

Coffs Harbour Vessel Refuelling Facility

Review of environmental factors

Transport for NSW | September 2022



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Transport for NSW | 20 September 2022

Prepared by Advisian Pty Ltd and Transport for NSW

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1. Introduction

The purpose of the Minor Works review of environmental factors (REF) is to describe the proposal, to document the likely impacts of the proposal on the environment, to detail mitigation measures to be implemented and to determine whether or not the project can proceed. For the purposes of this work Transport for NSW (TfNSW) is the proponent and determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Section 2.80(4) of State Environmental Planning Policy (Transport and Infrastructure) 2021 (TI SEPP) permits development for the purpose of wharf or boating facilities to be carried out by or on behalf of a public authority without consent on any land. As the proposal is for the purpose of wharf or boating facilities, it can be assessed and determined by Transport for NSW under Division 5.1 of the EP&A Act.

The description of the proposal and assessment of associated environmental impacts has been undertaken in the REF to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment. The REF will satisfy the requirements of Part 5 of the EP&A Act and Part 8 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation). The REF will also address relevant standard environmental and ecological matters under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), *NSW Biodiversity Conservation Act 2016* (BC Act), *NSW Fisheries Management Act 1994* (FM Act), *NSW Coastal Management Act 2016* (CM Act 2016), *NSW Protection of the Environment Operations Act 1997* (POEO Act) and the *NSW Crown Land Management Act 2016* (CL Act) 2016.

The findings of the REF would be considered when assessing:

- Whether the proposal is likely to have a significant impact on the environment and therefore the necessity for an environmental impact statement to be prepared and approval to be sought from the Minister for Planning and Homes under Division 5.2 of the EP&A Act
- The significance of any impact on threatened species as defined by the BC Act and/or FM Act, in Section 1.7 of the EP&A Act and therefore the requirement for a Species Impact Statement or a Biodiversity Development Assessment Report
- The potential for the proposal to significantly impact a matter of national environmental significance, including nationally listed threatened biodiversity matters, or the environment of Commonwealth land. Where a significant impact is considered likely on nationally listed biodiversity matters, either the proposal must be reconsidered or a Project REF must be prepared.

2. The proposal

2.1 Description

2.1.1 Proposal location

Location details	
Title	Coffs Harbour, Inner Harbour
File number	
Waterway Name and GPS Location	Coffs Harbour
Local Government area:	Coffs Harbour Local Government Area
Tenure, landuse and zoning:	IN4 – Working Waterfront
TfNSW Region:	Northern Region

The proposal is in the town of Coffs Harbour, located on the mid-north coast of New South Wales (NSW). It lies within the Coffs Harbour City Council Local Government Area (LGA). The proposed works would occur over marine (intertidal and subtidal) and adjacent terrestrial foreshore lands within the Inner Harbour and adjacent to the existing Government offices, berths, travel lift runway and the former Coffs Harbour Slipway site. The site is approximately 200 m west of the Coffs Harbour International Marina (Figure 2-1). Images of the existing marine facilities within the Inner Harbour and the location of the proposed works are provided in Figure 2-2. Images of the existing facilities and the location of the proposed works at night, with existing lighting, are provided in Figure 2-3.

Surrounding land uses and local businesses include:

- Government offices and associated boat berthing facilities (e.g. NSW Marine Parks, NSW Fisheries, Marine Area Command, Marine Rescue)
- Coffs Harbour Maintenance Facility (including hardstand, travel lift and runway)
- Coffs Harbour Yacht Club (CHYC)
- Coffs Harbour International Marina
- Coffs Harbour Fishermen's Co-operative
- Commercial and recreational boat berthing facilities
- Recreational Fishing Charters (KC's, Coffs Harbour Fishing Charters)
- Cafes / restaurants (Attitude Bar, Latitude 30 Restaurant and Bar, The Galley Takeaway, Homemade Ice Cream, Coffs Harbour Fishermen's Co-op)
- Harbourside Chandlery
- Marina Hair and Beauty
- Jeffrey Baker Art
- SAMA Studio – Yoga and Healing
- Laundrette
- Amenities block (showers, toilets)
- Public parking facilities
- Public open space, walking tracks, parkland and beaches (i.e. Jetty Beach and Park Beach)
- Muttonbird Island Nature Reserve
- Coffs Harbour Jetty.

Images are provided in Figure 2-4. The location of these land use areas and businesses relative to the proposed works area are shown in Figure 2-5.



Figure 2-1 Location of the proposed works.



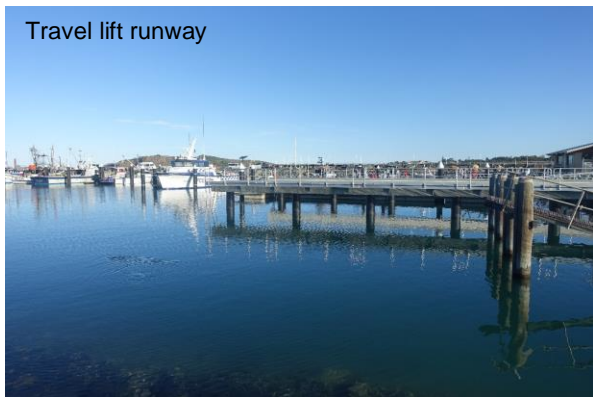
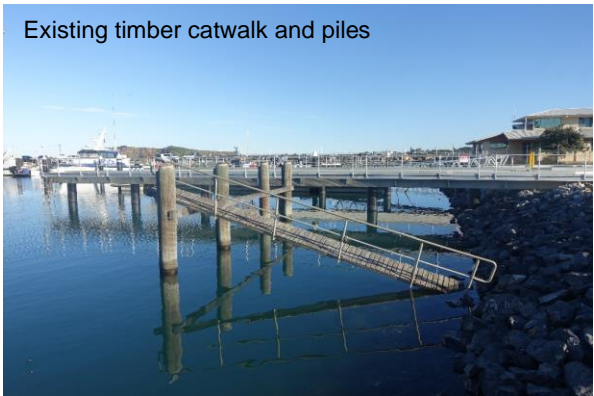
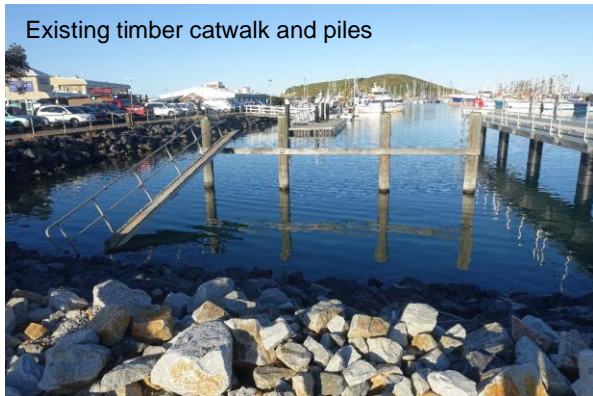


Figure 2-2 Images of existing facilities in the Inner Harbour in the location of the proposed works.



Figure 2-3 Images of existing facilities and the location of the proposed works at night (with existing lighting).





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Figure 2-4 Images of local businesses and public facilities near the proposal site.



Refer to following page for further detail of local businesses and the Coffs Harbour Maintenance Facility

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Figure 2-5 Location of land use areas and businesses relative to the proposed works.

2.1.2 Description of proposed work

Transport for NSW proposes to provide a new on-water vessel refuelling facility at Coffs Harbour Marina (the proposal). The fuel facility would have a useable capacity of approximately 10,000 L of unleaded petrol, with a slightly larger storage capacity, for use by Government agencies, commercial parties and the public. The proposal forms part of the overall Coffs Harbour Marine Precinct which includes a new vessel maintenance facility and refurbished operation centre. The land on which the proposal is based is owned by NSW Crown Lands on a Crown Reserve which is managed by Transport for NSW for the purpose of port facilities and services. Plans for the proposal are shown in **Appendix A1**.

Key elements of the proposal include:

- A bunded concrete slab of up to 120 m² for the tank refuelling area with spill containment at fill point and stormwater drainage to Australian Standards and approximate 20 m² concrete slab to connect to the existing driveway.
- A 10,000 L above ground self-bunded tank for unleaded petrol with fuel pump, cabinet and 4 m high venting mast. The tank is supported on a concrete plinth within the bunded concrete slab.
- A painted metal screening fence (up to 2.4 m high) of approximately 45 m length to provide separation with the maintenance facility works and screening for the fuel tank.
- A 17 m long gangway and 3 m wide by 17 m long fuel pontoon facility with a fuel bowser, bowser roof structure, outdoor payment terminal with card reader, double wall fuel pipe with rupture valves, emergency stop button, lighting and CCTV camera. The gangway connection would be supported by a concrete abutment.
- A fuel system with double wall fuel pipes, vapour return pipe, check valves, emergency stop buttons and control panel with warnings, alarms and flashing beacon.
- Elements to assist with safe vessel navigation to and from the fuel pontoon, including new untreated timber fender piles and waling adjacent to the existing travel lift runway, extra waling for the existing timber fender piles and signage.
- Elements to assist with protecting vessels, including heavy duty fendering for the new pontoon and for the existing public pontoon.
- Proposed lighting on the pontoon would be provided by lights mounted on the fuel bowser shelter. Note that lighting at night is proposed to allow for the 24 hours, 7 days access required for Government agency vessels to improve agencies' response time for marine related rescue and safety work.
- Proposed lighting for the gangway in accordance with NPWS recommendations for limiting impacts on marine and coastal fauna (as feasible).
- Proposed white light on the fender pile near the end of the northern travel lift runway to assist with vessels approaching the pontoon in accordance with NPWS recommendations for limiting impacts on marine and coastal fauna (as feasible).
- Proposed lighting for the fuel delivery and fuel tank area in accordance with NPWS recommendations for limiting impacts on marine and coastal fauna (as feasible).

Key features of the proposal include:

- An estimated 300 m² land area would be disturbed. The construction of concrete works and installation of services and associated connections on land would require excavation of up to 200 m³ of clean fill material (placed after remediation of the Coffs Harbour Slipway site). Most of the excavated clean fill material would be used as backfill on site. Excess material (up to 50 m³) would be taken offsite and disposed of lawfully. All excavations will be less than 1.5 m depth and dewatering will not be required.

- An estimated 800 m² overwater area would be affected by the construction works.
- Up to 12 existing Marina Drive parking spaces west of the entrance to the proposed fuel facility are envisaged to be used for the temporary Contractor's site compound, facilities and parking. Up to 15 existing Marina Drive parking spaces east of the entrance of the proposed fuel facility may be required to provide temporary use to assist with the construction of works overwater (e.g. during the lifting of gangway and piles with cranes). These parking spaces are understood to be owned by Crown Lands and managed by Transport for NSW. Coffs Harbour City Council was consulted with during preparation of the REF, with details of this temporary use area communicated, but has not provided a response to date.

The proposal is anticipated to involve the following work methodology:

- Site establishment works including Contractor's temporary site compound, facilities and parking.
- Establishment of environmental controls including a turbidity curtain around the in-water works area.
- Supply and installation of concrete pavement including kerbs and drainage. Works would include excavation of existing gravel and fill, regrading, compaction of subgrade, placement of basecourse material and installation of reinforced concrete pavement.
- Fabrication, supply and installation of metal screening fence.
- Fabrication, supply and installation of above ground self-bunded tank.
- Removal of the existing and dilapidated timber catwalk over water. The existing timber piles would be retained.
- Supply and installation of a concrete gangway abutment with localised removal of rocks and fill from existing rock revetment where required.
- Fabrication, supply and installation of gangway. A crane is envisaged to be required for the installation.
- Fabrication, supply and installation of two marine piles for the pontoon. The piles would be steel piles with HDPE sleeves and would be envisaged to be installed using a barge. The piles would either be screwed into the bedrock or installed into pre-bored holes to achieve the required pile embedment into rock.
- Fabrication, supply and installation of five untreated timber fender piles adjacent to existing travel lift runway. It is envisaged that the rock would be pre-bored and the piles installed into the rock socket to achieve the required embedment.
- Fabrication, supply and installation of fuel pontoon. The pontoon is envisaged to be floated down to the area using the nearby wharf, beach or boat ramp (subject to Contractor's preferred methodology and approval for access) and then attached to the marine piles.
- Fabrication, supply and installation of fuel bowser with shelter on the pontoon and associated connections.
- Supply and installation of services within covered service ducts on the pontoons, on land facilities and connections.
- Supply and installation of timber waling for existing and new untreated timber fender piles.
- Supply and installation of heavy duty fendering for the new pontoon and existing public pontoon.
- Supply and installation of fire services including fire hydrant, hose reel, extinguisher, fire water pipeline, trenching and connection.
- Supply and installation of electrical works including lighting on land and on the fuel bowser shelter, electrical switchboard, panel, trenching and associated power connection.
- Supply and installation of a solar powered light on the untreated timber fender pile near the end of the northern travel lift runway.
- Supply and installation of CCTV cameras on the pontoon and on a pole on land, and associated trenching and cabling connections to control facility.

- Supply and installation of stormwater drainage works including pipes, encasing pipes in concrete (where required), pits, isolation valve that can be closed during fuel deliveries and connections to stormwater outlet through the existing rock revetment.
- Disposal of any excess excavated material that cannot be reused on site to an appropriately licenced waste facility.
- Security gates and fence.
- Site disestablishment works.

No dredging work is required or proposed.

Plant and equipment envisaged to be used during construction would include:

- Piling rig or excavator on barge.
- Workboat or punt.
- Mobile crane.
- Excavator, dump truck, rollers and compactors.
- Concrete trucks.
- Delivery trucks.
- Power hand tools.
- Welding tools.

The final construction methodology, proposed plant and equipment is subject to site conditions and the nominated Contractor's preferred methodology.

2.1.3 Objectives of works

The proposal objectives are to:

- Provide on-water access to unleaded petrol for use by Government agencies 24 hours, 7 days a week. The Government agency marina for NSW Maritime, Marine Area Command and the Department of Primary Industries (DPI) Fisheries is located south of the travel lift runway, approximately 40 m from the proposed facility. The accessibility of unleaded petrol will allow agencies to improve response times, which is critical for marine related rescue and safety work.
- Provide on-water access to unleaded petrol for use by commercial parties and the public during daytime operating hours.
- Support the services provided by the adjacent maintenance facility.
- Meet relevant codes, standards and regulatory requirements.
- Provide safe access for operator and users of the facility and minimise user conflict with adjacent maintenance facility and public pontoon (where possible).

2.1.4 Ancillary facilities

Ancillary facilities		
Will the proposal require the use or installation of a compound site?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
A compound site would be set up immediately adjacent to the proposal site. The compound site would be in an area of low ecological and heritage conservation significance (i.e. within the existing public carparking area). No clearing of native vegetation would be required. The site would be located on		

Ancillary facilities

relatively level ground and is positioned adjacent to the proposal site to provide as little impact on user amenity as possible.

Up to 12 existing Marina Drive public parking spaces west of the entrance to the proposed fuel facility are envisaged to be used for the temporary Contractor's site compound, facilities, storage and parking. Up to 15 existing Marina Drive public parking spaces east of the entrance of the proposed fuel facility may be required to provide temporary access to assist with the construction of works overwater (e.g. during the lifting of gangway and piles with cranes). These parking spaces are understood to be owned by Crown Lands and managed by Transport for NSW.

An aerial showing the location of the Contractor's work area in relation to the proposal site is provided in Figure 2-6. Photographs of the proposed compound site and temporary access areas are shown in Figure 2-7.

Will the proposal require the use or installation of a stockpile site?

Yes

No

Temporary stockpile areas would be set up in the vicinity of the excavation within the Contractor's Site or adjacent to the services trench. Excess material may be stored within the Contractor's site compound and storage area on Marina Drive located west of the entrance to the proposed fuel facility. This is shown in Figure 2-6. No clearing of native or other vegetation would be required for this stockpile site.

The Stockpile Site Management Guideline (EMS-TG-10) would be referred to and applied by the Contractor for the proposed stockpile required for the proposal.

Are any other ancillary facilities required (e.g. temporary plants, parking areas, access tracks)?

Yes

No

All ancillary facilities are as described above and shown in Figure 2-6.



Figure 2-6 Location of the Contractor's site area and adjacent site compound areas.

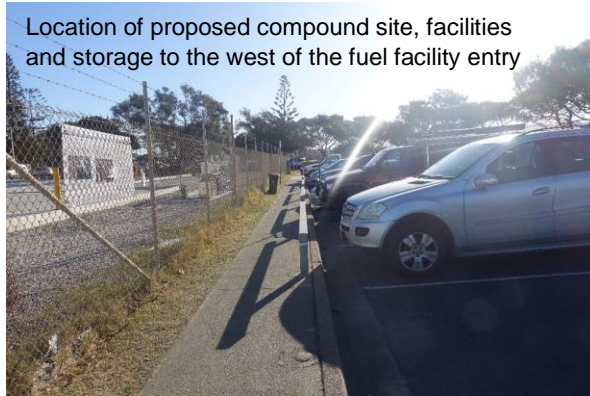


Figure 2-7 Images of the proposed location of compound and temporary use areas outside of the existing hardstand.

2.1.5 Proposed date of commencement

The proposed date of commencement for the Contractor is in the first quarter of 2023. The Contractor would undertake design, procurement and fabrication of offsite items such as fuel tank, pontoon and gangway prior to commencing work on site.

2.1.6 Estimated length of construction period

Site construction works are expected to be completed within a 4 month period, in the middle of 2023.

2.2 Need and options

2.2.1 Options considered

The options considered for the proposal are described below.

Do Nothing

If the Do Nothing option were selected, no works would be undertaken at Coffs Harbour Marina and no fuel facility would be installed. This would result in no construction related impacts on the surrounding environment and no visual and noise disturbances or traffic/vessel disruptions. However, this option does not address the objectives of the proposal including improving the response times of NSW Maritime, Marine Area Command and NSW DPI Fisheries, providing on-water access to unleaded petrol for commercial parties and the public, support the services provided by the adjacent maintenance facility, and provide safe access for operator and users of the facility.

Site Selection

Preferred Site

The existing boat maintenance facility was considered the preferred site as it has good road access via two separate entrances and the land is being developed to support vessel maintenance. The operator for the maintenance facility would also be able to operate the fuel facility.

Alternative Sites

- Coffs Harbour International Marina (CHIM) – near the office via a gangway and pontoon. This would involve a storage facility on the shore on land that is not controlled by CHIM as well as a long pipeline to service the fuel pontoon. This would be difficult to achieve and explain why there is no fuel service available at the marina. Incidentally, the CHIM website includes fuel (diesel) is available – presumably through an agreement with the Co-operative.
- The Fisherman's Co-operative has diesel available through a single bowser located on the Unloading Wharf (East face). This would involve extending the service to unleaded petrol but would require the Co-op's interest.
- Use the Government agency marina (located south of the travel lift runway) upgrade to include a dedicated fuel pontoon. For this option, an area within the adjacent boat maintenance site would need to be used for tanker access and storage/treatment facilities as there is no room surrounding the DPI Fisheries, Marine Area Command and Crown Land premises. Either the facility would cater for the 9 government vessels only, or an operator would need to be engaged in which case the boat maintenance facility would be the clear choice of sites as it is a secured area and not for public access. If the facility is to cater only for the 9 vessels, then it would appear difficult to justify a business case and it would risk reputational damage if not available to the general public.

Option Selection

Preferred Option

The preferred option is Option 2E at the existing maintenance facility (refer **Appendix A2**) - This option consists of a 10,000 L below or above ground fuel tank located on the north east corner of the maintenance facility site but not under the existing maintenance facility hardstand.

The fuel pontoon is located north of the travel lift runway and access is provided via an aluminium gangway. The pontoon is oriented perpendicular to the foreshore with fender protection along the travel lift runway and rock revetment areas (as required). The design allows a 12 m vessel to forward in and reverse out. A vessel trial was undertaken in May 2022 by a NSW Maritime Boating Safety Officer and demonstrated that this pontoon arrangement is preferred. Consultation was also undertaken with NSW Maritime, Marine Area Command and NSW DPI during the option selection process.

This option would have the following pro's and con's:

Pro's:

- Provide adequate waterway area for larger vessels (i.e. 12 m) to forward in and reverse out.
- Would service both Government agency and public vessels and is located away from the travel lift pontoon and Government agency berths.
- Fuel deliveries would not impact the maintenance facility usage.
- Installation of the fuel tank and line would not require removal and reinstatement of the hardstand.

Con's:

- The western end of the existing public pontoon would require cleat/s to be removed to prevent vessels tying up at this end.
- Navigation to the fuel pontoon would be constrained by the existing travel lift runway and public pontoon and would require signage and a risk assessment/consultation with TfNSW and other stakeholders is required for vessels tying up at the western end of the existing public pontoon.
- Potential environmental impacts of on-water construction as discussed in Section 3.

Alternative Options (refer [Appendix A2](#) for plans)

Option 1 – This option consists of a 4,000 L below ground fuel tank located within the Maritime Centre car park with the fuel pontoon extending out from the most landward finger of the Maritime Centre pontoons. This option would have the following pro's and con's:

Pro's:

- Is likely to be the cheapest option.
- Utilises some of the existing and proposed infrastructure.

Con's:

- Fuel deliveries would impact car park usage and introduce hazardous activities (i.e. refuelling) close to buildings.
- Requires the car park to be excavated for the fuel tank and line.
- No benefit to the public.
- The vessel turning circle is compromised.
- Navigation would be compromised if the travel lift pontoon is in use.
- Would block access to the 7 m berth when using the fuel pontoon.

Option 2A – This option consists of a 10,000 L underground fuel tank located within the maintenance facility hardstand with the fuel pontoon extending perpendicular from the travel lift pontoon. This option would have the following pro's and con's:

Pro's:

- Utilised some of the existing and proposed infrastructure.
- Would service both Government agency and public vessels.

Con's:

- Would require the hardstand to be excavated for the fuel tank and line.
- Fuel deliveries may impact on the maintenance facility usage and introduce hazardous activities (i.e. refuelling) close to ignition activities (e.g. grinding).
- It would block access to the 7 m berth when the fuel pontoon is in use.
- It may encourage public vessels in an area which is intended for Government agencies.
- The facility may not be accessible during travel lift operations due to the proximity of the bowser.
- The vessel turning circle would be compromised.
- Navigation would be compromised if the travel lift pontoon is in use.

Option 2B – This option consists of an underground 10,000 L fuel tank located within the maintenance facility hardstand with the fuel pontoon located north of the travel lift rails and access is provided via an aluminium gangway. This option would have the following pro's and con's:

Pro's:

- Would provide adequate waterway area for manoeuvring around the berth.
- Would service both Government agency and public vessels.
- Is located away from the travel lift pontoon and Government agency berths.

Con's:

- Fuel deliveries may impact the maintenance facility usage and introduce hazardous activities (i.e. refuelling) close to ignition activities (e.g. grinding).
- It would require the hardstand to be excavated for the fuel tank and line.
- Navigation to the fuel pontoon would be constrained by the existing travel lift runway and public pontoon and would require signage and a risk assessment/consultation with TfNSW and other stakeholders is required for vessels tying up at the western end of the existing public pontoon.

Option 2C – This option consists of a 10,000 L below or above ground fuel tank located on the north east corner of the maintenance facility but not under the hardstand. The fuel pontoon is located north of the travel lift rails and access is provided via an aluminium gangway. This option would have the following pro's and con's:

Pro's:

- Would service both Government agency and public vessels.
- Is located away from the travel lift pontoon and Government agency berths.
- Fuel deliveries would not impact the maintenance facility usage.
- Installation of the fuel tank and line would not require removal and reinstatement of the hardstand.

Con's:

- Manoeuvring around the berth by larger vessels (10 – 12 m) would require high level of skill and favourable wind conditions for safe navigation based on findings from the NSW Maritime vessel trial.
- Navigation in the area would be constrained by the existing travel lift runway and public pontoon and would require signage and a risk assessment/consultation with TfNSW and other stakeholders is required for vessels tying up at the western end of the existing public pontoon.

Option 2D – This option consists of a 10,000 L above or below ground fuel tank located on the north east corner of the maintenance facility but not on the hardstand. The fuel pontoon is located north of the travel lift rails extending from the existing public pontoon. Access would be provided via an aluminium gangway. This option would have the following pro's and con's:

Pro's:

- Would service both Government agency and public vessels.
- Would provide adequate waterway area for manoeuvring around the berth.
- Easy vessel access for berthing.
- It is located away from the travel lift pontoon and Government agency berths.
- Fuel deliveries would not impact on the maintenance facility usage.
- Installation of the fuel tank and line would not require removal and reinstatement of the hardstand.

Con's:

- Is likely to be the most expensive option.
- Navigation to the fuel pontoon would be constrained by the existing travel lift runway and public pontoon and would require signage and a risk assessment/consultation with TfNSW and other stakeholders is required for vessels tying up at the western end of the existing public pontoon.
- Location and length of the gangway could be considered a hazard for vessels during strong wind based on feedback from NSW Maritime.
- The fuel pontoon would be connected to the public pontoon and thus require a fence/gate to separate the two.
- Loss of capacity for smaller boats to park on the western and northern edge of the public pontoon
- Potential for increased user conflict between the use of the two pontoons.
- Potential increase in security risk as there would be two access points.

Above or Below Ground Fuel Tank Selection

Above Ground Tank

The preferred option is an above ground tank. The proposed tank is sited in a secured area that is not used by the travel lift or storage of vessels. Given the construction risk for excavation to install a below ground tank (as described below), the above ground tank option was the preferred option for this project. A low profile above ground rectangular tank is preferred to suit the footprint and improve lines of sight and aesthetics.

Below Ground Tank

Pro's:

- Improved lines of site and aesthetics, although boats stored on hardstand will also have a similar impact.
- Reduced "supply" cost of tank.
- Tank does not need a coating or ongoing maintenance, except routine checks.

Con's:

- Risk posed to operator of the facility during excavation and potential for damage to existing structures (e.g. wash down slab, revetment wall).
- Uncertainty over the installation cost due to ground conditions (e.g. unexpected discovery of boulders bedrock and services).
- Higher risk of construction delays or third party (operator) claims for damages.
- Added complexity of dewatering and treatment of the excavated materials at a nearby site to enable classification for disposal.
- Added risk of potential contaminants may affect disposal location and cost.
- Longer site works duration which may also result in adverse conditions or claims from the operator.

Bunded Concrete Area Surface Water Collection System Selection

Preferred Option

The preferred option is connection of the bunded concrete area to the stormwater network with pipe outlet through the existing rock revetment. The stormwater system will have an isolation valve that is to be closed by the operator during fuel deliveries. The valve would only be opened after confirming there is no hydrocarbons in the sump. If hydrocarbons present, then a licensed waste contractor would be required to remove.

Pro's:

- Cheapest and simplest to install.
- Only require minor excavation for the installation of stormwater pits and pipes.
- Does not require a trade waste permit.

Con's:

- Operator is required to 'do the right thing', and manually open and close the valve. This risk can be managed by appropriate training and manual with operator procedures. As the anticipated frequency of delivery would be no more than 1 delivery per week (subject to season, demand and operator requirement), the manual operation of the valve would be easy for the operator to manage.

Alternative Options Considered

Connection to the Maintenance Facility trade waste

This option was not considered feasible for the following reasons:

- There are various non-hazardous zone rated electricals (i.e. equipment that could arch in a flammable environment) in the vicinity of the existing trade waste unit for the maintenance facility. To upgrade the electrical would affect the warranty that came with the original install.
- The current trade waste approval excludes liquids containing fuel.
- Potential limitations on the existing system that require investigation e.g. first flush system capacity for additional surface area, effectiveness of existing Trident treatment system for fuel removal.

Implementation of an inground separator

This option was not considered feasible as the option would require an approximately 8000 L capacity underground separator tank (approximately 6m long x 2.2 m diameter). A tank of this size would require significant excavation adjacent to the existing rock revetment. As discussed in the "Above or Below Ground Tank Selection" Section, there is significant construction risk for such excavation extent.

Fendering Selection

Fender protection along the existing travel lift runway and rock revetment areas is required for safe navigation. Following the vessel trial undertaken in May 2022 by a NSW Maritime Boating Safety Officer, NSW Maritime requested fender protection for the existing travel lift runway and rock revetment areas to be incorporated as part of the design.

Preferred Option

The preferred option is the use of untreated timber (Turpentine) piles with timber (Turpentine) walers along both the travel lift runway and rock revetment areas. The rock revetment area already has four existing timber piles (refer to Figure 2-8) that can be used for the fendering and walers can be added to the piles. The travel lift runway would require five additional untreated (Turpentine) piles with Turpentine walers.

Pro's:

- Provide safe navigation by reducing risk of boats colliding with the rock revetment and travel lift runway.
- Utilises existing timber piles on site for the rock revetment area.
- Fendering for travel lift runway and rock revetment would be made of the same material, provide a more uniform look and assist with constructability and maintenance.
- Turpentine species is naturally resistant to marine borers and is preferred to other species including treated timber piles.

Con's:

- Potential limited supply of untreated turpentine timber piles and members, and long lead time required for ordering.

Alternative Options Considered

- Do Nothing (No fendering along the travel lift runway) – the travel lift runway would continue to pose a navigation risk for boats.
- Floating rubber fender attached to the concrete and pile structure of the travel lift runway – the distance between the travel lift runway piles is too far apart to provide adequate backing for the floating rubber fender for the fender to be effective.
- Rubber fender attached to the aluminium walkway of the travel lift runway – the aluminium walkway is not designed for berthing loads and the walkway could be damaged on impact to the rubber fender.
- Steel marine fender piles with HDPE sleeve with walers – more expensive than timber piles, different look to the timber piles on the rock revetment area and waler attachment to the piles could compromise the marine durability of the HDPE sleeve.
- TfNSW looked at the option for double treated piles however this was not considered due to the risk of leaching.



Figure 2-8 Existing timber structures on site. The timber piles and walers are proposed to be retained. The timber catwalk is proposed to be removed.

2.2.2 Justification for the proposal

Coffs Harbour Marina is a busy commercial and recreational marina, with many vessels utilising the 165 berths and entering and exiting the area daily. Currently, there is only a diesel fuel facility servicing the marina, limiting the number and types of vessels able to utilise fuel facilities provided at the marina. The installation of an unleaded petrol facility would allow for increased numbers of commercial parties and the public to enter the marina and visit the Coffs Harbour area. Not only would this be beneficial for commercial and public vessels, the on-water unleaded petrol facility would be accessible 24/7 for Government agencies involved in rescue and safety work. This would significantly improve the agencies' response time to incidents which could potentially be lifesaving. Outside of regular business hours, the facility would be properly secured and monitored via a CCTV camera to prevent destruction, vandalism and other illegal activities.

The proposal is required to:

- Provide on-water unleaded petrol for use by Government agencies 24 hours, 7 days a week. The Government agency marina for NSW Maritime, Marine Area Command and the Department of Primary Industries Fisheries is located south of the travel lift runway, approximately 40 m from the proposed facility. The accessibility of unleaded petrol will allow these agencies to improve response times, which is critical for marine related rescue and safety work.
- Provide on-water unleaded petrol for use by commercial parties and the public during daytime operating hours.
- Support the services provided by the adjacent maintenance facility.
- Meet relevant codes, standards and regulatory requirements.
- Provide safe access for operator and users of the facility and minimise user conflict with adjacent maintenance facility and public pontoon (where possible).

2.3 Statutory and planning framework

2.3.1 Environmental Planning and Assessment Act 1979

The NSW Environmental Planning and Assessment Act (EP&A) 1979 establishes the system of environmental planning and assessment in NSW. Part 5 of the EP&A Act specifies the environmental impact assessment requirements for activities undertaken by or on behalf of public authorities such as Council which are permissible without development consent under the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TI SEPP) and State Environmental Planning Policy (Resilience and Hazards) 2021 (RH SEPP).

The description of the proposal and assessment of associated environmental impacts has been undertaken in this REF to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment. The REF satisfies the requirements of Part 5 of the EP&A Act and Part 8 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation).

Section 171 of the EP&A Regulation defines the factors which must be considered when determining if an activity assessed under Division 5.1 of the EP&A Act has, or is likely to have, a significant impact on the environment. Section 4 of this REF provides an environmental impact assessment of the proposal, with a summary of the assessment in accordance with Section 171 of the EP&A Regulation.

2.3.2 Other relevant NSW legislation and environmental planning instruments

State Environmental Planning Policy (Transport and Infrastructure) 2021

Section 2.80(4) of the TI SEPP permits development for the purpose of wharf or boating facilities to be carried out by or on behalf of a public authority without consent on any land. As the proposal is for the purpose of wharf or boating facilities, it can be assessed and determined by Transport for NSW under Division 5.1 of the EP&A Act.

The proposal does not require development consent or approval under the RH SEPP or *State Environmental Planning Policy (Planning Systems) 2021*.

State Environmental Planning Policy (Resilience and Hazards) 2021

Chapter 2 of the RH SEPP gives effects to the objectives of the CM Act by specifying how development proposals are to be assessed if they fall within the “coastal zone” which is comprised of four types of coastal management areas.

The location of coastal wetlands and littoral rainforest in relation to the proposal area are discussed in Section 3.9.5. No coastal wetlands or littoral rainforests occur in the study area and will not be impacted by this proposal.

The site is situated within land identified by the RH SEPP as a coastal environment area and coastal use area. As the proposal is being assessed under Division 5.1 of the EP&A Act, consideration of RH SEPP provisions in Chapter 2 is not required.

Chapter 3 of the RH SEPP contains the provisions for determining whether proposals are categorised as “potentially offensive development” and/or a “potentially hazardous development”.

An assessment of the proposal by Moore Management (2022) against the provisions of Chapter 3 of the RH SEPP concludes that the refuelling facility is not deemed to be an “potentially offensive development” and the storage of unleaded petrol of 10,000 litres does not constitute a “potentially hazardous development” based on the separation distances to sensitive land uses.

Chapter 4 of the RH SEPP contains the provisions for the remediation of land. It is not expected that any contaminated soil or sediment would be disturbed by the proposed activity and require remediation as full site remediation was previously undertaken in 2016.

State Environmental Planning Policy (Primary Production) 2021

Part 2.5 of State Environmental Planning Policy (Primary Production) 2021 applies to any development which has the potential to adversely affect the existing or future oyster aquaculture development(s) and/or area(s). The main aim of this part is to encourage sustainable aquaculture by allowing the permissibility of aquaculture development in certain zones under the standard instrument. Part 2.5 sets out minimum site location and operational requirements for permissible aquaculture and establishes an environmental assessment regime for aquaculture development. No oyster aquaculture areas occur within Coffs Harbour (inner or outer harbour and nearby coastal zone) and would not be impacted by the proposal.

Coffs Harbour Local Environment Plan 2013

Coffs Harbour Local Environmental Plan 2013 (the LEP) currently applies to all land in the LGA. An associated Development Control Plan (DCP) applies to all land that the LEP applies to. The proposal would be carried out on land zoned as IN4 – Working Waterfront (Figure 2-9). Development consent is not required under the LEP as the proposal is permitted without consent pursuant to the provisions of the TI SEPP and is to be assessed under Division 5.1 of the EP&A Act.



Figure 2-9 Land Zoning Map for Coffs Harbour Marina (NSW Planning Portal 2022).

Fisheries Management Act 1994

The FM Act applies to all state waters and lists threatened species of fish and marine vegetation, endangered populations and ecological communities, critical habitats and key threatening processes. All aquatic vegetation including mangroves, saltmarsh, seagrass and seaweeds are also protected under the FM Act.

The FM Act requires that an assessment of significance (7-part test) be applied to species of fish and marine vegetation (i.e. seagrasses, mangroves and seaweeds), and populations or ecological communities listed under its Schedules that may be affected by a proposed action, development or activity. If a significant impact on a threatened species is likely, a Species Impact Statement (SIS) must be completed and the concurrence of, or consultation with NSW Fisheries is required. When a proposal is likely to harm aquatic vegetation a Part 7 Permit to Harm Marine Vegetation must be obtained.

Aquatic vegetation has been discussed in Section 3.9.6 and threatened species listed under the FM Act in Section 3.9.1 and **Appendix C**. There is the potential for short term minor impacts on marine fauna within the immediate construction area, however, these are not considered significant given their scale and the safeguards which would be adopted for the proposal. No seagrass, macroalgae, saltmarsh or mangroves would be disturbed as they do not occur within the proposed construction area. In summary, the proposal is not expected to have any significant impact on any sensitive marine habitats (i.e. aquatic vegetation or subtidal rocky reefs) or fauna listed under the FM Act. In addition, no areas of Critical Habitat listed under the FM Act occur in the study area so will not be impacted by the proposal.

A NSW DPI Part 7 Permit to Harm Marine Vegetation would not be required for the proposal.

Biodiversity Conservation Act 2016

The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future consistent with the principles of ecologically sustainable development (ESD). Part 7 of the BC Act contains the biodiversity assessment and approvals provisions for which developments or activities are assessed.

The BC Act outlines the protection of threatened species, communities and critical habitat in NSW. In the aquatic environment seabirds, waders, aquatic reptiles, aquatic mammals and insects, endangered aquatic ecological communities and key threatening processes are addressed. Searches for threatened species listed under the BC Act which are known to occur in the study area were made via the BioNet Atlas of NSW Wildlife. Search results are provided in **Appendix D**.

Threatened species listed under the BC Act are addressed in Section 3.9.1. While some temporary, short-term and minor impacts on listed marine fauna that may occur in the study area are possible, the proposed works are not expected to have any long term or significant impact on any threatened fauna or ecological communities listed under the BC Act given the safeguards which would be adopted. In addition, no Areas of Outstanding Biodiversity Value (AOBVs) listed under the BC Act occur in the area so will not be impacted by the proposal.

Protection of the Environment Operations Act 1997

The POEO Act is the main piece of legislation which provides environmental protection. The POEO Act also grants Environmental Protection Licences (EPLs) with conditions and regulates such activities that have the potential to cause environmental harm.

The capacity of the refuelling facility is below the criteria for petroleum products storage that would require an EPL under Schedule 1, Clause 9 of the POEO Act. It is noted that the Coffs Harbour Maintenance Facility operates under an existing EPL, and the refuelling facility would come under its operation.

National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NP&W Act) seeks to regulate and protect native flora and fauna in NSW and provides the statutory framework for public conservation reserves administered by the Minister for the Environment. Protected areas, set aside for conservation under the NP&W Act 1974, are managed by the National Parks and Wildlife Service (NPWS). These areas play a critical role in protecting biodiversity as well as natural and cultural heritage. An important component of the State's reserve system are Marine Protected Areas (MPA's). These include many National Parks and Nature Reserves with marine or estuarine components, as well as Aquatic Reserves and Marine Parks managed by the Marine Estate Management Authority.

Protected areas under the NP&W Act include are addressed in Section 3.9.8. The study site is located in close proximity to Muttonbird Island Nature Reserve and the Solitary Islands Marine Park however, these protected areas are not located within the proposed construction works area and are not expected to be impacted by the proposed works if all appropriate safeguards are adopted.

Marine Estate Management Act 2014

The *Marine Estate Management Act 2014* (MEM Act) aims to provide for the management of the marine estate of NSW consistent with the principles of ecologically sustainable development to promote a biologically diverse, healthy and productive marine estate.

The location of this proposal is less than 80 metres from the habitat protection zone of the Solitary Islands Marine Park (albeit over the northern breakwater of Coffs Harbour and not immediately connected by the waterway). This affords the waters a higher level of protection than other areas of the marine park or other areas of NSW.

Section 56 of the MEM Act requires a determining authority to consider the purposes of marine parks under the MEM Act, marine park management rules in the area and any advice given to it by DPI Fisheries.

Clause 1.8 of the Marine Estate Management (Management Rules) Regulation 1999 states the objects of habitat protection zone are:

- 'a) to provide a high level of protection for biological diversity, habitat, ecological processes, natural features and cultural features (both Aboriginal and non-Aboriginal) in the zone, and
- b) where consistent with paragraph (a), to provide opportunities for recreational and commercial activities (including fishing), scientific research, educational activities and other activities, so long as they are ecologically sustainable, do not have a significant impact on fish populations within the zone and have a negligible impact on other animals, plants and habitat.'

The area of the marine park directly adjacent to the proposal site includes sensitive reef and habitat of the critically endangered Marine Brown Alga *Nereia lophocladia*. However, this algae has not been recorded within the marina area and was not observed during the June 2022 field survey within the proposed works area.

Further discussion on the Solitary Islands Marine Park is provided in Section 3.9.8. An Assessment of Significance for *Nereia lophocladia* is provided in **Appendix H**. The proposal is not expected to have any impact on the objectives of the marine park habitat protection zone if the safeguards in this REF are adopted.

Marine Safety Act 1998 and Maritime Safety Regulation 2016

The *Marine Safety Act 1998* aims to ensure the safe and responsible operation of vessels in ports and other waterways so as to protect the safety and amenity of other users of those waters and occupiers of adjoining land. This Act and Regulation apply to vessel movements at the site.

Marine Pollution Act 2012

The *Marine Pollution Act 2012* aims to protect the State's marine and coastal environment from pollution by oil and certain other marine pollutants discharged from ships. The proposal is unlikely to result in any oil, noxious liquid, pollutant, sewage or garbage discharge as controlled under this Act, providing relevant standard controls are implemented and monitored.

Coastal Management Act 2016

The CM Act establishes a strategic framework and objectives for managing coastal issues in NSW. The CM Act defines the coastal zone as comprising four coastal management areas: coastal wetlands and littoral rainforests area; coastal vulnerability area; coastal environment area; and coastal use area. Chapter 2 of the RH SEPP gives effect to the objectives of the CM Act from a land use planning perspective.

The site is situated within land identified by the RH SEPP as a coastal environment area and coastal use area. [Note: Interactive mapping available at: <http://www.planning.nsw.gov.au/Policy-and-Legislation/Coastal-management>]

Under Section 8(2) of the CM Act, the management objectives for the coastal environment area are:

- a) 'to protect and enhance the coastal environmental values and natural processes of coastal waters, estuaries, coastal lakes and coastal lagoons, and enhance natural character, scenic value, biological diversity and ecosystem integrity,
- b) to reduce threats to and improve the resilience of coastal waters, estuaries, coastal lakes and coastal lagoons, including in response to climate change,
- c) to maintain and improve water quality and estuary health,
- d) to support the social and cultural values of coastal waters, estuaries, coastal lakes and coastal lagoons,
- e) to maintain the presence of beaches, dunes and the natural features of foreshores, taking into account the beach system operating at the relevant place,
- f) to maintain and, where practicable, improve public access, amenity and use of beaches, foreshores, headlands and rock platforms.'

Under Section 9(2) of the CM Act, the management objectives for the coastal use area are:

- a) 'to protect and enhance the scenic, social and cultural values of the coast by ensuring that:
 - i. the type, bulk, scale and size of development is appropriate for the location and natural scenic quality of the coast, and
 - ii. adverse impacts of development on cultural and built environment heritage are avoided or mitigated, and
 - iii. urban design, including water sensitive urban design, is supported and incorporated into development activities, and
 - iv. adequate public open space is provided, including for recreational activities and associated infrastructure, and
 - v. the use of the surf zone is considered,
- b) to accommodate both urbanised and natural stretches of coastline.'

The proposal is consistent with the objectives for the coastal environment and coastal use areas as it would not have any adverse impacts on the coastal environment if all recommended safeguards are adopted, and is an appropriate development in the location, especially considering it constitutes an upgrade to an existing facility with the same end use.

Crown Land Management Act 2016

The *Crown Land Management Act 2016* aims to provide for the ownership, use and management of the Crown land of NSW. The site is located on a Crown Reserve which is managed by Transport for NSW for the purpose of port facilities and services.

NSW Heritage Act 1997

The *Heritage Act 1977* contains the provisions for listing sites or places on the State Heritage Register and the protection of relics. There are no sites or places listed on the State Heritage Register or covered by an Interim Heritage Order within or in the vicinity of the proposed works area (refer to Section 3.7).

The Heritage Act defines a “relic” as follows:

“relic means any deposit, artefact, object or material evidence that:

- a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and
- b) is of State or local heritage significance.”

There are no known relics that have been identified as having state or local heritage significance either within the proposed works area or in the vicinity of the area that would be impacted by the proposal. The closest heritage item listed under Schedule 5 of the LEP is the “Coffs Harbour Jetty” (Item No. I20), located approximately 200 m to the south. This will not be impacted by the proposal. Heritage search results are summarised in Section 3.7) and provided in **Appendix E**.

No approvals or permits under the Heritage Act 1977 are expected to be required, especially considering the existing land use at the site, which is the same as the proposed future use.

2.3.3 Commonwealth legislation

Environmental Protection and Biodiversity Conservation Act 1999

The EPBC Act is administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW). Under the EPBC Act, all actions which are likely to have a significant impact on Matters of National Environmental Significance (MNES) are referred to the Commonwealth Environment Minister and are subject to a rigorous assessment and approvals process. The EPBC Act 1999 identifies nine MNES:

1. World Heritage Properties
2. National Heritage Places
3. Ramsar Wetlands of International Significance
4. Nationally Listed Threatened Species and Ecological Communities
5. Listed Migratory Species
6. Commonwealth Marine Areas
7. The Great Barrier Reef Marine Park
8. Nuclear Action
9. The protection of water sources from coal seam gas development and large coal mining development

An EPBC Act Protected Matters Search was undertaken for the proposal (see **Appendix B**). The proposal will not have any significant impact on any MNES under the EPBC Act if the proposed safeguards are adopted (refer to Section 4.2). In addition, no areas of Critical Habitat listed under the EPBC Act occur in the study area so will not be impacted by the proposal.

Aboriginal and Torres Strait Islander Heritage Protection Act 1994

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1994* aims to protect and preserve any significant Aboriginal and Torres Strait Islander areas or objects. The proposal would not impact any significant Aboriginal or Torres Strait Islander areas or objects.

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Native Title Act 1993

The Native Title Act 1993 provides for the recognition and protection of Native Title for Aboriginal peoples and Torres Strait Islanders. The Act recognises Native Title for land over which Native Title has not been extinguished and where persons can prove continuous use, occupation or other classes of behaviour and actions consistent with the traditional cultural possession of those lands. It also makes provision for Indigenous Lands Use Agreements (ILUA) to be formed as a framework for notification of Native Title Stakeholders for certain future acts on lands where native title has not been extinguished.

Searches of the National Native Title Register, Register of Native Title Claims and Register of Indigenous Land Use Agreements were undertaken in August 2022 for the Coffs Harbour LGA. These searches returned no relevant native title determinations, claims or land use agreements.

Aboriginal heritage is described in Section 3.8.

2.4 Community and agency consultation

2.4.1 TI SEPP consultation

Part 2.2 of the TI SEPP contains provisions for public authorities to consult with local Councils and other public authorities prior to the commencement of certain types of development. This is detailed below:

Is consultation with Council required under Sections 2.10 – 2.12 and 2.14 of the TI SEPP?		
<p>Are the works likely to have a substantial impact on the stormwater management services which are provided by Council?</p> <p>The proposal includes supply and installation of stormwater drainage works including pipes, pits and connections to the existing stormwater outlet through the existing rock revetment. However, no substantial impacts on stormwater management systems provided by Council will occur as a result of the proposal.</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Are the works likely to generate traffic to an extent that will strain the capacity of the existing road system in a local Government area?</p> <p>The works will involve increased construction and construction worker related traffic during construction. During operation additional traffic in the form of fuel delivery trucks will be encountered. It is not expected that these would strain the capacity of the existing road system.</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Will the works involve connection to a Council owned sewerage system? If so, will this connection have a substantial impact on the capacity of the system?</p> <p>No connection to the local sewage system will be required. Trade waste will not be required.</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Will the works involve connection to a Council owned water supply system? If so, will this require the use of a substantial volume of water?</p> <p>Connection to Council owned water supply may be required during construction and water supply for fire services would be required during operation but the volume of required water use would not be considered to be substantial.</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Is consultation with Council required under Sections 2.10 – 2.12 and 2.14 of the TI SEPP?

Will the works involve the installation of a temporary structure on, or the enclosing of, a public place which is under local Council management or control? If so, will this cause more than a minor or inconsequential disruption to pedestrian or vehicular flow?

Yes

No

Proposed ancillary facilities are described in Section 2.1.4 with a site layout and images provided. A compound site would be set up immediately adjacent to the proposal site. The compound site would be within the existing public carparking area and is positioned adjacent to the proposal site to provide as little impact on user amenity as possible.

Up to 12 existing Marina Drive public parking spaces west of the entrance to the proposed fuel facility are envisaged to be used for the temporary Contractor's site compound, facilities and parking. Up to 15 existing Marina Drive public parking spaces east of the entrance of the proposed fuel facility may be required to provide temporary access to assist with the construction of works overwater (e.g. during the lifting of gangway and piles with cranes). Access to pedestrian pathways in both areas would be restricted during construction and there are likely to be minor disruptions to traffic flow. The parking spaces are understood to be owned by Crown Lands and managed by Transport for NSW.

Will the works involve more than a minor or inconsequential excavation of a road or adjacent footpath for which Council is the roads authority and responsible for maintenance?

Yes

No

No excavation of a road or footpath is proposed.

Is there a local heritage item (that is not also a state heritage item) or a heritage conservation area in the study area for the works? If yes, does a heritage assessment indicate that the potential impacts to the heritage significance of the item/area are more than minor or inconsequential?

Yes

No

Refer to Section 3.7 and Section 3.8 for a description of Non-Aboriginal and Aboriginal heritage in the study area. No heritage items occur within the proposed works area or will be impacted by the proposal.

Is the proposal within the coastal vulnerability area and is inconsistent with a certified coastal management program applying to that land?

Note: a certified coastal zone management plan is taken to be a certified coastal management program.

Yes

No/NA

Council has prepared mapping for areas proposed for inclusion in the Coastal Vulnerability Area Map under the RH SEPP. This includes the proposal site. A link to Council's mapping is provided below:

<https://coffsharbour.maps.arcgis.com/apps/MapSeries/index.html?appid=eec205ab36cb4258905552f7d7d9d470>.

The proposal is not inconsistent with the Coffs Harbour Coastal Zone Management Plan (BMT 2019).

Are the works located on flood liable land? If so, will the works change flooding patterns to more than a minor extent?

Yes

No

Is consultation with Council required under Sections 2.10 – 2.12 and 2.14 of the TI SEPP?

The proposal site does not lie within flood liable land. The proposal would not result in changes to existing surface levels on the site or change potential flooding patterns.

Is consultation with a public authority (other than Council) required under Sections 2.13 and 2.15 of the TI SEPP?

Are the works located on flood liable land? (to any extent) (Section 2.13) If so, do the works comprise more than minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance?

Yes

No/NA

The proposal site does not lie within flood liable land. The proposal would not result in changes to existing surface levels on the site or change potential flooding patterns.

Are the works adjacent to a national park, nature reserve or other area reserved under the *National Parks and Wildlife Act 1974*, or on land acquired under that Act?

Yes

No

Muttonbird Island Nature Reserve occurs to the east of the proposal site (approximately 500 m to the east) (see Figure 2-1). However, this terrestrial reserve is not located within the proposed works area. The reserve would not be directly impacted by the proposed works and any indirect impacts (e.g. of additional lighting or on landscape character and visual amenity) are not likely to be significant if all appropriate safeguards are adopted.

The Biodiversity and Conservation Division (BCD) of the Department of Planning and Environment (DP&E) and the NSW National Parks and Wildlife Service (NPWS) were consulted with and all relevant matters are addressed in this REF. An Assessment of Significance for the wedge-tailed shearwater (Muttonbird) which has a breeding colony on Muttonbird Island is provided in **Appendix H**.

Are the works on land in Zone E1 National Parks and Nature Reserves or in a land use zone equivalent to that zone?

Yes

No

The proposed works are on land zoned as IN4 – Working Waterfront under Coffs Harbour Local Environment Plan (LEP) Land Zoning Map Sheet LZN_006D (see Figure 2-9).

Are the works comprising a fixed or floating structure in or over navigable waters?

Yes

No

The proposal involves the construction of a new gangway and fuel pontoon facility. The proposal is described in Section 2.1.2. Consultation was undertaken with Transport for NSW (Maritime).

Are the works adjacent to an aquatic reserve or a marine park declared under the *Marine Estate Management Act 2014*?

Yes

No

Is consultation with a public authority (other than Council) required under Sections 2.13 and 2.15 of the TI SEPP?

The Solitary Islands Marine Park occurs to the north of the northern breakwater of Coffs Harbour Inner Harbour. However, the Marine Park is not located within the proposed works area and would not be expected to be impacted by the proposal if all appropriate safeguards outlined in this REF are adopted. The NSW Department of Primary Industries (DPI) (Fisheries and Solitary Islands Marine Park) were consulted as part of the REF consultation process and all relevant matters are addressed in the REF.

Would the works increase the amount of artificial light in the night sky and that is on land within the dark sky region as identified on the dark sky region map? (Note: the dark sky region is within 200 kilometres of the Siding Spring Observatory)

Yes

No

The proposal site is not located within the dark sky region.

Is the proposal located on defence communications facility buffer land within the meaning of clause 5.15 of the Standard Instrument?

Yes

No

The proposal does not occur within defence communications facility buffer land.

Are the works on land in a mine subsidence district within the meaning of the *Mine Subsidence Compensation Act 1961*?

Yes

No

The proposal site is not located within a mine subsidence district.

2.4.2 Other agency and community consultation

Consultation with Council and non-Council authorities regarding the proposed activity is required for consideration in the REF in accordance with the following Sections of the TI SEPP:

- Section 2.15 (Consultation with public authorities other than councils):
 - Development adjacent to land reserved under the *National Parks and Wildlife Act 1974* or to land acquired under Part 11 of that Act – the Department of Planning and Environment (DP&E).
 - Development comprising a fixed or floating structure in or over navigable waters – Transport for NSW.

Consultation was undertaken with the following local stakeholders and Government agencies.

- Coffs Harbour City Council
- NSW Environment Protection Authority (EPA)
- Biodiversity and Conservation Division (BCD) of DP&E
- NSW Crown Lands (Grafton Office)
- NSW DPI - Fisheries
- NSW DPI - Solitary Islands Marine Park
- National Parks and Wildlife Service (NPWS)
- Marine Area Command
- NSW Maritime
- Marine Rescue

- Coffs Harbour District Local Aboriginal Land Council (CHDLALC)
- Coffs Harbour Fishermen's Co-operative
- Coffs Harbour International Marina
- Coffs Harbour Yacht Club

Consultation letters with a description of the proposed works and Concept Design Plans were sent via email to all of the above stakeholders on 28 June 2022. Responses were requested by 22 August 2022. In addition, TfNSW undertook additional consultation with some relevant stakeholders during the design phase.

All original stakeholder responses received by the time of writing are provided in **Appendix F**. A summary of stakeholder concerns and/or requirements communicated for the proposal are outlined in Table 2-1. Sections of the REF where these have been addressed (where applicable) are also provided.

Table 2-1 Summary of stakeholder consultation responses.

Agency / stakeholder	Concerns / comments	Where addressed in REF
Coffs Harbour City Council	No response received at 31/8/22.	NA
NSW Environment Protection Authority (EPA)	No response received at 31/8/22.	NA
Biodiversity and Conservation Division (BCD) of DP&E	<p>General comments</p> <p>Response indicated the REF should address impacts related to Biodiversity, NPWS Estate, Acid Sulfate Soils, Flooding, Coastal Processes and Associated Hazards, and Cumulative Impacts, as required.</p> <p>Shorebirds</p> <p>The REF should include the requirement for a pre-clearance survey for threatened shorebirds including Sooty Oystercatcher (<i>Haematopus fuliginosus</i>) and Pied Oystercatcher (<i>Haematopus longirostris</i>).</p>	<p>Section 3 – Environmental assessment.</p> <p>Section 5.2 – Other requirements.</p> <p>Appendix H – Assessments of Significance.</p>
NSW Crown Lands (Grafton Office)	No response received at 31/8/22.	
NSW DPI - Fisheries / Solitary Island Marine Park	<p>General comments</p> <p>DPI Fisheries strongly supports provision of an on-water unleaded fuel facility at Coffs Harbour. The absence of such a facility has been a long-standing work health and safety and operational issue for NSW Government vessels and commercial vessels in Coffs Harbour. Provision of a facility will support enhanced on-water compliance, emergency response and local economic values including tourism.</p> <p>DPI Fisheries supports the proposed location of the facility to the north of the travel lift. Any location south of the travel lift would increase traffic adjacent to the NSW Government moorings and may impede operations. The protection and safety proposed by the pontoon to the north and fendering to the south and west is supported, noting that further review of entrance clearance from the public wharf is proposed. DPI Fisheries requests 24 hour access to the facility to support efficient and effective government operations.</p>	<p>Section 2.1.1 – Options considered.</p> <p>Section 2.1.2 – Justification for the proposal.</p>

Agency / stakeholder	Concerns / comments	Where addressed in REF
	<p>Marine Estate Management Act 2014</p> <p>The location of this proposal is less than 80 metres from the habitat protection zone of the Solitary Islands Marine Park. This affords the waters a higher level of protection than other areas of the marine park or other areas of NSW.</p> <p>Any development at this location is likely to have an effect on the marine park. Section 56 of the Marine Estate Management Act 2014 (MEM Act) requires a determining authority to consider the purposes of marine parks under the MEM Act, marine park management rules in the area and any advice given to it by DPI Fisheries.</p> <p>The area of the marine park directly adjacent to the proposal site includes sensitive reef and habitat of the critically endangered Marine Brown Alga <i>Nereia lophocladia</i>.</p> <p>Coastal Management Act 2016</p> <p>DPI Fisheries requests that the proposal is assessed and implemented in accordance with the above act and the State Environmental Planning Policy (Resilience and Hazards) 2021 for the Coastal Environment Area, including section 8 management objectives.</p> <p>Sediment and erosion control</p> <p>DPI Fisheries requests that the proposal includes installation, monitoring and maintenance of best-practice sediment and erosion control measures consistent with the 'Blue Book – Managing Urban Stormwater: Soils and Construction'.</p> <p>Acid sulfate soils</p> <p>The REF should ensure appropriate monitoring, management and contingency planning for acid sulfate soils and consider the need for an acid sulfate soil management plan. Every best-practice measure for monitoring, remediation and contingency planning must be put in place to prevent any soil contaminants from reaching marine waters. Stockpiling of any soils must be kept to a minimum, both in volume and in time stored onsite.</p> <p>Contaminated land</p> <p>The REF should ensure appropriate investigation and management of any contamination. Soil and groundwater testing should be required at this site prior to</p>	<p>Section 3 – Environmental assessment.</p> <p>Section 2.3.2 – Legislation.</p> <p>Appendix H – Assessment of Significance for <i>Nereia lophocladia</i>.</p> <p>Section 2.3.2 – Legislation.</p> <p>Section 3.1 – Land surface, and Section 3.2 – Water quality.</p> <p>Section 3.1 – Land surface.</p> <p>Section 3.1 and Section 3.2.</p>

Agency / stakeholder	Concerns / comments	Where addressed in REF
	<p>any further excavation, earthworks or construction to understand and ensure an appropriate response to any existing contamination.</p> <p>Stormwater</p> <p>Due to the risk of fuel spills at this site, the proposal must include on-site stormwater management. Best-practice on-site stormwater detention and treatment systems that are capable of treating hydrocarbons must be installed as part of this proposal to treat stormwater before it is released to the environment or marine waters.</p> <p>Emergency spill management</p> <p>The operation of a fuel cell and public on-water unleaded fuelling facility has a very high risk of minor spills to the marine environment, and some risk of major spills. Due to the location adjacent to the habitat protection zone of the Solitary Islands Marine Park, sensitive reef and habitat of the critically endangered Marine Brown Alga <i>Nereia lophocladia</i>, DPI Fisheries requests the highest levels of best-practice on site to capably manage these risks, including spill equipment and emergency management capability and processes.</p> <p>Agency responsibilities</p> <p>DPI Fisheries understands that because the diesel fuel bowser located at the Coffs Harbour Fishermen's Cooperative is on land, Coffs Harbour City Council has recently been required to respond to and investigate any pollution and associated offences. Specialist equipment and expertise is required to respond to maritime fuel spills and pollution offences. It is not reasonable nor practical to expect Coffs Harbour City Council to maintain this specialist capacity just because the fuel comes from a land-based bowser accessing a vessel rather than directly from the vessel itself. Council does not have the capacity to respond efficiently or effectively to these events.</p> <p>DPI Fisheries strongly recommends that the scope of the NSW State Waters Marine Oil and Chemical Spill Contingency Plan (https://roads-waterways.transport.nsw.gov.au/documents/about/environment/oil-spill-contingency-plan-nsw-state-waters.pdf) should be expanded to specifically include pollution of oil and chemicals from land-based on-water vessel fuelling facilities. Either the Port Authority of NSW should assume responsibility as the Combat</p>	<p>No additional contamination testing was undertaken considering previous investigation and the full site remediation that occurred in 2016.</p> <p>Sections 2.1.2 and 2.2.1.</p> <p>Operational procedures and training for staff and refuelling contractors will be developed for the safe operation of the bunded area during and after refuelling, and for the safe treatment and removal of hydrocarbons in the case of a spill in the bunded area during refuelling.</p> <p>Section 3.2</p> <p>This item relates to the responsibility of government agencies to investigate pollution incidents or offences generally within Coffs Harbour. This is beyond the scope of the Coffs Harbour</p>

Agency / stakeholder	Concerns / comments	Where addressed in REF
	<p>Agency for Coffs Harbour as for other major ports in NSW, or Transport for NSW as the Combat Agency for other NSW State waters. DPI Fisheries understands that Transport for NSW is declared as an Appropriate Regulatory Authority under specific circumstances for the purposes of the Protection of the Environment Operations Act 1997 and regulations. DPI Fisheries recommends Transport for NSW responsibilities should be expanded to include pollution resulting from land-based on-water vessel fuelling facilities. Transport for NSW has specific capacity and expertise in this area that will help to ensure the best-possible regulatory outcomes. Council does not have the capacity to investigate any pollution incidents or offences that occur at a new on-water unleaded facility in Coffs Harbour.</p>	<p>Vessel Refuelling project and as such cannot be addressed and resolved in this REF.</p>
<p>National Parks and Wildlife Service</p>	<p>Shearwater fledging</p> <p>The proposed start time of March to May is a critical time for the nearby colony of shearwaters on Muttonbird Nature Reserve, who fledge during that time period, guided by the moon.</p> <p>Requested additional details about proposed lighting as follows:</p> <ul style="list-style-type: none"> • If works will be undertaken at night, including if security lighting is proposed for the site during construction. • What lighting and how is it mounted on the pontoon. • If permanent lighting is proposed elsewhere in the development footprint, or to be installed nearby. 	<p>Appendix H – Assessment of Significance for the Muttonbird has been undertaken.</p> <p>Section 2.1 – Description.</p>
<p>Marine Area Command</p>	<p>Design options</p> <p>Either of the design options [Option 2C and Option 2D] would be workable for Police vessels.</p> <p>Access to the facility might be prevented if Option 2D is selected and large private vessels were able to moor alongside the western end of the public wharf.</p> <p>Option 2C provide most security benefits due to lack of connection to public wharf.</p> <p>[Note Option 2E was subsequently developed and have been provided to NSW Police for information].</p>	<p>Section 2.2.1 – Options considered.</p>
<p>NSW Maritime</p>	<p>Design options</p>	<p>Section 2.2.1 – Options considered.</p>

Agency / stakeholder	Concerns / comments	Where addressed in REF
	<p>NSW Maritime consider Option 2E to be the preferred option following a vessel trial in May 2022.</p> <p>Option 2C would require a high level of skill and favourable wind conditions to be easily accessed.</p> <p>Due to the confinement of the space and narrow access to the north-west corner of the harbour, the better configuration for a refuelling wharf would be something that can be accessed on a direct line in and then reversing out.</p> <p>NSW Maritime consider the location and length of the gateway in Option 2D a major hazard during strong winds.</p> <p>The largest vessels likely to use the facility are 12-13 m. These vessels could be berthed to the 10 m pontoon in most situations provided suitable cleats and fendering.</p> <p>The pontoon should not be designed to allow for vessels to berth on the inside of the pontoon (western bank) closest to the rock wall. This could cause problems with vessels hitting rocks due to poor seamanship or in challenging weather conditions.</p> <p>The pontoon would require robust fendering and cleats, service pedestals, fire systems and nearby pollution response equipment.</p> <p>Appropriate signage would be required.</p> <p>The facility should be a dedicated fuel or emergency pontoon only.</p> <p>Operations</p> <p>The facility would require 24 hr access for Government agencies, as well as a swipe card, FOB or keypad system for security purposes.</p>	
Marine Rescue	Onsite meeting with Marine Rescue and TfNSW to discuss fuel facility design - No issues raised with the proposal.	N/A
Coffs Harbour District Local Aboriginal Land Council (CHDLALC)	<p>No concerns or constraints have been raised regarding the refuelling facility.</p> <p>Your plans clearly indicate that a procedure is in place in the instance of any spills or incidents involving potential fuel contamination, which if not indicated would be of major concern to CHDLALC.</p>	Section 3.8 – Aboriginal heritage.

Agency / stakeholder	Concerns / comments	Where addressed in REF
	<p>As the area to house the refuelling facility is on “man-made” infrastructure and not on natural ground there would be a very low likelihood that any Aboriginal cultural heritage objects would be impacted by the proposal.</p> <p>In summary, CHDLALC holds no Aboriginal Cultural Heritage constraints regarding the refuelling facility at Coffs Harbour Marina.</p>	
Coffs Harbour Fishermen’s Co-op	<p>Discussed over the phone with TfNSW – The Co-op was not concerned with proposed facility as all fishing vessels have diesel engines and would not utilise the new pontoon.</p> <p>No formal written response at 5/8/22.</p>	NA.
Coffs Harbour International Marina	<p>Met online and discussed the proposed design, construction and program with TfNSW.</p> <p>Asked about the potential for enabling larger catamarans to refuel from the public pontoon – by connecting public pontoon with VRF and extendable fuel reel.</p>	Section 2.2.1 – Options considered.
Coffs Harbour Yacht Club	<p>Met online and discussed the proposed design, construction and program with TfNSW. CHYC had no issues with the proposal - Preference for the public pontoon and new VRF pontoon to be separate.</p>	Section 2.2.1 – Options considered.

3. Environmental assessment

This section provides a detailed description of the potential environmental impacts associated with the construction and operation of the proposal. All aspects of the environment potentially impacted upon by the proposal are considered. This includes consideration of the factors specified in the guidelines *Is an EIS required?* (DUAP 1999) and the *Marinas and Related Facilities EIS Guideline* (DUAP 1996). The factors specified in Section 171 of the Environmental Planning and Assessment Regulation 2000 and the matters of national environmental significance under the Federal *Environment Protection and Biodiversity Conservation Act 1999* are also considered in Section 4. Site-specific safeguards are provided to ameliorate the identified potential impacts.

3.1 Land surface

Description of existing environmental and potential impacts

Are there any known occurrences of salinity or acid sulfate soils in the area?

Yes

No

Acid sulfate soil risk mapping (NSW PI&E 2022) was reviewed. The land in the proposal area is classified by NSW PI&E as 'X2 – Disturbed terrain' (Figure 3-1). Coffs Harbour City Council's mapping identifies the site as Class 5 acid sulfate soil. Given the recent development and remediation of the hardstand area and rock revetment, it is unlikely that acid sulfate soils will be disturbed or encountered. However, due to the Council classification, it is considered prudent to include a safeguard to address the potential risk of encountering acid sulfate soils during construction.

Saline soils are not relevant to this proposal, given the location is in a marine environment which is saline by nature.



Hm: High probability, bottom sediments	L1: Low probability, <1 m below ground surface
H0: High probability at/near ground surface	L2: Low probability, 1 - 3 m below ground surface
H1: High probability <1 m below ground surface	L4: Low probability, >3 m below ground surface
H2: High probability 1 - 3 m below ground surface	N: No known occurrence
H4: High probability >3 m below ground surface	NB: No known occurrence, beach
Lm: Low probability, bottom sediments	X2: Disturbed terrain
L0: Low probability, at/near ground surface	X4: Disturbed terrain

Figure 3-1 Acid sulfate soil risk mapping probability (NSW PI&E 2022).

Description of existing environmental and potential impacts		
<p>Does the proposal involve the disturbance of large areas (e.g. >2 ha) for earthworks?</p> <p>No bulk earthworks are proposed. Only minor excavation of clean fill material on land in the footprint of the proposed fuel cell will be required for the installation of services and the concrete slab and foundation. The excavation would be within the clean fill placed as part of the previous site remediation works.</p> <p>Does the proposal involve disturbance to the bank, soft substrate or bed of a waterbody (including disturbance of existing retaining structures and rock armouring)?</p> <p>Proposed piling activities for the fuel pontoon and untreated timber fender piles will cause minor and localised disturbance to the soft sediment seabed adjacent to the fuel facility. No dredging of the seabed is proposed. The works will be undertaken on already disturbed land.</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Does the site have constraints for erosion and sedimentation controls such as steep gradients or areas subject to strong tidal, current or wave action?</p> <p>No natural constraints exist which would impede the implementation of standard control measures for erosion and sediment control. Erosion control devices would be located on land around all active works areas while sediment control devices (i.e. silt curtains) would be installed within the waterway, around the active in-water works area and any piling activities. This will mitigate the spread of soils into the waterway and spread of resuspended sediment within the water column, along with any minor wave action generated during construction.</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Are there any sensitive receiving environments that are located in or nearby the likely proposal footprint or that could be affected by unavoidable hydrological disturbances from the proposal (altered hydraulic flows, increased erosion, nutrients or sediments)?</p> <p>Sensitive receiving environments in the general study area (but not within the proposal area) include wetlands, the Solitary Island Marine Park, Muttonbird Island Nature Reserve, littoral rainforests, seagrass beds, shallow water communities and drinking water catchments. These are described in Section 3.9. However, as the majority of these sensitive areas (with the exception of shallow water communities) are not located within or immediately adjacent to the proposal footprint they will not be impacted directly by any hydrological disturbances from the proposal. In addition, indirect impacts on these sensitive receiving environments are not expected to occur as long as the safeguards in this REF are adopted.</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Is there any evidence within or nearby the likely footprint of potential contamination?</p> <p><i>Historical Site Contamination</i></p> <p>Historical contamination of terrestrial and marine areas of the Coffs Harbour Slipway site is known and is thought to have originated from slipway</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Description of existing environmental and potential impacts

operations spanning some 40 years. However, full remediation of the site occurred in 2016. In 2014, Crown Lands engaged WorleyParsons Services Pty Limited (WorleyParsons) to undertake a contaminant assessment and remedial planning at the Site. The results of the contaminant assessment were reported to Crown Lands in July 2014 (WorleyParsons 2014a) and included a summary of three previous investigations at the Site (Ardill Payne and Partners, 2003; GeoLink, 2010; and NSW Office of Environment and Heritage, 2011a). Additional assessment of the potential bioaccumulation of contaminants in marine biota was undertaken by WorleyParsons as reported in February 2015 (WorleyParsons 2015) and opportunistic sampling and analysis of soils completed in May 2015 as part of a geotechnical investigation.

In 2015, WorleyParsons prepared a Remediation Action Plan - Coffs Harbour Slipway, providing a summary of the proposed remediation of the contaminated soils and sediments located at the Coffs Harbour Slipway.

Slipway and Western Harbour Remediation 2016

In May to June 2016, full remediation of the slipway site, including dredging of the western inner harbour was undertaken. The overall objective of the project was to remediate the site in accordance with the Remediation Action Plan (WorleyParsons 2015), an EPA letter dated 27 July 2015 and technical specification (GHD 2015).

Specific objectives of the remediation were to:

- Remove remaining terrestrial and marine infrastructure, including sleepers, rails and ballast.
- Clean and validate the ballast material so that it could be re-used on-site.
- Remove soil and sediment containing contaminants to the extent agreed to by the NSW Environment Protection Authority (EPA).
- Carry out the works in a manner that minimises potential risks associated with dissolved and/or suspended contaminants from dredging disturbance and sediment dewatering.
- Dispose of the removed soil and sediment at an appropriately licensed landfill.
- Restore formation levels through backfilling of excavations with suitably sourced, clean engineered fill.

Validation Testing During Remediation Works

GHD Pty Ltd (GHD) was commissioned by Soil Conservation Service (SCS) to conduct environmental monitoring during remediation and validation at the Coffs Harbour Slipway following the remediation works. A full summary of the environmental monitoring and validation remediation works can be found in GHD (2016). Soil and sediment containing contaminants were excavated to (or exceeding) the extent agreed to by the EPA within the proposed boundaries as well as the additional area near the police jetty. The works were carried out in a manner that minimised potential risks associated with contaminants from dredging disturbance and sediment dewatering, as was evident by environmental monitoring data (water quality monitoring) collected during remediation.

Description of existing environmental and potential impacts

NSW EPA Contaminated Land Record

A search of the NSW EPA Contaminated Land Record for the Coffs Harbour City Council LGA was undertaken on 1 August 2022 (results provided below). The Coffs Harbour Marina Area is not included in this register.

Suburb	Address	Site Name	Notices related to this site
COFFS HARBOUR	134-136 Pacific HIGHWAY	BP Service Station	6 former
COFFS HARBOUR	Aviation DRIVE	Mobil Coffs Harbour Airport	1 former
COFFS HARBOUR	314-316 Harbour DRIVE	Mobil Service Station	9 former
CORAMBA	End of Martin Street and adjacent car park OTHER	Martin Street	1 current and 7 former
WOOLGOOLGA	56 Clarence STREET	United Petroleum Service Station (1868 Solitary Islands Way)	2 current

Source: NSW EPA 2022;

<https://app.epa.nsw.gov.au/prclmapp/searchregister.aspx>

Considering the previous investigations of marine sediment and soils undertaken at the site, along with associated remediation works, no additional testing of soils, groundwater or sediments was considered necessary for this proposal. It is not expected that any contaminated soil or sediment would be disturbed by the proposed activity.

Is the likely proposal footprint in or nearby to areas highly affected by coastal processes (tides, currents, waves)?

Yes

No

The proposal is located within Coffs Harbour Marina within the Inner Harbour area of Coffs Harbour. The marina is sheltered, protected by southern and northern breakwater as well as Muttonbird Island to the east, therefore extreme coastal processes are not likely to be encountered within the proposal area. In addition, works would be undertaken only during suitable climatic conditions.

Is the proposal likely to result in more than 2.5 ha (area) of land sediment disturbance?

Yes

No

Only minor excavation of a small area of clean fill material on land in the footprint of the proposed fuel cell will be required for the installation of services and the concrete slab and foundation.

Proposed piling activities for the fuel pontoon and untreated timber fender piles will cause minor and highly localised disturbance to the soft sediment seabed adjacent to the fuel facility. No dredging of the seabed is proposed.

A summary of potential land surface impacts relating to the proposal are as follows:

- The seabed in the location of the proposal is unvegetated soft sediment, with rock rubble around the foreshore areas adjacent to the rock revetment, which was dredged as part of the 2016 site remediation. Scattered rocks and anthropogenic debris are also present on the seabed. Some images of the seabed around the proposed piling works are provided in Figure 3-2.

Description of existing environmental and potential impacts

- Only minor excavation of a small area of clean fill material on land in the footprint of the proposed fuel cell will be required for the installation of services and the concrete slab and foundation. This area has also previously been remediated. Images of this area are shown in Figure 3-2.
- Impacts associated with disturbance of land surface/soils and bottom sediments (e.g. turbidity increases) impacting on nearby aquatic habitats.

It is expected that the potential effects on land surface will be minor and insignificant if the recommended safeguards are adopted.



Figure 3-2 Images of the seabed (left) and remediated land surface (right) which will be disturbed during construction.

Safeguards

Safeguards to be implemented for land surface are:

1. During land based excavation works, suitably qualified staff will monitor the removal of any in-situ fill material / soil (i.e. material other than clean fill, gravel and underlayer previously placed by others) and assess for the presence of acid sulphate material (ASM) through field based screening tests. If ASM is detected, effective controls will be implemented according to Roads and Maritime Services Guidelines for the Management of Acid Sulphate Materials (2005) '*ASM Procedure No. 4 – Attachment 1 Acid Sulfate Soil Controls*'
2. Erosion and sediment control measures on land and water are to be implemented and maintained for all proposal related works including site establishment, construction and disestablishment to:
 - Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets.
 - Prevent the spread of re-suspended sediments in the waterway.
 - Reduce water velocity and capture sediment on site.
 - Minimise the amount of material transported from site to surrounding pavement surfaces.
 - Divert clean water around the site.
3. Erosion and sediment control measures are to be implemented in accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book). These measures should be inspected prior to any rainfall forecast by the Australian Bureau of Meteorology and monitored and maintained at least daily during any rainfall events.
4. Erosion and sedimentation controls are to be checked and maintained on a regular basis (including clearing of sediment from behind barriers) and records kept and provided on request.
5. Work areas are to be stabilised progressively during the works.
6. A progressive Erosion and Sediment Control Plan (ESCP) is to be prepared for the works. This would be required from the Contractor(s).
7. The maintenance of sediment stockpile sites is to be in accordance with the Roads and Maritime Services Stockpile Site Management Guideline (EMS-TG-10).

3.2 Waterways and water quality

Description of existing environment and potential impacts		
Is the proposal located within, adjacent to or near a waterway?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
The proposal would be undertaken adjacent to and within the Inner Harbour of Coffs Harbour.		
Would the proposal be undertaken over water and/or using vessels?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
The proposal includes the construction of a pontoon with a sheltered fuel bowser, gangway, installation of untreated timber fender piles and timber waling, and installation of heavy duty fenders on the new pontoon and on the existing public pontoon. Construction or positioning of these elements would all take place over water using boats and work barges. All fuel and chemicals aboard vessels would be stored in secure, designated containers and locations. Refuelling activities will occur on land, at commercial marine re-fuelling facilities, or via established on-water re-fuelling procedures. Appropriate emergency spill management kits will be available during refuelling operations at all times.		
Is the location known to flood or be prone to water logging?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
The proposal does not lie within any flood prone areas and will not be located on flood prone lands. The proposal area encompasses an area of terrestrial land adjacent to a rock revetment and drains to the Inner Harbour. The area is not prone to flooding or water logging.		
Is the proposal located within or immediately adjacent to the area managed by Sydney Catchment Authority covered by State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
The site does not lie within any maps of the Sydney Water Drinking Catchment.		
Would the proposal be undertaken on a bridge, wharf or ferry?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
The proposal will not be undertaken on a bridge, wharf or ferry.		
Does the proposal occur near priority oyster aquaculture areas, any other oyster/shellfish leases or commercial fishing operations?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
There are no priority oyster aquaculture areas, other oyster/shellfish leases or commercial fishing operations in the vicinity of the proposal.		
<p>Water-based construction activities that have the potential to affect water quality include:</p> <ul style="list-style-type: none"> • Demolition/removal of existing structures (e.g. the dilapidated timber catwalk). • Piling activities creating localised turbid plumes. • Drilling muds and cuttings excavated by piling activity releases. • Pontoon installation. • Fenders installation on new and existing pontoon. • Removal and reinstatement of the existing rock revetment to allow the installation of the concrete abutment, gangway and stormwater outlets. • Construction vessel and barge use/movements including any anchoring/mooring required. <p>The primary water quality impacts which may arise during construction are expected to be localised and short-term increases in turbidity in the immediate vicinity of piling activities and the accidental release of</p>		

Description of existing environment and potential impacts

drilling muds and cuttings. Any sediment disturbed by piling is expected to be highly localised and can be contained to within the construction area with the use of silt curtains. A turbidity curtain and floating booms will be used locally around the perimeter of piling works to limit the spread of any plumes generated. Drilling spoil and cuttings will be deposited at seabed level within the site and contained within the turbidity curtain. Additionally, all work areas would be bunded using geo-textile fabric to filter water and debris from the work area.

Any vessel-based activities pose a risk of accidental hydrocarbon spills and associated environmental damage. These risks can be effectively mitigated by ensuring that there is no storage of fuels on vessels unless double bunded and through the implementation of spill contingency plans and stringent operational practices (e.g. regular maintenance). The likelihood of a significant spill of fuel or oil during construction is considered quite low. The most likely scenario is an accidental spill of <20 L and this should be able to be effectively contained and removed before significantly impacting marine biota or settling to the seabed. Visual site monitoring would be undertaken during construction and an Emergency Oil and Fuel Spillage Plan would be prepared. Therefore, with the recommended safeguards in place, the overall level of risk of this impact is considered low.

Land-based construction activities that have the potential to affect water quality include:

- Minor excavation/trenching of remediated land surface.
- Pouring of concrete.
- Installation of the fuel tank.
- Installation of services.
- Use of vehicles and other construction equipment.

These have the potential to affect water quality in the case of uncontrolled runoff into the waterway during excavation activities, accidental spills which are not contained and then enter the waterway, or from storm-water runoff. Where appropriate sediment and erosion control devices, levels of education, housekeeping practices (including separation, management and disposal of waste) are implemented and waste and recycling depositories made available for the proposal, the likelihood of water quality impacts associated with land based construction works should be very low.

NSW DPI comments/requests:

Stormwater - Due to the risk of fuel spills at this site, the proposal must include on-site stormwater management. Best-practice on-site stormwater detention and treatment systems that are capable of treating hydrocarbons must be installed as part of this proposal to treat stormwater before it is released to the environment or marine waters.

Emergency spill management - The operation of a fuel tank and public on-water unleaded fuelling facility has a very high risk of minor spills to the marine environment, and some risk of major spills. Due to the location adjacent to the habitat protection zone of the Solitary Islands Marine Park, sensitive reef and habitat of the critically endangered Marine Brown Alga *Nereia lophocladia*, DPI Fisheries requests the highest levels of best-practice on site to capably manage these risks, including spill equipment and emergency management capability and processes.

Safeguards

Safeguards to be implemented for waterways and water quality are:

1. A silt boom/curtain must be installed around any active in-water work areas that may disturb the seabed (e.g. piling, demolition). The installation of the silt boom may be progressive to contain areas of current works, however before construction, a plan of deployment and progression must be prepared by the Contractor to align with the schedule of works; the plan must ensure that:
 - a. Installation of the silt curtain/boom is to occur before starting physical works.
 - b. Installation is undertaken during high tide periods from a boat. The device must be designed to rise and fall with the tide to prevent disturbance.
 - c. The silt boom and curtain must be weighted appropriately with sufficient length to reach from the surface to the bed level regardless of tidal fluctuations (i.e. it must reach the seabed in all tidal states) before starting work.
 - d. Inspection of the device is undertaken on a daily basis after ebbing tides, with additional inspection following any storm events. Visual monitoring of turbidity inside and outside of the device must occur at all times during active work.
 - e. Results of daily observations of the integrity of the silt curtain are required to be recorded and maintained. Records are required to be kept on the site and to be made available for inspection by persons authorised by TfNSW.
 - f. Decommissioning is to be carried out by boat during a high tide period.
 - g. Decommissioning can only be undertaken once construction activities are above seabed level (that is, no activities which disturb the seabed are to occur without the curtain in place).
 - h. Before removing the silt curtain device, conditions within the curtain will be assessed visually to verify that sediment has settled resulting in similar water turbidity to that outside the curtain (that is, the curtain must not be decommissioned until the water inside and outside correspond visually).
2. Visual monitoring of local water quality (i.e. turbidity, hydrocarbon spills/slicks) is to be undertaken at all times during work to quickly identify any potential spills or deficient silt curtains or erosion and sediment controls.
3. Work positioning barges, excavators and pile driving equipment must be scheduled to occur during calm conditions to prevent excessive sedimentation impacts and minimise any safety risks.
4. An Emergency Oil and Fuel Spillage Plan will be included in the Construction and Environmental Management Plan (CEMP).
5. All construction equipment and vessels will be inspected by qualified personnel prior to commencement of work, to reduce the risk of hydrocarbon spills or leaks.
6. Containment measures will be utilised to minimise spillage associated with pile replacement or repair, grouting and concreting.
7. Spill response kits (including hydrocarbon booms) will be located around the construction site and on-board construction vessels to facilitate containment of any water-based spills. All on-site personnel must be trained in their use. Spill response strategy and procedures will include the contact details of the relevant authorities to be notified in the event of a spill.
8. Industry standards and pollution prevention regulations will be adhered to during refuelling, transfer, storage and handling of hazardous materials.
9. The lowest volumes of hydrocarbons (oil, grease, petrol and diesel) practicable will be stored on-site.
10. Chemical storage areas will be bunded and chemicals will be stored in accordance with the products Safety Data Sheet (SDS) and AS 1940 on board construction vessels, and the land-based ancillary areas.
11. No dewatering discharges are to occur without approval of TfNSW prior to the activity occurring.
12. Vessels (self-propelled and unpowered) will have adequate on-board communication, containment, drainage, bunding and monitoring systems to prevent discharges of unauthorised effluents.

13. Bunkering standard operating procedures will be implemented.
14. Spill containment device with a minimum capacity of 15L will be provided at the fill point for the fuel tanker during operation.
15. Bunded concrete pavement provided for the fuel delivery area which drains to a stormwater system with an isolation valve. The isolation valve will be closed by the operator during fuel deliveries and only to be reopened after confirming no hydrocarbons in the stormwater drainage devices. If hydrocarbons present, then a licensed waste contractor would be required to remove.
16. If visual hydrocarbon staining or slicks are observed, then the spill response procedure as outlined in the Emergency Oil and Fuel Spillage Plan would be implemented.
17. The fuel bowser and connections will have a number of measures that shutoff fuel spillage during operation and these are:
 - Rupture valve at the bottom of the pontoon that shutoff if the bowser is damaged.
 - Rupture valve at the hose that shutoff if hose is pulled too hard e.g. if the hose is left attached to the boat.
 - Emergency stop buttons at bowser, near tank and at control room.
 - Secure card system to restrict public use outside of office daylight hours.

This would be complimented with commercial marine spill kits that include a floating absorbent boom and padding to contain and collect fuel or oil spillage. Used absorbent material will be disposed of by a licensed waste contractor.

18. Concrete washout shall not take place on site.

Also refer to safeguards for land surface concerning runoff and erosion.

3.3 Hydrology and coastal processes

Description of existing environmental and potential impacts		
Is the proposal likely to result in changes to tides/currents/waves?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Is the location subject to tidal inundation/flows, high flow currents or wave action?</p> <p>The proposal is located within the sheltered Inner Harbour of Coffs Harbour. The general coastal location is subject to typical coastal processes, including tidal and wave action, particularly during storm events.</p> <p>Large wave and strong tidal and flow currents are not expected within the Inner Harbour and marina area. Given the sheltered nature of the area, boat waves are considered to be the governing wave height. Waves generated by boat traffic at four knots (restricted speed in this area) would be no greater than 0.2 m.</p> <p>The elevated water levels for this site is approximately 1.45 m AHD for 50 year Average Recurrence Interval. Even with allowance for sea level rise of 0.4 m and wave action, the proposed land development at 2.0 m AHD or above would be subject to minimal inundation and very minor wave overtopping during storm events.</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Would the proposal be likely to impact on existing coastal processes or create new coastal hazards?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Description of existing environmental and potential impacts		
No impacts on existing coastal processes are expected and no new coastal hazards will be created. The proposal footprint lies within a commercial and recreational marina. Small and large vessels transit the waterway regularly and rock armoured revetments are engineered to withstand wash generated by such vessels. As the type of vessel, and frequency of use within the harbour will not change significantly as a result of the proposal, there will be no increased wave action during construction or operation. Appropriate and standard marine navigational aids will be installed for use of the facility.		
Is the proposal likely to require the extraction of water from a local water course (not mains)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Potential impacts on hydrological issues and coastal process are:</p> <p>The inner harbour is an environment that is highly modified due to the construction of the break walls, internal rock revetments and port facilities. The proposed works call for the addition of a small number of piles and a relatively small floating pontoon wharf with no change to the adjoining revetment. This would not alter the tidal processes or hydrodynamic environment in the inner harbour or associated coastal areas.</p>		

Safeguards

Safeguards to be implemented for hydrology and coastal processes are included below and in Section 3.2 (waterways and water quality):

1. Weather and tide forecasts will be checked regularly during construction. In the unlikely case that significant inundation is forecast for the work area, all equipment and materials will be removed from the landside construction zones or appropriately secured. Flooding procedures and checking of weather forecasts will be captured under the spill/emergency response management plan.

3.4 Waste

Description of existing environmental and potential impacts		
Does the proposal involve dumping of dredging spoils or man-made structures at sea?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Does the proposal require a pump out station, effluent, biowaste disposal?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Is the proposal likely to generate >100 tonnes of waste material (contaminated and /or non-contaminated material)?</p> <p>Only minor excavation of clean fill material on land in the footprint of the proposed fuel tank will be required for the installation of services and the concrete slab and foundation. The excavation would be within the clean fill placed as part of the previous site remediation works. Most of the excavated clean fill material would be used as backfill on site. Excess material (up to 50 m³) would be taken offsite and disposed of lawfully.</p> <p>The installation of the untreated timber fender piles will require pre-bored holes to achieve the required pile embedment.</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Description of existing environmental and potential impacts		
No dredging or other excavation of sediments or soils will be undertaken.		
The dilapidated timber catwalk would also be disposed of lawfully.		
Is the proposal likely to require a licence from EPA? The fuel facility (at a mass of 9 tonnes) is below the criteria for petroleum products storage that would require an EPL under Schedule 1, Clause 9 of the POEO Act. In addition, the adjacent maintenance facility will already have an EPL. The fuel facility will come under the operation of the maintenance facility.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposal likely to require the removal of asbestos or other potentially contaminated materials (e.g. treated timber, soil etc)? The dilapidated timber catwalk would also be disposed of lawfully. The timber would be checked for whether it is treated timber. No other contaminated soil or material is expected to require removal. No asbestos removal will be required.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
The incorrect disposal of waste also has the potential to cause harm to marine and coastal fauna. This is discussed further in Section 3.9.		

Safeguards

Safeguards to be implemented for waste are:

1. A Waste Management Plan (WMP) will be prepared and implemented as part of the CEMP. The WMP will include:
 - a. Sustainable practices and measures to avoid and minimise waste associated with the proposal.
 - b. Classification of wastes and management options (re-use, recycle, stockpile, disposal) in accordance with the Waste Classification Guidelines (NSW EPA 2014).
 - c. Statutory approvals required for managing both on and off-site waste, or application of any relevant resource recovery exemptions.
 - d. Procedures for storage, transport and disposal.
 - e. Monitoring, record keeping and reporting.
 - f. The WMP will follow the resource management hierarchy principles embodied in the *Waste Avoidance and Resource Recovery Act 2001*.
2. No wastes will be disposed of in waterways.

3.5 Noise and vibration

Description of existing environmental and potential impacts
Are there any residential properties or other noise sensitive areas near the location of the proposal that may be affected by the work (i.e. church, school, hospital):

Description of existing environmental and potential impacts

During construction?

Yes

No

The closest residential properties are located approximately 500 m west of the proposal site and are not expected to be impacted by the proposal. There are local businesses including restaurants and marina services adjacent to the proposal site, the closest being Attitude Burger, approximately 60 m to the east of the site. The location of sensitive receivers in relation to the proposed works are shown in Figure 2-4 and Figure 2-5.

Potential construction noise impacts associated with the proposal include:

- Installation of new piles. The piling method will be determined by the contractor and their equipment. It is envisaged the piles would be installed using a barge. The two steel piles with HDPE sleeves will either be screwed into the bedrock or installed into pre-bored holes. For the five untreated timber fender piles, it is envisaged that the rock would be pre-bored and the piles installed into the rock socket to achieve the required embedment.
- General construction noise from wharf construction.
- Construction vehicle/vessel noise.
- Construction of concrete works and installation of services on land including excavation.

The Transport for NSW Construction and Maintenance Noise Estimator Tool was applied to the proposal based on the following inputs:

- Noise area category – R1.
- Residential receiver category - Developed Settlements (urban and suburban).
- Non-residential receiver category - Developed Settlements (urban and suburban); offices/retail outlets.
- Working hours – Standard.
- Line of sight to receivers – Yes.
- Representative distance (residential) – 22 Orlando St, Coffs Harbour: 500 m.
- Representative distance (commercial) – 1 Marina Drive, Coffs Harbour: 50 m.
- Scenario – Piling works (standard hours).

The noise estimator for individual plant was used to assess the loudest scenario of the proposed construction which is likely to be piling works involving a piling rig, possibly a crane and small hand tools.

The Noise Estimator Tool, indicates that:

- No exceedance above the noise management level of 50 dB(A) would occur during standard hours for the closest residential receiver (22 Orlando St). No additional mitigation measures will be required.
- An exceedance of 4 dB(A) above the noise management level of 70 dB(A) would occur during standard hours for the closest commercial receiver (Attitude Burger). No additional mitigation measures will be required.

Description of existing environmental and potential impacts		
<p>Outputs from the Noise Estimator Tool are provided in Appendix G.</p> <p>The addition of these construction noise sources to the general ambient noise level in the area are unlikely to have negative impacts on local businesses and recreational users of this area. This assessment considers the number of recreational and commercial vessels currently using the waterway and the usual vehicular traffic including small trucks and forklifts operating at the nearby Fishermen’s Co-op.</p> <p>Many of the nearby commercial businesses would be busiest during weekend and holiday periods and much of the recreational use of this area would also occur during these periods. These times would generally be avoided, reducing the potential impacts from noise (as described in Section 2.1 and again below).</p> <p>Considering the timing and proposed hours of operation, noise attenuation provided by distance and similar levels of noise emitted from ambient noise sources, the residents, tourists and commercial businesses of Coffs Harbour are not expected to be adversely inconvenienced from the additional noise emitted by the proposed activity with the implementation of safeguards recommended in this REF.</p>		
<p>During operation?</p> <p>The proposal would provide refuelling facilities for small vessels (<12 m) with unleaded marine engines. Engines of this type are quiet at low RPM’s and must be switched off during refuelling. The increase in vessel traffic transiting to and from the refuelling wharf would generally occur only during daylight hours (when the facility is open to the public) and is unlikely to be audible above ambient levels at the nearest business (60 m). Operation of the facility on rare occasions at night (by authorised Government users only) would similarly be inaudible at the distance of the nearest residential property (500 m).</p> <p>The electric pumps that deliver fuel to the wharf are similarly quiet and the installation would have adequate soundproofing built in.</p> <p>Delivery of fuel to the facility itself would involve the reversing of a truck, along with operation of a transfer pump, in daylight hours. During refuelling, an audible alarm will sound when the fuel tank reaches High or High High Level. This audible alarm can be muted using the button on the control panel and the tanker driver and/or operator will generally be next to the panel and can mute the alarm immediately. Noise generated by fuel deliveries would not be inconsistent with the ambient daytime noise of the precinct and associated hard stand area.</p> <p>Maps showing the location of nearest sensitive receivers including residential and businesses are provided in Figure 2-4 and Figure 2-5.</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Is the proposal going to be undertaken only during standard working hours?</p> <p>Standard working hours</p> <ul style="list-style-type: none"> Monday – Friday: 7:00am to 6.00pm 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Description of existing environmental and potential impacts

- Saturday: 8.00am to 1.00pm
- Sunday and Public Holidays: no work

The proposal will be undertaken within the standard working hours listed above. No night-time work or other out of hours work is proposed.

Construction works are expected to commence in mid-2023, outside of peak tourist months, therefore minimising the impacts on local businesses.

Construction is expected to be completed within a 4-month period. However, there is the potential for this timeline to be extended due to periods of bad weather or other unforeseeable delays.

Is any piling or explosive blasting required for the proposal?

Yes

No

New marine piling would be required for proposed pontoon and untreated timber fender piles (adjacent to the northern travel lift runway). It is envisaged that the piles would be installed using a piling rig on a barge. The two steel piles with HDPE sleeves will either be screwed into the bedrock or installed into pre-bored holes. For the five untreated timber fender piles, it is envisaged that the rock would be pre-bored and the piles installed into the rock socket to achieve the required embedment.

Indicative plant and equipment utilised for piling and other construction activities and the associated sound power levels (SWL) are listed in Table 3-1. The below plant and equipment have been employed in the Construction Noise Estimator which represents its highest SWL and would be considered to be a conservative 'worse-case scenario' for the possible piling and construction method scenarios.

Table 3-1 Noise levels for construction equipment.

Type/ model plant (See Sources Sheet)	SWL LAeq (dB(A))
BM800 Piling rig	116
Mobile Crane	113
Small Hand Tools	105

It is expected that nearby sensitive receivers may encounter some vibration and noise impacts during the piling.

Piling will be undertaken only during standard construction hours as detailed above and the contractor will provide respite periods where noise exceeds the Highly Affected Noise level of 75dB LAeq,15 minute. The Contractor(s) will monitor the piling-induced vibration at the nearest receivers at the commencement of piling works to ensure the actual vibration is within the limits in the *Assessing Vibration: A Technical Guideline* and the *German Standard DIN 4150-3-1999 Structural Vibration – Part 3 Effects of Vibration on Structures*.

Description of existing environmental and potential impacts		
The construction tempo would also dictate respite between noise generating tasks, namely the time spent relocating equipment from one pile location to the next. Noise generated above the noise management level during the installation of each pile would last less than three hours. Due to the small number of new piles required, the overall time spent piling is likely to be no more than one week.		
Would construction noise or vibration from the proposal affect sensitive receivers? Yes, noise and vibration impacts associated with the proposal (as previously described above) have the potential to impact on nearby commercial businesses, dining establishments and recreational users.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Would operation of the proposal alter the noise environment for sensitive receivers? This might include, but not be limited to, altering the line or level of an existing carriageway, changing traffic flow, adding extra lanes, increasing the volume or type of vessel movements, increasing the number of heavy vehicles, removing obstacles that provide shielding including changing the angle of view of the traffic, changing the type of pavement, increasing traffic speeds by more than 10 km/hr or installing audio-tactile line markings.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Would the proposal result in vibration being experienced by any surrounding properties or infrastructure during operation? Yes, noise and vibration impacts associated with the proposal during piling have the potential to impact on nearby commercial businesses, dining establishments and recreational users as described previously.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Social impacts from noise will be mitigated through the CEMP and development of a Noise Management Plan. Other potential noise impacts associated with the proposal (i.e. on marine fauna) have been described in the ensuing sections. No additional impacts are expected.		

Safeguards

Safeguards to be implemented for noise and vibration are:

1. The Contractor(s) CEMP is to address construction noise and vibration management including detail for a targeted range of management and monitoring options of noise from construction activities.
2. The Contractor(s) will provide respite periods where noise exceeds the Highly Affected Noise level of 75dB LAeq,15 minute. The timing of respite is to be determined by Transport for NSW.
3. The following general construction mitigation measures will be implemented by the Contractor(s) to reduce the impacts on noise amenity through source controls:
 - a. Where possible, plant and equipment will be selected that can be fitted with options to minimise noise such as covers, mufflers, shrouds and other noise suppression equipment.
 - b. Plant and equipment will be turned off and not left idling when not in use. Anchorages and moorings are to be used for boats or other watercraft if necessary.
 - c. Plant and equipment will be operated in accordance with industry standards and have been serviced as per manufacturer specifications.
 - d. Noisy plant and equipment will be oriented away from sensitive receivers where possible.

- e. Temporary screens or other items that provide a noise buffer (including plant and equipment) will be used proximate to noise sources.
 - f. Low noise emission plant and equipment will be selected where available.
 - g. Broadband reversing alarms or similar will be used as an alternative to a traditional beeper reversing alarm for vehicles permanently on-site.
 - h. Plant and equipment will be well maintained and serviced regularly to ensure it is not generating excessive noise.
 - i. Tools will not to be dropped from a height onto hard surfaces.
4. The following general construction mitigation measures will be implemented by the Contractor(s) to reduce the impacts on noise amenity through administration controls:
- a. The use of horns and alarms will be minimised.
 - b. The staff and visitor induction protocols will include awareness of noise generating activities and mitigation measures and techniques that should be implemented.
 - c. Training will be conducted for appropriate community behaviours when access/egress the site.
5. The following general construction mitigation measures will be implemented by Transport for NSW to reduce the impacts on noise amenity through community management:
- a. The community will be notified by Transport for NSW one week prior to noise intensive activities commencing, such as piling.
 - b. The community will be informed by Transport for NSW one week prior to any planned out of hours work commencing.
 - c. A complaints procedure will be implemented by Transport for NSW and contact details provided to potentially affected residents and businesses in the area.
 - d. Transport for NSW complaints procedure will include a record of complaints indicating cause and measures taken to resolve/minimise cause.
 - e. The following general construction mitigation measures will be implemented by the Contractor(s) to reduce the impacts on noise amenity through site controls:
 - f. Works will be scheduled to minimise the number of noisy plant and equipment operating at any one time.
 - g. Construction activities will be planned to minimise vehicular movements around the site.
 - h. Arrange worksites will avoid or minimise reversing movements and where possible, ensure vehicles enter and exit work sites in a forward direction.
 - i. The following general construction mitigation measures will be implemented by the Contractor(s) to reduce the impacts of vibration:
 - j. High vibration methods will be substituted with lower vibration methods where possible.
 - k. Alternatives to high vibration plant and equipment will be used where possible.
6. The following general construction-monitoring will be implemented by the Contractor(s) to reduce the impacts of vibration due to piling:
- a. The Contractor(s) will monitor the piling-induced vibration at the nearest receivers at the commencement of piling works to ensure the actual vibration is within the limits in the Assessing Vibration: A Technical Guideline and the German Standard DIN 4150-3-1999 Structural Vibration – Part 3 Effects of Vibration on Structures.

7. Refuelling procedures will be implemented by the Contractor(s) to minimise noise and these would include being next to the control panel during the refuelling processes to monitor tank levels and manage audible alarms as required.

The Contractor is responsible for the implementation of the mitigation measures and managing noise and vibration for the proposal. The Contractor's compliance is to be managed by TfNSW.

3.6 Air Quality

Description of existing environmental and potential impacts		
Is the proposal likely to result in large areas (>2ha) of exposed soil?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Are there any dust sensitive receivers located within the vicinity of the proposal during the construction period?</p> <p>Yes, dust sensitive receivers in the vicinity of the proposal include local businesses (see Section 2.1.1 and Section 3.11). Some minor generation of dust may occur during the proposed works (e.g. during minor excavation work). However, dust related impacts are expected to be very minor and not expected to adversely impact any of the sensitive receivers through the adoption of best practices and adherence to accepted industry guidelines, standards as well as the safeguards contained in this REF.</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Is there likely to be an emission to air during construction?</p> <p>General construction vehicle and vessel exhaust emissions are expected to occur. Impacts to air quality would primarily occur from exhaust emissions from the use of diesel-powered construction vehicles and vessels and fugitive refuelling emissions. Fugitive refuelling emissions are expected to be minor because of works at the site. Appropriate safeguards would be implemented to minimise any potential air quality impacts. No other significant emissions are expected as a result of construction.</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Operational air quality potential impacts will include the following:</p> <ul style="list-style-type: none"> • Intermittent odours when the fuel tank and vessels are being refuelled. • Venting mast (4 m high) on the fuel tank will disperse odours into the atmosphere. • Engine exhaust from vessels and fuel delivery vehicles. <p>These impacts are expected to be minor and inconsequential in relation to the existing surrounding and existing land uses at the site.</p>		

Safeguards

Safeguards to be implemented for air quality are:

1. The following general construction mitigation measures will be implemented by the Contractor(s) to reduce the impacts to air quality:
 - a. All plant and equipment used during the construction works will be regularly maintained to comply with the relevant exhaust guidelines.
 - b. Any visible and persistent dark emissions from vessel exhausts will be reported and the equipment repaired or replaced as soon as practicable.
 - c. All operations and activities occurring at the premises will be carried out in a manner that will minimise the emission of dust from the premises.

2. Comprehensive refuelling procedures will be implemented by the Contractor(s) to avoid or reduce the possibility of release. As a minimum, these procedures will include:
 - a. Refuelling using designated existing marina refuelling station for vessels or off-site for land vehicles.
 - b. Training personnel involved with refuelling or fuel transfer in their roles, functions and responsibility, including emergency response.
 - c. Maintaining open communication channels.
 - d. Deploying spill prevention systems in accordance with established procedures and regulatory requirements.
 - e. Maintaining emergency response equipment to ensure that it is readily available.
3. Equipment and construction vehicles and marine vessels will not be left idling and switched off when not in use.
4. Equipment and construction vehicles and marine vessels will be regularly serviced (including preventative maintenance) and removed from site if not working properly (emitting excessive smoke).
5. Construction works will be planned to ensure minimal movement of equipment and construction vehicles and marine vessels.
6. Vapour recovery system will be added to reduce odour and emissions during filling of the fuel tank.

3.7 Non-Aboriginal heritage

Description of existing environmental and potential impacts		
<p>Have online heritage database searches been completed?</p> <ul style="list-style-type: none"> • TfNSW section 170 register • NSW Heritage database • Commonwealth EPBC heritage list • Australian Heritage Places Inventory • Local Environmental Plan(s) heritage items <p>Refer to Appendix B and Appendix E for search results. These are also summarised below.</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Are there any items of non-Aboriginal heritage or heritage conservation areas listed on relevant heritage databases/registers that are located within the vicinity of the proposal, including submerged heritage?</p> <p>A search of the State Heritage Inventory identified one (1) item (Coffs Harbour Jetty, SHR ID: 02040) within the vicinity of Coffs Harbour Marina. Coffs Harbour Jetty is located 200 m south of the Project Site, along Jetty Beach (Figure 3-3). Coffs Harbour Jetty was built in the 1890's and has since undergone multiple extensions in 1914 and in the 1940's. Coffs Harbour Jetty was listed on the State Heritage Register by the NSW Government in 2021, meaning it has been recognised as having particular significance to the people of NSW and enriches an understanding of history among the community.</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Description of existing environmental and potential impacts



Figure 3-3 Location of Non-Aboriginal heritage items under the State Heritage Inventory (Heritage NSW, 2022a).

A search of the Maritime Heritage Database identified one (1) item (*Sussex*, Site ID: 469), within the Coffs Harbour area (Figure 3-4). *Sussex* was a wooden schooner constructed in 1885 in Brisbane Water and was 28.7 m long with a gross tonnage of 97. It set sail in January 1890 from Port Stephens to the Tweed River, however, the vessel was never seen again. Although never found, it is estimated to be located somewhere off the mid north coast and is protected under the Historic Shipwrecks Act 1976 (Heritage NSW, 2022b).

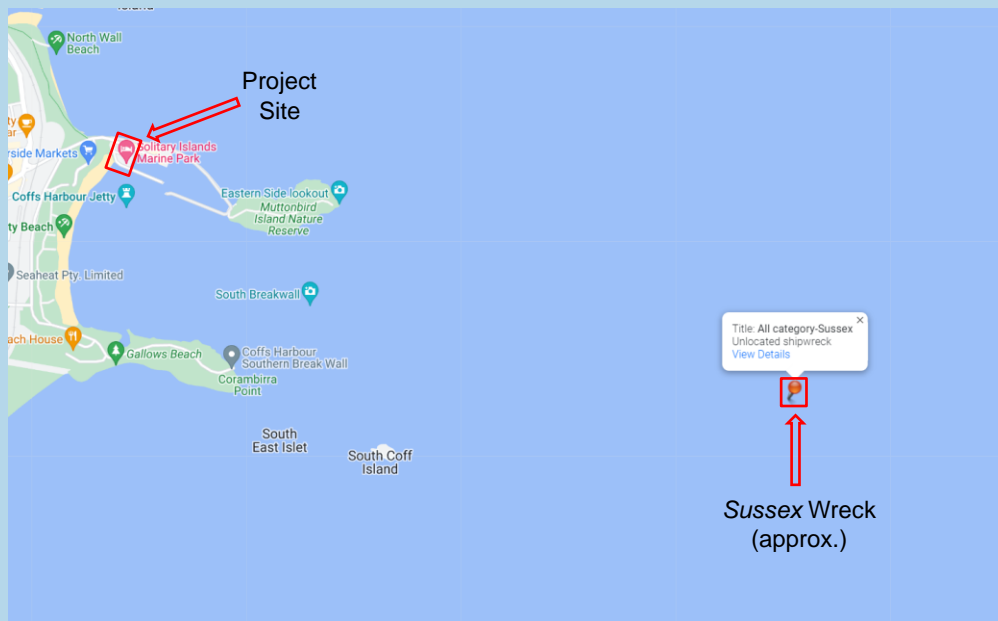


Figure 3-4 Location of maritime heritage sites in Coffs Harbour under the maritime heritage database (NSW Heritage, 2022b).

There are no (0) items listed under the TfNSW s170 register located within the vicinity of the Project Site.

Description of existing environmental and potential impacts		
There are no (0) items listed under the Commonwealth EPBC Heritage List located within the vicinity of the Project Site. Heritage searches and databases are included in Appendix B and Appendix E .		
Are there any items of potential non-Aboriginal heritage significance which are not listed on relevant heritage databases/registers that are in the vicinity of the proposal? There are no known items of potential non-Aboriginal heritage significance that have not been listed on the relevant databases. If any items are discovered that are suspected of having non-Aboriginal heritage significance, then works will cease in the area, and the Heritage Council will be notified, and relevant permits applied for if required. The contractors will detail further mitigation measures for heritage items.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposal likely to occur in or near features that indicate potential archaeological remains?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Protected Matters Search Tool (EPBC Act 1999)

The EPBC Act 1999 lists Matters of National Environmental Significance (MNES) including World Heritage Properties, National Heritage Properties, Commonwealth Land, Commonwealth Heritage Places and State and Territory Reserves. An EPBC Act Protected Matters Search for heritage items was undertaken on 12th May 2022 for a 2.5 km radius around the proposal site (**Appendix B**). Results were as follows:

- No cultural MNES, including World Heritage Properties or National Heritage Places are listed within a 2.5 km radius of the proposal site and will not be impacted by the proposal.
- No Commonwealth Heritage Places are listed within a 2.5 km radius of the proposal site and will not be impacted by the proposal.
- Three (3) Commonwealth Land areas are listed within a 2.5 km radius of the proposal site. However, these would not be impacted by the proposal as they do not occur in close proximity to the proposal area.

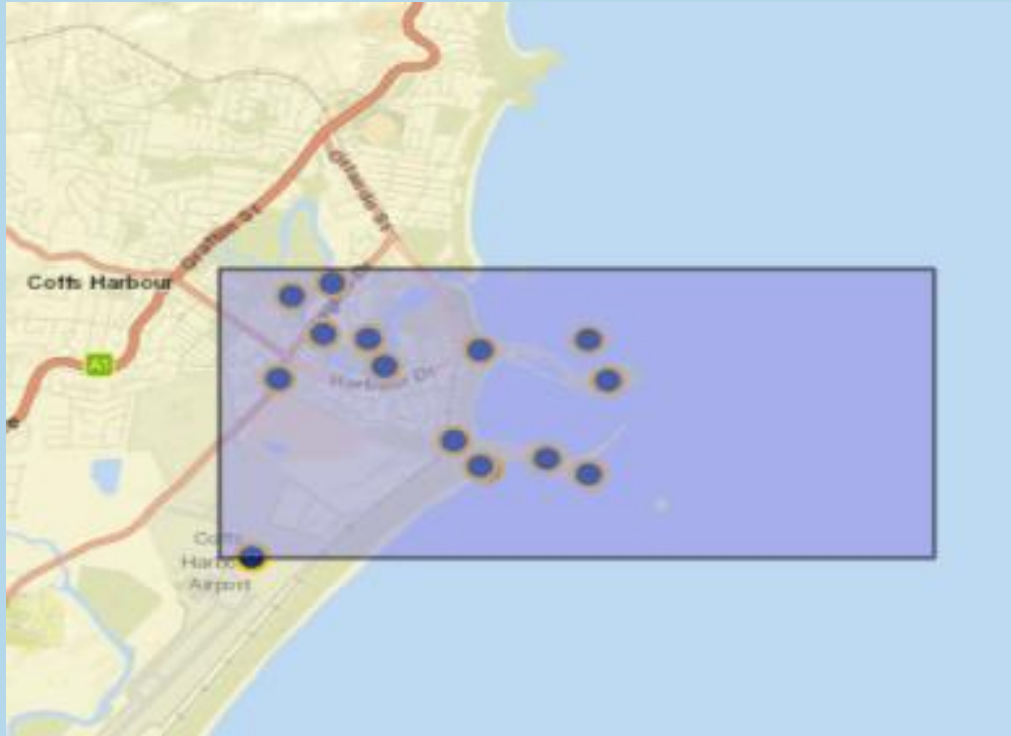
In summary, no cultural heritage items listed under the EPBC Act 1999 would be impacted by the proposal.

Safeguards

Safeguards to be implemented for non-Aboriginal heritage are:

1. If work results in unexpected historic heritage items (archaeological relics and other historic items including historic shipwrecks), all work must stop in the immediate area. TfNSW are to be notified and the 'unexpected heritage items procedure' in the Standard Management Procedure: Unexpected Heritage Items (2015) is to be followed.

3.8 Aboriginal heritage

Description of existing environmental and potential impacts		
<p>Would the proposal involve disturbance in any area that has not been subject to previous ground disturbances?</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>The proposal is located within the Coffs Harbour maintenance facility and adjacent harbour area. There will be no increase in the impact footprint to the ground or impacts on areas not subject to previous ground disturbance.</p>		
<p>Have online AHIMS search been completed?</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>A basic search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken on 1 August 2022 and is provided in Appendix E. The basic AHIMS search found 17 Aboriginal sites and no Aboriginal places in the search area shown in Figure 3-5.</p>		
<p>An extensive search was then undertaken to identify these sites with results provided in Appendix E. None of these sites are located within the proposal area and will not be directly or indirectly impacted by the proposal.</p>		
		
<p>Figure 3-5 AHIMS Search – Basic search results.</p>		
<p>Is there potential for the proposal to impact on any items of Aboriginal heritage?</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>No items of Aboriginal heritage occur within the proposed works area. If any items are discovered during works that are suspected of having Aboriginal heritage significance, then works will cease in the area, and Heritage NSW will be notified and relevant permits applied for if required. The contractors CEMP will detail further mitigation measures for heritage items.</p>		

Description of existing environmental and potential impacts		
Would the proposal involve the removal of mature native trees? There will be no requirement for the removal of any trees associated with the proposal.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Would the proposals impact on any key landscape features that may indicate any potential archaeological remains? The proposal will not result in any changes to key landscape features being undertaken on already altered and disturbed land.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposal consistent with the requirements of the TfNSW Procedure for Aboriginal cultural heritage consultation and investigation (PACHCI)? The TfNSW PACHCI procedure has been followed in the preparation of this REF. Results of the Stage 1 PACHCI are included in Appendix F .	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Consultation with the Coffs Harbour and District Aboriginal Land Council (CHDLALC) was undertaken during the preparation of this REF. The CHDLALC holds no Aboriginal Cultural Heritage constraints regarding the refuelling facility at Coffs Harbour Marina (refer to Table 2-1 and Appendix F).		

Safeguards

Safeguards to be implemented for Aboriginal heritage are:

1. Project staff and Contractor(s) will be made aware of their statutory obligations for heritage under the NP&W Act through the site induction and toolbox talks.
2. If Aboriginal heritage items are uncovered during the works including during any excavation works, all works in the vicinity of the find must cease and the TfNSW Aboriginal Community and Heritage Partner and Regional Environment Manager contacted immediately. The area should be protected with clearly identifiable No Go Zone signage and demarcation and steps in the Roads and Maritime Services Standard Management Procedure: Unexpected Heritage Finds must be followed.
3. In the event that skeletal remains are uncovered, works in the immediate area will cease, the area will be cordoned off and the NSW Police Coroner will be contacted to determine if the material is of Aboriginal origin. If determined to be Aboriginal, the OEH Enviroline 131 555 and relevant Aboriginal stakeholders will be contacted to determine an action plan for the management of the skeletal remains prior to works re-commencing.

3.9 Biodiversity

Description of existing environmental and potential impacts		
Have relevant database searches been carried out? The following database searches were undertaken: <ul style="list-style-type: none"> • EPBC Act 1999: Protected Matters Search (Appendix B) • NSW FM Act 1994: Schedules 4, 4a, 5 and 6 (Appendix C) • BC Act 2016: BioNet Atlas of NSW Wildlife (Appendix D) • DPI's WeedWise Website (Appendix I) A summary of results is provided in Section 3.9.1 and 3.9.3.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Description of existing environmental and potential impacts		
<p>Did the database searches identify any threatened ecological communities, populations, threatened flora and/or threatened fauna or migratory species in or within the vicinity of the proposed works? Both Federal and State listed matters must be considered.</p> <p>A number of threatened/protected fauna and flora are known to occur, or have the potential to occur, in the study area. Tables of listed species under the FM Act, EPBC Act and BC Act are provided in Section 3.9.1.</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Is the proposal likely to impact nationally listed threatened species, ecological communities or migratory species?</p> <p>Construction and operation of the proposal will occur on already disturbed land, which has undergone recent remediation and dredging. There are no threatened ecological communities within the proposed works area which have the potential to be impacted directly or indirectly by the proposal.</p> <p>Minor, short term indirect impacts on listed marine and coastal threatened fauna do have the potential to occur during construction and operation, however, these are not expected to be significant given the proposed work scope, location, existing habitat and safeguards which will be adopted.</p> <p>Refer to Appendix H for Assessments of Significance for selected species which are most likely to occur within the proposal area or have been raised during agency consultation as of concern: White's seahorse, black rockcod, wedge-tailed shearwater, pied oystercatcher, sooty oystercatcher, marine brown algae - <i>Nereia lophocladia</i>.</p> <p>Potential construction and operational related impacts on marine and coastal fauna can be summarised as:</p> <ul style="list-style-type: none"> • Direct impacts of construction on benthic habitat (e.g. soft sediment seafloor). • Entanglement or ingestion of fauna in marine debris. • Vessel strike. • Impacts of water pollution / waste. • Lighting impacts. • Noise impacts. • Introduction of marine invasive pest species. <p>Additional details on each of these matters is provided at the end of this table.</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Would the proposal result in the removal of or harm to any other aquatic or terrestrial vegetation?</p> <p>Construction and operation of the proposed fuel facility will occur on already disturbed land, which has undergone recent remediation. No terrestrial vegetation is present on this land apart from some planted grasses and small weeds around the fence lines.</p> <p>No riparian vegetation, mangroves or saltmarsh occur in the intertidal zone of the site and will not be impacted directly or indirectly by the proposal. No</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Description of existing environmental and potential impacts		
<p>macroalgae or seagrass occurs within the subtidal zone near to the proposal site and will not be impacted directly or indirectly.</p> <p>Filamentous marine algae occurs on the existing piles (which will be left in place) and the newly installed rock revetment adjacent to the maintenance facility. No macroalgae is attached to these structures. Refer to Section 3.9.6 for additional details regarding aquatic vegetation in the study area and images of the site.</p>		
<p>Would the proposal affect any sandstone platforms?</p> <p>No sandstone platforms occur in the construction area.</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Are there any known areas of outstanding biodiversity value or areas mapped as 'littoral rainforest' or 'coastal wetland' in the Coastal Management SEPP in or within the vicinity of the proposed work?</p> <p>There are no areas of outstanding biodiversity value in the vicinity of the proposed works. Coastal Wetlands and Littoral Rainforests in the general area were mapped using the NSW DPI Spatial Data Portal (Figure 3-7). The closest Coastal Wetland to the proposal is Coffs Creek, located ~900 m west of the Coffs Harbour Marina. Coffs Creek is not expected to be impacted by the proposal. Littoral Rainforests in the vicinity of the proposal are located ~250 m south-west of the proposal location and ~300 m north west of the proposal. As they are not in the immediate vicinity of the proposal, they are not expected to be impacted by the proposal.</p> <p>Refer to Section 3.9.5 for further details and maps.</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Would the proposal provide any additional barriers to the movement of terrestrial or aquatic wildlife?</p> <p>The proposal will not provide any barriers to the movement of wildlife during construction or operation.</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Would the proposal disturb any natural waterways or aquatic habitat?</p> <p>The proposal is located within and adjacent to a marine waterway being the Inner Harbour of Coffs Harbour. Within the immediate vicinity of the proposal, aquatic habitat includes unvegetated soft sediment seafloor which has recently been dredged as part of the Coffs Harbour Slipway remediation and dredging undertaken for the upgrade of the Government berths. This is surrounded by a rock revetment which is relatively new and at present has little marine growth (flora or fauna). Further afield (in the Outer Harbour area and marine/coastal areas outside of Coffs Harbour) there are areas of natural intertidal and subtidal reef inhabited by macroalgae and areas of seagrass. Existing aquatic habitat in the study area is described in 3.9.2 and 3.9.6.</p> <p>Disturbance of natural waterways or aquatic habitat associated with the proposal is expected to include:</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Description of existing environmental and potential impacts		
<ul style="list-style-type: none"> • Short term reductions in light availability in the immediate construction area through increased turbidity levels caused by demolition and piling activities. • Direct impacts on unvegetated soft sediment seafloor in the immediate construction area from the installation of new piles and potential localised increases in turbidity. • Direct impacts on unvegetated soft sediment seafloor habitats from general activities of construction vessels such as anchoring. • Potential impacts of water quality and aquatic habitat in the event of an accidental spill or if the use of silt curtains is not properly implemented. • Greater Coffs Harbour would not be expected to be impacted from the proposed works if all safeguards are adopted. 		
<p>Would the proposal result in the overshadowing or disturbance of seagrass, marine or riparian vegetation?</p> <p>There is no mapped seagrass (or other marine vegetation) or riparian vegetation in the waterway or on the foreshore within the proposal construction area. No marine vegetation including macroalgae, seagrass, mangroves, saltmarsh occurs in the intertidal or subtidal zone in the footprint of any proposed structures which have the potential to cause shading nor do they occur in areas which will be subject to disturbance during construction (as confirmed during the June 2022 field survey).</p> <p>Refer to Section 3.9.6 for further details.</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Would the proposal disturb any crevices or other locations (such as on jetties and culverts) for potential bat habitat?</p> <p>No crevices or locations such as bridges and culverts suitable for bat habitat will be disturbed or impacted by the proposal as they do not occur at the site.</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Additional information regarding potential impacts of the proposal on listed threatened marine and coastal fauna is provided below:</p> <p><u>Direct Impacts of Construction</u> - Direct impacts of construction on natural and artificial habitats and the marine fauna which may reside on or near to these areas has the potential to occur. For example, piling will impact directly on unvegetated substrate and any associated infauna while increased turbidity may also cause sedimentation impacts on sessile filter feeding invertebrates attached to artificial structures.</p> <p><u>Entanglement / Ingestion of Marine Debris</u> - Marine and coastal fauna (fishes, reptiles, sharks and rays, marine mammals and birds) have the potential to be adversely affected by marine debris which may be accidentally or deliberately disposed of into the waterway during construction. “Entanglement in or ingestion of anthropogenic debris in marine and estuarine environments” is listed as a key threatening process (KTP) under the BC Act while “Injury and fatality to vertebrate marine life caused by ingestion of, or entanglement in, harmful marine debris” is listed as a KTP under the EPBC Act.</p> <p>Entanglement of fauna in marine debris can cause restricted mobility, starvation, infection, amputation, drowning and smothering. Ingestion of marine debris occurs when species confuse items such as plastic bags, rubber, balloons and confectionery wrappers with prey and ingest them, causing a physical blockage in the digestive system, leading to internal injuries. While the potential impacts of marine debris on fauna can be fatal, this potential impact can also be easily mitigated. With appropriate waste</p>		

Description of existing environmental and potential impacts

management processes put in place during construction the potential impact of marine debris associated with the proposal can be effectively managed or mitigated and is not considered to be significant.

Impacts of Floating Plant and Cable Strike - The proposed construction works will require floating plant (e.g. barge, pile driver, crane for lifting new piles and other elements into place) to bring piles and marine elements to the site and undertake construction works. These will likely be required to be anchored or moored for the construction period to keep them in place. Anchoring gear typically has long cables, necessary to achieve stability. This equipment has the potential to impact on marine fauna through cable strike. Cable strike is related to anchor cables that stretch and slacken in the water column. Cables may strike marine fauna, causing slashing or other injuries, particularly larger fauna if swimming past. The risk of cable strike is generally greatest for inquisitive young cetaceans (dolphins and whales) and pinnipeds (seals), and slow moving species (e.g. turtles), although all animals are susceptible to injuries from cable movement in the water column. The risk of cable strike is greatest at night when floating plant may be left on site with multiple anchors and/or moorings. The potential of risk from cable strike is also related to the number of large marine fauna present in an area, which is expected to be low in the works area, particularly as these animals are likely to avoid the area during demolition and construction due to noise impacts.

Vessel Strike - There is the potential for marine fauna in the area to be struck by construction vessels causing injury or death depending on the vessel size, speed and species involved. Vessel strike is of most concern for slower moving marine mammals such as whales and turtles. The risk of damaging vessel strike associated with the proposed activities is very low due to the expected low number of large fauna in the immediate construction area, low number of vessels required, and very low speeds that these would be travelling within this waterway. While at site these vessels would generally be stationary. Large mobile marine fauna which may be present within the local area are also likely to be accustomed to vessel presence considering the current use of the Inner Harbour as an International Marina, Commercial Fishermen's Co-op with associated berthing for commercial, fishing vessels and berthing area for Government vessels. The addition of a small number of stationary or slow moving construction vessels and plant is unlikely to add significantly to the existing vessel traffic or its impact on fauna. In addition, it is likely that if mobile marine fauna are present in the construction area they will leave or avoid the area when construction vessels are operating due to noise impacts.

Impacts of Water Pollution - Potential sources of water pollution associated with the project are listed in Section 3.2. Water pollution has the potential to cause harm to marine and coastal fauna including sessile and mobile invertebrates, fish, reptiles, birds and marine mammals. Water pollution may alter the distribution and density of species, can increase levels of contaminants in the tissue of some species, which can then have impacts up the food chain, and reduce the relative abundance of top-order predators (DECCW 2009). Reproductive physiology, mating systems and organism life histories can also be impacted by water pollution and can combine with other factors to reduce population persistence (Dulvey et al. 2003). There is the potential for hazardous substances (e.g. fuels, oils and other construction plant related fluids) to accidentally enter the waterway through spills or leaks from land and marine based construction vessels and equipment. Impacts of this water pollution on marine fauna can potentially occur through two main routes being:

1. Ingestion
2. Substances such as oils sticking to their bodies, feathers or fur.

While the potential impacts of water pollution, including spills of fuels and oils can be dangerous, it is expected that this potential impact can be mitigated or managed effectively with the safeguards outlined in this REF associated with protecting water quality (see Section 3.2).

Noise and Vibration Impacts - Construction noise impacts related to the proposal are likely to include:

- Vehicle and vessel engine noise

Description of existing environmental and potential impacts

- Minor shallow excavation noise
- Piling noise and vibration
- Noise from small power tools.

Given that the study site is located adjacent to a commonly used waterway, a number of local businesses, roadways and carparks, the Fishermen's Co-op with day and night operations and Government berths the additional noise impacts of vehicles and vessels associated with construction on marine and coastal fauna are likely to be insignificant in relation to existing vehicle and vessel and commercial industry background noise. Limited installation of piles for the fuel wharf will be the main source of underwater construction noise which may affect marine fauna.

A number of marine mammals which have the potential to occur at or near the site are sensitive to underwater noise. The Underwater Piling Activities Noise Guidelines (Government of South Australia 2012) provides information regarding sensitivity of various species to underwater noise. Marine mammals are sensitive to the following frequencies:

- Baleen whales including Southern right whales, humpback whales and blue whales - sensitive to sound in the range of 7Hz to 22kHz.
- Toothed whales, including dolphins and killer whales - sensitive to sound in the range of 150 Hz to 160kHz.
- Pinnipeds (seals and sea lions) - sensitive to higher frequencies in the range of 75 Hz to 30 kHz.

Impacts of noise (including above and underwater noise) on marine and coastal fauna may be classed as behavioural or physiological.

Behavioural related noise impacts / responses may include:

- Changes in vocalisation, resting, diving and breathing patterns, changes in mother-infant spatial relationships, and avoidance of the noise source.
- Masking of biologically important sounds may interfere with communication and social interaction, and cause changes in behaviour as well.
- Avoidance behaviour – this is expected to occur for most highly mobile vertebrates which may be in the study area including mammals, fishes, birds and marine reptiles (e.g. turtles).

Physiological impacts can include reductions in hearing sensitivity or an increase in hearing threshold. If the noise exposure is below some critical sound energy level, the hair cells will eventually return to their normal shape. This effect is called a temporary threshold shift (TTS) as the hearing loss is temporary. If the noise exposure exceeds the critical sound energy level, the hair cells become permanently damaged and the effect is called permanent threshold shift (PTS).

A number of safeguards will be adopted to reduce the potential impacts of underwater noise on marine fauna and general construction noise on coastal fauna which are described at the end of this Section.

Invasive Marine Species - There is the potential that invasive marine species not currently known in Coffs Harbour could be translocated here during construction via transport of organisms or their eggs / cysts attached to the hulls of construction vessels, attached to construction equipment or in the ballast of vessels. The introduction of invasive marine species to areas in which they do not yet occur has the potential to threaten local biodiversity and displace indigenous species, impact on primary production and aquaculture. This may occur directly via competitive exclusion or direct predation, or indirectly through changing the physical and biological characteristics and structure of habitats and fouling of marine infrastructure (NSW DPI 2022). Safeguards will be adopted to mitigate the risk of the spread of marine invasive species into or out of Coffs Harbour during construction.

3.9.1 Threatened and Protected Species Searches

The various marine habitats within Coffs Harbour and nearby coastal waters are known to provide shelter, foraging, breeding and nursery areas for a wide range of marine fauna including bony fishes, sharks and rays, marine mammals (i.e. whales, dolphins, seals), marine reptiles (e.g. turtles) and marine/migratory birds. Many of these species are listed as threatened or protected under State and/or Commonwealth legislation including the NSW FM Act 1994, NSW BC Act 2016 and the Commonwealth EPBC Act 1999. The species listed under these Acts with the potential to occur within the study area are outlined in the Sections below.

NSW Fisheries Management Act 1994

Threatened and protected marine species listed under Schedules 4 to 5 of the FM Act 1994 (see search results in **Appendix C**) were reviewed in order to satisfy requirements of the Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management (NSW DPI 2013). Marine species, populations and ecological communities currently listed as endangered, critically endangered and/or vulnerable (i.e. Schedule 4, 4A and 5) under the NSW FM Act 1994 with the potential to occur in the study area are listed below.

Schedule 4: Endangered Species, Populations and Ecological Communities

- White's Seahorse (*Hippocampus whitei*) – endangered species
- Scalloped hammerhead shark (*Sphyrna lewini*) - endangered species
- Southern bluefin tuna (*Thunnus maccoyii*) - endangered species
- Marine worm (*Hadrachaeta aspeta*) - species presumed extinct
- Green sawfish (*Pristis zijsron*) - species presumed extinct
- Bennett's seaweed (*Vanvoorstia bennettiana*) - species presumed extinct

Schedule 4A: Critically Endangered Species and Ecological Communities

- Grey nurse shark (*Carcharius taurus*) - critically endangered species
- Marine slug (*Smeagol hilaris*) - critically endangered species
- Marine brown algae (*Nereia lophocladia*) - critically endangered species

Schedule 5: Vulnerable Species and Ecological Communities

- Great white shark (*Carcharodon carcharias*) - vulnerable species
- Black cod (*Epinephelus daemeli*) - vulnerable species
- Great hammerhead shark (*Sphyrna mokarran*) - vulnerable species

Protected Species

All species of the families 'Syngnathidae', 'Solenostomidae' and 'Pegasidae' (i.e. seahorses, sea dragons, pipefishes, pipehorses).

- Ballina angelfish, *Chaetodontoplus ballinae*
- Bluefish, *Girella cyanea*
- Eastern blue devil fish, *Paraplesiops bleekeri*
- Elegant wrasse, *Anampses elegans*
- Estuary cod, *Epinephelus coioides*
- Giant Queensland groper, *Epinephelus lanceolatus*
- Herbsts nurse shark, *Odontaspis ferox*

Considering the proposed activity, its potential impacts on marine fauna, and available safeguards, the proposed works are not expected to cause any long term or significant impact on these species, nor will they impact on the viability of local populations, or place any of them at the risk of extinction. Assessments of Significance for White's seahorse, black rockcod and marine brown algae (*Nereia lophocladia*) are

provided in **Appendix H** as these are the species most likely to occur within the proposal area or have been raised of as concern during consultation.

Biodiversity Conservation Act 2016 and Environmental Protection and Biodiversity Conservation Act 1999

Online database searches for species listed under the NSW BC Act 2016 and the EPBC Act 1999 with the potential to occur within the proposal location (within a 10 km and 2.5 km radius respectively) were undertaken on 12th May 2022. Full search results are provided in **Appendix D** (BC Act) and **Appendix B** (EPBC Act). In summary:

- The EPBC Act search listed 93 listed marine species, 12 whales and other cetaceans, 83 threatened species and 61 listed migratory species with the potential to occur in the study area (i.e. 2.5 km radius of the proposal location). The likelihood of occurrence of these threatened species in the proposal location is provided in Table 3-2. The Protected Matters Search results are provided in **Appendix B**.
- The BC Act search listed 22 threatened marine species and a number of marine/migratory and shorebirds from the study area (i.e. within a 10 km radius of the proposal location). The original Atlas of NSW Wildlife search results are provided in **Appendix D**.

Table 3-2 Threatened and protected species listed under the EPBC Act 1999 and BC Act 2016 with the potential to occur within the proposal location.

Common Name	Species Name	BC Act	EPBC Act	Likelihood of Occurrence
Black Rockcod	<i>Epinephelus daemellii</i>	-	V	Species or species habitat likely to occur within area*
White’s Seahorse	<i>Hippocampus whitei</i>	-	E	Species or species habitat known to occur within area*
Loggerhead Turtle	<i>Caretta caretta</i>	E1, P	E, M	Congregation or aggregation known to occur within area*
Green Turtle	<i>Chelonia mydas</i>	V, P	V, M	Species or species habitat known to occur within area*
Leatherback Turtle	<i>Dermochelys coriacea</i>	-	E, M	Breeding likely to occur within area*
Hawksbill Turtle	<i>Eretmochelys imbricata</i>	P	V, M	Species or species habitat known to occur within area*
Flatback Turtle	<i>Natator depressus</i>	P	V, M	Breeding likely to occur within area*
Blue Whale	<i>Balaenoptera musculus</i>	-	E, M, W	Species or species habitat known to occur within area*
Southern Right Whale	<i>Eubalaena australis</i>	E1, P	E, M, W	Species or species habitat likely to occur within area*
Minke Whale	<i>Balaenoptera acutorostrata</i>	P	W	Species may pass by area on occasion
Bryde’s Whale	<i>Balaenoptera musculus</i>	E1, P	M, W	Species may pass by area on occasion
Humpback Whale	<i>Megaptera novaeangliae</i>	V, P	M, W	Species may pass by area on occasion
Pygmy Sperm Whale	<i>Kogia breviceps</i>	P	-	Species may pass by area on occasion
Gray’s Beaked Whale	<i>Mesoplodon grayi</i>	P	-	Species may pass by area on occasion

Strap-toothed Beached Whale	<i>Mesoplodon layardii</i>	P	-	Species may pass by area on occasion
Killer Whale	<i>Orcinus orca</i>	-	M, W	
Pygmy Killer Whale	<i>Feresa attenuate</i>	P	-	Species may pass by area on occasion
Common Dolphin	<i>Delphinus delphis</i>	P	W	Species may pass by area on occasion
Risso's Dolphin	<i>Grampus griseus</i>	P	W	Species may pass by area on occasion
Fraser's Dolphin	<i>Lagenodelphis hosei</i>	P	-	Species may pass by area on occasion
Spotted Dolphin	<i>Stenella attenuata</i>	P	W	Species may pass by area on occasion
Striped Dolphin	<i>Stenella coeruleoalba</i>	P	-	Species may pass by area on occasion
Spinner Dolphin	<i>Stenella longirostris</i>	P	-	Species may pass by area on occasion
Bottlenose Dolphin	<i>Tursiops truncatus</i>	P	W	Species may pass by area on occasion
Indian Ocean Bottlenose Dolphin	<i>Tursiops aduncus</i>	-	W	
Australian Humpback Dolphin	<i>Sousa sahalensis</i>	-	M, W	
Oceanic Whitetip Shark	<i>Carcharhinus longimanus</i>	-	M	
Great White Shark	<i>Carcharodon carcharias</i>	-	V, M	Species or species habitat known to occur within area*
Porbeagle	<i>Lamna nasus</i>	-	M	
Whale Shark	<i>Rhincodon typus</i>	-	V, M	Species or species habitat may occur within area*
Dugong	<i>Dugong dugon</i>	E1, P	M	Species may pass by area on occasion
Reef Manta Ray	<i>Mobua alfredi</i>	-	M	
Giant Manta Ray	<i>Mobula birostris</i>	-	M	
Australian Fur-seal	<i>Arctocephalus pusillus doriferus</i>	V, P	-	Species may pass by area on occasion
Little Penguin	<i>Eudyptula minor</i>	P	-	Not likely to occur in area
Red Knot	<i>Calidris canutus</i>	-	E, M	Species or species habitat known to occur within area overfly marine area*
Curlew Sandpiper	<i>Calidris ferruginea</i>	-	CE, M	Species or species habitat known to occur within area overfly marine area*
Greater Sand Plover	<i>Charadrius leschenaultii</i>	-	V, M	Species or species habitat known to occur within area overfly marine area*
Fresh-footed Shearwater	<i>Ardenna carneipes</i>	V, P	-	Species may occur within or pass by area on occasion
Sooty Shearwater	<i>Ardenna grisea</i>	P	-	Species may occur within or pass by area on occasion

Wedge-tailed Shearwater	<i>Ardenna Pacifica</i>	P	-	Species may occur within or pass by area on occasion
Short-tailed Shearwater	<i>Ardenna tenuirostris</i>	P	-	Species may occur within or pass by area on occasion
Antipodean Albatross	<i>Diomedea antipodensis</i>	-	V, M	Foraging, feeding or related behaviour likely to occur within area*
Gibson's Albatross	<i>Diomedea antipodensis gibsoni</i>	-	V	Foraging, feeding or related behaviour likely to occur within area*
Southern Royal Albatross	<i>Diomedea epomophora</i>	-	V, M	Foraging, feeding or related behaviour likely to occur within area*
Wandering Albatross	<i>Diomedea exulans</i>	-	V, M	Foraging, feeding or related behaviour likely to occur within area*
White-throated Needletail	<i>Hirundapus caudacutus</i>	P	V	Species or species habitat known to occur within area overfly marine area*
Swift Parrot	<i>Lathamus discolor</i>	E1, P	CE	Species or species habitat known to occur within area overfly marine area*
Southern Giant Petrel	<i>Macronectes halli</i>	-	V, M	Species or species habitat may occur within area*
Northern Giant Petrel	<i>Macronectes halli</i>	V, P	V, M	Foraging, feeding or related behaviour likely to occur within area*
Fairy Prion	<i>Pachyptila turtur</i>	P	-	Species may occur within or pass by area on occasion
Westland Petrel	<i>Procellaria westlandica</i>	P	-	Species may occur within or pass by area on occasion
Gould's Petrel	<i>Pterodroma leucoptera leucoptera</i>	V, P	-	Species may occur within or pass by area on occasion
Black-winged Petrel	<i>Pterodroma nigripennis</i>	V, P	-	Species may occur within or pass by area on occasion
White-faced Storm-Petrel	<i>Pelagodroma marina</i>	P	-	Species may occur within or pass by area on occasion
Eastern Curlew	<i>Numenius madagascariensis</i>	-	CE, M	Species or species habitat known to occur within area*
Sooty Albatross	<i>Phoebastria fusca</i>	-	V, M	Species or species habitat may occur within area*
Australian Painted Snipe	<i>Rostratula australis</i>	-	E	Species or species habitat known to occur within area overfly marine area*
Buller's Albatross	<i>Thalassarche bulleri</i>	-	V, M	Species or species habitat may occur within area*
Northern Buller's Albatross	<i>Thalassarche bulleri platei</i>	-	V	Species or species habitat known to occur within area*
Indian Yellow-nosed Albatross	<i>Thalassarche carteri</i>	-	V, M	Species or species habitat likely to occur within area*

Shy Albatross	<i>Thalassarche cauta</i>	V, P	E, M	Species or species habitat may occur within area*
Chatham Albatross	<i>Thalassarche eremita</i>	-	E, M	Species or species habitat may occur within area*
Campbell Albatross	<i>Thalassarche impavida</i>	-	V, M	Species or species habitat may occur within area*
Black-browed Albatross	<i>Thalassarche melanophris</i>	-	V, M	Foraging, feeding or related behaviour likely to occur within area*
Salvin's Albatross	<i>Thalassarche salvini</i>	-	V, M	Foraging, feeding or related behaviour likely to occur within area*
White-capped Albatross	<i>Thalassarche steadi</i>	-	V, M	Species or species habitat may occur within area*

* "Likelihood of Occurrence" is determined by the EPBC Act Protected Matters Search Tool.

BC Act Status – V = vulnerable, E1 = endangered species, P = protected

EPBC Act Status – V = vulnerable, E = endangered, CE = critically endangered, M = migratory

Considering the proposed activity, its potential impacts on marine and coastal fauna, and available safeguards, the proposed works are not expected to cause any long term or significant impact on these species, nor will they impact on the viability of local populations, or place any of them at the risk of extinction. Assessments of Significance for White's seahorse, black rockcod, wedge-tailed shearwater, pied oystercatcher and sooty oystercatcher are provided in **Appendix H** as these are the species are those most likely to occur within the proposal area or have been raised of as concern during consultation.

3.9.2 Field Survey Results

A site visit (including diving within the marine area of the site) was conducted on 23rd and 24th June 2022 to investigate biodiversity within the proposal area. There were no native terrestrial flora within the proposal footprint which would be impacted directly or indirectly by construction or operation. Norfolk Island Pines, Casuarina's and Coastal Banksia were planted nearby. No aquatic vegetation including macroalgae, seagrass, saltmarsh or mangroves occurred within the proposal area and will not be impacted by the proposal. Along the rock revetment within the marina, and on the existing piles there were some oysters and barnacles present and the revetment was also seen to be covered in fine filamentous algae (with high sedimentation) in the subtidal zone. Mullet was observed in the area and an unidentified school of juvenile fish. Silver Gulls were also present, however, there were no birds nesting on site and no natural habitat present at the site in which this may occur. Images from the field survey are provided in Figure 3-6.



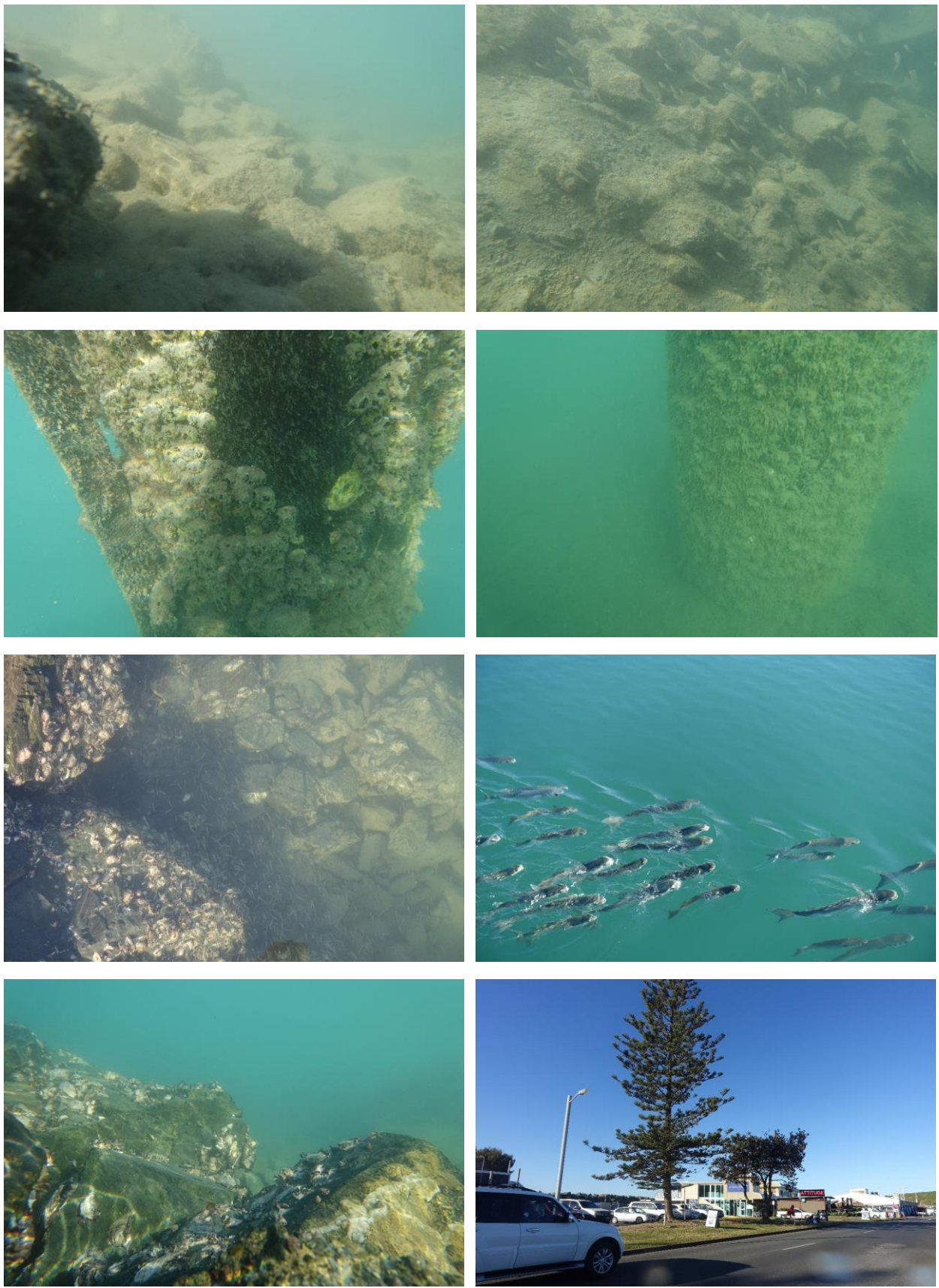


Figure 3-6 Flora and fauna within the study area.

3.9.3 WeedWise Search

A search of the NSW DPI WeedWise database for priority weeds for the North Coast Region, which includes the Coffs Harbour LGA, was undertaken on 5 August 2022. The search results are provided in **Appendix I**. The proposed works are not expected to result in the introduction of any priority terrestrial or aquatic weeds to the study area or result in the translocation of any priority aquatic or terrestrial weeds out of the study area to other areas, as they do not occur at the site.

3.9.4 Critical Habitat / Areas of Outstanding Biodiversity Value (AOBVs)

This section identifies any land declared as Critical Habitat and Areas of Outstanding Biodiversity Value (AOBV) located within the study area, as listed under the FM Act 1994, BC Act 2016 and EPBC Act 1999.

Fisheries Management Act 1994 – Critical Habitat

The FM Act 1994 makes provision for the declaration of Critical Habitat by the Minister for Primary Industries. Critical Habitat is defined under the FM Act 1994 as ‘the whole or any part of the habitat of an endangered species, population or ecological community that is critical to the survival of the species, population or ecological community’. Regulations can be developed to control specific activities in critical habitat areas. The Register of Critical Habitat under the FM Act 1994 can be found [here](#) (NSW DPI 2022a) and includes the following:

- ***Grey Nurse Shark Critical Habitat*** – Various locations in NSW are listed, none of which are located in the vicinity of the proposed works (NSW DPI 2002).

No areas of Critical Habitat listed under the FM Act 1994 will be impacted by the proposal.

Environmental Protection and Biodiversity Conservation Act 1999 – Critical Habitat

The Register of Critical Habitat for species listed under the EPBC Act 1999 indicates that no areas of listed Critical Habitat under this Act occur within the study area (DAWE 2022).

The only areas of Critical Habitat for aquatic / marine species identified under the EPBC Act are:

- Macquarie Island, Tasmania – Critical Habitat for wandering albatross (*Diomedea exulans*).
- Albatross Island, The Mewstone, Pedra Branca, Tasmania – Critical Habitat for shy albatross (*Thalassarche cauta*).
- Macquarie Island, Tasmania – Critical Habitat for grey-headed albatross (*Thalassarche chrysostoma*).

None of these islands are located near to the study area and will not be impacted by the proposal.

Biodiversity Conservation Act 2016 – Areas of Outstanding Biodiversity Value

The BC Act 2016 gives the Minister for the Environment the power to declare Areas of Outstanding Biodiversity Value (AOBVs). AOBVs are special areas that contain irreplaceable biodiversity values that are important to the whole of NSW, Australia or globally. They are explained in more detail [here](#) (DP&E 2022).

AOBVs for aquatic or marine species identified under the BC Act 2016 are listed on the ***Register*** and include:

- Cabbage Tree Island, Port Stephens, NSW – Critical Habitat for Gould’s petrel (*Pterodroma leucoptera*).
- Manly, Sydney Harbour, NSW – Critical Habitat for little penguin (*Eudyptula minor*).

Neither of these sites are located near to the proposal site and will not be impacted by the proposal.

3.9.5 Resilience and Hazards SEPP

State Environmental Planning Policy (Resilience and Hazards) 2021 (RH SEPP) updates and consolidates the repealed SEPPs being State Environmental Planning Policy (Coastal Management) 2018, SEPP 14 (Coastal Wetlands), SEPP 26 (Littoral Rainforests) and SEPP 71 (Coastal Protection) and integrates Clause 5.5 of the Standard Instrument – Principal Local Environment Plan. Chapter 2 of the RH SEPP gives effect to the objectives of the Coastal Management Act 2016 by specifying how development proposals are to be assessed if they fall within the “coastal zone” which is comprised of four types of coastal management areas:

1. Coastal wetlands and littoral rainforest area – land identified as such by the Coastal Wetlands and Littoral Rainforest Area Map
2. Coastal vulnerability area – land identified as such by the *Coastal Vulnerability Area Map*
3. Coastal environment area – land identified as such by the *Coastal Environmental Area Map*
4. Coastal use area – land identified as such by the *Coastal Use Area Map*

Coastal Wetlands and Littoral Rainforests in the vicinity of the proposal location were mapped using the NSW DPI Spatial Data Portal. The closest Coastal Wetland to the proposal is Coffs Creek, located ~900 m west of the Coffs Harbour Marina. Coffs Creek is not expected to be impacted by the proposal. Littoral Rainforests in the vicinity of the proposal are located ~250 m south-west of the proposal location and ~300 m north west of the proposal. As they are not in the immediate vicinity of the proposal, they are not expected to be impacted by the proposal (Figure 3-7).

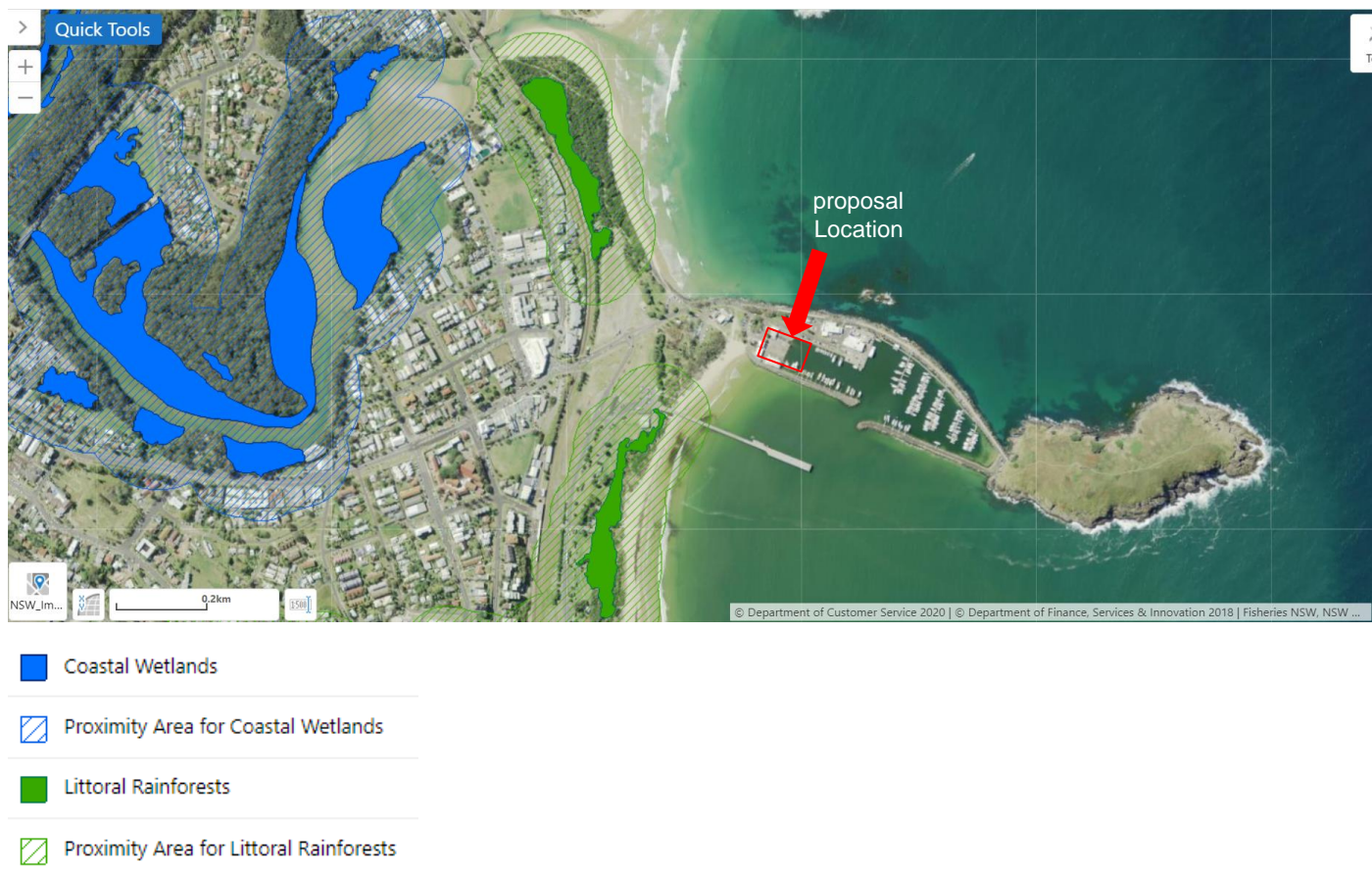


Figure 3-7 Coastal Wetlands and Littoral Rainforests in the vicinity of the proposal (NSW DPI 2022b).

Coffs Creek is a wave-dominated estuary which has a total catchment area of approximately 24.5 km². The mouth of the estuary is located along the southern half of North Wall Beach and is predominantly open, however, can close under low creek flow conditions and during periods of beach accretion or after large ocean storm events (CHCC 2018). Coffs Creek runs along a continuous area of public reserve made up of diverse riparian vegetation including saltmarsh, mangroves, subtropical coastal floodplain and areas of

koala habitat. The estuary is part of the Solitary Islands Marine Park and is designated as a Habitat Protected Zone (CHCC 2018). Coffs Creek will not be impacted by the proposal.

Chapter 3 of the RH SEPP contains the provisions for determining whether proposals are categorised as “potentially offensive development” and/or a “potentially hazardous development”. An assessment of the proposal by Moore Management (2022) against the provisions of Chapter 3 of the RH SEPP concludes that the refuelling facility is not deemed to be an “potentially offensive development” and the storage of unleaded petrol of 10,000 litres does not constitute a “potentially hazardous development” based on the separation distances to sensitive land uses.

3.9.6 Marine Vegetation

All marine vegetation is protected under the FM Act. Marine vegetation, such as saltmarsh, mangroves, seagrasses and macroalgae, provide shelter and nursery areas for aquatic animals and a hiding place from predators, and is essential component of the food chain in estuarine and coastal environments. It also stabilises sediments and shorelines and protects water quality in estuaries for recreational users.

NSW DPI administers legislation, which protects mangroves, seagrasses and seaweeds on public water, land and foreshores. Harming or removal of marine vegetation is generally only permissible by permit.

There is no marine vegetation in the direct or nearby vicinity of the proposal, therefore will not be impacted. The closest mapped marine vegetation occurs throughout Coffs Creek and is primarily made up of mangroves, saltmarsh and Zostera seagrass. These will not be impacted by the proposal (Figure 3-8).

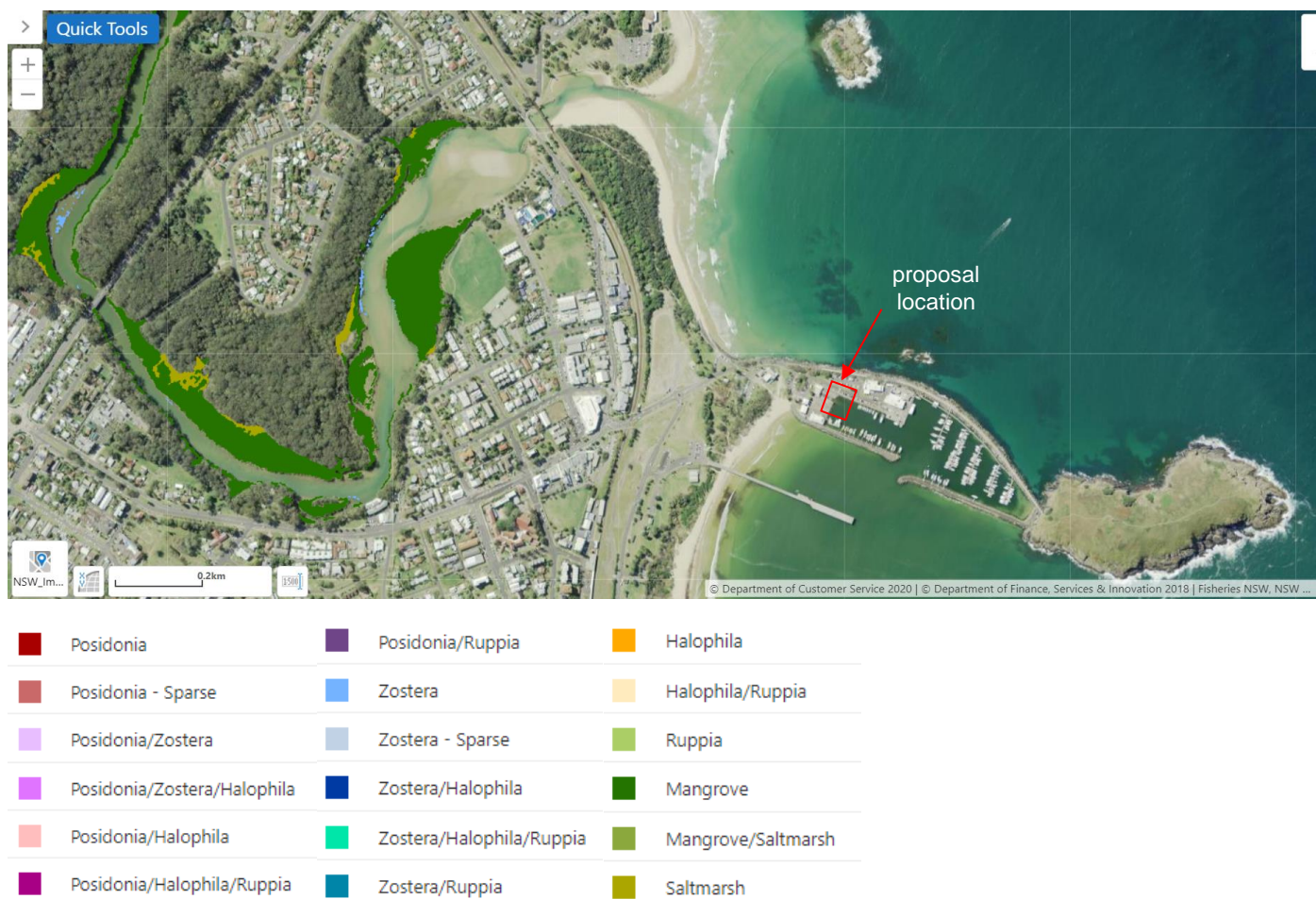


Figure 3-8 Mapped marine vegetation in the proposal location (NSW DPI 2022b).

3.9.7 Key Fish Habitat

One of the objectives of the FM Act is to 'conserve key fish habitats'. To achieve the objectives of the FM Act, DPI Fisheries has identified 'Key Fish Habitats' (KFHs) as those aquatic habitats that are important to the sustainability of the recreational and commercial fishing industries, the maintenance of fish populations generally, and the survival and recovery of threatened aquatic species.

A policy definition of the term KFH was developed to guide the compilation of maps. KFH was defined to include all marine and estuarine habitats up to highest astronomical tide level (that reached by 'king' tides) and most permanent and semipermanent freshwater habitats including rivers, creeks, lakes, lagoons, billabongs, weir pools and impoundments up to the top of the bank.

Small headwater creeks and gullies (known as first and second order streams), that only flow for a short period after rain are generally excluded, as are farm dams constructed on such systems. Wholly artificial waterbodies such as irrigation channels, urban drains and ponds, salt and evaporation ponds are also excluded except where they are known to support populations of threatened fish or invertebrates.

KFH mapped in the proposal area is shown in Figure 3-9 The proposal is located within KFH and as such may be impacted by the proposal.

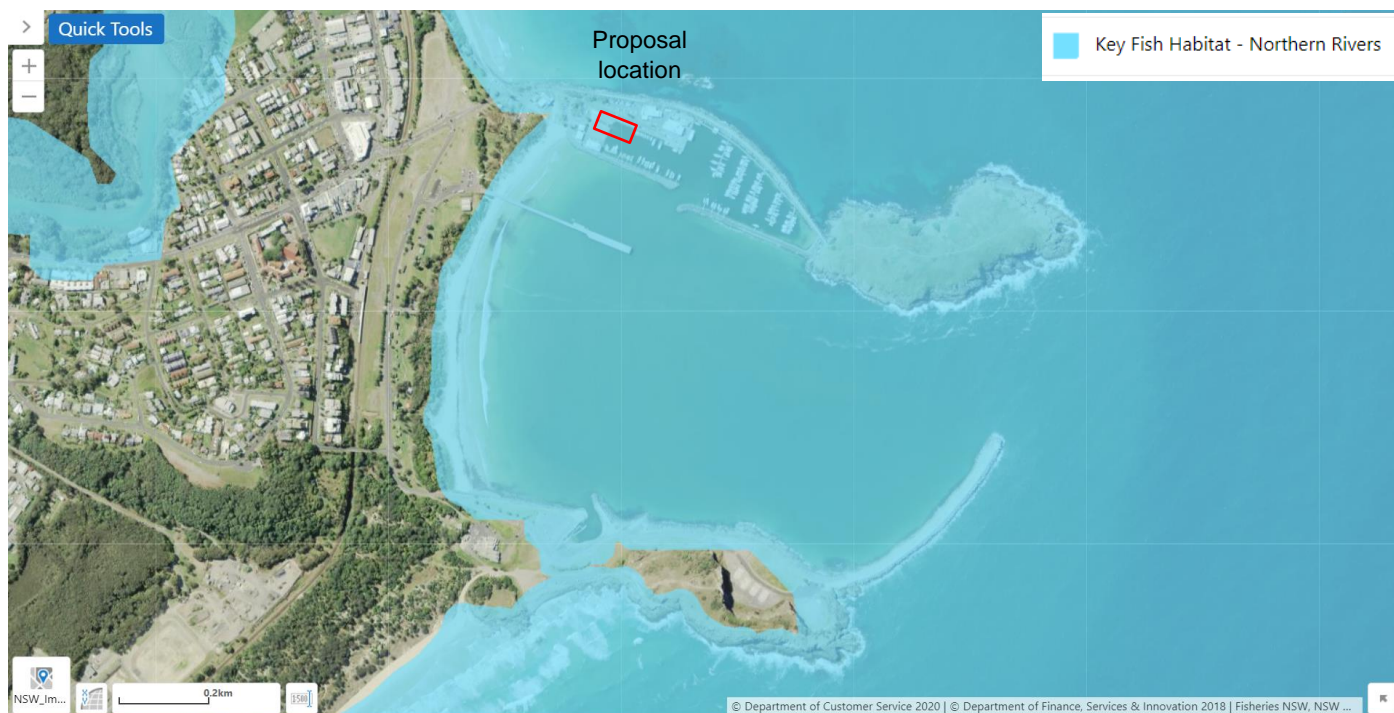


Figure 3-9 Mapped key fish habitat in relation to the proposal site (NSW DPI 2022b).

3.9.8 Protected Areas

Marine Protected Areas

Protected areas, set aside for conservation under the NP&W Act 1974, are managed by the National Parks and Wildlife Service (NPWS). An important component of the State's reserve system are marine protected areas. These include many National Parks and Nature Reserves with marine or estuarine components, as well as Aquatic Reserves and Marine Parks managed by the Marine Estate Management Authority. Marine protected areas are parts of the NSW marine estate that are managed to conserve marine biodiversity and support marine science, recreation and education. The NSW system of marine protected areas includes:

- Marine parks – six multiple use marine parks cover around one third (approximately 345,000 hectares) of the NSW marine estate.

- Aquatic reserves – 12 aquatic reserves cover around 2,000 hectares of the NSW marine estate.
- National parks and nature reserves – include around 20,000 hectares of estuarine and oceanic habitats (NSW DPI 2022c).

A map of the location of all marine protected areas in NSW is provided in Figure 3-10. The closest marine protected area to the study site is the Solitary Islands Marine Park, which is located immediately north of the study area. The Solitary Islands Marine Park extends north from Coffs Harbour to Sandon River along about 75 km of coastline. It is approximately 710 km² from the mean high water to three nautical miles offshore, including estuaries to their tidal limit. The Park was established in January 1998 (prior to that it was a marine reserve since 1991) and its zones and management rules commenced in August 2002.

The zoning map for this marine park is provided in **Appendix J**. The area of the marine park immediately north of Coffs Harbour is zoned as a Habitat Protection Zone (NSW DPI 2022c).

The Solitary Islands Marine Park contains diverse habitats - estuaries, sandy beaches, intertidal rocky shores, sub-tidal reefs, open oceans; and the important Solitary Islands, from which the marine park takes its name.

More than 550 reef fish, 90 hard coral and 600 molluscs (shelled animals) species have been observed throughout the park (NSW DPI 2022c). North Solitary Island has the park's highest reef fish diversity. Anemone Bay, at the Island's northern end, is particularly diverse and supports the densest coverage of anemone and anemone fish worldwide. South Solitary is renowned for its large pelagic fish, turtles and is also rich in shelled animals, with many marine snails and slugs, especially on the western side. It is the northern most breeding site recorded for the giant cuttlefish. The park's northern estuaries are some of the state's most pristine, largely because the majority of adjacent land is located in Yuraygir National Park. The local Aboriginal communities within the Gumbaynggirr Nation and Yaegl Nation have strong cultural links with the marine park and are actively involved in conservation planning.

Despite its proximity to the site, the Solitary Islands Marine Park is not located within the immediate works area and it is highly unlikely that the proposed works would result in any impact on the marine park if appropriate safeguards listed in this REF are adopted.

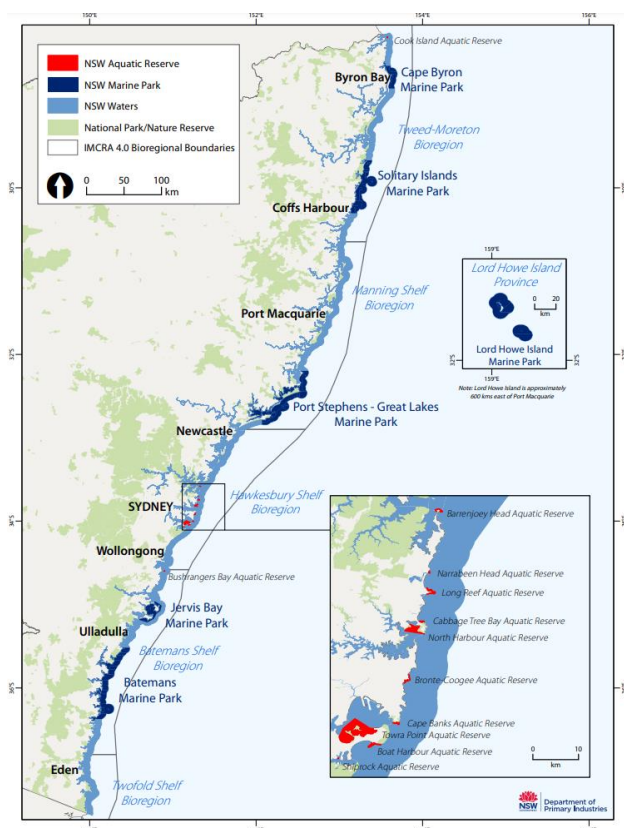


Figure 3-10 Marine protected areas in New South Wales (NSW DPI 2022c).

Terrestrial Protected Areas

Muttonbird Island Nature Reserve is located directly east of Coffs Harbour International Marina, on the southern boundary of the Solitary Islands Marine Park. It is linked to the mainland by a causeway, which acts as the northern breakwater for the harbour. With over 5,500 breeding pairs it is a major breeding ground for migratory wedge-tailed shearwaters (*Puffinus pacificus*), known locally as muttonbirds, which migrate annually to the Philippines but return to breed on the island. Also known as Giidany Miirlarl, it is also an important Aboriginal place, harbouring stories of the Dreaming and a wealth of traditional resources (NSW NPWS 2022c). The island is not located within the proposed works area and no impacts of the proposed works on Muttonbird Island Nature Reserve will occur.

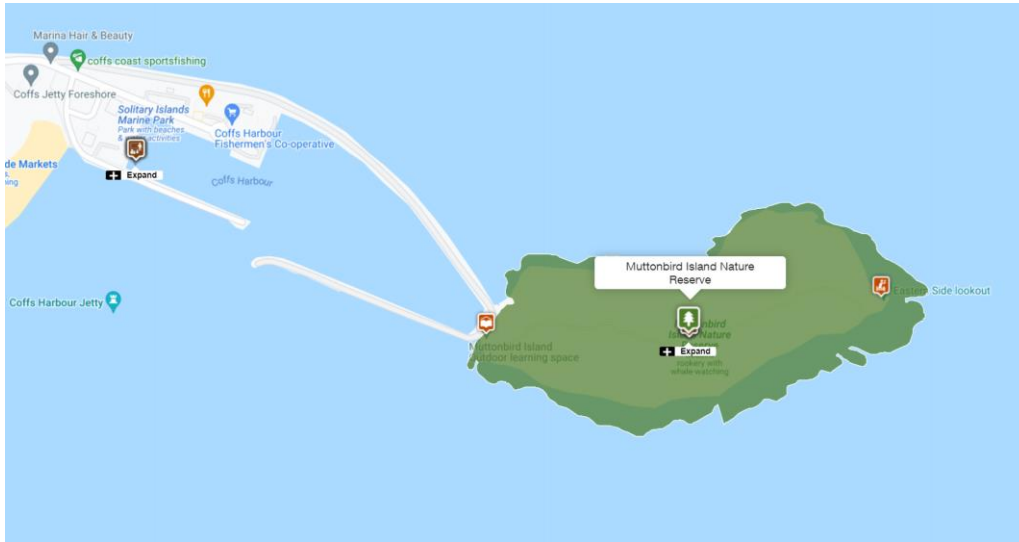


Figure 3-11 Muttonbird Island Nature Reserve (NSW NPWS 2022c).

3.9.9 Matters of National Significance

Matters of National Environmental Significance (MNES) associated within the marine environment occurring within 2.5 km of the proposal location (Coffs Harbour Marina) were identified in an EPBC Act Protected Matters Report (see **Appendix B**) which was generated on 12 May 2022 as follows:

- No Wetlands of International Significance occur within the proposal location and will not be impacted by the proposal.
- The Great Barrier Reef Marine Park does not occur within the proposal location and will not be impacted by the proposal.
- The Commonwealth Marine Area does not occur within the proposal location and will not be impacted by the proposal.
- Five (5) Listed Threatened Ecological Communities occur within the proposal location. The only one of these which is aquatic/marine is “Subtropical and Temperate Coastal Saltmarsh Vulnerable Community”. This community does not occur within Coffs Harbour Marina and will not be impacted by the proposal. Refer to Section 3.9.1 for further details.
- Eighty-three (83) Listed Threatened Species occur within the proposal location. No significant impacts on these are expected.
- Sixty-one (61) Listed Migratory Species occur within the proposal location. No significant impacts on these are expected.

“Other Protected Matters” listed under the EPBC Act include:

- Ninety-three (93) Listed Marine Species occur within 2.5 km of the proposal location. Refer to Section 3.9.1 for further details.
- Twelve (12) Whales and Other Cetaceans occur within 2.5 km of the proposal location. Refer to Section 3.9.1 for further details.

- No Critical Habitat occur within 2.5 km of the proposal location.
- No Australian Marine Parks occur within 2.5 km of the proposal location.
- No Key Ecological Marine Features occur within 2.5 km of the proposal location.
- No Nationally Important Wetlands occur within 2.5 km of the proposal location.

3.9.10 Wetlands of International Importance (RAMSAR Wetlands)

No wetlands of international importance (RAMSAR Wetlands) occur within the proposal location (within 2.5 km of the proposal) and will not be impacted. Refer to the EPBC Act Protected Matters Search results in **Appendix B**.

Safeguards

Safeguards to be implemented for protection of biodiversity are as follows:

1. A pre-clearance survey of the site is to be undertaken to identify the presence of any threatened shorebirds including Sooty Oystercatcher (*Haematopus fuliginosus*) and Pied Oystercatcher (*Haematopus longirostris*) (noted as required by BCD of DP&E). If protected shorebird species are present within 150 m of the site works during high noise impact activities (i.e., piling and excavation works), the works must not proceed until they have left the area.
2. Slow start up measures would be used for noise generating activities, to ensure that noise – sensitive shorebirds can move away from the source of noise if required.
3. Implementation of and adherence to a defined Marine Construction Zone to ensure protection of aquatic habitats and associated marine fauna.
4. All construction vessels will be well maintained and regularly serviced to ensure they are in proper working order and reduce the likelihood of fuel / oil leaks and spills.
5. Oil and sewage spill response kits will be readily available on the construction vessels and training should be provided to construction staff on their use. The location of these should be clearly marked.
6. Post construction a seabed clearance survey will be undertaken to ensure that no demolition or construction materials are left on the seabed. If items are identified they must be removed and disposed of lawfully.
7. To reduce the spread of suspended sediments generated during piling and the potential for sedimentation / smothering of aquatic habitats and associated flora and fauna, silt curtains or similar must be used wherever possible around the immediate area of piling and/or in-water works.
8. To reduce the potential for lighting related impacts on marine fauna, construction activities will be undertaken during standard construction hours to reduce the overall need for construction related artificial lighting and associated impacts. Downward directed lighting which minimises light spillage and dimmed lighting should be used on the structures where possible (ensuring still in accordance with navigational requirements).
9. The risk of vessel strike during construction may be reduced through the adoption of:
 - a. Vessels will maintain the required NPWS exclusion zone with all whales when travelling to site where practicable (100 m minimum and 300 m if calf is present).
 - b. Site inductions and training.
 - c. Marine fauna awareness in the local waterway by vessel operators so appropriate speeds and clearance can be adopted when cetaceans are nearby.
10. To reduce the potential for noise impacts on marine fauna (specifically marine mammals; whales, dolphins, seals) the following will be applied:

- a. Pre-start Observation: The Contractor must visually monitor the local waterway (within the marina area) before the commencement of piling. If no mammals have been sighted during the soft-start procedure (gradual increase of power) full impact piling may commence.

11. Shut-Down requirements:

- a. Piling is not permitted between 6.00 pm and 7.00 am.
- b. If any mammals are spotted within the marina area piling must cease immediately or as soon as safe to do so until the mammals have moved outside of the area.
- c. All piling must cease for a minimum of 30 minutes after the last sighting of a mammals within the marina area. Piling must recommence at the prestart observation after the 30 minutes shutdown has elapsed.

12. Construction vessel antifouling will be maintained to avoid the attachment and potential translocation of invasive marine species into and out of Coffs Harbour.

13. Ballast water management will be implemented:

- a. Ballast water exchange by domestic vessels will be avoided.
- b. Domestic vessels will manage ballast water in accordance with the Australian Ballast Water Management Requirements (Department of Agriculture and Water Resources 2016).
- c. Any ballast water exchange from international vessels will be undertaken in accordance with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM) (IMO 2016).

14. DPI Fisheries (1800 043 536) is to be immediately notified of any fish or marine mammal kills within the construction site. In such cases, all works other than emergency response procedures are to cease until the issue is rectified and written approval to proceed is provided by DPI Fisheries.

15. Any injured marine mammals must be immediately reported to the ORRCA 24 hour hotline on 02 9415 3333 or NPWS on 1300 361 967. The ORRCA telephone hotline is staffed by volunteers and keeps ORRCA members, Government Authorities and interested members of the public informed of marine mammal emergencies, incidents and sightings. ORRCA representatives will quickly mobilise to site and attempt to capture and treat the stricken animal. Depending upon the location of the animal and the circumstances that surround the injury, construction activities may need to cease or be altered to enable the rescue of the animal. Following this, the TfNSW Project Manager must also be informed.

3.10 Land and Water transport

Description of existing environmental and potential impacts		
<p>Is the proposal likely to result in changes, exclusions, detours or disruptions to land or water traffic flow (vessel, vehicular, cycle and pedestrian) parking or access during construction?</p> <p>During construction the proposal will result in the following reduction of public parking spaces (owned by TfNSW):</p> <ul style="list-style-type: none"> • 12 spaces to the west of the site on Marina Drive to be used for construction compound and parking for duration of construction. • 15 spaces to the east of the site on Marina Drive for temporary works such as crane operations if required. 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Description of existing environmental and potential impacts		
<p>Short-term traffic diversions along Marina Drive may also need to be implemented to allow safe access for construction vehicles and equipment to the site.</p> <p>There is also potential for reduced access to the public wharf during some phases of construction (e.g. piling, crane operations). This may apply to access from land via the gangway and for vessels looking to berth. The access limitations are likely to be short term and intermittent disruption.</p> <p>Land and water traffic flow should be otherwise uninterrupted. See Figure 2-6 for proposed construction footprint.</p>		
<p>Is the proposal likely to result in changes, exclusions, detours or disruptions to land or water traffic flow (vessel, vehicular, cycle and pedestrian) parking or access during operation?</p> <p>The proposal includes the removal of dock cleats on the western end of the public wharf, thereby reducing the usable area of the wharf for casual berthing. This action is necessary to guarantee room to manoeuvre for vessels using the proposed fuel facility.</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Is the proposal likely to affect any other transport nodes or transport infrastructure (e.g. ferry wharves bus stops, bus routes) in the surrounding area? Or result in detours or disruptions to traffic flow (vessel, vehicular, cycle and pedestrian) or access during operation?</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Safeguards

Safeguards to be implemented for land and water transport are as follows:

Land Transport

1. The contractor must prepare and implement a Traffic Management Plan (TMP) to ensure safety and welfare of all contractor employees and the public including details of construction vehicles routes. The contractor must submit the TMP to TfNSW for review and approval 14 days before construction starts.
2. Measures to minimise disruption to local businesses including maintenance of pedestrian and vehicle access and public parking (as far as practicable) and provision of directional signage.
3. Measures, where required, to physically separate pedestrian and construction vehicle movements, such as temporary barriers.
4. Minimise traffic associated with construction activities.
5. Whilst construction vehicles use Council local roads:
 - a. Any Oversize/Overmass or Performance Based Standards permits required during the period of construction will be submitted to the National Heavy Vehicle Regulator (NHVR) for approval.
 - b. Trucks will enter and leave the site in a forward direction, where possible.
 - c. Exhaust brakes will not be used in built up areas.
 - d. Erect direction and speed signage as required.

- e. Retain access for existing commercial users of the Fishermen’s Co-op, nearby businesses and pedestrian access to the breakwater.
- f. Use broadband reversing alarms on all vehicles where reversing alarms are fitted to muffle the noise.

Water Transport

1. The TMP is to include measures related to the transport of vessels.
2. Access to wharves/berths within the Inner Harbour including the Coffs Harbour Marina and those for emergency and Government vessels must not be impeded or restricted during the proposed works.
3. All work vessels associated with the proposal must comply with the relevant NSW marine legislation.
4. All work vessels and crew associated with the proposal must comply with the Marine Safety (Domestic Commercial Vessels) National Law Act 2012. The contractor is to submit documentation to TfNSW for domestic commercial vessels 21 days prior to works commencing.
5. Any submerged hazards, cables, wires, silt curtains etc must be marked with yellow aqua buoys (sign written “Warning – Submerged Hazard”). These aqua buoys must be lit with a yellow flashing light if hazards are present before sunrise and after sunset.
6. Notify NSW Maritime a minimum of 21 days prior to works commencing, providing a full scope of works relating to on-water operations. A Marine Notice may be required to be published on the Maritime website and/or local newspaper.

3.11 Socio-economic

Description of existing environmental and potential impacts		
Is the proposal likely to impact on local business?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Nearby local businesses were identified through a site inspection and desktop review of the local area and include:</p> <ul style="list-style-type: none"> • Coffs Harbour Fishermen’s Co-operative • Latitude 30 • Attitude Burgers • The Gallery • Hub Café Jetty • Eric & Deb’s Homemade Ice Cream • Harbourside Chandlery • Marina Hair + Beauty • Sama Studio • Whale Watch Experience • Jetty Dive Centre • NSW Department of Primary Industries • Coffs Harbour Yacht Club <p>The location of these are shown in Figure 2-5.</p>		
Is the proposal likely to require any property acquisition?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Description of existing environmental and potential impacts		
Is the proposal likely to alter any access for properties (either temporarily or permanently)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposal likely to alter any on-street parking arrangements (either temporarily or permanently)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Minor short-term loss of parking is anticipated in the ancillary area adjacent to the proposed construction works as described in Section 3.10.		
Is the proposal likely to change pedestrian movements or pedestrian access (either temporarily or permanently)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Pedestrian access along the footpath adjacent to the proposed ancillary and site compound areas shown in Figure 2-6 will be temporarily unavailable to pedestrians during construction to allow for construction to occur and public safety. No permanent changes to pedestrian movements or access will occur.		
Is the proposal likely to impact on any items or places of social value to the community (either temporarily or permanently)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Short term minor impacts on traffic and pedestrian accessways as well as visual amenity in an area which is widely used by the public and visitors to Coffs harbour will occur during construction works only.		
Is the proposal likely to reduce or change visibility of any businesses, farms, tourist attractions or the like (either temporarily or permanently)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

3.11.1 Socio-economic data

Social Characteristics

For the ABS 2016 Census in Coffs Harbour (SSC10959), the following key characteristics were recorded:

- Total population – 25,752 persons.
- Median age – 43.
- Aboriginal and Torres Strait Islander – 5.6% of total population.
- Children aged 0-14 – 17.4% of the population
- People aged 65 and over – 22.3% of the population
- People born overseas – 24.5% of the population
- Total private dwellings – 11,832
- Private dwellings structure – 59.1% separate houses, 17.7% semi-detached, row or terrace house, townhouse etc, 19.8% flat or apartment and 1.8% other dwellings.
- Tenure – 32.6% owned outright, 23.4% owned with a mortgage and 40.3% rented.
- Household size – average 2.3 people
- Number of registered motor vehicles – 41.7% of occupied private dwellings had one registered motor vehicle garaged or parked at their address, 31.9% had two registered motor vehicles and 12.3% had three or more registered motor vehicles.

Transport and Access

In Coffs Harbour at the 2016 Census, the methods of travel to work for employed people were Car, as driver 68.5%, Car, as passenger 6.7%, Walked only 4.0% and Bicycle 1.2%. On the day, 0.8% of employed people used public transport (train, bus, ferry, tram/light rail) as at least one of their methods of travel to work and 75.9% used car (either as driver or as passenger).

Coffs Harbour is a town located on Highway 1 (A1) which is a major national highway between the NSW/QLD border near Tweed Heads and the VIC/NSW border near Timbillica. Coffs Harbour Marina is accessed through the local road network within Coffs Harbour, with Orlando St leading directly from the A1 to Marina Drive, in which the proposal site is located.

The existing public car park at Coffs Harbour Marina consists of 150 parking spaces which are shared across the surrounding shops and jetties. The marina is accessible via public transport, with the nearest bus stop located on Harbour Drive opposite the Jetty Village Shopping Centre, a 750 m walk away.

Economic Characteristics

In Coffs Harbour at the 2016 Census, 10,931 people reported being in the labour force in the week before Census night. Of these 51.3% were employed full time, 36.0% were employed part-time and 7.7% were unemployed.

Employment within Hospitals (excluding Psychiatric Hospitals) grew 0.6% from the 2011 Census to 5.8% of the working population, whilst Supermarkets and Grocery Stores made up 3.3% of the working population, Aged Care Residential Services made up 3.3%, Accommodation made up 3% and Cafes and Restaurants made up 2.9% of the working population within Coffs Harbour.

Unemployment in Coffs Harbour decreased between 2011 and 2016, from 9.1% to 7.7%. With an increase in population size and percentage of those employed across the same time period, it can be assumed that the local economy is growing and is predicted to do so into the future.

Tourism Industry

Tourism across NSW contributes approximately \$30.2 billion to the state's gross state product (Destination NSW). Within the North Coast Region (of which Coffs Harbour is within), tourism contributed \$4.9 billion in 2019-20 to the local economy, with 49% of visitors coming from within NSW, 27% coming from out of state and 5% coming from overseas (Destination NSW). It is worth noting that international traveller numbers dropped dramatically in the second half of the 2019-20 financial year due to the Coronavirus. In the Coffs Harbour LGA, the tourism industry is valued at approximately \$490 million with majority of visitors being domestic daytrip and overnight visitors (CHCC 2016).

One of Coffs Harbour's most popular tourist attractions is the Big Banana, which attracts thousands of visitors during peak holiday season (White 2014). Other popular attractions include a wide range of beaches, national parks and whale watching experiences.

The Coffs Harbour City Council uses the following four core values it uses to guide the tourism development, management and marketing across the Coffs Coast region:

- **Sustainability** – ensure a sustainable approach to tourism that achieves an appropriate balance between a healthy visitor economy and the protection of natural, social and cultural environments.
- **Cooperation** – foster a cooperative approach to tourism across Government, business and community stakeholders at local regional and state levels.
- **Cultural Diversity** – share and preserve the region's creativity, cultural diversity, authenticity, community values and lifestyles.
- **Celebration** – adopt a consistent and cooperative approach to celebrate and promote the Coffs Coast's significant natural and coastal surroundings through the delivery of quality and innovative tourism experiences (CHCC 2016).

Coffs Harbour Infrastructure

Social infrastructure refers to the community facilities, services and networks that help individuals, families, groups and communities meet their social needs, maximise their potential for development, and enhance their community well-being. It includes education facilities; health, emergency and aged-care facilities; sports, recreational and cultural facilities; community support services and transport facilities.

The area in the vicinity of the proposed works is important both socially and recreationally for locals and tourists, with a range of amenities and facilities. The over 700 m long seawall runs on the northern side of the harbour and provides access to restaurants, public toilets car parks and the popular Muttonbird Island walking track and lookout. The marina provides 165 berths which can be rented out as well as the following facilities: vessel haul out facility, fuel (diesel), hardstands and maintenance facilities, mechanic, Australian Border Force, chandlery, showers and restrooms and a laundry. Nearby, there is also the Coffs Harbour Yacht Club, picnic tables and Jetty Beach and its foreshore.

Impacts to the Coffs Harbour infrastructure are expected to be minor and short-term in nature, with noise and visual aesthetics expected to be impacted during construction, however, will be minor if all recommended safeguards are implemented. Following construction there will be no impacts to noise than what currently exists. Visual aesthetics will also not be impacted as the fuel cell and wharf will be partially obscured by trees and parked cars and will be consistent with the existing infrastructure.





Figure 3-12 Coffs Harbour Marina and surrounding infrastructure.

Business and Industry

Coffs Harbour Marina is an active working waterfront marina. Local businesses along the Coffs Harbour Marina are most likely going to be impacted by noise and visual aesthetics during construction, however, these are expected to be minor if all recommended safeguards are implemented. Nearby businesses include.

- Coffs Harbour Fishermen’s Co-operative
- Latitude 30
- Attitude Burgers
- The Gallery
- Hub Café Jetty
- Eric & Deb’s Homemade Ice Cream
- Harbourside Chandlery
- Marina Hair + Beauty
- Sama Studio
- Whale Watch Experience
- Jetty Dive Centre
- NSW Department of Primary Industries
- Coffs Harbour Yacht Club

Post construction, noise and visual aesthetics are not expected to be impacted. The location of the fuel cell and wharf will be partially obscured by trees and parked cars and will be consistent with the existing infrastructure.


Safeguards

Safeguards as per Section 3.5 (Noise and vibration), Section 3.6 (Air quality), Section 3.10 (Land and water transport) and Section 3.12 (Landscape character and visual amenity) would be implemented to prevent or reduce potential socio-economic impacts.

Additional safeguards to be implemented for socio-economic factors are:

1. The contractor must prepare and implement a Work, Health and Safety Management Plan to ensure safety and welfare of all contractor employees and the public. All Safe Work Method Statements (SWMS) for the related activities will be submitted to the Principal’s Authorised Person prior to the commencement of works and be referenced in the CEMP.
2. TfNSW will implement a community engagement / notification strategy.
3. The Principal’s Authorised Person will monitor any complaints received in relation to the activity and where practical instruct the contractor to make any necessary modifications to reduce any adverse impacts on users.

3.12 Landscape character and visual amenity

Description of existing environmental and potential impacts		
<p>Is the proposed work over or near an important physical or cultural element or landscape? (Heritage items and areas, distinctive or historic built form, National Parks, conservation areas, scenic highways etc)?</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>The proposal is located within Coffs Harbour and in the general vicinity of the Muttonbird Island Nature Reserve and the Solitary Islands Marine Park. No heritage items occur within the vicinity of the site. Distant views of the facility (see Figure 3-13) are provided from the walking tracks on the Muttonbird Island Nature Reserve. However, given the distance between these locations and that the proposal would result in a relatively small facility which is associated with and in keeping with the current use of the Inner Harbour, no impacts on visual amenity / landscape character from Muttonbird Island are anticipated during either construction or operation.</p>		
		
<p>Figure 3-13 View of the facility from Muttonbird Island Nature Reserve.</p>		
<p>Would the proposal obstruct or intrude upon the character or views of a valued landscape or urban area? For example locally significant topography, a scenic headland or a park, a river, lake or the ocean or a historic or distinctive townscape or landmark?</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>No. See above.</p>		
<p>Would the proposal require the pruning, trimming or removal of trees or stands of vegetation, either native or introduced?</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>Do the trees form part of a streetscape, an avenue or roadside planting?</p>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Description of existing environmental and potential impacts		
Have the trees been planted by a community group, Landcare group or by Council or are the trees a memorial or part of a memorial group e.g. Has a plaque?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Do the trees form part of a heritage listing or have other heritage value?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Would the proposal result in large areas of shotcrete visible from a road, water or adjacent properties?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Would any new structures or features being constructed result in over shadowing to adjoining properties or aquatic areas? The new pontoon and walkway would cause shading of the unvegetated soft sediment seabed and rock revetment within its footprint. No shading of any properties would occur.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Would the proposal involve the removal or reuse of large areas of road corridor, landscape, either verges or medians?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Would the proposal involve substantial changes to the appearance of a bridge (including piers, girders, abutments and parapets), wharf or other structure that are visible from the road, water or residential areas?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If involving lighting, would the proposal create unwanted light spillage on residential properties at night (in construction or operation)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Would any new structures or features being constructed result in over shadowing to adjoining properties or areas?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Would any demolished structures or features removed result in visual/landscape changes to adjoining properties or areas?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Safeguards

Safeguards to be implemented for landscape character and visual amenity are:

1. The structure is to be constructed with minimal use of reflective materials. Where painted finishes are to be applied, it is recommended that these are of a matte finish, where practical, including for white caps to pile heads, if these are required.
2. Screening of the fuel facility is to occur as described in Section 2.1.2.

4. Consideration of State and Commonwealth environmental factors

4.1 Environmental Planning and Assessment Regulation 2021 checklist

In addition to the requirements of the Is an EIS required?, Section 171 of the EP&A Regulation defines the factors which must be considered when determining if an activity assessed under Division 5.1 of the EP&A Act has, or is likely to have, a significant impact on the environment.

A summary of the assessment in accordance with Section 171 of the EP&A Regulation is included in Table 4-1 to assess the likely impacts of the proposal on the natural and built environment.

Table 4-1 Assessment in accordance with Section 171 of the EP&A Regulation.

Environmental factor	Impact
<p>(a) Any environmental impact on a community?</p> <p>The proposed work may cause minor short-term environmental impacts on the community, such as reduced access for vehicles and pedestrians, parking loss, and noise and vibration impact on nearby commercial businesses. However, the potential impacts would be minimised with the implementation of the safeguards as detailed in this REF. The completed works would have no environmental impact on a community in the long-term and waterway users (in particular, recreational, government and small commercial vessels) would benefit from the convenience of the new fuel facility.</p> <p>Refer to safeguards in Section 5.</p>	<p>Negative and minor – short term Positive – long term</p>
<p>(b) Any transformation of a locality?</p> <p>The proposed works would be undertaken within the boundaries of the existing hardstand and adjacent waterway. The proposal would result in an ancillary maritime facility within an existing maritime precinct. The proposal will increase user amenity within the locality (e.g. for recreational, government and small commercial vessels) and environmental safety for the waterway through improved re-fuelling facilities.</p> <p>Refer to safeguards in Section 5.</p>	<p>Negative and minor – short term Positive – long term</p>
<p>(c) Any environmental impact on the ecosystems of a locality?</p> <p>The proposal would have potential short term and highly localised impacts on marine habitats, fauna, water and sediment quality. However, these impacts would be avoided or minimised by adopting the safeguards as detailed in this REF. There would be no significant change to the use of the site and with the operational safeguards proposed, long-term impacts are not expected to be altered from current impacts.</p> <p>Refer to safeguards in Section 5.</p>	<p>Negative and minor – short term Nil – long term</p>
<p>(d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?</p>	<p>Negative – short term Nil – long term</p>

Environmental factor	Impact
<p>Short term noise and access impacts for nearby businesses, residential and recreational users of the area would be expected to occur as a result of the proposal. There would be no long-term reduction in the aesthetic, recreational, scientific or other environmental quality or value of the locality as result of the proposed works.</p> <p>Refer to safeguards in Section 5.</p>	
<p>(e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?</p> <p>There would be no harm to any known locality, place or building of significance. The proposed facility is planned as part of the Coffs Harbour Marine Precinct project and relevant permits will be obtained for the works.</p> <p>Refer to safeguards in Section 5.</p>	No expected impact
<p>(f) Any impact on habitat of any protected animals (within the meaning of the <i>Biodiversity Conservation Act 2016</i>)?</p> <p>The local marine and terrestrial environments have the potential to support several fauna species protected under the BC Act 2016. Any potential impacts on these habitats (typically relating to noise or potential water quality impacts) would be indirect and short-term in nature. In addition, any impacts can be avoided or minimised by adopting the safeguards provided in this REF. There would be no significant change to the use of the site and with the operational safeguards proposed, long-term impacts are not expected to be altered from current impacts</p> <p>Refer to safeguards in Section 5.</p>	Negative and minor – short term Nil – long term
<p>(g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?</p> <p>There would be no endangering of any species of animal, plant or other form of life resulting from the proposed works. Safeguards are provided to avoid or minimise any potential impacts on flora and fauna.</p> <p>Refer to safeguards in Section 5.</p>	No expected impact
<p>(h) Any long-term effects on the environment?</p> <p>There would be no adverse long-terms effects on the environment, especially if the safeguards outlined in this REF are adopted and operation of the facility is undertaken in accordance with best practice. There would be no significant change to the use of the site and with the operational safeguards proposed, long-term impacts are not expected to be altered from current impacts.</p> <p>Refer to safeguards in Section 5.</p>	No expected impact
<p>(i) Any degradation of the quality of the environment?</p> <p>There is the potential for short term minor impacts on the quality of the environment e.g. water and sediment quality, and noise and visual amenity.</p>	Negative and minor - short term Nil – long term

Environmental factor	Impact
<p>By adopting the safeguards outlined in this REF any degradation in the quality of the environment would be temporary and highly localised.</p> <p>There would be no significant change to the use of the site and with the operational safeguards proposed, no long-term degradation of the quality of the environment is expected.</p> <p>Refer to safeguards in Section 5.</p>	
<p>(j) Any risk to the safety of the environment?</p> <p>There would be potential short-term risks to the safety of the environment during the proposed construction works. This can be managed effectively with the safeguards presented in this REF. Any risk to the safety of the environment would be short term and temporary.</p> <p>In the long term, the safety of the environment in Coffs Harbour would be improved by the provision of the proposed refuelling facility due its attendant safeguards for spills and fuel flow control. This will negate the need for less reliable ways of refuelling for small craft, such as using jerry cans or fuel drums.</p> <p>Refer to safeguards in Section 5.</p>	<p>Negative and minor – short term</p> <p>Positive – long term</p>
<p>(k) Any reduction in the range of beneficial uses of the environment?</p> <p>There would be a short-term reduction in the beneficial uses of the environment, primarily resulting from very localised access/parking restrictions during construction. However, the proposal aims to increase the range of beneficial uses of the site in the longer term.</p> <p>Refer to safeguards in Section 5.</p>	<p>Negative and minor - short term</p> <p>Positive – long term</p>
<p>(l) Any pollution of the environment?</p> <p>There is the potential for short term and localised water, sediment and noise pollution issues associated with the proposal during construction. However, these can be mitigated/managed effectively with the safeguards presented in this REF. There would be no significant change to the site's use and with the operational safeguards proposed, no long-term pollution of the environment is expected.</p> <p>Refer to safeguards in Section 5.</p>	<p>Negative and minor – short term</p> <p>Nil – long term</p>
<p>(m) Any environmental problems associated with the disposal of waste?</p> <p>There will be no environmental problems associated with any general or construction waste generated from the site. Small amounts of waste generated during construction would be contained and removed for disposal to approved recycling facilities or to licensed landfill in accordance with the safeguards in this REF. No environmental problems are anticipated for the disposal of waste.</p> <p>Refer to safeguards in Section 5.</p>	<p>No expected impact</p>

Environmental factor	Impact
<p>(n) Any increased demands on resources, natural or otherwise which are, or are likely to become, in short supply?</p> <p>The proposal would not result in any increased demands on resources that are, or are likely to become, in short supply. Relatively small amounts of construction materials would be required for the proposed works. The safeguards provided in this REF would be implemented to minimise any impacts.</p>	No expected impact
<p>(o) Any cumulative environmental effect with other existing or likely future activities?</p> <p>There would be no cumulative environmental effect of the proposal with existing activities in the area. The proposed fuel facility would be located within a maritime precinct of consistent usage. No increase in the number of vessels using the harbour due to the proposal is expected. No cumulative environment impacts are anticipated in consideration of these activities.</p> <p>There may be minor cumulative impacts with future development or upgrades within the marina which are not related to the current proposal and not yet known, however these would be expected to be minimal given limitations to site activities and size. Potential impacts would be minimised with implementation of the safeguards provided in this REF.</p> <p>Refer to safeguards in Section 5.</p>	Nil – short term Potential negative and minor – long term
<p>(p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?</p> <p>Due to the limited size of the proposed facility, there would be no impacts on coastal processes or coastal hazards as a result of the proposed works. Future climate change conditions (such as sea level rise) will not generate impacts related to the facility.</p> <p>Refer to safeguards in Section 5.</p>	No expected impacts
<p>(q) Any applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1?</p> <p>The proposal is consistent with the North Coast Regional Plan (DP&E 2017) including the local government narratives for the Coffs Harbour LGA which includes opportunities to grow the tourism industry through the provision of new on-water access to unleaded petrol for use by commercial parties and the public.</p>	Positive – long term
<p>(r) Any other relevant environmental factors?</p> <p>Contribution of the proposal to carbon emissions and climate change</p> <p>The addition of an unleaded fuel facility to the Coffs Harbour marine precinct would improve fuel delivery for existing users of the harbour. These users are not likely to increase their activities, or the use of fuel, and by extension, the amount of local carbon emissions, in the short term.</p>	<p>Carbon emissions</p> <p>Nil – short term Potential negative and minor – long term</p>

Environmental factor	Impact
In the medium to long term, it is possible that the presence of the facility, and its convenience, may encourage a greater level of activity or higher number, of small unleaded vessels using the precinct. This would result in an increase in local carbon emissions from these types of vessels. Given the limitations of space in the harbour, local economy and the efficiency of marine unleaded engines, the overall quantity of carbon emission increase is likely to be small. It is therefore also likely that these potential increases to emissions will not substantially jeopardise future decarbonisation efforts in the area.	

4.2 Matters of National Environmental Significance checklist

An EPBC Act Protected Matters Search was undertaken for the proposal to identify any MNES within a 2.5 km radius of the proposal location (see **Appendix B**). A summary of the finding is provided in Table 4-2 below.

Table 4-2 Matters of national environmental significance checklist.

Factor	Impact
<p>Any impact on a World Heritage property?</p> <p>No World Heritage Properties occur within 2.5 km of the study area so will not be impacted by the proposal.</p>	Nil
<p>Any impact on a National Heritage place?</p> <p>No National Heritage Places occur within 2.5 km of the study area so will not be impacted by the proposal.</p>	Nil
<p>Any impact on a wetland of international importance (often called 'Ramsar' wetlands)?</p> <p>No wetlands of international importance occur within 2.5 km of the study area so will not be impacted by the proposal.</p>	Nil
<p>Any impact on nationally threatened species, ecological communities or migratory species?</p> <p>The EPBC Act 1999 Protected Matters Search identified a number of threatened and migratory fauna (including marine mammals, reptiles, sharks/rays and marine/migratory birds) with the potential to occur in the study area (i.e. within 2.5 km of the proposal location). Potential impacts are outlined in Section 3.9. Assessments of Significance are provided in Appendix H.</p> <p>With the adoption of the safeguards provided in this REF any impacts on these species would be short term and minor (e.g. short term noise</p>	Minor

Factor	Impact
impacts). No significant impacts on any fauna listed under the EPBC Act are expected.	
<p>Any impact on a Commonwealth marine area?</p> <p>The Commonwealth Marine Area does not occur within 2.5 km of the study area so will not be impacted by the proposal.</p>	Nil
<p>Does the proposal involve a nuclear action (including uranium mining)?</p> <p>This proposal does not include nuclear action.</p>	Nil
<p>Additionally, any impact (direct or indirect) on the environment of Commonwealth land?</p> <p>The proposal will not have any impact on any listed Commonwealth Land as it does not occur within a 2.5 km radius of the proposal location.</p>	Nil

5. Summary of safeguards and environmental management measures

This section (Table 5-1) provides a summary of the site-specific environmental safeguards and management measures identified in described in chapters 3 and 4 of this REF. These safeguards will be implemented to reduce potential environmental impacts throughout construction and operation. A framework for managing the potential impacts is provided with reference to environmental management plans and relevant TfNSW QA specifications. Any potential licence and/or approval requirements required prior to construction are also listed (see Table 5-2).

Table 5-1 Summary of site-specific safeguards for proposed work.

Safeguards for the proposed work	
Land surface	<ol style="list-style-type: none"> 1. During land based excavation works, suitably qualified staff will monitor the removal of any in-situ fill material / soil (i.e. material other than clean fill, gravel and underlayer previously placed by others) and assess for the presence of acid sulphate material (ASM) through field based screening tests. If ASM is detected, effective controls will be implemented according to Roads and Maritime Services Guidelines for the Management of Acid Sulphate Materials (2005) 'ASM Procedure No. 4 – Attachment 1 Acid Sulfate Soil Controls' 2. Erosion and sediment control measures on land and water are to be implemented and maintained for all proposal related works including site establishment, construction and disestablishment to: <ul style="list-style-type: none"> • Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets. • Prevent the spread of re-suspended sediments in the waterway. • Reduce water velocity and capture sediment on site. • Minimise the amount of material transported from site to surrounding pavement surfaces. • Divert clean water around the site. 3. Erosion and sediment control measures are to be implemented in accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book). These measures should be inspected prior to any rainfall forecast by the Australian Bureau of Meteorology and monitored and maintained at least daily during any rainfall events. 4. Erosion and sedimentation controls are to be checked and maintained on a regular basis (including clearing of sediment from behind barriers) and records kept and provided on request. 5. Work areas are to be stabilised progressively during the works. 6. A progressive Erosion and Sediment Control Plan (ESCP) is to be prepared for the works. This would be required from the Contractor(s). 7. The maintenance of sediment stockpile sites is to be in accordance with the Roads and Maritime Services Stockpile Site Management Guideline (EMS-TG-10).

Safeguards for the proposed work

Waterways and water quality

1. A silt boom/curtain must be installed around any active in-water work areas that may disturb the seabed (e.g. piling, demolition). The installation of the silt boom may be progressive to contain areas of current works, however before construction, a plan of deployment and progression must be prepared by the Contractor to align with the schedule of works; the plan must ensure that:
 - a. Installation of the silt curtain/boom is to occur before starting physical works.
 - b. Installation is undertaken during high tide periods from a boat. The device must be designed to rise and fall with the tide to prevent disturbance.
 - c. The silt boom and curtain must be weighted appropriately with sufficient length to reach from the surface to the bed level regardless of tidal fluctuations (i.e. it must reach the seabed in all tidal states) before starting work.
 - d. Inspection of the device is undertaken on a daily basis after ebbing tides, with additional inspection following any storm events. Visual monitoring of turbidity inside and outside of the device must occur at all times during active work.
 - e. Results of daily observations of the integrity of the silt curtain are required to be recorded and maintained. Records are required to be kept on the site and to be made available for inspection by persons authorised by TfNSW.
 - f. Decommissioning is to be carried out by boat during a high tide period.
 - g. Decommissioning can only be undertaken once construction activities are above seabed level (that is, no activities which disturb the seabed are to occur without the curtain in place).
 - h. Before removing the silt curtain device, conditions within the curtain will be assessed visually to verify that sediment has settled resulting in similar water turbidity to that outside the curtain (that is, the curtain must not be decommissioned until the water inside and outside correspond visually).
2. Visual monitoring of local water quality (i.e. turbidity, hydrocarbon spills/slicks) is to be undertaken at all times during work to quickly identify any potential spills or deficient silt curtains or erosion and sediment controls.
3. Work positioning barges, excavators and pile driving equipment must be scheduled to occur during calm conditions to prevent excessive sedimentation impacts and minimise any safety risks.
4. An Emergency Oil and Fuel Spillage Plan will be included in the Construction and Environmental Management Plan (CEMP).
5. All construction equipment and vessels will be inspected by qualified personnel prior to commencement of work, to reduce the risk of hydrocarbon spills or leaks.
6. Containment measures will be utilised to minimise spillage associated with pile replacement or repair, grouting and concreting.
7. Spill response kits (including hydrocarbon booms) will be located around the construction site and on-board construction vessels to facilitate containment of any water-based spills. All on-site personnel

Safeguards for the proposed work

	<p>must be trained in their use. Spill response strategy and procedures will include the contact details of the relevant authorities to be notified in the event of a spill.</p> <ol style="list-style-type: none"> 8. Industry standards and pollution prevention regulations will be adhered to during refuelling, transfer, storage and handling of hazardous materials. 9. The lowest volumes of hydrocarbons (oil, grease, petrol and diesel) practicable will be stored on-site. 10. Chemical storage areas will be bunded and chemicals will be stored in accordance with the products Safety Data Sheet (SDS) and AS 1940 on board construction vessels, and the land-based ancillary areas. 11. No dewatering discharges are to occur without approval of TfNSW prior to the activity occurring. 12. Vessels (self-propelled and unpowered) will have adequate on-board communication, containment, drainage, bunding and monitoring systems to prevent discharges of unauthorised effluents. 13. Bunkering standard operating procedures will be implemented. 14. Spill containment device with a minimum capacity of 15L will be provided at the fill point for the fuel tanker during operation. 15. Bunded concrete pavement provided for the fuel delivery area which drains to a stormwater system with an isolation valve. The isolation valve will be closed by the operator during fuel deliveries and only to be reopened after confirming no hydrocarbons in the stormwater drainage devices. If hydrocarbons present, then a licensed waste contractor would be required to remove. 16. If visual hydrocarbon staining or slicks are observed, then the spill response procedure as outlined in the Emergency Oil and Fuel Spillage Plan would be implemented. 17. The fuel bowser and connections will have a number of measures that shutoff fuel spillage during operation and these are: <ul style="list-style-type: none"> • Rupture valve at the bottom of the pontoon that shutoff if the bowser is damaged. • Rupture valve at the hose that shutoff if hose is pulled too hard e.g. if the hose is left attached to the boat. • Emergency stop buttons at bowser, near tank and at control room. • Secure card system to restrict public use outside of office daylight hours. <p>This would be complimented with commercial marine spill kits that include a floating absorbent boom and padding to contain and collect fuel or oil spillage. Used absorbent material will be disposed of by a licensed waste contractor.</p> 18. Concrete washout shall not take place on site.
Hydrology and costal processes	<ol style="list-style-type: none"> 1. Weather and tide forecasts will be checked regularly during construction. In the unlikely case that significant inundation is forecast for the work area, all equipment and materials will be removed from the landside construction zones or appropriately secured. Flooding

Safeguards for the proposed work

	<p>procedures and checking of weather forecasts will be captured under the spill/emergency response management plan.</p>
Waste	<ol style="list-style-type: none"> 1. A Waste Management Plan (WMP) will be prepared and implemented as part of the CEMP. The WMP will include: <ol style="list-style-type: none"> a. Sustainable practices and measures to avoid and minimise waste associated with the proposal. b. Classification of wastes and management options (re-use, recycle, stockpile, disposal) in accordance with the Waste Classification Guidelines (NSW EPA 2014). c. Statutory approvals required for managing both on and off-site waste, or application of any relevant resource recovery exemptions. d. Procedures for storage, transport and disposal. e. Monitoring, record keeping and reporting. f. The WMP will follow the resource management hierarchy principles embodied in the <i>Waste Avoidance and Resource Recovery Act 2001</i>. 2. No wastes will be disposed of in waterways.
Noise and vibration	<ol style="list-style-type: none"> 1. The Contractor(s) CEMP is to address construction noise and vibration management including detail for a targeted range of management and monitoring options of noise from construction activities. 2. The Contractor(s) will provide respite periods where noise exceeds the Highly Affected Noise level of 75dB LAeq,15 minute. The timing of respite is to be determined by Transport for NSW. 3. The following general construction mitigation measures will be implemented by the Contractor(s) to reduce the impacts on noise amenity through source controls: <ol style="list-style-type: none"> a. Where possible, plant and equipment will be selected that can be fitted with options to minimise noise such as covers, mufflers, shrouds and other noise suppression equipment. b. Plant and equipment will be turned off and not left idling when not in use. Anchorages and moorings are to be used for boats or other watercraft if necessary. c. Plant and equipment will be operated in accordance with industry standards and have been serviced as per manufacturer specifications. d. Noisy plant and equipment will be oriented away from sensitive receivers where possible. e. Temporary screens or other items that provide a noise buffer (including plant and equipment) will be used proximate to noise sources.

Safeguards for the proposed work

- f. Low noise emission plant and equipment will be selected where available.
 - g. Broadband reversing alarms or similar will be used as an alternative to a traditional beeper reversing alarm for vehicles permanently on-site.
 - h. Plant and equipment will be well maintained and serviced regularly to ensure it is not generating excessive noise.
 - i. Tools will not to be dropped from a height onto hard surfaces.
4. The following general construction mitigation measures will be implemented by the Contractor(s) to reduce the impacts on noise amenity through administration controls:
 - a. The use of horns and alarms will be minimised.
 - b. The staff and visitor induction protocols will include awareness of noise generating activities and mitigation measures and techniques that should be implemented.
 - c. Training will be conducted for appropriate community behaviours when access/egress the site.
 5. The following general construction mitigation measures will be implemented by Transport for NSW to reduce the impacts on noise amenity through community management:
 - a. The community will be notified by Transport for NSW one week prior to noise intensive activities commencing, such as piling.
 - b. The community will be informed by Transport for NSW one week prior to any planned out of hours work commencing.
 - c. A complaints procedure will be implemented by Transport for NSW and contact details provided to potentially affected residents and businesses in the area.
 - d. Transport for NSW complaints procedure will include a record of complaints indicating cause and measures taken to resolve/minimise cause.
 6. The following general construction mitigation measures will be implemented by the Contractor(s) to reduce the impacts on noise amenity through site controls:
 - a. Works will be scheduled to minimise the number of noisy plant and equipment operating at any one time.
 - b. Construction activities will be planned to minimise vehicular movements around the site.
 - c. Arrange worksites will avoid or minimise reversing movements and where possible, ensure vehicles enter and exit work sites in a forward direction.
 7. The following general construction mitigation measures will be implemented by the Contractor(s) to reduce the impacts of vibration:

Safeguards for the proposed work

- a. High vibration methods will be substituted with lower vibration methods where possible.
 - b. Alternatives to high vibration plant and equipment will be used where possible.
8. The following general construction-monitoring will be implemented by the Contractor(s) to reduce the impacts of vibration due to piling:
- a. The Contractor(s) will monitor the piling-induced vibration at the nearest receivers at the commencement of piling works to ensure the actual vibration is within the limits in the Assessing Vibration: A Technical Guideline and the German Standard DIN 4150-3-1999 Structural Vibration – Part 3 Effects of Vibration on Structures.
9. Refuelling procedures will be implemented by the Contractor(s) to minimise noise and these would include being next to the control panel during the refuelling processes to monitor tank levels and manage audible alarms as required.

The Contractor is responsible for the implementation of the mitigation measures and managing noise and vibration for the proposal. The Contractor's compliance is to be managed by TfNSW.

Air quality

1. The following general construction mitigation measures will be implemented by the Contractor(s) to reduce the impacts to air quality:
 - a. All plant and equipment used during the construction works will be regularly maintained to comply with the relevant exhaust guidelines.
 - b. Any visible and persistent dark emissions from vessel exhausts will be reported and the equipment repaired or replaced as soon as practicable.
 - c. All operations and activities occurring at the premises will be carried out in a manner that will minimise the emission of dust from the premises.
2. Comprehensive refuelling procedures will be implemented by the Contractor(s) to avoid or reduce the possibility of release. As a minimum, these procedures will include:
 - a. Refuelling using designated existing marina refuelling station for vessels or off-site for land vehicles.
 - b. Training personnel involved with refuelling or fuel transfer in their roles, functions and responsibility, including emergency response.
 - c. Maintaining open communication channels.
 - d. Deploying spill prevention systems in accordance with established procedures and regulatory requirements.
 - e. Maintaining emergency response equipment to ensure that it is readily available.
3. Equipment and construction vehicles and marine vessels will not be left idling and switched off when not in use.
4. Equipment and construction vehicles and marine vessels will be regularly serviced (including preventative maintenance) and removed from site if not working properly (emitting excessive smoke).

Safeguards for the proposed work	
	<ol style="list-style-type: none"> 5. Construction works will be planned to ensure minimal movement of equipment and construction vehicles and marine vessels. 6. Vapour recovery system will be added to reduce odour and emissions during filling of the fuel tank.
Non-Aboriginal Heritage	<ol style="list-style-type: none"> 1. If work results in unexpected historic heritage items (archaeological relics and other historic items including historic shipwrecks), all work must stop in the immediate area. TfNSW are to be notified and the 'unexpected heritage items procedure' in the Standard Management Procedure: Unexpected Heritage Items (2015) is to be followed.
Aboriginal Heritage	<ol style="list-style-type: none"> 1. Project staff and Contractor(s) will be made aware of their statutory obligations for heritage under the NP&W Act through the site induction and toolbox talks. 2. If Aboriginal heritage items are uncovered during the works including during any excavation works, all works in the vicinity of the find must cease and the TfNSW Aboriginal Community and Heritage Partner and Regional Environment Manager contacted immediately. The area should be protected with clearly identifiable No Go Zone signage and demarcation and steps in the Roads and Maritime Services Standard Management Procedure: Unexpected Heritage Finds must be followed. 3. In the event that skeletal remains are uncovered, works in the immediate area will cease, the area will be cordoned off and the NSW Police Coroner will be contacted to determine if the material is of Aboriginal origin. If determined to be Aboriginal, the OEH Enviroline 131 555 and relevant Aboriginal stakeholders will be contacted to determine an action plan for the management of the skeletal remains prior to works re-commencing.
Biodiversity	<ol style="list-style-type: none"> 1. A pre-clearance survey of the site is to be undertaken to identify the presence of any threatened shorebirds including Sooty Oystercatcher (<i>Haematopus fuliginosus</i>) and Pied Oystercatcher (<i>Haematopus longirostris</i>) (noted as required by BCD of DP&E). If protected shorebird species are present within 150 m of the site works during high noise impact activities (i.e., piling and excavation works), the works must not proceed until they have left the area. 2. Slow start up measures would be used for noise generating activities, to ensure that noise – sensitive shorebirds can move away from the source of noise if required. 3. Implementation of and adherence to a defined Marine Construction Zone to ensure protection of aquatic habitats and associated marine fauna. 4. All construction vessels will be well maintained and regularly serviced to ensure they are in proper working order and reduce the likelihood of fuel / oil leaks and spills. 5. Oil and sewage spill response kits will be readily available on the construction vessels and training should be provided to construction staff on their use. The location of these should be clearly marked.

Safeguards for the proposed work

6. Post construction a seabed clearance survey will be undertaken to ensure that no demolition or construction materials are left on the seabed. If items are identified they must be removed and disposed of lawfully.
7. To reduce the spread of suspended sediments generated during piling and the potential for sedimentation / smothering of aquatic habitats and associated flora and fauna, silt curtains or similar must be used wherever possible around the immediate area of piling and/or in-water works.
8. To reduce the potential for lighting related impacts on marine fauna, construction activities will be undertaken during standard construction hours to reduce the overall need for construction related artificial lighting and associated impacts. Downward directed lighting which minimises light spillage and dimmed lighting should be used on the structures where possible (ensuring still in accordance with navigational requirements).
9. The risk of vessel strike during construction may be reduced through the adoption of:
 - a. Vessels will maintain the required NPWS exclusion zone with all whales when travelling to site where practicable (100 m minimum and 300 m if calf is present).
 - b. Site inductions and training.
 - c. Marine fauna awareness in the local waterway by vessel operators so appropriate speeds and clearance can be adopted when cetaceans are nearby.
10. To reduce the potential for noise impacts on marine fauna (specifically marine mammals; whales, dolphins, seals) the following will be applied:
 - a. Pre-start Observation: The Contractor must visually monitor the local waterway (within the marina area) before the commencement of piling. If no mammals have been sighted during the soft-start procedure (gradual increase of power) full impact piling may commence.
11. Shut-Down requirements:
 - a. Piling is not permitted between 6.00 pm and 7.00 am.
 - b. If any mammals are spotted within the marina area piling must cease immediately or as soon as safe to do so until the mammals have moved outside of the area.
 - c. All piling must cease for a minimum of 30 minutes after the last sighting of a mammals within the marina area. Piling must recommence at the prestart observation after the 30 minutes shutdown has elapsed.

Safeguards for the proposed work

12. Construction vessel antifouling will be maintained to avoid the attachment and potential translocation of invasive marine species into and out of Coffs Harbour.
13. Ballast water management will be implemented:
 - a. Ballast water exchange by domestic vessels will be avoided.
 - b. Domestic vessels will manage ballast water in accordance with the Australian Ballast Water Management Requirements (Department of Agriculture and Water Resources 2016).
 - c. Any ballast water exchange from international vessels will be undertaken in accordance with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM) (IMO 2016).
14. DPI Fisheries (1800 043 536) is to be immediately notified of any fish or marine mammal kills within the construction site. In such cases, all works other than emergency response procedures are to cease until the issue is rectified and written approval to proceed is provided by DPI Fisheries.
15. Any injured marine mammals must be immediately reported to the ORRCA 24 hour hotline on 02 9415 3333 or NPWS on 1300 361 967. The ORRCA telephone hotline is staffed by volunteers and keeps ORRCA members, Government Authorities and interested members of the public informed of marine mammal emergencies, incidents and sightings. ORRCA representatives will quickly mobilise to site and attempt to capture and treat the stricken animal. Depending upon the location of the animal and the circumstances that surround the injury, construction activities may need to cease or be altered to enable the rescue of the animal. Following this, the TfNSW Project Manager must also be informed.

Land and water transport

Land Transport

1. The contractor must prepare and implement a Traffic Management Plan (TMP) to ensure safety and welfare of all contractor employees and the public including details of construction vehicles routes. The contractor must submit the TMP to TfNSW for review and approval 14 days before construction starts.
2. Measures to minimise disruption to local businesses including maintenance of pedestrian and vehicle access and public parking (as far as practicable) and provision of directional signage.
3. Measures, where required, to physically separate pedestrian and construction vehicle movements, such as temporary barriers.
4. Minimise traffic associated with construction activities.
5. Whilst construction vehicles use Council local roads:
 - a. Any Oversize/Overmass or Performance Based Standards permits required during the period of construction will be

Safeguards for the proposed work

	<p>submitted to the National Heavy Vehicle Regulator (NHVR) for approval.</p> <ul style="list-style-type: none"> b. Trucks will enter and leave the site in a forward direction, where possible. c. Exhaust brakes will not be used in built up areas. d. Erect direction and speed signage as required. e. Retain access for existing commercial users of the Fishermen's Co-op, nearby businesses and pedestrian access to the breakwater. f. Use broadband reversing alarms on all vehicles where reversing alarms are fitted to muffle the noise. <p>Water Transport</p> <ol style="list-style-type: none"> 1. The TMP is to include measures related to the transport of vessels. 2. Access to wharves/berths within the Inner Harbour including the Coffs Harbour Marina and those for emergency and Government vessels must not be impeded or restricted during the proposed works. 3. All work vessels associated with the proposal must comply with the relevant NSW marine legislation. 4. All work vessels and crew associated with the proposal must comply with the Marine Safety (Domestic Commercial Vessels) National Law Act 2012. The contractor is to submit documentation to TfNSW for domestic commercial vessels 21 days prior to works commencing. 5. Any submerged hazards, cables, wires, silt curtains etc must be marked with yellow aqua buoys (sign written "Warning – Submerged Hazard"). These aqua buoys must be lit with a yellow flashing light if hazards are present before sunrise and after sunset. 6. Notify NSW Maritime a minimum of 21 days prior to works commencing, providing a full scope of works relating to on-water operations. A Marine Notice may be required to be published on the Maritime website and/or local newspaper.
Socio-economic	<ol style="list-style-type: none"> 1. The contractor must prepare and implement a Work, Health and Safety Management Plan to ensure safety and welfare of all contractor employees and the public. All Safe Work Method Statements (SWMS) for the related activities will be submitted to the Principal's Authorised Person prior to the commencement of works and be referenced in the CEMP. 2. TfNSW will implement a community engagement / notification strategy. 3. The Principal's Authorised Person will monitor any complaints received in relation to the activity and where practical instruct the contractor to make any necessary modifications to reduce any adverse impacts on users.
Landscape character and visual amenity	<ol style="list-style-type: none"> 1. The structure is to be constructed with minimal use of reflective materials. Where painted finishes are to be applied, it is

Safeguards for the proposed work

- recommended that these are of a matte finish, where practical, including for white caps to pile heads, if these are required.
2. Screening of the fuel facility is to occur as described in Section 2.1.2.

5.1 Licensing and approvals

A list of licences and/or approvals required for the proposal is provided in Table 5-2. These requirements would be the responsibility of Transport for NSW.

Table 5-2 Summary of licensing and approval required.

Instrument	Requirement	Timing
<i>Fisheries Management Act 1994 (s199)</i>	Notification to the Minister for Primary Industries prior to any dredging or reclamation works.	A minimum of 28 days prior to the start of work.
<i>Crown Land Management Act 2016 (Division 3.4, 5.5 and 5.6)</i>	Licence or lease to occupy areas of Crown land.	Prior to start of the activity

5.2 Other requirements

A list of other requirements for the proposal are provided in Table 5-3. These requirements would be the responsibility of the appointed Contractor.

Table 5-3 Other requirements for the proposal.

Requirement		
Construction Environmental Management Plan sent to Environment Manager for review. Sub-plans required include: <ul style="list-style-type: none"> Erosion and Sediment Control Plan Emergency Oil and Fuel Spillage Plan Waste Management Plan Noise Management Plan Traffic Management Plan 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
A pre-clearance survey for threatened shorebirds including Sooty Oystercatcher (<i>Haematopus fuliginosus</i>) and Pied Oystercatcher (<i>Haematopus longirostris</i>) is required by BCD.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
To ensure appropriate consideration under Section 56 of the MEM Act, DPI Fisheries requests a copy of the Review of Environmental Factors (REF) once available. DPI Fisheries may provide additional advice on the proposal at that time.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Vessels and On-water Operations: <ul style="list-style-type: none"> All work vessels associated with the Proposal must comply with the relevant NSW marine legislation. All work vessels and crew associated with the Proposal must comply with the Marine Safety (Domestic Commercial Vessels) National Law Act 2012. The contractor is to submit documentation for domestic commercial vessels 21 days prior to works commencing. Any submerged hazards, cables, wires, silt curtains etc must be marked with yellow aqua buoys (sign written "Warning – 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Requirement		
<p>Submerged Hazard”). These aqua buoys must be lit with a yellow flashing light if hazards are present before sunrise and after sunset.</p> <ul style="list-style-type: none"> Notify NSW Maritime a minimum of 21 days prior to works commencing, providing a full scope of works relating to on-water operations. A Marine Notice may be required to be published on the Maritime website and/or local newspaper. 		
<p>An updated and as built hazardous areas classification report and drawings set will be required based upon the as constructed facility.</p>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

6. Certification, review and decision

6.1 Certification

This minor works REF provides a true and fair review of the proposal in relation to its potential effects on the environment. It addresses to the fullest extent possible all matters affecting or likely to affect the environment as a result of the proposal.

Prepared by:



Dr Katie Newton
Principal Marine Consultant
Advisian Pty Ltd
Date: 20 September 2022

Minor Works REF reviewed by:

 28/9/22

Greg Collins
Northern Region Environmental Manager
Transport for NSW
Date:

6.2 Environment staff review

The Minor Works REF has been reviewed and considered against the requirements of sections 5.5 and 5.7 of the EP&A Act.

In considering the proposal this assessment has examined and taken into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of that activity as addressed in the Minor Works REF and associated information. This assessment is considered to be in accordance with the factors required to be considered under clause 228 of the Environmental Planning and Assessment Regulation 2000.

The proposal described in the Minor Works REF will have some environmental impacts which can be ameliorated satisfactorily. Having regard to the safeguard and management measures proposed, this assessment has considered that these impacts are unlikely to be significant and therefore an approval for the proposal does not need to be sought under Division 5.2 of the EP&A Act.

The assessment has considered the potential impacts of the activity on areas of outstanding biodiversity value and on threatened species, ecological communities or their habitats for both terrestrial and aquatic species as defined by the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994*.

The proposal described in the Minor Works REF will not affect areas of outstanding biodiversity value. The activity described in the Minor Works REF will not significantly affect threatened species ecological communities or their habitats. Therefore a species impact statement is not required.

The assessment has also addressed the potential impacts on the activity on matters of national environmental significance and any impacts on the environment of Commonwealth land and concluded that there will be no significant impacts. Therefore there is no need for a referral to be made to the Australian Government Department of Agriculture, Water and the Environment for a decision by the Commonwealth Minister for the Environment and Energy on whether assessment and approval is required under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Minor Works REF is considered to meet all relevant requirements.

6.3 Environment staff recommendation

It is recommended that the proposal to provide a new on-water vessel refuelling facility at Coffs Harbour Marina at Coffs Harbour, NSW, as described in this Minor Works REF proceed subject to the implementation of all safeguards identified in the Minor Works REF and compliance with all other relevant statutory approvals, licences, permits and authorisations.

The Minor Works REF has examined and taken into account to the fullest extent possible all matters likely to affect the environment by reason of the activity and established that the activity is not likely to significantly affect the environment or threatened species, ecological communities or their habitats.

The Minor Works REF has concluded that there will be no significant impacts on matters of national environmental significance or any impacts on the environment of Commonwealth land.

The Minor Works REF determination will remain current for five years until September 2027 at which time it shall lapse if works have not been physically commenced.

The pre-construction checklist must be completed prior to the commencement of any works.

Recommended by:

Greg Collins *Greg Collins* 28/9/2022
Northern Region Environmental Manager
Transport for NSW

Noted by:

Daniel Cini *Daniel Cini* 28.9.22
Project Manager
Maritime Infrastructure Delivery Office (MIDO)

6.4 Determination

In accordance with the above recommendation and sections 5.5 and 5.7 of the EP&A Act, I determine that TfNSW may:

- proceed with the activity

Andrew Dooley 28.09.2022

Andrew Dooley
Senior Project Manager (Level 4)
Maritime Infrastructure Delivery Office (MIDO)
Greater Sydney

7. References

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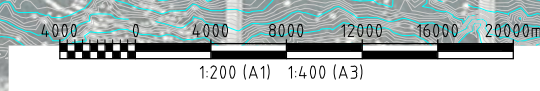
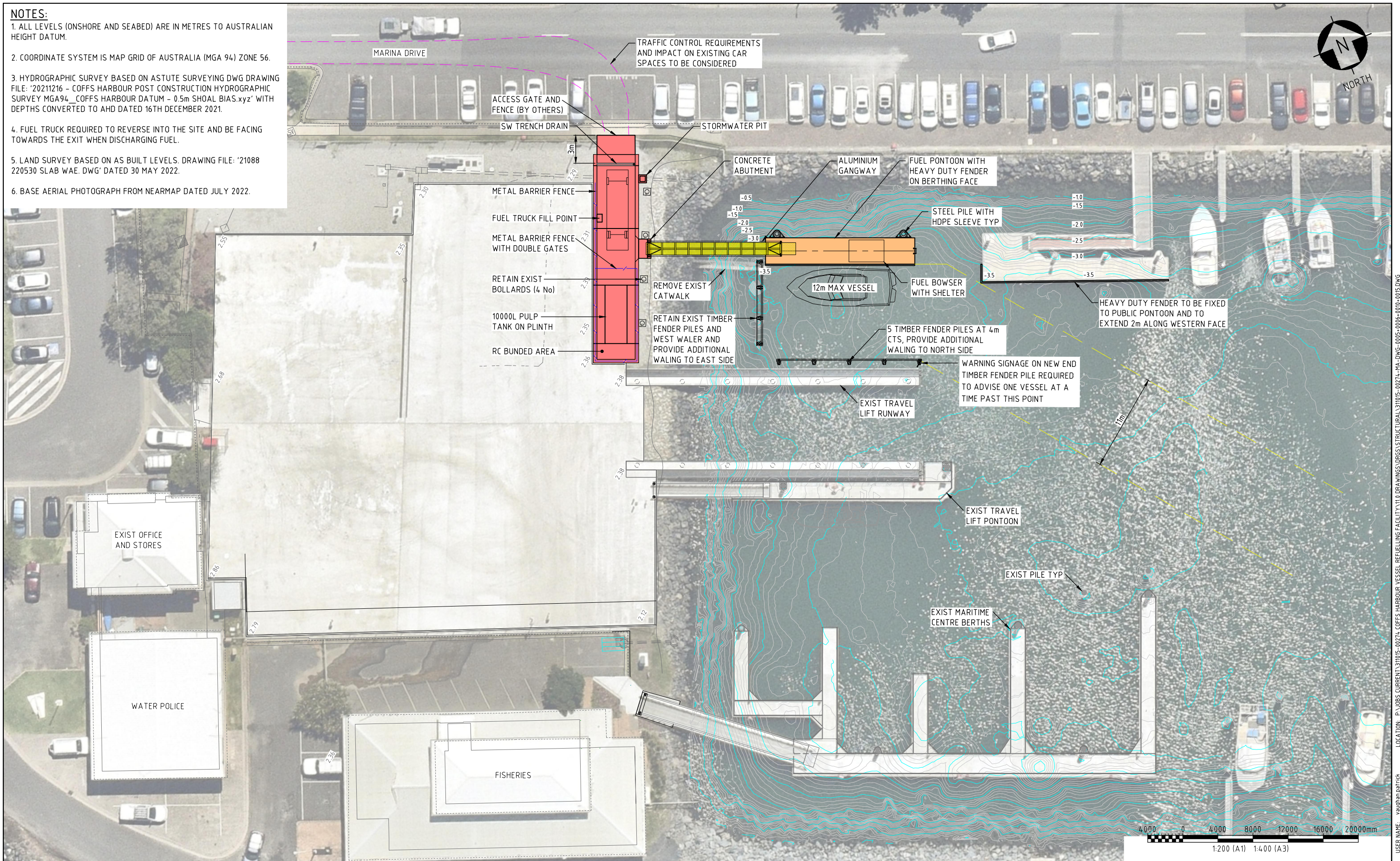
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Appendix A – Design Plans

NOTES:

1. ALL LEVELS (ONSHORE AND SEABED) ARE IN METRES TO AUSTRALIAN HEIGHT DATUM.
2. COORDINATE SYSTEM IS MAP GRID OF AUSTRALIA (MGA 94) ZONE 56.
3. HYDROGRAPHIC SURVEY BASED ON ASTUTE SURVEYING DWG DRAWING FILE: '20211216 - COFFS HARBOUR POST CONSTRUCTION HYDROGRAPHIC SURVEY MGA94_COFFS HARBOUR DATUM - 0.5m SHOAL BIAS.xyz' WITH DEPTHS CONVERTED TO AHD DATED 16TH DECEMBER 2021.
4. FUEL TRUCK REQUIRED TO REVERSE INTO THE SITE AND BE FACING TOWARDS THE EXIT WHEN DISCHARGING FUEL.
5. LAND SURVEY BASED ON AS BUILT LEVELS. DRAWING FILE: '21088 220530 SLAB WAE. DWG' DATED 30 MAY 2022.
6. BASE AERIAL PHOTOGRAPH FROM NEARMAP DATED JULY 2022.



REV	DATE	REVISION DESCRIPTION	DRAWN	DRAFT CHK	DESIGNED	ENG CHK	APPROVED	CUSTOMER	REFERENCE DRAWING No	REFERENCE DRAWING TITLE
C	30.08.22	ISSUED FOR REVIEW OF ENVIRONMENTAL FACTORS	VIP	DHL	DHL	PM	PM			
B	17.08.22	RE-ISSUED FOR CLIENT REVIEW	VIP	DHL	DHL	MJT	PM			
A	08.08.22	ISSUED FOR CLIENT REVIEW	VIP	DHL	DHL	PM	PM			

A1 SHEET SCALE AS SHOWN

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ADVISIAN PROJECT No.
311015-00274

ENGINEERING AND PERMIT STAMPS (As Required)

INFORMATION ONLY
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CUSTOMER

Transport for NSW

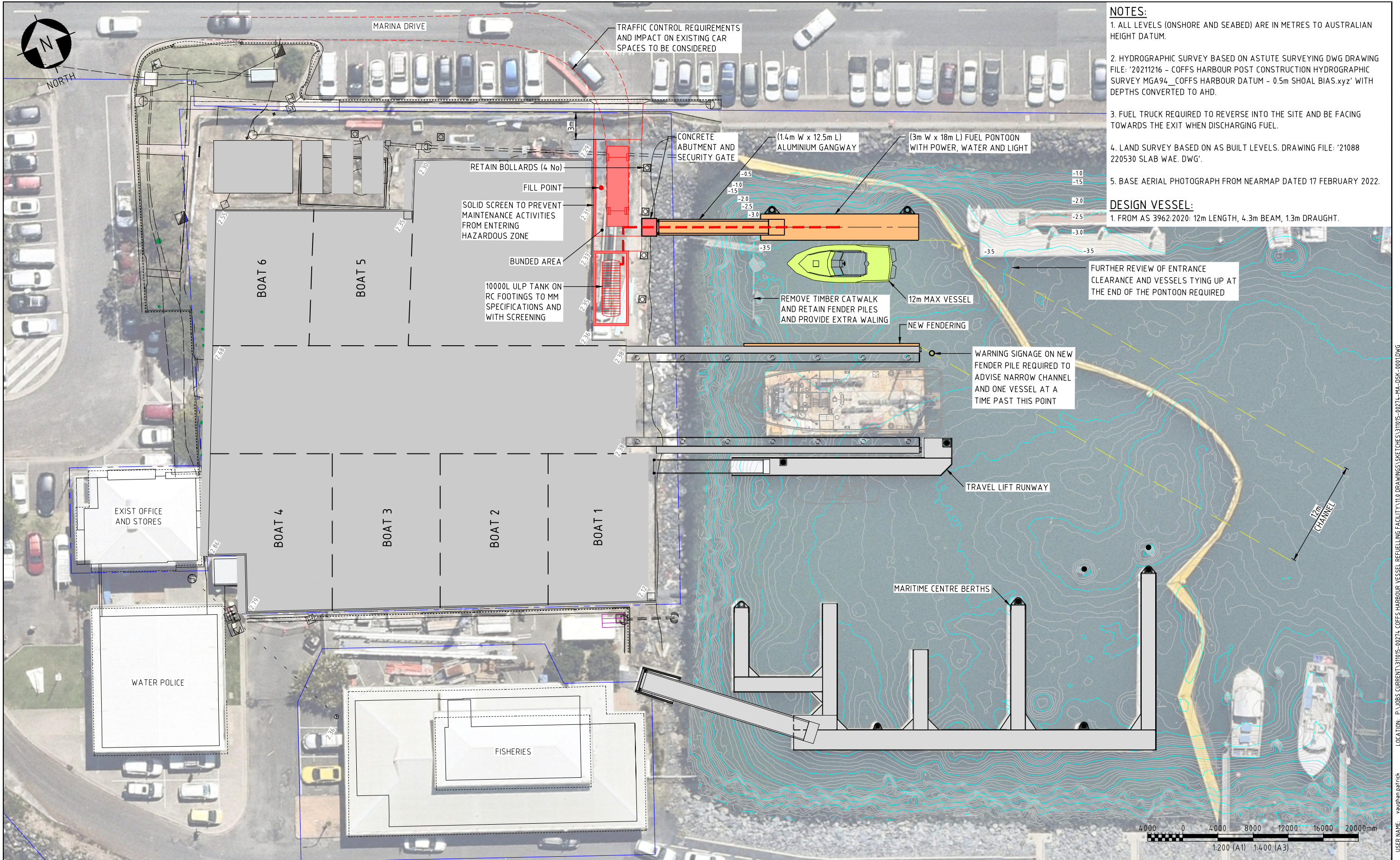
This drawing is prepared solely for the use of the contractual customer of Advisian and Advisian assumes no liability to any other party for any representations contained in this drawing.

COFFS HARBOUR VESSEL REFUELLING FACILITY

GENERAL ARRANGEMENT PLAN

DRG No **311015-00274-MA-DWG-0005** REV **C**

LOCATION: P:\JOBS CURRENT\311015-00274 COFFS HARBOUR VESSEL REFUELLING FACILITY\110 DRAWINGS\DRGS\STRUCTURAL\311015-00274-MA-DWG-0005-000-0015.DWG
 USER NAME: vaughan.patrick
 PLOT DATE & TIME: 31/08/2022 3:51:37 PM
 SAVE DATE & TIME: 30/08/2022 5:21:33 PM



- NOTES:**
1. ALL LEVELS (ONSHORE AND SEABED) ARE IN METRES TO AUSTRALIAN HEIGHT DATUM.
 2. HYDROGRAPHIC SURVEY BASED ON ASTUTE SURVEYING DWG DRAWING FILE: '20211216 - COFFS HARBOUR POST CONSTRUCTION HYDROGRAPHIC SURVEY MGA94_COFFS HARBOUR DATUM - 0.5m SHOAL BIAS.xyz' WITH DEPTHS CONVERTED TO AHD.
 3. FUEL TRUCK REQUIRED TO REVERSE INTO THE SITE AND BE FACING TOWARDS THE EXIT WHEN DISCHARGING FUEL.
 4. LAND SURVEY BASED ON AS BUILT LEVELS. DRAWING FILE: '21088 220530 SLAB WAE. DWG'.
 5. BASE AERIAL PHOTOGRAPH FROM NEARMAP DATED 17 FEBRUARY 2022.

DESIGN VESSEL:
 1. FROM AS 3962:2020: 12m LENGTH, 4.3m BEAM, 1.3m DRAUGHT.

FURTHER REVIEW OF ENTRANCE CLEARANCE AND VESSELS TYING UP AT THE END OF THE PONTOON REQUIRED

WARNING SIGNAGE ON NEW FENDER PILE REQUIRED TO ADVISE NARROW CHANNEL AND ONE VESSEL AT A TIME PAST THIS POINT

TRAFFIC CONTROL REQUIREMENTS AND IMPACT ON EXISTING CAR SPACES TO BE CONSIDERED

RETAIN BOLLARDS (4 No)
 FILL POINT
 SOLID SCREEN TO PREVENT MAINTENANCE ACTIVITIES FROM ENTERING HAZARDOUS ZONE

BUNDED AREA
 10000L ULP TANK ON RC FOOTINGS TO MM SPECIFICATIONS AND WITH SCREENING

(1.4m W x 12.5m L) ALUMINIUM GANGWAY

(3m W x 18m L) FUEL PONTOON WITH POWER, WATER AND LIGHT

REMOVE TIMBER CATWALK AND RETAIN FENDER PILES AND PROVIDE EXTRA WALING

12m MAX VESSEL

NEW FENDERING

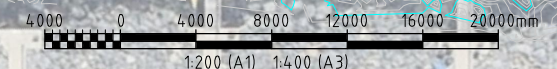
TRAVEL LIFT RUNWAY

MARITIME CENTRE BERTHS

EXIST OFFICE AND STORES

WATER POLICE

FISHERIES



REV	DATE	REVISION DESCRIPTION	DRAWN	DRAFT CHK	DESIGNED	ENG CHK	APPROVED	CUSTOMER	REF DRAWING No	REFERENCE DRAWING TITLE
A	10.06.22	ISSUED FOR REVIEW	VIP	DHL	DHL	PM	PM			

A1 SHEET SCALE AS SHOWN

Oneway
 so zero harm

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ADVISIAN PROJECT No.
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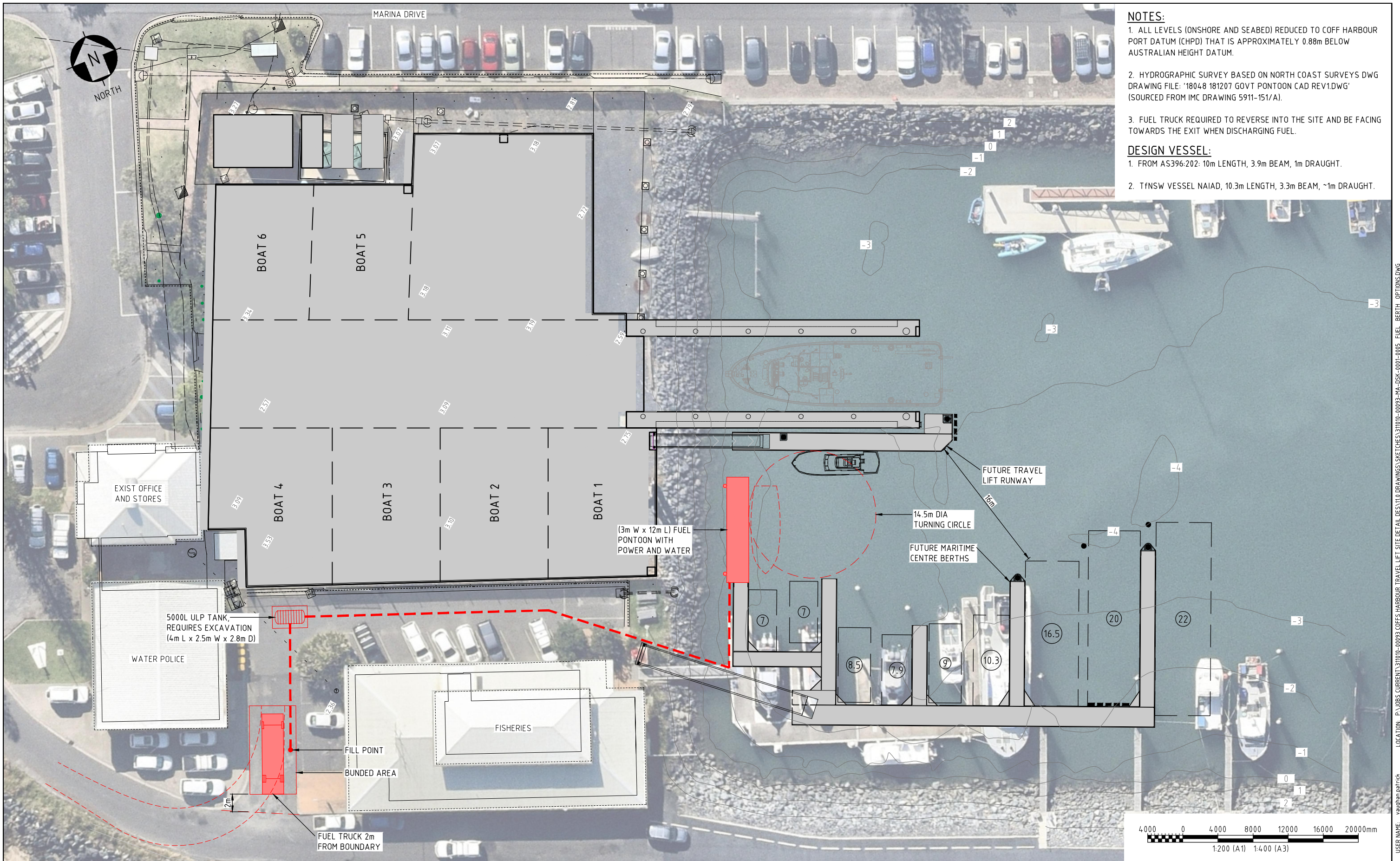
COFFS HARBOUR
 VESSEL REFUELLING FACILITY

OPTION 2E (PREFERRED)

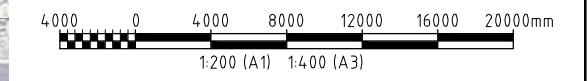
DRG No
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REV
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 USER NAME: vaughan.patrick
 PLOT DATE & TIME: 10/06/2022 3:34:50 PM
 SAVE DATE & TIME: 8/6/2022 4:52:23 PM



- NOTES:**
1. ALL LEVELS (ONSHORE AND SEABED) REDUCED TO COFF HARBOUR PORT DATUM (CHPD) THAT IS APPROXIMATELY 0.88m BELOW AUSTRALIAN HEIGHT DATUM.
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 2. TfNSW VESSEL NAIAD, 10.3m LENGTH, 3.3m BEAM, ~1m DRAUGHT.



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B	21.10.21	ISSUED WITH MEMO	VIP	BSM	BSM	PM	BSM			
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A1 SHEET SCALE AS SHOWN

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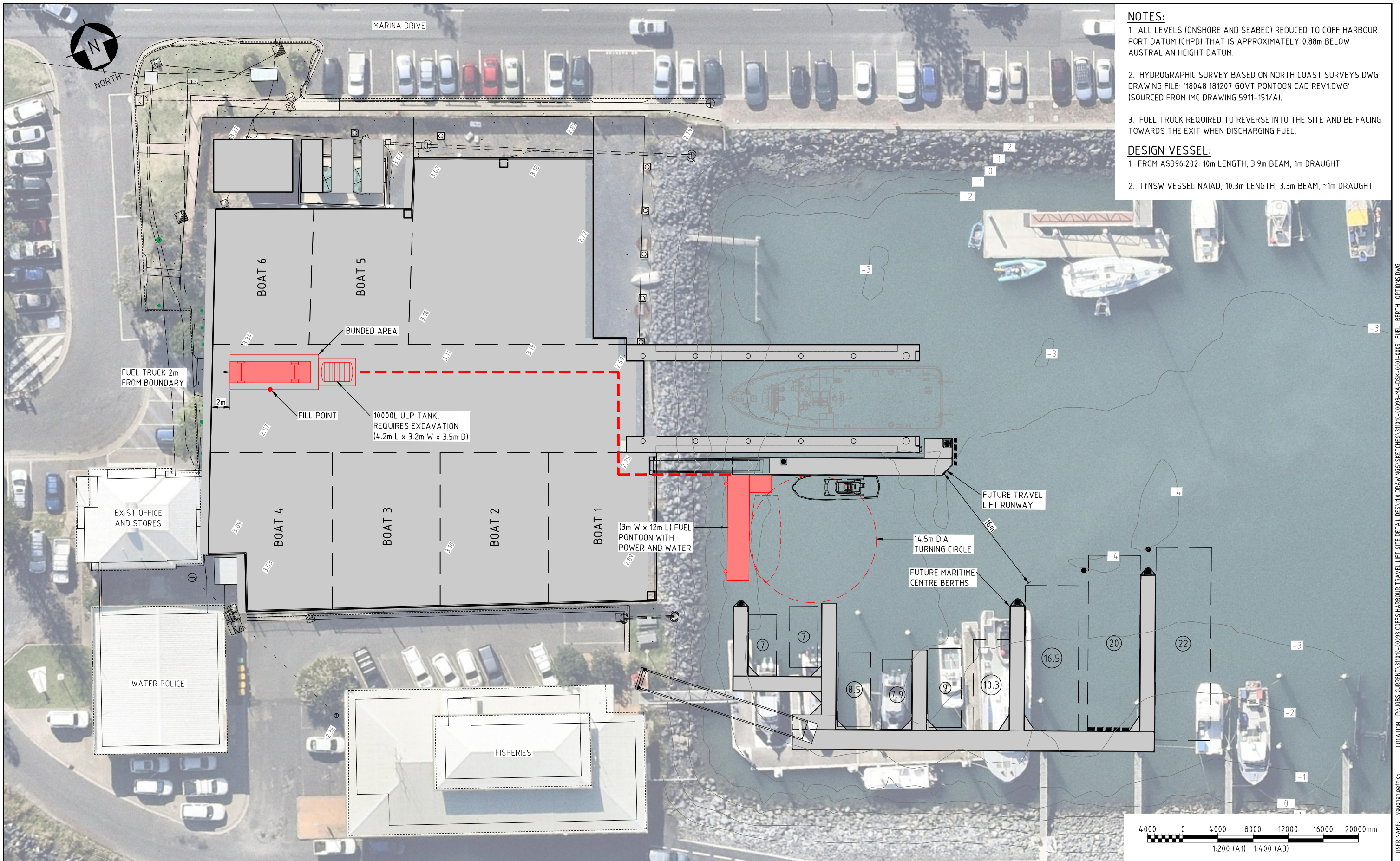
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FUEL FACILITY
OPTION 1

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LOCATION: P:\JOBS CURRENT\311010-00093 COFFS HARBOUR TRAVEL LIFT SITE DETAIL DES\110 DRAWINGS\SKETCHES\311010-00093-MA-DSK-001-005_FUEL_BERTH_OPTIONS.DWG
 USER NAME: vaughan.patrick
 PLOT DATE & TIME: 21/10/2021 2:27:18 PM
 SAVE DATE & TIME: 21/10/2021 2:25:44 PM



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SAVE DATE & TIME: 21/10/2021 2:25:44 PM

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A1 SHEET SCALE AS SHOWN

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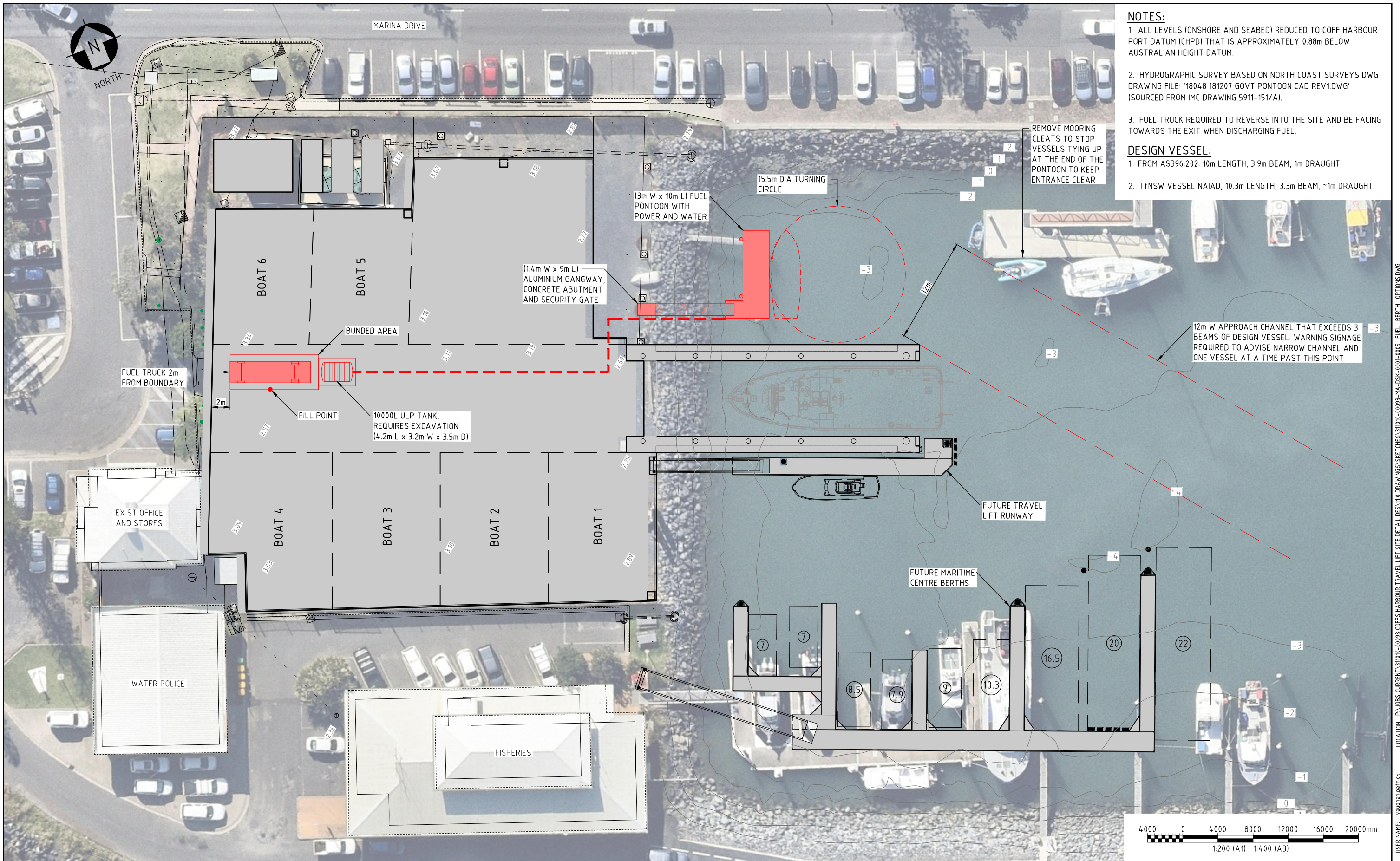
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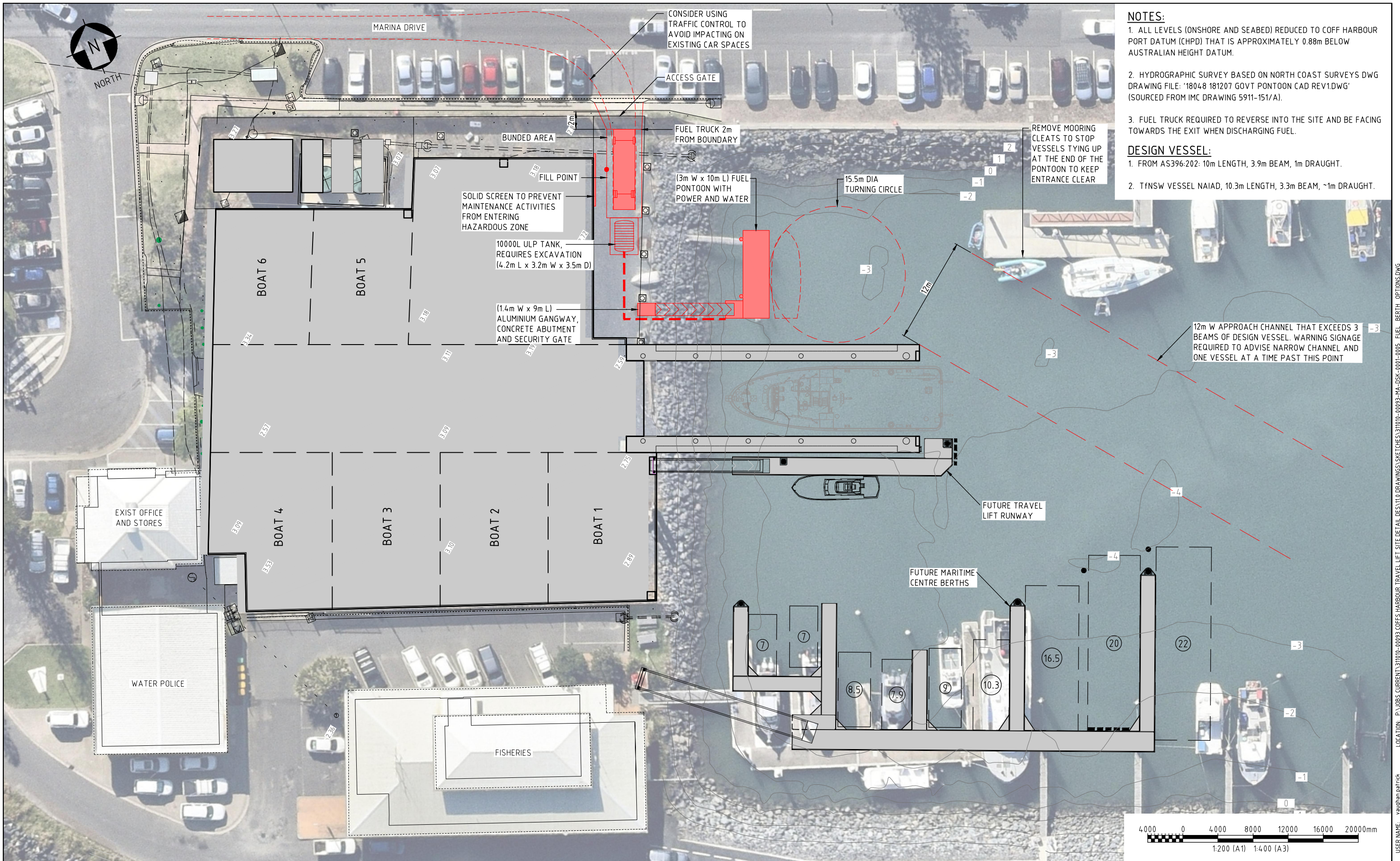
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OPTION 2B

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LOCATION: P:\JOBS CURRENT\311010-00093 COFFS HARBOUR TRAVEL LIFT SITE DETAIL DES\110 DRAWINGS\SKETCHES\311010-00093-MA-DSK-001-005_FUEL_BERTH_OPTIONS.DWG
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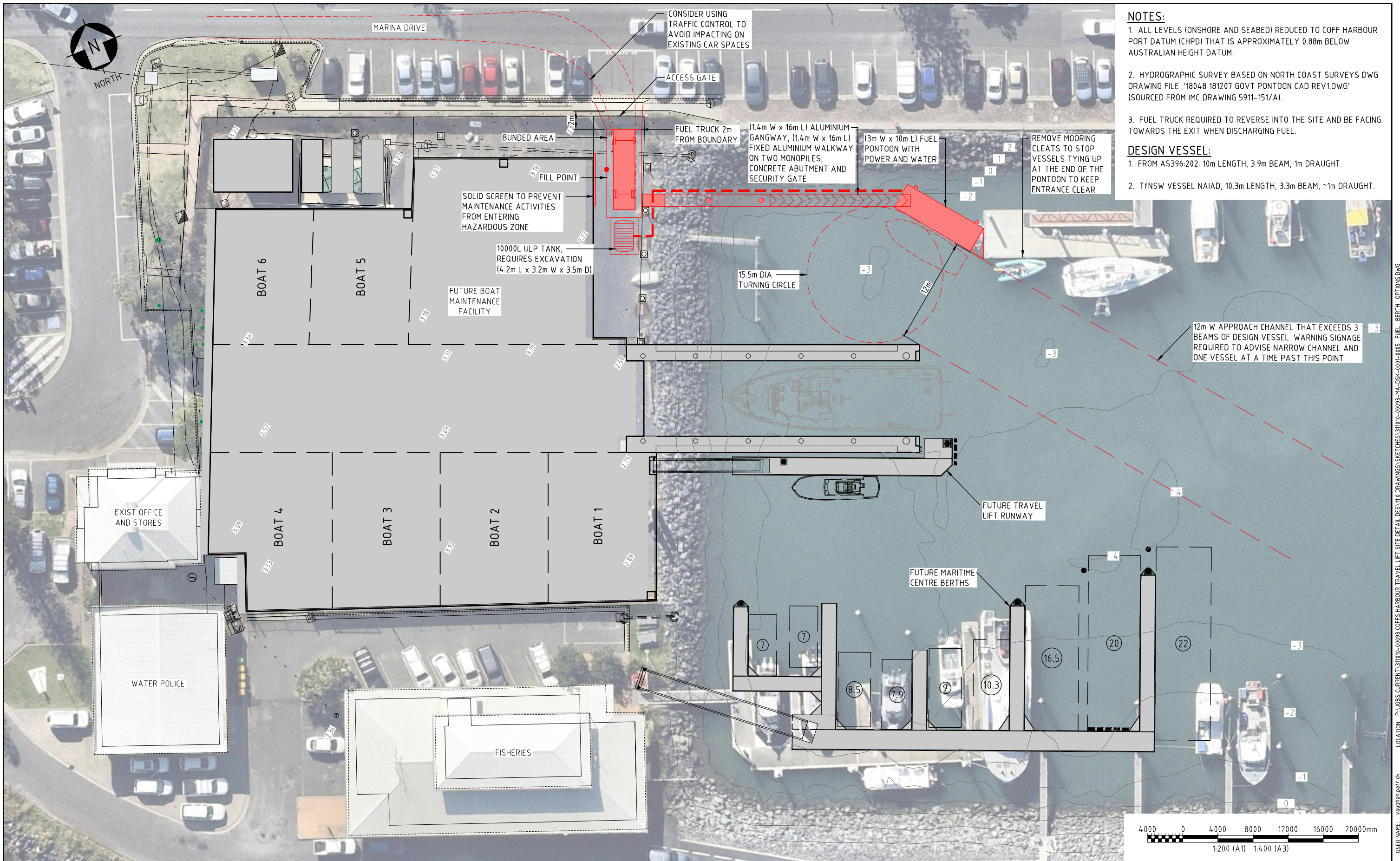
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Appendix B – EPBC Act Protected Matters Search



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 12-May-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	83
Listed Migratory Species:	61

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	3
Commonwealth Heritage Places:	None
Listed Marine Species:	93
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	3
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	8
Key Ecological Features (Marine):	None
Biologically Important Areas:	3
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities

[[Resource Information](#)]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area	In buffer area only
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area	In buffer area only
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only

Listed Threatened Species

[[Resource Information](#)]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In feature area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In feature area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In feature area
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In feature area
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area
FROG			
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat may occur within area	In feature area
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Mixophyes iteratus Giant Barred Frog, Southern Barred Frog [1944]	Vulnerable	Species or species habitat known to occur within area	In feature area
INSECT			
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area	In feature area
MAMMAL			
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In feature area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Potorous tridactylus tridactylus Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			
Acronychia littoralis Scented Acronychia [8582]	Endangered	Species or species habitat known to occur within area	In feature area
Allocasuarina thalassoscopica [21927]	Endangered	Species or species habitat likely to occur within area	In feature area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In feature area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area	In feature area
Endiandra hayesii Rusty Rose Walnut, Velvet Laurel [13866]	Vulnerable	Species or species habitat may occur within area	In feature area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area	In feature area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat known to occur within area	In feature area
Marsdenia longiloba Clear Milkvine [2794]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Parsonsia dorrigoensis Milky Silkpod [64684]	Endangered	Species or species habitat may occur within area	In buffer area only
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area	In feature area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat known to occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Samadera sp. Moonee Creek (J.King s.n. Nov. 1949) [86885]	Endangered	Species or species habitat may occur within area	In feature area
Sarcochilus fitzgeraldii Ravine Orchid [19131]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat known to occur within area	In feature area
Vincetoxicum woollsii listed as Tylophora woollsii [40080]	Endangered	Species or species habitat likely to occur within area	In feature area
Zieria prostrata Headland Zieria [56782]	Endangered	Species or species habitat may occur within area	In buffer area only

REPTILE

Caretta caretta Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area	In feature area

SHARK

Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
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Scientific Name	Threatened Category	Presence Text	Buffer Status
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardenna grisea Sooty Shearwater [82651]		Breeding known to occur within area	In feature area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area	In feature area
Ardenna tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In feature area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area
Migratory Marine Species			
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In feature area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area	In feature area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Thalasseus bergii Greater Crested Tern [83000]		Breeding known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands

[[Resource Information](#)]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Corporation [11373]	NSW	In buffer area only

Defence

Defence - Training Depot [10074]	NSW	In buffer area only
Defence - Training Depot [10075]	NSW	In buffer area only

Listed Marine Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Anous stolidus			
Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes			
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardenna grisea as Puffinus griseus			
Sooty Shearwater [82651]		Breeding known to occur within area	In feature area
Ardenna pacifica as Puffinus pacificus			
Wedge-tailed Shearwater [84292]		Breeding known to occur within area	In feature area
Ardenna tenuirostris as Puffinus tenuirostris			
Short-tailed Shearwater [82652]		Breeding known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding known to occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding known to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pterodroma nigripennis Black-winged Petrel [1038]		Breeding known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Stercorarius skua as Catharacta skua Great Skua [823]		Species or species habitat may occur within area	In buffer area only
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area overfly marine area	In feature area
Fish			
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In feature area
Campichthys tryoni Tryon's Pipefish [66193]		Species or species habitat may occur within area	In feature area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area	In feature area
Corythoichthys ocellatus Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area	In feature area
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area	In feature area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area	In feature area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area	In feature area
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area	In feature area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In feature area
Hippocampus kelloggi Kellogg's Seahorse, Great Seahorse [66723]		Species or species habitat may occur within area	In feature area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area	In feature area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area	In feature area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area	In feature area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In feature area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In feature area
Micrognathus andersonii Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area	In feature area
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area	In feature area
Microphis manadensis Manado Pipefish, Manado River Pipefish [66258]		Species or species habitat may occur within area	In feature area
Solegnathus dunckeri Duncker's Pipehorse [66271]		Species or species habitat may occur within area	In feature area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area	In feature area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In feature area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In feature area
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In feature area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In feature area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In feature area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In feature area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In feature area
Mammal			
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In feature area
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area	In feature area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area	In feature area

Whales and Other Cetaceans

[[Resource Information](#)]

Current Scientific Name	Status	Type of Presence	Buffer Status
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Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In feature area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In feature area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat likely to occur within area	In feature area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In feature area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In feature area

Current Scientific Name	Status	Type of Presence	Buffer Status
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In feature area

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Protected Area Name	Reserve Type	State	Buffer Status
Coffs Coast	Regional Park	NSW	In buffer area only
Muttonbird Island	Nature Reserve	NSW	In feature area
Solitary Islands	Marine Park	NSW	In feature area

Regional Forest Agreements [\[Resource Information \]](#)

Note that all areas with completed RFAs have been included.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Clarence Valley and Coffs Harbour Regional Water Supply Project	2005/2191	Controlled Action	Post-Approval	In feature area
Pacific Highway Upgrade - Coffs Harbour Bypass, NSW	2017/8005	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Safe management of vegetation within Obstacle Limitation Surfaces, Coffs Harbour Regional Aerodrome, NSW	2016/7794	Not Controlled Action	Completed	In buffer area only
Undertake vegetation removal as per CASA safety requirements	2011/6007	Not Controlled Action	Completed	In buffer area only
Vegetation removal over sewer infrastructure easement	2013/6725	Not Controlled Action	Completed	In buffer area only

Referral decision

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Referral decision				
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In feature area
World Rally Championship 'Super Special Stage'	2013/6731	Referral Decision	Completed	In feature area

Biologically Important Areas

Scientific Name	Behaviour	Presence	Buffer Status
Dolphins			
Tursiops aduncus			
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur	In feature area
Sharks			
Carcharias taurus			
Grey Nurse Shark [64469]	Foraging	Known to occur	In feature area
Whales			
Megaptera novaeangliae			
Humpback Whale [38]	Foraging	Known to occur	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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Appendix C – FM Act Search Results

Fisheries Management Act 1994 No 38

Current version for 24 March 2022 to date (accessed 5 August 2022 at 10:13)

Schedule 4

Schedule 4 Endangered species, populations and ecological communities

(Section 220C)

Part 1 Endangered species

Fish

<i>Archaeophya adamsi</i> Fraser, 1959	Adam's Emerald Dragonfly
<i>Austrocordulia leonardi</i>	Sydney Hawk Dragonfly
* <i>Dendronephthya australis</i> (Kükenthal, 1905)	Cauliflower Soft Coral
<i>Hippocampus whitei</i> (Bleeker, 1855)	White's Seahorse
* <i>Maccullochella ikei</i> Rowland	Eastern Freshwater Cod
* <i>Maccullochella macquariensis</i> (Cuvier)	Trout Cod
* <i>Macquaria australasica</i> (Cuvier, 1830)	Macquarie Perch
<i>Mogurnda adspersa</i> (Castelnau, 1878)	Southern Purplespotted Gudgeon, Purple Spotted Gudgeon
<i>Nannoperca australis</i> Günther, 1861	Southern Pygmy Perch
* <i>Nannoperca oxleyana</i> Whitley	Oxleyan Pygmy Perch
* <i>Prototroctes maraena</i> (Günther, 1864)	Australian Grayling
<i>Sphyrna lewini</i> (Griffith & Smith, 1834)	Scalloped Hammerhead Shark
<i>Thunnus maccoyii</i>	Southern Bluefin Tuna

Marine vegetation

Part 2 Endangered populations

Fish

<i>Ambassis agassizii</i> Steindachner, 1866, Agassiz's glassfish, olive perchlet, western New South Wales population
<i>Craterocephalus amniculus</i> (Crowley and Ivanstoft, 1990), Darling River Hardyhead, Hunter River population
<i>Gadopsis marmoratus</i> , river blackfish, Snowy River population
<i>Tandanus tandanus</i> (Mitchell, 1838), freshwater catfish, eel tailed catfish, Murray-Darling Basin population

Marine vegetation

**Posidonia australis* Hook.f. (1858), seagrass, Port Hacking, Botany Bay, Sydney Harbour, Pittwater, Brisbane Waters and Lake Macquarie populations

Part 3 Endangered ecological communities

Aquatic ecological community in the natural drainage system of the lower Murray River catchment (as described in the recommendation of the Fisheries Scientific Committee to list the ecological community)

Aquatic ecological community in the natural drainage system of the lowland catchment of the Darling River (described in the recommendation of the Fisheries Scientific Committee to list that aquatic ecological community, as the area covered by that recommendation)

Aquatic ecological community in the natural drainage system of the lowland catchment of the Lachlan River (described in the recommendation of the Fisheries Scientific Committee to list that aquatic ecological community, as the area covered by that recommendation)

Aquatic ecological community in the catchment of the Snowy River in NSW (as described in the final determination of the Fisheries Scientific Committee to list that aquatic ecological community)

Part 4 Species presumed extinct

Fish

<i>Hadrachaeta aspeta</i> Hutchings, 1977	Marine Worm
* <i>Pristis zijsron</i> Bleeker, 1851	Green Sawfish
<i>Metaprotella haswelliana</i> Mayer, 1882	Haswells Caprellid

Marine vegetation

**Ianvoorstia bennettiana* (Harvey) Papenfuss (1956)

Bennetts Seaweed

Fisheries Management Act 1994 No 38

Current version for 24 March 2022 to date (accessed 5 August 2022 at 10:13)

Schedule 4A

Schedule 4A Critically endangered species and ecological communities

(Section 220C)

Part 1 Critically endangered species

Fish

<i>*Carcharias taurus</i> Rafinesque, 1810	Greynurse Shark
<i>*Craterocephalus fluviatilis</i> (McCulloch, 1913)	Murray Hardyhead
<i>Euastacus dharawalus</i> (Morgan, 1997)	Fitzroy Falls Spiny Crayfish
<i>Galaxias rostratus</i>	Flathead Galaxias
<i>Galaxias tantangara</i> (Raadik, 2014)	Stocky Galaxias
<i>Notopala hanleyi</i> (Frauenfeld, 1864)	Hanley's River Snail
<i>Notopala sublineata</i> (Conrad, 1850)	Darling River Snail
<i>Smeagol hiliaris</i> Tillier & Ponder, 1992	Marine Slug

Marine vegetation

<i>Nereia lophocladia</i> J. Agardh (1897)	Marine Brown Alga
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Part 2 Critically endangered ecological communities

Fisheries Management Act 1994 No 38

Current version for 24 March 2022 to date (accessed 5 August 2022 at 10:13)

Schedule 5

Schedule 5 Vulnerable species and ecological communities

(Section 220C)

Part 1 Vulnerable species

Fish

Austropetalia tonyana (Theischinger, 1995)

Alpine Redspot Dragonfly

Bidyanus bidyanus (Mitchell, 1838)

Silver Perch

Branchinella buchananensis Geddes, 1981

Buchanans Fairy Shrimp

**Carcharodon carcharias* (Linnaeus, 1758)

White Shark, Great White Shark

Epinephelus daemeli (Günther, 1876)

Black Rockcod, Black Cod

Euastacus armatus (von Martens 1866)

Murray Crayfish

Microrchestia bousfieldi Lowry & Peart, 2010

Bousfields Marsh-hopper

Sphyrna mokarran Ruppell, 1837

Great Hammerhead Shark

Marine vegetation

Part 2 Vulnerable ecological communities

Fisheries Management Act 1994 No 38

Current version for 24 March 2022 to date (accessed 5 August 2022 at 10:13)

Schedule 6

Schedule 6 Key threatening processes

(Section 220C)

Degradation of native riparian vegetation along New South Wales water courses

Hook and line fishing in areas important for the survival of threatened fish species

Human-caused climate change

Installation and operation of instream structures and other mechanisms that alter natural flow regimes of rivers and streams

Introduction of fish to waters within a river catchment outside their natural range

Introduction of non-indigenous fish and marine vegetation to the coastal waters of New South Wales

Removal of large woody debris from New South Wales rivers and streams

The current shark meshing program in New South Wales waters

Appendix D – BC Act Search Results

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Public Report of all Valid Records of Animals in selected area [North: -30.25 West: 153.09 East: 153.19 South: -30.35] returned a total of 59,932 records of 430 species.


Report generated on 12/05/2022 1:50 PM

Kingdom	Class	Family	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Animalia	Amphibia	Myobatrachidae	<i>Crinia parinsignifera</i>		Eastern Sign-bearing Froglet	P		2	
Animalia	Amphibia	Myobatrachidae	<i>Crinia signifera</i>		Common Eastern Froglet	P		46	
Animalia	Amphibia	Myobatrachidae	<i>Crinia tinnula</i>		Wallum Froglet	V,P		22	
Animalia	Amphibia	Myobatrachidae	<i>Mixophyes fasciolatus</i>		Great Barred Frog	P		1	
Animalia	Amphibia	Myobatrachidae	<i>Mixophyes iteratus</i>		Giant Barred Frog	E1,P,2	E	3	
Animalia	Amphibia	Myobatrachidae	<i>Pseudophryne coriacea</i>		Red-backed Toadlet	P		9	
Animalia	Amphibia	Myobatrachidae	<i>Uperoleia fusca</i>		Dusky Toadlet	P		8	
Animalia	Amphibia	Myobatrachidae	<i>Uperoleia sp.</i>			P		1	
Animalia	Amphibia	Hylidae	<i>Litoria caerulea</i>		Green Tree Frog	P		73	
Animalia	Amphibia	Hylidae	<i>Litoria dentata</i>		Bleating Tree Frog	P		55	
Animalia	Amphibia	Hylidae	<i>Litoria fallax</i>		Eastern Dwarf Tree Frog	P		75	
Animalia	Amphibia	Hylidae	<i>Litoria gracilentata</i>		Dainty Green Tree Frog	P		2	
Animalia	Amphibia	Hylidae	<i>Litoria latopalmeta</i>		Broad-palmed Frog	P		1	
Animalia	Amphibia	Hylidae	<i>Litoria nasuta</i>		Rocket Frog	P		2	
Animalia	Amphibia	Hylidae	<i>Litoria peronii</i>		Peron's Tree Frog	P		126	
Animalia	Amphibia	Hylidae	<i>Litoria revelata</i>		Revealed Frog	P		1	
Animalia	Amphibia	Hylidae	<i>Litoria sp.</i>		Unidentified Tree Frog	P		1	
Animalia	Amphibia	Hylidae	<i>Litoria tyleri</i>		Tyler's Tree Frog	P		25	
Animalia	Amphibia	Hylidae	<i>Litoria wilcoxii</i>			P		1	
Animalia	Amphibia	Limnodynastidae	<i>Adelotus brevis</i>		Tusked Frog	P		45	
Animalia	Amphibia	Limnodynastidae	<i>Limnodynastes dumerilii</i>		Eastern Banjo Frog	P		1	
Animalia	Amphibia	Limnodynastidae	<i>Limnodynastes peronii</i>		Brown-striped Frog	P		45	
Animalia	Amphibia	Limnodynastidae	<i>Limnodynastes tasmaniensis</i>		Spotted Grass Frog	P		1	
Animalia	Amphibia	Limnodynastidae	<i>Platyplectrum ornatum</i>		Ornate Burrowing Frog	P		1	
Animalia	Amphibia	Bufo	<i>Rhinella marina</i>	*	Cane Toad			5	
Animalia	Reptilia	Cheloniidae	<i>Caretta caretta</i>		Loggerhead Turtle	E1,P	E	1	
Animalia	Reptilia	Cheloniidae	<i>Chelonia mydas</i>		Green Turtle	V,P	V	28	
Animalia	Reptilia	Cheloniidae	<i>Eretmochelys imbricata</i>		Hawksbill Turtle	P	V	3	
Animalia	Reptilia	Cheloniidae	<i>Natator depressus</i>		Flatback Turtle	P		1	
Animalia	Reptilia	Chelidae	<i>Chelodina longicollis</i>		Eastern Snake-necked Turtle	P		22	
Animalia	Reptilia	Chelidae	<i>Emydura sp.</i>		Unidentified Emydura	P		10	
Animalia	Reptilia	Carphodactylidae	<i>Saltuarius swaini</i>		Southern Leaf-tailed Gecko	P		4	
Animalia	Reptilia	Gekkonidae	<i>Hemidactylus frenatus</i>	*	House Gecko			3	
Animalia	Reptilia	Pygopodidae	<i>Lialis burtonis</i>		Burton's Snake-lizard	P		4	
Animalia	Reptilia	Scincidae	<i>Bellatorias frerei</i>		Major Skink	P		3	
Animalia	Reptilia	Scincidae	<i>Bellatorias major</i>		Land Mullet	P		5	
Animalia	Reptilia	Scincidae	<i>Calyptotis ruficauda</i>		Red-tailed Calyptotis	P		9	
Animalia	Reptilia	Scincidae	<i>Concinnia martini</i>		Dark Barsided Skink	P		1	
Animalia	Reptilia	Scincidae	<i>Concinnia tenuis</i>		Barred-sided Skink	P		1	
Animalia	Reptilia	Scincidae	<i>Ctenotus robustus</i>		Robust Ctenotus	P		3	
Animalia	Reptilia	Scincidae	<i>Cyclodomorphus gerrardii</i>		Pink-tongued Lizard	P		14	
Animalia	Reptilia	Scincidae	<i>Egernia mcphoei</i>		Eastern Crevice Skink	P		2	
Animalia	Reptilia	Scincidae	<i>Lampropholis delicata</i>		Dark-flecked Garden Sunskink	P		23	
Animalia	Reptilia	Scincidae	<i>Lampropholis guichenoti</i>		Pale-flecked Garden Sunskink	P		1	
Animalia	Reptilia	Scincidae	<i>Lampropholis sp.</i>		unidentified grass skink	P		1	
Animalia	Reptilia	Scincidae	<i>Ophioscincus truncatus</i>		Short-limbed Snake-skink	P		1	
Animalia	Reptilia	Scincidae	<i>Saiphos equalis</i>		Three-toed Skink	P		1	
Animalia	Reptilia	Scincidae	<i>Saproscincus rosei</i>		Orange-tailed Shadeskink	P		1	
Animalia	Reptilia	Scincidae	<i>Silvascincus murrayi</i>		Murray's Skink	P		2	
Animalia	Reptilia	Scincidae	<i>Tiliqua scincoides</i>		Eastern Blue-tongue	P		284	
Animalia	Reptilia	Agamidae	<i>Intellagama lesueurii</i>		Eastern Water Dragon	P		166	
Animalia	Reptilia	Agamidae	<i>Intellagama lesueurii lesueurii</i>		Eastern Water Dragon	P		1	
Animalia	Reptilia	Agamidae	<i>Pogona barbata</i>		Bearded Dragon	P		8	
Animalia	Reptilia	Varanidae	<i>Varanus varius</i>		Lace Monitor	P		6	
Animalia	Reptilia	Typhlopidae	<i>Anilius nigrescens</i>		Blackish Blind Snake	P		5	
Animalia	Reptilia	Pythonidae	<i>Morelia spilota</i>		Carpet & Diamond Pythons	P		2	
Animalia	Reptilia	Pythonidae	<i>Morelia spilota mcdowelli</i>		Eastern Carpet Python	P		5	
Animalia	Reptilia	Pythonidae	<i>Morelia spilota spilota</i>		Diamond Python	P		1	
Animalia	Reptilia	Colubridae	<i>Boiga irregularis</i>		Brown Tree Snake	P		28	
Animalia	Reptilia	Colubridae	<i>Dendrelaphis punctulatus</i>		Common Tree Snake	P		161	

Animalia	Reptilia	Elapidae	<i>Acanthophis antarcticus</i>	Common Death Adder	P		1
Animalia	Reptilia	Elapidae	<i>Cacophis krefftii</i>	Southern Dwarf Crowned Snake	P		9
Animalia	Reptilia	Elapidae	<i>Cacophis squamulosus</i>	Golden-crowned Snake	P		9
Animalia	Reptilia	Elapidae	<i>Cryptophis nigrescens</i>	Eastern Small-eyed Snake	P		4
Animalia	Reptilia	Elapidae	<i>Demansia psammophis</i>	Yellow-faced Whip Snake	P		11
Animalia	Reptilia	Elapidae	<i>Hemiaspis signata</i>	Black-bellied Swamp Snake	P		5
Animalia	Reptilia	Elapidae	<i>Hoplocephalus stephensii</i>	Stephens' Banded Snake	V,P		1
Animalia	Reptilia	Elapidae	<i>Hydrophis platurus</i>	Yellow-bellied Seasnake	P		1
Animalia	Reptilia	Elapidae	<i>Notechis scutatus</i>	Tiger Snake	P		1
Animalia	Reptilia	Elapidae	<i>Pseudechis porphyriacus</i>	Red-bellied Black Snake	P		127
Animalia	Reptilia	Elapidae	<i>Pseudonaja textilis</i>	Eastern Brown Snake	P		4
Animalia	Reptilia	Elapidae	<i>Tropidechis carinatus</i>	Rough-scaled Snake	P		6
Animalia	Reptilia	Elapidae	<i>Vermicella annulata</i>	Bandy-bandy	P		5
Animalia	Aves	Megapodiidae	<i>Alectura lathami</i>	Australian Brush-turkey	P		116
Animalia	Aves	Phasianidae	<i>Coturnix sp.</i>	Unidentified Quail	P		2
Animalia	Aves	Phasianidae	<i>Synoicus chinensis</i>	King Quail	P		1
Animalia	Aves	Phasianidae	<i>Synoicus ypsilophora</i>	Brown Quail	P		11
Animalia	Aves	Anatidae	<i>Anas platyrhynchos</i>	* Mallard			2
Animalia	Aves	Anatidae	<i>Anas superciliosa</i>	Pacific Black Duck	P		69
Animalia	Aves	Anatidae	<i>Chenonetta jubata</i>	Australian Wood Duck	P		123
Animalia	Aves	Phaethontidae	<i>Phaethon lepturus</i>	White-tailed Tropicbird	P	C,J	7
Animalia	Aves	Phaethontidae	<i>Phaethon rubricauda</i>	Red-tailed Tropicbird	V,P	C,J	1
Animalia	Aves	Podicipedidae	<i>Poliiocephalus poliocephalus</i>	Hoary-headed Grebe	P		1
Animalia	Aves	Podicipedidae	<i>Tachybaptus novaehollandiae</i>	Australasian Grebe	P		1
Animalia	Aves	Columbidae	<i>Chalcophaps indica</i>	Emerald Dove	P		1
Animalia	Aves	Columbidae	<i>Columba leucomela</i>	White-headed Pigeon	P		38
Animalia	Aves	Columbidae	<i>Columba livia</i>	* Rock Dove			48
Animalia	Aves	Columbidae	<i>Geopelia humeralis</i>	Bar-shouldered Dove	P		16
Animalia	Aves	Columbidae	<i>Geopelia striata</i>	Peaceful Dove	P		12
Animalia	Aves	Columbidae	<i>Leucosarcia melanoleuca</i>	Wonga Pigeon	P		18
Animalia	Aves	Columbidae	<i>Lopholaimus antarcticus</i>	Topknot Pigeon	P		6
Animalia	Aves	Columbidae	<i>Macropygia phasianella</i>	Brown Cuckoo-Dove	P		35
Animalia	Aves	Columbidae	<i>Ocyphaps lophotes</i>	Crested Pigeon	P		143
Animalia	Aves	Columbidae	<i>Ptilinopus magnificus</i>	Wompo Fruit-Dove	V,P		16
Animalia	Aves	Columbidae	<i>Ptilinopus regina</i>	Rose-crowned Fruit-Dove	V,P		11
Animalia	Aves	Columbidae	<i>Ptilinopus superbus</i>	Superb Fruit-Dove	V,P		1
Animalia	Aves	Columbidae	<i>Spilopelia chinensis</i>	* Spotted Turtle-Dove			164
Animalia	Aves	Podargidae	<i>Podargus strigoides</i>	Tawny Frogmouth	P		286
Animalia	Aves	Aegothelidae	<i>Aegothales cristatus</i>	Australian Owllet-nightjar	P		3
Animalia	Aves	Apodidae	<i>Apus pacificus</i>	Fork-tailed Swift	P	C,J,K	1
Animalia	Aves	Apodidae	<i>Hirundapus caudacutus</i>	White-throated Needletail	P	V,C,J,K	17
Animalia	Aves	Oceanitidae	<i>Pelagodroma marina</i>	White-faced Storm-Petrel	P		6
Animalia	Aves	Diomedidae	<i>Thalassarche cauta</i>	Shy Albatross	V,P	V	1
Animalia	Aves	Procellariidae	<i>Ardena carneipes</i>	Flesh-footed Shearwater	V,P	J,K	1
Animalia	Aves	Procellariidae	<i>Ardena grisea</i>	Sooty Shearwater	P	J	8
Animalia	Aves	Procellariidae	<i>Ardena pacifica</i>	Wedge-tailed Shearwater	P	J	46081
Animalia	Aves	Procellariidae	<i>Ardena tenuirostris</i>	Short-tailed Shearwater	P	C,J,K	49
Animalia	Aves	Procellariidae	<i>Macronectes halli</i>	Northern Giant-Petrel	V,P	V	1
Animalia	Aves	Procellariidae	<i>Pachyptila turtur</i>	Fairy Prion	P		4
Animalia	Aves	Procellariidae	<i>Procellaria westlandica</i>	Westland Petrel	P		1
Animalia	Aves	Procellariidae	<i>Pterodroma leucoptera leucoptera</i>	Gould's Petrel	V,P	E	1
Animalia	Aves	Procellariidae	<i>Pterodroma nigripennis</i>	Black-winged Petrel	V,P		15
Animalia	Aves	Spheniscidae	<i>Eudyptula minor</i>	Little Penguin	P		1
Animalia	Aves	Fregatidae	<i>Fregata ariel</i>	Lesser Frigatebird	P	C,J,K	1
Animalia	Aves	Sulidae	<i>Morus serrator</i>	Australasian Gannet	P		10
Animalia	Aves	Sulidae	<i>Sula dactylatra</i>	Masked Booby	V,P	J,K	1
Animalia	Aves	Sulidae	<i>Sula leucogaster</i>	Brown Booby	P	C,J,K	2
Animalia	Aves	Anhingidae	<i>Anhinga novaehollandiae</i>	Australasian Darter	P		21
Animalia	Aves	Phalacrocoracidae	<i>Microcarbo melanoleucos</i>	Little Pied Cormorant	P		15
Animalia	Aves	Phalacrocoracidae	<i>Phalacrocorax carbo</i>	Great Cormorant	P		5
Animalia	Aves	Phalacrocoracidae	<i>Phalacrocorax sp.</i>	Unidentified Cormorant	P		4
Animalia	Aves	Phalacrocoracidae	<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant	P		6
Animalia	Aves	Phalacrocoracidae	<i>Phalacrocorax varius</i>	Pied Cormorant	P		15
Animalia	Aves	Pelecanidae	<i>Pelecanus conspicillatus</i>	Australian Pelican	P		12
Animalia	Aves	Ciconiidae	<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	E1,P		5
Animalia	Aves	Ardeidae	<i>Ardea intermedia</i>	Intermediate Egret	P		3
Animalia	Aves	Ardeidae	<i>Ardea pacifica</i>	White-necked Heron	P		1
Animalia	Aves	Ardeidae	<i>Ardea/Egretta sp.</i>	Unidentified Egret	P		2
Animalia	Aves	Ardeidae	<i>Bubulcus ibis</i>	Cattle Egret	P		13

Animalia	Aves	Ardeidae	<i>Butorides striata</i>	Striated Heron	P	3		
Animalia	Aves	Ardeidae	<i>Casmerodius modesta</i>	Eastern Great Egret	P	9		
Animalia	Aves	Ardeidae	<i>Egretta garzetta</i>	Little Egret	P	4		
Animalia	Aves	Ardeidae	<i>Egretta novaehollandiae</i>	White-faced Heron	P	49		
Animalia	Aves	Ardeidae	<i>Egretta sacra</i>	Eastern Reef Egret	P	3		
Animalia	Aves	Ardeidae	<i>Ixobrychus flavicollis</i>	Black Bittern	V,P	4		
Animalia	Aves	Ardeidae	<i>Nycticorax caledonicus</i>	Nankeen Night Heron	P	2		
Animalia	Aves	Threskiornithidae	<i>Platalea flavipes</i>	Yellow-billed Spoonbill	P	1		
Animalia	Aves	Threskiornithidae	<i>Platalea regia</i>	Royal Spoonbill	P	7		
Animalia	Aves	Threskiornithidae	<i>Threskiornis moluccus</i>	Australian White Ibis	P	67		
Animalia	Aves	Threskiornithidae	<i>Threskiornis spinicollis</i>	Straw-necked Ibis	P	17		
Animalia	Aves	Accipitridae	<i>Accipiter cirrocephalus</i>	Collared Sparrowhawk	P	14		
Animalia	Aves	Accipitridae	<i>Accipiter fasciatus</i>	Brown Goshawk	P	9		
Animalia	Aves	Accipitridae	<i>Accipiter novaehollandiae</i>	Grey Goshawk	P	10		
Animalia	Aves	Accipitridae	<i>Aquila audax</i>	Wedge-tailed Eagle	P	2		
Animalia	Aves	Accipitridae	<i>Aviceda subcristata</i>	Pacific Baza	P	42		
Animalia	Aves	Accipitridae	<i>Circus approximans</i>	Swamp Harrier	P	1		
Animalia	Aves	Accipitridae	<i>Elanus axillaris</i>	Black-shouldered Kite	P	14		
Animalia	Aves	Accipitridae	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V,P	17		
Animalia	Aves	Accipitridae	<i>Haliastur indus</i>	Brahminy Kite	P	53		
Animalia	Aves	Accipitridae	<i>Haliastur sphenurus</i>	Whistling Kite	P	11		
Animalia	Aves	Accipitridae	<i>Hieraetus morphnoides</i>	Little Eagle	V,P	1		
Animalia	Aves	Accipitridae	<i>^^Lophoictinia isura</i>	Square-tailed Kite	V,P,3	9		
Animalia	Aves	Accipitridae	<i>^^Pandion cristatus</i>	Eastern Osprey	V,P,3	55		
Animalia	Aves	Falconidae	<i>Falco berigora</i>	Brown Falcon	P	2		
Animalia	Aves	Falconidae	<i>Falco cenchroides cenchroides</i>	Nankeen Kestrel	P	3		
Animalia	Aves	Falconidae	<i>Falco longipennis</i>	Australian Hobby	P	3		
Animalia	Aves	Falconidae	<i>Falco peregrinus</i>	Peregrine Falcon	P	3		
Animalia	Aves	Rallidae	<i>Amaurornis moluccana</i>	Pale-vented Bush-hen	V,P	1		
Animalia	Aves	Rallidae	<i>Fulica atra</i>	Eurasian Coot	P	3		
Animalia	Aves	Rallidae	<i>Gallinula tenebrosa</i>	Dusky Moorhen	P	9		
Animalia	Aves	Rallidae	<i>Hypotaenidia philippensis</i>	Buff-banded Rail	P	11		
Animalia	Aves	Rallidae	<i>Lewinia pectoralis</i>	Lewin's Rail	P	2		
Animalia	Aves	Rallidae	<i>Porphyrio porphyrio</i>	Purple Swamphen	P	64		
Animalia	Aves	Rallidae	<i>Porzana pusilla</i>	Baillon's Crake	P	1		
Animalia	Aves	Burhinidae	<i>Burhinus grallarius</i>	Bush Stone-curlew	E1,P	1		
Animalia	Aves	Haematopodidae	<i>Haematopus fuliginosus</i>	Sooty Oystercatcher	V,P	44		
Animalia	Aves	Haematopodidae	<i>Haematopus longirostris</i>	Pied Oystercatcher	E1,P	22		
Animalia	Aves	Recurvirostridae	<i>Himantopus himantopus</i>	Black-winged Stilt	P	1		
Animalia	Aves	Charadriidae	<i>Charadrius ruficapillus</i>	Red-capped Plover	P	1		
Animalia	Aves	Charadriidae	<i>Pluvialis fulva</i>	Pacific Golden Plover	P	C,J,K	2	
Animalia	Aves	Charadriidae	<i>Vanellus miles</i>	Masked Lapwing	P	112		
Animalia	Aves	Scolopacidae	<i>Gallinago hardwickii</i>	Latham's Snipe	P	J,K	2	
Animalia	Aves	Scolopacidae	<i>Limosa lapponica</i>	Bar-tailed Godwit	P	C,J,K	1	
Animalia	Aves	Scolopacidae	<i>Numenius madagascariensis</i>	Eastern Curlew	P	CE,C,J,K	1	
Animalia	Aves	Scolopacidae	<i>Tringa brevipes</i>	Grey-tailed Tattler	P	C,J,K	1	
Animalia	Aves	Turnicidae	<i>Turnix varius</i>	Painted Button-quail	P	3		
Animalia	Aves	Laridae	<i>Anous minutus</i>	Black Noddy	P	1		
Animalia	Aves	Laridae	<i>Chroicocephalus novaehollandiae</i>	Silver Gull	P	170		
Animalia	Aves	Laridae	<i>Onychoprion fuscata</i>	Sooty Tern	V,P	3		
Animalia	Aves	Laridae	<i>Sterna hirundo</i>	Common Tern	P	C,J,K	2	
Animalia	Aves	Laridae	<i>Sternula albifrons</i>	Little Tern	E1,P	C,J,K	9	
Animalia	Aves	Laridae	<i>Thalasseus bergii</i>	Crested Tern	P	J	12	
Animalia	Aves	Cacatuidae	<i>Cacatua galerita</i>	Sulphur-crested Cockatoo	P	13		
Animalia	Aves	Cacatuidae	<i>Cacatua sanguinea</i>	Little Corella	P	4		
Animalia	Aves	Cacatuidae	<i>^Calyptorhynchus lathami</i>	Glossy Black-Cockatoo	V,P,2	46		
Animalia	Aves	Cacatuidae	<i>Eolophus roseicapilla</i>	Galah	P	92		
Animalia	Aves	Cacatuidae	<i>Zanda funereus</i>	Yellow-tailed Black-Cockatoo	P	50		
Animalia	Aves	Psittacidae	<i>Alisterus scapularis</i>	Australian King-Parrot	P	37		
Animalia	Aves	Psittacidae	<i>^Cyclopsitta diophthalma coxeni</i>	Coxen's Fig-Parrot	E4A,P,2	E	3	
Animalia	Aves	Psittacidae	<i>Glossopsitta concinna</i>	Musk Lorikeet	P	8		
Animalia	Aves	Psittacidae	<i>Glossopsitta pusilla</i>	Little Lorikeet	V,P	15		
Animalia	Aves	Psittacidae	<i>^^Lathamus discolor</i>	Swift Parrot	E1,P,3	CE	9	
Animalia	Aves	Psittacidae	<i>Melopsittacus undulatus</i>	Budgerigar	P	5		
Animalia	Aves	Psittacidae	<i>Platycercus elegans</i>	Crimson Rosella	P	8		
Animalia	Aves	Psittacidae	<i>Platycercus eximius</i>	Eastern Rosella	P	69		
Animalia	Aves	Psittacidae	<i>Platycercus sp.</i>	Unidentified Rosella	P	3		
Animalia	Aves	Psittacidae	<i>Trichoglossus chlorolepidotus</i>	Scaly-breasted Lorikeet	P	92		
Animalia	Aves	Psittacidae	<i>Trichoglossus haematodus</i>	Rainbow Lorikeet	P	735		

Animalia	Aves	Cuculidae	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	P		47	
Animalia	Aves	Cuculidae	<i>Cacomantis variolosus</i>	Brush Cuckoo	P		13	
Animalia	Aves	Cuculidae	<i>Centropus phasianinus</i>	Pheasant Coucal	P		20	
Animalia	Aves	Cuculidae	<i>Chalcites basalis</i>	Horsfield's Bronze-Cuckoo	P		1	
Animalia	Aves	Cuculidae	<i>Chalcites lucidus</i>	Shining Bronze-Cuckoo	P		20	
Animalia	Aves	Cuculidae	<i>Eudynamis orientalis</i>	Eastern Koel	P		43	
Animalia	Aves	Cuculidae	<i>Eudynamis orientalis cyanocephala</i>		P		1	
Animalia	Aves	Cuculidae	<i>Scythrops novaehollandiae</i>	Channel-billed Cuckoo	P		12	
Animalia	Aves	Strigidae	<i>Ninox novaeseelandiae</i>	Southern Boobook	P		17	
Animalia	Aves	Strigidae	<i>Ninox strenua</i>	Powerful Owl	V,P,3		10	
Animalia	Aves	Tytonidae	<i>Tyto javanica</i>	Eastern Barn Owl	P		14	
Animalia	Aves	Tytonidae	<i>Tyto longimembris</i>	Eastern Grass Owl	V,P,3		2	
Animalia	Aves	Tytonidae	<i>Tyto novaehollandiae</i>	Masked Owl	V,P,3		4	
Animalia	Aves	Alcedinidae	<i>Ceyx azureus</i>	Azure Kingfisher	P		46	
Animalia	Aves	Alcedinidae	<i>Dacelo novaeguineae</i>	Laughing Kookaburra	P		291	
Animalia	Aves	Alcedinidae	<i>Todiramphus chloris</i>	Collared Kingfisher	V,P		8	
Animalia	Aves	Alcedinidae	<i>Todiramphus macleayii</i>	Forest Kingfisher	P		10	
Animalia	Aves	Alcedinidae	<i>Todiramphus sanctus</i>	Sacred Kingfisher	P		122	
Animalia	Aves	Meropidae	<i>Merops ornatus</i>	Rainbow Bee-eater	P		13	
Animalia	Aves	Coraciidae	<i>Eurystomus orientalis</i>	Dollarbird	P		43	
Animalia	Aves	Pittidae	<i>Pitta versicolor</i>	Noisy Pitta	P		16	
Animalia	Aves	Menuridae	<i>Menura novaehollandiae</i>	Superb Lyrebird	P		13	
Animalia	Aves	Climacteridae	<i>Climacteris erythroptus</i>	Red-browed Treecreeper	P		1	
Animalia	Aves	Climacteridae	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	V,P		1	
Animalia	Aves	Climacteridae	<i>Cormobates leucophaea</i>	White-throated Treecreeper	P		105	
Animalia	Aves	Ptilonorhynchidae	<i>Ailuroedus crassirostris</i>	Green Catbird	P		21	
Animalia	Aves	Ptilonorhynchidae	<i>Ptilonorhynchus violaceus</i>	Satin Bowerbird	P		90	
Animalia	Aves	Ptilonorhynchidae	<i>Sericulus chrysocephalus</i>	Regent Bowerbird	P		24	
Animalia	Aves	Maluridae	<i>Malurus cyaneus</i>	Superb Fairy-wren	P		57	
Animalia	Aves	Maluridae	<i>Malurus lamberti</i>	Variogated Fairy-wren	P		167	
Animalia	Aves	Maluridae	<i>Malurus melanocephalus</i>	Red-backed Fairy-wren	P		68	
Animalia	Aves	Maluridae	<i>Stipiturus malachurus</i>	Southern Emu-wren	P		3	
Animalia	Aves	Acanthizidae	<i>Acanthiza lineata</i>	Striated Thornbill	P		17	
Animalia	Aves	Acanthizidae	<i>Acanthiza nana</i>	Yellow Thornbill	P		21	
Animalia	Aves	Acanthizidae	<i>Acanthiza pusilla</i>	Brown Thornbill	P		202	
Animalia	Aves	Acanthizidae	<i>Gerygone levigaster</i>	Mangrove Gerygone	P		19	
Animalia	Aves	Acanthizidae	<i>Gerygone mouki</i>	Brown Gerygone	P		46	
Animalia	Aves	Acanthizidae	<i>Gerygone olivacea</i>	White-throated Gerygone	P		32	
Animalia	Aves	Acanthizidae	<i>Neosericornis citreogularis</i>	Yellow-throated Scrubwren	P		14	
Animalia	Aves	Acanthizidae	<i>Sericornis frontalis</i>	White-browed Scrubwren	P		299	
Animalia	Aves	Acanthizidae	<i>Sericornis magnirostra</i>	Large-billed Scrubwren	P		86	
Animalia	Aves	Acanthizidae	<i>Smicronis brevirostris</i>	Weebill	P		1	
Animalia	Aves	Pardalotidae	<i>Pardalotus punctatus</i>	Spotted Pardalote	P		69	
Animalia	Aves	Pardalotidae	<i>Pardalotus striatus</i>	Striated Pardalote	P		38	
Animalia	Aves	Meliphagidae	<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill	P		143	
Animalia	Aves	Meliphagidae	<i>Anthochaera carunculata</i>	Red Wattlebird	P		5	
Animalia	Aves	Meliphagidae	<i>Anthochaera chrysoptera</i>	Little Wattlebird	P		50	
Animalia	Aves	Meliphagidae	<i>Anthochaera phrygia</i>	Regent Honeyeater	E4A,P	CE	5	
Animalia	Aves	Meliphagidae	<i>Anthochaera sp.</i>	Unidentified Wattlebird	P		7	
Animalia	Aves	Meliphagidae	<i>Caligavis chrysops</i>	Yellow-faced Honeyeater	P		287	
Animalia	Aves	Meliphagidae	<i>Entomyzon cyanotis</i>	Blue-faced Honeyeater	P		41	
Animalia	Aves	Meliphagidae	<i>Grantiella picta</i>	Painted Honeyeater	V,P	V	1	
Animalia	Aves	Meliphagidae	<i>Lichmera indistincta</i>	Brown Honeyeater	P		52	
Animalia	Aves	Meliphagidae	<i>Manorina melanocephala</i>	Noisy Miner	P		231	
Animalia	Aves	Meliphagidae	<i>Meliphaga lewinii</i>	Lewin's Honeyeater	P		343	
Animalia	Aves	Meliphagidae	<i>Melithreptus albugularis</i>	White-throated Honeyeater	P		2	
Animalia	Aves	Meliphagidae	<i>Melithreptus lunatus</i>	White-naped Honeyeater	P		8	
Animalia	Aves	Meliphagidae	<i>Myzomela sanguinolenta</i>	Scarlet Honeyeater	P		71	
Animalia	Aves	Meliphagidae	<i>Philemon citreogularis</i>	Little Friarbird	P		4	
Animalia	Aves	Meliphagidae	<i>Philemon corniculatus</i>	Noisy Friarbird	P		46	
Animalia	Aves	Meliphagidae	<i>Phylidonyris niger</i>	White-cheeked Honeyeater	P		288	
Animalia	Aves	Meliphagidae	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater	P		1	
Animalia	Aves	Orthonychiidae	<i>Orthonyx temminckii</i>	Logrunner	P		12	
Animalia	Aves	Falconidae	<i>Falcunculus frontatus frontatus</i>	Eastern Shrike-tit	P		5	
Animalia	Aves	Psophodidae	<i>Psophodes olivaceus</i>	Eastern Whipbird	P		125	
Animalia	Aves	Neosittidae	<i>Daphoenositta chrysoptera</i>	Varied Sittella	V,P		19	
Animalia	Aves	Campephagidae	<i>Coracina lineata</i>	Barred Cuckoo-shrike	V,P		2	
Animalia	Aves	Campephagidae	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	P		77	
Animalia	Aves	Campephagidae	<i>Coracina papuensis</i>	White-bellied Cuckoo-shrike	P		3	

Animalia	Aves	Campephagidae	<i>Edolisoma tenuirostris</i>	Cicadabird	P	26	
Animalia	Aves	Campephagidae	<i>Lalage leucomela</i>	Varied Triller	P	18	
Animalia	Aves	Pachycephalidae	<i>Colluricincla harmonica</i>	Grey Shrike-thrush	P	75	
Animalia	Aves	Pachycephalidae	<i>Colluricincla megarhyncha</i>	Little Shrike-thrush	P	5	
Animalia	Aves	Pachycephalidae	<i>Pachycephala pectoralis</i>	Golden Whistler	P	153	
Animalia	Aves	Pachycephalidae	<i>Pachycephala rufiventris</i>	Rufous Whistler	P	43	
Animalia	Aves	Oriolidae	<i>Oriolus sagittatus</i>	Olive-backed Oriole	P	57	
Animalia	Aves	Oriolidae	<i>Sphecotheres vieilloti</i>	Australasian Figbird	P	121	
Animalia	Aves	Artamidae	<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	V,P	2	
Animalia	Aves	Artamidae	<i>Artamus leucorhynchus</i>	White-breasted Woodswallow	P	4	
Animalia	Aves	Artamidae	<i>Artamus personatus</i>	Masked Woodswallow	P	1	
Animalia	Aves	Artamidae	<i>Cracticus nigrogularis</i>	Pied Butcherbird	P	85	
Animalia	Aves	Artamidae	<i>Cracticus sp.</i>	Unidentified Butcherbird	P	4	
Animalia	Aves	Artamidae	<i>Cracticus torquatus</i>	Grey Butcherbird	P	59	
Animalia	Aves	Artamidae	<i>Gymnorhina tibicen</i>	Australian Magpie	P	231	
Animalia	Aves	Artamidae	<i>Strepera graculina</i>	Pied Currawong	P	157	
Animalia	Aves	Dicruridae	<i>Dicrurus bracteatus</i>	Spangled Drongo	P	80	
Animalia	Aves	Rhipiduridae	<i>Rhipidura albiscapa</i>	Grey Fantail	P	146	
Animalia	Aves	Rhipiduridae	<i>Rhipidura leucophrys</i>	Willie Wagtail	P	42	
Animalia	Aves	Rhipiduridae	<i>Rhipidura rufifrons</i>	Rufous Fantail	P	32	
Animalia	Aves	Corvidae	<i>Corvus coronoides</i>	Australian Raven	P	35	
Animalia	Aves	Corvidae	<i>Corvus orru</i>	Torresian Crow	P	102	
Animalia	Aves	Corvidae	<i>Corvus sp.</i>	Unidentified Corvid	P	2	
Animalia	Aves	Corvidae	<i>Corvus tasmanicus</i>	Forest Raven	P	14	
Animalia	Aves	Monarchidae	<i>Grallina cyanoleuca</i>	Maggie-lark	P	184	
Animalia	Aves	Monarchidae	<i>Monarcha melanopsis</i>	Black-faced Monarch	P	40	
Animalia	Aves	Monarchidae	<i>Myiagra cyanoleuca</i>	Satin Flycatcher	P	2	
Animalia	Aves	Monarchidae	<i>Myiagra inquieta</i>	Restless Flycatcher	P	2	
Animalia	Aves	Monarchidae	<i>Myiagra rubecula</i>	Leaden Flycatcher	P	37	
Animalia	Aves	Monarchidae	<i>Symposiachrus trivirgatus</i>	Spectacled Monarch	P	51	
Animalia	Aves	Paradisaeidae	<i>Ptiloris paradiseus</i>	Paradise Riflebird	P	2	
Animalia	Aves	Petroicidae	<i>Eopsaltria australis</i>	Eastern Yellow Robin	P	270	
Animalia	Aves	Petroicidae	<i>Microeca fascians</i>	Jacky Winter	P	2	
Animalia	Aves	Petroicidae	<i>Petroica rosea</i>	Rose Robin	P	12	
Animalia	Aves	Petroicidae	<i>Tregellasia capito</i>	Pale-yellow Robin	P	21	
Animalia	Aves	Cisticolidae	<i>Cisticola exilis</i>	Golden-headed Cisticola	P	3	
Animalia	Aves	Acrocephalidae	<i>Acrocephalus australis</i>	Australian Reed-Warbler	P	2	
Animalia	Aves	Locustellidae	<i>Cincloramphus cruralis</i>	Brown Songlark	P	1	
Animalia	Aves	Locustellidae	<i>Cincloramphus timoriensis</i>	Tawny Grassbird	P	4	
Animalia	Aves	Hirundinidae	<i>Hirundo neoxena</i>	Welcome Swallow	P	69	
Animalia	Aves	Hirundinidae	<i>Petrochelidon ariel</i>	Fairy Martin	P	1	
Animalia	Aves	Hirundinidae	<i>Petrochelidon nigricans</i>	Tree Martin	P	2	
Animalia	Aves	Pycnonotidae	<i>Pycnonotus jocosus</i>	Red-whiskered Bulbul	*	46	
Animalia	Aves	Turdidae	<i>Zoothera lunulata</i>	Bassian Thrush	P	5	
Animalia	Aves	Turdidae	<i>Zoothera sp.</i>	unidentified ground thrush	P	10	
Animalia	Aves	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	*	4	
Animalia	Aves	Sturnidae	<i>Sturnus vulgaris</i>	Common Starling	*	9	
Animalia	Aves	Zosteropidae	<i>Zosterops lateralis</i>	Silvereye	P	520	
Animalia	Aves	Dicaeidae	<i>Dicaeum hirundinaceum</i>	Mistletoebird	P	39	
Animalia	Aves	Estrildidae	<i>Lonchura castaneothorax</i>	Chestnut-breasted Mannikin	P	6	
Animalia	Aves	Estrildidae	<i>Neochmia temporalis</i>	Red-browed Finch	P	279	
Animalia	Aves	Estrildidae	<i>Stizoptera bichenovii</i>	Double-barred Finch	P	20	
Animalia	Aves	Passeridae	<i>Passer domesticus</i>	House Sparrow	*	9	
Animalia	Aves	Motacillidae	<i>Anthus novaeseelandiae</i>	Australian Pipit	P	1	
Animalia	Mammalia	Ornithorhynchidae	<i>Ornithorhynchus anatinus</i>	Platypus	P	3	
Animalia	Mammalia	Tachyglossidae	<i>Tachyglossus aculeatus</i>	Short-beaked Echidna	P	51	
Animalia	Mammalia	Dasyuridae	<i>Antechinus flavipes</i>	Yellow-footed Antechinus	P	1	
Animalia	Mammalia	Dasyuridae	<i>Antechinus mimetes</i>	Mainland Dusky Antechinus	P	2	
Animalia	Mammalia	Dasyuridae	<i>Antechinus sp.</i>	Unidentified Antechinus	P	3	
Animalia	Mammalia	Dasyuridae	<i>Antechinus stuartii</i>	Brown Antechinus	P	16	
Animalia	Mammalia	Dasyuridae	<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V,P	8	E
Animalia	Mammalia	Dasyuridae	<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	V,P	1	
Animalia	Mammalia	Dasyuridae	<i>Planigale maculata</i>	Common Planigale	V,P	1	
Animalia	Mammalia	Peramelidae	<i>Isodon macrourus</i>	Northern Brown Bandicoot	P	63	
Animalia	Mammalia	Peramelidae	<i>Isodon/Perameles sp.</i>	unidentified Bandicoot	P	12	
Animalia	Mammalia	Peramelidae	<i>Perameles nasuta</i>	Long-nosed Bandicoot	P	12	
Animalia	Mammalia	Phascolarctidae	<i>Phascolarctos cinereus</i>	Koala	V,P	454	E
Animalia	Mammalia	Vombatidae	<i>Vombatus ursinus</i>	Bare-nosed Wombat	P	1	
Animalia	Mammalia	Petauridae	<i>Petaurus australis</i>	Yellow-bellied Glider	V,P	1	

Animalia	Mammalia	Petauridae	<i>Petaurus breviceps</i>	Sugar Glider	P		17	
Animalia	Mammalia	Petauridae	<i>Petaurus norfolcensis</i>	Squirrel Glider	V,P		13	
Animalia	Mammalia	Petauridae	<i>Petaurus sp.</i>	Glider	P		1	
Animalia	Mammalia	Pseudocheiridae	<i>Petauroides volans</i>	Greater Glider	P	V	1	
Animalia	Mammalia	Pseudocheiridae	<i>Pseudocheirus peregrinus</i>	Common Ringtail Possum	P		89	
Animalia	Mammalia	Acrobatidae	<i>Acrobates pygmaeus</i>	Feathertail Glider	P		18	
Animalia	Mammalia	Phalangeridae	<i>Trichosurus caninus</i>	Short-eared Possum	P		1	
Animalia	Mammalia	Phalangeridae	<i>Trichosurus sp.</i>	brushtail possum	P		13	
Animalia	Mammalia	Phalangeridae	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	P		231	
Animalia	Mammalia	Potoroidae	<i>Potorous tridactylus</i>	Long-nosed Potoroo	V,P	V	1	
Animalia	Mammalia	Macropodidae	<i>Macropus giganteus</i>	Eastern Grey Kangaroo	P		41	
Animalia	Mammalia	Macropodidae	<i>Macropus sp.</i>	kangaroo / wallaby	P		14	
Animalia	Mammalia	Macropodidae	<i>Notamacropus rufogriseus</i>	Red-necked Wallaby	P		17	
Animalia	Mammalia	Macropodidae	<i>Osphranter robustus</i>	Common Wallaroo	P		1	
Animalia	Mammalia	Macropodidae	<i>Thylogale thetis</i>	Red-necked Pademelon	P		2	
Animalia	Mammalia	Macropodidae	<i>Wallabia bicolor</i>	Swamp Wallaby	P		39	
Animalia	Mammalia	Pteropodidae	<i>Pteropus alecto</i>	Black Flying-fox	P		49	
Animalia	Mammalia	Pteropodidae	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V,P	V	98	
Animalia	Mammalia	Pteropodidae	<i>Pteropus scapulatus</i>	Little Red Flying-fox	P		5	
Animalia	Mammalia	Pteropodidae	<i>Pteropus sp.</i>	Flying-fox	P		5	
Animalia	Mammalia	Pteropodidae	<i>Syconycteris australis</i>	Common Blossom-bat	V,P		4	
Animalia	Mammalia	Rhinolophidae	<i>Rhinolophus megaphyllus</i>	Eastern Horseshoe-bat	P		3	
Animalia	Mammalia	Molossidae	<i>Austronomus australis</i>	White-striped Freetail-bat	P		6	
Animalia	Mammalia	Molossidae	<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat	V,P		1	
Animalia	Mammalia	Molossidae	<i>Molossidae sp.</i>	unidentified mastiff bat	P		1	
Animalia	Mammalia	Molossidae	<i>Ozimops ridei</i>	Eastern Free-tailed Bat	P		1	
Animalia	Mammalia	Vespertilionidae	<i>Chalinolobus gouldii</i>	Gould's Wattled Bat	P		9	
Animalia	Mammalia	Vespertilionidae	<i>Chalinolobus morio</i>	Chocolate Wattled Bat	P		1	
Animalia	Mammalia	Vespertilionidae	<i>Myotis macropus</i>	Southern Myotis	V,P		2	
Animalia	Mammalia	Vespertilionidae	<i>Nyctophilus bifax</i>	Eastern Long-eared Bat	V,P		4	
Animalia	Mammalia	Vespertilionidae	<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat	P		15	
Animalia	Mammalia	Vespertilionidae	<i>Nyctophilus gouldi</i>	Gould's Long-eared Bat	P		14	
Animalia	Mammalia	Vespertilionidae	<i>Nyctophilus sp.</i>	long-eared bat	P		1	
Animalia	Mammalia	Vespertilionidae	<i>Scotorepens orion</i>	Eastern Broad-nosed Bat	P		3	
Animalia	Mammalia	Vespertilionidae	<i>Scotorepens sp.</i>	Unidentified broad-nosed bat	P		1	
Animalia	Mammalia	Vespertilionidae	<i>Vespadelus pumilus</i>	Eastern Forest Bat	P		13	
Animalia	Mammalia	Vespertilionidae	<i>Vespadelus vulturnus</i>	Little Forest Bat	P		1	
Animalia	Mammalia	Miniopteridae	<i>Miniopterus australis</i>	Little Bent-winged Bat	V,P		16	
Animalia	Mammalia	Miniopteridae	<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V,P		9	
Animalia	Mammalia	Muridae	<i>Hydromys chrysogaster</i>	Water-rat	P		1	
Animalia	Mammalia	Muridae	<i>Melomys burtoni</i>	Grassland Melomys	P		1	
Animalia	Mammalia	Muridae	<i>Mus musculus</i>	House Mouse			10	
Animalia	Mammalia	Muridae	<i>Mus musculus domesticus</i>				5	
Animalia	Mammalia	Muridae	<i>Pseudomys novaehollandiae</i>	New Holland Mouse	P	V	2	
Animalia	Mammalia	Muridae	<i>Rattus fuscipes</i>	Bush Rat	P		24	
Animalia	Mammalia	Muridae	<i>Rattus lutreolus</i>	Swamp Rat	P		25	
Animalia	Mammalia	Muridae	<i>Rattus norvegicus</i>	Brown Rat			5	
Animalia	Mammalia	Muridae	<i>Rattus rattus</i>	Black Rat			25	
Animalia	Mammalia	Dugongidae	<i>Dugong dugon</i>	Dugong	E1,P		1	
Animalia	Mammalia	Otariidae	<i>Arctocephalus pusillus doriferus</i>	Australian Fur-seal	V,P		2	
Animalia	Mammalia	Canidae	<i>Canis familiaris</i>	Dog			2	
Animalia	Mammalia	Canidae	<i>Canis lupus</i>	Dingo, domestic dog			3	
Animalia	Mammalia	Canidae	<i>Canis lupus dingo</i>	Dingo			4	
Animalia	Mammalia	Canidae	<i>Vulpes vulpes</i>	Fox			27	
Animalia	Mammalia	Felidae	<i>Felis catus</i>	Cat			12	
Animalia	Mammalia	Leporidae	<i>Lepus capensis occidentalis</i>		P		5	
Animalia	Mammalia	Leporidae	<i>Oryctolagus cuniculus</i>	Rabbit			6	
Animalia	Mammalia	Cervidae	<i>Cervus sp.</i>	Unidentified Deer			4	
Animalia	Mammalia	Cervidae	<i>Dama dama</i>	Fallow Deer			6	
Animalia	Mammalia	Balaenidae	<i>Eubalaena australis</i>	Southern Right Whale	E1,P	E	2	
Animalia	Mammalia	Balaenopteridae	<i>Balaenoptera acutorostrata</i>	Dwarf Minke Whale	P		9	
Animalia	Mammalia	Balaenopteridae	<i>Balaenoptera edeni</i>	Bryde's Whale	P		2	
Animalia	Mammalia	Balaenopteridae	<i>Balaenoptera musculus</i>	Blue Whale	E1,P	E	1	
Animalia	Mammalia	Balaenopteridae	<i>Megaptera novaeangliae</i>	Humpback Whale	V,P	V	17	
Animalia	Mammalia	Kogiidae	<i>Kogia breviceps</i>	Pygmy Sperm Whale	P		1	
Animalia	Mammalia	Ziphiidae	<i>Mesoplodon grayi</i>	Gray's Beaked Whale	P		1	
Animalia	Mammalia	Ziphiidae	<i>Mesoplodon layardii</i>	Strap-toothed Beaked Whale	P		1	
Animalia	Mammalia	Ziphiidae	<i>Mesoplodon sp.</i>	Unidentified Beaked Whale	P		1	
Animalia	Mammalia	Delphinidae	<i>Delphinus delphis</i>	Common Dolphin	P		1	

Animalia	Mammalia	Delphinidae	<i>Feresa attenuata</i>	Pygmy Killer Whale	P	1	
Animalia	Mammalia	Delphinidae	<i>Grampus griseus</i>	Risso's Dolphin	P	2	
Animalia	Mammalia	Delphinidae	<i>Lagenodelphis hosei</i>	Fraser's Dolphin	P	2	
Animalia	Mammalia	Delphinidae	<i>Peponocephala electra</i>	Melon-headed Whale	P	2	
Animalia	Mammalia	Delphinidae	<i>Pseudorca crassidens</i>	False Killer Whale	P	2	
Animalia	Mammalia	Delphinidae	<i>Stenella attenuata</i>	Pantropical Spotted Dolphin	P	1	
Animalia	Mammalia	Delphinidae	<i>Stenella coeruleoalba</i>	Striped Dolphin	P	1	
Animalia	Mammalia	Delphinidae	<i>Stenella longirostris</i>	Spinner Dolphin	P	1	
Animalia	Mammalia	Delphinidae	<i>Tursiops truncatus</i>	Bottlenose Dolphin	P	7	
Animalia	Insecta	Cicadidae	<i>Cystosoma saundersii</i>	Bladder Cicada		2	
Animalia	Insecta	Sphecidae	<i>Exeirur lateritius</i>	cicada killer		1	
Animalia	Insecta	Hesperiidae	<i>Ocybadistes knightorum</i>	Black Grass-dart Butterfly	E1	92	
Animalia	Insecta	Nymphalidae	<i>Danaus plexippus</i>	Monarch Butterfly	*	4	
Animalia	Insecta	Nymphalidae	<i>Heteronympha mirifica</i>	Wonder Brown Butterfly		1	
Animalia	Insecta	Nymphalidae	<i>Junonia villida calybe</i>	Meadow Argus Butterfly		1	
Animalia	Insecta	Nymphalidae	<i>Polyura sempronius</i>	Tailed Emperor Butterfly		1	
Animalia	Insecta	Nymphalidae	<i>Tisiphone abeona</i>	Swordgrass Brown Butterfly		4	
Animalia	Insecta	Papilionidae	<i>Graphium sarpedon</i>	Blue Triangle		1	
Animalia	Insecta	Papilionidae	<i>Papilio aegaeus</i>	Large Citrus Butterfly		2	
Animalia	Insecta	Pieridae	<i>Catopsilia gorgophone gorgophone</i>	Yellow Migrant Butterfly		1	
Animalia	Insecta	Pieridae	<i>Delias nigrina</i>	common jezebel		2	
Animalia	Insecta	Pieridae	<i>Pieris rapae</i>	Cabbage White Butterfly	*	1	
Animalia	Insecta	Petaluridae	<i>Petalura litorea</i>	Coastal Petaltail	E1	1	
Animalia	Unknown	Unknown Fauna	<i>Fauna sp.</i>	Unidentified Fauna		14	
Animalia	Unknown	Unknown Fauna	<i>Microchiroptera suborder</i>	Unidentified Microbat		2	

Appendix E – Heritage Search Results

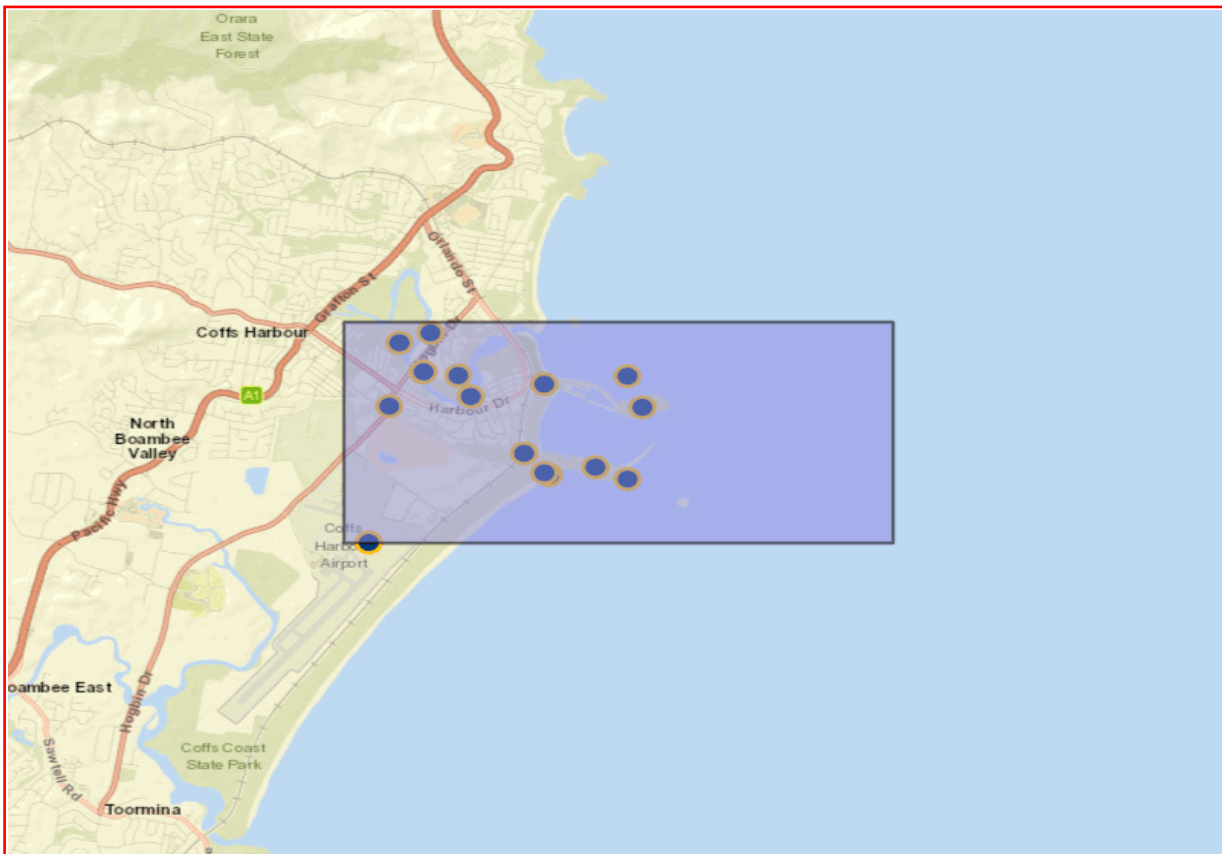
Advisian Pty Ltd
Suite 2, 8-14 Telford Street
NEWCASTLE EAST New South Wales 2300
Attention: Kathryn Smythe
Email: katie.newton@advisian.com

Date: 01 August 2022

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -30.3206, 153.1179 - Lat, Long To : -30.2954, 153.1797, conducted by Kathryn Smythe on 01 August 2022.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

17	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(https://www.legislation.nsw.gov.au/gazette\)](https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
22-1-0160	Brodie Drive Contact	AGD	56	512170	6648150	Open site	Valid	Artefact : 1		
22-1-0309	Coffs Creek 1 Contact T Russell	AGD	56	512607	6647344	Open site	Partially Destroyed	Aboriginal Ceremony and Dreaming : -		102584
22-1-0028	Coffs Harbour; Contact	AGD	56	513400	6647500	Open site	Valid	Shell : -, Artefact : -	Midden	
22-1-0018	South Coffs Island;Coffs Harbour; Contact	AGD	56	514300	6646300	Open site	Valid	Aboriginal Ceremony and Dreaming : -	Natural Mythological (Ritual)	101054
22-1-0559	Muttonbird Island Contact	GDA	56	514566	6647394	Open site	Valid	Aboriginal Ceremony and Dreaming : -		
22-1-0295	btshelter Contact Searle	GDA	56	511939	6648212	Open site	Not a Site	Habitation Structure : -		
22-1-0015	Coffs Harbour Aerodrome;Coffs Harbour; Contact	AGD	56	511500	6645500	Open site	Valid	Shell : -, Artefact : -	Midden	98161
22-1-0398	Coffs Creek PAD Contact	GDA	56	512190	6647839	Open site	Partially Destroyed	Potential Archaeological Deposit (PAD) : 1		102584
22-1-0311	Coffs Creek 3 Contact T Russell	AGD	56	512605	6647345	Open site	Valid	Aboriginal Ceremony and Dreaming : -		
22-1-0017	North Coffs Island, Muttonbird Island Contact	AGD	56	514300	6647600	Open site	Valid	Aboriginal Ceremony and Dreaming : -	Natural Mythological (Ritual)	
22-1-0221	Hogbin Drive Extension 1 Contact Searle	AGD	56	511724	6647224	Open site	Valid	Artefact : -		100056,101089
22-1-0300	Custodian Burial - Clybucca Contact T Russell	AGD	56	512470	6647610	Open site	Valid	Burial : 1		
22-1-0340	Dunhill-Stone Quarrie Contact Mr.Steve Hart	AGD	56	513181	6646626	Open site	Valid	Stone Quarry : -		
22-1-0310	Coffs Creek 2 Contact T Russell	GDA	56	512201	6647846	Open site	Partially Destroyed	Aboriginal Ceremony and Dreaming : -		102584

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status **</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
22-1-0140	CHSS-7	AGD	56	513450	6646350	Open site	Valid	Shell : -		
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins					<u>Permits</u>		
22-1-0080	Corambirra Stone Tool Workshop;	AGD	56	513400	6646380	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Mrs.Lisa Southgate					<u>Permits</u>		
22-1-0579	Coffs Jetty South East	GDA	56	514057	6646639	Open site	Valid	Aboriginal Ceremony and Dreaming : -		
	<u>Contact</u>	<u>Recorders</u>	Coffs Harbour City Council - cnr Coff and Castle Streets,Mr.Marten Bouma					<u>Permits</u>		

**** Site Status**

Valid - The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 04/08/2022 for Kathryn Smythe for the following area at Lat, Long From : -30.3206, 153.1179 - Lat, Long To : -30.2954, 153.1797. Number of Aboriginal sites and Aboriginal objects found is 17

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Appendix F – Consultation Responses

Transport for New South Wales
Maritime Infrastructure Delivery Office
33 James Craig Road
Rozelle 2039

Attention: Mr Daniel Cini

Dear Dr Katie Newton

**Re: Request for Biodiversity and Conservation Division's Review of Environmental Factors
Environmental Assessment Requirements –Coffs Harbour Vessel Refuelling Facility**

Thank you for your e-mail dated 28 June 2022 about the proposed Coffs Harbour Vessel Refuelling facility seeking Environmental Assessment Requirements (EARs) from the Biodiversity and Conservation Division (BCD) of the Biodiversity, Conservation and Science Directorate in the Environment and Heritage Group of the Department of Planning and Environment. I appreciate the opportunity to provide input.

We note that the project will be assessed in accordance with Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Review of Environmental Factors (REF) EARs provided by the BCD are limited to biodiversity, NPWS estate, coastal processes and associated hazards.

The proponent should ensure that the REF will be sufficiently comprehensive to enable unambiguous assessment of all direct and indirect impacts of the proposed activity.

In particular, the REF should include the requirement for a pre-clearance survey for threatened shorebirds including Sooty Oystercatcher (*Haematopus fuliginosus*) and Pied Oystercatcher (*Haematopus longirostris*).

We consider that this information is necessary for a comprehensive REF for the proposed activity.

The full list of our requirements that may need to be addressed in the REF is provided in **Attachment 1**. In preparing the REF, the proponent should refer to the relevant guidance material listed in **Attachment 2**.

If you have any further questions about this advice, please do not hesitate to contact Ms Vanessa Owen, Senior Project Officer, at vanessa.owen@environment.nsw.gov.au or on 4927 3116.

Yours sincerely



6 July 2022

DON OWNER
A/Senior Team Leader Planning, North East Branch
Biodiversity and Conservation

Enclosures:

Attachment 1 - BCD Recommended Environmental Assessment Requirements for REF – Coffs Harbour Refuelling Facility

Attachment 2 - REF Guidance Material

Attachment 1

Biodiversity and Conservation Division's Recommended Environmental Assessment Requirements (EARs)

Review of Environmental Factors

Coffs Harbour Refuelling Facility

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A. The Proposed Activity

The Review of Environmental Factors (REF) should fully and clearly describe the proposed activity, including any environmental impact mitigation measures, and identify all the processes and activities intended for the site during the life of the proposed activity.

The description of the proposed activity in the REF should, where relevant, include:

1. the location of the proposed activity and details of the surrounding environment;
2. appropriate land use zoning;
3. the size and type of the proposed activity and its operation;
4. the proposed layout of the site;
5. the staging and timing of the proposed activity;
6. the proposed activity's relationship to any other proposal.
7. all equipment proposed for use at the site;
8. chemicals, including fuel, used on the site and proposed methods for the transportation, storage, use and emergency management;
9. waste generation, storage and disposal;
10. the anticipated environment impacts of the proposed activity, both direct and indirect,
11. a plan showing the distribution of any threatened flora or fauna species and the vegetation communities on or adjacent to the subject site, and the extent of vegetation proposed to be cleared;
12. ownership details of any residence and/or land likely to be affected by the proposed activity;
13. maps/diagrams showing the location of residences and properties likely to be affected and other industrial developments, conservation areas, wetlands, etc. in the locality that may be affected by the proposed activity;
14. methods to mitigate any expected environmental impacts of the proposed activity;
and
15. the anticipated level of performance in meeting required environmental standards.

B. Environmental Impacts of the Proposed Activity

Impacts related to Biodiversity, NPWS Estate, Acid Sulfate Soils, Flooding, Coastal Processes and Associated Hazards, and Cumulative Impacts, should be assessed, quantified, and reported on in the EIS, as required.

The EIS should address the specific requirements outlined under each heading below, where necessary, and assess impacts in accordance with the relevant guidelines mentioned. A full list of guidelines is at **Attachment 2**.

C. Biodiversity

1. The REF must assess the impacts of the proposed activity on biodiversity values to determine if the proposed activity is “likely to significantly affect threatened species” for the purposes of Section 7.8 of the *Biodiversity Conservation Act 2016* (BC Act).
2. In particular, the REF should include the requirement for a pre-clearance survey for threatened shorebirds including Sooty Oystercatcher (*Haematopus fuliginosus*) and Pied Oystercatcher (*Haematopus longirostris*).

D. NPWS Estate

The REF should address the following with respect to land reserved under the *National Parks and Wildlife Act 1974*.

1. Where appropriate, likely impacts (both direct and indirect) of the proposed development on any adjoining and/or nearby NPWS estate reserved under the *National Parks and Wildlife Act 1974* should be considered, with reference to the *Developments adjacent to National Parks and Wildlife Service lands Guidelines for consent and planning authorities* (DPIE, 2020) available at:
<https://www.environment.nsw.gov.au/research-and-publications/publications-search/developments-adjacent-to-national-parks-and-wildlife-service-lands>
2. The NPWS has clear guidelines for assessing the environmental impact of developments and activities proposed within NPWS managed lands. These include guidelines for the preparation of a REF for activities proposed on land reserved under the *National Parks and Wildlife Act 1974*, including national parks and nature reserves. The *Guidelines for preparing a Review of Environmental Factors* provides information on how to determine whether certain activities are permissible, as well as specific information on matters for consideration during the preparation of an REF. The guidelines can be found at
<http://www.environment.nsw.gov.au/research-and-publications/publications-search/guidelines-for-preparing-a-review-of-environmental-factors>
3. For those proposals within NPWS managed areas that seek a lease or licence under Section 151 of the *National Parks and Wildlife Act 1974*, in addition to an REF, applications must also be accompanied by a sustainability assessment. The assessment must address the criteria adopted by the Chief Executive of the former Office of Environment and Heritage. Templates for completing a Sustainability Assessment can be found at:

<http://www.environment.nsw.gov.au/protectedareas/sustainabilityassessments.htm>

Note: Proposals which may impact marine protected areas should be referred to the Regions, Industry, Agriculture and Resources Group in the Department of Planning, Industry and Environment to determine the assessment and approval requirements.

E. Coastal Process and Associated Hazards

The REF should include an assessment of the following referring to the relevant guidelines in Attachment 2:

1. The potential effect of coastal processes and coastal hazards including potential impacts of sea level rise:
 - a. on the proposed activity; and
 - b. arising from the proposed activity.
2. Whether the proposed activity is consistent with any coastal zone management plans.
3. Whether the proposed activity will significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.
4. All site drainage, stormwater quality devices and erosion / sedimentation control measures should be identified and the onsite treatment of stormwater and effluent runoff and predicted stormwater discharge quality from the proposed activity should be detailed.

F. Cumulative Impacts

The REF should include an assessment of the following:

1. The cumulative impacts, including both construction and operational impacts, from all clearing activities and operations, associated edge effects and other indirect impacts on cultural heritage, biodiversity and NPWS Estate in accordance with the *Environmental Planning and Assessment Act 1979*.
2. The cumulative impacts, including both construction and operational impacts, of the proponent's existing proposals and other proposals and associated infrastructure (such as access tracks etc.), as well as the cumulative impact of the proposed activity in the context of other proposals located in the vicinity.

Attachment 2 – EIS Guidance material

Title	Web address
<u>Relevant Legislation</u>	
<i>Biodiversity Conservation Act 2016</i>	https://www.legislation.nsw.gov.au/#/view/act/2016/63/full
<i>Coastal Management Act 2016</i>	https://www.legislation.nsw.gov.au/#/view/act/2016/20/full
<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>	http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
<i>Environmental Planning and Assessment Act 1979</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
<i>Fisheries Management Act 1994</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N
<i>Marine Parks Act 1997</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+64+1997+cd+0+N
<i>National Parks and Wildlife Act 1974</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N
<i>Protection of the Environment Operations Act 1997</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N
<i>Water Management Act 2000</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N
<i>Wilderness Act 1987</i>	http://www.legislation.nsw.gov.au/viewtop/inforce/act+196+1987+FIRST+0+N
<u>Biodiversity</u>	
Biodiversity Assessment Method (DPIE, 2020)	https://www.environment.nsw.gov.au/research-and-publications/publications-search/biodiversity-assessment-method-2020
Biodiversity Development Assessment Report	https://www.legislation.nsw.gov.au/#/view/act/2016/63/part6/div3/sec6.12
Guidance and Criteria to assist a decision maker to determine a serious and irreversible impact (OEH, 2017)	http://www.environment.nsw.gov.au/resources/bcact/guidance-decision-makers-determine-serious-irreversible-impact-170204.pdf

Title	Web address
Accreditation Scheme for Application of the Biodiversity Assessment Method Order 2017	https://www.legislation.nsw.gov.au/regulations/2017-471.pdf
Biodiversity conservation actions	www.environment.nsw.gov.au/resources/bcact/ancillary-rules-biodiversity-actions-170496.pdf
Reasonable steps to seek like-for-like biodiversity credits for the purpose of applying the variation rules	www.environment.nsw.gov.au/resources/bcact/ancillary-rules-reasonable-steps-170498.pdf
Threatened Species Website	www.environment.nsw.gov.au/threatenedspecies/
NSW BioNet (Atlas of NSW Wildlife)	www.bionet.nsw.gov.au/
Surveying threatened plants and their habitats NSW survey guide for the Biodiversity Assessment Method (DPIE 2020)	https://www.environment.nsw.gov.au/research-and-publications/publications-search/surveying-threatened-plants-and-their-habitats-survey-guide-for-the-biodiversity-assessment-method
Threatened biodiversity survey and assessment - Guidelines for developments and activities (2004 working draft)	https://www.environment.nsw.gov.au/research-and-publications/publications-search/threatened-biodiversity-survey-and-assessment
Field survey methods for environmental consultants and surveyors when assessing proposed developments or other activities on sites containing threatened species (OEH undated)	https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/field-survey-method-guidelines.pdf
NSW Survey Guide for Threatened Frogs (DPIE 2020)	https://www.environment.nsw.gov.au/research-and-publications/publications-search/nsw-survey-guide-for-threatened-frogs
'Species credit' threatened bats and their habitats (OEH 2018)	https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/species-credit-threatened-bats-survey-guide-180466.pdf
BioNet Vegetation Classification - NSW Plant Community Type (PCT) database	www.environment.nsw.gov.au/research/Vegetationinformationsystem.htm

Title	Web address
SEED Data Portal (access to online spatial data)	http://data.environment.nsw.gov.au/
Department of Primary Industry Policy and guidelines for fish habitat conservation and management (update 2013)	https://www.dpi.nsw.gov.au/fishing/habitat/publications/pubs/fish-habitat-conservation
List of national parks	http://www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx
Revocation, recategorisation and road adjustment policy (OEH, 2012)	http://www.environment.nsw.gov.au/policies/RevocationOfLandPolicy.htm
Developments adjacent to National Parks and Wildlife Service lands Guidelines for consent and planning authorities (DPIE 2020)	https://www.environment.nsw.gov.au/research-and-publications/publications-search/developments-adjacent-to-national-parks-and-wildlife-service-lands
<u>Acid Sulfate Soils</u>	
Acid Sulfate Soils Planning Maps via Data.NSW	http://data.nsw.gov.au/data/
Acid Sulfate Soils Manual (Stone et al. 1998)	http://www.environment.nsw.gov.au/resources/epa/Acid-Sulfate-Manual-1998.pdf
National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual, Department of Agriculture and Water Resources, Canberra, ACT. (Sullivan, L, Ward, N, Toppler, N and Lancaster, G. 2018a)	https://www.waterquality.gov.au/sites/default/files/documents/dewatering-acid-sulfate-soils.pdf
National Acid Sulfate Soils guidance: National acid sulfate soils sampling and identification methods manual, Department of Agriculture and Water Resources, Canberra ACT.(Sullivan, L, Ward, N, Toppler, N and Lancaster, G. 2018b)	https://www.waterquality.gov.au/issues/acid-sulfate-soils/sampling-and-identification-methods-manual.pdf

Title	Web address
National Acid Sulfate soils Guidance: Overview and management of monosulfidic black ooze (MBO) accumulations in waterways and wetlands, Department of Agriculture and Water Resources, Canberra ACT. (Sullivan, LA, Ward, NJ, Bush, RT, Toppler, NR, Choppala, G. 2018c)	https://www.waterquality.gov.au/issues/acid-sulfate-soils/monosulfidic-black-ooze-accumulation.pdf
National Acid sulfate soils guidance: Guidelines for the dredging of acid sulfate soil sediments and associated dredge spoil management, Department of Agriculture and Water Resources, Canberra, ACT (Simpson, SL, Mosley, L, Batley, GE and Shand P. 2018)	https://www.waterquality.gov.au/sites/default/files/documents/dredging-sediments-spoil.pdf
National Acid Sulfate Soils Guidance: Guidance for the dewatering of acid sulfate soils in shallow groundwater environments, Department of Agriculture and Water Resources, Canberra, ACT. (Shand, P, Appleyard, S, Simpson, SL, Degens, B, Mosley, LM 2018)	https://www.waterquality.gov.au/issues/acid-sulfate-soils/dewatering-groundwater-environments.pdf
<u>Flooding, Coastal Processes and Associated Hazards</u>	
Reforms to coastal erosion management	http://www.environment.nsw.gov.au/coasts/coastalerosionmgmt.htm
Floodplain development manual	http://www.environment.nsw.gov.au/floodplains/manual.htm
Guidelines for Preparing Coastal Zone Management Plans	http://www.environment.nsw.gov.au/resources/coasts/130224CZMPGuide.pdf
NSW Climate Impact Profile	http://climatechange.environment.nsw.gov.au/
Climate Change Impacts and Risk Management	Climate Change Impacts and Risk Management: A Guide for Business and Government, AGIC Guidelines for Climate Change Adaptation

2 September 2022

Daniel Cini
Project Manager
Transport for NSW

Dear Daniel,

Preliminary assessment results for the Coffs Harbour Vessel Refuelling Facility based on Stage 1 of the *Procedure for Aboriginal cultural heritage consultation and investigation* (the procedure).

The project, as described in the Stage 1 assessment checklist, was assessed as being unlikely to have an impact on Aboriginal cultural heritage.

The assessment is based on the following due diligence considerations:

- The project works are within the existing marina, which consists of reclaimed land (disturbed zones).
- The project is unlikely to harm known Aboriginal objects or places (AHIMS sites).
- The AHIMS search indicated that there are 17 recorded Aboriginal sites within the search area, however, due to the works being carried out within reclaimed land, no impacts are expected to occur.
- The study area does contain landscape features that indicate the presence of Aboriginal objects, based on the Office of Environment and Heritage's *Due diligence Code of Practice for the Protection of Aboriginal objects in NSW* and the Roads and Maritime Services' procedure, however, the cultural heritage potential of the study area appears to be reduced due to past disturbances in the form of the construction of the current marina and associated infrastructure.
- There is an absence of sandstone rock outcrops likely to contain Aboriginal art.

Your project may proceed in accordance with the environmental impact assessment process, as relevant, and all other relevant approvals.

If the scope of your project changes you must contact me and your regional environmental staff Greg Collins to reassess any potential impacts on Aboriginal cultural heritage.

If any potential Aboriginal objects (including skeletal remains) are discovered during the course of the project, all works in the vicinity of the find must cease. Follow the steps outlined in the Transport for NSW *Unexpected Heritage Items Procedure*.

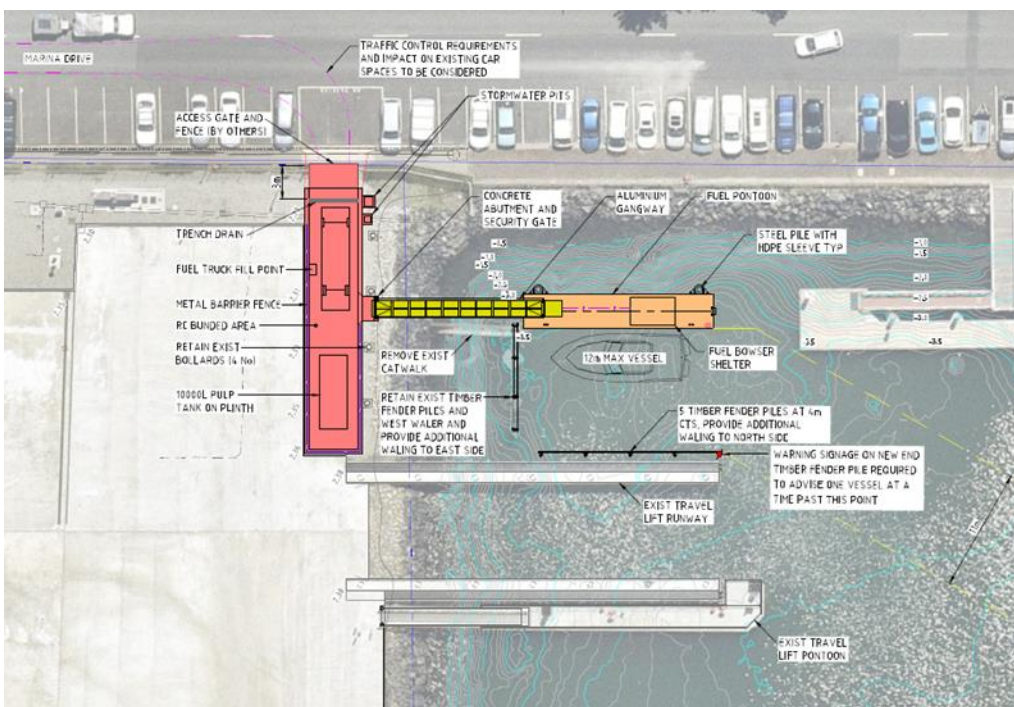
For further assistance in this matter do not hesitate to contact me.

Yours sincerely



Lee Davison
Aboriginal Community and Heritage Partner

Project area location





Newton, Katie (Newcastle)

From: Chris Spencer <ceo@coffsharbourlalc.com.au>
Sent: Thursday, 30 June 2022 11:52 AM
To: Newton, Katie (Newcastle); Matthew Smith
Cc: Daniel Cini; LAM, Deborah (Sydney)
Subject: RE: Coffs Harbour Vessel Refuelling Facility - Consultation[External Sender]

**** [EXTERNAL SENDER] Do not click links or open attachments unless you recognize the sender. ****

Good morning Katie,

Thank you for your email and update regarding the refuelling facility at Coffs Harbour Marina.

Your plans clearly indicate that a procedure is in place in the instance of any spills or incidents involving potential fuel contamination, which if not indicated would be of major concern to CHDLALC.

As the area to house the refuelling facility is on "manmade" infrastructure and not on natural ground – there would be a very low likelihood that any Aboriginal cultural heritage objects would be impacted by the proposal.

In summary, CHDLALC holds no Aboriginal Cultural Heritage constraints regarding the refuelling facility at Coffs Harbour Marina.

If you require any further information or hold any questions in relation to this response, please do not hesitate to contact me on the details listed below.

Kind regards



Coffs Harbour and District
Local Aboriginal Land Council
PO Box 6150 Coffs Harbour NSW 2450
02 6652 8740

**Coffs Harbour
& District LALC**

Chris Spencer
Chief Executive Officer
ceo@coffsharbourlalc.com.au
m 0408 264 887

Gumbaynggirr — Ngiyaala junga-ngarraanga Girrwaanbi-biin gungangulam wajaarrundi gilinggal-wangga-an-wiil.

I acknowledge the traditional custodians of country throughout Australia and their continued connections to land, water and community.

I pay my respects to Elders past and present of the Gumbaynggirr nation where I live and work.

From: Newton, Katie (Newcastle) <katie.newton@advisian.com>
Sent: Tuesday, 28 June 2022 10:13 AM
To: Matthew Smith <programs@coffsharbourlalc.com.au>; Chris Spencer <ceo@coffsharbourlalc.com.au>
Cc: Daniel Cini <Daniel.Cini@transport.nsw.gov.au>; LAM, Deborah (Sydney) <DEBORAH.LAM@advisian.com>
Subject: Coffs Harbour Vessel Refuelling Facility - Consultation

Dear Matt and Chris,

The Maritime Infrastructure Delivery Office (MIDO) of Transport for NSW (TfNSW) is proposing to provide a new on-water vessel refuelling facility at

Coffs Harbour Marina (the proposal). The fuel facility would have a storage capacity of approximately 10,000 L of unleaded petrol for use by government agencies, commercial parties and the public. The proposal is the final stage of the overall Coffs Harbour Maritime Precinct which includes a new maintenance facility and refurbished operation centre. Further details can be found in the attached.

TfNSW invites Coffs Harbour LALC to comment and advise of any interests, concerns or requirements relating to the proposal.

A written response (please send via email) is appreciated by Friday 22nd July, 2022.

Regards,
Katie.

Dr Katie Newton
Principal Marine Environmental Consultant

Suite 2, 8-14 Telford Street | Newcastle East NSW 2300
M +61425325410
E katie.newton@advisian.com
www.advisian.com



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Newton, Katie (Newcastle)

From: Sian Nivison <Sian.Nivison@transport.nsw.gov.au>
Sent: Tuesday, 17 May 2022 4:11 PM
To: Lee Burdett-Symons; Rod Mcdonagh
Cc: Joseph Wright; Andrew Moriarty; Daniel Cini; Julian Burgess
Subject: RE: Proposed Fuel Cell Location Coffs Harbour

Hi Lee, Thanks for your email.

I have copied in Daniel Cini who will be able to give a further update.

Thanks, Sian

Sian Nivison *She/Her*
Director – Maritime North
Maritime NSW
Greater Sydney
Transport for NSW

M 0447 881 578 E sian.nivison@transport.nsw.gov.au

transport.nsw.gov.au

2/16 Isles Drive
Coffs Harbour NSW 2450



Transport
for NSW



I acknowledge the Aboriginal people of the country on which I work, their traditions, culture and a shared history and identity. I also pay my respects to Elders past and present and recognise the continued connection to country.

Please consider the environment before printing this email.

From: Lee Burdett-Symons <lee.burdett@dpi.nsw.gov.au>
Sent: Tuesday, 17 May 2022 3:14 PM
To: Sian Nivison <Sian.Nivison@transport.nsw.gov.au>; Rod Mcdonagh <Rod.McDonagh@transport.nsw.gov.au>
Cc: Joseph Wright <joseph.wright@dpi.nsw.gov.au>; Andrew Moriarty <andrew.moriarty@dpi.nsw.gov.au>
Subject: Proposed Fuel Cell Location Coffs Harbour

CAUTION: This email is sent from an external source. Do not click any links or open attachments unless you recognise the sender and know the content is safe.

Hi Sian,

Would it be possible to get an update on the Fuel Cell issue for the Coffs Harbour Govt marina.

With Thanks

Ms Lee Burdett | Program Leader – North East
FISHERIES COMPLIANCE UNIT
NSW Department of Primary Industries | Fisheries
Unit 3, 24 Acacia Ave | PO BOX 5584 | Port Macquarie | NSW 2444
M: 0408 517 441 | E: lee.burdett@dpi.nsw.gov.au



From: Lee Burdett-Symons
Sent: Monday, 29 November 2021 2:20 PM
To: Sian Nivison <Sian.Nivison@transport.nsw.gov.au>
Cc: Joseph Wright <joseph.wright@dpi.nsw.gov.au>
Subject: Options Review - Proposed Fuel Cell Location Coffs Harbour

Hi Sian,

The fisheries Coffs Harbour team are very happy with either option.

With Thanks

Ms Lee Burdett | Program Leader North East
FISHERIES COMPLIANCE UNIT
NSW Department of Primary Industries | Fisheries
Unit 3, 24 Acacia Ave | PO BOX 5584 | Port Macquarie | NSW 2444
M: 0408 517 441 | E: lee.burdett@dpi.nsw.gov.au



From: Sian Nivison <Sian.Nivison@transport.nsw.gov.au>
Sent: Monday, 29 November 2021 7:34 AM
To: Lee Burdett-Symons <lee.burdett@dpi.nsw.gov.au>
Cc: rod.mcdonagh <rod.mcdonagh@transport.nsw.gov.au>
Subject: Options Review - Proposed Fuel Cell Location Coffs Harbour

Hi Lee, Hope you are well and had a good weekend.

As discussed, we are scoping a project for an unleaded fuel cell in Coffs Harbour.

The consultants have analysed the various sites and have now recommended 2 options for consideration as detailed below.

Please could you let us know your thoughts on these 2 options – there are pros and cons with both.

At this stage Maritime are leaning towards Option 2C but we are still reviewing the plans.

If you need to discuss any of the navigation/access aspects could you please reach out to Rod McDonagh copied on this email.

We are hoping to get feedback early this week so we can progress with the next steps.

Thanks, Sian

5.4 Option 2C

Option 2C consists of a 10,000 L below or above ground fuel tank located on the north east corner of the maintenance facility but not under the hardstand. The fuel pontoon is located north of the lift rails and access provided via a 9m long aluminium gangway. This option could service both government agency and public vessels.

Pro's

- Provides adequate waterway area for manoeuvring around the berth.
- Is located away from the travel lift pontoon and government agency berths.
- Fuel deliveries would not impact on the maintenance facility usage.
- Excavation of the tank and fuel would not require removal and reinstatement of the hardstar

Con's

- Navigation into the area is constrained by a 12m channel that requires signage and a risk assessment/consultation with TfNSW (operations) and other stakeholders.
- The western end of the existing public pontoon requires cleat/s to be removed to prevent vessels tying up at this end.
- Excavation of a below ground fuel tank may require shoring to support the hard stand and/c the revetment. Alternatively this could be an above ground tank.
- Fuel truck loads on the foreshore revetment need to be investigated however, it thought to l ok given previous use of the area (ie cranes lifting boats from the water)

5.5 Option 2D

Option 2D consists of a 10,000 L below or above ground fuel tank located on the north east corner o the maintenance facility but not on the hardstand. The fuel pontoon is located north of the travel lift rails extending from the existing public pontoon. Access would be provided via a 12 m long fixed aluminium walkway and a 16m long aluminium gangway. This option could service both government agency and public vessels.

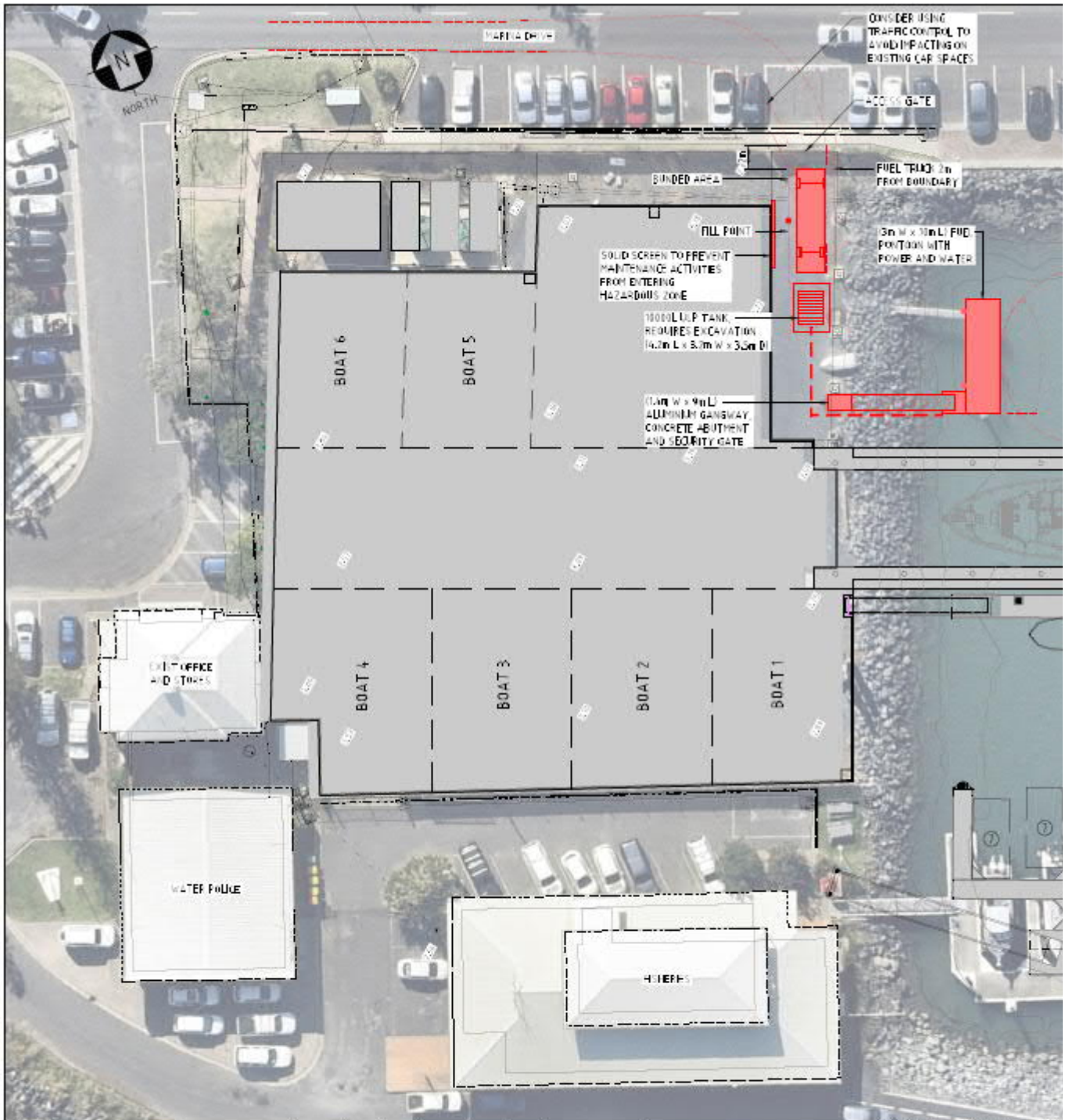
Pro's

- Provides adequate waterway area for manoeuvring around the berth.
- Easy vessel access for berthing (ie drive straight in).
- Is located away from the travel lift pontoon and government agency berths.
- Fuel deliveries would not impact on the maintenance facility usage.
- Excavation of the tank and fuel would not require removal and reinstatement of the hardstar

Con's

- Is likely to be the most expensive option.
- Navigation into the area is constrained by a 12m channel that requires signage and a risk assessment/consultation with TfNSW (operations) and other stakeholders.
- The eastern end of the existing public pontoon requires cleat/s to be removed to prevent vessels tying up at this end.
- Excavation of the fuel tank may require shoring to support the hard stand and/or the revetment. Alternatively this could be an above ground tank.

- Fuel truck loads on the foreshore revetment need to be investigated however, it thought to be ok given previous use of the area (ie cranes lifting boats from the water).
- The fuel pontoon would be connected to the public pontoon and thus require a fence/gate to separate the two.



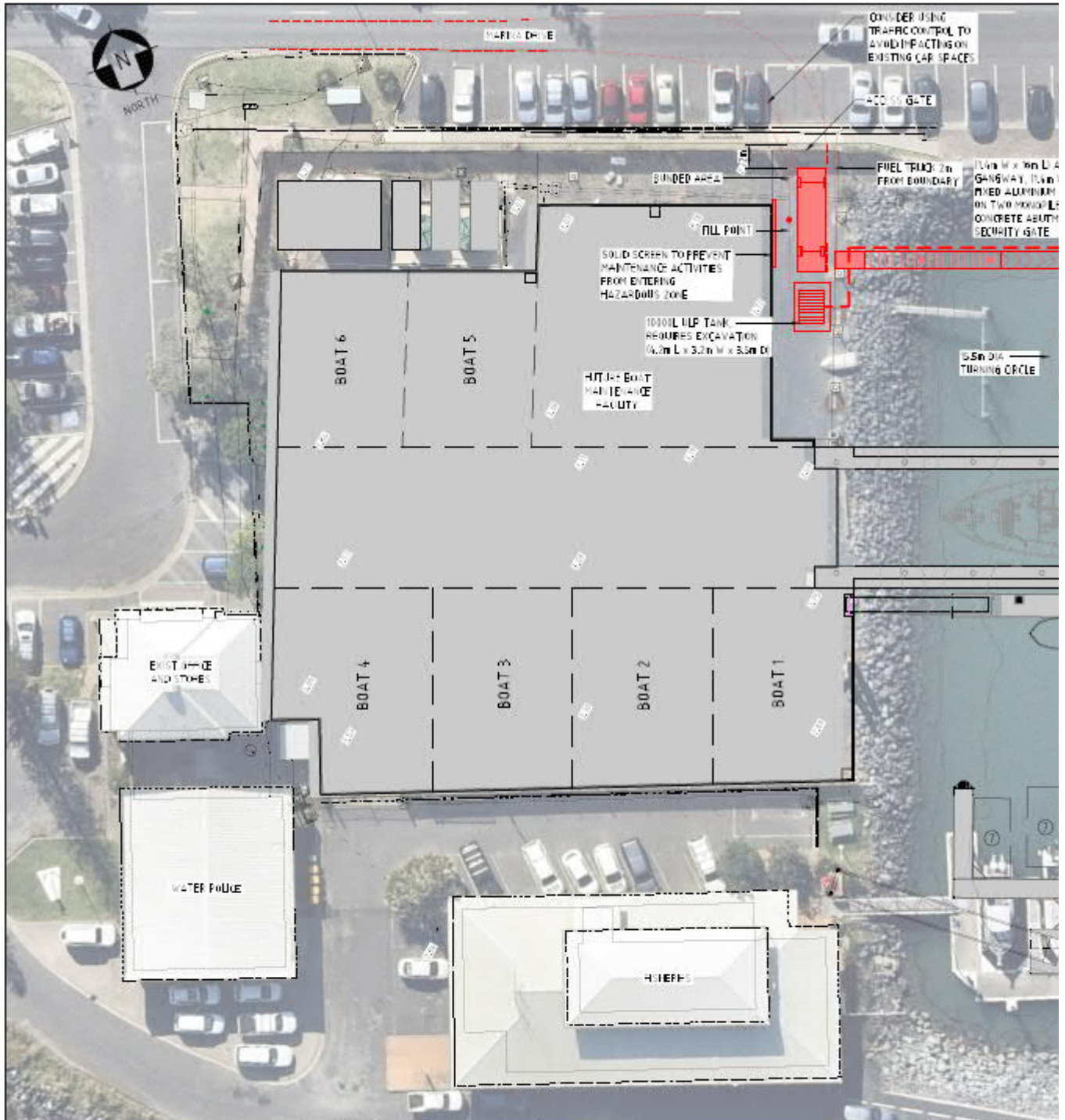
REV	DATE	REVISION DESCRIPTION	ISSUED BY	CHECKED BY	DESIGNED BY	APPROVED BY	DATE	REFERENCE DRAWING FILE
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2	07/22/21	ISSUED FOR PERMITS	MP	ESH	ESH			

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NO.	DATE	REVISION DESCRIPTION	BY	APP'D BY	REVISED DATE	PROJECT NO.	APP'D DATE	OTHER	REF DRAWING NO.	REF REV NO.	REF DATE	REF FILE
1	12/2021	ISSUED WITH PERMITS	VP	ESP	ESP	PH	ESP					
2	01/2022	ISSUED FOR REVIEW	VP	ESP	ESP							

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Sian Nivison
 Director - Maritime North

NSW Maritime
 Transport for NSW

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Newton, Katie (Newcastle)

From: Julian Burgess <Julian.BURGESS2@transport.nsw.gov.au>
Sent: Monday, 21 March 2022 3:55 PM
To: Daniel Cini
Subject: FW: Coffs Harbour - Fuel Cell - Concept Design

From: Julian Burgess
Sent: Monday, 29 November 2021 5:32 PM
To: Sian Nivison <Sian.Nivison@transport.nsw.gov.au>
Subject: RE: Coffs Harbour - Fuel Cell - Concept Design

Thanks

From: Sian Nivison <Sian.Nivison@transport.nsw.gov.au>
Sent: Monday, 29 November 2021 5:28 PM
To: Julian Burgess <Julian.BURGESS2@transport.nsw.gov.au>; Rod Mcdonagh <Rod.McDonagh@transport.nsw.gov.au>
Subject: Re: Coffs Harbour - Fuel Cell - Concept Design

Hi Julian, Confirming 2C. Sian

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From: Julian Burgess <Julian.BURGESS2@transport.nsw.gov.au>
Sent: Monday, November 29, 2021 5:22:30 PM
To: Sian Nivison <Sian.Nivison@transport.nsw.gov.au>; Rod Mcdonagh <Rod.McDonagh@transport.nsw.gov.au>
Subject: RE: Coffs Harbour - Fuel Cell - Concept Design

Hi Sian

Thanks for clarification, please confirm your preference for 2C

Thanks Julian

From: Sian Nivison <Sian.Nivison@transport.nsw.gov.au>
Sent: Monday, 29 November 2021 4:53 PM
To: Rod Mcdonagh <Rod.McDonagh@transport.nsw.gov.au>; Julian Burgess <Julian.BURGESS2@transport.nsw.gov.au>
Subject: RE: Coffs Harbour - Fuel Cell - Concept Design

Thanks Rod

Sian Nivison
Director - Maritime North

NSW Maritime
Transport for NSW

M 0447 881 578
2/16 Isles Drive Coffs Harbour NSW 2450

From: Rod Mcdonagh

Sent: Monday, 29 November 2021 3:38 PM

To: Julian Burgess <Julian.BURGESS2@transport.nsw.gov.au>; Sian Nivison <Sian.Nivison@transport.nsw.gov.au>

Subject: FW: Coffs Harbour - Fuel Cell - Concept Design

Hi Sian, Julian

In my opinion, Option 2C is most feasible from a budgetary and navigational viewpoint. The location of the pontoon in this location provides more overall on water area, and less risk for vessel operators.

The pros and cons of the land and fuel truck aspects are noted, and don't impact on the pontoon effectiveness. A consideration between 2C & 2D is the accessibility for fuel trucks, and any potential effects of the hardstand location and on the overall site.

Vessel Considerations and Location Suitability- Option 2C

- The pontoon location is suitable and would provide adequate manoeuvring area.
- The majority of operators of larger vessels would be all professional Mariners and should not encounter navigational restrictions in normal conditions
- The location and length of the gangway in Option 2D could be considered a major hazard in itself .It is possible that in times of strong wind vessels could become jammed on the gangway. Its location further reduces manoeuvring room.
- The 12m channel entry width is the same for 2C & 2D
- The area would have adequate depth for the type of vessels using the facility.
- A reasonable area of separation is required between the existing public pontoon and this facility, to mitigate collisions on account of poor seamanship, machinery failure, and challenging weather. 2C provides this.
- The information provided indicates that vessels to approximately 10m have been modelled on this option, which is indicative of the larger vessels that would utilise the facility.
- At present there are some vessels that are approximately 12-13m that would utilise this facility. The dimensions of the pontoon at 10m, would adequately berth these vessels provided suitable cleats and fendering was in place. It would be manageable in most situations

Other Comments

- Previous plans proposed for the bowser to be placed on the pontoon. It appears there would be adequate area to place the bowser on the foreshore near the gangway entry. This would provide a unrestricted area on the pontoon and better security for the bowser. A hose reel could be utilised and placed in a similar location or towards the end of the gangway/pontoon apron.
- The pontoon should not be designed to allow for vessels to berth on the inside of the pontoon(western bank) closest to the rock wall. This could cause problems with vessels hitting rocks due to poor seamanship or in challenging weather conditions.
- I would not envisage more than 1 vessel having to refuel at any one time.
- The pontoon would require robust fendering and cleats, service pedestals, fire systems and nearby pollution response equipment .
- Appropriate signage would be required.
- An above ground tank takes up a relatively small footprint and may be easier to service and maintain ?

Previous General Comments

Vessel Usage Trends

- The facility would predominantly cater for Government vessels and commercial and recreational vessels moored within the harbour . An 8000-10 000 ltr tank should provide sufficient capacity for the fleet.

- These vessels would broadly range in size from 5-13m.
- The facility would offer a fuel option for other recreational vessels transiting the coast or those using the nearby boat ramp.
- As a guide, Government vessel fuel capacity varies from about 500ltrs to 1200ltrs.
- Jetty Dive, one of the most frequent charter operators operates two vessels. The largest, a 12.5m vessel with 4x 300hp outboards has a fuel capacity of 1300ltrs. This vessel uses approximately 800ltrs per week which can fluctuate. Other fishing charter vessels and larger Government vessels could require similar fuel amounts.

Other Comments

- 24 hr access for Government agencies would be required.
- The facility should be a dedicated fuel or emergency pontoon only
- A swipe card, FOB or keypad systems would be required, which does not seem to be included in the costs provided. These systems provide many functions for the benefit of the facility operator and the customer in regards to fuel usage reports and personnel security functions.
- Whilst commercial arrangements will need to be further developed, it is quite common for on water fuel to be very expensive and at times 40-50 cents above retail price. To gain maximum use of the facility, particularly for private charter operators, a reasonable price for regular users, is something that should be deliberated as a marked increase in their current usage may deter them from utilising the facility.
- Further consultation or research with potential users of the facility may be required.
- I have a list of the fuel capacity of current Government vessels, apart from Marine Rescue

I have perused the Masterplan documents and have no specific comments at this stage, other than some more detail around the covered storage area between 36 Marina Dr and the Police building.

I note the response that DPI are comfortable with either option 2C or 2D. They are operating similar vessels to Maritime at this point, as are Water Police.

I have left previous message for Coffs Water Police regarding this and will follow up again.

Regards

Rod McDonagh
 Manager Operations North
 Maritime Operations and Compliance | North Area
 Greater Sydney
 Transport for NSW

M 0418 494 153
 2/4 Landsborough Street
 South West Rocks NSW 2431



From: Julian Burgess <Julian.BURGESS2@transport.nsw.gov.au>
 Sent: Tuesday, 23 November 2021 2:54 PM
 To: Rod Mcdonagh <Rod.McDonagh@transport.nsw.gov.au>
 Cc: Sian Nivison <Sian.Nivison@transport.nsw.gov.au>; Dean Moore <dean.moore@transport.nsw.gov.au>; Darren Hulm <darren.hulm@transport.nsw.gov.au>; David Doyle <David.Doyle@transport.nsw.gov.au>
 Subject: Coffs Harbour - Fuel Cell - Concept Design

Hi Rod et al,

Find attached the DRAFT Coffs Harbour Fuel Facility Concept options memo compiled with the drawings.

The report recommends options 2C & 2D. I have reviewed, and both have pro & cons.

Could you please provide feedback by simply using a Pros & Cons table and return by not later COB Monday 29 November 2021.

Subject to your feedback I can have the report updated and a further costs estimate undertaken before finalizing a briefing note for approval prior to breaking for Christmas

Sian – I have NOT issued to other Agency's, assuming you would take the lead.

Thanks

Julian

OFFICIAL

Newton, Katie (Newcastle)

From: Sian Nivison <Sian.Nivison@transport.nsw.gov.au>
Sent: Monday, 21 February 2022 7:35 AM
To: Daniel Cini
Subject: FW: Options Review - Proposed Fuel Cell Location Coffs Harbour [SEC=OFFICIAL]

Daniel – And another email of feedback re: fuel cell project

Sian Nivison
Director - Maritime North

NSW Maritime
Transport for NSW

M 0447 881 578
2/16 Isles Drive Coffs Harbour NSW 2450



From: Christian Picker <pick3chr@police.nsw.gov.au>
Sent: Tuesday, 7 December 2021 11:39 AM
To: David Carlin <carl1dav@police.nsw.gov.au>; Joshua Shaw <shaw1jos@police.nsw.gov.au>; Sian Nivison <Sian.Nivison@transport.nsw.gov.au>
Cc: Jacob Gow <gow1jac@police.nsw.gov.au>
Subject: RE: Options Review - Proposed Fuel Cell Location Coffs Harbour [SEC=OFFICIAL]

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Hi Sian,

I have reviewed your email and it is my opinion that either option is workable for police vessels. Currently, the largest vessel police would be utilising this unleaded fuel facility for would be our 8m Noosa cat runabout. Both options appear manageable in regards to this vessel. The second option (2D) in my option has more potential for access issues if large vessels were to utilise the western end of the public wharf. I have noted that you intend to remove some bollards on the wharf to prevent this, however members of the public may find other means to lay alongside and restrict access. Although option 1 requires more vessel pivoting upon entry/exit it does provide security benefits (not attached to public wharf if fuel was to be restricted).

Regards,
Christian Picker
A/Sgt
CHWP.

From: David Carlin <carl1dav@police.nsw.gov.au>
Sent: Friday, 3 December 2021 10:03 AM
To: Christian Picker <pick3chr@police.nsw.gov.au>; Joshua Shaw <shaw1jos@police.nsw.gov.au>
Subject: FW: Options Review - Proposed Fuel Cell Location Coffs Harbour [SEC=OFFICIAL]

Hi Chris/Josh

Please review below and provide comment.

I would think 2C would be preferred for access.

Regards

 **David Carlin**
A/Inspector
Fleet/Regional Controller
NSW Marine Area Command
4 Jubilee Place, Balmain NSW 2041
E: carl1dav@police.nsw.gov.au P: [93207410](tel:93207410) E: 57420 M: [0488100083](tel:0488100083)

From: Joseph McNulty <mcnu1jos@police.nsw.gov.au>
Sent: Tuesday, 30 November 2021 8:45 AM
To: David Carlin <carl1dav@police.nsw.gov.au>
Subject: Fwd: Options Review - Proposed Fuel Cell Location Coffs Harbour

Hi Dave,
This is probably more relevant for you.

Joe

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From: Sian Nivison <Sian.Nivison@transport.nsw.gov.au>
Sent: Monday, November 29, 2021 7:40:47 AM
To: Joseph McNulty <mcnu1jos@police.nsw.gov.au>; Christian Picker <pick3chr@police.nsw.gov.au>
Cc: Rod McDonagh <Rod.McDonagh@transport.nsw.gov.au>
Subject: Options Review - Proposed Fuel Cell Location Coffs Harbour

Joe/Christian, Hope you are well and had a good weekend.

As discussed, we are scoping a project for an unleaded fuel cell in Coffs Harbour.

The consultants have analysed the various sites and have now recommended 2 options or consideration as detailed below.

Please could you let us know your thoughts on these 2 options – there are pros and cons with both.

At this stage Maritime are leaning towards Option 2C but we are still reviewing the plans.

If you need to discuss any of the navigation/access aspects could you please reach out to Rod McDonagh copied on this email.

We are hoping to get feedback early this week so we can progress with the next steps.

Thanks, Sian

5.4 Option 2C

Option 2C consists of a 10,000 L below or above ground fuel tank located on the north east corner of the maintenance facility but not under the hardstand. The fuel pontoon is located north of the lift rails and access provided via a 9m long aluminium gangway. This option could service both government agency and public vessels.

Pro's

- Provides adequate waterway area for manoeuvring around the berth.
- Is located away from the travel lift pontoon and government agency berths.
- Fuel deliveries would not impact on the maintenance facility usage.
- Excavation of the tank and fuel would not require removal and reinstatement of the hardstar

Con's

- Navigation into the area is constrained by a 12m channel that requires signage and a risk assessment/consultation with TfNSW (operations) and other stakeholders.
- The western end of the existing public pontoon requires cleat/s to be removed to prevent vessels tying up at this end.
- Excavation of a below ground fuel tank may require shoring to support the hard stand and/c the revetment. Alternatively this could be an above ground tank.
- Fuel truck loads on the foreshore revetment need to be investigated however, it thought to l ok given previous use of the area (ie cranes lifting boats from the water)

5.5 Option 2D

Option 2D consists of a 10,000 L below or above ground fuel tank located on the north east corner o the maintenance facility but not on the hardstand. The fuel pontoon is located north of the travel lift rails extending from the existing public pontoon. Access would be provided via a 12 m long fixed aluminium walkway and a 16m long aluminium gangway. This option could service both government agency and public vessels.

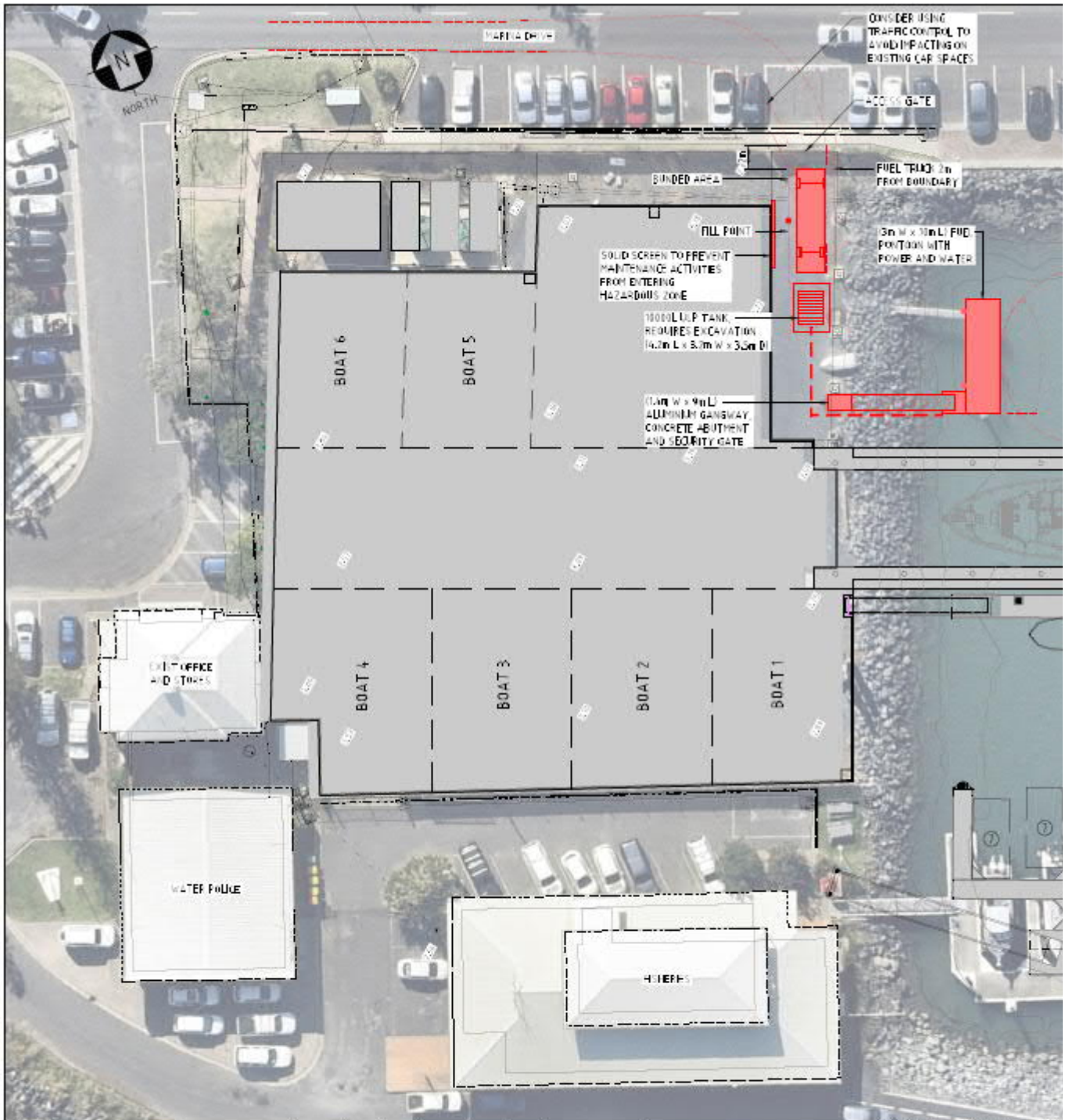
Pro's

- Provides adequate waterway area for manoeuvring around the berth.
- Easy vessel access for berthing (ie drive straight in).
- Is located away from the travel lift pontoon and government agency berths.
- Fuel deliveries would not impact on the maintenance facility usage.
- Excavation of the tank and fuel would not require removal and reinstatement of the hardstar

Con's

- Is likely to be the most expensive option.
- Navigation into the area is constrained by a 12m channel that requires signage and a risk assessment/consultation with TfNSW (operations) and other stakeholders.
- The eastern end of the existing public pontoon requires cleat/s to be removed to prevent vessels tying up at this end.
- Excavation of the fuel tank may require shoring to support the hard stand and/or the revetment. Alternatively this could be an above ground tank.

- Fuel truck loads on the foreshore revetment need to be investigated however, it thought to be ok given previous use of the area (ie cranes lifting boats from the water).
- The fuel pontoon would be connected to the public pontoon and thus require a fence/gate to separate the two.



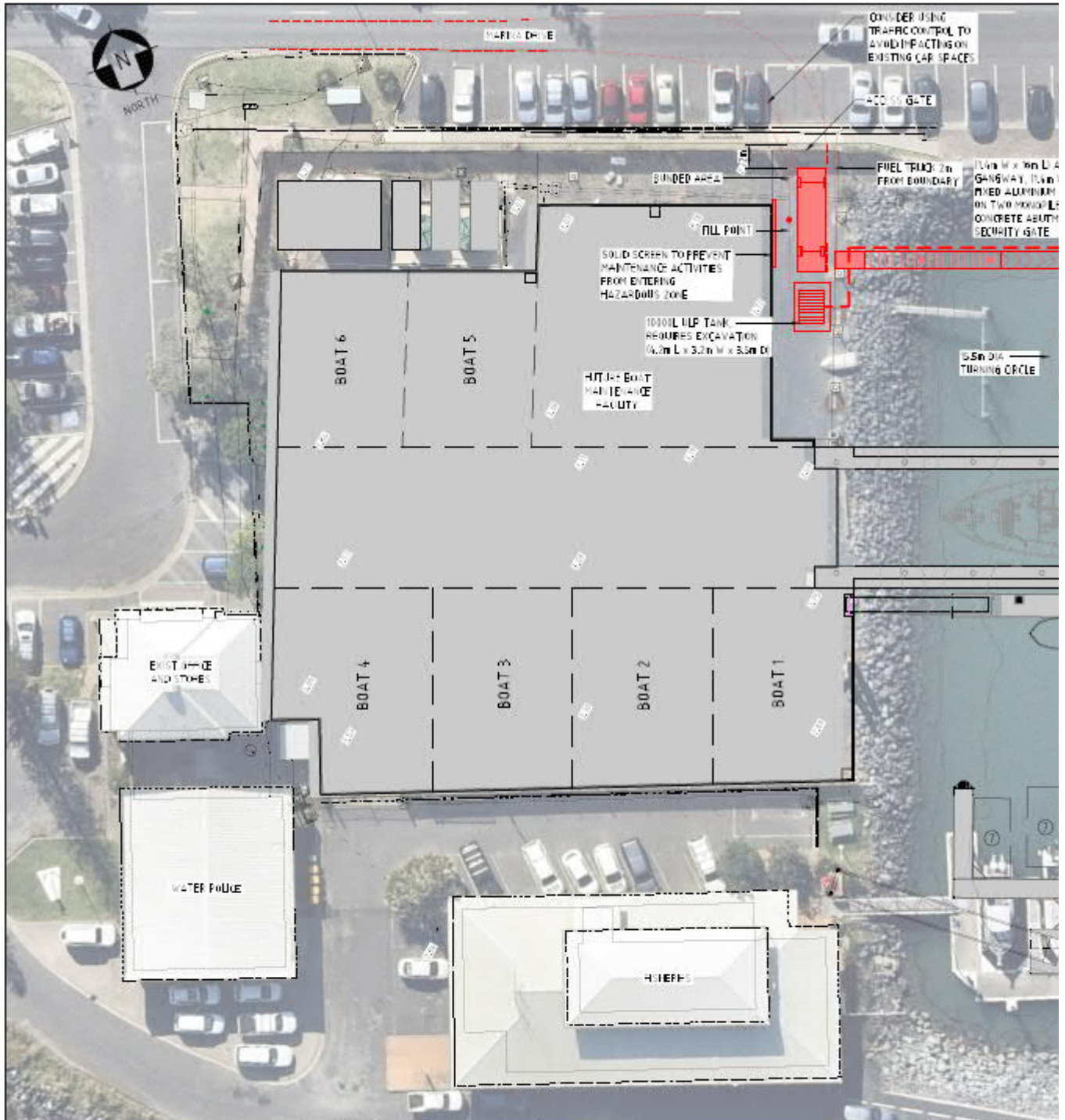
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2	07/22/21	ISSUED FOR PERMITS	MP	ESH	ESH			

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2	01/2022	ISSUED FOR REVIEW	VP	ESP	ESP							

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Sian Nivison
 Director - Maritime North

NSW Maritime
 Transport for NSW

M 0447 881 578
 2/16 Isles Drive Coffs Harbour NSW 2450



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OFFICIAL

Daniel Cini
Project Manager
Maritime Infrastructure Delivery Office
Transport for NSW
33 James Craig Rd
Rozelle NSW 2039

Re: **Proposed Coffs Harbour vessel refuelling facility**

Dear Daniel,

Thank you for the opportunity to comment on the proposal to provide a new on-water vessel refuelling facility at the Coffs Harbour Marina. The NSW Department of Primary Industries (DPI) Fisheries has considered the information in your letter dated 28 June 2022 and provides the following comments at this time.

Operational considerations

DPI Fisheries strongly supports provision of an on-water unleaded fuel facility at Coffs Harbour. The absence of such a facility has been a long-standing work health and safety and operational issue for NSW Government vessels and commercial vessels in Coffs Harbour. Provision of a facility will support enhanced on-water compliance, emergency response and local economic values including tourism.

DPI Fisheries supports the proposed location of the facility to the north of the travel lift. Any location south of the travel lift would increase traffic adjacent to the NSW Government moorings and may impede operations. The protection and safety proposed by the pontoon to the north and fendering to the south and west is supported, noting that further review of entrance clearance from the public wharf is proposed.

DPI Fisheries requests 24 hour access to the facility to support efficient and effective government operations.

Marine Estate Management Act 2014

The location of this proposal is less than 80 metres from the habitat protection zone of the Solitary Islands Marine Park. This affords the waters a higher level of protection than other areas of the marine park or other areas of NSW.

Any development at this location is likely to have an effect on the marine park. Section 56 of the *Marine Estate Management Act 2014* (MEM Act) requires a determining authority to consider the

purposes of marine parks under the MEM Act, marine park management rules in the area and any advice given to it by DPI Fisheries.

Clause 1.8 of the Marine Estate Management (Management Rules) Regulation 1999 states the objects of habitat protection zone are:

- a) to provide a high level of protection for biological diversity, habitat, ecological processes, natural features and cultural features (both Aboriginal and non-Aboriginal) in the zone, and
- b) where consistent with paragraph (a), to provide opportunities for recreational and commercial activities (including fishing), scientific research, educational activities and other activities, so long as they are ecologically sustainable, do not have a significant impact on fish populations within the zone and have a negligible impact on other animals, plants and habitat.

The area of the marine park directly adjacent to the proposal site includes sensitive reef and habitat of the critically endangered Marine Brown Alga *Nereia lophocladia*.

Coastal Management Act 2016

This site is located within the Coastal Environment Area for the purposes of the *Coastal Management Act 2016* and State Environmental Planning Policy (Resilience and Hazards) 2021. While DPI Fisheries understands that development consent from Council is not required, DPI Fisheries requests that the proposal is still assessed and implemented consistent with the requirements of the *Coastal Management Act 2016* and State Environmental Planning Policy (Resilience and Hazards) 2021 for the Coastal Environment Area, including section 8 management objectives.

Sediment and erosion control

Due to the proximity of the proposal to marine park habitat protection zone, it is important that the highest levels of sediment and erosion control are installed prior to and appropriately maintained throughout all phases of construction and rehabilitation, and at any time when earth is disturbed. DPI Fisheries requests that the proposal includes installation, monitoring and maintenance of best-practice sediment and erosion control measures consistent with the 'Blue Book – Managing Urban Stormwater: Soils and Construction' (see <https://www.environment.nsw.gov.au/research-and-publications/publications-search/managing-urban-stormwater-soils-and-construction-volume-1-4th-edition>). These measures should be inspected prior to any rainfall forecast by the Australian Bureau of Meteorology and monitored and maintained at least daily during any rainfall events.

Acid sulfate soils

Coffs Harbour City Council's mapping identifies the site as Class 5 acid sulfate soil. It is unclear from the information available at this stage what depth of construction is involved. The Review of Environmental Factors (REF) should ensure appropriate monitoring, management and contingency planning for acid sulfate soils and consider the need for an acid sulfate soil management plan.

Every best-practice measure for monitoring, remediation and contingency planning must be put in place to prevent any soil contaminants from reaching marine waters. Stockpiling of any soils must be kept to a minimum, both in volume and in time stored onsite.

Contaminated land

Coffs Harbour City Council's mapping identifies this site as Potential Contaminated Land due to historical use. The REF should ensure appropriate investigation and management of any contamination. Soil and groundwater testing should be required at this site prior to any further excavation, earthworks or construction to understand and ensure an appropriate response to any existing contamination.

Stormwater

Due to the risk of fuel spills at this site, the proposal must include on-site stormwater management. Best-practice on-site stormwater detention and treatment systems that are capable of treating

hydrocarbons must be installed as part of this proposal to treat stormwater before it is released to the environment or marine waters.

Emergency spill management

The operation of a fuel cell and public on-water unleaded fuelling facility has a very high risk of minor spills to the marine environment, and some risk of major spills. Due to the location adjacent to the habitat protection zone of the Solitary Islands Marine Park, sensitive reef and habitat of the critically endangered Marine Brown Alga *Nereia lophocladia*, DPI Fisheries requests the highest levels of best-practice on site to capably manage these risks, including spill equipment and emergency management capability and processes.

Agency responsibilities

DPI Fisheries understands that because the diesel fuel bowser located at the Coffs Harbour Fishermen's Cooperative is on land, Coffs Harbour City Council has recently been required to respond to and investigate any pollution and associated offences. Specialist equipment and expertise is required to respond to maritime fuel spills and pollution offences. It is not reasonable nor practical to expect Coffs Harbour City Council to maintain this specialist capacity just because the fuel comes from a land-based bowser accessing a vessel rather than directly from the vessel itself. Council does not have the capacity to respond efficiently or effectively to these events.

DPI Fisheries strongly recommends that the scope of the NSW State Waters Marine Oil and Chemical Spill Contingency Plan (<https://roads-waterways.transport.nsw.gov.au/documents/about/environment/oil-spill-contingency-plan-nsw-state-waters.pdf>) should be expanded to specifically include pollution of oil and chemicals from land-based on-water vessel fuelling facilities. Either the Port Authority of NSW should assume responsibility as the Combat Agency for Coffs Harbour as for other major ports in NSW, or Transport for NSW as the Combat Agency for other NSW State waters.

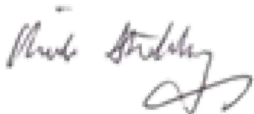
DPI Fisheries understands that Transport for NSW is declared as an Appropriate Regulatory Authority under specific circumstances for the purposes of the *Protection of the Environment Operations Act 1997* and regulations. DPI Fisheries recommends Transport for NSW responsibilities should be expanded to include pollution resulting from land-based on-water vessel fuelling facilities. Transport for NSW has specific capacity and expertise in this area that will help to ensure the best-possible regulatory outcomes. Council does not have the capacity to investigate any pollution incidents or offences that occur at a new on-water unleaded facility in Coffs Harbour.

Review of Environmental Factors

To ensure appropriate consideration under section 56 of the MEM Act, DPI Fisheries requests a copy of the Review of Environmental Factors (REF) once available. DPI Fisheries may provide additional advice on the proposal at that time. The REF should address the issues raised in this letter. The Neutral or Beneficial Effect on Water Quality Assessment Guideline 2021 (https://www.waternsw.com.au/_data/assets/pdf_file/0004/165775/NorBE-Assessment-Guideline-2021.pdf) should be applied to ensure there is no negative impact on marine park water quality.

If you require any additional information, please don't hesitate to contact me.

Yours sincerely,



Nicole Strehling

Marine Park Manager
Solitary Islands Marine Park

Appendix G – Noise Estimator Tool Output

Appendix H – Assessments of Significance

Assessments of Significance

Assessments of Significance were undertaken for **White's seahorse** (*Hippocampus whitei*) and **black rockcod** (*Epinephelus daemeli*), which are the threatened marine fauna which are considered most likely to occur within the proposed construction works area with potential habitat available in the form of the artificial rock revetment and wharf/mooring piles within the Inner Harbour. These species are listed under both the FM Act 1994 and the EPBC Act 1999, and as such, assessments under both Acts separately are provided below.

In addition, a number of marine/migratory and shorebird species have been specifically noted as of concern during stakeholder consultation. These are all expected to have a low likelihood of occurring in the proposed works area, due to a lack of suitable habitat associated with the current commercial use of the area. Assessments of significance were also undertaken under the relevant acts as per stakeholder advice below:

- NSW DPI: *"The area of the marine park directly adjacent to the proposal site includes sensitive reef and habitat of the critically endangered (under the FM Act 1994) Marine Brown Alga Nereia lophocladia"*. An Assessment of Significance for **Nereia lophocladia** under this Act has been undertaken.
- NPWS: *"Shearwater fledging - The proposed start time of March to May is a critical time for the nearby colony of wedge-tailed shearwaters (Puffinus pacificus) (i.e. muttonbirds) on Muttonbird Nature Reserve, who fledge during that time period, guided by the moon"*. The **Wedge-tailed shearwater** is a 'listed marine species' under the EPBC Act and as Assessment of Significance under this Act has been undertaken.
- BCD of DP&E: *"Shorebirds - The REF should include the requirement for a pre-clearance survey for threatened shorebirds including Sooty Oystercatcher (Haematopus fuliginosus) and Pied Oystercatcher (Haematopus longirostris)"*. The **Pied Oystercatcher** is listed as an endangered species under the BC Act 2016 but is not listed under the EPBC Act. The **Sooty Oystercatcher** is listed as vulnerable under the BC Act and is not listed under the EPBC Act. An Assessment of Significance under the BC Act is provided for these species.

Fisheries Management Act 1994

The Threatened Species Assessment Guidelines (DPI 2008) outlines seven factors which need to be taken into account when considering whether a proposal will have a significant impact on a threatened species listed under the FM Act 1994. These are available at: Threatened Species Assessment Guidelines - Assessment of Significance (nsw.gov.au).

White's Seahorse (endangered)



(NSW DPI 2022: https://www.dpi.nsw.gov.au/data/assets/pdf_file/0003/1150851/whites-seahorse-hippocampus-whitei.pdf)

An Assessment of Significance for White's seahorse was undertaken as set out below:

Factor 1 - In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

There are 31 syngnathid species that are known to occur in NSW coastal waters, and this includes White's seahorse *Hippocampus whitei* (NSW DPI 2021). This group is vulnerable as there is increasing degradation of habitat and continued illegal trade. The life cycle of this group is highly unique as in most species it is the male that incubates the babies to term and then gives birth (NSW DPI 2021).

Syngnathid species, including White's seahorse, were assessed to have a moderate likelihood to occur in the study area as there is suitable habitat (i.e. piling structures). The wider marina area also has preferred habitat type for this species (pilings), however a) they were not identified during the field survey during June 2022, although noting they are a cryptic species and b) there is a lower likelihood of occurrence associated with the heavy commercial and recreational use and disturbed nature of the study area.

In addition, there is no removal of piling structure proposed during the works. If syngnathids do occur, the proposed activities are not likely to impact on the life cycle of this species with the recommended safeguards in place.

It is not considered that the proposed works will have adverse effects on the life cycle of this species to place a local population at risk of extinction.

Factor 2 - In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

There are no endangered populations listed under the FM Act 1994 that occur in the immediate study area or known to occur within the study area so these will not be impacted by the proposal.

Factor 3 - In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

- (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or*
- (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.*

No endangered or critically endangered ecological communities under the FM Act occur in the immediate study area and will not be impacted by the proposal.

Factor 4 - In relation to the habitat of a threatened species, population or ecological community:

- (i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and*
- (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and*
- (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.*

There will be no significant permanent removal or modification of habitat which may be used by White's seahorse which is endangered under the FM Act 1994. Part of the proposed works will involve the installation of a small number of new piles which in time will colonise with new macroalgae growth and potentially provide new habitat for this species.

With the safeguards in place, to prevent impacts on water and sediment quality, no adverse indirect effects are expected on the life cycle of White's seahorse to place a local population at risk of extinction.

Factor 5 - Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).

No areas of declared critical habitat listed under the FM Act 1994 occur within the study area so they will not be impacted. In addition, there is no critical habitat for White's seahorse listed under the FM Act.

Factor 6 - Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.

The White's seahorse does not have a recovery plan but there are recovery actions set out (NSW DPI 2019). The scale of the proposal means that the action is not considered to be significantly inconsistent with these objectives set out for White's seahorse.

Factor 7 - Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

The proposed activity is not listed as a Key Threatening Process (KTP) under the FM Act 1994. Of the KTPs listed under the FM Act the only one with the potential to be associated with the Project is "Introduction of non-indigenous fish and marine vegetation to the coastal waters of New South Wales". This could occur during demolition or construction works if any water-based construction vessels and/or their equipment are used from outside the local waterway and are not checked and cleaned before entering the waterway. Translocation of invasive species is a potential impact identified in this study, but safeguards will be adopted by all vessels to mitigate this risk.

Overall Assessment of Significance – There are not expected to be any significant impacts on White's seahorse as a result of the proposal.

Black rockcod (vulnerable)



(NSW DPI 2022: <https://www.dpi.nsw.gov.au/fishing/threatened-species/what-current/vulnerable-species2/black-rockcod>)

An Assessment of Significance for black rockcod was undertaken as set out below:

Factor 1 - In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Juvenile black rockcod are non-mobile and known to inhabit near shore rocky reefs including rock revetments in protected marinas (NSW DPI 2015). Although the study area has preferred habitat type for these species, they are not considered to have high likelihood to occur given a) habitat quality is limited in terms of no aquatic macrophyte growth on the newly installed rock revetment within the proposal area and the unvegetated fine sediment seabed, b) no individuals were sighted during the field survey in June 2022 and c) the heavy commercial and recreational use and disturbed nature of the study area. Although black rockcod are territorial, they will mobilise and move away if disturbed.

The life cycle of black rockcod is hermaphroditic with juveniles developing as females and changing into males later in life. It is not considered that the proposed works will have adverse effects on the life cycle of this species to place a local population at risk of extinction.

Factor 2 - In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

There are no endangered populations listed under the FM Act 1994 that occur in the immediate study area or known to occur within the study area so these will not be impacted by the proposal.

Factor 3 - In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

- (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or*
- (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.*

No endangered ecological communities listed under the FM Act 1994 occur in the immediate study and these will not be impacted by the proposal.

Factor 4 - In relation to the habitat of a threatened species, population or ecological community:

- (i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and*
- (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and*
- (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.*

There will be no significant permanent removal or modification of habitat (artificial rock revetment) which may be used by black rockcod which are threatened species under the FM Act 1994.

With the safeguards in place, to prevent impacts on water quality, no adverse indirect effects are expected on habitat of black rockcod within the study area and wider area which would place a local population at risk of extinction.

Factor 5 - Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).

No areas of declared critical habitat listed under the FM Act 1994 occur within the study area so they will not be impacted. There is no declaration of critical habitat for this species.

Factor 6 - Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.

A recovery plan has been developed to promote the recovery of black rockcod in NSW to an extent where it can eventually be de-listed from the Schedules of the Fisheries Management Act 1994 (NSW DPI, 2012, Black Rockcod Recovery Plan (nsw.gov.au)).

The specific objectives of the recovery plan are to:

- “mitigate moderate and high risk threats to black rockcod;
- initiate and support scientific research to increase knowledge of the distribution, abundance, reproductive biology, life history, ecology, migratory patterns and genetics of black rockcod;
- monitor fishery management strategies where necessary to reduce potential for interaction with black rockcod (either directly or indirectly);
- establish an on-going monitoring program to document the status of black rockcod populations and their habitats and to evaluate the effectiveness of recovery actions;
- provide enhanced compliance and protection for important black rockcod habitats;
- educate the community about the identification of and ‘best practice’ catch and release methods for black rockcod, increase awareness of the status of and threats to black rockcod populations, and enhance community support for recovery actions; and
- improve understanding of the threats to the survival of black rockcod and contribute to management actions to ameliorate identified threats.”

Of these, the proposal is most relevant to “provide enhanced compliance and protection for important Black Rockcod habitats”. The existing potential black cod habitat identified in this assessment is not considered critical or high quality at this point in time, having been newly installed. The proposal will not involve permanent modifications to this habitat and over time this habitat is expected to become inhabited by macrophytes and provide higher quality potential habitat.

The scale of the proposal and findings of this assessment means that the action is not considered to be significantly inconsistent with the objectives or actions of the recovery plan set out for black rockcod.

Factor 7 - Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

The proposed activity is not listed as a Key Threatening Process (KTP) under the FM Act 1994. Of the KTPs listed under the FM Act the only one with the potential to be associated with the Project is "Introduction of non-indigenous fish and marine vegetation to the coastal waters of New South Wales". This could occur during demolition or construction works if any water-based construction vessels and/or their equipment are used from outside the local waterway and are not checked and cleaned before entering the waterway. Translocation of invasive species is a potential impact identified in this study, but safeguards will be adopted by all vessels to mitigate this risk.

Overall Assessment of Significance – There are not expected to be any significant impacts on black rockcod as a result of the proposal.

Marine Brown Alga (*Nereia lopholcladia*) (Critically Endangered)



(Photo by L Mamo, NSW DPI 2022: <https://www.dpi.nsw.gov.au/fishing/threatened-species/what-current/critically-endangered-species/marine-brown-alga>)

An Assessment of Significance for marine brown alga was undertaken as set out below:

Factor 1 - In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

The marine brown alga, *Nereia lopholcladia*, is critically endangered and has been found on islands within the Solitary Islands Marine Park (including Muttonbird island and others) that are located just outside of Coffs Harbour. Muttonbird Island is located approximately 300 m east of the proposal site. The algae has also been previously found along the northern side of the Coffs Harbour breakwater (the marina being located on the southern side).

Nereia lopholcladia is known to be found on hard substrate between the sand and reef interface on the seabed between 3 to 12 m of water depth (NSW DPI 2018). It is considered highly unlikely to occur at the study site, given the habitat (intertidal rock revetment with unvegetated muddy seabed) is not suitable. In addition, surveys within the Inner Harbour by Elgin (2015) and Advisian (2020) did not report this algae as being present, nor did the site survey undertaken for this REF in late June 2022 (noting this was undertaken during suitable months to observe the macroscopic visible life stage).

Knowledge on this species is still emerging, given there have only been few sightings. It is a small species that is thought to be between 15 - 30 cm in length. The life cycle of the algae is seasonal with alternating life stages and the macroscopic (visible) stage is only observed between Winter to early Summer. It is not considered that the proposed works will have adverse effects on the life cycle of this species to place a local population (i.e. the known population at Muttonbird Island) at risk of extinction.

Factor 2 - In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

There are no endangered populations listed under the FM Act 1994 that occur in the immediate study area or known to occur within the study area so these will not be impacted by the proposal.

Factor 3 - In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

(iii) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(iv) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

No endangered ecological communities listed under the FM Act 1994 occur in the immediate study area and these will not be impacted by the proposal.

Factor 4 - In relation to the habitat of a threatened species, population or ecological community:

(iv) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and

(v) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

(vi) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.

The habitat within the proposal area is not suitable for this species. The proposal will not result in fragmentation or isolation of habitat.

Factor 5 - Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).

No areas of declared critical habitat listed under the FM Act 1994 occur within the study area so they will not be impacted. There is no declaration of critical habitat for this species.

Factor 6 - Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.

A Priorities Action Statement has been developed for the Marine Brown Algae to promote its protection in NSW to an extent where it can eventually be de-listed from the Schedules of the Fisheries Management Act 1994 (NSW DPI, <https://www.dpi.nsw.gov.au>).

The specific objectives of the Priorities Action Station are to:

- "Provide advice to consent and determining authorities.
- Collate and review existing information.

- Community and stakeholder liaison, awareness and education.
- Compliance and enforcement.
- Enhance, modify or implement NRM planning processes to minimise adverse impacts on threatened species.
- Habitat protection.
- Habitat rehabilitation.
- Pest eradication and control.
- Research and monitoring.
- Stocking and translocation.
- Targeted surveys and mapping”

“Of these, the proposal is most relevant to “provide habitat protection”. However, the immediate study area does not contain suitable habitat for this species. With the safeguards in place, to prevent direct and indirect impacts, no adverse indirect effects are expected on habitat of marine brown algae within the wider area which would place the algae at risk of extinction.

The scale of the proposal and findings of this assessment mean that the action is not considered to be significantly inconsistent with the objectives or actions of the recovery plan set out for the marine brown algae.

Factor 7 - Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

The proposed activity is not listed as a Key Threatening Process (KTP) under the FM Act 1994. Of the KTPs listed under the FM Act the only ones with the potential to be associated with the Project are:

- “Introduction of non-indigenous fish and marine vegetation to the coastal waters of New South Wales”. This could occur during demolition or construction works if any water-based construction vessels and/or their equipment are used from outside the local waterway and are not checked and cleaned before entering the waterway. Translocation of invasive species is a potential impact identified in this study, but safeguards will be adopted by all vessels to mitigate this risk.

Overall Assessment of Significance – There are not expected to be any significant impacts on marine brown alga as a result of the proposal.

Biodiversity Conservation Act 2016

Pied Oystercatcher (endangered)



(OEH 2022: <https://www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=10386>)

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

The pied oystercatcher is an endangered species under the BC Act. It is known to be distributed along the entire Australian coastline with higher abundance in coastal Tasmania and parts of Victoria (OEH 2010). Within NSW, its distribution is sparser and (in 2010) there was estimated to be only 200 breeding pairs.

This species favours intertidal flats of inlets and bays, open beaches and saltmarshes. It mostly nests on coastal and estuarine beaches and occasionally on saltmarsh or more grassy coastal areas. It uses exposed sand, mud or rock at low tide for foraging of molluscs, worms, crabs and small fish.

There is potential that there is suitable foraging habitat in the vicinity of the study area. However, given its already disturbed commercial nature it is expected that shorebirds will generally avoid the areas of work.

The life cycle of this species includes female egg laying and incubating (of two to three eggs) between August and January. The young leave the nest within days. There is no suitable habitat in the immediate works area for nesting, however this could potentially occur on beaches nearby such as on Muttonbird Island, Park Beach or Jetty Beach. It is considered that there is sufficient distance that the proposed works will not have adverse effects on the life cycle of this species to place a local population at risk of extinction.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

No endangered ecological communities listed under the BC Act occur within the study area and will not be impacted by the proposal.

(c) in relation to the habitat of a threatened species or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity,

and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.

With the safeguards in place, to prevent direct and indirect impacts, no adverse indirect effects are expected on the habitat of pied oystercatcher (i.e. on beaches within the wider area) which would lead to important habitat becoming removed, modified or isolated and affect the long-term survival of this species.

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

No declared areas of area of outstanding biodiversity value listed under the BC Act 2016 occur within the study area and will not be impacted by the proposal.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

“Entanglement in or ingestion of anthropogenic debris in marine and estuarine environments” is listed as a key threatening process (KTP) under the BC Act. This could occur during demolition or construction works if there is any accidental or intentional disposal of waste and litter into the waterway. Potential impacts from litter on marine wildlife is a potential impact that has been identified in this study, but safeguards will be adopted to mitigate this risk.

Overall Assessment of Significance – There are not expected to be any significant impacts on the pied oystercatcher as a result of the proposal.

Sooty Oystercatcher (vulnerable)



(OEH 2022: <https://www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=10385>)

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

The pied oystercatcher is a vulnerable listed species under the BC Act. It is known to be distributed along the entire Australian coastline and most commonly occurs in offshore islands such as Bass Strait. Within NSW, its distribution is sparser as there are limited available nesting sites.

This species favours rocky headlands, rocky shelves and exposed reefs with rock pools, beaches and muddy estuaries. It forages on low tide on the exposed rock for limpets and mussels. There is potentially suitable foraging habitat in the vicinity of the study area (i.e. intertidal rocky reef and mudflats). However, given its already disturbed commercial nature it is expected that shorebirds will generally avoid the immediate areas of work. There is alternative suitable foraging habitat nearby that can be utilised by this species.

The life cycle of this species includes nesting during spring and summer, almost exclusively on offshore islands and occasionally on promontories. The nest is a shallow scrap on the ground, or they construct small mounds from shells, rock or seaweed.

Given that there is no suitable nesting habitat in the immediate study area, it is considered that there is sufficient distance that the proposed works will not have adverse effects on the life cycle of this species to place a local population at risk of extinction. There is potential that this species may nest nearby on islands within the Solitary Islands Marine Park, but due to the nature of the proposal no impacts would be expected on these nesting populations.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

No endangered ecological communities listed under the BC Act occur within the study area and will not be impacted by the proposal.

(c) in relation to the habitat of a threatened species or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity,

and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.

With the safeguards in place, to prevent direct and indirect impacts, no adverse indirect effects are expected on the habitat of sooty oystercatcher (i.e. on nesting sites on nearby islands) which would lead to important habitat becoming removed, modified or isolated and affect the long-term survival of this species.

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

No declared areas of area of outstanding biodiversity value listed under the BC Act 2016 occur within the study area and will not be impacted by the proposal.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

“Entanglement in or ingestion of anthropogenic debris in marine and estuarine environments” is listed as a key threatening process (KTP) under the BC Act. This could occur during demolition or construction works if there is any accidental or intentional disposal of waste and litter into the waterway. Potential impacts from litter on marine wildlife is a potential impact that has been identified in this study, but safeguards will be adopted to mitigate this risk.

Overall Assessment of Significance – There are not expected to be any significant impacts on sooty oystercatcher as a result of the proposal.

Environment Protection and Biodiversity Conservation Act 1999

White's Seahorse (endangered)

Will the action lead to a long-term decrease in the size of a population?

No local population is known and the proposal will not result in the long-term decrease of any population.

Will the action reduce the area of occupancy of the species?

No individuals were observed within the proposal footprint during the field survey and the proposal will not reduce the area of occupancy of the species.

Will the action fragment an existing population into two or more populations?

No local population is known and the proposal will not result in the fragmentation of any population.

Will the action adversely affect habitat critical to the survival of a species?

No critical habitat under the EPBC Act occurs in the study area. In addition, there is no critical habitat for White's seahorse listed under the EPBC Act.

Will the action disrupt the breeding cycle of a population?

The breeding cycle of White's seahorse will not be disrupted considering that no individuals were observed during the field survey. There is also no modifications required to piling structures, that would be the most likely habitat used by this species in the circumstances that they do occur.

Will the action modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?

There will be no significant permanent removal or modification of habitat which may be used by White's seahorse. Part of the proposed works will involve the installation of a small number of new piles which in time will colonise with new macroalgae growth and potentially provide new habitat for this species.

With the safeguards in place, to prevent impacts on water and sediment quality, no adverse indirect effects are expected on White's seahorse to the extent that the species would decline.

Will the action result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat?

The introduction of marine invasive species could occur during demolition or construction works if any water-based construction vessels and/or their equipment are used from outside the local waterway and are not checked and cleaned before entering the waterway. Translocation of invasive species is a potential impact identified in this study, but safeguards will be adopted by all vessels to mitigate this risk.

Will the action introduce disease that may cause the species to decline?

The proposed activity will not result in the introduction of any disease that would cause this species to decline.

Will the action interfere with the recovery of the species?

The White's seahorse does not have a recovery plan under the EPBC Act (DPI 2019). The scale of the proposal means that the action is not considered to interfere with the recovery of the species since they were not observed during the field survey and habitat within the proposed works footprint is not currently of a quality which would support this species.

Overall Assessment of Significance – There are not expected to be any significant impacts on White's seahorse as a result of the proposal.

Black rockcod (vulnerable)

Will the action lead to a long-term decrease in the size of a population?

No local population is known and the proposal will not result in the long-term decrease of any population.

Will the action reduce the area of occupancy of the species?

No individuals were observed within the proposal footprint during the field survey and the proposal will not reduce the area of occupancy of the species.

Will the action fragment an existing population into two or more populations?

No local population is known and the proposal will not result in the fragmentation of any population.

Will the action adversely affect habitat critical to the survival of a species?

No critical habitat under the EPBC Act occurs in the study area. In addition, there is no critical habitat for black rockcod listed under the EPBC Act.

Will the action disrupt the breeding cycle of a population?

The breeding cycle of black rockcod will not be disrupted considering that no individuals were observed during the field survey.

Will the action modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?

There will be no significant permanent removal or modification of habitat which may be used by black rockcod. Overtime, the newly installed rock revetment is likely to colonise with new macroalgae growth and potentially provide new habitat for this species.

With the safeguards in place, to prevent impacts on water and sediment quality, no adverse indirect effects are expected on black rockcod to the extent that the species would decline.

Will the action result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat?

The introduction of marine invasive species could occur during demolition or construction works if any water-based construction vessels and/or their equipment are used from outside the local waterway and are not checked and cleaned before entering the waterway. Translocation of invasive species is a potential impact identified in this study, but safeguards will be adopted by all vessels to mitigate this risk.

Will the action introduce disease that may cause the species to decline?

The proposed activity will not result in the introduction of any disease that would cause this species to decline.

Will the action interfere with the recovery of the species?

Black rockcod does not have a recovery plan under the EPBC Act. However, the scale of the proposal means that the action is not considered to interfere with the recovery of the species since they were not observed during the field survey and habitat within the proposed works footprint is not currently of a quality which would support this species.

Overall Assessment of Significance – There are not expected to be any significant impacts on black rockcod as a result of the proposal.

Wedge-tailed shearwater (endangered)



(DPIE 2022: <https://www.environment.nsw.gov.au/topics/animals-and-plants/native-animals/native-animal-facts/shearwaters>)

Will the action lead to a long-term decrease in the size of a population?

The wedge tailed shearwater (also known as Muttonbird) is an endangered shorebird with significant population known to occur on islands within the Solitary Islands Marine Park (including Muttonbird island and others) that are located just outside of Coffs Harbour. Muttonbird Island is named after this species and is located approximately 300 m from the marina. It is also thought to be one of the worlds remaining breeding grounds so is of significant importance (<https://smallworldstories.org/shearwater-season/>).

A particular concern for this species is that between April and May, the shearwater fledging's begin their migration to north. However, some of the birds from Muttonbird Island are not successful as their first attempt to leave and end up stranded around the marina precinct of Coffs Harbour, which is within the immediate study area (based off Coffs Harbour community Facebook group). It is thought that the artificial lights of the Coffs Harbour township can cause confusion and disorientation.

Although within the immediate study area, there is no suitable nesting or foraging habitat for this species, individuals may enter the marina. This is most likely to occur during the migration season in April and May for the reasons described above. The proposal involves installation of a small number of lights necessary for safety and navigation. These are not expected to add to the existing light impact of the marina area except in a very minimal way. Safeguards are proposed to reduce the potential impact of additional artificial lighting as far as practicable. With the safeguards in place, no impacts are expected on sooty shearwaters that would lead to a long-term decrease of this population.

Will the action reduce the area of occupancy of the species?

There is no suitable nesting or foraging habitat within the immediate works area and the proposal would not reduce the area of occupancy of this species. With safeguards in place, no impacts are expected on the wider area, including the important habitat at nearby Muttonbird Island.

Will the action fragment an existing population into two or more populations?

The proposal does not include actions that would fragment the known existing population.

Will the action adversely affect habitat critical to the survival of a species?

No critical habitat under the EPBC Act occurs in the study area. In addition, there is no critical habitat for wedge-tailed shearwater listed under the EPBC Act.

However, it is recognised that Muttonbird Island provides habitat for an important breeding population. This habitat is managed under the Muttonbird Island Nature Reserve Plan of Management (<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Parks-reserves-and-protected-areas/Parks-plans-of-management/muttonbird-island-nature-reserve-plan-of-management-090513.pdf>).

With the safeguards in place, no indirect impacts are expected that could modify habitat (i.e. via water quality or sediment quality) adversely affect habitat at Muttonbird Island.

Will the action disrupt the breeding cycle of a population?

The proposal will not disrupt the breeding cycle of the population at nearby Muttonbird Island.

Will the action modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?

The proposal will not modify, destroy, remove or isolate habitat that will cause the species to decline. There is the potential impact is that fledging's may come into the marina during April and May as a result of disorientation. However, the proposal is within the existing commercial marina development and it is not considered that the small number of additional lights would result in significant cumulative impacts to this species).

Will the action result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat?

The introduction of marine invasive species could occur during demolition or construction works if any water-based construction vessels and/or their equipment are used from outside the local waterway and are not checked and cleaned before entering the waterway. Translocation of invasive species is a potential impact identified in this study, but safeguards will be adopted by all vessels to mitigate this risk. In addition, considering the terrestrial habitat of this species, the introduction of marine invasive species is not of concern.

Will the action introduce disease that may cause the species to decline?

The proposal does not include actions that would introduce avian diseases and would cause this species to decline.

Will the action interfere with the recovery of the species?

"Injury and fatality to vertebrate marine life caused by ingestion of, or entanglement in, harmful marine debris" is listed as a KTP under the EPBC Act. This could occur during demolition or

construction works if there is any accidental or intentional disposal of waste and litter into the waterway. Potential impacts from litter on marine wildlife is a potential impact that has been identified in this study, but safeguards will be adopted to mitigate this risk.

There is no recovery plan for this species, however, are numerous management plans that are of relevance as listed here (<http://www.environment.gov.au>) including:

- Department of Agriculture, Water and the Environment (2020). *Wildlife Conservation Plan for Seabirds*. Department of Agriculture, Water and the Environment, Canberra. Available from: <http://www.dcceew.gov.au/environment/biodiversity/publications/wildlife-conservation-plan-seabirds-2022>. In effect under the EPBC Act from 16-Jun-2022.
- Department of the Environment and Energy (2018). *Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (2018)*. Canberra, ACT: Commonwealth of Australia. Available from: <http://www.environment.gov.au/biodiversity/threatened/publications/tap/marine-debris-2018>. In effect under the EPBC Act from 21-Jul-2018.

The proposal is not considered to have any actions that would significantly interfere with the actions outlined in these.

Overall Assessment of Significance – There are not expected to be any significant impacts on wedge-tailed shearwater as a result of the proposal.

Appendix I – WeedWise Search Results

Priority weeds for the North Coast

Note: this region includes the local council areas of Ballina, Bellingen, Byron, Clarence Valley, Coffs Harbour, Kempsey, Kyogle, Lismore, Nambucca, Port Macquarie-Hastings, Richmond Valley and Tweed.

[Select another region](#)

Weed

All plants

[Aaron's beard prickly pear](#)

Opuntia leucotricha

[African boxthorn](#)

Lycium ferocissimum

[Aleman grass](#)

Echinochloa polystachya

[Alligator weed](#)

Alternanthera philoxeroides

[Alligator weed](#)

Alternanthera philoxeroides

[Anchored water hyacinth](#)

Eichhornia azurea

[Asparagus fern](#)

Asparagus virgatus

[Athel pine](#)

Tamarix aphylla

[Bellyache bush](#)

Jatropha gossypifolia

[Bitou bush](#)

Chrysanthemoides monilifera subsp. *rotundata*

[Bitou bush](#)

Chrysanthemoides monilifera subsp. *rotundata*

[Black knapweed](#)

Centaurea x moncktonii

[Black locust](#)

Robinia pseudoacacia

[Black willow](#)

Salix nigra

[Black willow](#)

Salix nigra

[Blackberry](#)

Rubus fruticosus species aggregate

Duty

General Biosecurity Duty

All plants are regulated with a **general biosecurity duty** to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Biosecurity Zone

The Alligator Weed Biosecurity Zone is established for all land within the state except land in the following regions: Greater Sydney, Hunter (but only in the local government areas of City of Lake Macquarie, City of Maitland, City of Newcastle or Port Stephens).

Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Regional Recommended Measure

Exclusion zone: Whole region excluding the core infestation area of Nambucca Valley Council, Kempsey Shire Council, Port Macquarie Hastings Council, Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council.

Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Biosecurity Zone

The Bitou Bush Biosecurity Zone is established for all land within the State except land within 10 kilometres of the mean high water mark of the Pacific Ocean between Cape Byron in the north and Point Perpendicular in the south.

Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Regional Recommended Measure

An exclusion zone is established for all lands in the region, except the core infestations comprising of historic plantings. Historic plantings are individual mature plants at least 100 m away from waterways and floodplains.

Whole region: The plant or parts of the plant are not sold, traded, carried, grown or released into the environment. Exclusion zone: The plant is eradicated from the land and the land is kept free of the plant. Land managers mitigate the risk of the plant being introduced to their land. Core infestations: Land managers may retain individual mature historic plants if they are being effectively managed to destroy any new plants sprouting from the roots of the parent tree. Land managers should consult with their local council weeds officer to determine if historic plants on their property meet the criteria. If mature, historic plants senesce, they may not be replaced with new black locust plants.

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Regional Recommended Measure

Exclusion zone: all lands in the region, except the core infestation area of: Clarence Valley Council and Nambucca Valley Shire Council
Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers reduce impacts from the plant on priority assets.

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

All species in the *Rubus fruticosus* species aggregate have this requirement, except for the varieties Black Satin, Chehalern, Chester Thornless, Dirksen Thornless, Loch Ness, Murrindindi, Silvan, Smooth Stern, and Thornfree

<p><u>Blind cactus</u> <i>Opuntia rufida</i></p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i></p>
<p><u>Blue heliotrope</u> <i>Heliotropium amplexicaule</i></p>	<p>Regional Recommended Measure Exclusion zone: whole region excluding the core infestation area of Clarence Valley Council and Port Macquarie-Hastings Council <i>Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.</i></p>
<p><u>Boneseed</u> <i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i></p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i></p>
<p><u>Boneseed</u> <i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i></p>	<p>Control Order Boneseed Control Zone: Whole of NSW <i>Boneseed Control Zone (Whole of NSW): Owners and occupiers of land on which there is boneseed must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of boneseed must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.</i></p>
<p><u>Boxing glove cactus</u> <i>Cylindropuntia fulgida</i> var. <i>mamillata</i></p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i></p>
<p><u>Bridal creeper</u> <i>Asparagus asparagoides</i></p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i> *this requirement also applies to the Western Cape form of bridal creeper</p>
<p><u>Bridal creeper</u> <i>Asparagus asparagoides</i></p>	<p>Regional Recommended Measure Exclusion zone: whole region excluding the core infestation area of Nambucca Valley Council and Kempsey Shire Council. <i>Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.</i></p>
<p><u>Bridal veil creeper</u> <i>Asparagus declinatus</i></p>	<p>Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i></p>
<p><u>Broad-leaf pepper tree</u> <i>Schinus terebinthifolius</i></p>	<p>Regional Recommended Measure Exclusion zone: whole region excluding the core infestation area of Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council <i>Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.</i></p>
<p><u>Broomrapes</u> <i>Orobanche</i> species</p>	<p>Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i> All species of Orobanche are Prohibited Matter in NSW, except Clover broomrape, Orobanche minor and Australian broomrape, Orobanche cernua var. australiana.</p>
<p><u>Bunny ears cactus</u> <i>Opuntia microdasys</i></p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i></p>
<p><u>Cabomba</u> <i>Cabomba caroliniana</i></p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i></p>
<p><u>Cane cactus</u> <i>Austrocylindropuntia cylindrica</i></p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i> All species in the Austrocylindropuntia genus have this requirement</p>
<p><u>Cape broom</u> <i>Genista monspessulana</i></p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i></p>
<p><u>Cape broom</u> <i>Genista monspessulana</i></p>	<p>Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant.</i></p>
<p><u>Cat's claw creeper</u> <i>Dolichandra unguis-cati</i></p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i></p>
<p><u>Cecropia</u> <i>Cecropia</i> species</p>	<p>Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.</i></p>
<p><u>Chicken dance cactus</u> <i>Opuntia schickendantzii</i></p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i></p>
<p><u>Chilean needle grass</u> <i>Nassella neesiana</i></p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i></p>
<p><u>Chinese celtis</u> <i>Celtis sinensis</i></p>	<p>Regional Recommended Measure Exclusion zone: whole region excluding the core infestation area of Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council <i>Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.</i></p>

Chinese knotweed
Persicaria chinensis

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.

Chinese tallow tree
Triadica sebifera

Regional Recommended Measure

Exclusion zone: whole region excluding the core infestation area of Richmond Valley Council, Ballina Shire Council, Lismore Council and Kyogle Council, Byron Shire Council and Tweed Shire Council
Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

Chinese violet
Asystasia gangetica subsp. *micrantha*

Control Order

Owners and occupiers of land on which there is Chinese violet must notify the local control authority for the area if the Chinese violet is part of a new infestation on the land, destroy all Chinese violet on the land ensuring that subsequent generations of Chinese violet are destroyed; and keep the land free of Chinese violet. A person who deals with a carrier of Chinese violet must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.

Climbing asparagus
Asparagus africanus

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Climbing asparagus fern
Asparagus plumosus

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Cockspur coral tree
Erythrina crista-galli

Regional Recommended Measure

Exclusion zone: whole region excluding the core infestation area of Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council
Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

Common pear
Opuntia stricta

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Devil's fig
Solanum torvum

Regional Recommended Measure

Exclusion zone: whole region excluding the core infestation area of: Ballina Shire Council, Byron Shire Council, Kyogle Council, Richmond, Lismore Council, Valley Council and Tweed Shire Council
Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant is eradicated from the land and the land is kept free of the plant. Land managers mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers reduce impacts from the plant on priority assets. Land managers mitigate the risk of the plant spreading from their land to neighbouring properties that are not currently infested with not currently infested with the weed or exclusion zones.

East Indian hygrophila
Hygrophila polysperma

Regional Recommended Measure

Exclusion zone: all waters in the region excluding the core infestation area of Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council.
Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

Eurasian water milfoil
Myriophyllum spicatum

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Eve's needle cactus
Austrocyllindropuntia subulata

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

All species in the Austrocyllindropuntia genus have this requirement

Fireweed
Senecio madagascariensis

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Flax-leaf broom
Genista linifolia

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Foxtail fern
Asparagus densiflorus

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Frogbit
Limnobium laevigatum

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

All species of Limnobium are Prohibited Matter

Gamba grass
Andropogon gayanus

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Giant devil's fig
Solanum chrysotrichum

Regional Recommended Measure

Exclusion zone: whole region excluding the core infestation area of Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council
Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

This biosecurity duty also applies to devil's fig (*Solanum torvum*)

Giant rat's tail grass
Sporobolus pyramidalis

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.

This Regional Recommended Measure applies to *Sporobolus jacquemontii* (American rat's tail grass)

Giant reed
Arundo donax

Regional Recommended Measure

Exclusion zone: whole region excluding core infestation area of the Clarence Valley Council, Bellingen Shire Council and Coffs Harbour City Council.

Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

Glory lily
Gloriosa superba

Regional Recommended Measure

Exclusion zone: whole region excluding the core infestation area of Kempsey Shire Council, Richmond Valley Council, Ballina Shire Council, Bellingen Shire Council, Clarence Valley Council, Coffs Harbour City Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council.

Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

Gorse
Ulex europaeus

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Gorse
Ulex europaeus

Regional Recommended Measure

Land managers should mitigate the risk of the plant being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant.

Green castrum
Cestrum parqui

Regional Recommended Measure

Exclusion zone: whole region excluding the core infestation area of Bellingen Shire Council, Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council

Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

Grey sallow
Salix cinerea

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Grey sallow
Salix cinerea

Regional Recommended Measure

Land managers should mitigate the risk of the plant being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant.

Ground asparagus
Asparagus aethiopicus

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Groundsel bush
Baccharis halimifolia

Regional Recommended Measure

Exclusion zone: whole region excluding the core infestation area of Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council

Whole region: The plant or parts of the plant should not be traded, carried, grown or released in the environment. Exclusion zone: Land managers should mitigate the risk of spread of the plant from their land. Land managers should mitigate the risk of the plant establishing on their land. Core infestation: Land managers should reduce impacts from the plant on priority assets.

Hawkweeds
Pilosella species

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

All species in the genera *Pilosella* and *Hieracium* are Prohibited Matter except for *Hieracium murorum*.

Honey locust
Gleditsia triacanthos

Regional Recommended Measure

Exclusion zone: whole region excluding the core infestation area of Richmond Valley Council, Ballina Shire Council, Clarence Valley Council (Mann catchment), Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council

Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

Horsetails
Equisetum species

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.

Hudson pear
Cylindropuntia pallida

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Hydrocotyl
Hydrocotyle ranunculoides

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Hygrophila
Hygrophila costata

Regional Recommended Measure

Exclusion zone: all waters in the region excluding the core infestation area of Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council

Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

Hymenachne
Hymenachne amplexicaulis and hybrids

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Hymenachne
Hymenachne amplexicaulis and hybrids

Regional Recommended Measure

Land managers should mitigate the risk of the plant being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant.

Japanese walnut
Juglans ailantifolia

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.

Job's tears
Coix lacryma-job

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.

Karoo acacia
Vachellia karroo

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Kei apple
Dovyalis caffra

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.

Kidney-leaf mud plantain
Heteranthera reniformis

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.

Kochia
Bassia scoparia

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Excluding the subspecies *trichophylla*

Koster's curse
Clidemia hirta

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Kudzu
Pueraria lobata

Regional Recommended Measure

Exclusion zone: whole region excluding the core infestation area of Richmond Valley Council, Ballina Shire Council, Bellingen Shire Council, Clarence Valley Council, Coffs Harbour City Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council

Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

Lagarosiphon
Lagarosiphon major

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Lantana
Lantana camara

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Leaf cactus
Pereskia aculeata

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.

Leucaena
Leucaena leucocephala

Regional Recommended Measure

Exclusion zone: all lands in the region except the core infestation area of Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council, Tweed Shire Council.

Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

Long-leaf willow primrose
Ludwigia longifolia

Regional Recommended Measure

Exclusion zone: All lands in the region except the core infestation area of Nambucca Shire Council, Bellingen Shire Council, Coffs Harbour City Council, Clarence Valley Council, Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council.

Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

Ludwigia
Ludwigia peruviana

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.

Madeira vine
Anredera cordifolia

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Mahonia
Berberis lomanifolia

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.

Mesquite
Prosopis species

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

All species in the genus *Prosopis* have this requirement

Mexican feather grass
Nassella tenuissima

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

<p><u>Miconia</u> <i>Miconia</i> species</p>	<p>Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i> All species of <i>Miconia</i> are Prohibited Matter in NSW</p>
<p><u>Mikania vine</u> <i>Mikania micrantha</i></p>	<p>Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i> *all species in the genus <i>Mikania</i> are Prohibited Matter in NSW</p>
<p><u>Mimosa</u> <i>Mimosa pigra</i></p>	<p>Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i></p>
<p><u>Ming asparagus fern</u> <i>Asparagus macowanii</i></p>	<p>Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.</i></p>
<p><u>Monkey's comb</u> <i>Pithecoctenium crucigerum</i></p>	<p>Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.</i></p>
<p><u>Moonflower</u> <i>Ipomoea alba</i></p>	<p>Regional Recommended Measure Exclusion zone: whole region excluding the core infestation area of Clarence Valley Council, Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council. <i>Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.</i></p>
<p><u>Mysore thorn</u> <i>Caesalpinia decapetala</i></p>	<p>Regional Recommended Measure Exclusion zone: all lands in the region except for the core infestation area of Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council and Tweed Shire Council. <i>Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.</i></p>
<p><u>Pampas grass</u> <i>Cortaderia</i> species</p>	<p>Regional Recommended Measure <i>Land managers mitigate the risk of the plant being introduced to their land. Notify the Local control authority if the plant is found on the land. Land managers prevent the weed from establishing on their land. The plant or parts of the plant are not traded, carried, grown, or released into the environment.</i> This Regional Recommended Measure applies to <i>Cortaderia jubata</i> (pink pampas grass)</p>
<p><u>Pampas grass</u> <i>Cortaderia</i> species</p>	<p>Regional Recommended Measure <i>Land managers mitigate the risk of the plant being introduced to their land. Notify the Local control authority if the plant is found on the land. The plant is eradicated from the land and the land is kept free of the plant. The plant or parts of the plant are not traded, carried, grown, or released into the environment.</i> This Regional Recommended Measure applies to <i>Cortaderia seloana</i>.</p>
<p><u>Paper mulberry</u> <i>Broussonetia papyrifera</i></p>	<p>Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.</i></p>
<p><u>Parkinsonia</u> <i>Parkinsonia aculeata</i></p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i></p>
<p><u>Parkinsonia</u> <i>Parkinsonia aculeata</i></p>	<p>Control Order Parkinsonia Control Zone: Whole of NSW <i>Parkinsonia Control Zone (Whole of NSW): Owners and occupiers of land on which there is parkinsonia must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of parkinsonia must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.</i></p>
<p><u>Parthenium weed</u> <i>Parthenium hysterophorus</i></p>	<p>Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i></p>
<p><u>Parthenium weed</u> <i>Parthenium hysterophorus</i></p>	<p>Prohibition on certain dealings <i>The following equipment must not be imported into NSW from Queensland: grain harvesters (including the comb or front), comb trailers (including the comb or front), bins used for holding grain during harvest operations, augers or similar for moving grain, vehicles used to transport grain harvesters, support vehicles driven in paddocks during harvest operations, mineral exploration drilling rigs and vehicles used to transport those rigs, unless set out as an exception in Division 5, Part 2 of the Biosecurity Order (Permitted Activities) 2017</i></p>
<p><u>Pond apple</u> <i>Annona glabra</i></p>	<p>Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i></p>
<p><u>Prickly acacia</u> <i>Vachellia nilotica</i></p>	<p>Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i></p>
<p><u>Prickly pears - Austrocyllindropuntias</u> <i>Austrocyllindropuntia</i> species</p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i> All species in the <i>Austrocyllindropuntia</i> genus have this requirement</p>
<p><u>Prickly pears - Cylindropuntias</u> <i>Cylindropuntia</i> species</p>	<p>Prohibition on certain dealings <i>Must not be imported into the state, sold, bartered, exchanged or offered for sale.</i> All species in the <i>Cylindropuntia</i> genus have this requirement</p>

Prickly pears - Opuntias

Opuntia species

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

For all *Opuntia* species except for *Opuntia ficus-indica* (Indian fig).

Red cestrum

Cestrum elegans

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.

Riverina pear

Opuntia elata

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

For all *Opuntia* species except for *Opuntia ficus-indica* (Indian fig).

Rope pear

Cylindropuntia imbricata

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

All species in the *Cylindropuntia* genus have this requirement

Rubber vine

Cryptostegia grandiflora

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Sagittaria

Sagittaria platyphylla

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Salvinia

Salvinia molesta

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Scotch broom

Cytisus scoparius subsp. *scoparius*

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Scotch broom

Cytisus scoparius subsp. *scoparius*

Regional Recommended Measure

Land managers should mitigate the risk of the plant being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant.

Sea spurge

Euphorbia paralias

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.

Seeded banana

Musa species

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.

Senegal tea plant

Gymnocoronis spilanthoides

Regional Recommended Measure

Land managers should mitigate the risk of the plant being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant.

Serrated tussock

Nassella trichotoma

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Shoebutton ardisia

Ardisia elliptica

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.

Siam weed

Chromolaena odorata

Prohibited Matter

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Sicklethorn

Asparagus falcatus

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.

Silverleaf nightshade

Solanum elaeagnifolium

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Skunk vine

Paederia foetida

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.

Smooth tree pear

Opuntia monacantha

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Snakefeather

Asparagus scandens

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Spongeplant

Limnobiium spongia

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

All species of *Limnobiium* are Prohibited Matter

Spotted knapweed

Centaurea stoebe subsp. *micranthos*

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Tiger pear

Opuntia aurantiaca

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Tobacco weed
Elephantopus mollis

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.

Tropical soda apple
Solanum viarum

Control Order

Tropical Soda Apple Control Zone: Whole of NSW

Tropical Soda Apple Control Zone (Whole of NSW): Owners and occupiers of land on which there is tropical soda apple must notify the local control authority of new infestations; destroy the plants including the fruit; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of tropical soda apple must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.

Velvety tree pear
Opuntia tomentosa

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Water caltrop
Trapa species

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

All species in the *Trapa* genus are Prohibited Matter in NSW

Water hyacinth
Eichhornia crassipes

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Water hyacinth
Eichhornia crassipes

Biosecurity Zone

The Water Hyacinth Biosecurity Zone applies to all land within the State, except for the following regions: Greater Sydney or North Coast, North West (but only the local government area of Moree Plains), Hunter (but only in the local government areas of City of Cessnock, City of Lake Macquarie, MidCoast, City of Maitland, City of Newcastle or Port Stephens), South East (but only in the local government areas of Eurobodalla, Kiama, City of Shellharbour, City of Shoalhaven or City of Wollongong).

Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone

Water lettuce
Pistia stratiotes

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.

Water mimosa
Neptunia oleracea

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.

This Regional Recommended Measure also applies to *Neptunia plena*

Water soldier
Stratiotes aloides

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Water star grass
Heteranthera zosterifolia

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.

Wheel cactus
Opuntia robusta

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

White blackberry
Rubus niveus

Regional Recommended Measure

Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.

Willows
Salix species

Prohibition on certain dealings

Must not be imported into the state, sold, bartered, exchanged or offered for sale.

All species in the *Salix* genus have this requirement, except *Salix babylonica* (weeping willows), *Salix x calodendron* (pussy willow) and *Salix x reichardtii* (sterile pussy willow)

Witchweeds
Striga species

Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

All species in the *Striga* genus are Prohibited Matter in NSW, except the native *Striga parviflora*

Yellow bells
Tecoma stans

Regional Recommended Measure

Exclusion zone: whole region excluding the core infestation area of Richmond Valley Council, Ballina Shire Council, Lismore Council, Kyogle Council, Byron Shire Council, Tweed Shire Council, Bellingen Shire Council and Coffs Harbour City Council (Brunxer Park and Woolgoolga only).

Whole region: The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets.

Yellow burrhead
Limncharis flava

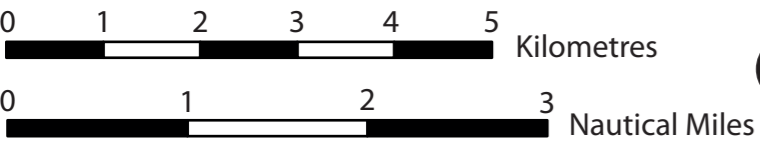
Prohibited Matter

A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

The content provided here is for information purposes only and is taken from the *Biosecurity Act 2015* and its subordinate legislation, and the Regional Strategic Weed Management Plans (published by each Local Land Services region in NSW). It describes the state and regional priorities for weeds in New South Wales, Australia.

Appendix J – Marine Parks Zoning Map

Solitary Islands Marine Park Zoning Map



Map Projection: Unprojected Geographic. Horizontal Datum: Geodetic Datum of Australia (GDA94) 1:90,000 @ A1. Produced 2018.

- Sanctuary Zone
- Habitat Protection Zone
- Habitat Protection Zone (Shore-based line fishing only)
- Habitat Protection Zone (Grey Nurse Shark Key Habitat Restriction/Prohibition on Commercial Fish Trapping)
- Habitat Protection Zone (Prohibition on Commercial Fish Trapping)
- Habitat Protection Zone (Prohibition on Crab Trapping)
- General Use Zone
- Special Purpose Zone
- National Park Zone (Commonwealth waters)
- Multiple Use Zone (Commonwealth waters)
- Special Purpose Zone (Commonwealth waters)

- Public Moorings*
*Refer to SMP user guide for conditions of use
- Zone Markers (Selected areas only)
- Zone Marker Buoys

Activity Table - Solitary Islands Marine Park (New South Wales waters)	Sanctuary Zone	Habitat Protection Zone	General Use Zone
Recreational fishing*			
Line fishing	X	✓ (a)	✓
Trapping	X	✓ (h)	✓
Spearfishing	X	✓ (b)(h)	✓
Netting	X	✓ (c)(h)	✓
Boating and watercraft			
Recreational boating	✓	✓	✓
Personal watercraft	✓ (d)	✓ (d)	✓
Anchoring	X	✓	✓
Non-extractive activities			
SCUBA diving/snorkelling	✓	✓	✓
Surfing	✓	✓	✓
Sailing	✓	✓	✓
Collecting			
Scientific/educational	P	P	P
Recreational: bait, shellfish, etc*	X	✓ (e)(h)	✓
For private aquariums*	X	✓	P
For commercial aquariums	X	X	X
Competitions			
Line fishing/spearfishing	X	P	P
Surfing/sailing	P	P	P
Miscellaneous			
Aquaculture*	X	X	✓
Organised research (other than for personal interest)	P	P	P
Commercial tourist activities	P	P	P
Commercial fishing			
Prawn trawling	X	X	✓
Beach hauling	X	X (f)	✓
Purse seine	X	X	X
Setline/dropline	X	X	X
Longline (surface and demersal)	X	X	X
Estuary mesh netting	X	X	X
Line fishing	X	✓ (a)(h)	✓
Hand gathering (pipis & beachworms)	X	✓ (h)	✓
Spanner crab netting	X	✓ (h)	✓
Crab trapping	X	✓ (g)(h)	✓
Lobster trapping	X	✓ (h)	✓
Fish trapping (maximum of 10 traps)	X	✓ (g)(h)	✓
Lift netting for bait (non-saleable only)	X	✓ (h)	✓

A summary of activities permitted and restrictions that apply are detailed above. Refer to the Marine Estate Management (Management Rules) Regulation 1999 for full details.

Note: All other relevant legislation continues to apply in addition to the management rules.

* Requires fishing licence/permit. P Permit required.

- (a) Wire traces for bottom fishing are prohibited within 500 metres of North and South Solitary Islands (grey nurse shark key habitat areas). Wire traces are permitted for trolling purposes, but only whilst a vessel is underway. Fishing with bait is prohibited within 200 metres of grey nurse shark aggregation sites at North and South Solitary Islands.
- (b) Not permitted in estuaries or on ocean beaches (except the last 20m at each end of the beach).
- (c) Recreational nets permitted for taking prawns and crabs in habitat protection zones are the scoop, landing, scissor (push) or hoop (lift) nets.
- (d) Not permitted in estuaries, except when transiting the lower reaches of the Sandon, Corindi and Woolli Rivers at slow speeds from the lowest boat ramp to exit the river.
- (e) No collecting at Diggers Camp rock platform or Moonee Beach.
- (f) Beach hauling is permitted in designated areas only on the following beaches within daylight hours and on weekdays only: Park Beach (south of creek mouth), Sandy Beach, Woolgoolga Front Beach, Arrawarra Beach (south of creek mouth) and Station Creek (southern end).
- (g) Prohibitions apply to specific areas (see map).
- (h) Not permitted at Minnie Water Back Beach, Bare Bluff at Diggers Point, or Moonee Beach.

NOTE: Commonwealth waters management plan effective from 1 July 2018.

Activity table - Solitary Islands Marine Park (Commonwealth waters)	National Park Zone	Multiple Use Zone	Special Purpose Zone (Trawl)
Commercial activities			
Net (demersal and pelagic)	X	X	X
Trawl (demersal) and Danish seine	X	X	✓
Trawl (midwater), Purse seine	X	✓	✓
Dropline, Trotline, Longline (demersal, auto longline)	X	✓	✓
Handline, rod & reel, trolling, squid jig, poling	X	✓	✓
Trap and pot (including spanner crab net)	X	✓	✓
Hand collection	X	✓	✓
Commercial tourism - Charter fishing			
Commercial tourism - Nature watching, SCUBA diving	✓	✓	✓
Other activities			
Recreational fishing (including spearfishing and collecting)	X	✓	✓
Recreational use (non-extractive - including SCUBA diving, nature watching, and boating)	✓	✓	✓
Scientific research/monitoring	✓	✓	✓

A summary of relevant activities that are allowed, require authorisation or are not allowed are detailed above. Refer to the Temperate East Marine Parks Network Management Plan 2018 for full details.

- 1 Authorisation required to carry out the activity. For further information contact Parks Australia
- 2 Recreational fishing must be conducted in accordance with relevant New South Wales laws.

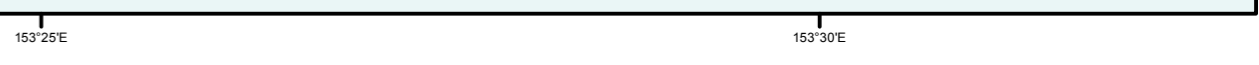
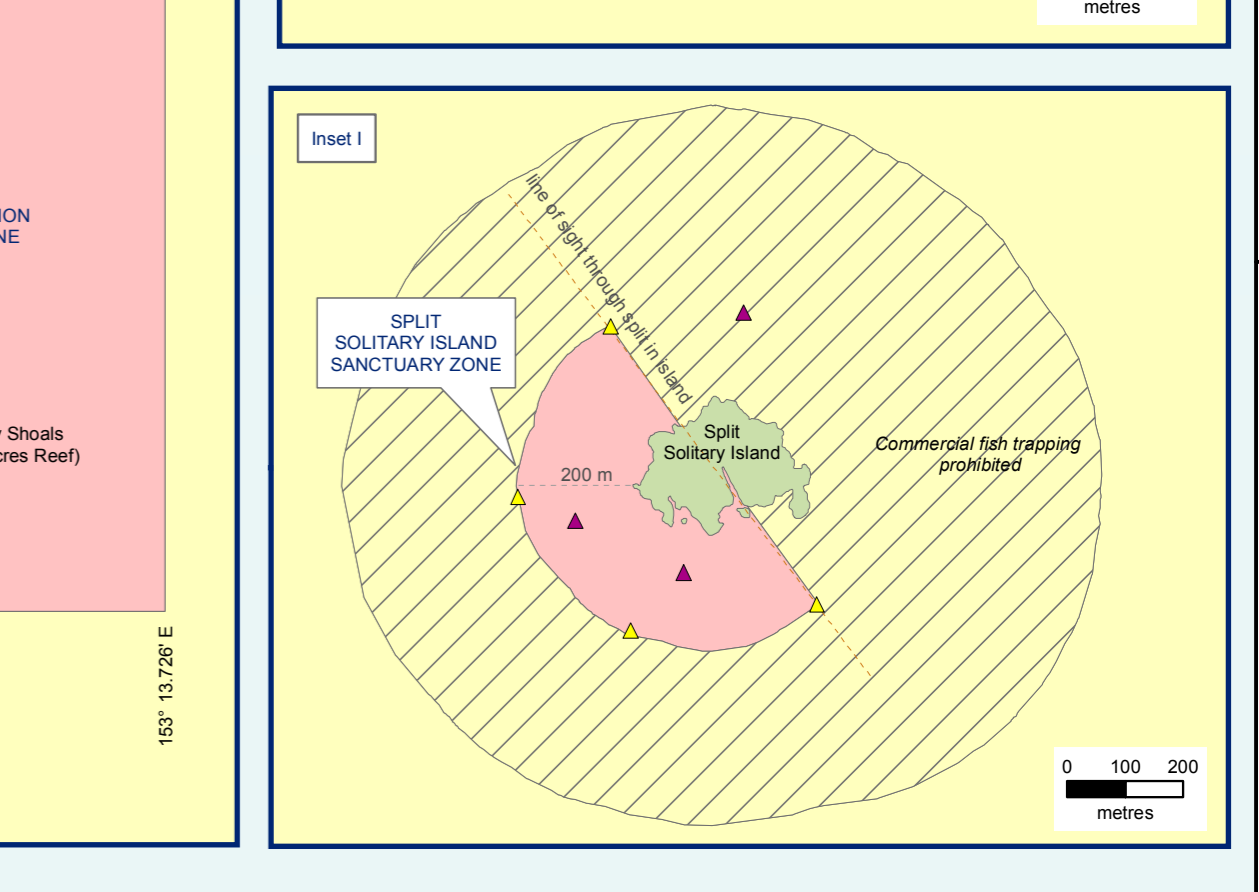
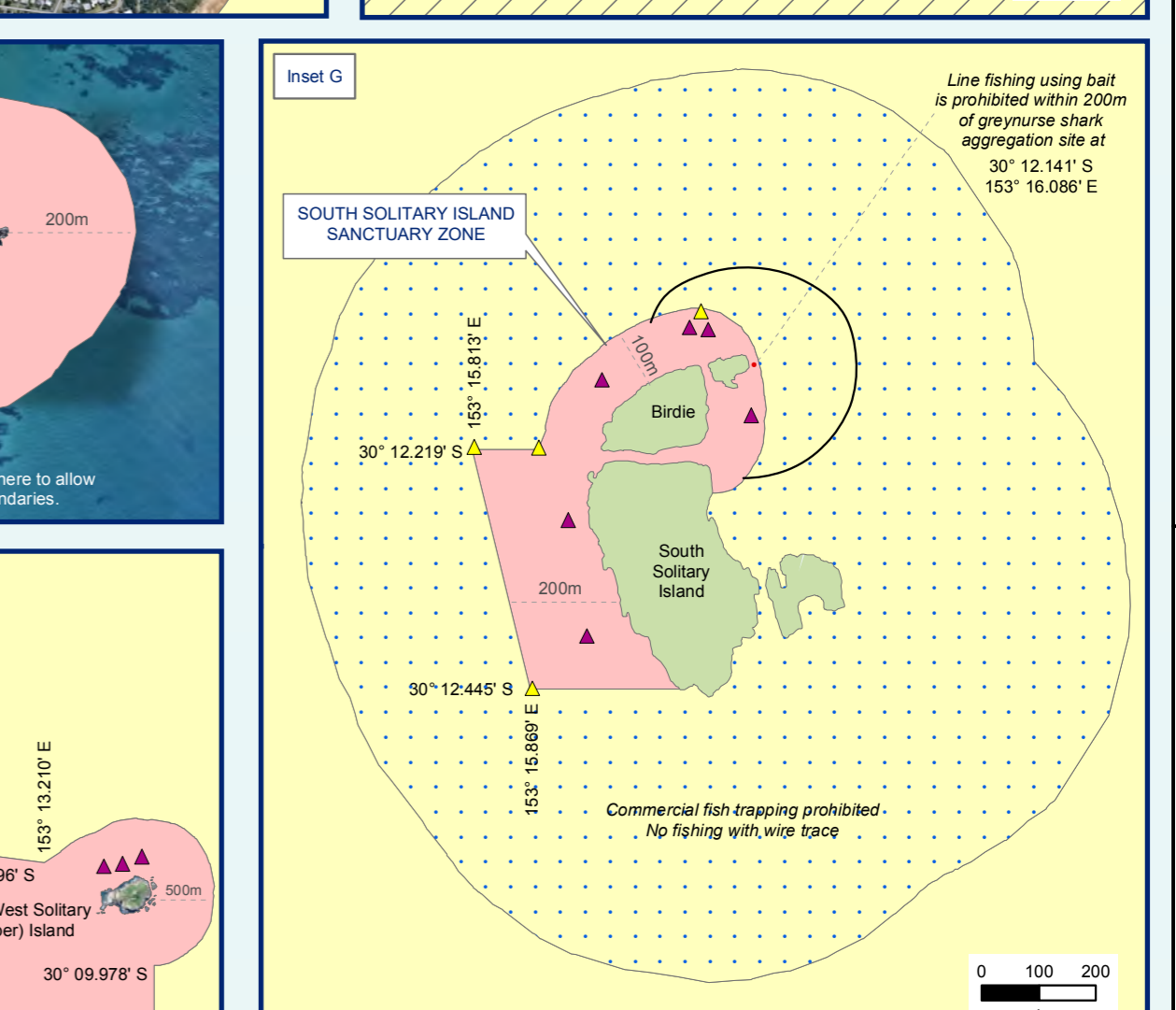
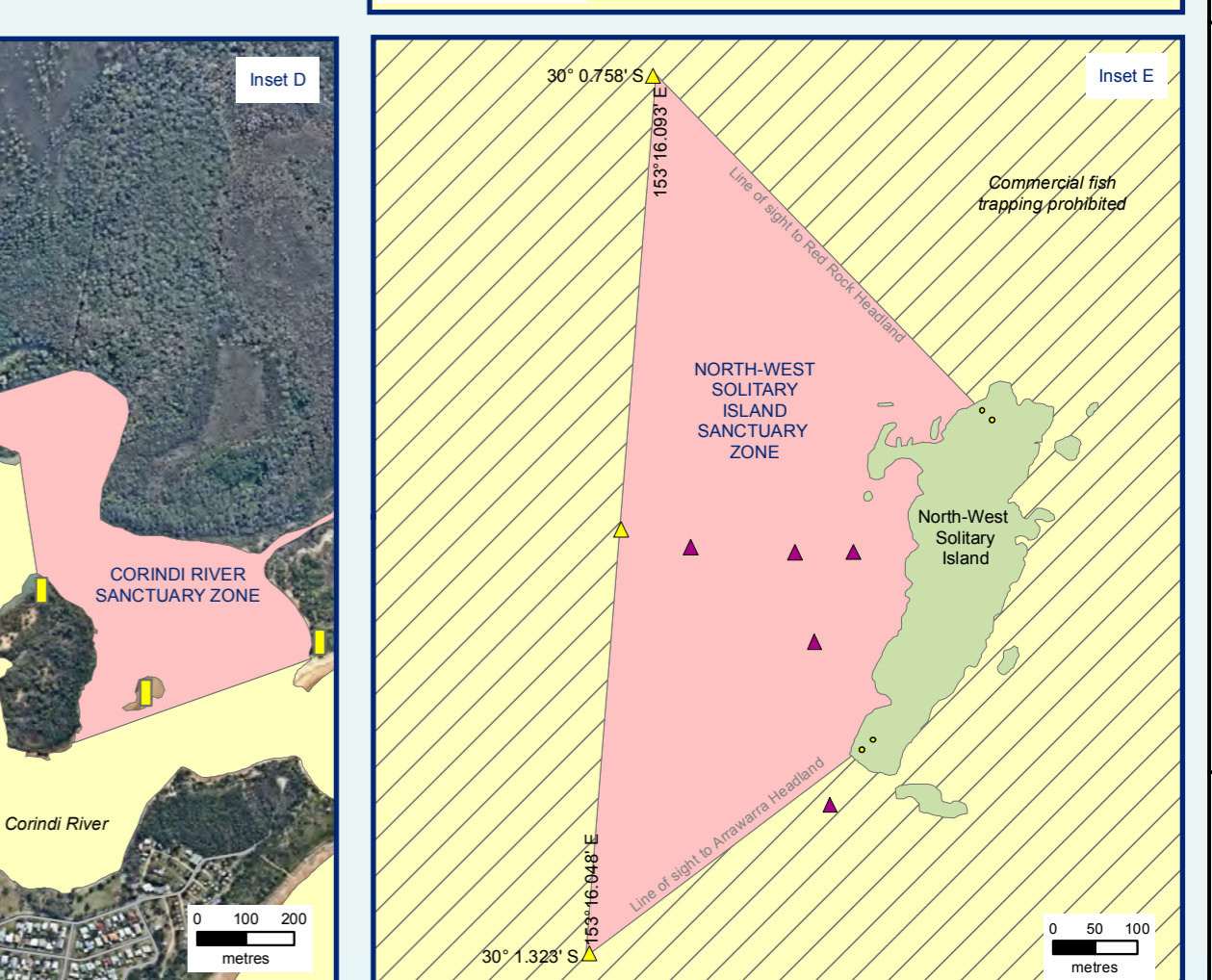
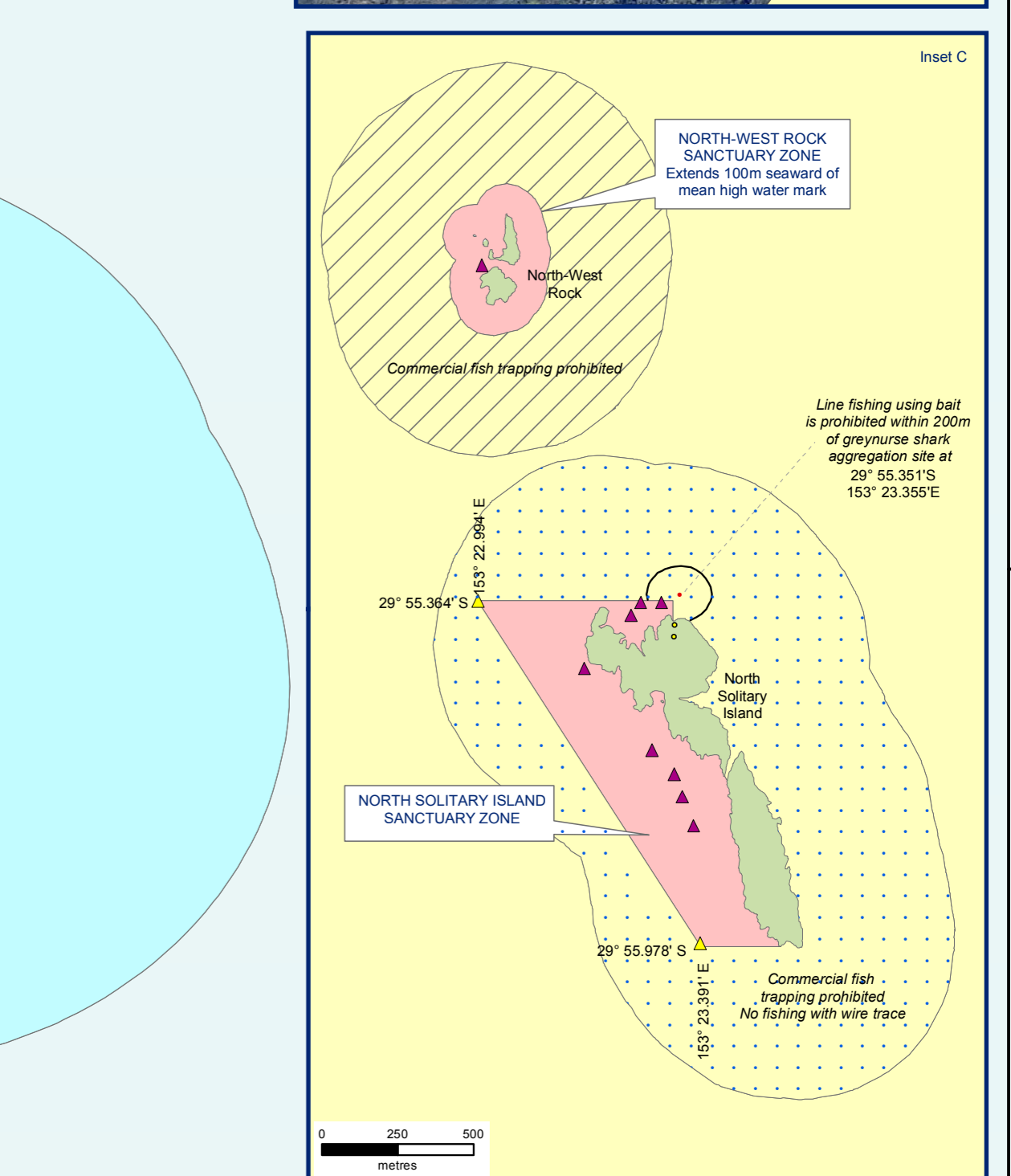
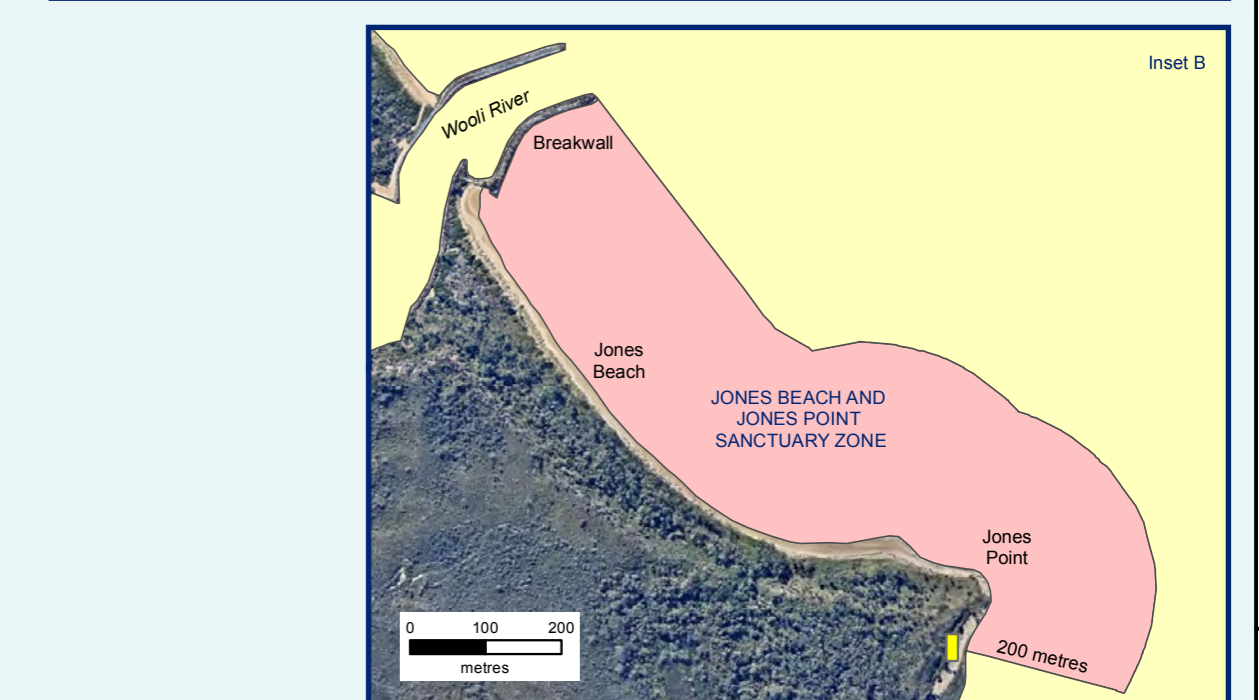
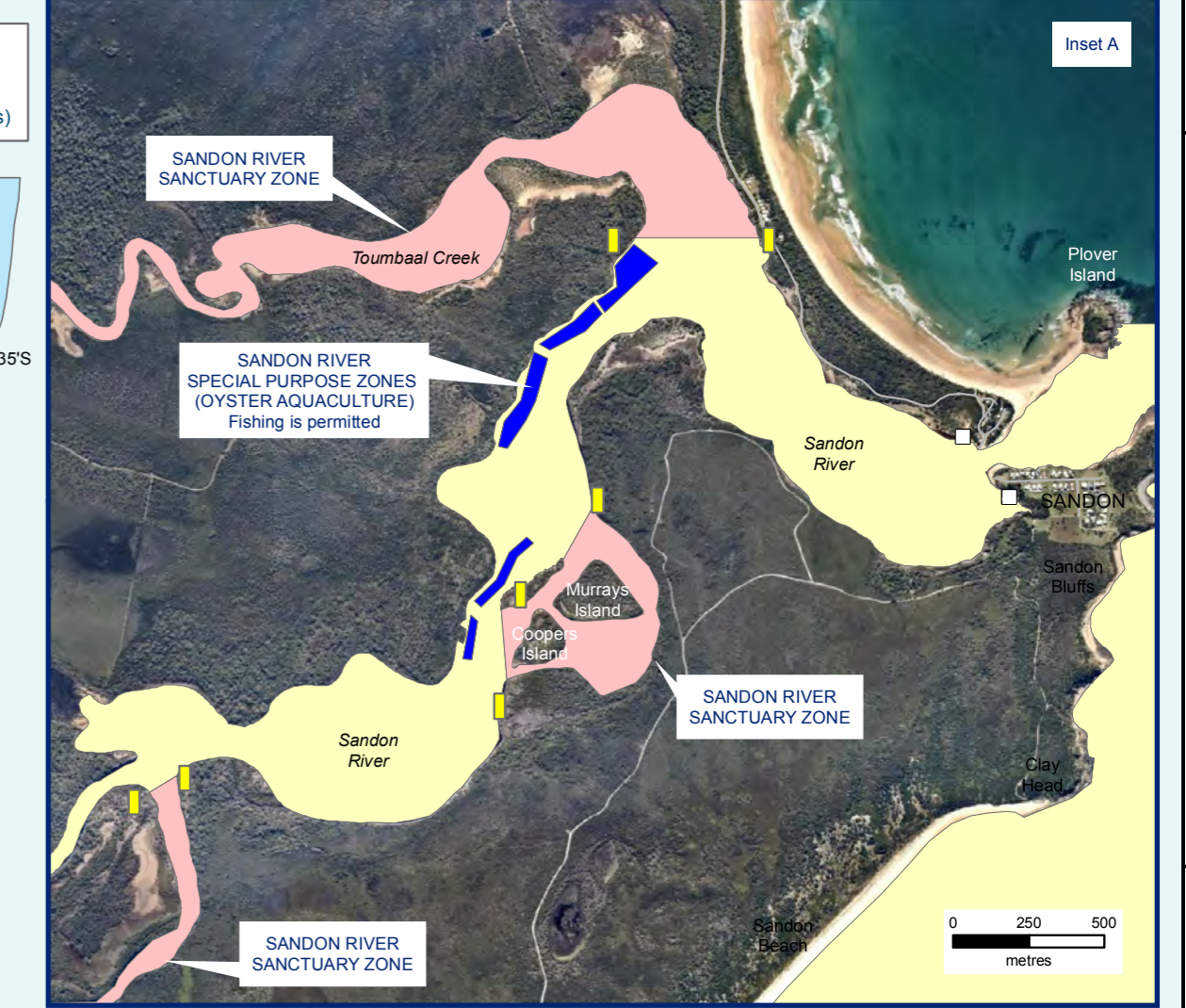
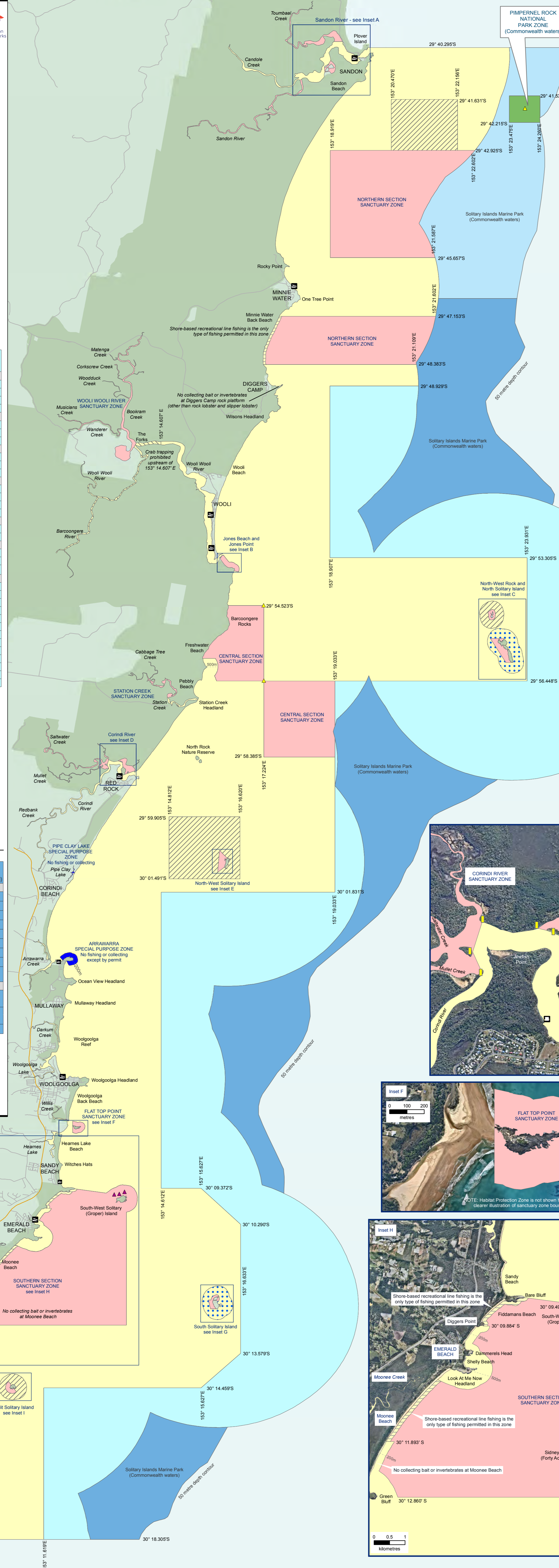
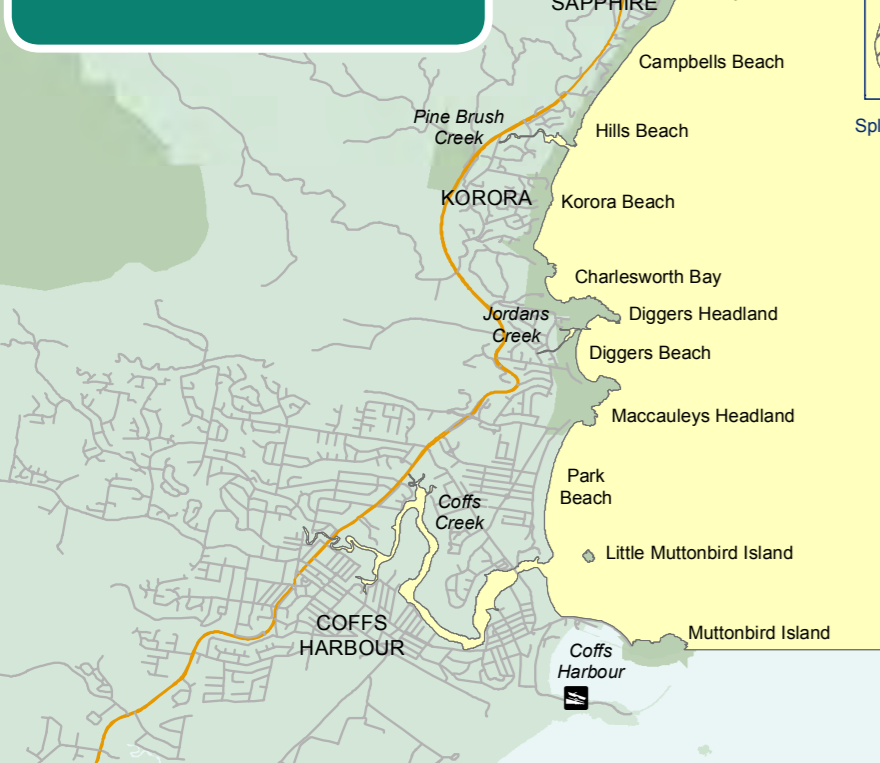
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Zoning maps for NSW marine parks are available for free on smart phones and tablets from the **Avenza Map Store** and as part of the **NSW DPI FishSmart app**.

To use Avenza Maps, download the app from the iTunes store or Google Play.

Once installed, go to the Avenza Maps Store and search for DPI Fisheries to find and download available maps.

Alternatively, the **NSW DPI FishSmart app** provides recreational fishers access to essential information needed to fish in NSW waters, including marine park maps.



About this release

Reference number	EIA-P05-G01-T05
Title	EIA template: Minor works review of environmental factors (Maritime)
Parent procedure	EIA-P05-2
Prepared by	Senior Environment Officer (Planning and Assessment) Senior Environment Specialist (Planning and Assessment)
Approved by	Director Environmental Policy, Planning and Assessment
Document location	Objective: Global Folder \ RMS Global Folder \ ENVIRONMENT \ Procedures \ Environment Planning and Assessment Procedures \ Environmental Planning and Assessment Procedures – EIA-P01 Routine and minor works
Document status	Version 3.0, 05 FEB 2021

Version	Date	Revision description
1.0	05.01.09	First issue
1.1	20.08.09	Amendments to Section 1, Section 1.2 Section 2 and Section 5 – New sign-off for the environmental assessment contractor.
2.0	01/11/11	Table formatting and style amended throughout. Best practice updates. Changes based on legislation amendments.
2.1	13/07/12	Addition of Growth Centres SEPP consultation.
2.2	02/05/13	Update to Clause 228 checklist.
2.3	15/07/13	Update to Commonwealth Minister portfolio
2.4	27/07/15	Included Maritime references and updated hyperlinks
2.5	30/09/15	Update to incorporate requirements of EPBC Act strategic assessment
2.6	11/08/17	Various minor edits. Updated hyperlinks and reference to WaterNSW. Rebranded and made web accessible.
2.7	05/03/18	Update to incorporate legislative updates (EP&A Act, ISEPP, BC Act), agency name changes, RMS delegation title changes
2.8	05/06/18	Updated to incorporate legislative updates (Coastal Management SEPP), edits to Section 3.3 (Noise and vibration), Section 3.7 (Biodiversity) and Section 3.12 (Waste) and various minor edits.
2.9	03/09/18	Marco enabled checkboxes added to replace Word standard checkboxes and minor edits.
3.0	04/10/18	Updated to incorporate legislative updates (ISEPP)



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