southern Dinghy Mooring - Site BM2	1/Dry	18 36.803'S 146 29.377'E 18 36.791'S 146 29.366'E
GM0789	Long Boat Mooring - Site BM6	1/Dry	18 36.786'S 146 29.398'E 18 36.769'S 146 29.377'E

GM0790	Challenger Mooring - Site BM4	1/Dry	18 36.792'S 146 29.391'E 18 36.779'S 146 29.372'E
GM0791	Pioneer 1 Beach Mooring - Site BM1	1.5/Dry	18 36.807'S 146 29.373'E 18 36.787'S 146 29.355'E
GM2727	Reef Flat Mooring 2 - Site RM1	1/Dry	18 36.744'S 146 29.228'E
GM2733	Temporary Mooring 5 - Site M5	7	18°36.372'S 146°29.225'E
GM2736	Temporary Mooring 5 - Site M5	5	18 36.372'S 146 29.225'E
GM2740	Northern Dinghy Mooring - Site BM3	1/Dry	18 36.801'S 146 29.380'E 18 36.788'S 146 29.369'E
GM2743	Southwind Mooring - Site BM3	1/Dry	18 36.789'S 146 29.394'E 18 36.776'S 146 29.374'E

There are several public moorings around Orpheus Island however these are not under the operation or responsibility of OIRS.

4.14 Boating

OIRS has a fleet of seven vessels (Table 3) that are used for research and education purposes in the surrounding and adjacent waters of the Palm Island group. The vessel program is covered under permit G21/42208.1.

Table 3: List of OIRS fleet vessels

Vessel Name	UVI	Length	Pax + Crew
Challenger IV	430163	11.30	23+ 2
Pioneer II	459416	7.2	10 + 1
Auriga	444892	6.3	6 + 2
Research Dinghy 1	427102	4.90	9 + 1
Research Dinghy 2	426891	4.90	9 + 1
Research Dinghy 3	427892	4.90	9 + 1
Research Dinghy 4	429892	4.90	9 + 1

When operating an OIRS vessel at all times Queensland Maritime laws, this EMP and James Cook University Boating Policies and Procedures must be followed. Abiding to such operational procedures ensures the fleet remains fit for purpose. Where possible moorings will be used as the primary method of securing a vessel as opposed to anchoring. Anchoring is only permitted on sand or bare rock to ensure the reef environment is free of unnecessary damage.

4.15 Pontoon/Pulley System

The pontoon/pulley system located on the foreshore of OIRS assists with vessel management in the intertidal zone. The attached pontoon is not used for loading and unloading as this is done with the tractor and luggage cages. The pontoon is 3.33 m wide by 9.10 m long made of a corrugated steel board base with polyethylene piping for fender rim – both painted white for UV reflectivity. The pontoon/pulley system in place at Pioneer Bay beach does not impact on any Matters of National Environmental Significance (MNES) in the area.

The Pontoon/Pulley Cyclone Management Plan (CMP) provided in Appendix 2 details management of the pontoon and pulley system to ensure the facility remains fit for purpose and is safeguarded during extreme weather events minimising damage from Research Station infrastructure to the surrounding environment during a cyclone.

4.2 Classroom on the Reef Live Streaming Program

The Classroom on the Reef (COTR) program is a network of environmental monitoring infrastructure associated with education, research and public outreach activities conducted by James Cook University at Orpheus Island Research Station. The program provides access to real-time data and supports improved understanding of Great Barrier Reef ecosystems.

Infrastructure associated with the COTR program was installed within and adjacent to the OIRS lease area at two different locations in 2017. One site is located on the Western side of Orpheus Island in Pioneer Bay (18°36'45.47"S 146°29'2.81"E) and the other site is located on the Eastern side of Orpheus Island in Rocky Bay (18°36'41.63"S 146°29'57.67"E). Each site includes a weather station, above and underwater cameras, environmental sensors, communications cabling and is powered by solar panels and batteries. Whilst originally connected via fibre-optic communications cable, as of 2026 all communications are via Starlink and Ubiquity antennas. Each set of camera and sensor systems have sheathed underwater cable secured to the seafloor via dedicated bricks. Beach poles are approximately 1-2m tall and cover an area of approximately 2m³ including solar panels.

All maintenance, repair, replacement and operational activities associated with Classroom on the Reef infrastructure is undertaken in a manner that minimises impacts on the surrounding natural and cultural environments and in accordance of this Environmental Management Plan including but not limited to:

- Section 4.1 Biodiversity Management
- Section 4.2 Wildlife Management
- Section 4.6 Erosion Management
- Section 4.7 Waste and Chemical Management
- Section 6.0 Research and Education Management

All works associated with Classroom on the Reef infrastructure must minimise disturbance to native vegetation, wildlife habitat, cultural heritage values and the surrounding terrestrial and marine environments. Any environmental incidents, biosecurity risks, pollution events or damage to infrastructure must be reported through OIRS incident reporting processes and managed in accordance with relevant JCU procedures. Through implementation of these controls, Classroom on the Reef infrastructure continues to support environmental monitoring, research and education outcomes while protecting the environmental and cultural values of Orpheus Island National Park and the surrounding Great Barrier Reef Marine Park.

5.0 SITE INDUCTIONS

5.1 Site and Safety Induction

Upon arrival at OIRS, all visitors receive a Site and Safety induction. They will be required to sign the induction documentation that states they fully understand the site, safety and operational conditions as well as the obligations outlined in this EMP. The site and safety induction is reaffirmed annually and is valid for a calendar year. Any changes or modifications made on-site may require an additional induction to be provided to returning visitors. The OIRS Site and Safety Induction covers:

- Traditional Owner Acknowledgment and Cultural Heritage Guideline
- Site Familiarisation and Environmental Hazards
- Site Emergency Evacuation Procedures
- Site First Aid and Firefighting equipment locations
- OIRS protocols including National Park, GBRMP Zoning, Permits, Biosecurity and Invasive Species
- OIRS protocols for facilities, vessels, land and water activities
- OIRS protocols for Chemical and Waste Management

5.2 Plant Inductions

OIRS has certain plant and equipment on-site that require inductions and training by OIRS Station Staff before use. These include the Buggy, Tractor, certain handheld and electric tools as well as laboratory equipment. Local on-site inductions will be conducted by OIRS Station Staff when required before use of any of these items.

5.3 Vessel Inductions

All OIRS vessels require OIRS Station Staff and users to be inducted before operating any of the fleet vessels. Any persons intending to operate a vessel will hold and upload relevant marine licences and certifications in the JCU Boating and Diving register. Once on-site at OIRS they must complete a practical induction with an OIRS staff member and be deemed competent before they are permitted to operate any OIRS vessels.

5.4 Snorkelling and SCUBA Inductions

OIRS Station Staff will discuss snorkelling activities with users before commencement of research and/or education activity. This will ensure operations are being conducted in accordance with permit condition, OIRS Station operations, this EMP, relevant policies or legislation, as well as in a safe manner to protect the environment and the participants. All OIRS users who plan to conduct snorkelling activities as part of their research and/or educational activity must be inducted on site at OIRS.

All OIRS users who plan to conduct scuba operations as part of their research and/or education activity must be inducted on OIRS procedures either with the Boating and Diving Unit in Townsville or on-site at OIRS. As part of client communication OIRS Station Staff will discuss research and/or education scuba operations with users before commencement of research and/or education activity. This will ensure operations are being conducted in accordance with permit condition, OIRS Station operations, this EMP as well as any relevant policies or legislation.

6.0 RESEARCH AND EDUCATION MANAGEMENT

6.1 Permits

Marine research or education activities are conducted within the SRZ or other permitted zones in accordance with permission from GBRMPA, other relevant governing agencies and this EMP. The permit holder must inform and ensure that all persons participating undertake the relevant training, restrictions and allowances related to the permit in which they are working under. Some permits that may be required for a user to conduct their research and/or education activities may fall under the following authorities:

- GBRMPA Education or Research Permit
- Limited Impact Permit
- Department of Environment, Tourism, Science and Innovation (DETSI)
- Department of Agriculture, Fishers and Forestry (DAFF)
- Animal Ethics

It is the responsibility of the user, not OIRS, to ensure they apply for, obtain and remain compliant with the appropriate permits for their research. However, OIRS can offer advice and assistance if requested. If clients are unsure or need clarification, they are advised to contact GBRMPA directly.

6.2.1 Research Permits

Research permits are required for all research that is conducted within the Great Barrier Reef Marine Park. This can include but is not limited to collection of samples, manipulative research or any research within the Great Barrier Reef Marine Park.

The Great Barrier Reef Marine Park Zoning Plan 2003 (the Zoning Plan) provides for “as-of-right” research to be conducted in the Marine Park without the written permission of the Authority providing certain conditions are satisfied. One such condition is that the research being undertaken is a component of a research project or an educational program conducted by an accredited educational or research institution.

GBRMPA has a Memorandum of Understanding (MoU) with JCU to conduct “as-of-right” scientific research or limited impact research in the Great Barrier Reef Marine Park. GBRMPA recognises the important role that research plays in contributing to the understanding of the Great Barrier Reef (GBR) and that there may not be a need for individual researchers to obtain permissions if their parent organisations are accredited research providers.

All research needs to be conducted in line with JCU’s MoU, Code of Conduct, this EMP and research permit conditions. It is also the responsibility of the permit holder to ensure all permit reporting, equipment retrieval, return of specimens, shut down of projects and activities or any other portion of the project is conducted in accordance with the permit requirement and this EMP at the conclusion of the project and activity.

Further information or applications can be made directly to GBRMPA.

6.2.2 Limited Impact Permits

Limited Impact Permit (LIP) research can only be conducted by GBRMPA accredited institutions that have a Memorandum of Understanding (MoU) with GBRMPA. James Cook University is a GBRMPA accredited institute.

All LIP research must be conducted within accordance with the issuing institution's MoU and this EMP. It is the responsibility of the permit holder to ensure they are performing within the limits of their LIP permit. A letter of authorization from the accredited institute needs to be presented to OIRS staff before any projects and activities are commenced in affiliation with OIRS.

All projects and activities under an LIP can only be conducted in General Use, Habitat Protection, Conservation Park, SRZ, Buffer (non-extractive) and Marine National Park (non-extractive). It is also the responsibility of the permit holder to ensure all permit reporting, equipment retrieval, return of specimens, shut down of projects and activities or any other portion of the project is conducted in accordance with permit requirement and this EMP at the conclusion of the project and activity.

The condition on sampling under a LIP can be found under Regulation 19 & 20 of the Great Barrier Reef Marine Park Regulations 2019. Please be aware that if users do not comply with LIP and EMP guidelines this is a contravention of the Zoning Plan and will make the researcher and/or institution liable to prosecution. In addition, the user's accreditation may be revoked.

6.2.3 Education Permits

All education programs and activities that are conducted within the Great Barrier Marine Park require an education permit from GBRMPA. Users can apply for a standard education permit or request extra authorities upon application with GBRMPA. For information on application guidelines, visit the GBRMPA website.

Any animals collected for educational programs or activity purposes require ethics approval from the JCU Animal Ethics Committee.

6.3 Site Registration

The aim of site registration is to reduce overuse or conflicting use of the SRZ. Site registration will also enable OIRS to contact owners if equipment is abandoned or needs to be removed for whatever reason. All new research sites must be discussed with OIRS Station Officers before any research or activity is commenced. In addition, all equipment must be clearly marked and removed upon completion of the research activity. Site registration will be reviewed and updated as required.

Users must note that equipment deployed without identification or a permit number will be removed from the marine park without prior notification.

6.4 Specimen Collection

For the purposes of research or other station activities marine fauna may be collected and released in certain conditions and in accordance to permit requirements. Protected species must not be collected.

Permit holders are responsible for the health and wellness of the flora and fauna collected from the Marine Park. Only healthy specimens are to be released back into the GRBMP at the site of collection where possible and under any other relevant permit conditions.

6.4.1 Local Collection – Marine

Local collection of marine life for research and education purposes will be conducted in accordance with relevant permits (GBRMPA, Fisheries, Ethics).

6.4.2 Local Collection – Terrestrial

Local collection of terrestrial plants, invertebrates, soil and leaf litter within the Authority area is approved under this EMP however must be discussed in advance with OIRS staff to ensure no conflicts with other programs. If approved, an “Access to Living Collection Request” must be submitted via JCU’s internal systems with details of species, number of impacted individuals, dates and locations.

6.4.3 Non-Local and Overseas Specimens

Non-local and overseas specimens will only be bought to OIRS after approval from the relevant governing bodies and the OIRS Station Manager. Any non-local organisms will be contained in closed systems to prevent translocation. All seawater will be collected and disposed of to prevent translocation.

6.4.4 Limited Impact Permit sampling

Specimens collected under the permission of a LIP must occur within the SRZ. Collection needs to be discussed with OIRS Station Staff and a letter of authorisation from the accredited institute needs to be presented to OIRS station staff before any collection commences.

7.0 OIRS MONITORING AND REPORTING

OIRS shall monitor and keep records of the following key items relating to the operation of its facilities and in line with permitted activities under GBRMPA permits and JCU policies and procedures:

- The number of research and education groups visiting OIRS
- A list of animals collected and held in the OIRS Display Tank
- Research Sites currently in use
- Potable water quality testing (6 monthly)
- Seawater discharge water quality monitoring (6 monthly, see Section 4.2)
- Mooring inspection report (annually, see Section 4.2)
- Seawater intake pipeline inspection (biennially, see Section 4.2)
- Maintenance inspections of infrastructure (pontoon/pulley, desalination plant)
- Records of non-compliance

7.1 Non-compliance Reporting

Users and OIRS station staff have a responsibility to report any and all non-compliance and ceasing non-compliant activities immediately until the matter is corrected. The OIRS Station Manager reports all non-compliance incidents to the relevant JCU and external stakeholders or authorities as soon as practically possible.

8. REVIEW

The OIRS Environmental Management Plan (EMP) is a dynamic document that may be updated or amended by the OIRS Station Manager or the Estate and Research Division Directorates, JCU before the scheduled review date. A comprehensive review is conducted every five years, with the next review aligning with the conclusion of the current 20-year lease, signed on 10 March 2009.

9. LEGISLATION AND OTHER RELEVANT DOCUMENTS

- [Aboriginal Cultural Heritage Act 2003](#)
- [Biosecurity Act 2014](#)
- [Cultural Record \(Landscapes Queensland and Queensland Estate\) Act 1987](#)
- [Environment Protection & Biodiversity Conservation Act 1999](#)
- [Environment Protection & Biodiversity Conservation Regulations 2000](#)
- [Environment Protection Act 1994](#)
- [Environment Protection \(Air\) Policy 2019](#)
- [Environment Protection \(Noise\) Policy 2019](#)
- [Environment Protection Regulation 2019](#)
- [Fisheries Act 1994](#)
- [Fisheries Regulations 2008](#)
- [Great Barrier Reef Marine Park Act 1975](#)
- [Great Barrier Reef Regulation 2019](#)
- [Great Barrier Reef Marine Park \(Environmental Management Charge – Excise\) Act 1993](#)
- [Great Barrier Reef Marine Park \(Environmental Management Charge – General\) Act 1993](#)
- [Marine Parks and Queensland Parks and Wildlife Service and Partnerships Regulations](#)
- [Nature Conservation Act 1992](#)
- [Nature Conservation \(Animals\) Regulation 2020](#)
- [Nature Conservation \(Wildlife\) Regulation 2006](#)
- [Queensland Heritage Act 1992](#)

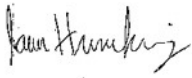
Other Relevant Documents may include:

- OIRS Management Guidelines 2026-2030
- OIRS Emergency Preparedness and Response Plan
- OIRS EMP 2020 – 2025
- OIRS EMP 2016 - 2024
- JCU Code of Conduct
- JCU Scientific Diving Operations Manual
- Regional Ecosystem Description Database (REDD), maintained by the Queensland Herbarium
- QPWS&P and GBR&MP Biosecurity Risk Prevention Protocols Version 1

References

Rasmussen C.E. and Cuff. C “Cultural Heritage Report – Orpheus Island” April 2003

O’Keefe, M.J. (1991) “Geography and archaeology of the palm islands and adjacent continental shelf of North Queensland”. Unpublished M.A. Thesis, James Cook University of North Queensland, Faculty of Arts. pp.261.

Approval of Environmental Management Plan & Management Guidelines	
APPLICANT:	Orpheus Island Research Station (OIRS) James Cook University
PROJECT NAME : PURPOSE AND/OR DETAILS OF INFRASTRUCTURE:	OIRS 2026-2030 Environmental Management Plan (EMP) -V6 June 2026 Management Guidelines -V4 June 2026
PROTECTED AREA & SITE NAME:	Orpheus Island National Park S34 Authority - Nature Conservation Act 1992
RECOMMENDED BY: Name: Jana Hummelshoj Position: Assistant Principal Ranger, Technical Support GBR&MP Region 	Signed:  Date: 20/07/2026.....
ENDORSED BY: Name: Dan Schaper Position: Principal Ranger, North GBR&MP Region QPWS 	Signed:  Date: 20/7/26
ENDORSED BY: Name: Tina Alderson Position: Regional Director GBR&MP Region QPWS 	Signed:  Date:20/7/2026.....