Review of Environmental Factors

for

Construction (including Dredging) & Operation of New Berthing Facility within Existing Marina

Ulladulla Harbour

PROPONENT: SHOALHAVEN CITY COUNCIL

PREPARED BY: PETER DALMAZZO

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ATTACHMENTS

1 INTRODUCTION

1.1 Background

Peter Dalmazzo was commissioned by Shoalhaven City Council to prepare this review of environmental factors for a proposed berthing facility at Ulladulla Harbour. This review of environmental factors includes an assessment of potential environmental impacts and information on statutory requirements, licences and/or permits that may need to be considered for construction (including dredging) and operation of the facility. Under Part 5 of the Environmental Planning & Assessment Act, Shoalhaven City Council is the proponent and a determining authority for the construction (including dredging) and operation of the berthing facility.

1.2 Location and Land Tenure

The location of the site is shown in Figures 1, 2 and 3. Ulladulla Harbour is located in the City of Shoalhaven on the south coast of NSW, about 220 kilometres south of Sydney. The site of the proposed activity is located on the southern side of Ulladulla Harbour between the existing “Tee Jetty” and land to the southeast, near the “Stone Jetty”. The bed of the harbour is Crown land reserved for port purposes. The facility would be located near and accessed from Lot 7314 DP 1166835 (Figure 4), which is part of Shoalhaven Regional Crown Reserve 1011528 for Access and Public Requirements, Tourism Purposes and Environmental and Heritage Protection notified 30 June 2006. Dredging was included as a purpose for which the reserve is to be used or occupied in NSW Government Gazette 89 16 October 2015.

2 JUSTIFICATION & DESCRIPTION OF PROPOSED ACTIVITY

2.1 Project Justification

Ulladulla Harbour provides locals and tourists with an access point for recreational boating, diving and fishing. The harbour is also of key importance to the local fishing industry. In order to cater for increased demand within the community for recreational boating, commercial fishing and tourism, the new berthing facility would cater for vessels which at present have little opportunity to get a mooring in the harbour. The facility would mainly cater for motor cruisers but there is anticipated to be provision for at least one berth for deep keeled yachts. With assistance from the Australian Government and the NSW Government (through the Boating Now Program and the Department of Planning, Industry and Environment), Shoalhaven City Council will deliver the project, to facilitate and encourage the operation of private, charter and commercial vessels.

2.2 General Description of the Proposed Activity

The proposed activities are:

- dredging part of the harbour bed to a navigable depth (including removal of the mudstone rock platform in the southern comer) as shown in Figure 5
- construction of a floating pontoon public berthing facility (Figure 6)
- operation of the berthing facility.

Council will require occupation of Lot 7314 DP1166835 and/or the unidentified Crown land forming the southern end of Ulladulla Harbour for storage, stock piling, site office etc.

Dredging and Spoil Disposal

Initial estimations indicate that the overall dredge footprint would be 3,018 square metres (Earth2Water Pty Ltd, 2020) yielding an *in situ* volume of overlying sediments in the order of 1,132 cubic metres and 2,741 cubic metres of *in situ* bedrock (Magryn, 2021). As described in Section 2.3.c below, GHD (2018) shortlisted two methods for deepening the harbour:

- Hydraulic and mechanical dredging, possibly with the use of geotube containers and skip bins
- Mechanical dredging only, with the use of skip bins.

These methods were further considered by Terra Insight (2020) as described in Section 2.3.c below. Tenderers for the works will be invited to propose their preferred dredging method.

For either method, skip bins would be placed on top of the rock platform in front of the stone wall for draining while the backhoe dredger worked the western half of the dredge area. After dredging in the western half of the project area is complete, the backhoe dredger would be relocated to the eastern half. It is recognised that a point would be reached where there would be insufficient rock platform to support the skip bins. At this point, the skip bins would be placed on the car park area adjacent to the work site and within the reach of the backhoe dredger to allow the final sections of the rock platform to be dredged. Sediment material will be dredged separately (by suction method), dewatered, placed into skip bins and transported to the approved disposal facility daily. The sediments are likely to dewater rapidly during the skip loading operation given their coarse character. The return waters would be discharged into the harbour within a silt curtain.

The beneficial reuse of the Ulladulla Harbour dredged sediments is proposed for the West Nowra Landfill as daily cover material. As proposed by Earth2Water Pty Ltd (2020), monitoring and validation of dredged stockpile material will be undertaken to assess PASS (pH testing) and any odour/dust issues prior to any offsite disposal. The spoil would be transported in sealed or covered trucks to the waste disposal location.

The beneficial reuse of the Ulladulla Harbour dredged rock will be utilised in the proposed development of 188 Camden Street Ulladulla (Lot 1 DP1137716) into an industrial estate. Dredged rock will be loaded into skip bins or directly onto dump trucks at the harbour and transferred by road directly to Camden Street. The transportation, processing (crushing), storage and subsequent use of the rock will be the subject of separate development applications.

Construction of Berthing Facility

Berthing facility construction would include:

- fabrication and provision of new floating pontoon berthing facility
- installation of mooring piles, pontoon restraint piles and jetty support piles
- establishment of 19 berths with a mixture of 4.5 to 5.5 metre widths and 8 to 12 metre lengths
- construction of concrete paths, security gate and fence

- construction of platforms and gangway ramp to access the pontoon
- provision of effluent pump-out, power and water supply
- a dedicated future amenities facility may be built in the foreshore/carpark area adjacent to the berthing facility and this will be subject to a separate environmental assessment and available budget.

Figure 1. Location of Ulladulla Harbour.
Source: © NSW Department of Finance and Services Panorama Avenue Bathurst NSW 2795
www.six.nsw.gov.au

Figure 2. Location of proposed berthing facility in the harbour.
Source: © nearmap www.nearmap.com.au

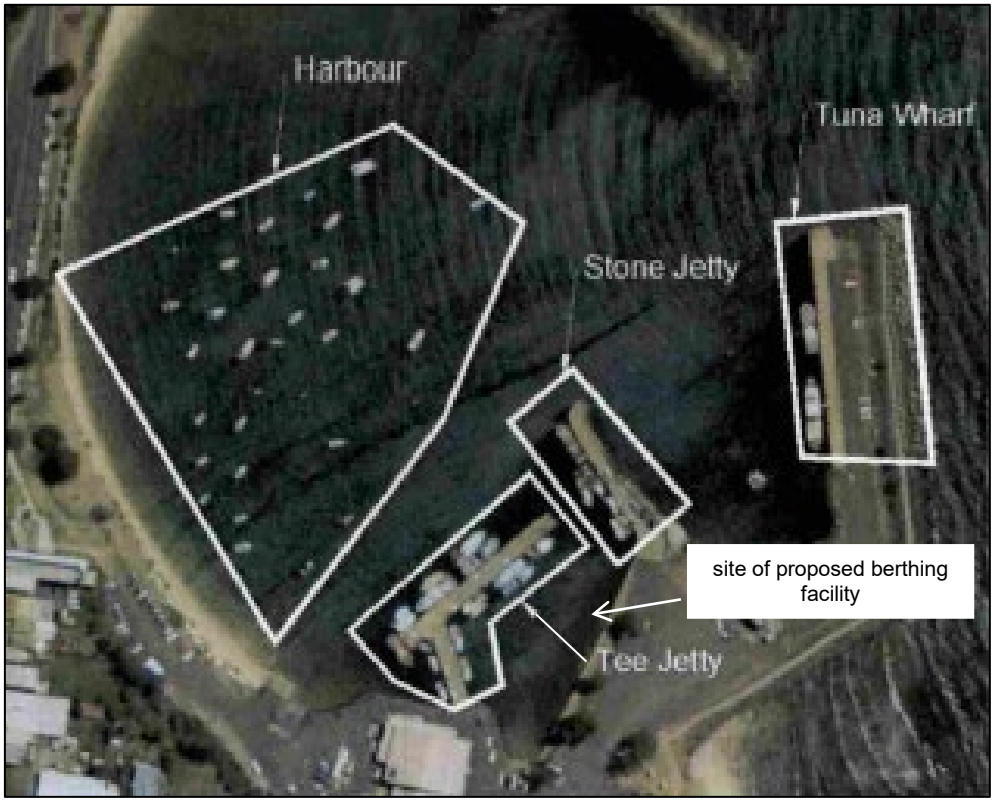

Figure 3. Existing wharves and mooring areas in the harbour (from GHD, 2012a).

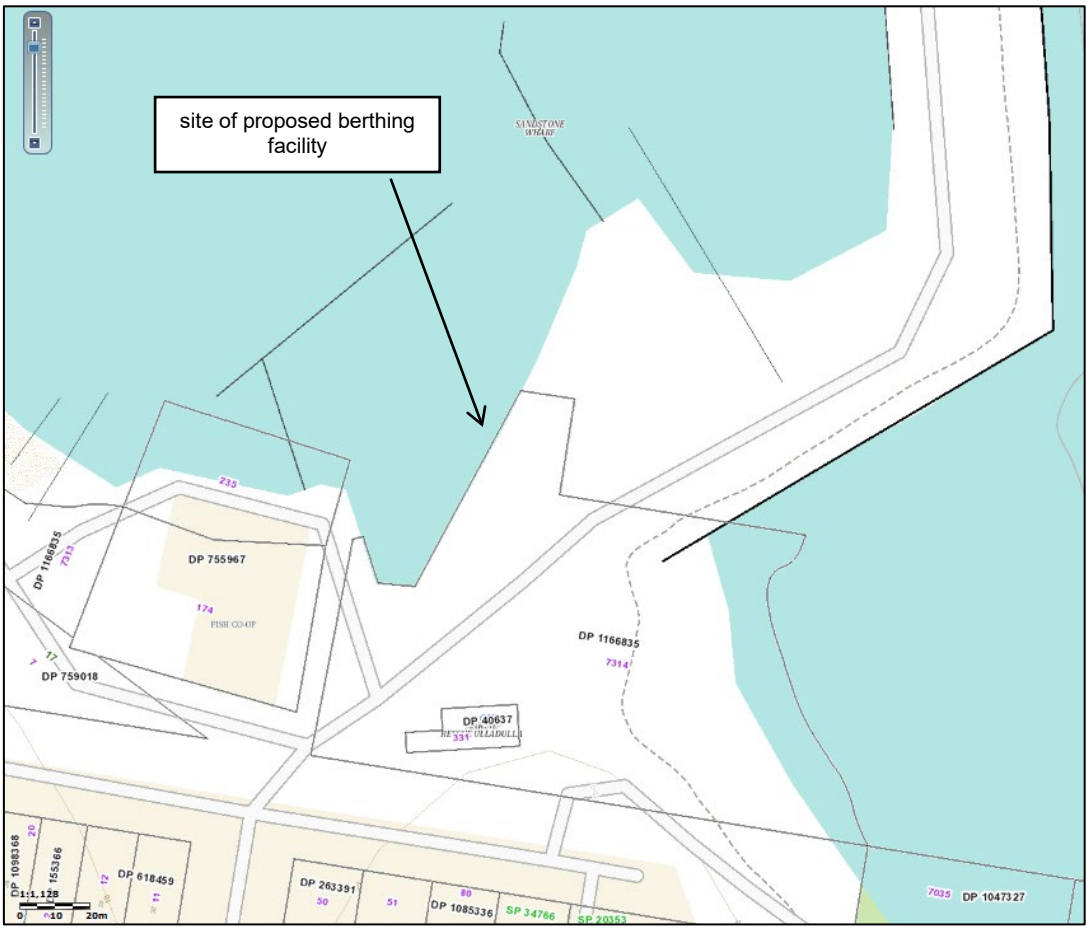

Figure 4. Lot boundaries near the subject site.
Source: © NSW Department of Finance and Services Panorama Avenue Bathurst NSW 2795
www.six.nsw.gov.au

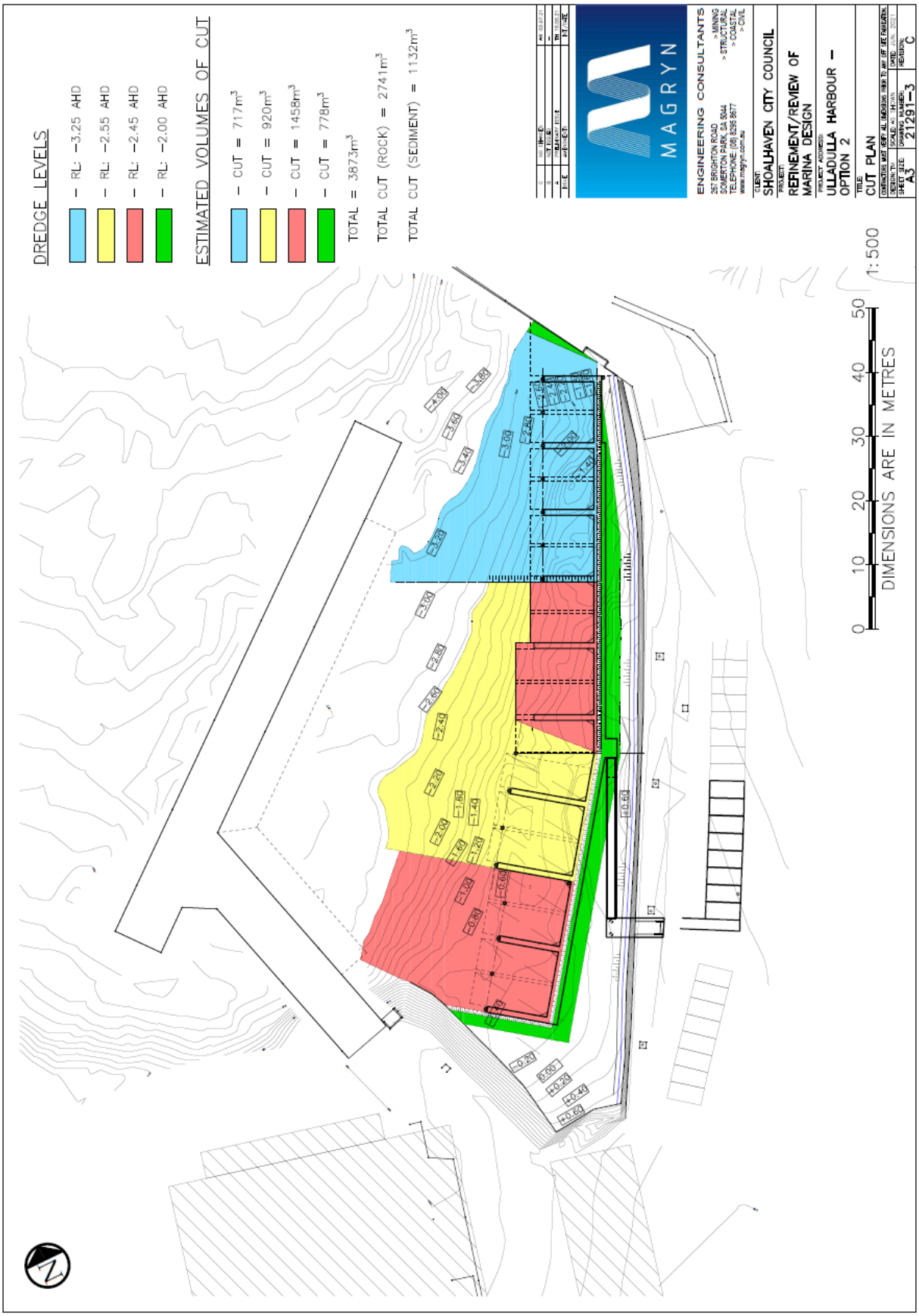

Figure 5. Location and levels of proposed dredging in the harbour (from Magryn, 2021).

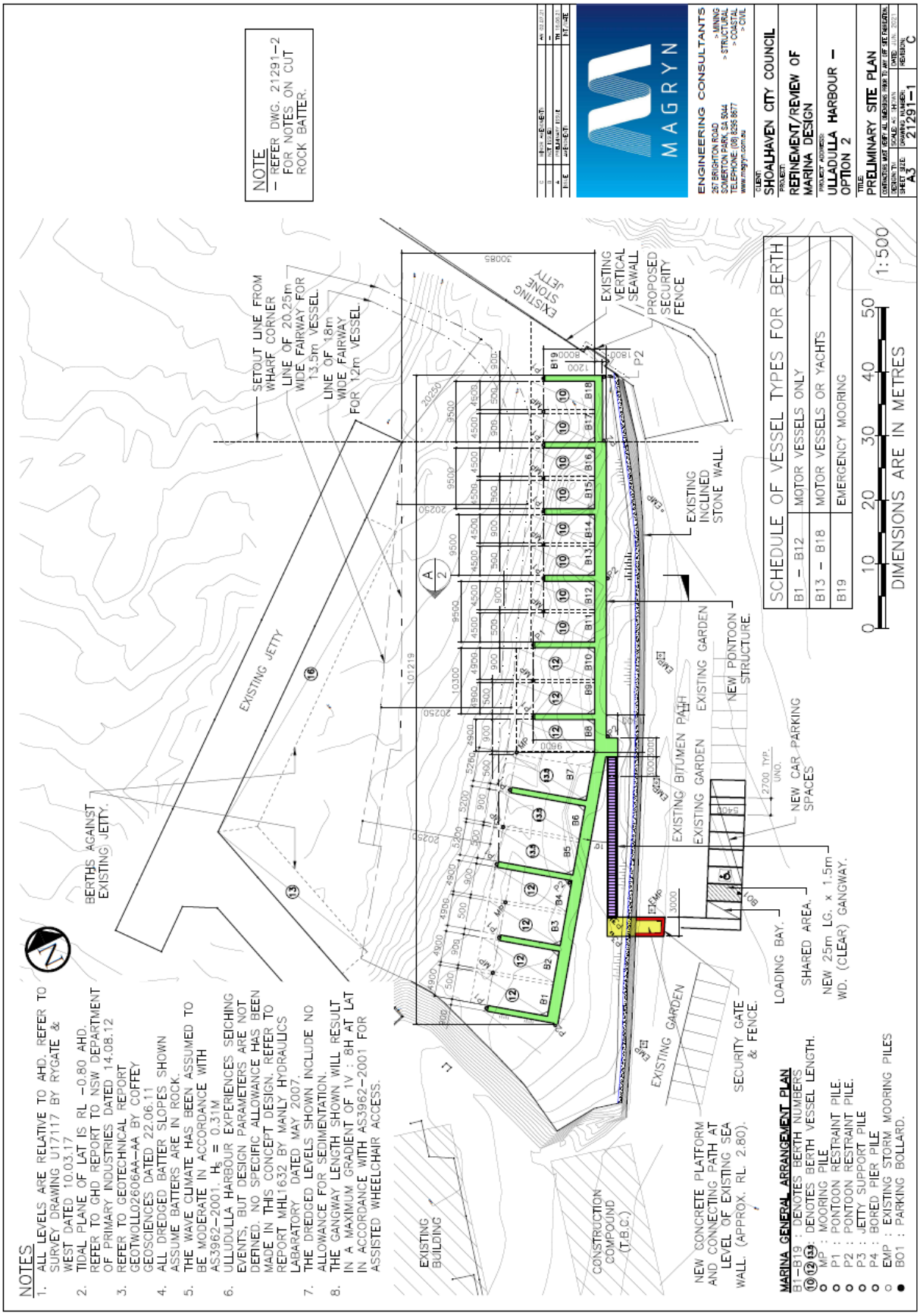

Figure 6. Layout of the proposed berthing facility (from Magryn, 2021).

2.3 Consideration of Alternatives

2.3.a Do Nothing

There would continue to be limited opportunities for additional mooring of recreational and commercial vessels in the harbour, including resident and visiting vessels.

2.3.b Other locations and layouts

In 2007 Patterson Britton & Partners prepared an Ulladulla Harbour Development Plan. This feasibility study defined two options for developing a much larger marina in Ulladulla as follows:

- approximately 200 floating berths in the harbour and 17 floating berths in the area between the Tee Jetty and land to the southeast
- approximately 200 floating berths in the harbour and 50 floating berths at the area where the Tee Jetty is located; this option included the demolition of the Tee Jetty.

The report noted that the introduction of wet berths within the small inner harbour was feasible and would involve the dredging of this area to a uniform navigable depth (including the partial removal of the mudstone rock platform in the southern comer).

GHD (2012a) investigated seven possible pontoon layouts for the area between the Tee Jetty and the land to the southeast, with a layout plan being drawn for one option by TLB Pty Ltd . An additional option (option 2) was drawn by Magryn Pty Ltd (2018) which reduced the volume of rock removal required and this is the adopted layout.

Revisions to the plan were made following a site meeting on 4 May 2021 attended by a DPI Senior Fisheries Manager, Council officers and Peter Dalmazzo to discuss options for making the proposal more environmentally friendly.

2.3.c Dredging and Spoil Disposal Options

GHD (2018) examined various types of plant (including backhoe dredger, cutter suction dredger, silt curtain) and methodologies for deepening the harbour. The two options for undertaking dredging were described by GHD as follows.

The first option is to remove the overlaying sediment using a hydraulic dredging method before starting the bedrock dredging with mechanical method:

- A hydraulic pump would be attached to the boom of the backhoe dredger. The pump would act as a vacuum and would be ideal for dredging soft material. The dredged overlaying sediment (in a slurry state) would be disposed of into geotube containers placed on a bunded section of the car park for dewatering. It is envisaged that the return waters would be discharged into the harbour within a silt curtain.
- The drained geotube containers would then be taken to landfill facilities for disposal.
- Due to the physical limitations on site, it was considered that skip bins would be ideal for containing the dredged bedrock.
- Once a bin was loaded, it would remain on the platform for a period of time to allow draining.

The second option is to remove the overlaying sediment along with bedrock with mechanical method. In this option, the dredged material (mixture of overlaying sediment and bedrock) would be disposed of directly into skip bins.

Based on rock encountered during more recent investigations, Terra Insight (2020) also considered several methods of excavation within the harbour, as follows:

Cutter dredge: these are large vessels and based on the volume of material to be removed and the potential that a significant volume of material to be removed will be comprised of medium to high strength rock, this option is unlikely to be a cost effective solution and was not considered further.

Backhoe dredger: these dredges are typically specifically designed for dredging hard materials and would be suited to the required operations within the harbour but its operation may be limited by the available draft below the barge. Consequently, some operations may need to be undertaken from the shore line or during high tide using other alternative methods of excavation. The option may also require areas of high strength rock to be pre-treated.

Excavator and barge: a more cost effective alternative to the backhoe dredger, given the size of the harbour and the low volume of material to be removed, would be to adopt an excavator with the ability to saw the rock into suitable sized material for extraction by the same excavator. Some of this work could be undertaken by the same excavator from near the shoreline (if a long reach excavator is adopted) or from the shoreline at low tide (depending on the type of excavator adopted). Areas of excavation deeper in the harbour would require adoption of a large jack up barge capable of supporting the excavator. An additional barge may be required to remove the cut material within the deeper parts of the harbour.

GHD (2012b) examined the following potential dredge spoil disposal options:

- beneficial re-use options including beach nourishment, road base, rock revetment
- ocean disposal
- land reclamation
- on-shore disposal to a suitably licensed landfill facility.

The feasibility of selected beneficial re-use options was further assessed by Earth2Water Pty Ltd (2020). They investigated the proposed reuse and disposal options of:

- rock - land development at 188 Camden Street (former sewerage treatment works)
- sediment - disposal as landfill at the licensed waste facility in West Nowra.

Details of these proposed options are presented in Section 7.2.m.

3 LEGISLATION AND PERMIT REQUIREMENTS

3.1 NSW Environmental Planning & Assessment Act 1979 & Regulation 2000

As described in Section 3.2 below, development consent is not required for the proposed dredging, construction or operation of the facility. The proposals constitute 'activities' for the purposes of section 5.1 of the Act, being carried out by (or on behalf of) public authorities. Section 5.5 in Part 5 of the Environmental Planning and Assessment Act requires that the determining authorities must examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the activity. Section 5.7 requires that an assessment must also be made of whether the proposed activity is likely to have a significant effect on the environment and therefore whether or not an environmental impact statement is required. These assessments are included in Section 7 of this review of environmental factors.

Although development consent is not required, the following is considered as a guide to the level of environmental assessment required. Section 4.12(8) of the Act states that a development application for designated development is to be accompanied by an environmental impact statement. The proposed facility with 19 berths for vessels up to 15 metres in length does not exceed the following criteria from clause 23 of Schedule 3 of the Regulation and so would not be designated development if development consent was required:

> 23 Marinas or other related land and water shoreline facilities
> *(1) Marinas or other related land or water shoreline facilities that moor, park or store vessels (excluding rowing boats, dinghies or other small craft) at fixed or floating berths, at freestanding moorings, alongside jetties or pontoons, within dry storage stacks or on cradles on hardstand areas:*
> *(a) that have an intended capacity of 15 or more vessels having a length of 20 metres or more, or*
> *(b) that have an intended capacity of 30 or more vessels of any length and:*
> *(i) are located in non-tidal waters, or within 100 metres of a wetland or aquatic reserve, or*
> *(ii) require the construction of a groyne or annual maintenance dredging, or*
> *(iii) the ratio of car park spaces to vessels is less than 0.5:1, or*
> *(c) that have an intended capacity of 80 or more vessels of any size.*
> *(2) Facilities that repair or maintain vessels out of the water (including slipways, hoists or other facilities) that have an intended capacity of:*
> *(a) one or more vessels having a length of 25 metres or more, or*
> *(b) 5 or more vessels of any length at any one time.*

3.2 State Environmental Planning Policy (Infrastructure) 2007

Part 3 Division 13 of SEPP (Infrastructure) deals with port, wharf or boating facilities. By virtue of clause 68(4) the SEPP, development for the purpose of wharf or boating facilities may be carried out by or on behalf of a public authority without consent on any land. Wharf or boating facilities means a wharf or any of the following facilities associated with a wharf or boating that are not port facilities:

(a) facilities for the embarkation or disembarkation of passengers onto or from any vessels, including public ferry wharves,

(b) facilities for the loading or unloading of freight onto or from vessels and associated receival, land transport and storage facilities,
(c) wharves for commercial fishing operations,
(d) refuelling, launching, berthing, mooring, storage or maintenance facilities for any vessel,
(e) sea walls or training walls,
(f) administration buildings, communication, security and power supply facilities, roads, rail lines, pipelines, fencing, lighting or car parks.

Furthermore, by virtue of subclause 68(5) consent is not required for the operation of the berthing facility or any of the following purposes if the development is in connection with the berthing facility:

(a) construction works (including dredging or land reclamation, if the dredging or land reclamation is required for the construction of those facilities),
(b) routine maintenance works (other than maintenance that is exempt development),
(c) environmental management works,
(d) alteration, demolition or relocation of a local heritage item,
(e) alteration or relocation of a State heritage item.

It is considered that the proposed berthing facility meets the above definition of wharf or boating facilities so development consent is not required for the dredging, construction or operation of the facility.

Part 2 Division 1 clause 16 Clause 16 requires that Council must give written notice of the intention to carry out the development to the Maritime Authority of NSW and take into consideration any response to the notice that is received from that authority within 21 days after the notice is given.

3.3 State Environmental Planning Policy (Coastal Management) 2018

The aim of this Policy is to promote an integrated and co-ordinated approach to land use planning in the coastal zone. The proposed activities would not carried out on land identified as “coastal wetlands” or “littoral rainforest” on the Coastal Wetlands and Littoral Rainforests Area Map (Figure 7) therefore development consent is not required by clause10. The provisions of clauses 11, 12, 13 and 14 in relation to proximity areas, coastal vulnerability area, coastal environment area and coastal use area do not apply because development consent is not required.

3.4 Shoalhaven Local Environmental Plan 2014

As shown in Figure 8, Ulladulla Harbour is zoned by the Shoalhaven LEP as W3 Working Waterways. The objectives of the zone are:

- To enable the efficient movement and operation of commercial shipping, water-based transport and maritime industries.
- To promote the equitable use of waterways, including appropriate recreational uses.
- To minimise impacts on ecological values arising from the active use of waterways.
- To provide for sustainable fishing industries.

The land adjacent to the site of the proposed activities is zoned IN4 Working Waterfront. The objectives of the zone are:

- To retain and encourage waterfront industrial and maritime activities.
- To identify sites for maritime purposes and for activities that require direct waterfront access.
- To ensure that development does not have an adverse impact on the environmental and visual qualities of the foreshore.
- To encourage employment opportunities.
- To minimise any adverse effect of development on land uses in other zones.

The proposal is consistent with the objectives of the zones. Wharf or boating facilities are permissible in both zones with consent. However, the provisions of SEPP (Infrastructure) mean that development consent is not required for this proposal.

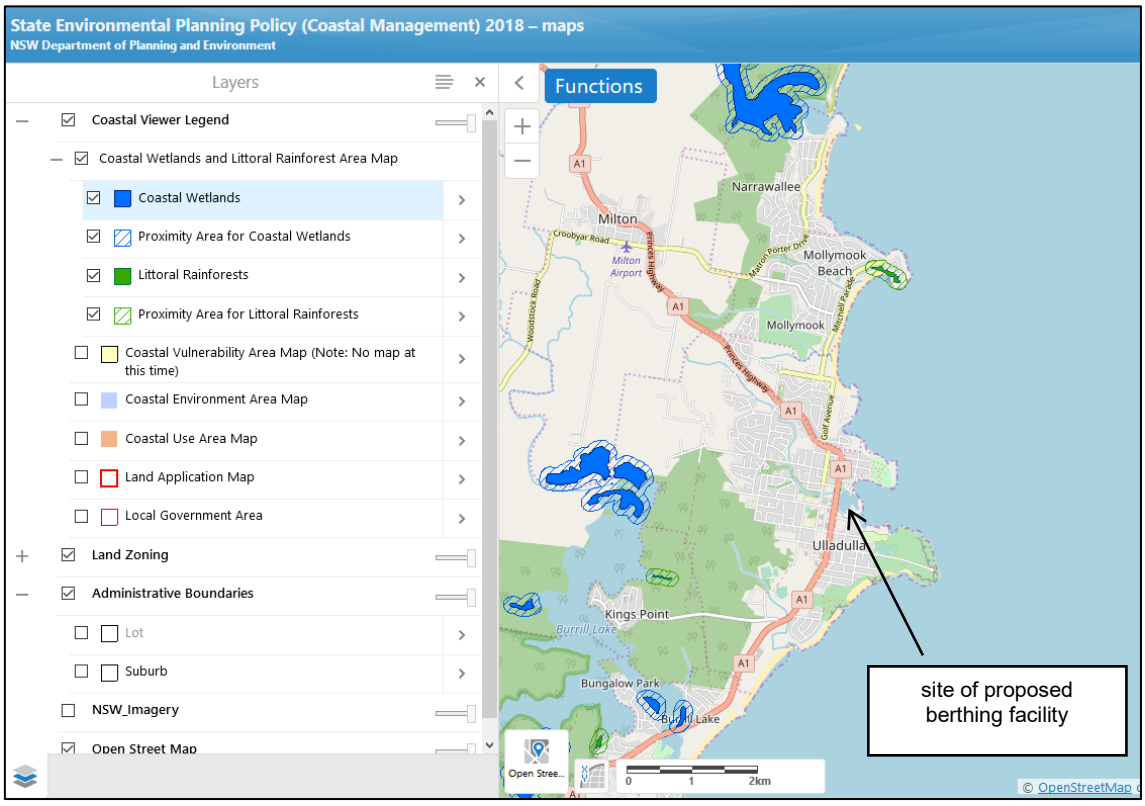

Figure 7. SEPP (Coastal Management) Coastal Wetlands and Littoral Rainforests Area Map.
Source: NSW Department of Planning and Environment

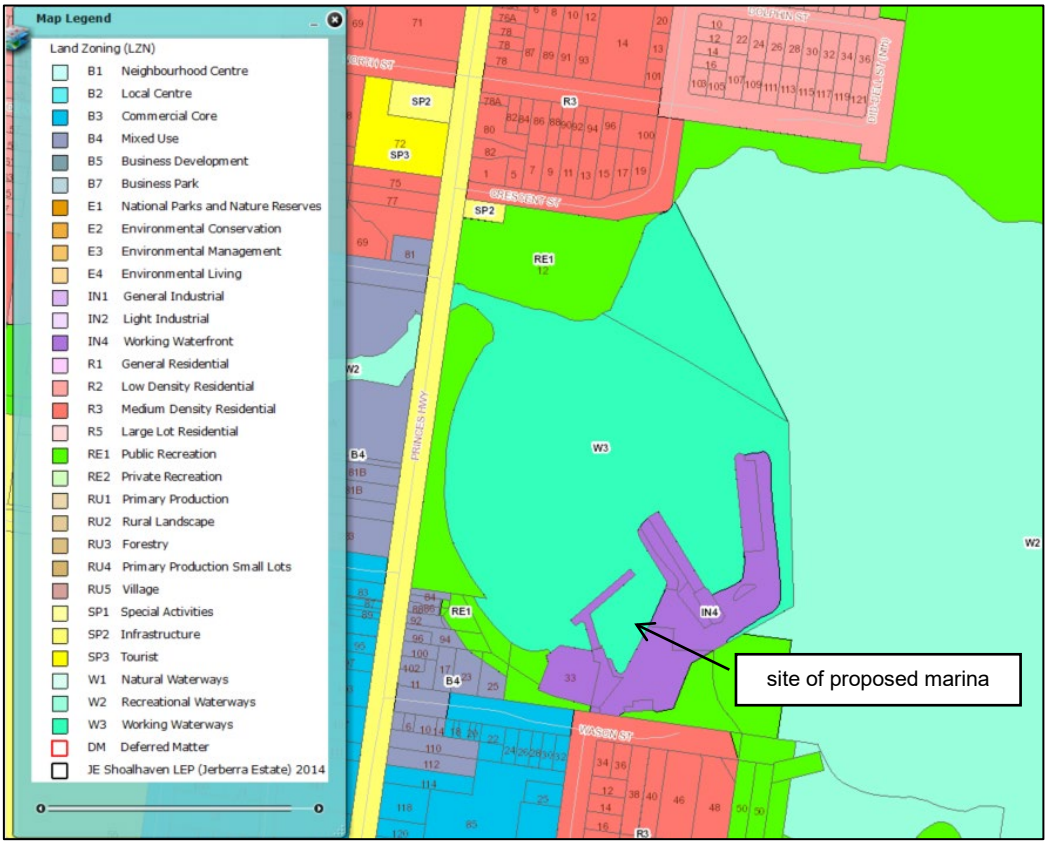

Figure 8. Land use zoning in Shoalhaven LEP 2014.
Source: Shoalhaven City Council Maps Online

3.5 NSW Crown Land Management Act 2016

The berthing facility would be over Crown land. Under section 9.2 of the Act, a person shall not, without lawful authority:

- clear, dig up or cultivate Crown land
- interfere with any substance on, in or forming part of Crown land, or
- erect a structure on Crown land.

The proposed activity would constitute one or all of these activities. It is expected that Council would be required to obtain 'lawful authority' in the form of a licence under division 5.6 for the proposed dredging and use of the car park during construction, as well as a lease under division 5.5 for ongoing occupation and use of the site (see Figure 9).

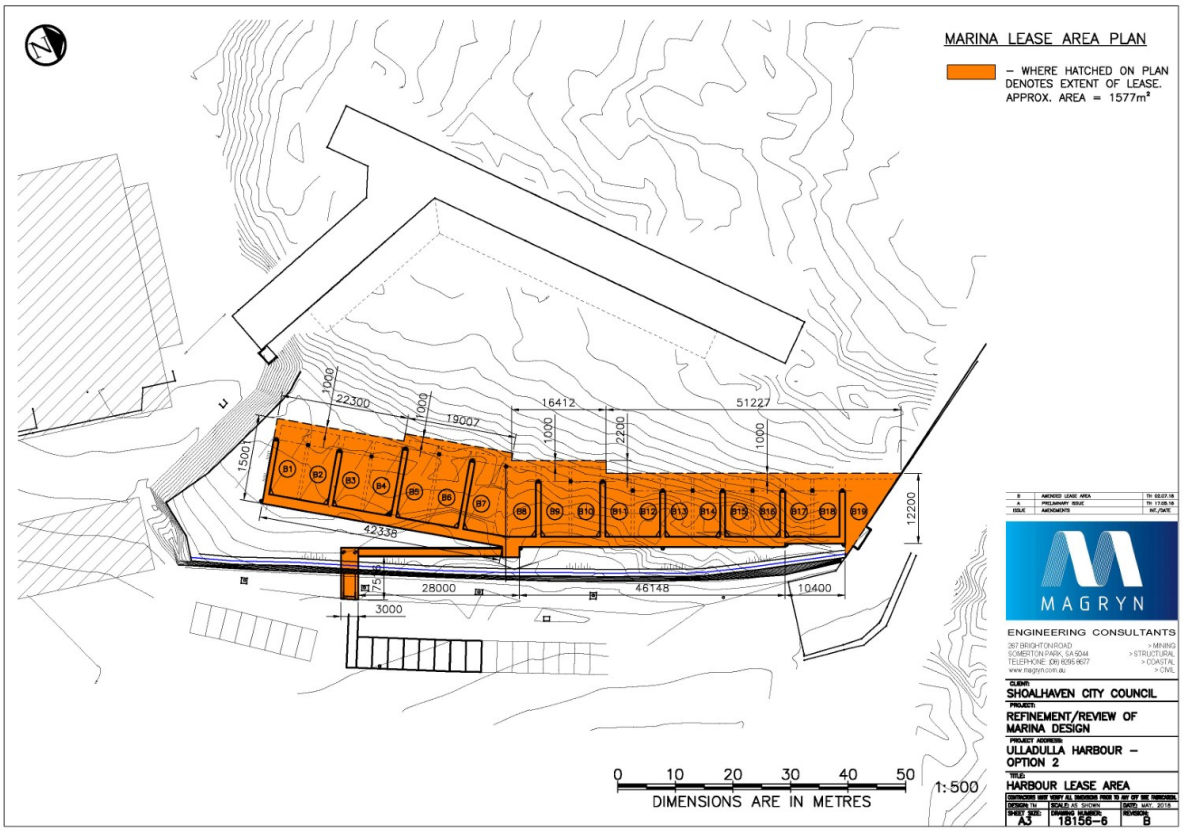

Figure 9. Extent of area to be leased under Crown Land Management Act.

3.6 NSW Protection of the Environment Operations Act 1997

This Act sets out offences for water pollution, air pollution, noise pollution and land pollution. The proposed berthing facility would have capacity to handle less than 80 vessels at any time so it does not constitute scheduled development work or scheduled activity as listed in Schedule 1 of the Act. The proposed activity therefore does not require an environmental protection licence.

The act allows for the use of 'virgin excavated natural material' which is defined in the Act as

> *natural material (such as clay, gravel, sand, soil or rock fines):*
>
> *a) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities, and*
> *b) that does not contain any sulfidic ores or soils or any other waste,*
>
> *and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved for the time being pursuant to an EPA Gazettal notice.*

The 'excavated natural material exemption 2014' is a general exemption under Part 9, Clause 91 and 92 of the Protection of the Environment Operations (Waste) Regulation

2014. The exemption allows consumers to use excavated natural material as engineering fill or for use in earthworks provided certain chemical and other material property requirements are met. An exemption would be required from the NSW EPA for the beneficial reuse of harbour sediment due to the Electrical Conductivity (EC) which exceeds the maximum average (1.5 dS/m) and absolute maximum (3 dS/m). The EC is related to natural salt levels in the harbour.

3.7 NSW Biodiversity Conservation Act 2016

This Act lists threatened species and ecological communities, areas of outstanding biodiversity value and key threatening processes. If a significant impact on threatened species is likely, a determining authority may elect either to obtain a biodiversity development assessment report in connection with environmental impact assessment or a species impact statement must be completed and concurrence of the Environment Agency Head obtained. Biodiversity conservation matters are dealt with in Section 7 of this report.

3.8 NSW Fisheries Management Act 1994

Part 7A of the Fisheries Management Act lists threatened species of fish and marine vegetation, populations or ecological communities that need to be considered. Threatened fish matters are dealt with in Section 7 of this report. Section 199 of the Act requires a public authority to notify the Minister for Fisheries before carrying out or authorising dredging or reclamation work. Section 200 of the Act requires Council to apply for a permit carry out dredging or reclamation, unless the work is authorised under the Crown Lands Act or by another relevant public authority. Section 205 of the Act requires a permit be obtained for the harming of marine vegetation including mangroves, seagrasses and attached marine and estuarine macroalgae (seaweeds). Section 219 of the Act requires Council to apply for a permit for any blockages or obstructions to fish passage, whether temporary or permanent, unless it is otherwise permitted by or under any other Act. Any use of explosives in waterways will require an approval under clauses 112-113 of the Fisheries Management (General) Regulation 2002.

3.9 Marine Safety Act 1998

It is an offence under section 16 of this Act to not comply with a direction from the Minister to remove an obstruction to navigation that was not lawfully erected in, over or on navigable waters. Compliance with Part 5 of the Environmental Planning and Assessment Act and a lease or licence for the facility under the Crown Lands Act would likely mean that the berthing facility was lawfully erected.

3.10 NSW Water Management Act 2000

Under clause 41 of the Water Management (General) Regulation 2018, activities carried out by public authorities on waterfront land are exempt from the need for a Controlled Activity Approval. Therefore, so long as the works are carried out by or on behalf of Council, a controlled activity approval from the NSW Department of Planning, Industry & Environment is not required.

3.11 NSW National Parks and Wildlife Act 1974

The National Parks and Wildlife Act protects all Aboriginal objects and Aboriginal places in NSW. Under section 86 of the Act it is an offence to harm or desecrate any Aboriginal object without an Aboriginal Heritage Impact Permit. The Act, however,

provides that if a person who exercises 'due diligence' in determining that their actions will not harm Aboriginal objects has a defence against prosecution if they later unknowingly harm an object without a permit (section 87(2) of the Act). To effect this, the NSW Department of Environment, Climate Change and Water prepared the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales to assist individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects and to determine whether they should apply for a permit. Aboriginal heritage matters, including an assessment under the Due Diligence Code, are dealt with in Section 7 of this report.

3.12 NSW Aboriginal Land Rights Act 1983

The Aboriginal Land Rights Act recognises the rights of Aboriginal people in New South Wales and provides a vehicle for the expression of self-determination and self-governance. The Act provides that the New South Wales Aboriginal Land Council and Local Aboriginal Land Councils may make claim(s) to claimable Crown land(s). Aboriginal Land Claims are dealt with in Section 7 of this report.

3.13 Australian Native Title Act 1993

The Native Title Act is Australian legislation that recognises and protects native title. It provides that native title cannot be extinguished contrary to the Act. The Act covers acts affecting native title and determining whether native title exists and compensation for acts affecting native title. For past acts and future acts, this Act deals with (a) their validity, (b) their effect on native title, (c) compensation for the acts. Native title is dealt with in Section 7 of this report.

3.14 Australian Environment Protection & Biodiversity Conservation Act 1999

The EPBC Act is Australian legislation that protects matters of national environmental significance. It acts in parallel with the NSW legislation and requires separate assessments of significance should listed species or processes be potentially impacted by the works. Under Part 9 of the EPBC Act an action that could have a significant impact on a matter of national environmental significance may only be taken with approval of the Australian Government Minister for the Environment. EPBC Act matters are dealt with in Section 7 of this report.

4 CONSULTATION

The proposal has been widely advertised initially by the support provided by Prime Minister Hon. Malcolm Turnbull, during his visit to Ulladulla in June 2016.

Shoalhaven City Council provided an open forum at the site on 15th February 2017 and received only one negative consideration by one fisherman, while several other fishermen were in clear support for the proposal.

The proposal was also advertised consecutively on Wednesdays in the local Milton – Ulladulla Times which submissions closed in early March 2017. Only submissions of support were received.

The project has been reviewed from time to time by the Ulladulla Harbour Working Port Committee.

It is accepted that the proposed development has almost unanimous support of the local community.

Part 2 Division 1 clause 16 of State Environmental Planning Policy (Infrastructure) requires that Council must give written notice of the intention to carry out the development to the Maritime Authority of NSW and take into consideration any response to the notice that is received from that authority within 21 days after the notice is given.

Section 199 of the Fisheries Management Act 1994 requires a public authority to notify the Minister for Fisheries before carrying out or authorising dredging or reclamation work.

During preparation of this review of environmental factors, preliminary comment was invited from the following NSW government agencies in February 2018:

- Department of Industry - Crown Lands
- Department of Industry - Water
- Department of Primary Industries - Fisheries
- Environment Protection Agency
- Office of Environment and Heritage
- Roads and Maritime Services

Responses from agencies are in Attachment 1.

A site meeting on 4 May 2021 was attended by a DPI Senior Fisheries Manager, Council officers and Peter Dalmazzo to discuss options for making the proposal more environmentally friendly. Outcomes of that meeting are in a letter report in Attachment 2.

Issues raised during consultation have been addressed in appropriate sections of this review of environmental factors.

5 DESCRIPTION OF THE SITE AND SURROUNDING ENVIRONMENT

An air photograph of the site is presented in Figure 10. The subject site was surrounded by the following built features:

- Tee jetty to the north-west
- Stone jetty to the north-east
- Stone sea wall to the east
- Commercial fishing operation to the southwest
- Car parking to the south and southeast.

Photographs showing the character, habitats and organisms at the site are in Figures 11 to 21. There was no remnant native vegetation on the foreshore, though some garden beds and other plantings, including native plants, were present.

The western side of the subject site where boats were moored at the Tee Jetty had a cover of water up to about 4 metres deep. The water gradually became shallower towards the southern and eastern shoreline. Coffey Geotechnics (2011) described the site as follows. On the eastern side of the subject site a rock platform was exposed at low tide that extended between about 5m and 15m out from a near vertical stone wall (about 2 to 2.5 metres high) that supported fill along this side of the harbour. The exposed rock appeared to be a tuffaceous sandstone that was slightly weathered to fresh with widely spaced joint patterns. The rock surface was somewhat irregular possibly as a result of previous excavations for the harbour as well as weathering and erosion.

The intertidal and shallow subtidal rock platform, including the area of mixed sand and rock habitats, was approximately 1000 square metres in area.

GHD (2012b) described the subtidal sediment composition as predominantly silty sand. Sediment depth was approximately 250-300 millimetres in the eastern area of the harbour approximately 5 metres from the existing rock wall before increasing steeply to in excess of 1000 millimetres in the westerly direction. Results indicated that beyond the existing exposed rock platform that extended from the southern foreshore, the underlying rock interface dipped gradually to the north-west before gradually rising to the north in line with the Tee Jetty. The sediment profile remained flat for 3 metres towards the east before increasing steeply up to 250-300 millimetres along the Tee Jetty in the north-west.

Terra Insight (2020) described the following subsurface geotechnical conditions based on the findings of borehole investigation and local knowledge:

- MARINE Sediment: consisting of Gravelly SAND, SAND, and SILT. Encountered in BH01 and BH05 to BH09 to elevations between -0.3 and -2.3m AHD. The material is comprised of a dark brown grey soft sediment typically overlying the weathered bedrock
- CONGLOMERATE: encountered in the borehole BH02 located closest to the seawall. Comprised of siltstone gravel and small quartz clasts in high strength slightly weathered sandstone matrix. This rock shelf was also observed along the toe of the heritage listed sandstone wall on eastern side of the site and found in boreholes undertaken by Coffeys in 2011 located behind the heritage listed sea wall

- Sandy SILTSTONE: encountered in BH01 and BH05 to BH08, comprised of moderately weathered to slightly weathered material with some extremely weathered bands/seams, dark grey, fine sand, thinly bedded
- SANDSTONE: encountered in BH01 to BH03, slightly weathered, dark grey, fine to medium grained
- Sandy SILTSTONE: encountered in all test holes. Dark grey, fine grained, medium to high strength, foliated and thinly bedded. Typically recovered as slightly weathered to fresh with depth.

Earth2Water Pty Ltd (2020) described the rock shelf as consisting of brown sandstone with ironstone, having fissures and an irregular edge littered with boulders and pockets of sediment sandwiched between.

To inform the preparation of this review of environmental factors, the site was inspected by the author on Friday 13 April 2018 between 11:30 am and 12:30 pm AEST. The weather was fine, partly cloudy and warm with moderate, north-westerly wind. The inspection was carried out around low tide. The supratidal part of the site was traversed on foot. Subtidal observations were made by snorkelling and free diving. Visibility in the water was poor (about 1 to 2 metres) and there was little wave action.

Intertidal animals observed at the site included Sydney Rock Oyster *Saccostrea glomerata*, Hairy Mussell *Trichomya hirsuta*, Spengler's Rock Whelk *Cabestana spengleri*, limpet *Patelloida mimula*, Tall-Ribbed Limpet *Patelloida alticostata*, Variegated Limpet *Cellana tramoserica*, Black Nerite *Nerita atramentosa*, Conniwinks *Bembicium auratum* and *Bembicium auratum*, Zebra Top Shell *Austrocochlea porcata*, Periwinkles *Austrolittorina unifasciata* and *Nodilittorina pyramidalis*, chitons Polyplacophora, various shore crabs including Swift-footed Crab *Leptograpsus variegatus*.

The toe of the rock platform was just below low tide level and in this shallow subtidal area there was a zone of mixed soft sediments and rock habitats for about 1 metre. Unvegetated, soft sediment dominated beyond that point.

Foliose algae were growing attached to the shallow subtidal and lower intertidal rock, including the following species: *Dictyota dichotoma, Halopteris paniculata*, *Padina* sp., *Sargassum* sp., *Colpomenia* sp., Neptunes Necklace *Hormosira banksia*, foliose coralline red alga and various turfing and crustose algae. Encrusting sponges and other sedentary invertebrates were also present on the subtidal rock.

A single plant of the seagrass Paddleweed *Halophila* sp. was growing in the soft sediments just offshore from the rock platform.

In the soft sediments, burrows of crustaceans and worms were common There were hermit crabs living on the sediment surface and stingray feeding pits were present.

Very few fish were observed at the site. The following were seen in the shallow subtidal habitat: juvenile Yellowfin Bream *Acanthopagrus australis*, juvenile Blue Groper *Achoerodus viridis*, Glassy Perchlet *Ambassis* sp., Gudgeon Eleotridae, Common Toadfish *Tetractenos hamiltoni*.

A range of additional fish species and invertebrates would be expected to utilise the intertidal and subtidal habitats at the site from time to time, including some species of

recreational and commercial importance. Dalmazzo (2011 & 2016) observed the following fish during brief surveys elsewhere in Ulladulla Harbour:

southern boat ramp: *Pagrus auratus* Snapper, *Ambassis jacksoniensis* Glass Perchlet, *Acanthopagrus australis* Yellowfin Bream, *Girella tricuspidata* Luderick, *Gerres ovatus* Silver Biddy and unidentified small fish from the families Blenniidae, Trypterygiidae and/or Gobiidae

northern boat ramp: Yellowfin Bream *Acanthopagrus australis*, Silver Biddy *Gerres ovatus*, Stripey *Microcanthus strigatus*, Mado *Atypichthys strigatus*, Bluestriped Goatfish *Upeneichthys lineatus*, Crimsonbanded Wrasse *Notolabrus gymnogenis*, Smooth Stingray *Dasyatis brevicaudata*.

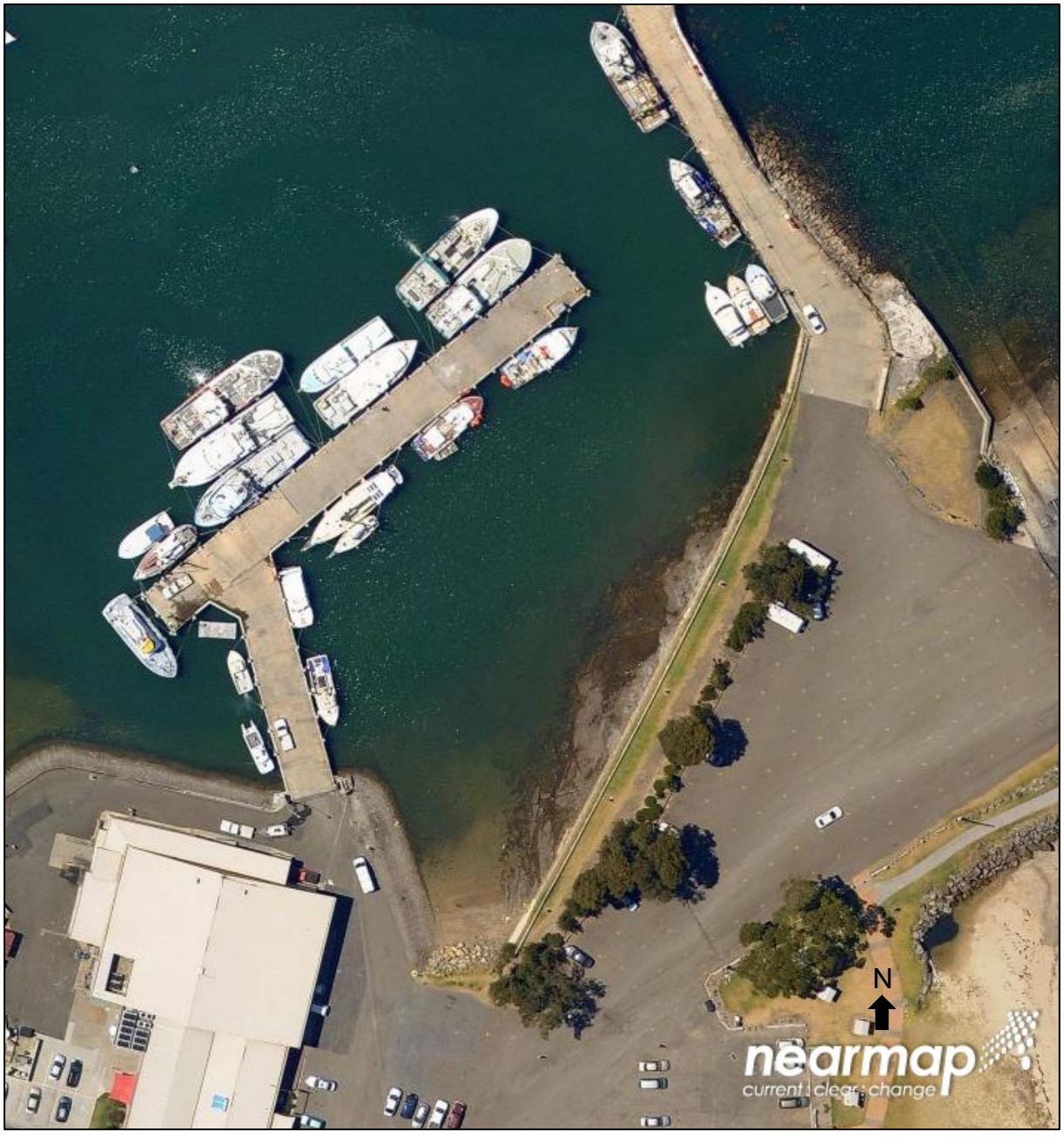

Figure 10. Aerial photograph of the site taken 1 January 2012.
Source: © nearmap www.nearmap.com.au

Figure 11. Photograph of the subject site, view northeast. Fishing boats at left of shot are moored at the Tee Jetty. The rock platform at right of shot would be removed and works undertaken to maintain the integrity of the stone wall at right of shot.

Figure 12. Weathered old section of rock wall east of proposed berthing facility site. Note some undercutting of base of wall.

Figure 13. Littorinid periwinkles above high tide level on rock platform.

Figure 14. Huddle of Black Nerites in intertidal crevice at low tide.

Figure 15. Rock oysters and grazing snails at mid tide level on rock platform.

Figure 16. Rock oysters, chitons and grazing snails at low tide level on rock platform.

Figure 17. Shallow subtidal area of mixed soft sediments and rock habitats.

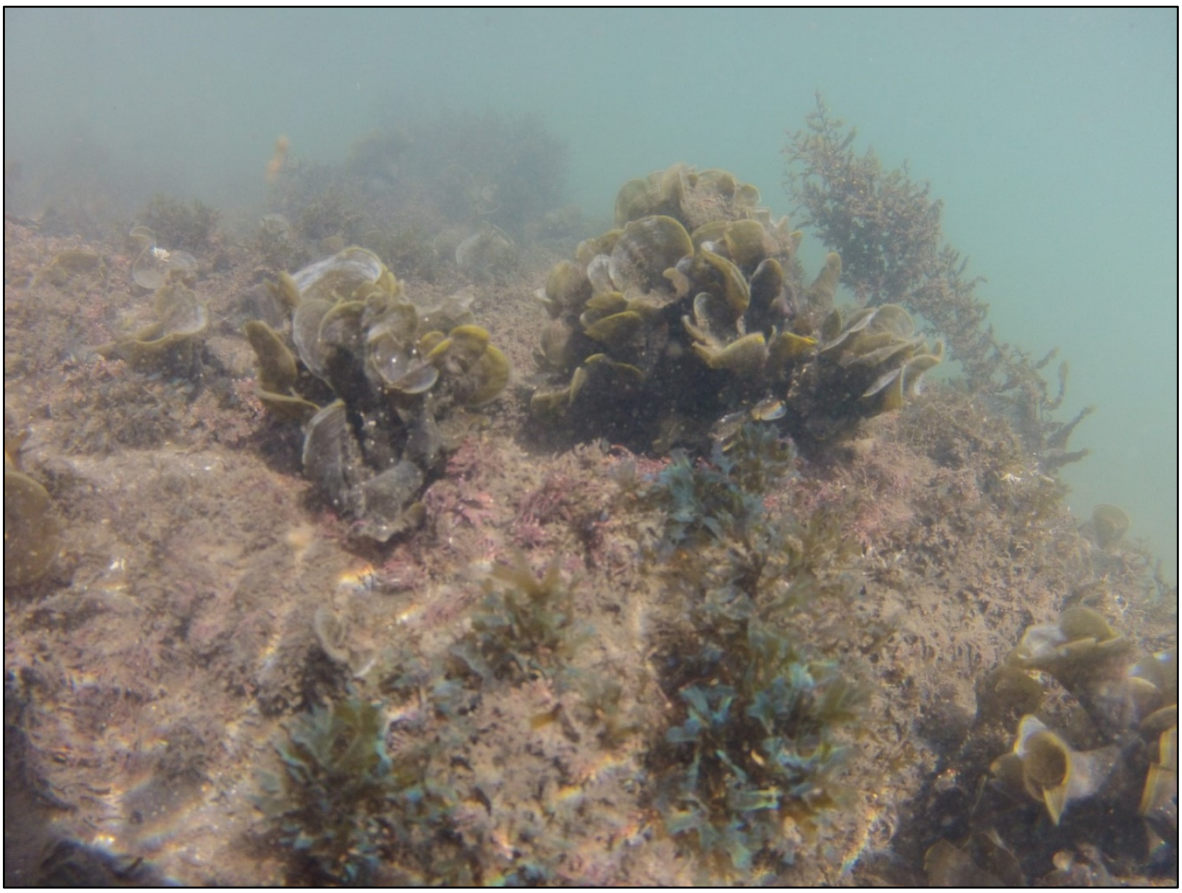

Figure 18. Macroalgae attached to shallow subtidal rock habitat.

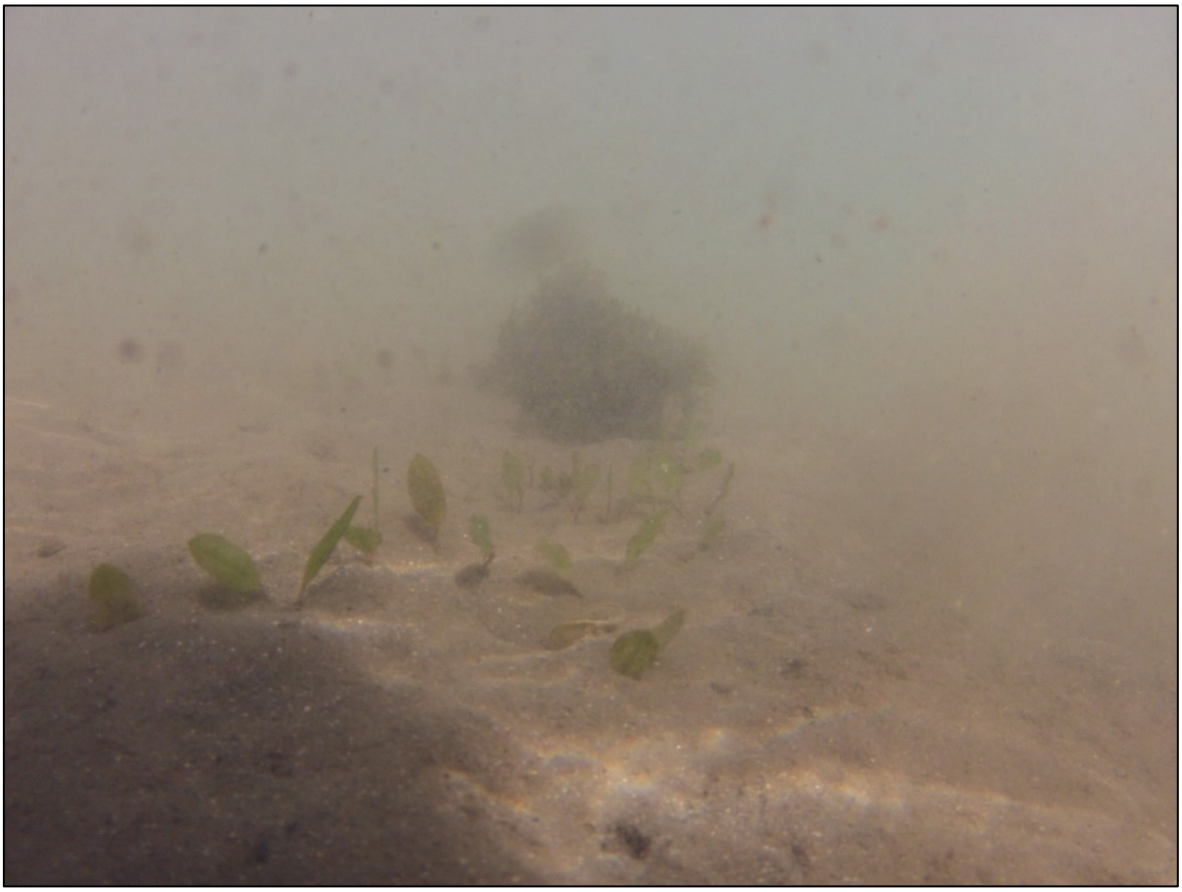

Figure 19. Single plant of Paddleweed seagrass.

Figure 20. Gudgeon and hermit crabs on shallow subtidal, soft sediments.

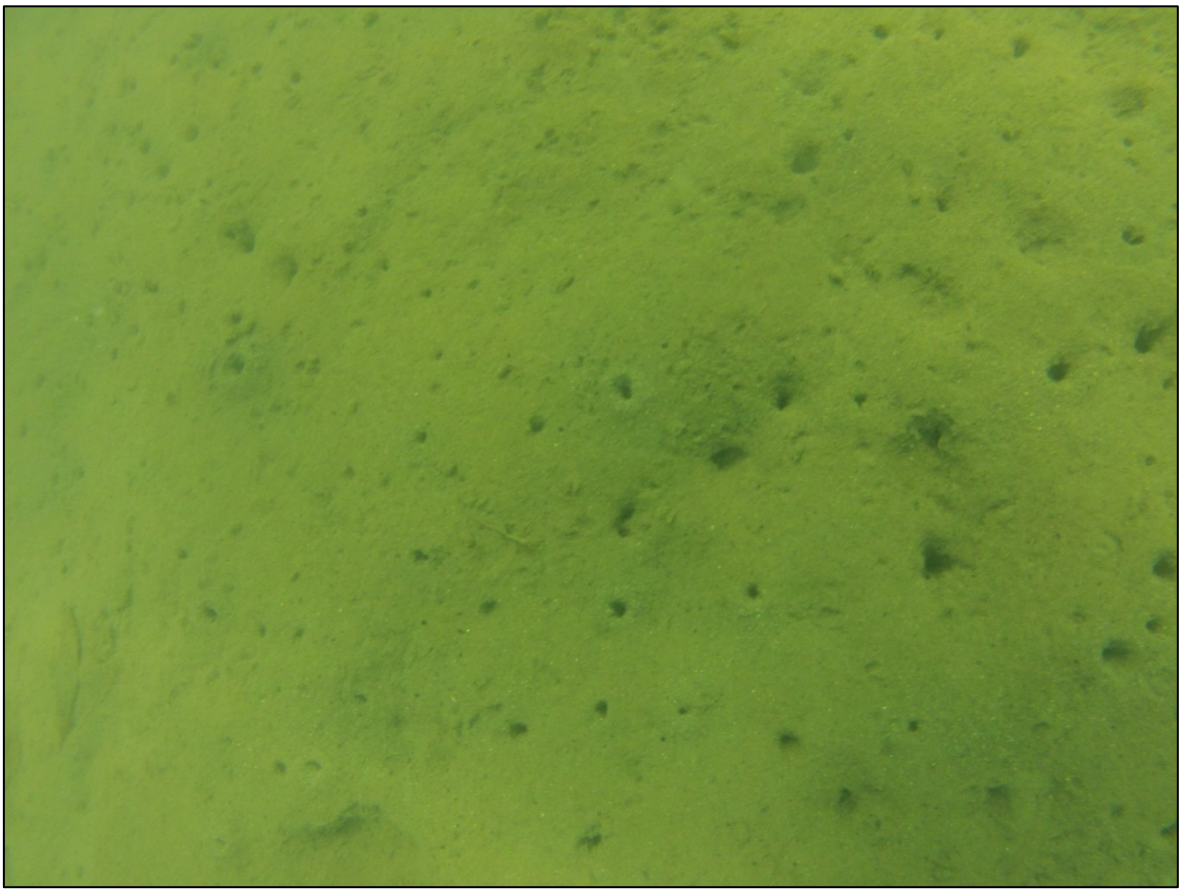

Figure 21. The subtidal bed of the harbour mostly consisted of unvegetated soft sediments, with many burrows of crustaceans and worms.

6 POTENTIAL ENVIRONMENTAL IMPACTS

There is a number of potential permanent or ongoing impacts and temporary or construction impacts from the proposal that could affect the human environment, aquatic or terrestrial plants or animals or their habitats.

Permanent and ongoing impacts on ecosystems are those that result in long term changes to the environment and could include direct loss of habitat and organisms, changes to substrate composition and orientation, shading of marine vegetation, changes to water movement regimes, barriers to fish passage and potential chronic operational impacts such as pollution.

Temporary or construction activities have the potential to cause shorter term impacts on the environment than those potential permanent or ongoing impacts described above. Temporary or construction activities could involve physical impacts directly on people, plants and animals, or effects on their habitats, through death or disturbance of plants or animals, temporary impacts on water quality and consequent impacts on ecology, movement of sediments during an adjustment period.

In a review of potential ecological impacts of dredging, Dalmazzo (1992) described a number of effects that can be classified into the following main types:

direct impacts:

- entrainment/removal of individual organisms
- disturbance to activities of animals
- modification of habitat and removal of food or feeding areas, shelter or roosting areas and breeding areas

indirect impacts:

- destabilisation of surrounding formations such as seagrass beds and river banks
- impacts on water quality and consequent impacts on ecology.

Water quality impacts from dredging can result from increased turbidity or siltation, reduced dissolved oxygen or resuspension of nutrients or toxic pollutants.

Potential impacts of marinas were described by the Great Barrier Reef Marine Park Authority (1994) as follows:

Shoreline and protective structures can affect the physical, chemical and biological components of the environment and may alienate beaches and change flooding characteristics. Adverse effects may result from alterations in water circulation, deposition/erosion characteristics, blockage of migration routes or shading in shallow water habitats or addition of toxic chemical preservatives. On the other hand, the berthing structures may provide suitable habitats for colonisation which may help to compensate for natural habitat altered or lost during construction. Certain structures may also attract fish into the area.

Runoff from marinas and sewage discharged from boats may affect the natural productivity of a site. Coral, algae and other animals and plants are sensitive to elevated nutrient concentrations and can be killed, overgrown or out-competed by other plants and animals. As a result, the composition or structure of a community can

be dramatically altered. Boat operation also may result in physical impacts to shorelines and to sensitive biota including intertidal oyster banks, reefs, seagrasses, mangroves, waterfowl, marine mammals and turtles.

The following sections describe in more detail potential impacts that could result from the proposed activities. The potential impacts are considered by applying statutory assessment criteria in Section 7. Environmental safeguards to mitigate potential impacts have been proposed in Section 8 of this report.

7 STATUTORY ASSESSMENTS OF ENVIRONMENTAL IMPACTS

7.1 Biodiversity Conservation Act 2016

Section 7.2 of the Biodiversity Conservation Act states that development is likely to significantly affect threatened species if:

> *(a) it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in section 7.3*

It is concluded in the assessment in Attachment 3 that the proposed activity is not likely to significantly affect threatened species or ecological communities, or their habitats.

> *(b) [this subsection does not apply to development that is an activity subject to environmental impact assessment under Part 5 of the Environmental Planning and Assessment Act 1979]*

> *(c) it is carried out in a declared area of outstanding biodiversity value*

The subject site is not in a declared area of outstanding biodiversity value listed in the Register of Declared Areas of Outstanding Biodiversity Value.

Based on the above criteria, the biodiversity offsets scheme does not apply and the determining authorities do not need to consider obtaining a biodiversity development assessment report or to retire biodiversity credits to offset the residual impact of the proposed activity on biodiversity values, nor is a species impact statement required.

7.2 NSW Environmental Planning and Assessment Act

Subsection 5.5(3) of the Environmental Planning and Assessment Act requires that determining authorities consider the effect of an activity on any wilderness area (within the meaning of the Wilderness Act 1987) in the locality in which the activity is intended to be carried on. The subject site is not in or near a wilderness area.

Clause 228(2) of the Environmental Planning and Assessment Regulation 2000 lists the factors to be taken into account when consideration is being given to the likely impact of an activity on the environment under Part 5 of the Environmental Planning and Assessment Act. The following assessment deals with each of the listed factors in relation to the proposed works.

7.2.a Any environmental impact on a community

The community most likely to be affected would be Ulladulla residents and visitors that use the harbour and surrounding facilities, including the car parking area (eg, there are markets held regularly in the car parking area adjacent to the subject berthing facility site).

During construction there may be some inconvenience. Negative impacts could include short term access restrictions to some areas for the duration of the construction works and there may be slightly more traffic movements. Berthing on the eastern side of the Tee Jetty might be affected during dredging. Increased truck movements would result from transport of the sediment and rock following dredging. As far as possible, the works are to be undertaken in an order and manner that would minimise disruption to the ongoing use of the area by the community. Direct consultation with known likely affected users (eg, fishing co-op, marine rescue association, fishing clubs, festival organisers) shall be undertaken and timing of the work shall take into consideration the needs of those users.

Nearby local businesses may be impacted by noise during dredging and construction. This would include noise from cutting of rock, placement of rock in skip bins, truck movements, driving of piles and operation of machinery such as concrete pumps and power tools. This is likely to be short-term and as it is already an existing working harbour similar background noise is already present at the site from time to time.

The area of waterway that would be permanently affected is not used by many community members apart from as an occasional manoeuvring area for commercial fishing vessels. There may be some effect on users of the adjacent Tee Jetty where, at times, commercial fishing vessels have in the past rafted up abreast (sometimes 3 deep). This practice may inhibit the area for vessels using the proposed berthing facility to manoeuvre in or out so it would need to be managed by, for example, restricting the practice to certain parts of the jetty only.

There may be slightly more traffic movements during operation of the facility with lessees accessing their berthed boat. However, as it is only a 19-berth facility, traffic increases are expected to be minor. Access to the facility would not traverse through residential areas.

The proposed activity would not have any impact on other community services and infrastructure such as power, water, waste water, waste management, educational, medical or social services.

There would be positive impacts for the community. Completion of the proposed activities would improve access to the waterway and to recreational vessels. It is expected that there would be increased opportunities for recreational boating, commercial fishing and tourism.

It is concluded that impacts on the community would not be significant.

7.2.b Any transformation of a locality

The general form of the locality would remain as a boat harbour with jetties and moored vessels. A small area waterway would be transformed to additional hard, artificial structures (pontoons, walkways and piles). The locality would not be transformed in any significant manner. It is considered that the transformation of the locality would not be a significant impact the environment.

7.2.c Any environmental impact on the ecosystems of the locality

The site is not mapped in the biodiversity layers of the Shoalhaven Local Environmental Plan 2014 (Figure 22) nor is it included on the Biodiversity Conservation Act Biodiversity Values Map (Figure 23).

Permanent impacts on ecosystems would result from direct loss of habitat and organisms, from changes to substrate composition and orientation and from shading.

During dredging, it is unlikely that any birds or many large fish would be entrained by the dredge. Some smaller or less mobile fish and large mobile invertebrates might be killed or injured, but the animals most likely to undergo injury or mortality directly by entrainment into the dredge are the invertebrates that live in the sediments, such as sand worms, crustaceans and bivalve molluscs, and the invertebrates living on the rock platform.

The following design principles from the Environmentally Friendly Seawall Guidelines (Department of Environment and Climate Change NSW, 2009.) and the Fish Friendly Marine Infrastructure page (https://www.fishhabitatnetwork.com.au/fish-friendly-marine-infrastructure) have been considered to guide the design of the rock finishes in the proposed Ulladulla Harbour berthing area:

- Aim to keep it natural - this relates to the natural rock surface material and orientation of the retained intertidal rock platform
- Maximise habitat diversity and complexity by incorporating microhabitats such as pools, crevices, boulders and ledges, and by maximising surface roughness and texture - this relates to the finished surfaces of the retained intertidal rock platform and the cut rock surfaces
- Create low-sloping walls or incorporate changes of slope to maximise habitat surface area - this relates to the subtidal cut rock surfaces.

During detailed design, attention shall be paid to ensuring “fish friendly designs” for any new infrastructure, such as including structural complexity in surfaces, and to minimise shading of the sea floor. The following should guide the design:

- retain natural rock surface wherever possible
- increase surface complexity of cut subtidal and intertidal rock faces by roughening or creating crevices
- create some small, natural looking rock pools on the retained intertidal rock platform
- install ~600mm dia rocks along the base of the stone seawall on the 1.3 metre wide rock platform and the new rock platform at -2.00 m AHD.

The overall dredge footprint would be 6,900 square metres most of which would be unvegetated soft sediments. The intertidal and shallow subtidal rock platform, including the area of mixed sand and rock habitats, was approximately 1000 square metres in area. Some of the rock platform supported attached macroalgae. The finished substrate of most of the dredged area is likely to be rock. A layer of soft sediment is likely to migrate over the rock surface from the adjacent, undredged bed of the harbour.

The areas of subtidal rock that support macroalgae were mapped using a recent air photo (Figure 24). Based on field observations it was estimated that there was approximately 50% coverage of rock surfaces with macroalgal growth and the area of macroalgae that would be affected was estimated to be 310 square metres. Foliose algae growing attached to the shallow subtidal and lower intertidal rock, included the following species: *Dictyota dichotoma, Halopteris paniculata*, *Padina* sp., *Sargassum* sp., *Colpomenia* sp., Neptunes Necklace *Hormosira banksia*, foliose coralline red alga and various turfing and crustose algae. A permit from DPI Fisheries would be required to harm these species.

There would be an initial period when intertidal and subtidal plant and animal communities in the dredged area would be depauperate in terms of species richness and abundance of individuals. Ultimately however, the dredged area would be recolonised by fish and other organisms from the large areas of similar habitat nearby in the harbour. Recolonisation is likely to commence almost immediately for mobile

species, but development of a functional ecological community of smaller invertebrates and macroalgae will depend on availability of recruits. The recruits could be from quite close by or distant parts of the harbour depending on the reproductive and dispersal strategies adopted by particular species. Some invertebrates reproduce seasonally and recruits may not be available until sometime after the dredge leaves the area.

Several square metres of benthic habitat would be permanently replaced by berthing facility piles. The piles would also occupy part of the water column. The area pontoons and vessel berths would have a plan area of approximately 1000 square metres. Although there would be finished surfaces at a depth suitable for recolonization by macroalge, light reduction caused by shading could affect growth in some areas.

It is unlikely that many mobile birds, fish and invertebrates would be killed or injured by the berthing facility construction or operation, but they may be disturbed from their normal activities. Birds, fish and large mobile invertebrates living at the site may be disturbed by the movement of machinery and people and from noise during the construction and operation of the berthing facility. Some would seek shelter, some would flee and some would be attracted as food organisms are disturbed. The effects would be localised to within a few tens of metres of the work site and would be intermittent. Those organisms that flee or seek shelter may return to the area when construction or other human activity is not occurring. Some sessile, benthic fauna may be killed during driving of the piles. The number of organisms potentially affected would not be large. New habitat for sessile plants and animals would be created by parts of the hard surfaces of the supporting piles.

Negative effects would be offset to some extent because new habitat would be created by parts of the hard surfaces of the supporting piles. The pontoons, rock surfaces, pylons and other berthing facility infrastructure can provide excellent habitats for fish and other marine life. During detailed design, attention should be paid to ensuring “fish friendly designs” for any new infrastructure, such as including structural complexity in surfaces, and to minimise shading of the sea floor.

During operation of the berthing facility, marine pests could be introduced into the harbour by domestic and international vessels. Although the berthing facility does not greatly increase the risk of this occurring (given the large number of vessels that already visit the harbour), it is recommended that educational material and operational procedures for dealing with marine pests be included in a berthing facility operations manual and a set of berthing facility user rules.

The impacts of the proposed activities on threatened species are considered in the assessment at Section 7.2.g below. Pollution effects on ecosystems are considered in the assessment at Section 7.2.l below.

Environmental safeguards to mitigate direct impacts on animals have been proposed in Section 8 of this report.

Overall, the impacts on ecosystems of the proposed works would be relatively small and localised. The impacts on the ecosystem of the locality would not be significant.

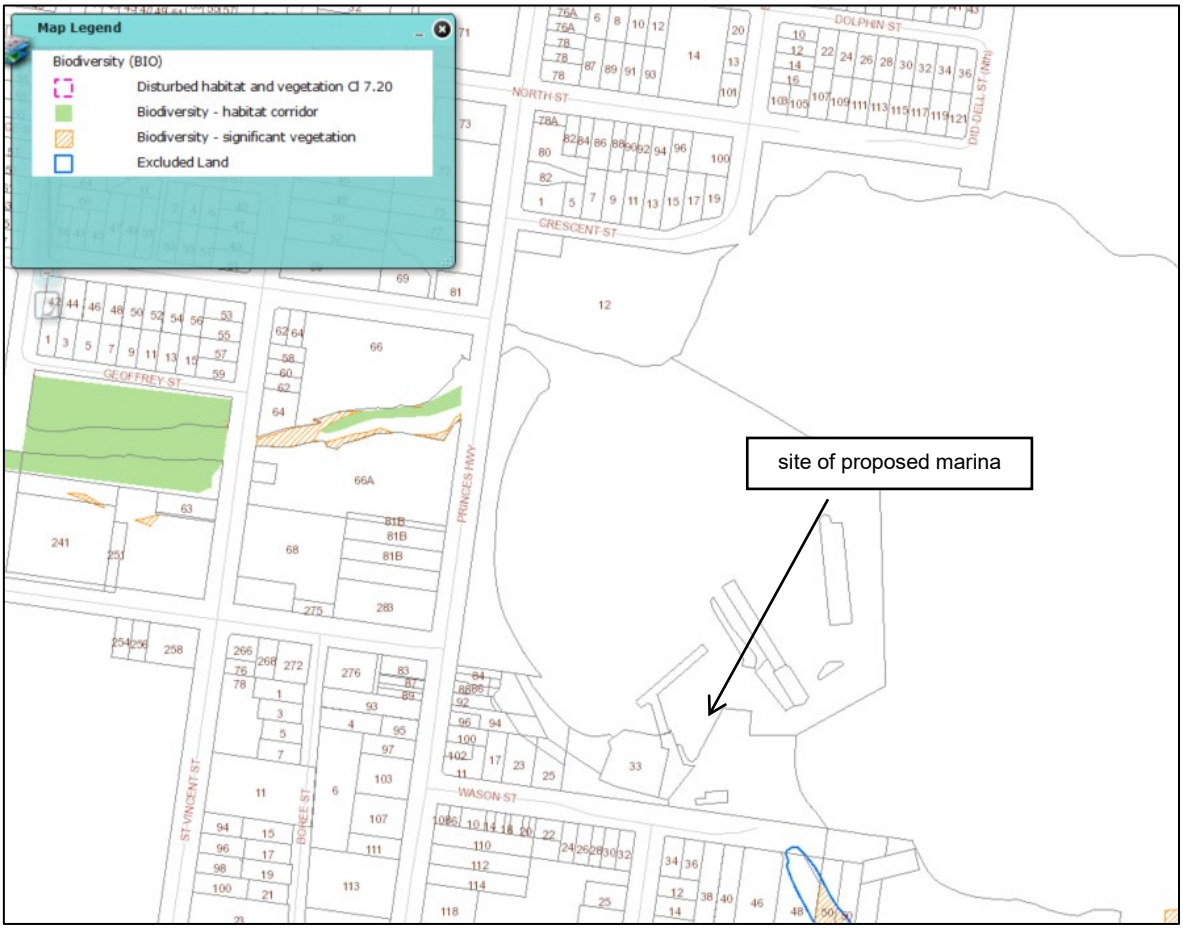

Figure 22. Biodiversity mapping from Shoalhaven Local Environmental Plan 2016.
Source: Shoalhaven City Council Maps Online

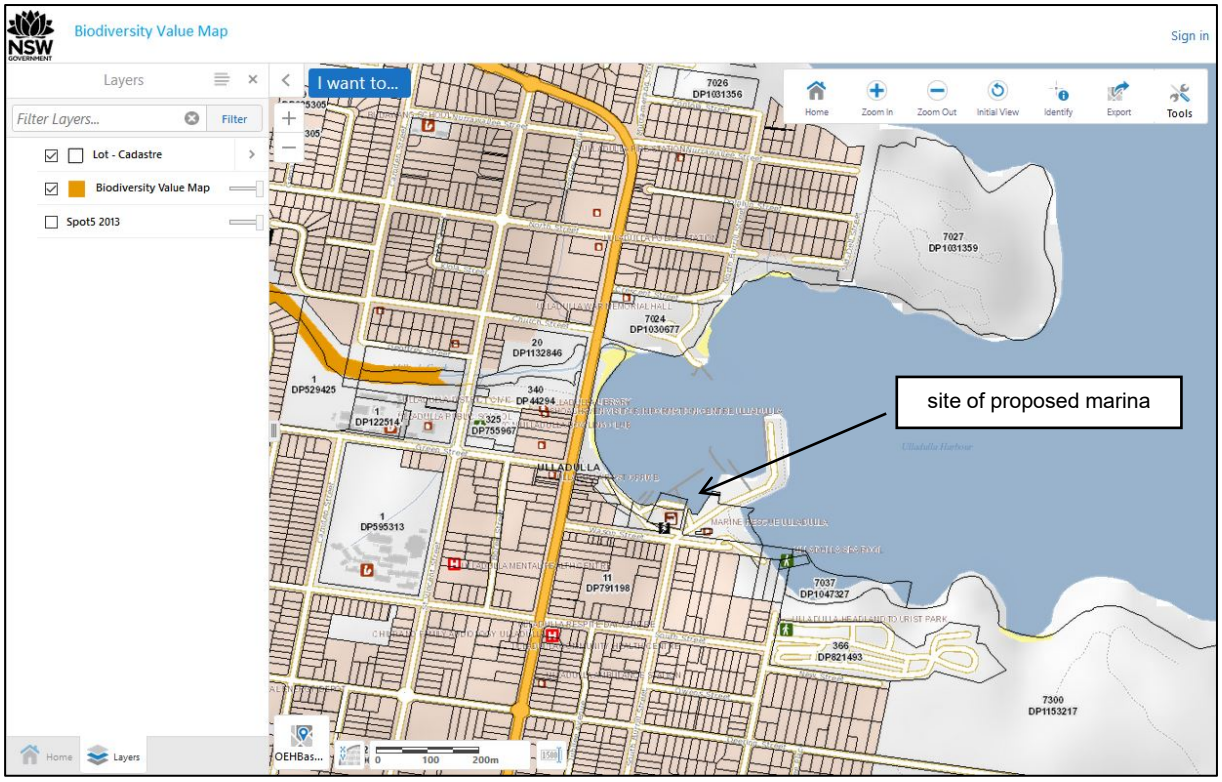

Figure 23. Biodiversity Values Map.
Source: © State of New South Wales and Office of Environment and Heritage [2018]

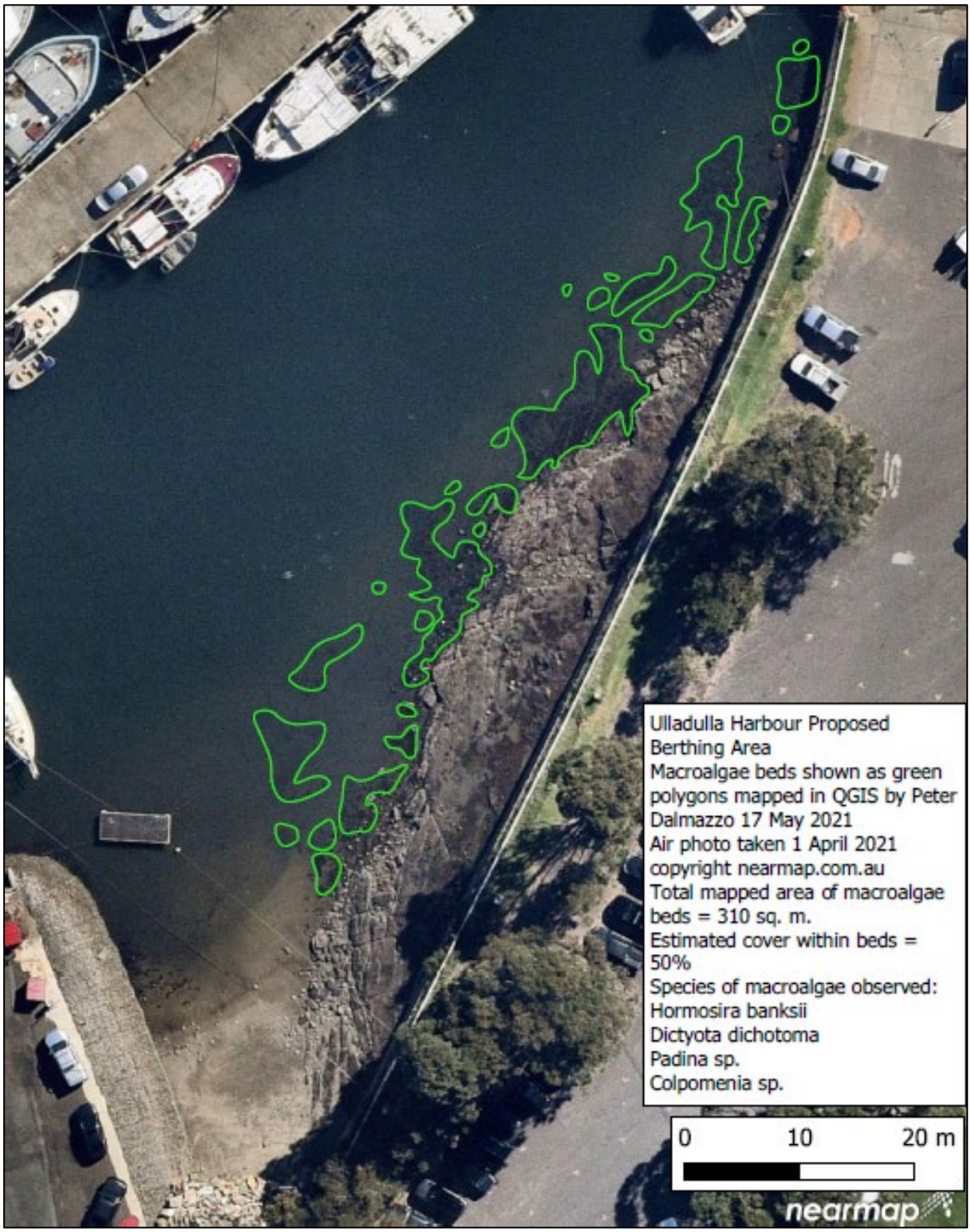

Figure 24. Map of subtidal rock supporting macroalgae.

7.2.d Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality

The subject site is not mapped as a scenic protection area the Shoalhaven Local Environmental Plan 2104. The presence of the machinery at the work site would impact on the visual and recreational qualities of the site for a short period. In the long term the berthing facility would only be visible from close proximity. The current aesthetic quality of the area would generally be retained - that of a highly modified

harbour with significant boating infrastructure and many moored vessels. The area of waterway that would be affected is not used by many community members apart from commercial fishing vessels so the locality has little recreational or scientific value. The proposed activities would improve recreational values of and opportunities at the locality as the purpose of the proposed berthing facility is to facilitate and encourage the operation of private, charter and commercial vessels. The berthing facility would cater for motor cruisers but there is anticipated to be provision for at least one berth for deep-keeled yachts. The aesthetic, recreational, scientific or other environmental quality or value would not be altered to any significant extent by the proposed activities.

7.2.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

Based on the assessments in the following subsections, it is considered unlikely that there would be any significant 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.

7.2.e.1 Items of Environmental Heritage

"Ulladulla Harbour including Old pier and stone pier, Steps and Walls" is included as a Heritage Item (Item No. 494) in Part 1 Schedule 5 of the Shoalhaven Local Environmental Plan 2014 and is of local significance. The proposed activities would be within the LEP mapped area for this item (Figure 25). *Note: the site is not listed by the Heritage Council of NSW under the NSW Heritage Act 1977.*

A conservation management plan has been prepared for the harbour (NSW Department of Public Works & Services Heritage Group, 1999).

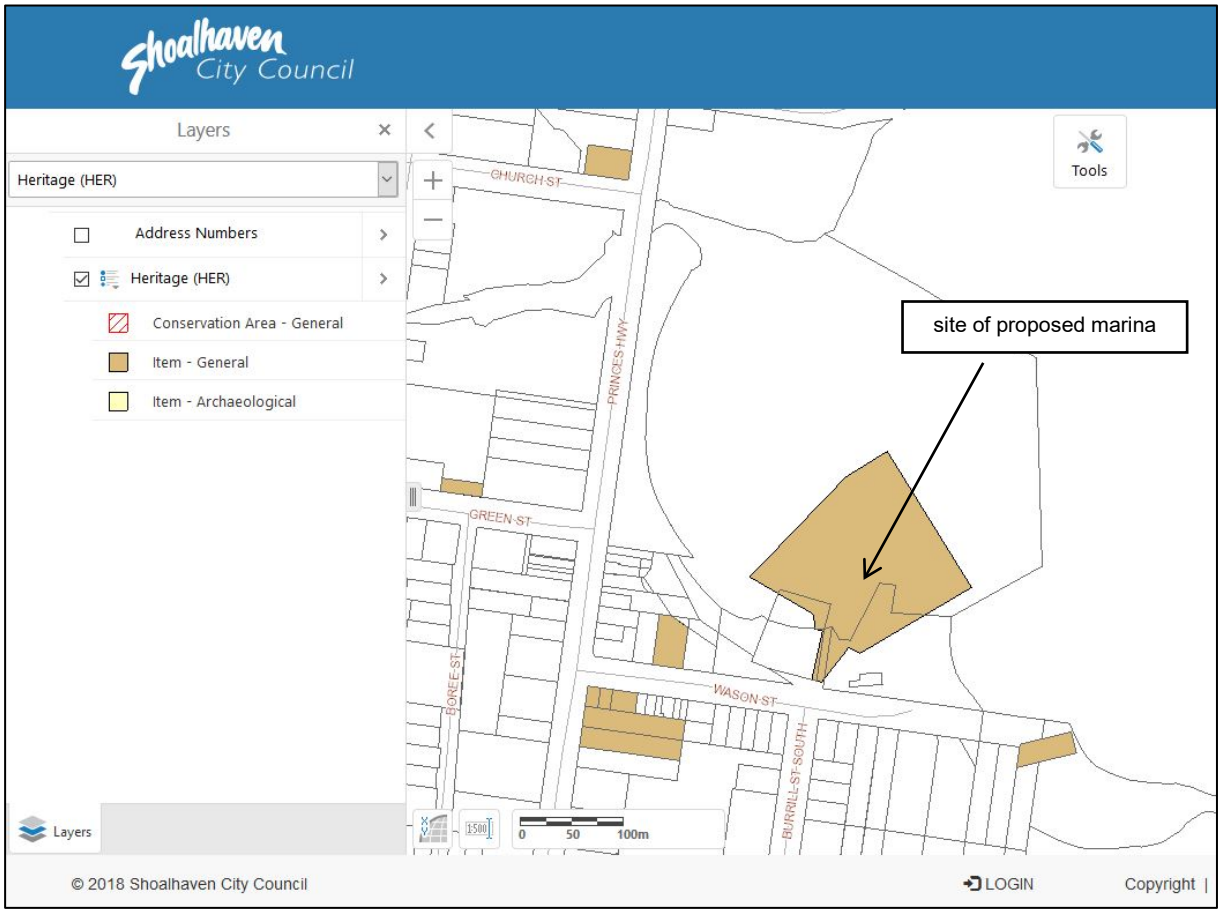

Figure 25. Heritage map from Shoalhaven LEP 2014.
Source: Shoalhaven City Council Maps Online

Shoalhaven Heritage Inventory entry for this item holds that the Ulladulla Harbour was commenced circa. 1837 following gazettal under the name “Boat Harbour” in 1829. A temporary timber jetty was built in 1858. Construction of a stone pier was undertaken by builders Elphinstone and Shand in 1863. The development of Ulladulla Harbour is of considerable significance as evidence of the actions of the local community and the NSW Government in the establishment of a safe port facility when water transport was the basis for a viable community in early NSW. Ulladulla Harbour is of high historical significance as a key port in the development of the NSW, Sydney and Ulladulla regions, before road, rail and air connections were established. The port was important for transportation, communication, industry and agriculture (fishing, leather-making, ship building, shipping, shell grit and silica mining, sawmilling, starch, and tourism).

Ulladulla Harbour is listed in the Shoalhaven City Council Heritage Study (MU021) as of Regional Significant. The harbour is not listed on the State Heritage Register as State Significant, however, the Shoalhaven Heritage Inventory determined the assessed (cultural heritage) significance as State. Ulladulla Harbour has subsequently been listed within the Shoalhaven LEP as local significance. The significance variation is explained in the conservation management plan wherein it qualifies Levels of Significance. Part of the fabric within the overarching Ulladulla Harbour was considered to be classified as “items which deserve to be on any national or state register…” which would subsequently be afforded statutory protection. There are only a few remaining significant elements (most early elements have been demolished), above ground, associated with maritime use of the harbour. These are reported to be of high significance in NSW and south-east Australia, and include:

- the stone jetty
- breakwaters (northern and southern)
- lighthouse (relocated from stone jetty to Wardens Head).

The significance is described below:

Aesthetic Significance
Maritime character – The port activities associated with the southern breakwater, stone jetty and timber/concrete jetty while industrial in nature are of high aesthetic significance, but are somewhat compromised by post-war architecture of low integrity.

Aesthetic (Scientific) Significance
Ulladulla Harbour is of some industrial and maritime significance archaeologically. There have been various types of activities and built elements (generally small scale) associated with the harbour, however demolition, disturbance and redevelopment are likely to have had a high impact. Most of the remaining structures (buildings) associated with the use of the harbour date from post 1945 and are not key examples of their era or type. They do perhaps reflect the function of the harbour and enable visitors to appreciate the fishing industry.

Social Significance
While it is difficult to measure, there is considerable social value associated with the coastal edge (including harbour pool), nearby open-space and port activities. The activities of the area and its natural setting are of cultural and recreational interest to the local community and visitors to the area. Ulladulla Harbour is of considerable social and historical significance for its cultural associates with pre and post-World War II Italian migrant community which is evidenced in the names of the fishing boats, a successful fishing industry and the Blessing of the Fleet Festival. The area also provides high opportunity for interpretation, which could increase the community's understanding of the area and therefore significance to them.

Condition and Protection
Coffey Geotechnics (2011) noted that the condition of the stone wall along the eastern edge of the subject site appeared to vary from poor to reasonable, based on a visual assessment only. It appeared to have been repaired and rebuilt in sections and was generally intact at the time of their observations. The poorer sections occur where significant weathering in combination with undercutting of the toe was evident. Some older sections of the stone wall were weathered and undercut at the base and the mortar had weathered and eroded between the stone blocks in parts of the wall.

Therefore the structural integrity of the stone retaining wall will need to be considered both during and following the rock excavation works. Coffey recommended the following measures with a view to maintaining the integrity of the stone wall:

- The condition of the wall before and after the excavation works should be recorded including detailed photographs and survey positions of the top, middle and base of the wall to check for displacement.
- Vibration monitoring should be carried out during the excavation process to assess whether vibration could potentially affect nearby masonry structures.

- Prior to commencement of excavations for the harbour deepening, a reinforced concrete beam approximately 0.6m thick x 0.6m wide should be cast along base of the stone wall along the section exposed at low tide. Concrete should also be compacted into voids where undercutting has occurred. The concrete beam should be anchored by closely spaced dowels to the rock platform.
- Grouting of weathered and eroded mortar joints and filling of voids in the wall should be carried out.
- The first saw cut into the rock platform parallel to the stone wall should be offset at least 1.3m from the base of the wall.
- The maximum batter slope of the tuffaceous sandstone along the eastern edge of the proposed harbour expansion should not exceed 2V:1H.
- Shotcrete should be placed over the exposed rock platform after excavation and clearing of loose material. The shotcrete should extend from the concrete beam at the toe of the stone wall and over the upper part of the cut batter to at least 1.0m below the low tide level. A minimum shotcrete cover of 100mm is recommended. A polyfibrecrete mix for aggressive conditions should be adopted for the shotcrete.

The proposals for a concrete beam and use of shotcrete have been reconsidered in an attempt to make the proposal more environmentally friendly. Instead of a concrete beam, large diameter, natural looking rocks would be placed at the base of the stone wall. Shotcrete would only be used where a suitably qualified engineer determines that stability of the batters is insufficient.

To protect the wall during dredging activity, GHD 2018 recommended:

- Fill the voids at the toe of the stone wall where it has been scoured (mostly in the northern end of the wall) with grout.
- Construct a temporary supporting wall in front of the heritage stone wall with container bags / geotextile sand container, to approximately two-thirds of the wall height.

<u>Assessment of Potential Impact</u>
The proposed activities would have no to little effect on the breakwaters and lighthouse due to their spatial separation from the proposed berthing facility.

The proposal will not have any negative effect on the heritage significance of Ulladulla Harbour. The Conservation Management Plan recommends that development options include options to “optimise port efficiency and to allow future growth in both the fishing and tourism industries while at the same time ensuring public open space is extended and not alienated from general use.” In this regard, the proposed activities would contribute to the livelihood and support the ongoing survival of the site as a working port. The proposal is an appropriate fit in allowing future growth in both the fishing and tourism industries without significantly impacting the fabric of the stone jetty. The proposal is another layer to address the changing culture of Ulladulla Harbour by servicing the demand for recreational boating, fishing and tourism.

The proposed berthing facility may have an effect on the aesthetic significance of Ulladulla Harbour, yet only in reference to the expanded curtilage of the extant stone wall which projects into the Harbour. The extant stone wall has aesthetic significance and the proposal will impact upon the reduced curtilage for the duration of the life on

the proposal (some 30-years to possible replacement). The central stone wall, adjacent to the proposed facility is of reduced aesthetic significance since its construction. The majority of the wall, in this location, has previously deteriorated and has been repaired with shotcrete (or similar) to structurally perform as a retaining wall.

The proposal is unlikely to have any negative effect/s on the social significance of Ulladulla Harbour. The owners of commercial and recreational fishing boats have been consulted and almost unanimously demonstrated support for the proposal. It was considered that the proposed activities are aimed at responding to the trend to increase tourism, which contributes in a positive manner to the local economy.

The proposal would not have any negative effects on the scientific significance of the Harbour. This assessment is fundamentally based on the Burra Charter. A fundamental feature is having a cautious approach. Conservation is based on a respect for the existing fabric, use, associations and meanings. It requires a cautious approach of changing as much as necessary but as little as possible. In this case the change to the overall precinct is minor, yet commensurate with modern boat harbour culture.

Drawing from this analysis, consideration must apply to the extant stone wall adjacent to where it is intended to dredge and install a floating facility to accommodate boats. The actual physical properties of the stone wall are not at risk.

The proposal is reversible and has a pre-determined life expectancy of 30 years.

In summary, any potential negative effect on the heritage significance is considerably outweighed by the positive contribution to the on-going and changing use of the Harbour Precinct, in particular as a future layer representing current culture of tourism and recreational fishing following past practices.

7.2.e.2 Native Title

A search of the National Native Title Tribunal databases in May 2018 indicated that native title had not been determined to exist over the subject land but there was one active native title claim in the area under the Native Title Act 1993 (Attachment 4). Council received the following advice from the Crown Property Office in the NSW Department of Industry - Lands:

"In regards to Native Title for the site I can confirm that DoI-Lands & Water is of the opinion that the part the proposal located above MHWM can be undertaken as this area has had Native Title extinguished by virtue of the public works to create the seawall. In respect of the proposal below MHWM DoI-Lands & Water considers that this will be a permissible future act under section 24M of the Native Title Act 1993."

Based on that advice it might be necessary that before the proposed public work is undertaken a notice be served on the Aboriginal and Torres Strait Islander Representative Body for NSW (currently NTSCORP).

7.2.e.3 Aboriginal Land Rights

With regard to Aboriginal Land Claim under the NSW Aboriginal Land Rights Act, advice from the Aboriginal Land Claim Investigation Unit of the Department of Industry - Crown Lands on 21 May 2018 (Attachment 4) indicated that Lot 7314 DP 1166835 was not subject of any undetermined Aboriginal Land Claims. However, parts of the

proposed activities may be undertaken on land/water subject of undetermined Aboriginal Land Claims 8042, 42448 and 42485 (Figure 26):

- ALC 8042 – this comprises 2 hectares of the Ulladulla harbour foreshore area north of Wason Street and east of the extension of Burrill Street (South). Claim lodged by NSW Aboriginal Land Council (NSWALC) on behalf of the Ulladulla Local Aboriginal Land Council (ULALC) in 2005

- ALC 42448 and 42485 (2017 'blanket and duplicate claims') – this appears to cover the entire harbour and foreshore Crown lands.

Although there is nothing in the NSW Aboriginal Land Rights Act that precludes the development, the Department of Industry - Crown Lands cannot issue a licence, lease or purchase of Crown land whilst there is an interest in the land by virtue of the land claim.

Following a request by Shoalhaven City, the NSW ALC in cooperation with the ULALC, withdrew the land claims through the Office of the Registrar of the Act (refer to D17/335282). The Office of Registrar sent notification of the whole withdrawal of Aboriginal Land Claim 8042 and Partial withdrawal of Aboriginal Land Claims 42448 and 42485 to the Department of Industry - Crown Lands on 21 September 2017. As a result, an Aboriginal Land Claim does not currently affect the area required for the facilities associated with the proposed berthing facility.

7.2.e.4 Aboriginal Objects

The National Parks and Wildlife Act protects all Aboriginal objects and Aboriginal places in NSW. It is an offence to do any of the following things without the permission of the NPWS (penalties can apply):

- disturb or move an Aboriginal object
- excavate land for the purpose of discovering an Aboriginal object
- knowingly destroy, damage or deface an Aboriginal object or Aboriginal place
- knowingly cause or permit the destruction, damage or defacement of, an Aboriginal object or Aboriginal place.

A preliminary assessment of potential impacts on Aboriginal objects under the NSW Government's Due Diligence Code of Practice (NSW Department of Environment, Climate Change and Water, 2010) is set out below.

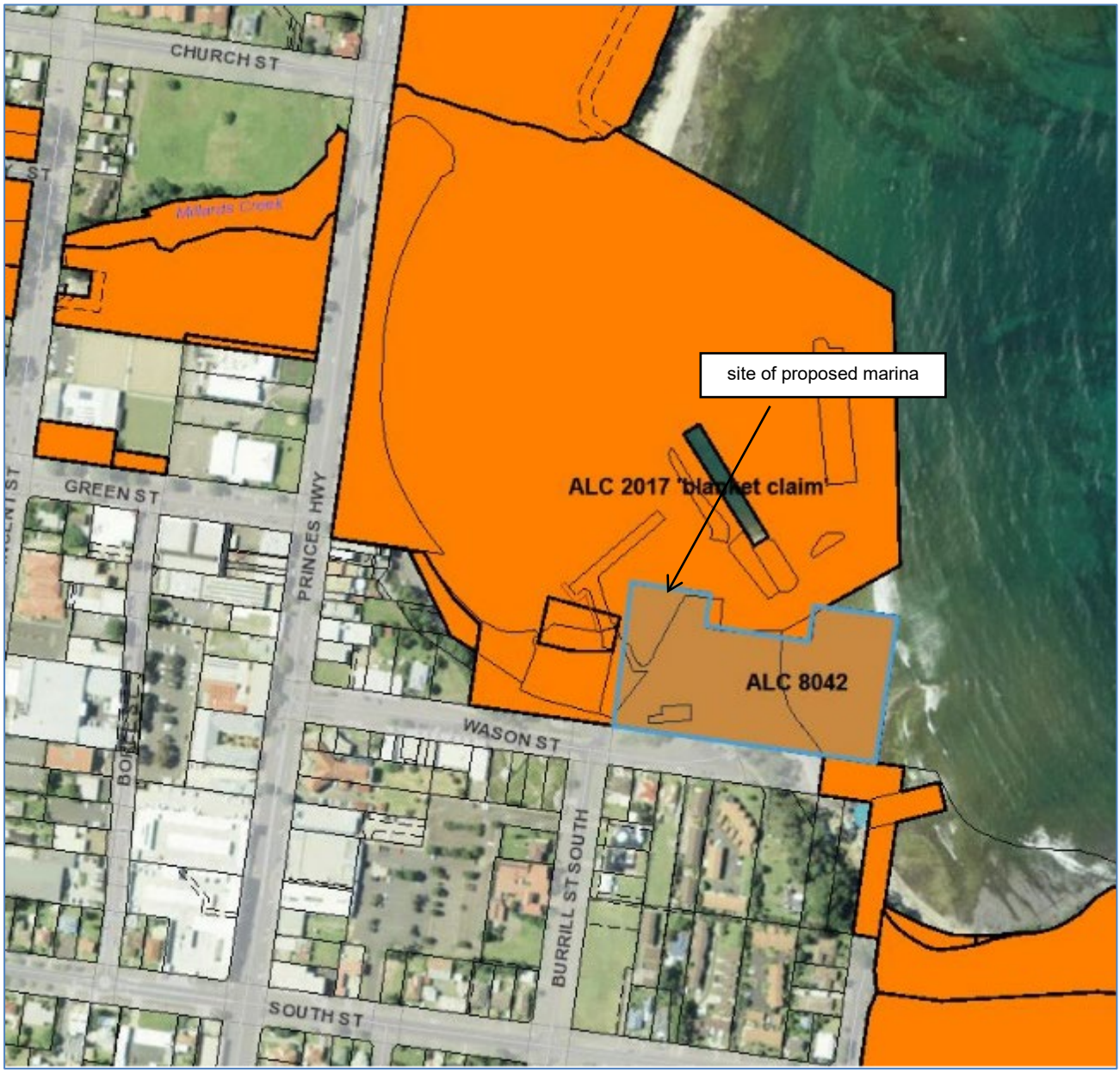

Figure 26. Aboriginal Land Claims (orange).
Source: Shoalhaven City Council

Preliminary Assessment under Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales

Step 1. Will the activity disturb the ground surface?
Yes.

Step 2a. Search the AHIMS database and use any other sources of information of which you are already aware
The results of a search of the AHIMS database are attached to this report (Attachment 4). No Aboriginal places have been declared and no Aboriginal sites have been recorded on the subject parcel of land.

Step 2b. Activities in areas where landscape features indicate the presence of Aboriginal objects

Even if an AHIMS search indicates no *known* Aboriginal objects at a site, it is necessary to consider whether Aboriginal objects are *likely* to be in the area having regard to landscape features. Aboriginal objects are often associated with particular landscape features as a result of Aboriginal people's use of those features in their everyday lives and for traditional cultural activities. Examples of such landscape features are rock shelters, sand dunes, waterways, waterholes and wetlands. The code indicates that the following generic list of landscape features should be considered:

Landscape Feature	Assessment for Lot 7308
1. within 200m of waters	the site is within the waters of Ulladulla Harbour
2. located within a sand dune system	the site is not located within a sand dune system
3. located on a ridge top, ridge line or headland	the site is not located on a ridge top, ridge line or headland
4. located within 200m below or above a cliff face	the site is not located within 200m below or above a cliff face
5. within 20m of or in a cave, rock shelter, or a cave mouth	no caves or rock shelters were observed within 20 metres of the site

The code provides that if the proposal is on such landscape *and is not on disturbed land*, then the assessment must continue to step 3. Disturbed land or land already disturbed by previous activity is defined in the code as follows:

> *Land is disturbed if it has been the subject of a human activity that has changed the land's surface, being changes that remain clear and observable. Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure) and construction of earthworks.*

The site of the proposed activity is considered "disturbed land" as it has obviously been subject to human activity through the construction of the harbour and associated facilities.

Aboriginal Heritage Due Diligence Conclusion
Progression to step 3 is not considered warranted given that:

1. no Aboriginal objects are known to be present on or within 50 metres of the site
2. the proposal is on disturbed land.

The proposed activity can proceed with caution without applying for an Aboriginal heritage impact permit as the proposed activity is unlikely to disturb an Aboriginal object or place. Nevertheless, workers involved in site works should be informed of the possible presence of Aboriginal objects at the site. They will be instructed to cease work and inform the "superintendent" if any material such as bone or other artefact is uncovered during excavation works. The superintendent will inform the DECCW Archaeologist.

7.2.f Any impact on the habitat of protected animals (within the meaning of the Biodiversity Conservation Act 2016)

With limited exceptions, all native mammals, birds, reptiles and amphibians in the subject area are protected under the Biodiversity Conservation Act. The area of habitat affected by the proposed activities would be relatively small compared to the total amount of habitat in the vicinity of the proposal so it is concluded that the potential impacts would not be significant.

7.2.g Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air

Section 221ZV of the NSW Fisheries Management Act 1994 sets out the matters that are to be taken into account for the purposes of determining whether a proposed activity is likely to significantly affect threatened fish species, populations or ecological communities, or their habitats. Section 7.3 of the NSW Biodiversity Conservation Act 2016 sets out the test for determining whether a proposed activity is likely to significantly affect terrestrial threatened species or ecological communities, or their habitats. The Australian Environment Protection and Biodiversity Conservation Act 1999 sets out the tests for determining whether a proposed action is likely to significantly affect nationally listed species or ecological communities.

Assessments under the above provisions are included in Attachment 3. Provided the proposed environmental safeguards are employed, it is concluded that there is not likely to be a significant effect on aquatic or terrestrial threatened species, populations or ecological communities, or their habitats from the proposed activities.

7.2.h Any long-term effects on the environment

Dredging and construction impacts would be short term and temporary. The berthing facility would have an expected life of several decades and could be removed and the area rehabilitated if that was considered necessary in the future, and although the removal of the rock shelf would be permanent it is a relatively small area. It is considered that there would be no significant long term effects on the environment.

7.2.i Any degradation of the quality of the environment

The increase in the size of boating facilities would affect the ‘natural’ quality of the environment in the area, but not to any great extent. The current overall quality of the site would be retained - that of a highly modified harbour with significant boating infrastructure and many moored vessels. There would be no significant degradation of the quality of the environment.

7.2.j Any risk to the safety of the environment

During construction, there is a danger that people could be injured by working machinery or that they could drown if they fall into the waterway. All workers would be inducted in occupational health and safety requirements for the work site. Prior to construction commencement, temporary chain wire fencing (hoarding) would be installed along the landward site boundary/extent of works and there would be traffic control and use of navigation markers, restricted area signs, etc. as appropriate, which would be removed when the construction is completed..

The proposed activity would not involve hazardous wastes and would not lead to increased bushfire or landslip risks. The activity is not going to adversely affect flood or tidal regimes, or exacerbate flooding risks. The new berths will improve access to

boats reducing risks associated with the lack of appropriate infrastructure and the inappropriate practice of mooring abreast other boats. Access to berths by members of the public will be restricted.

There would be no significant increase in the risk to the safety of the environment.

7.2.k Any reduction in the range of beneficial uses of the environment

Beneficial uses of the environment such as supply of water and food, availability of flowering plants for honey production, absorption and storage of carbon dioxide and production of oxygen would not be affected. Access for recreational use of the environment would be improved. There would be no significant reduction in the range of beneficial uses of the environment.

7.2.l Any pollution of the environment

Pollution of the human environment in the forms of noise, vibration, dust and diesel fumes may be experienced for several weeks while construction equipment operates to carry out the works. The location of the proposed works is in an existing working harbour and similar background noise is already present at the site. There are few residential houses close by, the nearest being approximately 100 metres from the site. Hours of operation of machinery should be restricted to between 7am and 6pm Mondays to Fridays and 8am to 3pm Saturdays. These construction impacts are therefore unlikely to significantly affect the human environment.

There is potential for indirect effects on the natural environment during construction from uncontained debris, turbidity, fuel and oil. There could be pollution of the waterway by disturbed sediment, demolition material, waste, packaging or other material falling, washing or blowing in from disturbed areas, stockpiles or site compounds. To avoid pollution from machinery, refuelling should be done off site, however if refuelling on site is required, due care should be taken to avoid spilling fuel, and a tray should be used to catch any accidentally spilt fuel. Waste material should be contained within the construction site or site compound during the activity and then be removed to an authorised waste disposal facility. No material should be placed in any location or in any manner that would allow it to escape from the site. During construction over the harbour, appropriate measures will need to be put in place to catch debris and prevent it from entering the waterway.

A construction environmental management plan shall be prepared that addresses, amongst other things, ways in which pollution of the sites by fuel, oil and other debris will be avoided. This should include protocols for equipment maintenance, storage of fuel and other chemicals and materials, management of waste and refuelling procedures, site layout and erosion and sediment control.

To prevent contaminated material being placed on the site, if fill material is imported for the works it needs to be either virgin excavated natural material or excavated natural material that has been tested in accordance with the 'excavated natural material exemption 2014'. Otherwise, an environment protection licence would be required under the Protection of the Environment Operations Act or an exemption obtained from the NSW EPA.

During dredging there is potential for some short term increase in turbidity and subsequent sedimentation of the harbour while the works are being carried out, or for contaminants in sediments to be released into the waterway during the dredging

activity. Prior to any works in or near waters commencing, silt curtains and floating booms would be installed around the dredge site. The silt curtain shall not be permanently removed until all works are completed, though it could be moved in and out as required.

Earth2Water Pty Ltd (2020) assessed sediments in the area to be dredged for a range of contaminants with the following results:

- no asbestos or foreign materials were detected
- concentrations of PFAS were reported below laboratory detection limits and general solid waste guidelines
- concentrations of TPH/BTEX/PAH, heavy metals and pH/EC were reported below the relevant thresholds
- concentrations of OCs, PCB, phenols were reported below the general solid waste guidelines
- concentrations of TBT were reported below EPA interim guidelines for the sediment and rock samples.

A geochemical analysis of sediments by GHD (2012b) and updated by GHD (2018) indicated there were exceedances of ecological assessment criteria for some contaminants in existing bottom sediment in the harbour outside of the proposed dredging area. To ensure that these contaminated sediments are not disturbed, a dredging control plan shall be prepared that ensures dredging is only carried out in the area indicated in the option 2 dredge area plan prepared by Magryn (2021), as shown in Figure 5 above.

With regard to Potential Acid Sulfate Soil (PASS), Earth2Water Pty Ltd (2020) found that the pH of the harbour sediments was consistently alkaline (pH = 8.5-8.6), showing minor pH change with oxidation. Based on the sediment pH and visible shell grit in samples, Earth2Water Pty Ltd (2020) interpreted that the presence of sulfide ores is adequately neutralized by the sediment geochemistry and it was interpreted that treatment/liming will not be necessary. Nevertheless, Earth2Water Pty Ltd (2020) indicated that a preliminary environmental and acid soil management plan is required to monitor and validate the stockpiled sediment for PASS (if present) as dredging has potential for unexpected findings, odour and altering the sediment geochemistry. A validation and monitoring plan would include pH testing of stockpiles to manage any PASS.

During operation of the berthing facility, there is potential for spillage of fuel or oil and for waste to enter the waterway. The activities would not involve the use, storage or transportation of hazardous substances or the use or generation of chemicals which may build up residues in the environment. A berthing facility operations manual that includes an environmental management system and operational procedures, as well as berthing facility user rules that include environmental protection provisions should be developed and implemented.

The berthing facility would be provided with sewage pump out facilities.

The environmental safeguards required for this proposal (listed in Section 8 of this review of environmental factors) include measures to protect the waterway from

pollution. Overall, the proposal would lead to no significant pollution of the environment.

7.2.m Any environmental problems associated with the disposal of waste

Waste generated during construction of the berthing facility shall be contained within the site during the activity. Small amounts of waste would be generated during operation of the berthing facility. The waste would be disposed off-site to be recycled or re-used in accordance with resource recovery exemptions or taken to a licensed waste facility.

Earth2Water Pty Ltd (2020) concluded that the dredged harbour sediments are likely to be suitable for beneficial reuse based on monitoring and validation following stockpiling and dewatering. The harbour sediments include approximately 1,132 m3 of sandy silts which are proposed for daily cover at West Nowra Landfill if an exemption order is granted by EPA. As described in Section 2.2 above, following dewatering and any necessary treatment, all dredge spoil would be disposed of to a suitably licensed onshore landfill facility. Skip bins would be transported in sealed trucks to the landfill facilities at at West Nowra (69 km).

Earth2Water Pty Ltd (2020) concluded that the rock shelf to be excavated from the harbour is classified as virgin excavated natural material (VENM) and general solid waste. The rock fissure sediments (approx. 1 tonne), surface hydrocarbon residues (to approx. 0.1m depth), localised tar and oysters/shells could be removed to enable the rock to be reclassified and re-used as VENM. The beneficial reuse of the Ulladulla Harbour dredged rock is proposed in the development of 188 Camden Street Ulladulla (Lot 1 DP1137716) and certain other surrounding lands into an industrial estate. Dredged rock will be loaded into skip bins or directly onto dump trucks. The transportation, processing (crushing), storage and subsequent use of the rock will be the subject of separate development applications.

There would be no significant problems associated with disposal of waste.

7.2.n Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply

Some fuel would be used to run machinery and equipment and an amount of concrete, plastic, metals and other materials would be used, but the amounts would be small and the proposal would not significantly increase demands on these resources such that they become in short supply.

7.2.o Any cumulative environmental effect with other existing or likely future activities

Cumulative impacts relate to combined effects of different activities. There is significant existing boating infrastructure in Ulladulla Harbour. GHD (2012a) reported 28 recreational vessels moored in the western harbour area and there can frequently be more than 20 commercial fishing and other vessels moored at the existing wharves. It is expected that some of the existing vessels in the harbour would be relocated to the proposed berthing facility. The scale of the current proposal for a new 19 berth facility would not add significantly to any effects of existing activities in the harbour. There would be no significant cumulative impacts from the proposal.

7.2.p Any impact on coastal processes and coastal hazards, including those under projected climate change conditions

Coastal hazards include beach erosion, shoreline recession, coastal lake or watercourse entrance instability, coastal inundation, coastal cliff or slope instability, tidal inundation, erosion and inundation of foreshores caused by tidal waters and the action of waves, including the interaction of those waters with catchment floodwaters. The subject site has pre-existing hard shorelines so no new impacts on coastal hazards are expected.

Under scenarios of rising sea level the floating pontoons would maintain their function and achieve their intended design performance for a design life of several decades.

NSW Department of Commerce (2007) reported that damage to vessels, mooring lines and wharves in the harbour has been reported on many occasions however, it was not clear if such damage has been due to seiche action or ocean wave action entering the harbour during severe storm events. It was concluded that seiching was a rare event. The proposed berthing facility would be located in a more protected part of the harbour. A berthing facility operations manual should include operational procedures to be undertaken if moored vessels are ranging to an unacceptable degree.

The proposed activity would not have any significant impact on coastal hazards or any coastal processes.

7.3 Australian Environment Protection & Biodiversity Conservation Act 1999

7.3.a Protected Matters

Actions that are likely to have a significant impact on a matter of national environmental significance, or are being undertaken on or would have an effect on Commonwealth land, are known as protected matters and may require approval under the Australian Environment Protection and Biodiversity Conservation (EPBC) Act. The EPBC Act identifies nine matters of national environmental significance:

- world heritage properties;
- national heritage places
- Ramsar wetlands of international importance;
- listed threatened species and ecological communities;
- migratory species protected under international agreements;
- Commonwealth marine areas;
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mines)
- a water resource, in relation to coal seam gas development and large coal mining development.

The Australian Department of Environment's online Protected Matters Search Tool was interrogated in May 2018 for the area within a 1 kilometre radius of the site. The report is summarised below and the full report is in Attachment 3.

Matters of National Environmental Significance

World Heritage Properties: None
National Heritage Places: None
Wetlands of International Importance: None
Great Barrier Reef Marine Park: None
Commonwealth Marine Areas: None
Listed Threatened Ecological Communities: 2
Listed Threatened Species: 63
Listed Migratory Species: 48

Other Matters Protected by the EPBC Act

Commonwealth Land: 1
Commonwealth Heritage Places: None
Listed Marine Species: 73 (relevant to Commonwealth areas only)
Whales and Other Cetaceans: 12
Critical Habitats: None
Commonwealth Reserves: None

Assessments of the likelihood of there being significant impacts on matters of national environmental significance and therefore whether the matter should be referred to the Australian Government Minister for the Environment are included in Attachment 3.

7.3.bEPBC Act Conclusion

Provided the proposed environmental safeguards are employed, the proposed action is not likely to have a significant impact on a matter of national environmental

significance, nor is the action being undertaken on or having an effect on Commonwealth land. The proposed action therefore does not need to be referred to the Australian Minister for the Environment.

8 ENVIRONMENTAL SAFEGUARDS

Approvals, Consultation and Design

1. It is recommended that advice be sought on whether any 'exclusive possession act' applies to the land (for example, a freehold title or lease) or the effect that any public works undertaken on the land may have had on native title. Based on that advice it might be necessary that, before the proposed work is undertaken, a notice be served on the Aboriginal and Torres Strait Islander Representative Body for NSW (currently NTSCORP) indicating that Council intends to carry out a 'future act' under the Australian Native Title Act 1993.

2. In accordance with the *State Environmental Planning Policy (Infrastructure) 2007,* Council shall give written notice of the intention to carry out the development to the Roads and Maritime Services and take into consideration any response to the notice that is received from that authority with 21 days after the notice is given.

3. The Minister for Fisheries shall be notified by Department of Industry - Lands before carrying out or authorising dredging or reclamation work as required under section 199 of the Fisheries Management Act.

4. Application shall be made for an exemption the NSW EPA for the beneficial reuse of harbour sediment (the Electrical Conductivity (EC) exceeds the maximum average (1.5 dS/m) and absolute maximum (3 dS/m), related to natural salt levels in the harbour).

5. Application shall be made for a section 205 permit under the Fisheries Management Act for the harming of marine vegetation.

6. Application shall be made for a s219 permit under the Fisheries Management Act for any blockages or obstructions to fish passage, whether temporary or permanent.

7. If there is to be any use of explosives in the waterway an approval under clauses 112-113 of the Fisheries Management (General) Regulation 2002 shall be obtained.

8. During detailed design, attention shall be paid to ensuring "fish friendly designs" for any new infrastructure, such as including structural complexity in surfaces, and to minimise shading of the sea floor. The following should guide the design:

    - retain natural rock surface wherever possible
    - increase surface complexity of cut subtidal and intertidal rock faces by roughening or creating crevices
    - create some small, natural looking rock pools on the retained intertidal rock platform
    - install ~600mm dia rocks along the base of the stone seawall on the 1.3 metre wide rock platform and the new rock platform at -2.00 m AHD.

Construction

9. All workers shall be inducted in occupational health and safety requirements for the work site.

10. When construction work is underway, the risks to members of the public shall be reduced by defining a no go area for public with hazard fencing and restricted area signs as appropriate. The safety fencing and signage shall be monitored daily by the contractor and immediately repaired or replaced if necessary and shall be removed when construction is completed.

11. Workers shall be informed of the possible presence of Aboriginal objects at the site and of their obligations and possible offences under the National Parks and Wildlife Act with respect to Aboriginal objects. Should any Aboriginal object (being Aboriginal artefacts, shell middens, bones and/or burials) be discovered during works, then work shall cease and the superintendent shall contact the Office of Environment and Heritage on (02) 4224 4188 as soon as possible.

12. Workers shall be informed of their obligations and possible offences with respect to the heritage value of the stone wall and other harbour components.

13. Workers shall be informed of their obligations and possible offences under the NSW Biodiversity Conservation Act and Australian Environmental Protection and Biodiversity Conservation Act with respect to threatened and migratory species. All workers shall be made aware that they are potentially working in or near the habitat of threatened and migratory species.

14. If native fauna is injured, immediate contact should be made with Wildlife Rescue South Coast and appropriate action taken.

15. If a seal or turtle has hauled out at a site when the work was being done, the advice of the Ulladulla office of the National Parks and Wildlife Service shall be sought for an appropriate course of action.

16. To maintain the integrity of the heritage listed stone wall:

- The condition of the wall before and after the excavation works should be recorded including detailed photographs and survey positions of the top, middle and base of the wall to check for displacement.
- Vibration monitoring should be carried out during the excavation process to assess whether vibration could potentially affect nearby masonry structures.
- Install ~600mm diameter natural looking rocks along the base of the stone seawall on the 1.3 metre wide rock platform and the new rock platform at -2.00 m AHD
- Grouting of weathered and eroded mortar joints and filling of voids in the wall should be carried out.
- A temporary supporting wall should be constructed in front of the heritage stone wall with container bags / geotextile sand container, to approximately two-thirds of the wall height.
- The first saw cut into the rock platform parallel to the stone wall should be offset at least 1.3m from the base of the wall.

- The maximum batter slope of the tuffaceous sandstone along the eastern edge of the proposed harbour expansion should not exceed 2V:1H.

17. Shotcrete should not be used unless a suitably qualified engineer determines that stability of the rock batters is insufficient.

18. As far as possible, the works shall be undertaken at a time that would minimise disruption to the ongoing use of the facility by the community. Direct consultation with known likely affected users (e.g., fishing co-op, marine rescue, festival organisers) shall also be undertaken and timing of the work shall take into consideration the needs of those users.

19. Hours of operation of all construction works shall be restricted to between 7am and 6pm Mondays to Fridays and 8am to 3pm Saturdays.

20. An environmental management plan shall be prepared by the construction company that addresses, amongst other things, ways in which pollution by noise, dust, waste, fuel and oil will be avoided. This shall include protocols for equipment maintenance, storage of fuel and other chemicals and materials, management of waste and refuelling procedures.

21. To avoid pollution from machinery, refuelling shall generally be done off site, however if refuelling on site is required, due care shall be taken to avoid spilling fuel and a tray shall be used to catch any accidentally spilt fuel. Spill kits are to be available on site at all times during works.

22. No major equipment maintenance works shall be undertaken on-site.

23. To prevent contaminated material being placed on the site, if material is imported for fill, it shall be either virgin excavated natural material as defined in the Protection of the Environment Operations Act or be excavated natural material that has been tested in accordance with the 'excavated natural material exemption 2014'. Otherwise, an environment protection licence would be required under the Act or an exemption obtained from the NSW EPA.

24. To ensure that contaminated sediments are not disturbed, a dredging control plan shall be prepared that ensures dredging is carried out generally in accordance with the area indicated in the option 2 dredge area plan prepared by Magryn (2021), as shown in Figure 5 above.

25. Prior to any works in or near waters commencing, silt curtains and floating booms shall be installed around the dredge site to contain the spread of turbid water. The silt curtain shall not be permanently removed until all works are completed, though it could be moved in and out as required.

26. The construction contractor shall keep an emergency spill kit on-site at all times with procedures to contain and collect any leakage or spillage of fuels, oils and greases from plant and equipment.

27. A visual inspection of the waterway for dead or distressed fish is to be undertaken twice daily during the works. Observations of dead or distressed fish are to be

immediately reported to the Fishers Watch hotline on 1800 043 536. In such cases all works are to cease until the issue is rectified and approval is given to proceed.

28. Waste material (for example packaging, strapping, off-cuts, excess concrete) shall be contained within the land-based site during construction and then be removed to an authorised waste disposal facility or an appropriate storage area for reuse elsewhere. No material shall be placed in any location or in any manner that would allow it to enter the waterway or escape from the site into adjoining bushland areas. Stockpiles of debris and construction materials shall be stored at least 10 metres outside the harbour. General refuse shall be disposed of to a covered container stored at the site. This container, when full, shall be transported to a licenced waste disposal centre. No waste shall be burnt or buried on-site or disposed of in the waterway.

29. A preliminary environmental and acid soil management plan shall be prepared to monitor and validate the stockpiled sediment for PASS (if present) as dredging has potential for unexpected findings, odour and altering the sediment geochemistry. The plan would include pH testing of stockpiles to manage any PASS.

30. Following dewatering and any necessary treatment, all dredge spoil shall be disposed of to a suitably licenced onshore facility and/or an approved and lawful site for the land-based application of the waste spoil. The spoil shall be transported in sealed or covered trucks to the waste disposal locations. All disposal of spoil shall be in accordance with the NSW Protection of the Environment Operations Act 1997 and associated waste regulation. The application of waste to land outside licenced waste facilities would also be subjected to separate assessment under the NSW Environmental Planning and Assessment Act 1979.

31. To manage potential acid sulfate soils, dredge spoil must be kept wet at all times during excavation and subsequent handling, transport and storage, until it can be disposed of safely. It must be received at the proposed disposal point within 16 hours of being dug up. Alternatively, if sediments are to be temporarily stored on site, then a sediment management plan will be required.

32. The rock fissure sediments (approx. 1 tonne), surface hydrocarbon residues (to approx. 0.1m depth), localised tar and oysters/shells shall be removed to enable the dredged rock to be reclassified and re-used as VENM. Dredged rock shall be loaded into skip bins or directly onto dump trucks. The transportation, processing (crushing), storage and subsequent use of the rock shall be the subject of separate development applications.

<u>Operation</u>

33. Develop and implement a berthing facility operations manual that includes an environmental management system and operational procedures to be undertaken if moored vessels are ranging to an unacceptable degree.

34. Develop and enforce berthing facility user rules that include environmental protection provisions.

9 CONCLUSIONS

Provided the environmental safeguards listed in Section 8 of this report are employed, dredging part of the bed of Ulladulla Harbour to a navigable depth (including removal of the mudstone rock platform in the southern comer) and the construction and operation of a floating pontoon public berthing facility as described in this review of environmental factors:

- are not likely to have a significant effect on the environment and therefore an environmental impact statement is not required

- are not likely to significantly affect threatened species and therefore a biodiversity development assessment report or a species impact statement is not required

- are not likely to have a significant impact on a matter of national environmental significance; would not be undertaken on or have an effect on Commonwealth land; does not need to be referred to the Australian Minister for the Environment.

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Department of Environment and Climate Change NSW, 2009. Environmentally Friendly Seawalls - A Guide to Improving the Environmental Value of Seawalls and Seawall-lined Foreshores in Estuaries.

NSW Department of Public Works & Services Heritage Group, 1999. Ulladulla Harbour: conservation management plan. Prepared for Department of Land and Water Conservation (South Coast Region).

Patterson Britton and Partners, 2007. Ulladulla Harbour Development Plan Report.

Terra Insight, 2020. Proposed Berthing Facility at Ulladulla Harbour NSW - Report on Geotechnical Investigation. Prepared for Shoalhaven City Council.

11 DETERMINATION

I, Robert Domm, Director – City Futures of Shoalhaven City Council, hereby determine that the proposed construction and operation of a 19-berth berthing facility at Ulladulla Harbour, as described in this review of environmental factors, can proceed.

(i) I have determined that it is unlikely that there will be any significant environmental impact as a result of the proposed work. An environmental impact statement is not required.

(ii) The proposed activity is not likely to significantly affect threatened species, populations or ecological communities listed in the Fisheries Management Act, or their habitats and therefore a species impact statement is not required.

(iii) The proposed activity is not likely to significantly affect threatened species listed in the Biodiversity Conservation Act and therefore the biodiversity offsets scheme does not apply and the determining authority does not need to consider obtaining a biodiversity development assessment report or to retire biodiversity credits to offset the residual impact on biodiversity values or to prepare a species impact statement.

(iv) The proposed action is not likely to have a significant impact on a matter of national environmental significance, nor would the action be undertaken on or have an effect on Commonwealth land. The proposed action therefore does not need to be referred to the Australian Minister for the Environment.

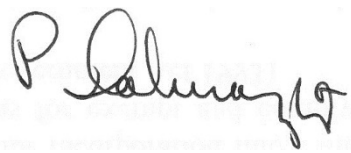
(v) The environmental safeguards proposed in this review of environmental factors are to be implemented.

29/07/2021

....

Robert Domm Date
Director – City Futures
Shoalhaven City Council

REF prepared by:



Peter Dalmazzo Date:19/07/2021

ATTACHMENTS

1. GOVERNMENT AGENCY RESPONSES
2. ENVIRONMENTALLY FRIENDLY ROCK FINISH
3. THREATENED SPECIES ASSESSMENTS
4. ABORIGINAL HERITAGE DOCUMENTATION

Department of Primary Industries

Our Ref: C17

20 March 2018

Peter Delmazzo

Dear Mr Delmazzo

Subject: Ulladulla Marina Proposal – Review of Environmental Factors

Thank you for your email dated 20 February 2018 seeking comment on the above proposed works from DPI Fisheries, a division of NSW Department of Primary Industries.

DPI Fisheries is responsible for ensuring that fish stocks are conserved and that there is no net loss of key fish habitats upon which they depend. To achieve this, DPI Fisheries ensures that developments comply with the requirements of the *Fisheries Management Act 1994* (FM Act) (namely the aquatic habitat protection and threatened species conservation provisions in Parts 7 and 7A of the Act, respectively), and the associated *Policy and Guidelines for Aquatic Habitat Management and Fish Conservation (1999)*. In addition, DPI Fisheries is responsible for ensuring the sustainable management of commercial, recreational and Aboriginal cultural fishing, aquaculture and marine protected areas within NSW.

Initial Comments

We note that the proposal site contains a rock shelf that would need to be removed to accommodate the facility. The Department will require an ecological assessment of the value of this aquatic habitat along with any plans to offset its removal.

The ongoing operational impacts from the proposal should also be considered in the REF, including pump out provisions, refuelling and bilge water disposal.

DPI Fisheries has partnered with the Marina Industries Association of Australia to develop principals for constructing 'fish friendly' marinas. Further information is available at https://www.dpi.nsw.gov.au/fishing/habitat/rehabilitating/fish-friendly-programs/fish-friendly-marinas. These principals should be considered when finalising the design of this proposal.

Environmental Assessment Requirements

DPI Fisheries advises that the REF for the proposed development should include information on the following:

- Location of works
- Description of works to be undertaken, including proposed methodology.
- Description and condition of aquatic habitats located within the footprint. An ecological study should be undertaken on the rock platform and benthic habitats within the proposal footprint.
- Description and condition water quality located within the footprint.
- Analysis of any interactions and/or impacts of the proposed construction works with aquatic environments and water quality.
- Analysis of any interactions and/or impacts of the ongoing operation of the marina with aquatic environments and water quality. This should including predicted future maintenance dredging.

NSW Department of Primary Industries | 4 Woollamia Road | T: (02) 4428 3400
DPI Fisheries | PO Box 97 | F: (02) 4441 8961
Aquatic Ecosystems | Huskisson NSW 2540 | www.dpi.nsw.gov.au/fisheries

- Safeguards to mitigate any impacts upon aquatic environments and water quality, from both construction and operational impacts. This should include provisions for containment and disposal of pollutants such as sewage, bilge water and waste.
- Potential impacts on any aquatic threatened species, populations and ecological communities listed under the *Fisheries Management Act 1994* and safeguards to mitigate any potential impacts.
- Details of proposed monitoring during construction and operation to verify predictions made within the REF.

Please note that approvals or consultation may be required from DPI Fisheries for the proposed development and works including:

- Dredging and reclamation. Any dredging or reclamation in a waterway (below the high bank) requires approval from DPI Fisheries. A permit is required under section 200 of the *Fisheries Management Act 1994* if the works are conducted by the proponent (or contractor) without specific approval from another NSW public authority (e.g. licence under the *Crown Lands Act 1989*). If the dredging/reclamation works are authorised by a public authority (e.g. NSW Office of Water), the public authority is required under section 199 of the *Fisheries Management Act 1994* to consult with DPI Fisheries and take into account any issues raised prior to approving the dredging/excavation and reclamation works in a waterway.
- Use of explosives in waterways. A permit from DPI Fisheries is required for the use of explosives in any waterways (under Clauses 70-71 of the *Fisheries Management (General) Regulation 2010*).

Once the REF has been prepared for the proposal please forward a copy to this office for our review and further comment.

For further detailed advice on DPI Fisheries aquatic habitat requirements, please refer to the Department's Policy and Guidelines for Fish Habitat Conservation and Management (2013 Update) available on our website www.dpi.nsw.gov.au.

If you require any further information, please do not hesitate to contact me on (02) 4428 3406.

Yours sincerely

Jillian Reynolds
Fisheries Manager
Aquatic Ecosystems – South Coast

Peter Dalmazzo

From: Navigation Advice South <NavigationAdviceSouth@rms.nsw.gov.au>
Sent: Friday, 23 February 2018 3:41 PM
To: Peter Dalmazzo
Subject: RE: agency consultation - proposed Ulladulla marina

Hi Peter,

The Maritime Division of Roads and Maritime Services (RMS) are currently consulting directly with Shoalhaven City Council and Department of Industry (Lands and Forestry) regarding the proposed design of this facility as part of a separate process and do not have any further advice or issues that need to be addressed in the REF at this stage.

I can also confirm that there are no approvals required from RMS for this development, however we will continue to consult with SCC as the project progresses to ensure the best outcome for the NSW Government, boating industry and general community.

Thank you for your correspondence on this matter.

Kind Regards
Eddie Douglas
Maritime Operations and Compliance, South | **Maritime Division**
www.rms.nsw.gov.au
Roads and Maritime Services
Level 2, 91 Foreshore Road Port Kembla NSW 2505

From: Peter Dalmazzo [mailto:peter@peterdalmazzo.com.au]
Sent: Tuesday, 20 February 2018 3:04 PM
To: ahp.central@dpi.nsw.gov.au; NowraCrownLands@crownland.nsw.gov.au; david.zerafa@dpi.nsw.gov.au; Navigation Advice South; rog.illawarra@environment.nsw.gov.au; queanbeyan@epa.nsw.gov.au
Cc: 'Geoff Young'
Subject: agency consultation - proposed Ulladulla marina

To NSW government agency representatives.

I have been engaged by Shoalhaven City Council to prepare a review of environmental factors for a proposed marina in Ulladulla Harbour. Council is the proponent for this proposal which is on Crown land. It is being assessed under Part 5 of the EP&A Act on the basis that SEPP (Infrastructure) allows it to be carried out without development consent.

Attached is a proposed layout for the marina.

Studies are underway to determine specifications for rock removal and dredging.

I am consulting with you now to gain input into the REF preparation. I would appreciate your comments on:

- any particular matters that should be addressed in the REF
- any particular environmental safeguards that should be employed for construction and operation of the facility

- any approvals required from your department.

It would be valuable to have your comments at this stage of the project and your early response would be greatly appreciated.

Regards,

Peter Dalmazzo
peter@peterdalmazzo.com.au
02 4448 6164
0466 930 775

Peter Dalmazzo

From: Geoff Young <Geoff.Young@shoalhaven.nsw.gov.au>
Sent: Tuesday, 27 February 2018 3:42 PM
To: Peter Dalmazzo
Subject: FW: Ulladulla Marina - request for comments- RMS (Maritime) advice

Hello Peter,

FYI

From: Michael Strachan
Sent: Tuesday, 27 February 2018 3:38 PM
To: Wayne Brighton <Wayne.Brighton@shoalhaven.nsw.gov.au>; Geoff Young <Geoff.Young@shoalhaven.nsw.gov.au>; Greg Pullen <Greg.Pullen@shoalhaven.nsw.gov.au>
Subject: FW: Ulladulla Marina - request for comments- RMS (Maritime) advice

FYI

Michael

From: VOYER Deon [mailto:Deon.Voyer@rms.nsw.gov.au]
Sent: Tuesday, 27 February 2018 2:49 PM
To: Michael Strachan <Michael.Strachan@shoalhaven.nsw.gov.au>
Cc: Martin Bergs <martin.bergs@crownland.nsw.gov.au>; IRELAND Arlo <Arlo.Ireland@rms.nsw.gov.au>; DOUGLAS Edward <Edward.Douglas@rms.nsw.gov.au>
Subject: FW: Ulladulla Marina - request for comments- RMS (Maritime) advice

Hello Michael

Following from the recent Crown Land chaired Ulladulla Harbour User Group, the Maritime Division of Roads & Maritime (RMS) provides advice of ***no objections*** (assessed on the grounds of impact to safe navigation) to the proposal, while noting the departures from applicable standards and fairway restrictions (managed by vessels size) given constraints at the site.

RMS provides in-principle support for the proposal, and offers assistance by way of further engagement with regard to the final design and operating parameters. Of note at this time is the planned dredging profile to suit keeled vessels (ie: yachts).

Please note that upon completion of the project, RMS will be reviewing moorings administered in Ulladulla Harbour (given its likely a number of RMS mooring customers will relocate to the development) with the view to providing Courtesy (public) moorings in the harbour, which may assist in the holistic management of the precinct.

Should you wish to discuss this matter any further, please call me directly.

Regards,

Deon Voyer
Manager Operations South
Maritime Operations & Compliance

M 0419 751 852 **T** (02) 8874 7855
www.rms.nsw.gov.au

Roads and Maritime Services
Level 2, 91 Foreshore Road Port Kembla NSW 2505

From: Michael Strachan [mailto:Michael.Strachan@shoalhaven.nsw.gov.au]
Sent: Friday, 2 February 2018 1:55 PM
To: IRELAND Arlo
Cc: DOUGLAS Edward
Subject: Ulladulla Marina - request for comments

Arlo

Do you have any comments in relation to the proposed layout for the proposed marina/berthing facility at Ulladulla Harbour

Please see attached

Regards

Michael Strachan
Infrastructure/Project Manager
Shoalhaven City Council

02 44293276 | 0412780797
strachan@shoalhaven.nsw.gov.au
www.shoalhaven.nsw.gov.au

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Peter Dalmazzo Environmental Consultant
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www.peterdalmazzo.com.au
email: peter@peterdalmazzo.com.au
157 Cedarvale Lane
Jaspers Brush NSW 2535
P J Dalmazzo & A M Glynn ABN 70 885 498 355

23 May 2021

Anthony Meta
Project Engineer
Works and Services
Shoalhaven City Council
Anthony.Meta@shoalhaven.nsw.gov.au

Dear Anthony

Environmentally Friendly Rock Finish
Ulladulla Harbour Berthing Area

As per suggestions made by DPI Fisheries at the site meeting concerning Ulladulla Harbour (4 May 2021) and included in a follow up email from DPI Senior Fisheries Manager, the following design principles from the Environmentally Friendly Seawall Guidelines[1] and the Fish Friendly Marine Infrastructure[2] are relevant to guide the design of the rock finishes in the proposed Ulladulla Harbour berthing area:

- Aim to keep it natural - this relates to the natural rock surface material and orientation of the retained intertidal rock platform
- Maximise habitat diversity and complexity by incorporating microhabitats such as pools, crevices, boulders and ledges, and by maximising surface roughness and texture - this relates to the finished surfaces of the retained intertidal rock platform and the cut rock surfaces
- Create low-sloping walls or incorporate changes of slope to maximise habitat surface area - this relates to the subtidal cut rock surfaces.

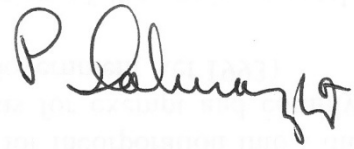
I recommend the following notes being included on a concept plan detailing the type of environmentally friendly concepts to be applied to the rock cutting and dredging associated with this development:

1. retain natural rock surface wherever possible - delete references to shotcrete
2. if feasible, use rock protection rather than concrete beam at toe of stone seawall, using local rocks
3. place local, natural looking rocks on the retained intertidal rock platform and, if feasible, cut rocks on the lower subtidal bench
4. increase surface complexity of cut subtidal and intertidal rock faces by roughening or creating crevices
5. create some small, natural looking rock pools on the retained intertidal rock platform
6. where possible, reduce slope of cut rock faces or increase width of horizontal benches between subtidal cut rock faces.

[1] Department of Environment and Climate Change NSW, 2009. Environmentally Friendly Seawalls - A Guide to Improving the Environmental Value of Seawalls and Seawall-lined Foreshores in Estuaries.
[2] https://www.fishhabitatnetwork.com.au/fish-friendly-marine-infrastructure

If you require any clarification of the above please do not hesitate to contact me at peter@peterdalmazzo.com.au or on 0466 930 775.

Yours sincerely



Peter Dalmazzo
Partner: P J Dalmazzo & A M Glynn

NSW Fisheries Management Act
&
NSW Biodiversity Conservation Act
&
Australian Environment Protection and Biodiversity Conservation Act

Threatened Species Assessments

for

Construction (including Dredging) & Operation of New Berthing Facility within Existing Marina Ulladulla Harbour

PROPONENTS: SHOALHAVEN CITY COUNCIL

PREPARED BY: PETER DALMAZZO

DATE: 18 FEBRUARY 2021

Peter Dalmazzo Environmental Consultant
ph: 02 4448 6164 mob: 0466 930 775
www.peterdalmazzo.com.au
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157 Cedarvale Lane
Jaspers Brush NSW 2535
P J Dalmazzo & A M Glynn ABN 70 885 498 355

Contents

1 BACKGROUND

These threatened species assessments consider the potential impacts of a proposal for construction (including dredging) and operation of a proposed berthing facility in the south eastern part of Ulladulla Harbour, as described in the review of environmental factors for the activities. Shoalhaven City Council is the proponent and a determining authority for the construction (including dredging) and operation of the berthing facility. The assessments are required by the NSW Fisheries Management Act 1994, the NSW Biodiversity Conservation Act 2016 and the Australian Environment Protection and Biodiversity Conservation Act 1999.

2 NSW FISHERIES MANAGEMENT ACT ASSESSMENT OF SIGNIFICANCE FOR THREATENED SPECIES, POPULATIONS OR ECOLOGICAL COMMUNITIES, OR THEIR HABITATS

2.1 Introduction

Section 221ZV of the Fisheries Management Act 1994 requires that the matters below are to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species, populations or ecological communities, or their habitats, and therefore whether or not a species impact statement and concurrence/consultation with the Fisheries Agency Head/Minister for Primary Industries is required. The following assessment has been carried out using the assessment guidelines approved by the Minister for Primary Industries under section 220ZZA of the Fisheries Management Act 1994 (NSW Department of Primary Industries, 2008). Information on habitats and life history is from the NSW Department of Primary Industries threatened species website as well as other cited sources.

2.2 Threatened Species

(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

Several saltwater species listed as threatened in the schedules to the Fisheries Management Act 1994 are known to have occurred on the south coast of NSW:

- critically endangered species - Grey Nurse Shark and the slug *Smeagol hilaris*
- endangered species - Southern Bluefin Tuna, Scalloped Hammerhead Shark and Australian Grayling
- vulnerable species - Great White Shark and Black Rockcod
- presumed extinct in New South Wales - Green Sawfish

Grey Nurse Sharks *Carcharias taurus* (Critically Endangered) are found predominantly in inshore coastal waters. They have been recorded at various depths, but are mainly found in waters between 15 and 40 metres deep. Grey nurse sharks gather at a number of key sites along the coasts of NSW and southern Queensland. These sites have gravel or sand filled gutters, rocky reefs or caves, and are called aggregation sites (NSW Department of Primary Industries, 2013). The subject site is not a known aggregation site for Grey Nurse Shark and the species is extremely unlikely to occur there. No known aggregation site for Grey

Nurse Shark is located near Ulladulla Harbour so it is unlikely that any increased fishing effort in the area from users of the berthing facility is likely to affect the species. In the unlikely event that a Grey Nurse Shark was present in the vicinity at the time of construction, it would be expected to swim away in response to the disturbance with little consequent disruption to its life cycle. The proposed activities are unlikely to significantly affect the life cycle of this species.

Smeagol hilaris (Critically Endangered), a pulmonate slug, has only been collected from a small isolated location at Merry Beach, south of Ulladulla. Pulmonate slugs have developed lungs instead of gills and can breathe air. *Smeagol hilaris* lives in gravel and cobble filled rocky crevices at Merry Beach. Little is known about its ecology or reproductive biology. The proposed activities would have no effect on the life cycle of this species.

Southern Bluefin Tuna *Thunnus maccoyii* (Endangered) are pelagic fish occurring in oceanic waters normally on the seaward side of the continental shelf. Some users of the berthing facility might occasionally fish for Southern Bluefin Tuna but it is unlikely that any increased fishing effort in the area from users of the berthing facility is likely to significantly affect the species given the large number of commercial tuna fishing vessels that already operate out of the harbour from time to time. The proposed activities are unlikely to significantly affect the life cycle of this species.

Scalloped Hammerhead Shark *Sphyrna lewini* (Endangered) is a coastal pelagic species with a circumglobal distribution in warm temperate and tropical coastal areas. They are known to form large migratory schools and in Australia tend to move as far south as Sydney during the warmer months (NSW Department of Primary Industries, 2012a). In the extremely unlikely event that a Scalloped Hammerhead Shark was present in the vicinity at the time of construction, it would be expected to swim away in response to the disturbance with little consequent disruption to its life cycle. Any slight increase in fishing activity in the area is unlikely to affect this species. The proposed activities are unlikely to significantly affect the life cycle of this species.

Australian Grayling *Prototroctes maraena* also known as the Cucumber Mullet or Cucumber Herring is a small to medium-sized slender fish that is endemic to south-eastern Australia. It is a migratory species that spawns in the lower freshwaters of coastal rivers and spends approximately 6 months in coastal seas as larvae/juveniles before migrating back into freshwater rivers and streams where they remain for the rest of their lives (NSW Department of Primary Industries, 2015a). There is limited freshwater habitat upstream of the subject site and Australian Grayling are extremely unlikely to occur there. The proposed activities are unlikely to significantly affect the life cycle of this species.

Great White Sharks *Carcharodon carcharias* (Vulnerable) are normally found in inshore waters around rocky reefs and islands and often near seal colonies. They have been recorded at varying depths down to 1,200 metres (NSW Department of Primary Industries, 2005a). In the extremely unlikely event that a Great White Shark was present in the vicinity at the time of construction, it would be expected to swim away in response to the disturbance with little consequent disruption to its life cycle. Some users of the berthing facility might occasionally fish in Great White Shark habitat but it is unlikely that any increased fishing effort in the area from users of the

berthing facility is likely to significantly affect the species given the large number of commercial and recreational fishing vessels that already operate out of the harbour from time to time. The proposed activities are unlikely to significantly affect the life cycle of this species.

Black Rockcod *Epinephelus daemelii* (Vulnerable) live in relatively shallow rocky reefs where they are usually found in caves, ledges, gutters and beneath bommies. The Black Rockcod is territorial and lives for years in the same place (Henrisson and Smith, 1994). The site of the proposed activities is unlikely to provide suitable habitat for adult Black Rockcod. Large juveniles are sometimes found around rocky reefs in estuaries (NSW Department of Primary Industries, 2015b & 2012b). The subtidal edges of the rock platform might provide marginal potential habitat for juvenile Black Rockcod. Given the territorial behaviour of the species, it is likely that the site would not support large numbers of individuals at one time. In the event that a juvenile Black Rockcod was present at one of the sites at the time of construction activities, it might be able to swim away in response to the disturbance. However, it might seek shelter amongst rocks and be crushed or smothered. The adult population would not be affected and there is only potential to affect a very small proportion of the juvenile population. The possible loss of a very small number of juvenile Black Rockcod is not considered likely to place a viable local population of Black Rockcod at risk of extinction. The artificial structures installed for the berthing facility could provide some habitat for juvenile Black Rockcod. Some users of the berthing facility might occasionally fish in Black Rockcod habitat but it is unlikely that any increased fishing effort in the area from users of the berthing facility is likely to significantly affect the species given the large number of commercial and recreational fishing vessels that already operate out of the harbour from time to time. The proposed activities are unlikely to significantly affect the life cycle of this species.

Green Sawfish *Pristis zijsron* (Presumed Extinct in NSW) live on muddy or sandy-mud soft bottom habitats in inshore areas mainly in the tropics. They also enter estuaries, where they have been found in very shallow water. It has been recorded on the NSW south coast, but the last confirmed sighting of the green sawfish in NSW was in 1972 from the Clarence River at Yamba (NSW Department of Primary Industries, 2005b). In the extremely unlikely event that a Green Sawfish was present in the vicinity at the time of construction, it would be expected to swim away in response to the disturbance with little consequent disruption to its life cycle. The proposed activities are unlikely to significantly affect the life cycle of this species.

Overall, the proposed activities would not be likely to have a significant adverse effect on the life cycle of any threatened fish species such that a viable local population of the species is likely to be placed at risk of extinction.

2.3 Threatened Populations

(b) in the case of an endangered population, whether the proposed development or activity 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

No threatened populations listed in the Fisheries Management Act would be affected by the proposed activities.

2.4 Endangered Ecological Communities

(c) 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 threatened ecological communities listed in the Fisheries Management Act would be affected by the proposed activities.

2.5 Habitat

(d) 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 proposed development or activity

The estuarine environment where the works would be carried out is not suitable habitat for *Smeagol hilaris*, Grey Nurse Shark, Southern Bluefin Tuna, Scalloped Hammerhead Shark, Great White Shark and Green Sawfish. There is limited freshwater habitat upstream so it considered that the estuarine environment where the works would be carried out is not likely to be habitat for juvenile or adult Australian Grayling. The subtidal edges of the rock platform might provide marginal potential habitat for juvenile Black Rockcod. The extent of potential habitat that would be affected is a few hundred square metres which is very small compared to the amount of unaffected habitat nearby.

(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

The proposal would, to a limited extent, form a partial physical barrier in surface and intertidal waters between aquatic habitats to the east and west. However, to get past the berthing facility, threatened species of fish would be able to move around its offshore end at any time. It is considered that the proposal would not adversely affect connections between areas to the extent that the maintenance of gene flow and the ability to sustain viable populations would be reduced. The proposal would not fragment or isolate an area of habitat of a threatened species, population or ecological community.

(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

The habitat to be modified is not included in a marine park, aquatic reserve or other conservation area. It is not a known aggregation site for Grey Nurse Sharks nor is it a known nursery area for juvenile Great White Sharks. The affected habitat is not likely to be important to any life cycle stages or to reproductive success, and hence long term survival, of any threatened species, population or ecological community.

2.6 Critical Habitat

(e) whether the proposed development or activity is likely to have an adverse effect on any critical habitat (either directly or indirectly)

No critical habitat listed in the Fisheries Management Act would be affected by the proposed activities.

2.7 Priorities Action Statement

(f) whether the proposed development or activity is consistent with a Priorities Action Statement

The Department of Primary Industries Priorities Action Statement (NSW Department of Primary Industries, 2017) provides an agreed list of strategies and actions that will assist to down-grade or de-list species, populations and ecological communities from the threatened species schedules of the Fisheries Management Act, as well as actions that will assist to abate or eliminate the impacts of key threatening processes. The Priorities Action Statement includes 11 recovery and threat abatement strategies:

- Research / monitoring
- Survey / mapping
- Collate and review existing information
- Habitat rehabilitation
- Enhance, modify or implement NRM planning processes to minimise adverse impacts on threatened species
- Habitat protection
- Advice to consent and determining authorities
- Community and stakeholder liaison, awareness and education
- Compliance / enforcement
- Stocking / translocation
- Pest eradication and control

The proposed activities are not inconsistent with these recovery and threat abatement strategies and actions.

2.8 Key Threatening Processes

(g) whether the proposed development 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

Key threatening processes are the things that threaten, or could threaten, the survival or evolutionary development of species, populations or ecological communities. The eight key threatening processes listed under the Fisheries Management Act are presented in Table 1 along with a brief assessment of their relevance to the current proposal for aquatic and intertidal areas. Further consideration is provided following the table for key threatening processes that could conceivably be affected by the proposal.

Table 1 Preliminary assessments of key threatening processes listed under the Fisheries Management Act

Key Threatening Process	Type of Threat	Assessment
Introduction of fish to fresh waters within a river catchment outside their natural range	Pest animal	The site is not in fresh waters. The proposed activity would not introduce fish to fresh waters outside their natural range nor increase the

		impact of such fish.
Introduction of non-indigenous fish and marine vegetation to the coastal waters of New South Wales	Pest animal & Weed	See further assessment below.
Human-caused climate change	Habitat loss/change	A small amount of fossil fuel would be burnt to operate machinery, but the proposed activity would not significantly contribute to climate change.
Removal of large woody debris from New South Wales rivers and streams	Habitat loss/change	The proposed activity would not remove large woody debris from rivers or streams nor increase impacts from the removal of large woody debris.
Degradation of native riparian vegetation along New South Wales water courses	Habitat loss/change	The proposed activity would not degrade native riparian vegetation nor increase impacts from the degradation of native riparian vegetation.
Installation and operation of instream structures and other mechanisms that alter natural flow of rivers and streams	Habitat loss/change	The proposed activity is not an instream structure or other mechanism that would alter natural flow of rivers and streams nor would it increase the impact of such structures or mechanisms.
Current shark meshing program in New South Wales waters	Direct threat	The proposed activity is not a shark meshing program nor would it increase the impact of shark meshing programs.
Hook and line fishing in areas important for the survival of threatened fish species	Direct threat	See further assessment below.

Introduction of non-indigenous fish and marine vegetation. During operation of the berthing facility, marine pests could be introduced into the harbour by domestic and international vessels. Although the berthing facility does not greatly increase the risk of this occurring (given the large number of vessels that already visit the harbour), it is recommended that educational material and operational procedures for dealing with marine pests be included in a berthing facility operations manual and a set of berthing facility user rules. The proposed activities are not likely to significantly introduce non-indigenous fish and marine vegetation to the coastal waters of New South Wales nor increase the impact of such introductions.

Hook and line fishing in areas important for the survival of threatened fish species. The proposed activities are not hook and line fishing but there are areas near Ulladulla that support threatened fish species such as the critically endangered Southern Bluefin Tuna, Grey Nurse Shark and the vulnerable Black Rockcod and some people who use the facilities at the berthing facility could be expected to fish in some of those areas. However, the proposed activities are unlikely to significantly increase the impact of hook and line fishing in those areas.

2.9 NSW Fisheries Management Act Conclusion

Provided the proposed environmental safeguards listed in the review of environmental factors are employed, there is not likely to be a significant effect on threatened species, populations or ecological communities, or their habitats from the proposed activities in aquatic and intertidal areas and therefore a species impact statement is not required.

3 NSW BIODIVERSITY CONSERVATION ACT ASSESSMENT OF SIGNIFICANCE FOR THREATENED SPECIES OR ECOLOGICAL COMMUNITIES, OR THEIR HABITATS

3.1 Introduction

The Biodiversity Conservation Act 2016 requires that an assessment must be made of whether a proposed activity is likely to significantly affect threatened species (as listed in schedules to the Act) and therefore whether or not a species impact statement or biodiversity development assessment report must be prepared and whether concurrence of or consultation with the Environment Agency Head or Minister for the Environment is required.

Section 7.2 of the Act states that an activity is likely to significantly affect threatened species if:

(a) it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in section 7.3, or
(b) *does not apply to activities under Part 5 of EP&A Act*, or
(c) it is carried out in a declared area of outstanding biodiversity value.

The proposed activities would not be carried out in a declared area of outstanding biodiversity value listed in the Register of Declared Areas of Outstanding Biodiversity Value.

Section 7.3 of the Act requires that the matters in the following subsections are to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats. The following assessment of significance has been carried out using the assessment guidelines approved by the Minister for the Environment under section 94A of the former Threatened Species Conservation Act 1995 (NSW Department of Environment and Climate Change, 2007), which were still applicable at the time of writing.

3.2 Threatened Species

(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

Using the NSW Office of Environment and Heritage's BioNet website logged in as a licensed user, the Bionet Atlas was interrogated for records of threatened species listed in schedules to the Biodiversity Conservation Act that have been observed within a ten kilometre by ten kilometre area around the site. The results of the search are attached to this report. The animal and plant species from the Atlas search are considered in Table 2 with comment on their potential to occur at the site. Information on habitats and life history is mostly from the NSW Office of Environment and Heritage threatened species website. For species considered to have a reasonable likelihood of occurring at the site or that were observed at the site, more detailed assessments are provided after the table. A number of additional species are also considered.

Table 2. Preliminary assessments of "potential to be affected" for threatened species recorded in NSW Bionet Atlas within 10km x 10km area around the site.

NSW BC Act Status: V - Vulnerable, E1 - Endangered, E4A - Critically Endangered
^, ^^ species listed under the Sensitive Species Data Policy
Australian EPBC Act Status: V - Vulnerable, E - Endangered, CE - Critically Endangered

Scientific Name	Common Name	BC Act status	EPBC Act status	Potential to be Affected
Heleioporus australiacus	Giant Burrowing Frog	V	V	Prefers 1st order streams and deep leaf litter or loose, sandy soils. No suitable habitat at the site. Unlikely to be affected.
^^*Mixophyes balbus*	Stuttering Frog	E1	V	Found in rainforest and wet, tall open forest. No suitable habitat at the site. Unlikely to be affected.
Litoria aurea	Green and Golden Bell Frog	E1	V	Inhabits marshes, dams and stream-sides. No suitable habitat at the site. Unlikely to be affected.
Caretta caretta	Loggerhead Turtle	E1	E	Marine species. **See further assessment below.**
Chelonia mydas	Green Turtle	V	V	Marine species. **See further assessment below.**
Stictonetta naevosa	Freckled Duck	V		Prefer permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. No suitable habitat at the site. Unlikely to be affected.
Ptilinopus superbus	Superb Fruit-Dove	V		Generally inhabits rainforest and other forest. No suitable habitat at the site. Unlikely to be affected.
Thalassarche cauta	Shy Albatross	V	V	Marine species. **See further assessment below.**
Thalassarche melanophris	Black-browed Albatross	V	V	Marine species. **See further assessment below.**
Macronectes giganteus	Southern Giant Petrel	E1	E	Marine species. **See further assessment below.**
Haliaeetus leucogaster	White-bellied Sea-Eagle	V		Forages over in-shore waters. Might occasionally forage at the site. No large stick nest present. Unlikely to be affected.
Lophoictinia isura	Square-tailed Kite	V		Found in a variety of timbered habitats including dry woodlands and open forests with particular preference for timbered watercourses. Might occasionally fly over the site. Unlikely to be affected.
Pandion cristatus	Eastern Osprey	V		Forages over in-shore waters. Might occasionally forage at the site. No large stick nest present. Unlikely to be affected.
Haematopus fuliginosus	Sooty Oystercatcher	V		Favours rocky headlands, rocky shelves, exposed reefs with rock pools, beaches and muddy estuaries. **See further assessment below.**
Haematopus longirostris	Pied Oystercatcher	E1		Favours intertidal flats of inlets and bays, open beaches and sandbanks. **See further assessment below.**
Thinornis rubricollis	Hooded Plover	E4A	V	Prefer sandy ocean beaches. Occasionally found on tidal bays and estuaries, rock platforms and rocky or sand-covered reefs near sandy beaches, and small beaches in lines of cliffs. **See further assessment**

				below.
Numenius madagascariensis	Eastern Curlew		CE	Most commonly associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass. **See further assessment below.**
Sternula albifrons	Little Tern	E1		Coastal, preferring sheltered environments. **See further assessment below.**
Callocephalon fimbriatum	Gang-gang Cockatoo	V		Inhabits eucalypt forests and woodlands. No suitable habitat at the site. Unlikely to be affected.
^^Calyptorhynchus lathami	Glossy Black-Cockatoo	V		Inhabits open forest and woodlands in which stands of she-oak species occur. No feed trees on the site. Prefers to nest in the hollows of large, old eucalypt trees, alive or dead. No breeding habitat present. Unlikely to be affected.
Pezoporus wallicus wallicus	Eastern Ground Parrot	V		Prefers low heathlands and sedgelands. No suitable habitat at the site. Unlikely to be affected.
Ninox strenua	Powerful Owl	V		Inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. No suitable habitat at the site. Unlikely to be affected.
Tyto novaehollandiae	Masked Owl	V		Lives in dry eucalypt forests and woodlands. No suitable habitat at the site. Unlikely to be affected.
Tyto tenebricosa	Sooty Owl	V		Occurs in rainforest, including dry rainforest, subtropical and warm temperate rainforest, as well as moist eucalypt forests. No suitable habitat at the site. Unlikely to be affected.
Anthochaera phrygia	Regent Honeyeater	E4A	CE	Inhabits dry open forest and woodland and riparian forests of River Sheoak. Occasionally seen foraging in flowering coastal Swamp Mahogany and Spotted Gum forests on the south coast. No suitable habitat at the site. Unlikely to be affected.
Epthianura albifrons	White-fronted Chat	V		Usually found foraging for insects on bare or grassy ground in wetland areas. Nests built in low vegetation, including low isolated mangroves. No suitable habitat at the site. Unlikely to be affected.
Daphoenositta chrysoptera	Varied Sittella	V		Inhabits eucalypt forests and woodlands, especially rough-barked. No suitable habitat at the site. Unlikely to be affected.
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V		Inhabits dry, open eucalypt forests and woodlands. No suitable habitat at the site. Unlikely to be affected.
Petroica boodang	Scarlet Robin	V		Lives in dry eucalypt forests and woodlands. No suitable habitat at the site. Unlikely to be affected.
Dasyurus maculatus	Spotted-tailed Quoll	V	E	Unlikely to occur due to proximity of urban area. No suitable habitat at the site. Unlikely to be affected.

Phascolarctos cinereus	Koala	V	V	Inhabits eucalypt woodlands and forests. No suitable habitat at the site. Unlikely to be affected.
Petauroides volans	Greater Glider		V	Occurs in eucalypt forest and woodland. No suitable habitat at the site. Unlikely to be affected.
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. No suitable habitat at the site. Unlikely to be affected.
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V		Prefers moist habitats, with trees taller than 20m. Generally roosts in eucalypt hollows. Might occasionally forage at the site at night. Unlikely to be affected.
Kerivoula papuensis	Golden-tipped Bat	V		Found in rainforest and adjacent wet and dry sclerophyll forest up to 1000m. Also recorded in tall open forest, Casuarina-dominated riparian forest and coastal Melaleuca forests. Might occasionally forage at the site at night. Unlikely to be affected.
Miniopterus schreibersii oceanensis	Eastern Bentwing-bat	V		Occurs in rainforest, wet sclerophyll forest, dry sclerophyll forest, open woodland, *Melaleuca* forest and open grasslands. Hunts in forested areas, catching moths and other flying insects above the tree tops. Roosts in caves, derelict mines, stormwater tunnels and buildings. Might occasionally forage at the site at night. Unlikely to be affected.
Myotis macropus	Southern Myotis	V		Roosts close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. Forages over streams and pools catching insects and small fish by raking their feet across the water surface. Might occasionally forage at the site at night. Unlikely to be affected.
Scoteanax rueppellii	Greater Broad-nosed Bat	V		Utilises woodland through to moist and dry eucalypt forest and rainforest but most commonly found in tall wet forest. Roosts in tree hollows and buildings. Might occasionally forage at the site at night. Unlikely to be affected.
Arctocephalus pusillus doriferus	Australian Fur-seal	V		Marine species. **See further assessment below.**
Physeter macrocephalus	Sperm Whale	V		Marine species. **See further assessment below.**
Syzygium paniculatum	Magenta Lilly Pilly	E1	V	Restricted mainly to remnant stands of littoral rainforest. No suitable habitat at the site. Unlikely to be affected.
^^*Caladenia tessellata*	Thick Lip Spider Orchid	E1	V	Found in grassy dry sclerophyll woodland. No suitable habitat at the site. Unlikely to be affected.
^^*Cryptostylis hunteriana*	Leafless Tongue Orchid	V	V	Found in a range of communities, including swamp-heath and woodland. No suitable habitat at the site. Unlikely to be affected.

Thesium australe	Austral Toadflax	V	V	Occurs in grassland on coastal headlands or grassland and grassy woodland. No suitable habitat at the site. Unlikely to be affected.

Marine Reptiles and Marine Mammals

Marine turtles may occasionally enter Ulladulla Harbour but are rarely likely to occur at the site. In the unlikely event that one of these animals was present in the vicinity at the time of construction or operation it would be expected to swim away in response to the disturbance with little consequent disruption to its life cycle. The low speed limit for boats in the adjacent waterway means that it is unlikely an animal would be struck and injured or killed. There would be no ongoing impacts on turtles.

Whales are extremely unlikely to enter the harbour. Seals may occasionally enter the harbour but are likely to keep away during construction. The low speed limit for boats in the adjacent waterway means that it is unlikely an animal would be struck and injured or killed.

However an injured or unwell turtle, whale or seal might be reticent to leave the site if it has beached, hauled out or is resting there. In the unlikely event that a marine reptile or mammal was present at the site when the work was being done, the advice of the Ulladulla office the National Parks and Wildlife Service should be sought on an appropriate course of action.

The proposed activities would not be likely to have an adverse effect on the life cycle of any threatened marine reptile or marine mammal species such that a viable local population of the species is likely to be placed at risk of extinction.

Water/Shore Birds

Pied and Sooty Oystercatchers, Hooded Plover, Eastern Curlew and other waders might feed in the area on this shoreline from time to time, though better quality, more extensive feeding areas occur elsewhere in the vicinity. Little Terns might occasionally forage in the area. Some birds might roost there from time to time. Impacts on foraging or roosting birds, should they be present while the work was being done, would be confined to indirect effects such as local noise disturbance for a number of hours each day that construction was underway. If any bird was present when construction commenced it is expected that their high mobility would enable them to relocate to undisturbed areas with little consequent impact on their life cycles. The site is already subject to significant disturbance from harbour activities. Considering the small size of the area in relation to nearby available habitat, the proposed construction and operation would not constitute a serious disruption to the birds' life cycles. Disturbance of breeding sites is considered to be the main threat to viability of populations of some of these bird species. No species of shorebirds are likely to attempt to nest at the site. The proposed activities would not be likely to have an adverse effect on the life cycle of any waterbird/shorebird species such that a viable local population of the species is likely to be placed at risk of extinction.

Sea Birds

Albatross and petrels spend almost all of their time at sea and would rarely enter the harbour, particularly if they are injured or unwell. In the event that one of these birds

was present at the site at the time of construction or operation it would be expected to fly away in response to the disturbance with little consequent disruption to its life cycle. No sea birds are likely to attempt to nest at the site. If an injured or unwell seabird is reticent to leave the site when the work was being done, the advice of the Ulladulla office the National Parks and Wildlife Service should be sought on an appropriate course of action. The proposed activities would not be likely to have an adverse effect on the life cycle of any seabird species such that a viable local population of the species is likely to be placed at risk of extinction.

3.3 Threatened Ecological Communities

(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 threatened ecological communities listed in Schedule 2 of the Biodiversity Conservation Act would be affected by the proposed activities.

3.4 Habitat

(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

The intertidal and shallow subtidal parts of the site support potential feeding habitat for some threatened shorebirds such as Sooty and Pied Oystercatchers. The extent of potential habitat that would be affected is approximately 1000 square metres which is very small compared to the amount of unaffected habitat nearby. Overall, the affected areas are likely to form a small and insignificant part of the total threatened species habitat present in the locality.

(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

The proposal would, to a limited extent, form a partial physical barrier in surface and intertidal areas between habitats to the east and west. However, to get past the berthing facility, threatened species of bird would be able to move over or around berthing facility structures at any time. It is considered that the proposal would not adversely affect connections between areas to the extent that the maintenance of gene flow and the ability to sustain viable populations would be reduced. The proposal would not fragment or isolate an area of habitat of a threatened species or ecological community.

(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

The habitat to be modified is not included in a marine park, aquatic reserve or other

conservation area and it is not included on the Biodiversity Values Map published under clause 7.3 of the Biodiversity Conservation Regulation 2017 (Figure 1). The affected habitat is not likely to be important to any life cycle stages or to reproductive success, and hence long term survival, of any threatened species or ecological community.

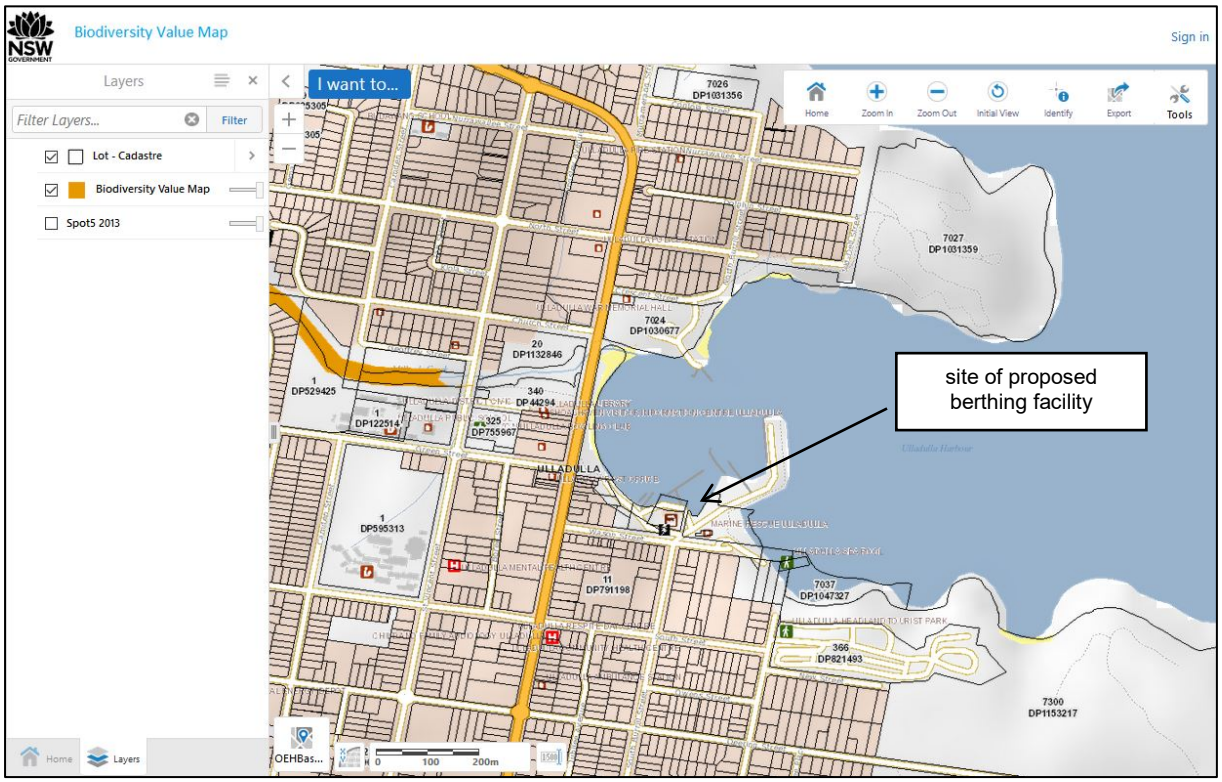

Figure 1. Biodiversity Values Map.
Source: © State of New South Wales and Office of Environment and Heritage [2018]

3.5 Area of Outstanding Biodiversity Value

(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 areas of land listed in the Register of Declared Areas of Outstanding Biodiversity Value would be affected by the proposed activities.

3.6 Key Threatening Processes

(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

Key threatening processes are the things that adversely affect threatened species or ecological communities, or could cause species or ecological communities that are not threatened to become threatened. The thirty eight key threatening processes listed in Schedule 4 of the Biodiversity Conservation Act are presented in Table 3 along with a brief assessment of their relevance to the current proposal. Following the table, further consideration is provided for key threatening processes that could conceivably be affected by the proposal.

Table 3. Preliminary assessment of key threatening processes listed under the Biodiversity Conservation Act.

Key Threatening Process	Type of Threat	Assessment
Invasion and establishment of exotic vines and scramblers	Weed	The proposed activities would not cause invasion and establishment of exotic vines and scramblers nor increase the impact of exotic vines and scramblers.
Invasion and establishment of Scotch Broom (*Cytisus scoparius*)	Weed	The proposed activities would not cause invasion by Scotch Broom nor increase the impact of Scotch Broom.
Invasion of native plant communities by bitou bush & boneseed	Weed	The proposed activities would not cause invasion of native plant communities by bitou bush & boneseed nor increase their impact.
Invasion of native plant communities by exotic perennial grasses	Weed	The proposed activities would not cause invasion of native plant communities by exotic perennial grasses nor increase the impact of exotic perennial grasses.
Invasion of native plant communities by African Olive *Olea europaea* L. subsp. *cuspidata* (Wall ex G.Don Ciferri)	Weed	The proposed activities would not cause invasion by Afican Olive nor increase the impact of African Olive.
Invasion, establishment and spread of Lantana (*Lantana camara* L. sens. Lat)	Weed	The proposed activities would not cause invasion, establishment and spread of Lantana nor increase the impact of Lantana.
Competition and grazing by the feral European rabbit	Pest animal	The proposed activities would not introduce rabbits nor increase the impact of rabbits.
Competition and habitat degradation by Feral Goats, Capra hircus Linnaeus 1758	Pest animal	The proposed activities would not introduce goats nor increase the impact of goats.
Competition from feral honeybees	Pest animal	The proposed activities would not introduce honeybees nor increase the impact of honeybees.
Herbivory and environmental degradation caused by feral deer	Pest animal	The proposed activities would not introduce deer nor increase the impact of deer.
Importation of red imported fire ants into NSW	Pest animal	The proposed activities would not import fire ants nor increase the impact of fire ants.
Introduction of the large earth bumblebee (*Bombus terrestris*)	Pest animal	The proposed activities would not introduce bumblebees nor increase the impact of bumblebees.
Invasion and establishment of the Cane Toad	Pest animal	The proposed activities would not introduce cane toads nor increase the impact of cane toads.
Invasion of the yellow crazy ant (*Anoplolepis gracilipes*) into NSW	Pest animal	The proposed activities would not introduce crazy ants nor increase the impact of crazy ants.
Predation and hybridisation by feral dogs, *Canis lupus familiaris*	Pest animal	The proposed activities would neither cause nor increase the impact of predation and hybridisation by feral dogs, *Canis lupus familiaris*
Predation by feral cats	Pest animal	The proposed activities would neither cause nor increase the impact of predation by feral cats.
Predation by the European Red Fox	Pest animal	The proposed activities would neither cause nor increase the impact of predation by the European Red Fox.
Predation by the Plague Minnow (*Gambusia holbrooki*)	Pest animal	The proposed activities would not introduce plague minnows nor increase the impact of plague minnows.
Predation by the Ship Rat (*Rattus rattus*) on Lord Howe Island	Pest animal	The proposed activities would not introduce rats nor increase the impact of rats.
Predation, habitat degradation,	Pest animal	The proposed activities would not introduce pigs

Key Threatening Process	Type of Threat	Assessment
competition and disease transmission by Feral Pigs (*Sus scrofa*)		nor increase the impact of pigs.
Death or injury to marine species following capture in shark control programs on ocean beaches	Other threat	The proposed activity is not a shark control program nor would it increase the impact of shark control programs.
Entanglement in, or ingestion of anthropogenic debris in marine and estuarine environments	Other threat	See further assessment below.
Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	Other threat	The proposed activities would not cause nor increase the impact of eucalypt dieback.
Aggressive exclusion of birds by noisy miners (*Manorina melanocephala*)	Other threat	The proposed activities would not cause nor increase the impact of noisy miners.
Alteration to the natural flow regimes of rivers, streams, floodplains & wetlands.	Habitat loss/change	The proposed activities would not alter the natural flow regimes of rivers, streams, floodplains & wetlands nor increase the impact of such alteration.
Bushrock Removal	Habitat loss/change	The proposed activities would not remove bushrock nor increase the impact of bushrock removal.
Clearing of native vegetation	Habitat loss/change	The proposed activities would not clear native vegetation nor increase the impact of clearing of native vegetation..
Alteration of habitat following subsidence due to longwall mining	Habitat loss/change	No longwall mining would be carried out. The proposed activities would not cause subsidence due to longwall mining nor increase the impact of subsidence due to longwall mining.
Ecological consequences of high frequency fires	Habitat loss/change	The proposed activities would not cause high frequency fires nor increase the impact of high frequency fires.
Human-caused Climate Change	Habitat loss/change	A small amount of fossil fuel would be burnt to operate machinery, but the proposed activities would not significantly contribute to climate change.
Loss and/or degradation of sites used for hill-topping by butterflies	Habitat loss/change	The proposed activities would not remove or degrade butterfly hill-topping sites nor increase impacts on butterfly hill-topping sites.
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	Habitat loss/change	The proposed activities would not result in invasion of escaped garden plants nor increase the impacts of invasion by escaped garden plants.
Loss of Hollow-bearing Trees	Habitat loss/change	The proposed activities would not result in loss of hollow-bearing trees nor increase impacts of loss of hollow-bearing trees.
Removal of dead wood and dead trees	Habitat loss/change	The proposed activities would not remove dead wood or dead trees nor increase impacts of removal of dead wood or dead trees.
Infection by psittacine circoviral (beak and feather) disease affecting endangered psittacine species	Disease	The proposed activities would not introduce psittacine circoviral disease nor increase the impact of psittacine circoviral disease.
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	Disease	The proposed activities would not introduce chytridiomycosis nor increase the impact of chytridiomycosis.
Infection of native plants by *Phytophthora cinnamomi*	Disease	The proposed activities would not introduce *Phytophthora cinnamomi* nor increase the impact

Key Threatening Process	Type of Threat	Assessment
		of *Phytophthora cinnamomi*.
Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae.	Disease	The proposed activities would not introduce exotic rust fungi nor increase the impact of exotic rust fungi on plants of the family Myrtaceae.

Entanglement in or ingestion of anthropogenic debris in marine and estuarine environments. Construction and operation will take place in and beside the marine environment and it would be possible for some packaging, strapping or other debris to enter the marine environment, which could then entangle or be ingested by native animals. Environmental safeguards are included in the review of environmental factors to mitigate potential impacts. Provided the safeguards are employed, the proposed activities are not likely to lead to, nor increase the impact of entanglement in or ingestion of anthropogenic debris in marine and estuarine environments.

Overall, provided the environmental safeguards for impact mitigation set out in the review of environmental factors are employed, the proposed activities are not likely to be part of a key threatening process nor are they likely to result in the operation of, or increase the impact of, a key threatening process to the extent that it could threaten the survival or evolutionary development of any threatened species or ecological communities.

3.7 Biodiversity Conservation Act Conclusion

Provided the environmental safeguards for impact mitigation set out in the review of environmental factors are applied, there are not likely to be significant effects on threatened species or ecological communities, or their habitats from the proposed activities and therefore a biodiversity development assessment report or a species impact statement are not required.

4 AUSTRALIAN ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT

4.1 Protected Matters

Actions that are likely to have a significant impact on a matter of national environmental significance, or are being undertaken on or would have an effect on Commonwealth land, are known as protected matters and may require approval under the Australian Environment Protection and Biodiversity Conservation (EPBC) Act. The EPBC Act identifies nine matters of national environmental significance:

- world heritage properties;
- national heritage places
- Ramsar wetlands of international importance;
- listed threatened species and ecological communities;
- migratory species protected under international agreements;
- Commonwealth marine areas;
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mines)
- a water resource, in relation to coal seam gas development and large coal mining development.

The Australian Department of Environment's online Protected Matters Search Tool was interrogated in May 2018 for the area within a 1 kilometre radius of the site. The report is summarised below and the full report is attached.

Matters of National Environmental Significance

World Heritage Properties: None
National Heritage Places: None
Wetlands of International Importance: None
Great Barrier Reef Marine Park: None
Commonwealth Marine Areas: None
Listed Threatened Ecological Communities: 2
Listed Threatened Species: 63
Listed Migratory Species: 48

Other Matters Protected by the EPBC Act

Commonwealth Land: 1
Commonwealth Heritage Places: None
Listed Marine Species: 73 (relevant to Commonwealth areas only)
Whales and Other Cetaceans: 12
Critical Habitats: None
Commonwealth Reserves: None

The proposal is not a nuclear action nor is it a coal seam gas development and large coal mining development. The Commonwealth land identified in the report belongs to the Australian Postal Commission and is several hundred metres from the subject site. The proposal would not be undertaken on Commonwealth land nor would it have an effect on Commonwealth land.

Neither of the listed threatened ecological communities occur at or near the site and they would not be affected.

The protected matters report (attached) included a number of listed threatened species and migratory species that have a range of distribution that includes the area of the proposed works. Assessments of the likelihood of there being significant impacts and therefore whether the matter should be referred to the Australian Government Minister for the Environment are included below. The Department of the Environment, Water, Heritage and the Arts' Significant Impact Guidelines (Australia Government, 2013) provide the assessment criteria for threatened and migratory species.

4.2 Threatened Species

An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of a population
- reduce the area of occupancy of the species
- fragment an existing population into two or more populations
- adversely affect habitat critical to the survival of a species
- disrupt the breeding cycle of a population
- modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
- result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat
- introduce disease that may cause the species to decline, or
- interfere with the recovery of the species.

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of an important population of a species
- reduce the area of occupancy of an important population
- fragment an existing important population into two or more populations
- adversely affect habitat critical to the survival of a species
- disrupt the breeding cycle of an important population
- modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
- result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat
- introduce disease that may cause the species to decline, or
- interfere substantially with the recovery of the species.

As described in sections 2 and 3 of this report, the proposed actions are unlikely to affect habitat for the threatened species listed in the protected matters report and are not likely to lead to a long term decrease in populations. Based on consideration of the above criteria, it is not expected that there will be significant effects on nationally threatened species.

4.3 Migratory Species

An action is likely to have a significant impact on a migratory species if there is a real chance or possibility that it will:

- substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species
- result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or
- seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

The area of the proposed actions would affect very little habitat, if any, for the migratory species listed in the protected matters report. Based on consideration of the above criteria, it is not expected that there will be significant effects on migratory species.

4.4 EPBC Act Conclusion

Provided the proposed environmental safeguards listed in the review of environmental factors are employed, the proposed actions are not likely to have a significant impact on a matter of national environmental significance, nor are the actions being undertaken on or having an effect on Commonwealth land. The proposed actions therefore do not need to be referred to the Australian Minister for the Environment.

5 REFERENCES

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ATTACHMENT

ATTACHMENT 1. BIONET ATLAS SPECIES SIGHTINGS SEARCH RESULTS

ATTACHMENT 2. ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT PROTECTED MATTERS REPORT

Data from the BioNet 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 0.1Â°; ^^ rounded to 0.01Â°). Copyright the State of NSW through the Office of Environment and Heritage. Search criteria : Licensed Report of all Valid Records of Threatened (listed on TSC Act 1995) or Commonwealth listed Entities in selected area [North: -35.31 West: 150.43 East: 150.53 South: -35.41] returned a total of 249 records of 44 species.
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Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Animalia	Amphibia	Myobatrachidae	3042	*Heleioporus australiacus*		Giant Burrowing Frog	V,P	V	4	
Animalia	Amphibia	Myobatrachidae	3073	*^^Mixophyes balbus*		Stuttering Frog	E1,P,2	V	1	
Animalia	Amphibia	Hylidae	3166	*Litoria aurea*		Green and Golden Bell Frog	E1,P	V	1	
Animalia	Reptilia	Cheloniidae	2004	*Caretta caretta*		Loggerhead Turtle	E1,P	E	1	
Animalia	Reptilia	Cheloniidae	2007	*Chelonia mydas*		Green Turtle	V,P	V	3	
Animalia	Aves	Anatidae	0214	*Stictonetta naevosa*		Freckled Duck	V,P		1	
Animalia	Aves	Columbidae	0023	*Ptilinopus superbus*		Superb Fruit-Dove	V,P		3	
Animalia	Aves	Diomedeidae	0091	*Thalassarche cauta*		Shy Albatross	V,P	V	3	
Animalia	Aves	Diomedeidae	0088	*Thalassarche melanophris*		Black-browed Albatross	V,P	V	3	
Animalia	Aves	Procellariidae	0929	*Macronectes giganteus*		Southern Giant Petrel	E1,P	E	1	
Animalia	Aves	Accipitridae	0226	*Haliaeetus leucogaster*		White-bellied Sea-Eagle	V,P	C	17	
Animalia	Aves	Accipitridae	0230	*Lophoictinia isura*		Square-tailed Kite	V,P,3		4	
Animalia	Aves	Accipitridae	8739	*Pandion cristatus*		Eastern Osprey	V,P,3		5	
Animalia	Aves	Haematopodidae	0131	*Haematopus fuliginosus*		Sooty Oystercatcher	V,P		23	
Animalia	Aves	Haematopodidae	0130	*Haematopus longirostris*		Pied Oystercatcher	E1,P		16	

Animalia	Aves	Charadriidae	0138	*Thinornis rubricollis*	Hooded Plover	E4A, P	V	11
Animalia	Aves	Scolopacidae	0149	*Numenius madagascariensis*	Eastern Curlew	P	CE,C,J,K	1
Animalia	Aves	Laridae	0117	*Sternula albifrons*	Little Tern	E1,P	C,J,K	4
Animalia	Aves	Cacatuidae	0268	*Callocephalon fimbriatum*	Gang-gang Cockatoo	V,P,3		7
Animalia	Aves	Cacatuidae	0265	*^^Calyptorhynchus lathami*	Glossy Black-Cockatoo	V,P,2		40
Animalia	Aves	Psittacidae	8913	*Pezoporus wallicus wallicus*	Eastern Ground Parrot	V,P,3		2
Animalia	Aves	Strigidae	0248	*Ninox strenua*	Powerful Owl	V,P,3		19
Animalia	Aves	Tytonidae	0250	*Tyto novaehollandiae*	Masked Owl	V,P,3		1
Animalia	Aves	Tytonidae	9924	*Tyto tenebricosa*	Sooty Owl	V,P,3		8
Animalia	Aves	Meliphagidae	0603	*Anthochaera phrygia*	Regent Honeyeater	E4A, P	CE	5
Animalia	Aves	Meliphagidae	0448	*Epthianura albifrons*	White-fronted Chat	V,P		1
Animalia	Aves	Neosittidae	0549	*Daphoenositta chrysoptera*	Varied Sittella	V,P		3
Animalia	Aves	Artamidae	8519	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		1
Animalia	Aves	Petroicidae	0380	*Petroica boodang*	Scarlet Robin	V,P		2
Animalia	Mammalia	Dasyuridae	1008	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	3
Animalia	Mammalia	Phascolarctidae	1162	*Phascolarctos cinereus*	Koala	V,P	V	1
Animalia	Mammalia	Pseudocheiridae	1133	*Petauroides volans*	Greater Glider	P	V	7
Animalia	Mammalia	Pteropodidae	1280	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	10
Animalia	Mammalia	Vespertilionidae	1372	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	V,P		3
Animalia	Mammalia	Vespertilionidae	1369	*Kerivoula papuensis*	Golden-tipped Bat	V,P		2

Animalia	Mammalia	Vespertilionidae	1834	*Miniopterus schreibersii oceanensis*	Eastern Bentwing-bat	V,P		2	
Animalia	Mammalia	Vespertilionidae	1357	*Myotis macropus*	Southern Myotis	V,P		3	
Animalia	Mammalia	Vespertilionidae	1361	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		1	
Animalia	Mammalia	Otariidae	1882	*Arctocephalus pusillus doriferus*	Australian Fur-seal	V,P		4	
Animalia	Mammalia	Physeteridae	1578	*Physeter macrocephalus*	Sperm Whale	V,P		1	
Plantae	Flora	Myrtaceae	4293	*Syzygium paniculatum*	Magenta Lilly Pilly	E1,P	V	1	
Plantae	Flora	Orchidaceae	4386	*^^Caladenia tessellata*	Thick Lip Spider Orchid	E1,P,2	V	1	
Plantae	Flora	Orchidaceae	4415	*^^Cryptostylis hunteriana*	Leafless Tongue Orchid	V,P,2	V	18	
Plantae	Flora	Santalaceae	5871	*Thesium australe*	Austral Toadflax	V,P	V	1	

Australian Government
Department of the Environment and Energy

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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

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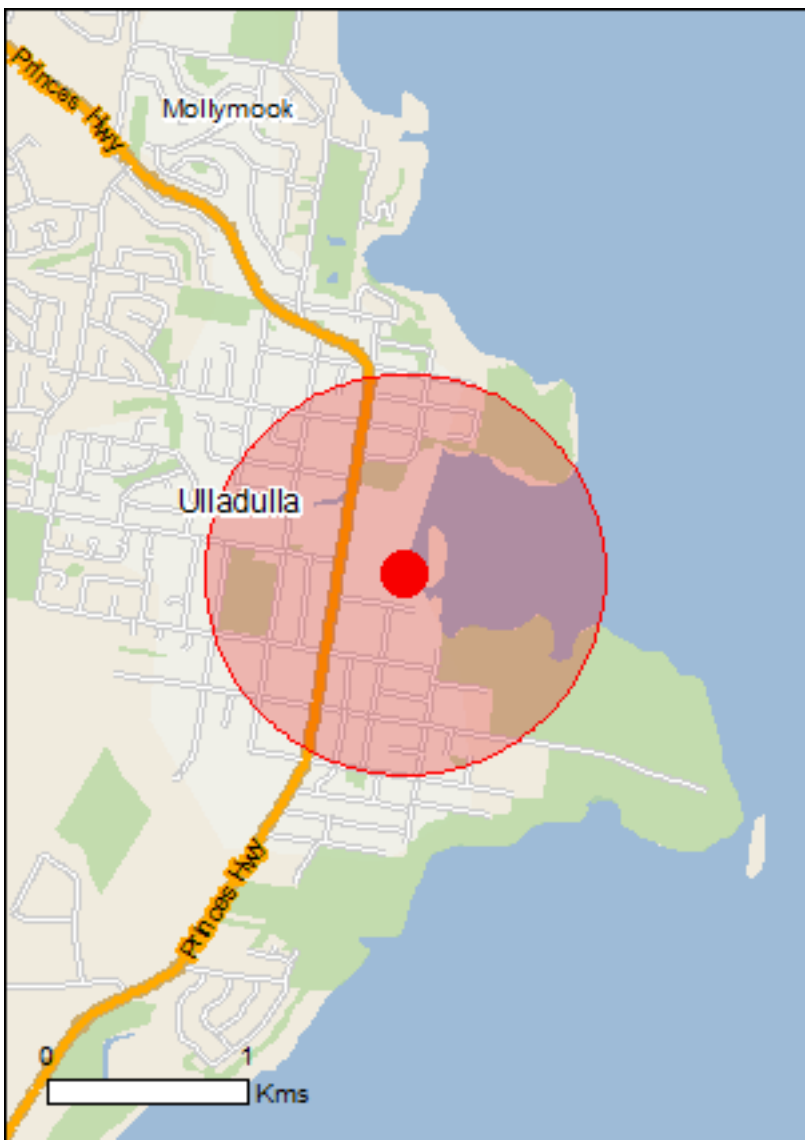

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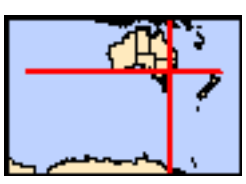

Summary

Matters of National Environmental 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:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	63
Listed Migratory Species:	48

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 environment anywhere.

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 Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	73
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	1
Invasive Species:	35
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	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.

Name	Status	Type of Presence
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Illawarra and south coast lowland forest and woodland ecological community	Critically Endangered	Community may occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within 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

Name	Status	Type of Presence
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed	Vulnerable	Species or species

Name	Status	Type of Presence
Albatross [64459] Thalassarche melanophris		habitat may occur within area
Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis rubricollis		
Hooded Plover (eastern) [66726]	Vulnerable	Species or species habitat known to occur within area
Fish		
Epinephelus daemelii		
Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area
Prototroctes maraena		
Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area
Frogs		
Heleioporus australiacus		
Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area
Litoria aurea		
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area
Litoria littlejohni		
Littlejohn's Tree Frog, Heath Frog [64733]	Vulnerable	Species or species habitat may occur within area
Mixophyes balbus		
Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat may occur within area
Mammals		
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within 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
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Isoodon obesulus obesulus		
Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Petauroides volans		
Greater Glider [254]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Potorous tridactylus tridactylus		
Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat likely to occur within area
Pseudomys novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Plants		
Caladenia tessellata		
Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat known to occur within area
Cryptostylis hunteriana		
Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis gibbosa		
Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat may occur within area
Syzygium paniculatum		
Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe		
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Hoplocephalus bungaroides		
Broad-headed Snake [1182]	Vulnerable	Species or species habitat may occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Sharks		
Carcharias taurus (east coast population)		
Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species habitat known to occur

Name	Threatened	Type of Presence within area
[Balaenoptera edeni](#) Bryde's Whale [35]		Species or species habitat may occur within area
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Species or species habitat may occur within area
[Caperea marginata](#) Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
[Carcharodon carcharias](#) White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
[Lagenorhynchus obscurus](#) Dusky Dolphin [43]		Species or species habitat may occur within area
[Lamna nasus](#) Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
[Manta birostris](#) Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
[Megaptera novaeangliae](#) Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
[Orcinus orca](#) Killer Whale, Orca [46]		Species or species habitat likely to occur within area
[Rhincodon typus](#) Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
[Cuculus optatus](#) Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
[Hirundapus caudacutus](#) White-throated Needletail [682]		Species or species habitat known to occur within area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land	[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.

Name
Commonwealth Land - Australian Postal Commission

Listed Marine Species	[Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Cuculus saturatus Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea gibsoni Gibson's Albatross [64466]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Sterna albifrons Little Tern [813]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Name	Threatened	Type of Presence
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche sp. nov. Pacific Albatross [66511]	Vulnerable*	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat known to occur within area
Thinornis rubricollis rubricollis Hooded Plover (eastern) [66726]	Vulnerable	Species or species habitat known to occur within area
Fish		
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Cosmocampus howensis Lord Howe Pipefish [66208]		Species or species habitat may occur within area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]		Species or species habitat may occur within area
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Solenostomus paegnius Rough-snout Ghost Pipefish [68425]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Stigmatopora olivacea a pipefish [74966]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Mammals		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

Regional Forest Agreements	[Resource Information]

Note that all areas with completed RFAs have been included.

Name	State
Southern RFA	New South Wales

Invasive Species

[Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat may occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-35.3576 150.4773

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.

Department of the Environment
GPO Box 787
Canberra ACT 2601 Australia
+61 2 6274 1111

National Native Title Tribunal

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Local government area Shoalhaven City Council

Representative A/TSI body area ALL

Applicant representative

Application status ALL

Notification status ALL

Date filed between and

Sort by Date filed

Search >

Your search returned **27** matches.

Name	NNTT file no	Federal Court file no	Date filed	Application status
South Coast People	NC2017/003	NSD1331/2017	03/08/2017	Active
B & J Wallace Holdings Pty Ltd and Attorney General of New South Wales	NN2017/007	NSD1083/2017	04/07/2017	Discontinued
Allan Gregory Carle and Anor	NN2013/003	NSD1752/2013	27/08/2013	Discontinued
Jerringa Traditional Owners Aboriginal Corporation	NC2012/002	NSD751/2012	30/05/2012	Dismissed
John George Jirgens	NN2011/005	NSD1308/2011	03/08/2011	Discontinued
Jerrinja Local Aboriginal Land Council	NN2010/002	NSD240/2010	10/03/2010	Determined
Lauri Tuominen	NN2006/002	NSD13/2006	04/01/2006	Discontinued
Ulladulla Local Aboriginal Land Council	NN2005/015	NSD1826/2005	28/09/2005	Determined
The Council of the City of Shoalhaven	NN2005/010	NSD1037/2005	23/06/2005	Discontinued
The Hon Bob Debus MP, Minister for the Environment for the State of New South Wales	NN2005/009	NSD468/2005	29/03/2005	Discontinued
Nowra Local Aboriginal Land Council	NN2004/011	NSD1631/2004	09/11/2004	Determined
Huskisson Bowling Club Ltd	NN2004/009	NSD1367/2004	20/09/2004	Discontinued
Kim Moran #3	NC1999/003	NSD6006/1999	30/04/1999	Dismissed
Shoalhaven City Council #3	NN1999/001	NSD6003/1999	16/03/1999	Discontinued
Jerrinja/ Wandi Wandian people	NC1998/025	NSD6180/1998	29/09/1998	Discontinued
Shoalhaven City Council #2	NN1998/004	NSD6154/1998	05/06/1998	Discontinued
Dariwul People	NC1998/012	NSD6101/1998	01/05/1998	Dismissed
Shoalhaven City Council	NN1997/022	NSD6145/1998	15/10/1997	Discontinued
Dariwal (KEJ Tribal Elders)	NC1997/001		06/01/1997	Rejected
Walbunja People	NC1996/029	NSD6046/1998	10/09/1996	Dismissed
Gundu-ngura	NC1996/021		26/06/1996	Rejected
Wadi Wadi #2	NC1996/012	NSD6031/1998	23/04/1996	Discontinued
Jerrungarugh People #2	NC1996/005	NSD6025/1998	28/02/1996	Dismissed
NSW Government # 12	NN1995/020		01/11/1995	Discontinued
Jerrungarugh Aboriginal People	NC1995/006	NSD6015/1998	10/04/1995	Dismissed
Terara Sands Pty Ltd	NN1994/034		29/11/1994	Discontinued
Boomer & Roberts	NN1994/007		13/07/1994	Withdrawn

National Native Title Tribunal

Application Details

Back to searc

South Coast People (NC2017/003)

Application name	South Coast People
Tribunal file no.	NC2017/003
Federal Court file no.	NSD1331/2017
Application type	Claimant
Date filed	03/08/2017
State or Territory	New South Wales
Area description	South Coast of NSW
Approximate area size (sq km)	16807.6695
Local government area(s)	Bega Valley Shire Council, Campbelltown City Council, Eurobodalla Shire Council, Goulburn Mulwaree Council, Liverpo Shellharbour City Council, Shoalhaven City Council, Sutherland Shire Council, The Council Of The Municipality Of Kiam Wingecarribee Shire Council, Wollondilly Shire Council, Wollongong City Council, Canterbury-Bankstown Council, Geor Council, Queanbeyan-Palerang Regional Council, Snowy Monaro Regional Council
Representative A/TSI body area(s)	New South Wales
Applicant's representative	NTSCORP Limited
Registration decision status	Accepted for registration
Dates registered on the Register of Native Title Claims	Registered from 31/01/2018
Notification status	Pre-notification
Notification date(s)	30/05/2018 to 29/08/2018
Application status	Active **More information on Federal Court website**

Schedule extract and attachments

Schedule extract	**SNTAExtract_NC2017_003**
Schedule extract attachment/s	**Attachment C Map of the area covered by the application** **Attachment B External boundary description** **NNTT Map of the application area**

Registration Decision(s)

Tribunal file no.	Decision result	Decision type	Decision date	Reason for decision	Link to Register
NC2017/003-1	Accepted	Full Decision	31/01/2018	**pdf** **rtf**	**Register Details**

Determination(s)

No determinations of native title have been made for this application

View this map in NTV: **NC2017/003**

Peter Dalmazzo

From: pauline.campbell@crownland.nsw.gov.au on behalf of CL ALC <cl.alc@crownland.nsw.gov.au>
Sent: Thursday, 31 May 2018 8:26 AM
To: Peter Dalmazzo
Subject: Re: Ulladulla Harbour Marina - land claims on proposed work sites?

Hi Peter

Lot 7314 DP 1166835 is not subject of any undetermined Aboriginal Land Claims.

Pauline

Aboriginal Land Claim Investigation Unit
NSW Department of Industry - Crown Lands
45 Wingewarra Street Dubbo NSW 2830 | PO Box 2185 | Dangar NSW 2309
T: +61 2 6883 3396 |
E: alc@crownland.nsw.gov.au
W: www.industry.nsw.gov.au/lands

On 31 May 2018 at 08:19, Peter Dalmazzo <peter@peterdalmazzo.com.au> wrote:

Hi Pauline

can you please clarify "Lot 7314 DP 1166835 was subject of any undetermined Aboriginal Land Claims…."

Should that read

Lot 7314 DP 1166835 was not subject of any undetermined Aboriginal Land Claims

or

Lot 7314 DP 1166835 was subject of undetermined Aboriginal Land Claims

Regards,

Peter Dalmazzo

peter@peterdalmazzo.com.au

02 4448 6164

0466 930 775

From: pauline.campbell@crownland.nsw.gov.au [mailto:pauline.campbell@crownland.nsw.gov.au] **On Behalf Of** CL ALC
Sent: Monday, 21 May 2018 9:12 AM
To: Peter Dalmazzo
Subject: Re: Ulladulla Harbour Marina - land claims on proposed work sites?

Hi

Sorry for the delay.

I have conducted a search of DoI - Lands databases CRV and CLIDnet this date with the following results:

Lot 7314 DP 1166835 was subject of any undetermined Aboriginal Land Claims 8042, 42448 and 42485 - Office of Registrar sent notification of the whole withdrawal of Aboriginal Land Claim 8042 and Partial withdrawal of Aboriginal Land Claims 42448 and 42485 on 21 September 2017.

Please be aware the Office of the Registrar Aboriginal Land Rights Act is the responsible authority for maintaining the currency and accuracy of the Aboriginal Land Claims register.

Any anomalies identified in a response from the Office of the Registrar should be raised with the Office of the Registrar.

For further information on Aboriginal Land Claims please visit www.crownland.nsw.gov.au or contact our unit on 6883 3396.

Kind Regards

Pauline

Aboriginal Land Claim Investigation Unit

NSW Department of Industry - Crown Lands
45 Wingewarra Street Dubbo NSW 2830 | PO Box 2185 | Dangar NSW 2309

T: +61 2 6883 3396 |

E: alc@crownland.nsw.gov.au

W: www.industry.nsw.gov.au/lands

On 20 May 2018 at 16:24, Peter Dalmazzo <peter@peterdalmazzo.com.au> wrote:

Hi Pauline

attached are:

- a plan showing areas proposed to be dredged (areas shown green, pink, blue and yellow)
- a plan showing the proposed lease area to be occupied by structures.

Is that what you need?

Regards,

Peter Dalmazzo

peter@peterdalmazzo.com.au

02 4448 6164

0466 930 775

From: pauline.campbell@crownland.nsw.gov.au [mailto:pauline.campbell@crownland.nsw.gov.au] **On Behalf Of** CL ALC
Sent: Friday, 18 May 2018 8:10 AM
To: Peter Dalmazzo
Subject: Re: Ulladulla Harbour Marina - land claims on proposed work sites?

Hi Peter

Could you please draw a colour on your map where the work is to be done.

Thanks

Pauline

Aboriginal Land Claim Investigation Unit

NSW Department of Industry - Crown Lands
45 Wingewarra Street Dubbo NSW 2830 | PO Box 2185 | Dangar NSW 2309

T: +61 2 6883 3396 |

E: alc@crownland.nsw.gov.au

W: www.industry.nsw.gov.au/lands

On 10 May 2018 at 20:26, Peter Dalmazzo <peter@peterdalmazzo.com.au> wrote:

Map attached this time.

From: Peter Dalmazzo [mailto:peter@peterdalmazzo.com.au]
Sent: Thursday, 10 May 2018 8:25 PM
To: 'alc@crownland.nsw.gov.au'
Subject: Ulladulla Harbour Marina - land claims on proposed work sites?

Dear ALC Unit

I am collating information on behalf of Shoalhaven City Council for environmental assessment of proposed construction of a marina in Ulladulla harbour. The location is shown on the attached map.

Council needs to know if there are any claims under the Aboriginal Land Rights Act 1983 that affect the land.

Can you please tell me whether there are any claims on land near the proposal?

Thanks for your assistance.

Regards,

Peter Dalmazzo

peter@peterdalmazzo.com.au

02 4448 6164

0466 930 775

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : Ulladulla marina water

Client Service ID : 348271

Peter Dalmazzo

157 Cedarvale Lane
Jaspers Brush New South Wales 2535

Attention: Peter Dalmazzo

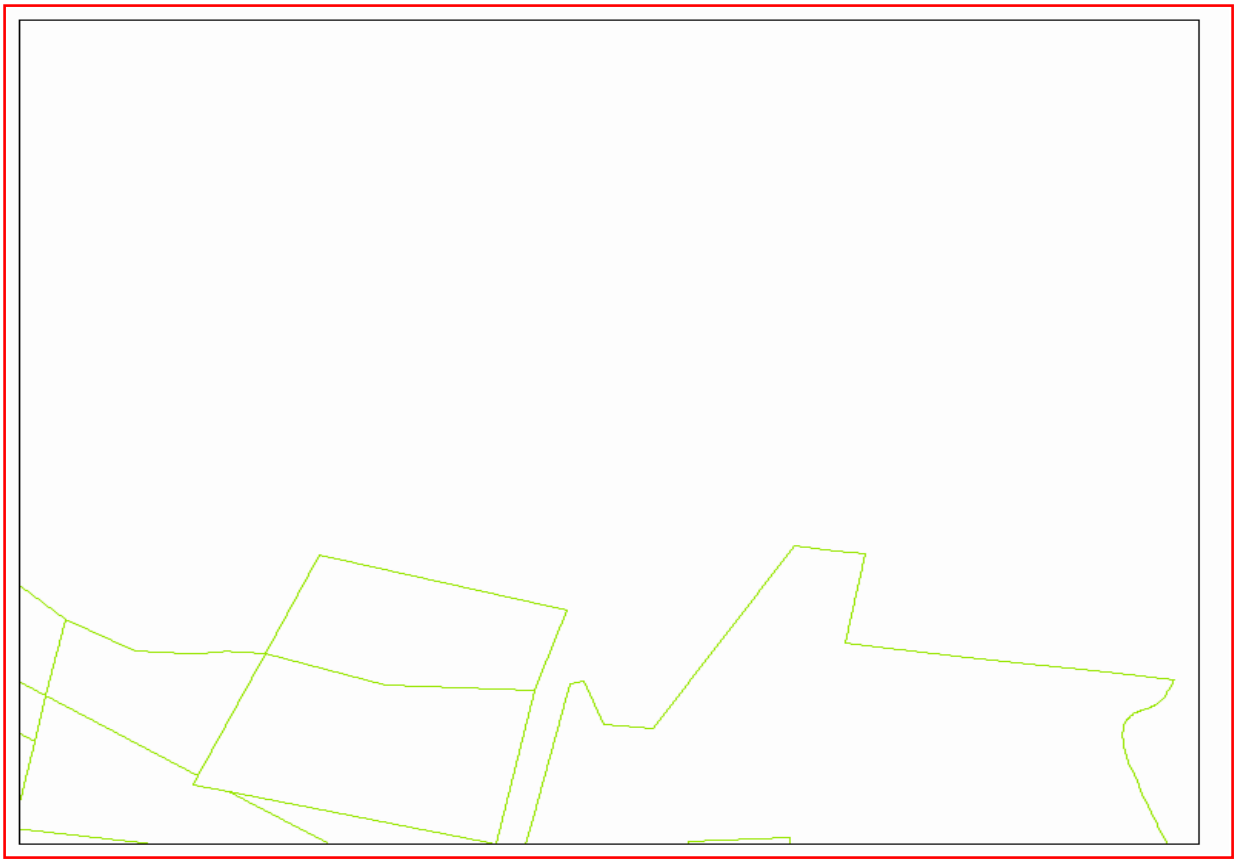
Email: peter@annaglynn.com

Date: 31 May 2018

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -35.3582, 150.4756 - Lat, Long To : -35.3564, 150.4784 with a Buffer of 0 meters, conducted by Peter Dalmazzo on 31 May 2018.

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 the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	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 (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit 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 be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage 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.

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