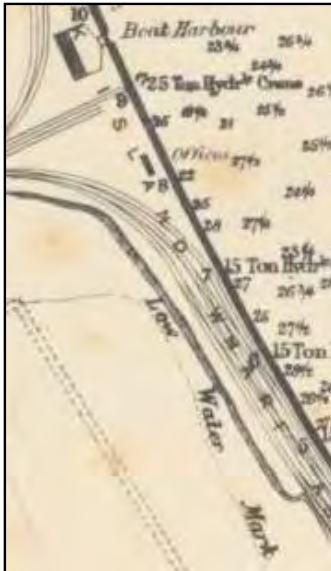




Appendix F

Heritage Assessment Report



Capital Dredging Project South Arm, Hunter River Newcastle Port, NSW

Cultural Heritage Assessment

September 2012



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Report Register

The following register documents the development and issue of this document.

Issue No.	Notes/Description	Issue Date
v1	Draft for client comment	27.9.2011
v3	Final for client	15.12.2011
v5	Final following revisions	7/09/2012

EXECUTIVE SUMMARY

Newcastle Port Corporation is proposing to obtain approvals to dredge twelve shipping berths on the South Arm of the Hunter River, within the Port of Newcastle. This work will be conducted in various locations adjacent to Mayfield North, Carrington and Walsh Point within the South Arm area.

The Project will include dredging:

- Mayfield 1 and 2 to a depth of 15.3 metres (NHTG).
- Mayfield 3 and 4 to a depth of 13.3 metres (NHTG).
- Mayfield 5, 6 and 7 to a depth of 16 metres (NHTG).
- Kooragang 1 and Walsh Point berth pocket to a depth of 14.5 meters (NHTG).
- Dyke Point 3 to a depth of 17 metres (NHTG).

The Project will include dredging batters either side of each berth as required. The proposed works are to facilitate future wharf and landside development associated with each berth, and to assist in diversifying trade in the port.

The proposed capital dredging works will be assessed under Part 5.1 of the *Environmental Planning and Assessment Act 1979*. This report documents the results of a cultural heritage assessment for the Project. The key findings of the assessments are as follows:

Historic/Maritime Heritage

- The proposed dredging program has the potential to impact known heritage items at Dyke Berth No.3, Mayfield 3 and 4, and potential archaeological relics at Walsh Point Berth 3 and Kooragang 1.
- There is unlikely to be maritime archaeological remains present within the proposed Mayfield Berth Nos.1, 2, 5, 6 and 7, and Walsh Point Berth Nos.1 and 2.
- Relocation and/or reorientation of the berths is not possible due to operational and safety considerations.

Proposed Dyke Berth No.3 site

- Three previously identified heritage items listed on the Newcastle Port Corporation's Section 170 Heritage and Conservation Register are present within the proposed Dyke Berth No.3 site.

These include the remains of Crane Base 14 and Crane Base 15 built in 1877-1888, and the remains of a McMyler Hoist that was later used as a conveyor coal loader base.

- The works at Dykes Berth 3 include removal of Crane Bases 14 and 15, as well as the foundation remains associated with the McMyler Hoist. These items have been previously identified as being locally significant.
- There is unlikely to be maritime archaeological remains present on the seabed in the location of Dyke Berth 3 due to the maintenance dredging that occurred across the site when the wharf was removed from the dyke in 1966.

Mayfield Berths 1, 2, 5, 6 and 7

- The former BHP Steelworks wharf in the location of Mayfield Berths 1 and 2 has previously been assessed, recorded and demolition works have commenced.

- The potential for archaeological remains associated with earlier jetties near Mayfield Berth 1 is considered to be low, with the former structure removed prior to the construction of the 1912 steel works wharf to remove any navigational hazard.
- There is unlikely to be maritime archaeological remains present in the location of Mayfield Berths 5, 6 and 7.

Mayfield 3 and 4

- Original timber wharves built for the former BHP Steelworks site at Mayfield 3 and 4 are listed as having local heritage significance under the *State Environmental Planning Policy (Major Projects) Amendment (Three Ports) 2009*. Refer to Appendix 4 for an addendum to this heritage assessment that addresses the timber wharves at Mayfield 3 and 4.

Walsh Point Berths 1, 2 and 3 and Kooragang Berth 1

- There are known seabed obstructions present in the vicinity of Walsh Point Berths 1, 2 and 3 and Kooragang Berth 1. The in-water structural remains associated with one or more slipways and possible jetty, and one of the pontoons have been identified from bathymetry surveys undertaken at Walsh Point.

These items are believed to be associated with the in-water infrastructure associated with the boat building and engineering yard present at Walsh Point from 1914.

The proposed works will require removal of the remains of the slipway and other known structural remains present below the water in these areas. These relics have been identified as being locally significant.

- Further underwater surveys of this material and any other relics that may be present within this area should be undertaken to positively identify the obstructions that are present, and the significance and condition of these items. In order to mitigate the impact of the proposed capital dredging works on the South Arm of the Hunter River on historical/maritime items it is recommended that:
 - No further maritime archaeological assessment is required for Mayfield Berths 1, 2, 5, 6 and 7. The proposed works can proceed as proposed in the design plans as assessed in this report.
 - Archival recording should be undertaken on the maritime archaeological remains associated with the former engineering works present along Walsh Point. The remains should be recorded following the guidelines stated in “Photographic Recording of Heritage Items Using Film or Digital Capture” and should be undertaken under the direction of a maritime archaeologist. This work should include both video and still photograph.
 - Prior to any works associated with the removal of Crane Bases 14 and 15, and of the former McMyler Hoist and Coal Loader, notification is required to the Heritage Council, Heritage Branch, Office of Environment and Heritage regarding the demolition and removal of these items from the Section 170 Heritage and Conservation Register.
 - As stated in the Heritage Act 1977, under Section 170A(1) notification has to be made in writing to the Heritage Council no less than 14 days before the item is removed from the Section 170 Register or demolition works commence.
 - An archival recording must be undertaken for both Crane Base 14 and 15, and the McMyler Hoist prior to their demolition. The remains should be recorded following the guidelines stated in “Photographic Recording of Heritage Items Using Film or Digital Capture” and should be undertaken under the direction of a maritime archaeologist. The recording should include the above and below water remains of all three items, and should include both video and still photography.

Aboriginal Heritage

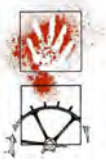
- There are no known Aboriginal archaeological sites within the Capital Dredging Project area.
- All dredging and substantial excavation for the Capital Dredging Project will be situated within the existing bed of the Hunter River estuary. Other construction activities will occur on adjoining reclaimed land associated with the modern port. Both of these contexts preclude the potential for Aboriginal archaeological deposits.
- In order to address the potential for impact to Aboriginal cultural values it is recommended that consultation with Aboriginal stakeholders should be systematic and on-going. Such a program should address and discuss potential management strategies where necessary, and seek a practical consensus.
- Possible management strategies include:
 - Establishing public interpretation of Aboriginal cultural values associated with the estuary (this may be achieved through on-site signage, pamphlet production, event sponsorship, and nomenclature); and/or
 - Commemoration of traditional Aboriginal themes through appropriate naming of port facilities and features.

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1. INTRODUCTION

1.1 Background

Newcastle Port Corporation seeks to obtain approval for the dredging of twelve shipping berths on the South Arm of the Hunter River, within the Port of Newcastle ("the Project"). This work will be conducted in various locations adjacent to Mayfield North, Carrington and Walsh Point within the South Arm area (Figure 1.1).

The Project will facilitate future wharf and landside development associated with each berth, and diversify trade in the port. The Project will also improve confidence for future proponents aiming to develop the adjoining lands for port-related facilities.

The Project will be assessed under Part 5.1 of the *Environmental Planning and Assessment Act 1979*. The Director General of the Department of Planning has issued the following heritage assessment requirements relevant to this study.

Heritage - including but not limited to:

- non-indigenous and indigenous heritage items and values of the site and surrounding area (including known or probable maritime heritage sites and appropriate surveys); and,
- consideration of the *NSW Heritage Manual* (NSW Heritage Office, 1996), *Assessing Heritage Significance Guidelines* (NSW Heritage Office, 2001) and *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC, 2005).

This report documents the results of a cultural heritage assessment for the capital dredging works. Cosmos Archaeology conducted the maritime archaeological assessment for the Project. Navin Officer Heritage Consultants (NOHC) implemented the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* for the Project.

The report was commissioned by GHD Pty Ltd.

1.2 Description of the Project

A dredge barge will undertake the dredging works for the twelve shipping berths. The disposal of the dredged material would be determined at the time of dredging. Options include dumping the material out to sea in a registered disposal area, re-use of the material within land reclamation works, or use as part of beach replenishment in the local area.

The actual dredging works may be undertaken by third party proponents as part of the development of future port infrastructure projects. The approval to dredge material may be provided to these third party proponents as an early works package, whilst approval is being sought independently for the development of land-side port facilities. In this case, the third party proponents would be responsible for undertaking all environmental assessments and approvals for these facilities, including material sea dumping permits if required.

The Project will include dredging of:

- Mayfield 1 and 2 to a depth of 15.3 metres (NHTG),
- Mayfield 3 and 4 to a depth of 13.3 metres (NHTG),
- Mayfield 5, 6 and 7 to a depth of 16 metres (NHTG)
- Kooragang 1 and Walsh Point berth pocket to a depth of 14.5 meters (NHTG)
- Dyke Point 3 to a depth of 17 metres (NHTG).



Batters either side of each berth will be dredged as required. Specific dredging volumes at each site are shown in Table 1.1.

These actual dredge levels include an over-dredging allowance of an additional 0.5 metres in depth in all proposed dredging areas. This is provided as a buffer to allow for sedimentation that may occur between maintenance dredging programs.

The dredging will also extend outside of each berth area to stabilise the batter immediately around each dredge area. The batter that will be created will be no greater than a slope of 1 to 4 to match the existing depth of the channel (RL 15.2). All dredging works will occur within the harbour. There will be no dredging or excavation of the area behind the present rock armour. Three berths, Kooragang 1, Kooragang 3 and Dyke 3, will impact on existing structures, both above and below water. (Figure 1.2).

Table 1.1: Specific dredging volumes at each site

Site	Approximate Volume in Cubic Metres
Dyke 3	300,000
Kooragang 1 and Walsh Point berth pocket	675,000
Mayfield 1 and 2	310,000
Mayfield 3 and 4	65,000
Mayfield 5 to 7	520,000
TOTAL	1,870,000

1.3 The study area and objectives

The study area for this assessment is the twelve areas proposed to be dredged as part of the capital dredging works within the South Arm of the Hunter River, Port of Newcastle (Figure 1.1).

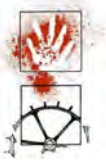
This assessment considers the impacts on known registered heritage items that will be impacted by, or are adjacent to, each of the dredge areas, as well as potential remains associated with jetties, and wharf structures associated with earlier harbour developments.

The key objectives of the Aboriginal heritage assessment were to:

- Identify all Aboriginal heritage listed items that are located within, or immediately adjacent to, the twelve dredge areas;
- Identify the potential for unrecorded Aboriginal sites to be located within, or immediately adjacent to, the twelve dredge areas; and
- Identify interested Aboriginal stakeholders and ascertain their views relative to the proposed works.

The key objectives of the maritime archaeological assessment were to:

- Identify the location and extent of all heritage registered items that are located within, or immediately adjacent to, the twelve dredge areas;



- Carry out additional primary and secondary historical research to identify earlier maritime infrastructure that may be present within the dredge areas;
- Outline the heritage significance for all known heritage items, as well as undertake a statement of significance of any newly identified items identified within or immediately adjacent to the dredging areas;
- Assess the impact that the reconstruction works would have on any heritage items that are within the impact area of the dredge areas; and,
- Provide mitigation options and recommendations relating to the identified potential impact.



LEGEND

- Berth Locations
- Study Area Locality
- Watercourse



Figure 1.1: Location of the study area within the south Arm of the Hunter River, Port of Newcastle (Plan supplied by GHD)



LEGEND

- Berth Locations
- Existing Channel 15.2m (NHTG)
- ▲ Approved Channel Depth 15.2m to be dredged by others

1:13,000 (at A4)
0 50 100 200 300 400
Metres
Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 58



Newcastle Port Corporation
Capital Strategic Dredging Project

Job Number 22-15683
Revision 0
Date 10 SEP 2012

Berth Locations

Figure 1.2

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 T 61 2 4979 9999 F 61 2 4979 9988 E info@ghd.com.au W www.ghd.com.au
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Figure 1.2: Location of the proposed Berths within the south Arm of the Hunter River, Port of Newcastle (Plan supplied by GHD)



2. METHODOLOGY

2.1 Aboriginal Cultural Heritage

A preliminary environmental assessment of the Capital Dredging Project was conducted in February 2011 by Worley Parsons (Worley Parsons 2011).

This assessment concluded that due to the extensive disturbance and alteration of the environment surrounding the Project site, it was unlikely that there would be any relics, items or places of Aboriginal significance remaining within the locality (Worley Parsons 2011:21).

Based on this assessment, Newcastle Port Corporation determined that an archaeological field survey or assessment component was not required and that the assessment of Aboriginal cultural heritage should focus on the conduct of the Aboriginal Community consultation program.

The Aboriginal cultural heritage assessment, therefore, consisted of three components:

- A review of archaeological potential including a review of historical mapping and identification of pre-European landforms to be impacted by proposed development;
- A search of the Office of Environment and Heritage (OEH) Aboriginal Heritage Information Management System (AHIMS) site database; and
- An Aboriginal community consultation program comprising implementation of the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC, 2005) and a site visit by registered interested parties.

2.2 Maritime Archaeology

The objectives of the maritime archaeological assessment have been met by undertaking the following methodology.

Historical research, including both primary and secondary resources, was undertaken to understand the historical development of the south arm of the Hunter River, and the specific built history of the Port of Newcastle.

A brief site inspection was conducted to visit the location of known above water heritage sites present within, or immediately adjacent to the proposed dredging area, as well as to obtain an understanding of the location of the berths within the general harbour area. The site inspection was a terrestrial survey only. No underwater or on-water surveys were conducted for the assessment.

Existing remote sensing data that has been collected within any of the proposed dredge areas has been used within this assessment.

With a greater understanding of the development history of the site, and from information gathered from the site inspection, an archaeological predictive model was produced to identify any known or potential archaeological relics that may be present within the dredging areas.

Where identified, these heritage items or relics have been assessed for their significance, as outlined in the *Assessing Heritage Significance Guidelines* (NSW Heritage Office 2001).

An impact assessment has then been undertaken to determine the impact that the proposed



3. STATUTORY INFORMATION

The proposed capital dredging works will be assessed under Part 5.1 of the *Environmental Planning and Assessment Act 1979*.

3.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) and its regulations, schedules and associated guidelines require that environmental impacts are considered in land use planning and decision making. Environmental impacts include cultural heritage assessment. The Act was reformed by the *Environmental Planning and Assessment Amendment (Infrastructure and other Planning Reform) Act 2005*.

Part 5.1 of the EP&A Act

Part 5.1 of the Act specifically applies to State Significant Infrastructure (SSI). The project has been transitioned to SSI from a Part 3A Environmental Assessment. This was confirmed by the Department of Planning and Infrastructure by letter dated 22 March 2012. Therefore the project is to be assessed under Part 5.1 of the EP&A Act and requires the preparation of an environmental impact statement.

3.2 SEPP (Major Projects) 2005 as amendment (Three Ports) 2009

State Environmental Planning Policies (SEPP) are prepared by the NSW Department of Planning under the *Environmental Planning and Assessment Act 1979*.

SEPP (Major Project) Three Ports 2009 is directed towards facilitating the streamlining of port-related investment and infrastructure. The SEPP includes Port Botany, Port Kembla and Newcastle Port.

Part 1 Division 2 Clause 21 deals with heritage conservation. The amendment states that consent from relevant Local Council is required if a development involves:

- (a) demolishing or moving a heritage item,
- (b) altering a heritage item that is a building by making structural changes to its interior,
- (c) erecting a building on land on which a heritage item is located.

(Part 1 Division 2 Clause 21(1))

Consent for work is not required if:

- (a) the applicant has notified the consent authority of the proposed development and the consent authority has advised the applicant in writing before any work is carried out that it is satisfied that the proposed development:
 - (i) is of a minor nature, or is for the maintenance of the heritage item, and
 - (ii) would not adversely affect the significance of the heritage item, or
- (b) the development is limited to the removal of a tree or other vegetation that the council is satisfied is a risk to human life or property, or
- (c) the development is exempt development.

Part 1 Division 2 Clause 21(2))

The SEPP requires any development within the vicinity of a listed heritage item to:

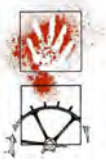


...require a heritage impact statement to be prepared that assesses the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item concerned.

Consent from Council is not required as this project is being assessed under Part 5.1 of the EP&A Act. *SEPP (State and Regional Development) 2011*, applies to this project and overrides the requirements of the *SEPP (Major Project) Three Ports 2009*.

3.3 Newcastle Local Environmental Plan (Draft 2011)

Newcastle Port has been annexed from the Draft Newcastle LEP (2011) and has been included within the State Environmental Planning Policy (Major Projects) as amendment (Three Ports) 2009.



4. HERITAGE REGISTER SEARCH RESULTS

4.1 National Heritage List

The National Heritage List is a register of natural and cultural places with outstanding heritage significance to the Australian nation. Each entry to the National Heritage List is assessed by the Australian Heritage Council as having exceptional heritage value and is protected under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. The Act requires that approval is obtained from the Australian Government Minister for the Environment and Water Resources before any action takes place that has, will have, or is likely to have, a significant impact on the national heritage values of a listed place.

- No items that are located within the Newcastle Port study area (within, or immediately adjacent to, the twelve proposed dredging areas) are listed on the National Heritage List.

4.2 NSW State Heritage Register

The State Heritage Register is a statutory list of places and items of State heritage significance made by the Minister for Planning. The Register lists a diverse range of places, including archaeological sites, that are particularly important to the State and which enrich our understanding of the history of NSW.

Places and items listed on the Register are legally protected under the NSW *Heritage Act 1977* and approval is required from the Heritage Council of NSW prior to undertaking work that results in their alteration or modification.

- No items that are located within the Newcastle Port study area are listed under the NSW Heritage Act 1977.

4.3 Newcastle Port Corporation Section 170 Heritage Register

- Three items that are located within the Newcastle Port study area are listed on the Newcastle Ports Corporation Section 170 Heritage and Conservation Register. These are:
 - Crane Base 15 (Listing Number 3930019);
 - Crane Base 14 (Listing Number 3930020); and,
 - Dyke 3 Coal Loader (part of the former McMyler Hoist) Listing Number 3930038).

4.4 SEPP (Major Projects) Amendment (Three Ports) 2009

- Three items that are located within the Newcastle Port study area are listed under Section 21(7) of State Environmental Planning Policy (SEPP) (Three Ports) 2009. These are:
 - Bullock Island Crane Bases, 38 Robertson Street, Carrington;
 - Former McMyler Hoist, 61 Robertson Street, Carrington; and,
 - Original Timber Wharves, 99 Selwyn Street, Mayfield North.



4.5 AHIMS

The NSW OEH maintains the Aboriginal Heritage Information Management System (AHIMS) which includes: information about Aboriginal objects that have been reported to the Director General, Department of Premier and Cabinet; information about Aboriginal places which have been declared by the Minister to have special significance with respect to Aboriginal culture; and, archaeological reports

- No items are listed on AHIMS as occurring within the Newcastle Port study area. (refer Appendix 1).

4.6 Summary

Three registered heritage items are listed on the Newcastle Ports Corporation Section 170 Heritage and Conservation Register.

Three registered heritage items are listed under SEPP (Major Projects) Three Ports 2009.

Five of the items are covered by both heritage listings. (Table 4.1).

Table 4.1: Summary of known heritage items in the study area

	Crane Base 15	Crane Base 14	Dyke 3 Coal Loader	Bullock Island Crane Bases	Former McMyler Hoist	Original Timber Wharves
<i>Commonwealth Environment Protection & Biodiversity Conservation Act 1999</i>						
<i>NSW Heritage Act 1976</i>						
NSW S170 Heritage and Conservation Register (Newcastle Ports Corp)	☑	☑	☑			
State Environmental Planning Policy (Major Project) as amended (Three Ports) 2009				☑	☑	☑



5. HISTORY

The following background is not a detailed history of Newcastle, but instead focuses on known cultural activity that has taken place in the South Arm of the Hunter River - specifically in the vicinity of Carrington (Bullock Island), Mayfield and Walsh Island.

This background has been compiled using primary (maps, plans, newspapers etc) and secondary sources (heritage studies, archaeological reports etc).

5.1 Penal Settlement and the Australian Agricultural Company (1804 - 1850)

In 1777, Lieutenant John Shortland discovered the river which he named after John Hunter - the governor of New South Wales - on an expedition in search of escaped convicts.ⁱ The settlement was known as Kings Town and the Coal Harbour, but was officially named Newcastle in 1804.ⁱⁱ A party of convicts and soldiers settled in the Hunter River in 1801 for the purpose of obtaining coal, timber and lime, but their camp was later abandoned.

Following a revolt in 1804, the Hunter River settlement was re-established and convicts were put to work in government coalmines.ⁱⁱⁱ Following the closure of the penal station in 1823, Newcastle was declared an open port and towns in the Hunter Valley were established by free settlers.^{iv}

The Australian Agricultural (A.A.) Company opened its first colliery at Newcastle in 1831, and held a monopoly over the industry until 1847.^v Demand during this time often surpassed production and ships often had to wait weeks to be loaded.^{vi} During this time the harbour was characterised by a series of mud flats and sand pits separated by channels (Figure 5.1).^{vii}

5.2 Development of Industry and the Harbour in the South Arm

Mining in the area increased rapidly when the A.A. Company's coal monopoly agreement was broken, and Newcastle was secured as a major trading port.^{viii} Despite this, trade growth was hindered as the harbour was not considered navigable, and did not possess adequate wharfage and loading facilities.^{ix}

A series of major port and harbour improvements prepared by Captain E.O. Moriarty - Engineer in Chief of Harbours and Rivers - were subsequently undertaken during the 1850s to reduce the levels of silt and sand within the harbour.^x These harbour improvement works coincided with the development of the Great Northern Railway.^{xi} These works, including major land reclamations, significantly altered the shape of the harbour over time (Figure 5.2).



Figure 5.1: View of the South Arm of the Hunter River in 1871.^{xii}

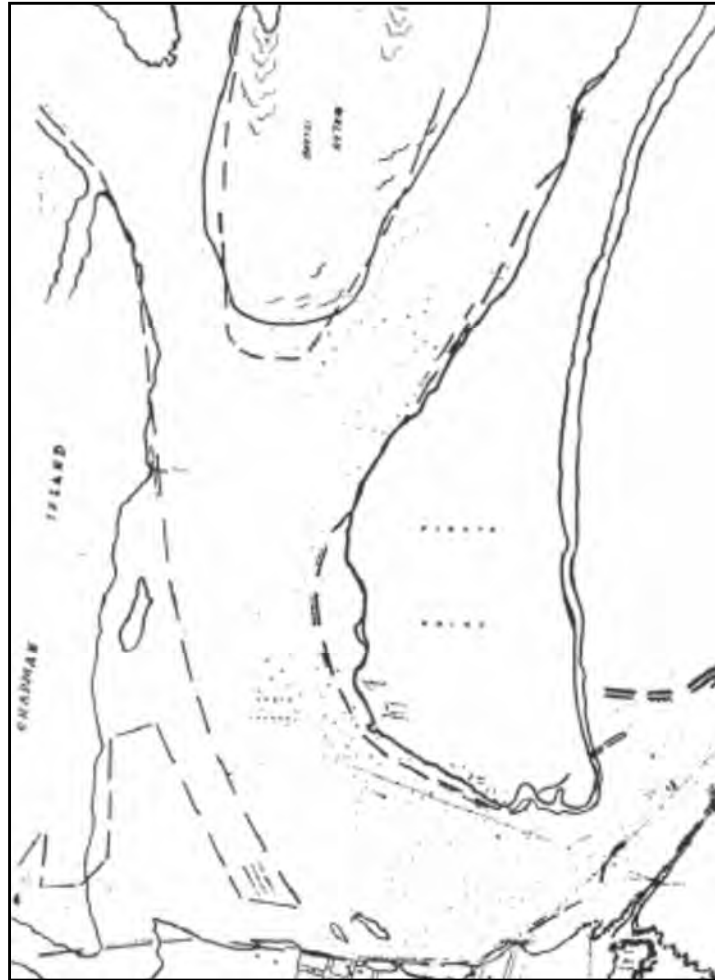


Figure 5.2: Comparison of the Port of Newcastle in 1851 and 1950 - the broken lines show the 1950 shoreline.^{xiii}

5.3 The Dyke

As part of the improvement works to the port and harbour facilities, a Dyke was constructed along a sand bank on the east side of Bullock Island (now Carrington) (see Figure 5.3). Moriarty proposed depositing a layer of ballast along the margin of the bank to prevent it flooding and to divert the flow of the river to scour a channel to the east of the Dyke.^{xiv}

In 1862, two ballast jetties were built and ships began depositing ballast heaps on the bank, while sand dredged from the harbour was pumped behind the newly created wall.^{xv}

The stone bank was completed by 1874 and subsequently lined with wharves equipped with coal loading facilities, including four hydraulic cranes (Nos. 7 - 10) (Figures 5.4 and 5.5).^{xvi} According to available documentation the wharves were built in 30 m sections, 60 m apart starting 230 m from the southern end.

Seventeen wharves were built in 1875, and in 1877 the first 10 wharves were connected to form a continuous timber wharf 838 m long.^{xvii} Contracts for the hydraulic loading cranes were awarded to the Armstrong Hydraulic Machinery Company, from Elswick in England.^{xviii} Four more cranes - two of 15 tonnes and two of 25 tonnes - were ordered in 1877.^{xix} (Figure 5.6).

In 1884 contracts were tendered for a northern extension to the Dyke and by 1886 it was almost three kilometres long.^{xx} An additional four, nine tonne cranes were erected in 1888; bringing the number of cranes on the Dyke to 12.^{xxi}



Figure 5.3: Ballast wharves on Bullock Island in 1869.^{xxii}



Figure 5.4: The Dyke and hydraulic cranes c1906 - looking south down the Dyke^{xxiii}.



Figure 5.5: Ship at the Dyke, Carrington c1909^{xxiv}



Coal loading was the primary activity at the Dyke wharves, but an area of wharfage in the northern end was used for the shipping of timber for export during the 1930s,^{xxv} and later by the Sulphide Corporation and as cattle, sheep and horse wharves.^{xxvi} In 1895 the Dyke was described as a substantial timber wharf, 7,760 feet in length with four ballast jetties constructed along its face, each 50 feet long and 200 feet apart. During this time 5,500 feet of the wharfage was set apart for the shipment of coal; the remainder of the wharf and the ballast jetties being used by vessels discharging ballast or waiting their turn to load.^{xxvii}

A number of boat harbours were built in Newcastle in the late 19th century to cater for smaller boats; including one at Stockton and at the Dyke.^{xxviii} The boat harbour at the Dyke provided for slipping boats and wharfage for landing produce. It also allowed boats to be lowered into the water while loading, as the strong current made it dangerous to moor alongside the wharf itself.^{xxix}



Figure 5.6: View of the Dyke, showing the location of hydraulic cranes and the boat harbour in 1887.^{xxx}

In 1901, four McMyler hoists were bought from America in anticipation of future needs of the coal loading facilities on the Dyke. These hoists could lift 40 tonne wagons compared to the current 10.^{xxxi}

A McMyler hoist was erected on the Dyke between cranes Nos 14 and 15 in 1909 - No. 14 could no longer be used and was removed, and No. 15 crane was moved to make way for the hoist (Figure 5.7).



Figure 5.7: McMyler hoist on the dyke in 1914^{xxxii}

The hoist was found to be inefficient and unsuitable for coal loading, and several coal owners refused to use it.^{xxxiii} The three remaining hoists were left to rust at Carrington while the sole erected McMyler hoist was closed in February 1916, and later demolished in May 1933.^{xxxiv} Two cranes (Nos 12 and 13) were installed and a number of cranes (Nos 7, 8, 9 and 10) were raised at the base to allow them to bunker larger vessels, in order to compensate for the failed McMyler hoist scheme (Figure 5.8).^{xxxv}



Figure 5.8: Carrington Dyke in 1940^{xxxvi}

As the quantity of coal being handled increased, the loading facilities at the Dyke on Bullock Island soon became inadequate for the port's needs. The first conveyor-type loader (the Newstan coal loader) was built as a result, and it operated from 1958 to 1967 (5.9).^{xxxvii}



Figure 5.9: Newcastle's first conveyor belt coal loader.^{xxxviii}



5.4 Industry at Port Waratah

Improvements to rail and harbour transport in Newcastle stimulated further settlement and industry, including smelting and manufacturing.^{xxxix} The Waratah Coal Company operated in Port Waratah from the early 1860s and operated a coal shoot capable of shipping “about 50 tonnes per house”.^{xl} In 1866, the Wallaroo Mining and Smelting company secured a lease on property owned by Waratah Coal and opened a smelting works which became known as the Hunter River Copper Company Works.^{xli}

Copper was smelted at Port Waratah until the early 1890s, until the works closed as a result of falling copper prices and damage to the site caused by flooding in 1893.^{xlii} The Waratah Coal Company subsequently sold their land to the Broken Hill Proprietary Company (BHP) in 1896.^{xliii}

Following their success in the silver lead industry, the Broken Hill Proprietary Company (BHP) decided to enter the steel business and established a steelworks in Newcastle, transforming the city into the industrial capital of Australia.^{xliv} Eager to facilitate the BHP operation at Newcastle, the State Government removed silt from the harbour - to a depth of 25 ft - to provide access to the approaching shipping channels for the import and export of raw materials and finished product.^{xlv}

The site where the steelworks buildings were to be built was very low lying and often flooded - leading to it being reclaimed with sand dredged from the harbour (Figure 5.10 to Figure 5.14).^{xlvi}



Figure 5.10: Chart of Port Waratah in 1869 showing the coal and copper smelting works.^{xlvii}

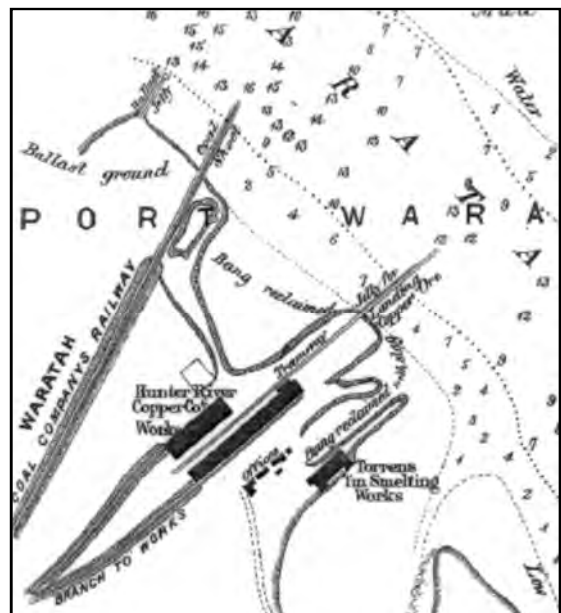


Figure 5.11: Chart of Port Waratah in 1875 showing the Waratah Coal Company and Hunter River Copper Company smelting works.^{xlviii}

Construction of a 600 ft timber wharf for the delivery of raw materials and shipping of the finished product began on the site in as early 1912 (Figure 5.15 to Figure 5.18).^{xlix} The plant officially opened in 1915 and expanded rapidly; by 1918 a second blast furnace was constructed and a third planned.ⁱ The wharf was of orthodox timber construction, supported on turpentine piles.ⁱⁱ The wharf facilities were expanded in 1916 - 17, to a total of 1,300 ft in length; able to accommodate four steamers simultaneously.ⁱⁱⁱ Rail tracks ran along the length of the wharf to carry wagons to receive cargo.^{liii}



Figure 5.12: Port Waratah in 1909 - showing land reclamations on the site.^{liv}



Figure 5.13: Port Waratah c1936 - showing land reclamations for the BHP Steelworks.^{lv}



Figure 5.14: Port Waratah 1956 - showing land reclamations for the BHP Steel works.^{lvi}

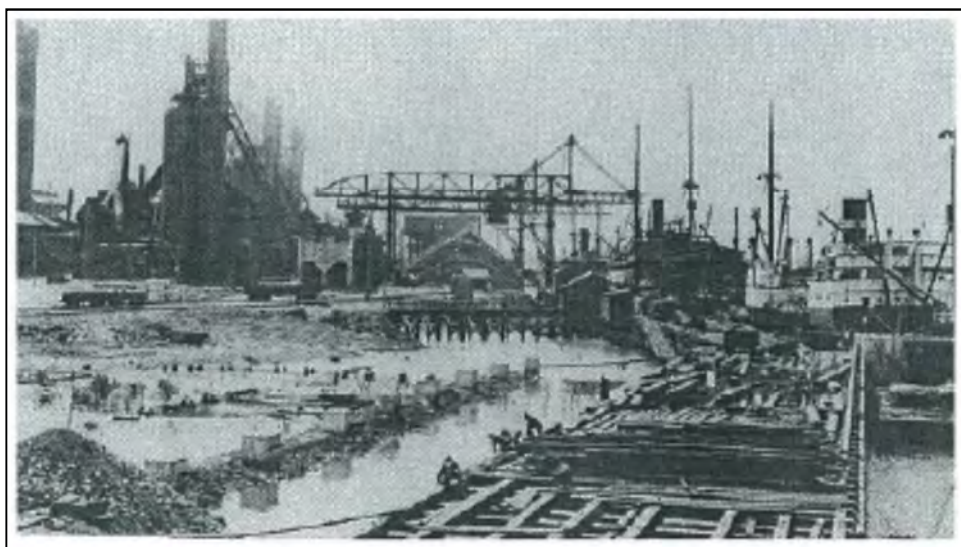
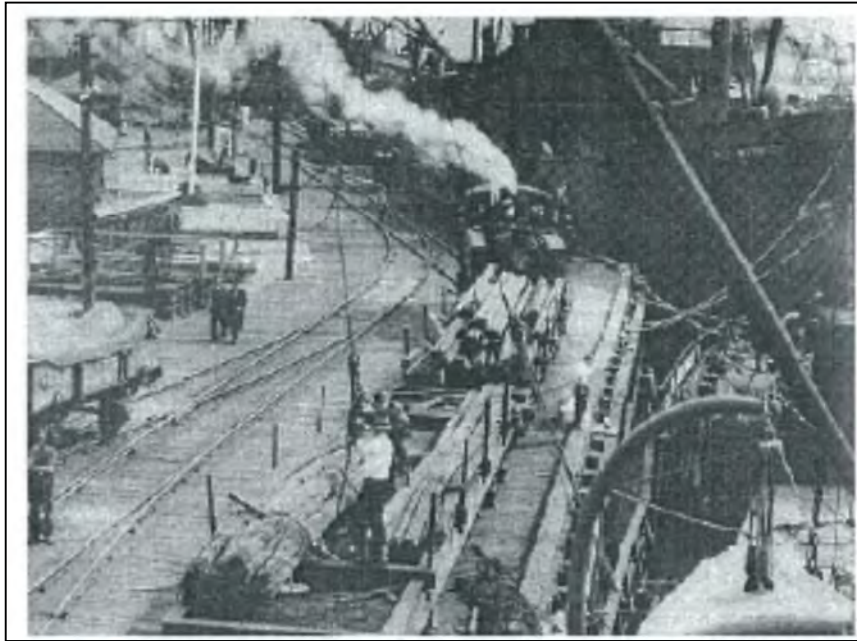


Figure 5.15: Construction of the BHP Steelworks wharf in 1912



Following World War I, the head of BHP - Essington Lewis - encouraged overseas steel processing firms to establish themselves close to the BHP works in Port Waratah.^{lviii} During the 1920s and 1930s, the Titan Manufacturing Company, the Australian Wire Rope Works Company, Bullivants Australian Company, the Commonwealth Steel Company, Ryland Brothers, Lysaght Brothers and Stewart and Lloyds Pty Ltd all established factories in Newcastle during the 1920s and 1930s (Figure 5.18 and Figure 5.19).^{lix} In most cases these plants were eventually taken over by the BHP.^{lx}

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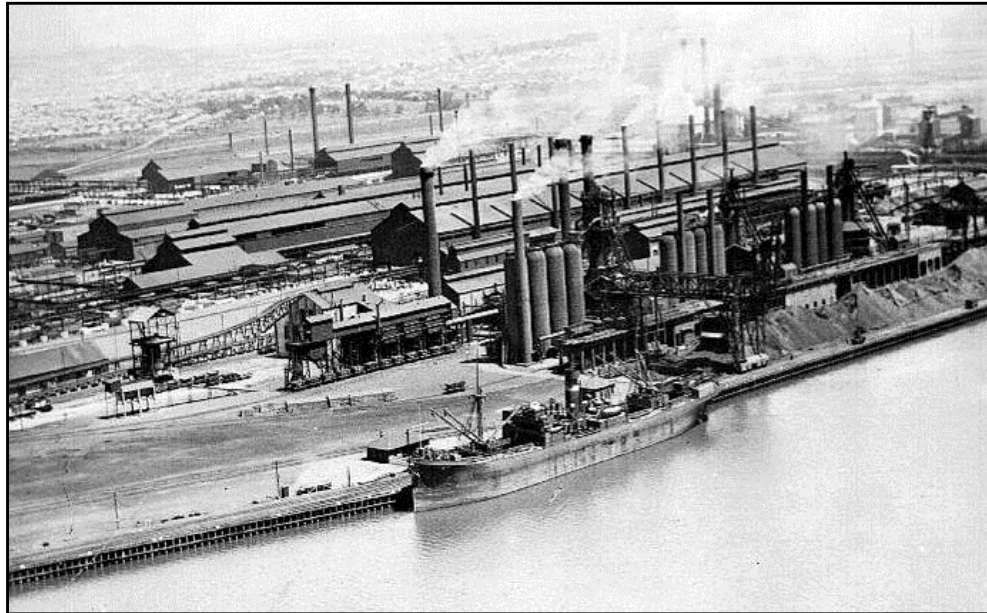


Figure 5.18: View of the BHP Steelworks wharves and furnaces in 1932.^{lxii}

In 1939 the annual output of “pig iron and ferry alloys” from the three blast furnaces at the works was 221, 000 tonnes - compared to that of 160, 000 tonnes in the USA.^{lxiii} During World War II facilities for the production of munitions were installed at the steelworks, and it was also used for shipbuilding, with more than 50 tug boats constructed for the US Army and the British Navy.^{lxiv}

During the 1950s the size of bulk carrier vessels increased dramatically and the wharves underwent further extensions in 1959 and again in 1964 in order to accommodate the larger vessels.^{lxv} The wharves continued to be an essential part of the steelworks up until September 1999, when the BHP steelworks closed.^{lxvi} Apart from a few significant heritage items, most plant and structures on the steelworks site - including the original timber wharves - were subsequently demolished in 2000.^{lxvii}



Figure 5.19: BHP Steelworks and subsidiary steel processing plants in the 1950s.^{lxviii}



5.5 Walsh Island Dockyard

As an economical method of disposing of the silt removed from the harbour, an area between Carrington and Stockton was reclaimed and included three small islands (including Goat and Spectacle Islands) and a large mud flat (Figure 5.20). Work began in 1897, and all material that was previously dumped out at sea was discharged into this area. The newly formed island was named after a senior Public Works engineer, Henry Deane Walsh.^{lxix}



Figure 5.20: View of Newcastle Harbour in 1893 prior to land reclamations to form Walsh Island.^{lxx}

The NSW Government established a dockyard at Walsh Island, directly opposite the BHP Steelworks, to provide shipbuilding, ship repair, bridge building and general engineering services (Figure 5.21 and Figure 5.22).^{lxxi}

Walsh Island suited this purpose as it was removed from the coal loading areas, but was also large enough to build the required workshops and slips with room for future expansion if required. At this time the island comprised of an area of about 80 acres, of which the dockyard only required 32 acres.

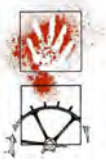


Figure 5.21: Location of the former dockyard complex on Walsh Island.^{boxii}



Figure 5.22: View from the Walsh Island Dockyard to the BHP Steelworks in 1916.^{boxiii}

The Walsh Island Dockyard and Engineering Works officially opened in November 1914 and was one of the largest workshops in Australia at the time.^{boxiv} There were three slipways or building berths in the shipyard; on which vessels up to 6,000 tonnes deadweight were constructed, as well smaller vessels such as suction and bucket dredges, ferry steamers and tugs.^{boxv} Two patent slipways were also located at the site for docking small vessels - one was capable of taking vessels 160ft long and 300 tonnes in weight, and the other could handle vessels of 230 ft in length and up to 600 tonnes in weight (Figure 5.23 to Figure 5.26).^{boxvi} The dockyard also produced shell casings, machine guns, aircraft engines, and airframe parts and components for World War I.^{boxvii}

The Commonwealth Government's shipbuilding programme ceased in 1921 and in the following year the dockyard was unsuccessfully offered for sale.^{boxviii} The depression had a negative impact on the shipbuilding industry in Australia, so the manufacturing focus of the Dockyard gradually changed to general engineering works, such as the construction of steel railway carriages, colliery skips and steel and cast iron pipes.^{boxix} At this time Walsh Island was 400 acres in size; 125 of which were covered with workshops.^{boxx}

A floating dock 630 ft in length with a lifting capacity of 15,000 tonnes was built in 1930 (Figure).^{boxxi} Despite this, the Walsh Island Dockyard and Engineering Works subsequently closed in February 1933.^{boxxii} The floating dock and many of the buildings and plant were sold and moved and the site was abandoned. Evidence of the Walsh Island Dockyard is limited to a few small remnants on the waterfront.^{boxxiii}

A substantial reclamation scheme was begun in 1951 and saw the creation of a large industrial estate and adjacent wetlands reserve (now Kooragang Island) between the north and south arms of the Hunter River.^{boxxiv} The project involved reclaiming the tidal flats between a number of low-lying islands in the Hunter River estuary, using silt and other materials dredged from the bed of the river and harbour.^{boxxv} Greenleaf Fertilisers Pty Ltd was the first industry to establish on this newly reclaimed land when it purchased 80 acres on Walsh Point in 1964.^{boxxvi} Eastern Nitrogen established a nitrogenous fertiliser plant on an adjacent site soon after.^{boxxvii} Coal loading operations expanded to Kooragang Island in the early 1980s.^{boxxviii}



Figure 5.23: Aerial view of the Walsh Island Dockyard and Engineering works (date unknown).^{lxviii} The photograph shows the boat slips, jetty and series of smaller jetties or pontoons where vessels would have docked.



Figure 5.24: View of the boat slips at the northern end of Walsh Point Dockyards (date unknown).^{xc}



Figure 5.25: View of the Dockyard and Engineering works at Walsh Point c1930s.^{xci}



Figure 5.26: Tug pulling the 15,000 ton Walsh Island floating dock after construction.^{xcii}

5.6 Summary of cultural activities within the study area

The following cultural activities are identified from the above historical background of the South Arm of the Hunter River, Newcastle:

Mayfield (M1 to M7)

- Early settlement
- Smelting and manufacturing (tin, coal, steel)
- Import / export of materials

Walsh Point (W1 - W3, K1)

- Land reclamation
- Shipbuilding (Walsh Island Dockyard)

Dyke (D3)

- Land reclamation
- Import / export (coal)



6. HISTORICAL/MARITIME SITE INSPECTION

A brief site inspection of the Project area was undertaken on 28 July 2011. The survey was undertaken by Chris Lewczak (Senior Maritime Archaeologist with Cosmos Archaeology) and Andrew Wood (Project Manager, Newcastle Port Corporation).

The aim of the inspection was to survey the three known heritage items at the proposed Dyke Berth No.3, as well as to conduct general inspection of the all of the proposed berths. The survey was conducted on land only. The conditions of the day of the survey were fine and overcast.

Dyke Point No.3 site contains three heritage items listed on the Newcastle Port Corporation's Section 170 Heritage and Conservation Register:

- Crane Base 15
- Crane Base 14
- The base of the McMyler Hoist that was later converted and used as a coal loader stand.

Crane Base 15 is located approximately seven metres from the edge of the rock armour and is a circular brick structure approximately 3.5 metres in diameter. Fifteen courses of brick work are visible on the crane base. The brickwork is expected to continue further, however, this was not visible as the section of the base that sits between high and low water is covered in shell and other marine growth. Visible inside of the brickwork is a large reinforced concrete block with at least two timber beams protruding through the brickwork of the base.

A separate modern concrete slab and a small bollard have been installed, presumably after the removal of the crane from the base after 1966. A small diameter iron pipe has been built into the circular brickwork of the base on the near-shore side of the base (Figure 6.1).

A condition assessment of the crane base was updated in 2001 stating the remains were of fair to poor condition, due to the mortar and brickwork being deteriorated and missing in places.^{xciii} The condition at the time of the survey does not appear to have deteriorated further since the 2001 inspection. Sections of the brickwork that have started to peel away from the base appear to have stabilised and not peeled away further. The condition of the item below the water could not be inspected.



Figure 6.1: Remains of Crane Base 15 (View to the northeast)
(Photograph Cosmos Archaeology).



Crane Base 14 is a similar construction to Crane Base 15. The base is located 120 metres to the south of Crane Base 15, and is approximately seven metres from the edge of the rock armour, and 3.5 metres in diameter. The outer skin of brickwork for the base appears to have been removed exposing the inside concrete and other fill material used either in the original construction of the crane or a later filled material installed in 1966 when the crane was removed. The lower section of the crane base is covered with cockles and other marine growth. A concrete plinth and bollard, similar to the one installed on top of Crane Base 15, has been added to this base, presumably after the crane was removed (Figure 6.2).

The brickwork associated with the circular base has deteriorated significantly since the last condition update was done on the item in 2001. In 2001 the outer brickwork was present on the crane base and the condition was described as fair to poor, however, this has been removed and the condition of the base is considered to be poor.



Figure 6.2: Remains of Crane Base 14 (View to the east)
(Photograph Cosmos Archaeology)

The base of **McMyler Hoist** is located between the two crane bases, approximately 44 metres from Crane Base 14 and 70 metres from Crane base 15. The base consists of a concrete slab 18 metres by 22 metres in size that has been built back out into the rock armour. The slab surface has been laid on top of brick footings on the shore side of the footing, and a larger concrete base for the in water component of the footing (Figure 6.3 and Figure 6.4).

The outer, larger, concrete base has been built on two large concrete piles and has been built flush against the brickwork foot. Remains of a concrete ramp that was the former access on top of the base is still present on the site, however, newer timber steps have been added.

A modern timber post and rail fence has also been erected on top of the base that has converted the remains of the base into a viewing platform. Two steel bollards are present on both outer corners of the base remains.

There are no other remains associated with the former hoist or with the later use of the base within the conveyor coal loader on the site. It is likely the outer, larger, concrete footing that has been built flush up against the brickwork footing may be an addition to the original hoist base that was added for the conveyor coal loader.



Figure 6.3: The remains of the McMyler Hoist Base (view to the southeast)
(Photograph Cosmos Archaeology)



Figure 6.4: The remains of the McMyler Hoist Base (view to the south)
(Photograph Cosmos Archaeology)



7. HISTORICAL/MARITIME ARCHAEOLOGICAL POTENTIAL

By having an understanding of the history of Newcastle Harbour, and specifically of the construction history of the area immediately adjacent to the proposed dredging areas, the archaeological potential for historical /maritime relics to be present within each area can be assessed. This archaeological potential is based on the historical maps, plans and history that have been gathered for this report.

7.1 Dyke 3

Prior to the reclamation works within the harbour, the area around Dyke Point 3 was off the eastern shore of Bullock Island. The construction of the dyke and temporary ballast wharves, to assist in the construction of the dyke, were the first items to be built in this area. Three temporary ballast wharves were built in the vicinity of Dyke Point 3. These can be seen in the 1869 plan of the reclamation works. Overlaying the historical map over subsequent historical plans and onto a current aerial photograph of the site shows that the northern of the three temporary wharves was likely located in the southern portion of the proposed dredge area (Figure 7.1).

Once the reclamation works were completed, the temporary ballast wharves were removed for the construction of more substantial wharves from 1875 through to 1879 on the dyke. Two cranes were initially added to the wharfage at Dyke Berth 3 between 1877 and 1888. The cranes were constructed on individual circular brick footings. The cranes were replaced by the McMyler hoist in 1909; however, the bases of the cranes were left on site. The hoist was built on a brick and concrete slab footing that extended from the edge of the dyke onto the wharf. The crane was removed in 1933, and the foundation was reused as part of the foundation for the first conveyor-type loader to be built in the harbour in 1958.

The archaeological potential that remains on the site is considered to be limited.

- The earliest items built on the site were the temporary ballast wharves used for unloading the ballast and other fill material used in the reclamation works for the dyke construction. These items were likely to have been lightweight constructions, adequate enough to unload ballast or fill material onto carts that were then deposited immediately behind the dyke. It was intended that these wharves were to be removed and replaced with larger timber wharves in their place.
- The 1870s wharves were constructed out of timber with ballast deposited between the piles to assist in holding down the piles.^{xciv} The removal of the dyke's wharves included dredging over the area in 1966. This would have removed any construction and fallen cargo material (coal) from the seabed.^{xcv}
- The remains of the two crane bases and the former McMyler hoist foundation are still present on the site today. Their physical remains are likely to be the only remaining components of the cranes that existed on the site.

It is not expected that structural remains from these cranes would have been deposited into the harbour as they were decommissioned while the wharves were still being actively used, and any material that was dropped into the water may have been a navigational hazard.

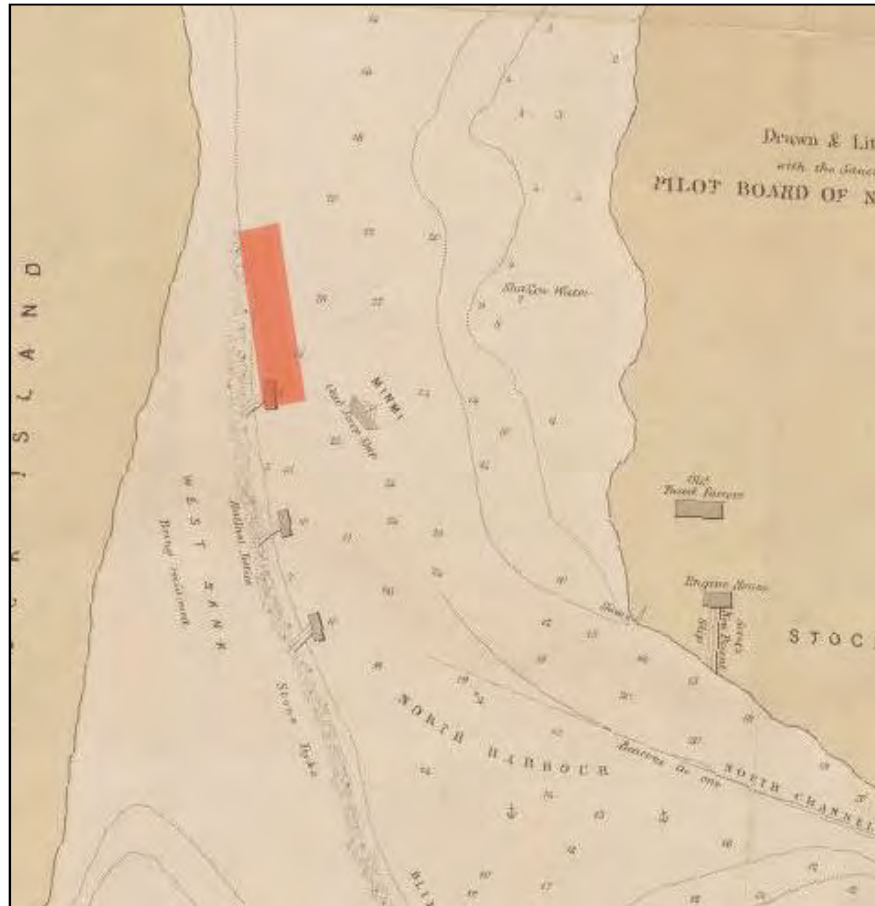


Figure 7.1: 1869 Parish Map of Newcastle showing the proposed location of Dyke Berth 3 (in red).

7.2 Walsh Point Berth Pocket and Kooragang Berth No. 1

Walsh Point was created as part of the 1897 reclamation works. Prior to this, the area was mudflats that were exposed at low tide and were not used for industry (Figure 7.2). After the reclamation the area was used for the Walsh Island Dockyard and Engineering Works that started operation in 1914.

- The 1956 plan of the works shows the maritime infrastructure that was present on the site. The plan shows five boat slips of various sizes within the area of Kooragang Berth 1.
- Immediately to the south of the slipways, a jetty and series of wharves or pontoons were constructed along the harbour frontage heading south to the end of Walsh Point. The former jetty, as well as one of the longer pontoons, is located within the proposed dredge area of Walsh Point Berth 3, with only the pontoons located in the vicinity of the proposed berths of Walsh Point 1 and 2 (Figure 7.3).
- Remains associated with the slipways and possible of the jetty/gangway and a pontoon are known to be present on the seabed in this area.

Bathymetry images of the known remains were collected by Newcastle Port Corporation associated with the regular maintenance dredging works. The images show the outline of a slipway as well as the centre track where the vessels were guided up onto the slip (Figure 7.4). The bathymetry survey shows there are possibly substantial remains of the slip under the water. Closer to the shore, where there appears to be a separate square structure, possibly one of the pontoons that were constructed along the rock armour.



- The substantial underwater remains of a second slipway are also present adjacent to the first.

The remains of the slip include the outline of one slip that extends out further in the harbour, as well either infrastructure associated with this slip, or another slip or platform that extends out into the water but not as far out in the harbour as the first (Figure 7.5).

- Further to the south of these two slips the survey identified the remains of a separate platform or pontoon in the vicinity of Walsh Point Berth No.3. The remains are a rectangular shape and do not appear to protrude far off of the seabed (Figure 7.6).

From the bathymetry images of the site it is clear that the in-water elements of the slipways and possible remains associated with the former jetty/gangway and a pontoon are present. These items relate to the ship building and maintenance of vessels on the site between 1913 and 1933.

- The likelihood for maritime archaeological remains that are associated with the dockyard and engineering works, such as cargo and equipment, are not likely to be present on the site due to the continuous maintenance dredging that has occurred in the area around the remains of the slipway.



Figure 7.2: 1869 Parish Map of Newcastle showing the proposed location of Walsh Point (WP) 1, 2 and 3, and Kooragang 1 (in red).



Figure 7.3: 1937 Parish Map of Newcastle showing the proposed location of Walsh Point (WP) 1, 2 and 3, and Kooragang 1 (in red) in relation to the Walsh Point Dockyard and Engineering works.

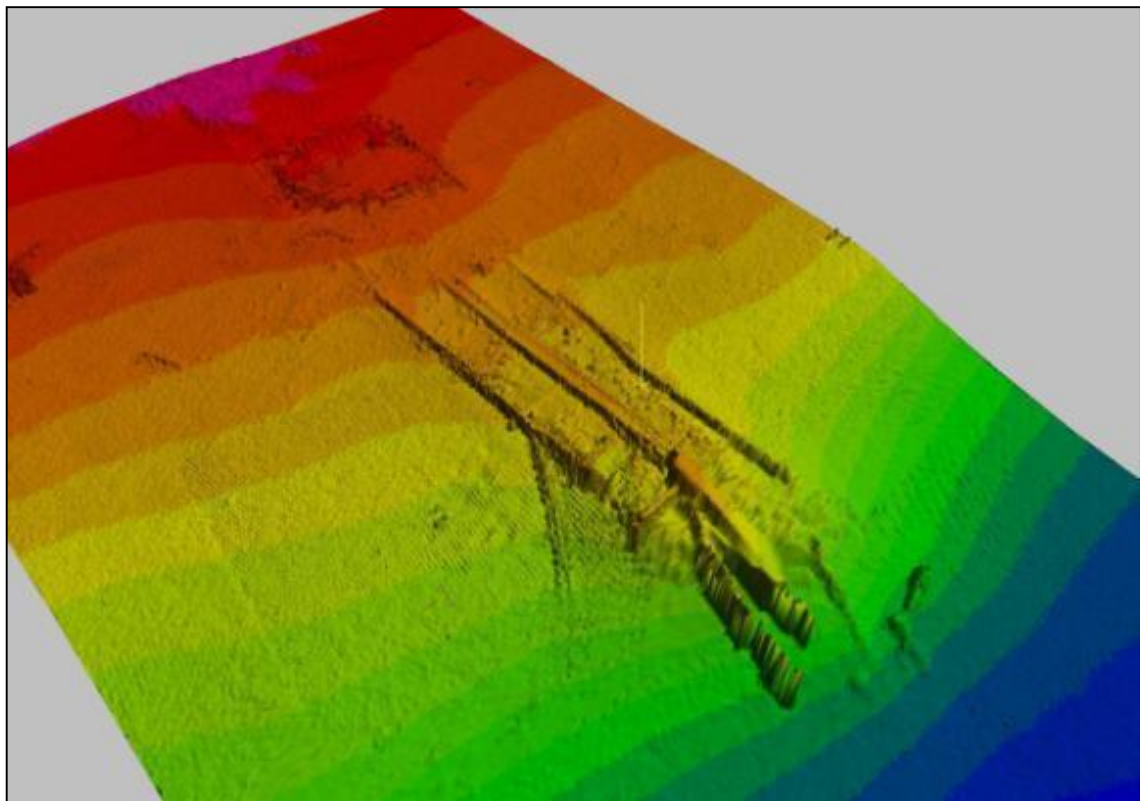


Figure 7.4: Bathymetry survey of one of the possible slipway remains within the vicinity of Kooragang 1 and Walsh Point No.3 (Source: Newcastle Port Corporation).

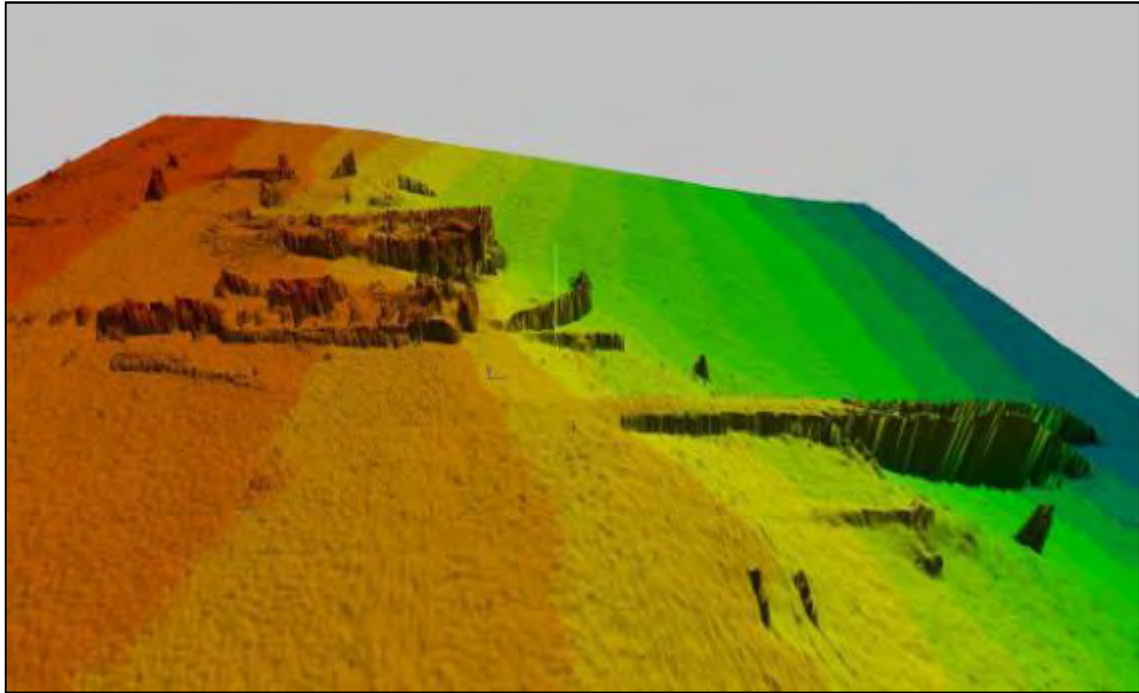


Figure 7.5: Bathymetry survey of the second possible slipway remains within the vicinity of Kooragang 1 and Walsh Point No.3 (Source: Newcastle Port Corporation).

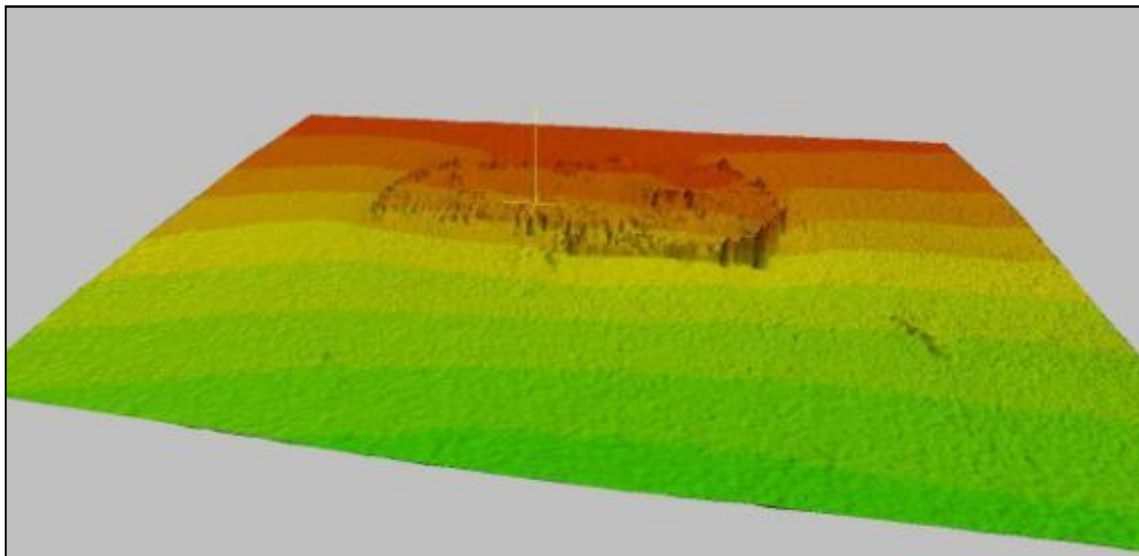


Figure 7.6: Bathymetry survey of a possible platform or pontoon located in the vicinity of Walsh Point 3 (Source: Newcastle Port Corporation).



7.3 Mayfield Berths 1, 2, 5, 6 and 7

Due to the distance between Mayfield Berths 1 to 7, these locations will be dealt with separately.

7.3.1 Mayfield Berths 1 and 2

Prior to the construction of the Dyke and the reclamation works that occurred within Newcastle Harbour, the general location of Mayfield Berths 1 and 2 was in the channel of the harbour. In 1869 ballast wharves associated with the copper smelting works were constructed to the north of the location of Mayfield Berth 2. During this time, the back channel that was present to the south of the smelting works was still open. The mouth of the channel was in the general alignment of Mayfield Berth 1 (Figure 7.7).

By 1909 the area around Port Waratah was being reclaimed, and by 1912 the steel works and associated wharves were being constructed. The 1939 parish map shows that the area around Mayfield Berths 1 and 2 had been enclosed. Immediately to the south of this area in the vicinity of Mayfield Berth 1 was a former loading jetty, likely associated with the former smelting works. The jetty extended out approximately to the near shore boundary of the proposed dredge area. This area was filled in and later reclaimed for the 1912 BHP expansion of the site. It is likely this jetty was removed prior to the new wharf being constructed, as any remains associated with the former jetty that extended beyond the 1912 jetty would have been a navigational hazard for ships berthing at the steel works wharf. The 1912 timber wharves built in this area were later approved for demolition in 2000. The method for removal of these piles is unknown, and the potential exists that pile remains below the current seabed



Figure 7.7: c1890 plan of Port of Newcastle showing Mayfield Berths 1 and 2 (in red).

There is limited archaeological potential within this section of the Newcastle Harbour.

- The earliest constructions were associated with the building of the northern section of the Dyke, and later reclamation works that occurred between the 1860s and 1909.
- There were a series of ballast wharves/jetties constructed to the north of Mayfield Berth 2; however, these are well outside the proposed dredge area.
- There is one timber jetty that appears on a c1890s parish map of Newcastle that extends into the proposed dredging area, where the 1912 wharves were later constructed.



The potential for remains of this earlier jetty being present within the study area is considered to be low as the former jetty was removed prior to the construction of the 1912 wharf. The removal of the former jetty would have been essential as any remains of the earlier jetty may have posed as a navigational hazard for vessels at the steel works wharf.

- The timber wharves built in the 1950s have already been assessed and demolition of part of the wharves has already occurred.^{xvii} Prior to their removal, maintenance dredging in front of each wharf is likely to have removed any material associated with the use of the wharf, as well as with the use of the earlier jetty built in this area, including cargo, which had been historically deposited on the seabed.

7.3.2 Mayfield Berths 3 and 4

The proposed development of the Mayfield 3 and 4 berths was added to the Project scope after the completion of the heritage assessment. An assessment of the proposed development of Mayfield 3 and 4 is included as an addendum to this report. Refer to Appendix 4 for a copy of the addendum report.

Newcastle Port Corporation has since received consent by Newcastle City Council to remove the timber wharves. These timber wharves have been removed as the structure was degraded and had the potential to collapse and become a navigation hazard.

7.3.3 Mayfield Berths 5, 6 and 7

The earliest historical maps of the south arm of the Hunter River in the general area of the proposed Mayfield Berths 5, 6 and 7 were the ballast wharves that appear in an 1868 parish map of the harbour.

These wharves were located to the southeast of Mayfield Berth 5, and remained in this area until the 1880s. The land was gradually reclaimed; however, the area further around to the northwest where the proposed berths are located does not appear to have been further reclaimed. There is no record of any maritime infrastructure being built in this area up to the 1960s (Figure 7.8).

- It is unlikely that any maritime archaeological remains associated with maritime activities will be present within this section of the Hunter River.

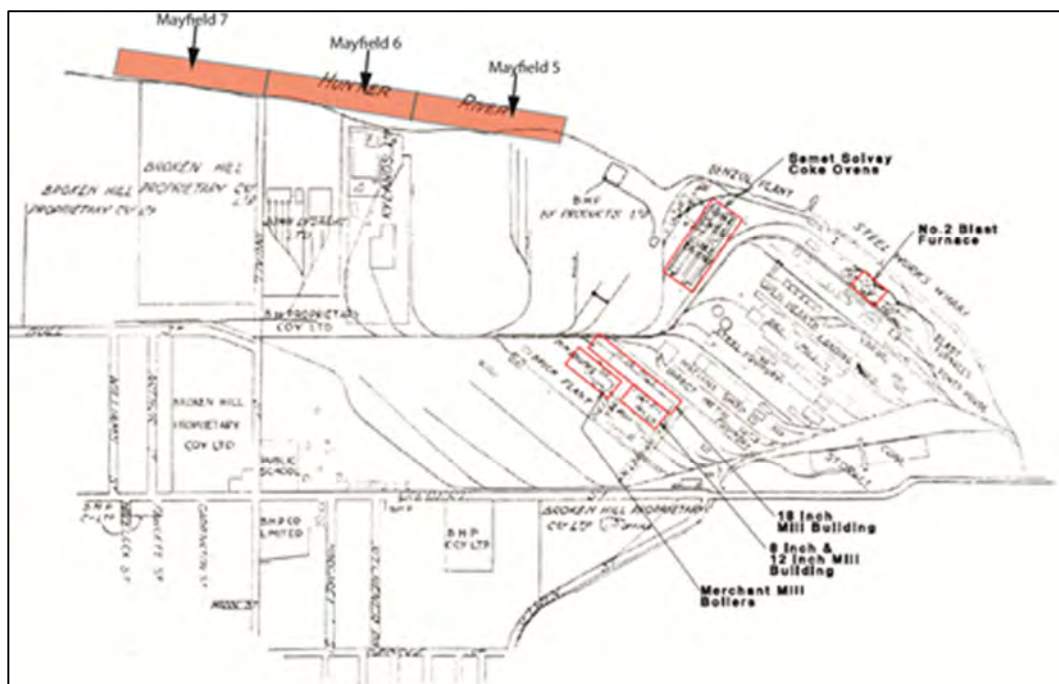


Figure 7.8: 1924 plan of the BHP Steel works showing the location of



Mayfield Berths 5, 6 and 7.



8. ASSESSMENT OF HISTORICAL/MARITIME SIGNIFICANCE

8.1 Assessment Criteria

An assessment of cultural significance or heritage significance seeks to understand and establish the importance or value that a place, site or item may have to select communities and the general community at large. The Australian ICOMOS *Charter for the Conservation of Places of Cultural Significance*^{xvii} (the *Burra Charter* 1979, most recently revised in 1999), is the standard adopted by most heritage practitioners in Australia when assessing significance. The charter defines cultural significance as;

“Aesthetic, historic, scientific or social value for past, present or future generations”

Value may be contained in the fabric of the item, its setting and relationship to other items, the response that the item stimulates in those who value it now, or the meaning of that item to contemporary society.

Accurate assessment of the cultural significance of sites, places and items is an essential component of the NSW heritage assessment and planning process. A clear determination of a site's significance allows informed planning decisions to be made for a place, in addition to ensuring that heritage values are maintained, enhanced, or at least minimally affected by development.

Assessments of significance are made by applying standard evaluation criteria:

Historic Cultural Heritage Significance Criteria (NSW Heritage Office Guidelines)

- a. *An item is important in the course or pattern of NSW's cultural or natural **history** (or the cultural or natural history of the local area);*
- b. *An item has strong or special **associations with the life or works of a person, or group of persons, of importance in NSW' cultural or natural history** (or the cultural or natural history of the local area);*
- c. *An item is important in demonstrating **aesthetic characteristics** and/or a high degree of **creative or technical achievement** in NSW (or the local area);*
- d. *An item has strong or special **associations with a particular community or cultural group** in NSW (or the local area) **for social, cultural or spiritual reasons**;*
- e. *An item has **potential to yield information** that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);*
- f. *An item possesses **uncommon, rare or endangered** aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);*
- g. *An item is important in **demonstrating the principal characteristics of a class of NSW's cultural or natural places**; or cultural and natural environments.*



8.2 Crane Base 14

8.2.1 Assessment

- a. *An item is important in the course or pattern of NSW's cultural or natural **history** (or the cultural or natural history of the local area);*

The crane known as 'Crane 14' was one of 12 hydraulic cranes installed along the dyke between 1877 and 1888 that were powered by the nearby Hydraulic Power House. With a lift capacity of 9 ton and a reach of 18 feet, the crane was employed to load coal by lifting and tipping rail hopper carts directly over the cargo holds of vessels docked at the wharf. Crane 14 was removed in c1909 when the McMyler hoist crane was built too close for it to operate, however the base of the crane was left in place.

The crane bases are historically significant as they are a record of the essential importance of these structures that were essential to the working of the Port. Crane 14 was part of the larger hydraulic system engineered to service Newcastle's 19th and 20th century port system. Crane 14 was removed in c1909, however, the remaining hydraulic cranes and the power house were used up until 1956.

Crane Base 14 has been assessed as being of local significance by this criterion.

- b. *An item has strong or special **associations with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history** (or the cultural or natural history of the local area);*

Crane Base 14 was one of 12 hydraulic cranes ordered from Armstrong Hydraulic Machinery Company, from Elswick in England. The cranes were of a standard design ordered specifically for use on the dyke; however, they are not associated with the life or works of a person or group of people of importance to NSW or the local area.

Crane Base 14 is not considered to be significant at a local or State level under this criterion.

- c. *An item is important in demonstrating **aesthetic characteristics** and/or a high degree of **creative or technical achievement** in NSW (or the local area);*

Crane Base 14 was associated with the larger hydraulic system constructed along the dyke at Newcastle Harbour in 1877-1888. The hydraulic system established to provide power to the cranes, specifically the Power House, was the first large scale system employed in NSW. The significance of the system lies with the generation of power for the cranes and the cranes themselves. The crane associated with the base was removed in c1909 with the construction McMyler hoist. The remains of the base associated with Crane 14 are not considered important in demonstrating aesthetic characteristics or a high degree of creative or technical achievement.

Crane Base 14 is not considered to be significant at a local or State level under this criterion.

- d. *An item has strong or special **associations with a particular community or cultural group** in NSW (or the local area) **for social, cultural or spiritual reasons**;*

The remains of Crane Base 14 are associated with the development and working of Newcastle Harbour; however, the crane base is not considered to be associated with a particular community or cultural group.

Crane Base 14 is not considered to be significant at a local or State level under this criterion.

- e. *An item has **potential to yield information** that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);*

The remains of the crane base associated with Crane 14 are considered to have research potential that is specific to the construction of these types of crane bases along the dyke. The crane bases



are likely constructed on timber piles with the circular brick footing constructed directly on top. The exact timber and pile, or other, foundation system will assist in understanding and interpreting the construction of the bases that have been retained. Investigation of crane base is likely to contribute to a greater understanding of how the crane base was constructed.

Crane Base 14 has been assessed as being of local significance by this criterion.

- f. An item possesses **uncommon, rare or endangered** aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);

The crane was one of 15 originally constructed on the dyke between 1877 and 1888. The cranes bases were all linked to the hydraulic powerhouse on the site and are the remaining infrastructure associated with the original loading system installed on the dyke. The remaining components of the former cranes, are limited to the foundation base remains only, with the crane and associated hydraulic system already removed. Hydraulic cranes have been installed within in other port and harbour operations in NSW, and these remains are not considered to be rare.

Crane Base 14 is not considered to be significant at a local or State level under this criterion.

- g. An item is important in **demonstrating the principal characteristics of a class of NSW's cultural or natural places**; or cultural and natural environments.

The remains of the former Crane 14 are limited to the foundation remains as the crane was removed in c1909 after the construction of the McMyler Hoist. The limited remains are not considered to be representative of the primary characteristics of the former crane.

Crane Base 14 is not considered to be significant at a local or State level under this criterion.

8.2.2 Statement of Significance

The remains of the former Crane 14 are associated with the major development and working of Newcastle Harbour that took place from the 1870s. The crane was one of 12 hydraulic cranes and one Power House constructed from 1877 to 1888. The crane was a working item associated with the larger work harbour. The crane was removed in c1909 after the construction of the McMyler hoist immediately adjacent to it but the crane base remained. The remains of the base are considered to have some research value into the specific types of timbers and construction method used. The remains of the base, however, are not considered to be associated with a particular community group or individual, and are not considered to be rare nor uncommon.

For these reasons the remains of the remains of Crane Base 14 are considered significant at a local level only for its historical and research values.

8.3 Crane Base 15

8.3.1 Assessment

- a. An item is important in the course or pattern of NSW's cultural or natural **history** (or the cultural or natural history of the local area);

The crane known as 'Crane 15' was one of 12 hydraulic cranes installed along the dyke between 1877 and 1888 that were powered by the nearby Hydraulic Power House. With a lift capacity of 9 ton and a reach of 18 ft, the crane was employed to load coal by lifting and tipping rail hopper carts directly over the cargo holds of vessels docked at the wharf. The crane remained in operation up until the wharf was left derelict in 1956 and was shortly after removed.

The crane bases are historically significant as they are a record of the essential importance of these structures that were essential to the working of the Port. Crane 15 was part of the larger hydraulic system engineered to service Newcastle's 19th and 20th century port system that remained in operation until 1956.



Crane Base 15 has been assessed as being of local significance by this criterion.

- b. An item has strong or special *associations with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history* (or the cultural or natural history of the local area);**

Crane Base 15 was one of 12 hydraulic cranes ordered from Armstrong Hydraulic Machinery Company, from Elswick in England. The cranes were of a standard design ordered specifically for use on the dyke; however, they are not associated with the life or works of a person or group of people of importance to NSW or the local area.

Crane Base 15 is not considered to be significant at a local or State level under this criterion.

- c. An item is important in demonstrating *aesthetic characteristics* and/or a high degree of *creative or technical achievement* in NSW (or the local area);**

Crane Base 15 was associated with the larger hydraulic system constructed along the dyke at Newcastle Harbour in 1877-1888. The hydraulic system established to provide power to the cranes, specifically the Power House, was the first large scale system employed in NSW. The significance of the system lies with the generation of power for the cranes and the cranes themselves. The crane associated with the base was removed after the wharf was removed in 1956. The remains of the base associated with Crane 15 are not considered important in demonstrating aesthetic characteristics or a high degree of creative or technical achievement.

Crane Base 15 is not considered to be significant at a local or State level under this criterion.

- d. An item has strong or special *associations with a particular community or cultural group* in NSW (or the local area) *for social, cultural or spiritual reasons*;**

The remains of Crane Base 15 are associated with the development and working of Newcastle Harbour; however, the crane base is not considered to be associated with a particular community or cultural group.

Crane Base 15 is not considered to be significant at a local or State level under this criterion.

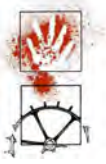
- e. An item has *potential to yield information* that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);**

The remains of the crane base associated with Crane 15 are considered to have research potential that is specific to the construction of these types of crane bases along the dyke. The crane bases are likely constructed on timber piles with the circular brick footing constructed directly on top. The exact timber and pile, or other, foundation system will assist in understanding and interpreting the construction of the bases that have been retained. Investigation of crane base is likely to contribute to a greater understanding of how the crane base was constructed.

Crane Base 14 has been assessed as being of local significance by this criterion.

- f. An item possesses *uncommon, rare or endangered* aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);**

The crane was one of 12 originally constructed on the dyke between 1877 and 1888. The cranes bases were all linked to the hydraulic powerhouse on the site and are the remaining infrastructure associated with the original loading system installed on the dyke. The remaining components of the former cranes, are limited to the foundation base remains only, with the crane and associated hydraulic system already removed. Hydraulic cranes have been installed within in other port and harbour operations in NSW, and these remains are not considered to be rare.



Crane Base 15 is not considered to be significant at a local or State level under this criterion.

- g.** An item is important in **demonstrating the principal characteristics of a class of NSW's cultural or natural places**; or cultural and natural environments.

The remains of the former Crane 15 are limited to the foundation remains as the crane was removed in 1956 after the construction wharves along the dyke were removed. The limited remains are not considered to be representative of the primary characteristics of the former crane.

Crane Base 15 is not considered to be significant at a local or State level under this criterion.

8.3.2 Statement of Significance

The remains of the former Crane 15 are associated with the major development and working of Newcastle Harbour that took place from the 1870s. The crane was one of 12 hydraulic cranes and one Power House constructed from 1877 to 1888. The crane was a working item associated with the larger work harbour, and was removed in 1956 when the derelict remains of the wharves along the dyke were removed. The remains of the base are considered to have some research value into the specific types of timbers and construction method used. The remains of the base, however, are not considered to be associated with a particular community group or individual, and are not considered to be rare nor uncommon.

For these reasons the remains of the remains of Crane Base 15 are considered significant at a local level only for its historical and research values.

8.4 McMyler Hoist and coal loader base remains

8.4.1 Assessment

- a.** An item is important in the course or pattern of NSW's cultural or natural **history** (or the cultural or natural history of the local area);

The McMyler Hoist was built in 1909 as an upgrade to the lifting capabilities present along the dyke. The wharves along the dyke were serviced by a series of hydraulic cranes with a lift capacity of 9 tons. Four hoists were bought, however, only one was erected adjacent to Crane 14. During its operation, the hoist was considered inefficient in its duty as a coal loader, and coupled with the fact only one of the four purchased hoists was constructed, a Commission of Enquiry was established into their purchase. The outcome of the enquiry led to the hoist being abandoned in 1916 and demolished in 1933.

The base of the hoist was later reused in 1950 when the Railway Department proposed to use the footing as part of the first operation conveyor coal loader in the Newcastle Port. Known as the Newstan Coal Loader, the conveyor loader was built in 1957 and remained in operation until the loader was superseded in 1968 by the Basin Coal Loader in 1967 and was demolished.

The foundation of the McMyler Hoist that was later used for the construction of the Newstan Coal Loader is considered to be historically significant as a surviving record of the working history of the port and the evolution of its infrastructure to improve its loading requirements.

The remains of the McMyler Hoist and of the former coal loader have been assessed as being of local significance by this criterion.

- b.** An item has strong or special **associations with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history** (or the cultural or natural history of the local area);

The McMyler Hoist and the later Newstan Coal Loader are associated with the working operations of the Port of Newcastle, and are not considered to have been associated with the life of works of a person or a group of people of importance to NSW.



The remains of the McMyler Hoist and of the former coal loader are not considered to be significant at a local or State level under this criterion.

- c. An item is important in demonstrating **aesthetic characteristics** and/or a high degree of **creative or technical achievement** in NSW (or the local area);

The remains of the former 1909 McMyler Hoist that were later used as a foundation for the coal loader built in 1957 demonstrate modernising infrastructure needed in maintaining the coal loading requirements of the Port at Newcastle. The existing elements of these two stages of redevelopment are limited to the footings to the hoist and loader, which are not considered to be aesthetic or show a high degree of creative or technical achievement.

The remains of the McMyler Hoist and of the former coal loader are not considered to be significant at a local or State level under this criterion.

- d. An item has strong or special **associations with a particular community or cultural group** in NSW (or the local area) **for social, cultural or spiritual reasons**;

The remains of the former McMyler Hoist that was later used as a foundation associated with the coal loader are representative of the infrastructure that was once in operation within Newcastle Port to load coal. While the remains are associated with the loading capabilities the port could offer, they are not considered to be associated with a particular community or cultural group.

The remains of the McMyler Hoist and of the former coal loader are not considered to be significant at a local or State level under this criterion.

- e. An item has **potential to yield information** that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);

The remains associated with the former McMyler Hoist have the potential to yield information relating to constructing the hoist on the former dyke wharf. A greater understanding of the construction techniques associated with the foundation for the hoist, such as piling works, timbers and bracing used to integrate the hoist into the former wharf and the platform of the base, can only be gained from the surviving elements that remain.

The surviving elements also have the potential to yield information relating to the adaptive reuse of the foundation of the hoist for the Newstan Coal Loader, and its impact on the original foundation.

The remains of the McMyler Hoist and of the former coal loader have been assessed as being of local significance by this criterion.

- f. An item possesses **uncommon, rare or endangered** aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);

The foundation remains of the former McMyler Hoist is associated with the only hoist of its type purchased and erected in NSW. The hoist was unsuited for operation in Newcastle as the tipping of the coal would cause the coal to breakup, and as such it was only in operation for seven years. The hoist was finally removed in 1933, with only the foundation existing on the site. While directly associated with the former hoist, the foundation remains are not likely to be unique or rare.

The remains of the McMyler Hoist and of the former coal loader are not considered to be significant at a local or State level under this criterion.

- g. An item is important in **demonstrating the principal characteristics of a class of NSW's cultural or natural places**; or cultural and natural environments.

The remains of the former McMyler hoist and later Newstan Coal loader are not considered to retain the principal characteristics of the former hoist or of the conveyor coal loader. The limited remains are not considered to be representative of the primary characteristics of the former hoist or coal loader.



The remains of the McMyler Hoist and of the former coal loader are not considered to be significant at a local or State level under this criterion.

8.4.2 Statement of Significance

The foundation remains of the former McMyler Hoist that were later adapted and used as a foundation for the Newstan Coal Loader is associated with the redevelopment and upgrading of Newcastle Harbour that took place from 1909. The installation of the McMyler Hoist was a failed venture to improve the loading of coal onto the vessels in the Port of Newcastle. The later adaption of the footing into the first conveyer coal loader built in 1957 highlights the next major upgrade to modernise the harbour's infrastructure and ability to load coal onto vessels. The existing remains of the hoist and later coal loader platform are limited to the foundations used for both structures, with the hoist dismantled in 1933 and the coal loader removed when it was superseded in 1968. These remains are not considered to be unique; however, they do have the potential to increase our understanding of the construction type and technique used for the bases of the McMyler Hoist.

For these reasons the foundation remains associated with the 1909 McMyler hoist that were later used for the Newstan Coal Loader are considered significant at a local level for historical and research values.

8.5 Dockyard and Engineering Works - maritime archaeological remains

8.5.1 Assessment

- a. *An item is important in the course or pattern of NSW's cultural or natural **history** (or the cultural or natural history of the local area);*

The maritime archaeological remains present immediately off Walsh Point are associated with the former Walsh Island Dockyard and Engineering Works that operated in the area between 1914 and February 1933. Prior to its construction, the site consisted of a long mud and sand spit consisting of seven smaller islands that were gradually reclaimed between 1897 and 1912. Construction of the dockyard began in 1913, with construction of the first vessel to be built at the dockyard starting later that year. The dockyard and engineering work sites included three slipways for the construction of vessels up to a dead weight of 6000 tons; as well as two smaller patent slipways adjacent to these that could slip vessels 230 feet long and up to 600 tons. Other maritime infrastructure built on the site included a jetty immediately to the south of the slipways and series of pontoons adjacent to the rock armoured shore that allowed vessel construction and repairs to be completed in the water. The dockyard and engineering workshop employed a local workforce of approximately 2000 by 1920, and by the time of its closure had built 47 vessels.

During World War 1 the engineering workshop was modified to produce shell casings, machine guns and other frames for the Australian war effort. During the Depression the government attempted to sell the dockyard and engineering works unsuccessfully. As a result of the downturn in the economy and failure to sell the asset, manufacturing at the engineering was diversified to include construction of steel railway carriages, colliery skips and steel and cast iron pipes.

Access to and from the dockyard and engineering works remained via water only, which included not only transporting raw materials and manufactured goods to and from the site, but also the workforce. In 1933 during the height of the Depression the dockyard and engineering works were abandoned. The buildings and machinery from the site were dismantled and relocated to a new Government dockyard at the southern end of the dyke at Carrington built between 1938 and 1941.

The former dockyard and engineering works played a role in the manufacturing of war material for the Australian army during WWII; though for the most part it supplied manufactured steel products to Newcastle and greater surrounding area. The site also employed a large local workforce in the production of steel goods, and the building and repairing of vessels on the slipways.

*The maritime archaeological remains associated with the Dockyard and Engineering Works have been assessed as being of **local significance** by this criterion.*



- b. An item has strong or special **associations with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history** (or the cultural or natural history of the local area);

The dockyard and engineering works were established by the State Government in 1913 and manufactured material for the local and state wide market. The site was part of the port at Newcastle; however, it is not considered to have been associated with the life or works of a person or a group of people of importance to NSW or the local area.

The maritime archaeological remains associated with the Dockyard and Engineering Works are not considered to be significant at a local or State level under this criterion.

- c. An item is important in demonstrating **aesthetic characteristics** and/or a high degree of **creative or technical achievement** in NSW (or the local area);

The maritime archaeological remains that are present below the water associated with the former dockyard and engineering works are linked with the outer slipway construction, and are possibly the remains of the former jetty/gangway constructed in this area. The below water remains associated with the slipway and jetty/gangway are not likely to demonstrate a high degree of creativity or technical design.

The maritime archaeological remains associated with the Dockyard and Engineering Works are not considered to be significant at a local or State level under this criterion.

- d. An item has strong or special **associations with a particular community or cultural group** in NSW (or the local area) **for social, cultural or spiritual reasons**;

The maritime archaeological remains associated with the dockyard and engineering works may be significant to former employees. It is more likely; however, that surviving former employees would associate more with the relocated dockyard and engineering work site at the southern end of the dyke that was in operation from 1941 through to 1977 than the original site at Walsh Point.

The maritime archaeological remains associated with the Dockyard and Engineering Works are not considered to be significant at a local or State level under this criterion.

- e. An item has **potential to yield information** that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);

The underwater remains of the dockyard and engineering works are likely to be associated with the former slipways, the jetty/gantry, and possibly one of pontoons. These items have the potential to yield information related to materials and construction techniques used in the building and maintenance of these elements. Information that can be gained from these remains has the ability to supplement surviving design and construction plans and show possible post construction additions and modifications specific to this site.

*The maritime archaeological remains associated with the Dockyard and Engineering Works have been assessed as being of **local significance** by this criterion.*

- f. An item possesses **uncommon, rare or endangered** aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);

The underwater remains associated with the dockyard and engineering works site are likely the last remaining in situ elements. The above water components were dismantled and moved to the new location across the river and the site was later redeveloped. The remaining components that are believed to be associated with the slipways and possibly the jetty/gangway and pontoon(s) represent important maritime infrastructure needed for the operation of the site. The design of the slipways and other infrastructure built on the site are not considered to be unique or a technical design and would have been typical of a construction design constructed for other slipways.



The maritime archaeological remains associated with the Dockyard and Engineering Works are not considered to be significant at a local or State level under this criterion.

- g. An item is important in **demonstrating the principal characteristics of a class of NSW's cultural or natural places**; or cultural and natural environments.

The remaining elements of the former dockyard and engineering works are limited to the below water components of the slipways and possibly of the jetty/gangway and pontoons constructed on the site. These limited items are not considered representative of the former operation as a whole, but are representative of the maritime infrastructure constructed only, and as such, are not considered to be representative of the primary characteristics of the former dockyard and engineering works.

The maritime archaeological remains associated with the Dockyard and Engineering Works are not considered to be significant at a local or State level under this criterion.

8.5.2 Statement of Significance

The maritime archaeological remains present on the seabed are associated with the former slipway and dockyard constructed on Walsh Point between 1913 and 1933. The site was constructed by the State government after the Commonwealth took control of the Cockatoo Island site. The site included five slipways and a series of pontoons that allowed for the construction and repairs of vessels on the site. The engineering workshop was originally utilised for the dockyard; however, manufacturing later diversified during the Depression to include steel railway carriages, colliery skips and steel and cast iron pipes. During World War 1 the engineering workshops also made shell casings, machine guns as well as other equipment. A total of 47 vessels were constructed at the dockyard, which included a floating dock.

In 1933 at the height of the Depression the operations were abandoned. The buildings and machinery at the site were dismantled and relocated to the southern end of the dyke on the opposite site of the river.

The maritime archaeological remains present are associated with the operations at the dockyard. It is likely with the redevelopment of the site in the 1960s all above water elements of the slipways and engineering workshops that were not relocated were removed from the site. The remaining underwater relics are locally significant as they are associated with the government initiative for establishing the dockyard and engineering works on the site, but also for their research value relating to the manner of construction and maintenance during the 19 years of use. The remains are not considered to be unique or have any technical design that was not employed at other slipways, and they are not considered to be associated with a particular individual or community group.

For these reasons the foundation maritime archaeological remains present in the vicinity of the former dockyard and engineering works at Walsh Point are considered to be significant at a local level for historical and research values.



9. ABORIGINAL COMMUNITY CONSULTATION PROGRAM

9.1. Draft Guidelines (2005)

The Director General's Requirements for the assessment of Aboriginal heritage have specified consideration of the following Department of Environment and Conservation (now the Office of Environment and Heritage) 2005 policy document:

- *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*

For guidance on consultation with Aboriginal people and communities, this document refers the user to a further 2005 DEC policy document:

- *Interim Community Consultation Requirements for Applicants*

Accordingly, the Aboriginal consultation program conducted for the Capital Dredging Project has followed the steps and protocols defined in this 2005 *Interim Community Consultation* policy document.

The following is a summary outline of those steps:

- Notification of the assessment, and consultation with various government organisations requesting information on potential Aboriginal stakeholders, as defined in the *Interim Guidelines*;
- Publication of a public notice in *The Newcastle Herald* on 28th May 2011 outlining the project assessment and inviting registration from Aboriginal organisations and individuals who wish to participate in the consultation program;
- Letters of notification and/or seeking registration were sent to twenty organisations, including seventeen Aboriginal organisations;
- Following a closing date for expressions of interest on the 9 June, 2011, ten responses to the public notice and sent letters were received, including the following seven Aboriginal organisations:
 - Awabakal Descendants Traditional Owners Aboriginal Corporation (ADTOAC);
 - Awabakal Local Aboriginal Land Council;
 - Awabakal Traditional Owners Aboriginal Corporation (ATOAC);
 - Cacatua Culture Consultants;
 - Gidawaa Walang Cultural Heritage Consultancy;
 - Mur-roo-ma Inc; and
 - Nur-Run-Gee Pty Ltd.
- Each of these respondents was recognised as Aboriginal stakeholders in the consultation program. The interest of the City of Newcastle was also recognised in the program.

9.2 Draft methodology

- A copy of a proposed assessment methodology was drafted and sent to all registered parties on the 1 July 2011, with an invitation to comment within a 21 day period.
- The draft methodology outlined an Aboriginal program limited to the conduct of the 2005 DEC *Interim Guidelines* consultation program. In addition, the methodology outlined the case for low Aboriginal archaeological potential based on historical mapping data, and outlined the non-Aboriginal maritime assessment methodology.



- Three responses to the methodology were received from Aboriginal stakeholder.

9.3 Responses to the Methodology

The following is a summary of the issues raised by the three respondents to the draft assessment methodology.

Awabakal Traditional Owners Aboriginal Corporation

- Concerned that the methodology is based only on historical mapping from 1865 and that no other Aboriginal cultural heritage aspects have been included and/or considered.
- Do not agree that an Aboriginal cultural heritage assessment is not required.
- Believe that further information be provided on the environment, known Aboriginal sites and impact of the proposed dredging.
- Are concerned that the Aboriginal cultural heritage of the South Arm of the Hunter River is being overlooked.

Awabakal Descendants Traditional Owners Aboriginal Corporation

- Believe that the proposed methodology requires major changes before they could agree to it.
- No information has been included regarding the number of Aboriginal cultural heritage sites registered on the OEH AHIMS database or mentioned in historical documents.
- Do not agree that there is no potential for Aboriginal archaeological sites in the project area.
- Suggest that a revised methodology is developed and distributed to Aboriginal Stakeholders for their comment.
- Request an opportunity to conduct a walk over/assessment of the proposed project and surrounding areas.

Nur-Run-Gee Pty Ltd

- Agree with and understand the proposed methodology.

9.4 Amendments to the Methodology

In order to address the concerns expressed in these responses, the conduct of a guided field inspection of the project area for Aboriginal stakeholders, guided by Newcastle Port Corporation, was introduced into the assessment methodology.

In addition, the scope of development-related excavation was limited to dredging of submerged estuary bed deposits.

A consequence of the latter change is that there is now no potential for remnant and now over-filled former land surfaces to be impacted by extraction. All dredging will occur in the current bed of the estuary, and therefore in contexts with low or no archaeological potential given that, since the nineteenth century, these areas have been either part of the active and submerged estuary floor, or tidal flats.

9.5 Guided Field Inspection

A guided field inspection of the project area for registered Aboriginal stakeholders was conducted by the proponent on the 2 September, 2011.



The aims of the inspection were:

- To provide an opportunity for stakeholders to question the proponent about the nature of the development;
- To provide an opportunity for stakeholders to inspect the project area firsthand and understand the nature of the proposed development;
- To explain the reasoning behind the assessment of low archaeological potential within the project area;
- To provide an opportunity for stakeholders to assess and report on the potential of the development to impact upon Aboriginal cultural values;

An invitation was extended to all inspection attendees to provide a written report on the inspection and to identify any potential for impact to Aboriginal cultural values, and possible strategies for managing any identified impacts.

9.6 Responses to the Guided Field Inspection

Written responses regarding the management of the potential impact of the project on Aboriginal cultural values were invited from each attendee group.

The following stakeholders attended the inspection:

- Awabakal Descendants Traditional Owners Aboriginal Corporation ;
- Awabakal Traditional Owners Aboriginal Corporation;

The following comments were provided by the invited stakeholder groups in response to the field inspection.

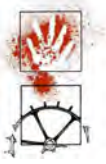
ATOAC: The new berths are being positioned appropriately. The new berths are being positioned on reclaimed land. Recommend that the Newcastle Port Corporation may need to consider the value of 'Place' within the Heritage and Cultural weighting of the South Arm Hunter River Project, as this consideration is to insure the protection and conservation of Place and Objects which impact significantly on the spirituality, cultural, historic and general legacy needs of Aboriginal people to address inequalities in social and community well being.

ADTOAC: The tour provided new insight into the project and subsequently we now have no objections to the project. We still reinforce the fact that if any Aboriginal Cultural Heritage is discovered in the course of this project, then all works should cease in the area of concern and all Aboriginal stakeholders be notified immediately. We would also like to be informed periodically of the project's progress.

Notification of proposed berths at Mayfield 3 and 4

NPC added the development of berths at Mayfield 3 and 4 to the Project. This proposal was added after the completion of the guided field inspection. NPC wrote to Aboriginal stakeholders informing them of the proposal to develop berths at Mayfield 3 and 4.

The stakeholders were given the opportunity to comment on the proposal, and to inform NPC of any issues that should be considered in the assessment. No registered Aboriginal stakeholders objected to the proposal to develop berths at Mayfield 3 and 4, and no additional assessment was requested. This was based on the berths being located in a highly disturbed industrial area, of similar context to adjoining berths at Mayfield that were visited during the guided field inspection. Copies of correspondence between NPC and the Aboriginal stakeholders are provided in Appendix 2.



9.7 Aboriginal Cultural Values

In contrast to the low potential for archaeological sites, which is a measure of the low potential for the survival of material evidence, there remains potential for Aboriginal cultural values to be associated with the intangible heritage of the Hunter River estuary. This arises from the area's likely importance and role in past Aboriginal habitation and tradition.

Copies of all correspondence from Aboriginal groups are provided in Appendix 2.

9.8 Draft Copy of EIS

Registered Aboriginal stakeholders were sent a draft copy of the EIS on 21 August 2012, and given 28 days to comment. Copies of these outgoing letters are provided in Appendix F of the EIS. No responses had been received from the stakeholders by the closing date or by the time of writing of this EIS.



10. ABORIGINAL ARCHAEOLOGICAL POTENTIAL

There are no known Aboriginal archaeological sites within the Capital Dredging Project area (AHIMS search conducted 1/9/11, no. 50468, search area 3 x 5 km) (Appendix 1).

Archaeological traces of Aboriginal occupation could be expected to occur in association with the original, pre-European, and nineteenth century shoreline of the Hunter River estuary. Site types that may be associated with the shoreline include stone artefact distributions (indicating transit and camp sites), and shell middens (meal remains of predominantly shell material).

As a result of the urban and maritime development of the lower Hunter River estuary, notably land reclamation activities, the location of the original, pre-European shoreline is now mostly situated some distance inland from the current estuary edge. The extent to which Aboriginal sites may still be present along the former shoreline remains largely unknown and would be dependent on the type and degree of disturbance which has occurred on the old land surface. Greatest potential could be associated with pre-European dry-land contexts that were subsequently developed through the importation and levelling of fill. This question does not need to be investigated for the current assessment because there are no areas of pre-European or nineteenth century dry-land or shoreline which will be impacted.

All dredging and substantial excavation for the Capital Dredging Project will be situated within the existing bed of the Hunter River estuary. Other construction activities will occur on adjoining reclaimed land associated with the modern port. Both of these contexts preclude the potential for Aboriginal archaeological deposits.

Historical mapping was reviewed as part of the assessment of nineteenth and twentieth century shoreline positions across the lower Hunter River estuary near the project area.

Figure 10.1 shows two historical maps which record the shoreline and tidal flats of the lower Hunter River from 1865 and 1912.

Figure 10.2 the outlines of these former estuary features are overlaid onto a modern aerial photo and compared with the proposed dredge locations. See map attached in covering e-mail for inclusion.

This comparison reveals that all of the dredging and adjacent construction activities will be situated on the existing bed of the estuary, or on reclaimed land which post dates 1912, and which was formerly estuary bed or tidal mud flats. Neither of these contexts is associated with significant Aboriginal archaeological potential for the following reasons:

- Their permanent or tidal inundation made them unsuitable for Aboriginal camping activities;
- Scouring from flood events and normal tidal flows will have removed any former dry-land deposits that may have been present prior to the development of the estuary and river bed in this location.



Figure 10.1 Historical mapping showing former shoreline and tidal flat areas associated with the lower Hunter River Estuary. Outlines traced from these maps are shown overlain on a modern aerial photo in Figure 10.2 (Top: 1865 *Plan of Allotments... on Bullock Island* ; Bottom: Extract from 1912 Parish map of Newcastle, County of Northumberland, Second Edition by NSW Lands Department]



Figure 10.2 Proposed location of dredging operations (blue outlines) relative to the former shorelines and tidal flats of the Hunter River estuary (red = 1865, yellow = 1912) (Base figure provided by GHD). Note that all proposed dredging areas are situated in areas of former riverbed or tidal flat. All adjacent dry land margins have been constructed post 1912, as part of port developments.



11. IMPACT ASSESSMENT

11.1 Historical/Maritime Heritage

11.1.1 Dyke Berth 3

The works at Dyke Berth 3 will require the removal of Crane Bases 14 and 15 from the site, as well as the remains of McMyler Hoist base. Each of these items has been assessed as being locally significant. Under the current proposed layout, Crane Base 15 and the remaining foundation to the McMyler Hoist will be directly impacted, while Crane Base 14 is located within the area that will be modified to create a batter between the berth and the current depth of the channel.

Alternate configurations of the berth to protect the three heritage items are not possible. The size of the berth pocket is already the minimum size for the class of vessels that will be using the berth. Also the location of the berth cannot be moved outward to retain the three items as the berth will enter into the designated shipping channel within the port. This would create the potential for “vessel hydraulic interactions” (the underwater pressure caused by displaced water caused by the passing vessels hull) that can cause a wash that can cause nearby objects to move. Moored vessels can be affected by the passing of a large vessel too closely to it. This can lead to vessel moorings lines breaking free and float out into the designated shipping channel, as well as potential for physical injury to persons on the wharf or vessel from the breaking of mooring lines as the lines are held under very high tension.

The location of the berth pocket also cannot be relocated outward as the associated infrastructure required for mooring vessels, such as bollards and tie-backs, would be hindered. The three heritage remains could potentially become a navigational hazard.

- *What aspects of the Proposal respect or enhance the heritage significance of the item/study area?*

There are no aspects of the current proposal that respect or enhance the heritage significance of Crane Base 14 and 15, as well as the foundation remains of the McMyler Hoist.

- *What aspects of the proposal could have a detrimental effect on the heritage significance of the item/study area?*

The proposed dredging works include the removal of Crane Bases 14 and 15, as well as the foundation remains of the McMyler Hoist. This will have a direct and detrimental effect on the heritage significance of each item. The removal of the two crane bases also has the potential to impact on the significance of the remaining nine crane bases that still exist on the dyke.

- *Have more sympathetic options been considered and discounted? Why?*

Alternatives to the proposed removal of the three heritage items have not been considered as there is limited available space for the creation of the berth. The relocating of the proposed pocket berth further out into the harbour to retain the three heritage items would cause the berth to be located within the designated shipping channel, which is not considered an option.

The berth pocket will be 65 metres wide, which is the maximum available between the current seawall and the boundary of the shipping lane. The berth cannot be widened as this would result in any vessels in the berthing pocket encroaching into the designated channel. Vessels are required to be outside of the designated channel area to minimise “vessel hydraulic interactions”. This is caused when passing vessels have the potential to create a wash and/or a vacuum effect that can result in vessel moorings and mooring lines breaking free. When broken mooring lines have the potential to cause physical death or injury as the lines are held under very high tension.

If the heritage items were to remain on the site, they would pose a navigation threat to vessels attempting to berth. The associated infrastructure for berthed vessels, such as tie backs and bollards,



would be hindered by any structure that is present between the mooring infrastructure and the vessel.

- *Are the proposed changes sympathetic to the heritage item/study area? In what way? (e.g. form, proportions, design)*

The design of the berth is not considered to be sympathetic to the three heritage items as the current design includes the total removal of the items. The design of the berth at Dyke no.3 has been done to meet the safety requirements needed in for the deep water standby berth.

11.1.2 Walsh Point Berths 1, 2 and 3 and Kooragang Berth 1

The three proposed Walsh Point Berths and the Kooragang Berth 1 are all located on the western side of Walsh Point, immediately adjacent to the former location of the ship building yard. Known “obstacles” are present within the proposed dredging area of Kooragang 1 and Walsh Point Berth 3. These items are the below water structural remains associated with some of the slipways, as well as possibly remains of the jetty or one of the pontoons. These remaining items are required to be removed from the seabed as they would pose as a navigational hazard if left *in situ*. The limited berthing space present along Walsh Point will not allow for the berths to be moved along the point to a safe distance away from vessels using the berth. The berth pocket also cannot be relocated further out berth pocket would encroach into the designated shipping channel, which is considered to be unsafe through vessel hydraulic interactions.

- *What aspects of the proposal respect or enhance the heritage significance of the item/study area?*

There are no aspects of the current proposal that respect or enhance the heritage significance of the below water remains associated with the slipways and potential remains associated with the jetty or pontoon. The proposal would require the removal of these remains.

- *What aspects of the proposal could have a detrimental effect on the heritage significance of the item/study area?*

The formation of the berthing pockets and proposed dredging will include the removal of the below water remains present on Walsh Point. It is likely these below water elements are the last remaining items associated with the slipways built on the site in 1913.

- *Have more sympathetic options been considered and discounted? Why?*

Alternatives to the proposed removal of the relics below water have not been considered as there is limited available space for the creation of the berth. Relocating the proposed pocket berth further out into the harbour would cause the berth to be located within the designated shipping channel. Vessels are required to be outside of the designated channel area to minimise “vessel hydraulic interactions”. This is caused when passing vessels have the potential to create a wash and/or a vacuum effect that can result in vessel moorings and mooring lines breaking free. When broken mooring lines have the potential to cause physical death or injury as the lines are held under very high tension.

If the relics are retained on the site, they could pose a navigation threat to vessel attempting to berth at Kooragang 1 and Walsh Point 3. The associated infrastructure for berthed vessels, such as tie backs and bollards, would be hindered by any structure that is present between the mooring infrastructure and the vessel.

- *Are the proposed changes sympathetic to the heritage item/study area? In what way? (e.g. form, proportions, design)*

The design and locations of the berths are not considered to be sympathetic to the below water relics as the current design includes the total removal of these items.



Based on the archaeological potential that has been identified in Chapter 7 of this report and the proposed impacts that will occur associated with the dredging works for each of the twelve proposed berths, there are likely to be impacts to known heritage items at Dyke Berth 3, and the potential for archaeological relics to be impacted at the three Walsh Point Berths and Kooragang Berth 1. No impacts to archaeological relics are likely to occur at the Mayfield Berths. As such an impact assessment will be undertaken for Dyke Berth 3, Kooragang Berth 1 and Walsh Point Berth 3.

Kooragang Berth 1 includes known anomalies that are present on the seabed. These items are believed to be the in water components of the slipways built at the dockyards in 1913. These relics will be required to be removed.

Walsh Point Berth 3, which is adjacent to Kooragang Berth 1, will require the removal of similar in water remains associated with the former slipway, or possible remains associated with the jetty and pontoons from the dredge area

Dyke Berth 3 will require the removal of existing structures, which include the heritage listed Crane Bases 14 and 15, and the former McMyler Hoist base, as well as a modern timber wharf at the northern end.

Mayfield 3 and 4

An assessment of the heritage significance, impacts and management measures of the timber wharves at the Mayfield 3 and 4 sites was undertaken after the completion of this heritage assessment. The full assessment of heritage issues associated with Mayfield 3 and 4 is provided as an addendum to this report in Appendix 4.

Newcastle Port Corporation has since received consent by Newcastle City Council to remove the timber wharves. These timber wharves have been removed as the structure was degraded and had the potential to collapse and become a navigation hazard.

11.2 Aboriginal Heritage

No potential for direct impact to archaeological sites or deposits has been identified in this assessment.

The estuary of the lower Hunter River is an important place in local Aboriginal tradition due to its remembered and assumed importance in local Aboriginal tradition. This importance is a consequence of both its past function as a place for Aboriginal hunting, food gathering, camping, and early interchange with Europeans; and its current form as an estuary, a fishing place, and as the modified remnant of that original estuary environment. As such these cultural values are largely intangible, though grounded in the loci of place and the on-going ecological health of the estuary.



12. MITIGATION MEASURES

12.1 Potential Impact to Historical/Maritime Items

Based on the historical/maritime archaeological potential that has been identified in Chapter 7 of this report, and the potential impacts identified in Chapter 10 of this report, it is concluded that:

- There are likely to be impacts to known heritage items at Dyke Berth 3;
- There is potential for archaeological relics to be impacted at the three Walsh Point Berths and Kooragang Berth 1; and
- No impacts to archaeological relics are likely to occur at the Mayfield Berths.

Dyke Berth 3 will require the removal of existing structures, which include the heritage listed Crane Bases 14 and 15, and the former McMyler Hoist base, as well as a modern timber wharf at the northern end.

Walsh Point Berth 3, which is adjacent to Kooragang Berth 1, will require the removal of similar in water remains associated with the former slipway, or possible remains associated with the jetty and pontoons from the dredge area.

Kooragang Berth 1 includes known anomalies that are present on the seabed. These items are believed to be the in water components of the slipways built at the dockyards in 1913. These relics will be required to be removed.

12.2 Mitigation Measures for Historical/Maritime Items

In order to mitigate the impact of the proposed capital dredging works on the South Arm of the Hunter River on historical/maritime items it is recommended that:

1. No further maritime archaeological assessment is required for Mayfield Berths 1, 2, 5, 6 and 7. The proposed works can proceed as proposed in the design plans as assessed in this report.
2. Archival recording should be undertaken on the maritime archaeological remains associated with the former engineering works present along Walsh Point. The remains should be recorded following the guidelines stated in "Photographic Recording of Heritage Items Using Film or Digital Capture" and should be undertaken under the direction of a maritime archaeologist. This work should include both video and still photograph.
3. Prior to any works associated with the removal of Crane Bases 14 and 15, and of the former McMyler Hoist and Coal Loader, notification is required to the Heritage Council, Heritage Branch, Office of Environment and Heritage regarding the demolition and removal of these items from the Section 170 Heritage and Conservation Register.
4. As stated in the Heritage Act 1977, under Section 170A(1) notification has to be made in writing to the Heritage Council no less than 14 days before the item is removed from the Section 170 Register or demolition works commence.
5. An archival recording must be undertaken for both Crane Base 14 and 15, and the McMyler Hoist prior to their demolition. The remains should be recorded following the guidelines stated in "Photographic Recording of Heritage Items Using Film or Digital Capture" and should be undertaken under the direction of a maritime archaeologist. The recording should include the above and below water remains of all three items, and should include both video and still photography.
6. Mayfield 3 and 4: No further maritime archaeological or heritage work is required for the proposed Mayfield No.3 and 4 Berths project. The archival recording completed in 2000 for



the proposed decommissioning of the wharf site is considered to be adequate, and no further archival recording work is required. NPC has since obtained consent from Newcastle City Council to remove these timber wharves.

12.3 Potential Impact to Aboriginal Heritage Items

Based on the Aboriginal archaeological potential that has been assessed in Chapter 9 of this report, and the potential impacts identified in Chapter 10 of this report, it is concluded that:

- There is no potential for direct impact to Aboriginal archaeological sites or deposits as a result of the proposed capital dredging works on the South Arm of the Hunter River.

12.4 Potential Impact to Aboriginal Cultural Values

Based on the information gathered through the Aboriginal consultation program, Aboriginal groups are satisfied that the proposed works will only affect reclaimed land; however, the significance of the lower Hunter River estuary in Aboriginal lore and tradition is very high.

12.5 Mitigation Measures for Aboriginal Cultural Values

In order to address the potential for impact to Aboriginal cultural values it is recommended that:

- Consultation with Aboriginal stakeholders should be systematic and on-going. Such a program should address and discuss potential management strategies where necessary, and seek a practical consensus. Possible management strategies include:
 - a) Establishing public interpretation of Aboriginal cultural values associated with the estuary (this may be achieved through on-site signage, pamphlet production, event sponsorship, and nomenclature); and/or
 - b) Commemoration of traditional Aboriginal themes through appropriate naming of port facilities and features.



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APPENDIX 1

AHIMS SEARCH RESULTS



Office of
Environment
& Heritage

AHIMS Web Services (AWS) Search Result

Your Ref Number : Newcastle Port

Client Service ID : 50468

Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
Kingston Australian Capital Territory 2604
Attention: Kelvin Officer
Email: kofficer@nohc.com.au

Date: 01 September 2011

Dear Sir or Madam:

**AHIMS Web Service search for the following area at Datum :AGD, Zone : 56, Eastings : 383000 - 386000,
Northings : 6357000 - 6362000 with a Buffer of 50 meters, conducted by Kelvin Officer on 01 September 2011**

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.

PO BOX 1967 Hurstville NSW 2220
43 BridgeStreet HURSTVILLE NSW 2220
Tel: (02)9585 6345 (02)9585 6741 Fax: (02)9585 6094

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au



APPENDIX 2

RESPONSES FROM ABORIGINAL GROUPS



EXPRESSIONS OF INTEREST



AWABAKAL LOCAL ABORIGINAL LAND COUNCIL

127 Maitland Road
Islington NSW 2296
ABN: 19 759 066 759

23/06/2011

Kerry Navin
4 Kingston Warehouse
71 Leichhardt Street, Kingston ACT 2604

Dear Kerry,

Re: Proposed Cultural and Heritage – Capital Dredging Project, Hunter River

I would like to formally express an interest in the Cultural heritage proposal on the Capital Dredging Project on the South Arm of the Hunter River.

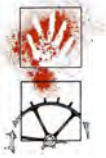
In past inspections such as dredging in the Awabakal area, the soil & sand which has been removed usually gets spreaded out in an open area where the Cultural & Heritage officer can inspect the remains.

This has been in effect because the river and the shore line has changed so much in the last 100 years, but it also gives the site officer a chance to recover Artefacts that have been lost in time in and around the Hunter river.

There has been a lot of Development in the Hunter River in the last 100 years but before that the area was heavily populated with Aboriginal tribes and was a major food source in the Newcastle area.

It is in the interest of the Awabakal Local Aboriginal Land Council that all proposed projects and cultural and heritage works within Awabakal boundary to be assessed by an Awabakal cultural and heritage officers.

The Awabakal LALC has been involved in all public projects in the past and our Cultural and Heritage Officers have more than 20 year experience and has a vast knowledge of Aboriginal culture and heritage in and around the Awabakal boundary.



EXECUTIVE SUMMARY

Awabakal Local Aboriginal Land Council (ALALC) was constituted in accordance with the provisions of the New South Wales Aboriginal Land Rights Act 1983 (ALRA) and administers the relevant provisions as they apply to the functions listed under Aims and Objectives, which set out the services and standards that can be expect from the organisation.

The ALALC has the responsibility of protecting and fostering the best interests of all Aboriginal people in the area, including the ongoing protection and conservation of the Aboriginal Culture and Heritage.

Additionally, ALALC promotes the awareness and protection of the Aboriginal Culture & Heritage of the area to the wider community.

Yours sincerely

David Ahoy
Senior sites officer



Nur-Run-Gee Pty Ltd
ABN 37 096 307 701



**CULTURAL AND HERITAGE
CONSULTANT
LICENCED BUILDER**

22 Popplewell Road
Fern Bay 2295

Phone: 02 49 201578
Mobile: 0408 618 874 Leanne
Mobile: 0431 334 365 Lennie
Email:
goodman@kooee.com.au

Navin Officer Heritage Consultants Pty Ltd
Attention Glenda Hyde
4/71 Leichardt Street
Kingston ACT 2604

20th June 2011

Dear Glenda

**Re: Proposed Capital Dredging Project – South Arm, Hunter
River Environmental Assessment**

Nur-Run-Gee Pty Ltd wishes to be consulted about the proposed project at South Arm, Hunter River Environmental Assessment and wish to register our expression of interest.

We are an Indigenous company that can offer the services of Cultural and Heritage Consultants and qualified Indigenous sites/field officers with over 20 years experience. All staff have their Greencard qualifications and are fit and able to carry out field work.

Nur-Run-Gee Pty Ltd has relevant insurances which can be forwarded if requested along with staff qualifications.

Looking forward to hearing from you.

If you have any further enquiries please do not hesitate to contact us.

Yours Sincerely

Lennie Anderson
Worimi Traditional Owner
Indigenous Archaeologist
Director
Nur-Run-Gee Pty Ltd



ATOAC
Awabakal Traditional Owners Association

19 June 2011

The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
KINGSTON ACT 2604

Dear Sir/Madam,

Re: Registration of Interest Regarding the Proposed Capital Dredging Project for the South Arm Hunter River Environmental Assessment.

The Awabakal Traditional Owners would like to Register our Interest regarding the Proposed Capital Dredging Project for the South Arm Hunter River Environmental Assessment.

We wish to be consulted with regard to the Aboriginal Cultural Heritage being undertaken as participants in the assessment and consultation process archaeological investigation for the proposed project.

The Awabakal People have a Primary Cultural Association with this area as the Newcastle region is well within our Awabakal Traditional Cultural Boundary. The Awabakal Traditional Owners Aboriginal Corporation are descendants of the Awabakal people, our connection to our ancestral country is both physical and spiritual.

We would like to take this opportunity to clarify our position being the direct descendants of the Traditional Awabakal People of the Newcastle and Lake Macquarie Region.

As Awabakal Descendants our cultural association with our area (Awabakal region) is derived through the history of our Apical Ancestors Margaret and Ned of the Awabakal People, the original inhabitants of the land.

Margaret and Ned are a well documented Aboriginal couple of whom numerous newspaper articles and several books have recorded their lives within the Awabakal Nation. Margaret and Ned are remembered and celebrated in Lake Macquarie and have two Bays at Swansea respectfully named in their honour, Black Neds Bay and Margarets Bay. Margarets Bay was officially named by her descendants, and is adjacent to Parbury Park which in 1880 was part of a reserve set aside for the use of Margaret and her children.

The principle vision and aims of the Awabakal People is to protect the cultural heritage of our ancestors. Therefore, any artifacts and/or residual evidence of our people are held in high regard and are considered a cultural reminder that unites us with our country, our past and spirituality.

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The Newcastle region is regarded as highly significant to the Awabakal People, and was utilised by our people repeatedly for many purposes including ceremony, fishing, hunting and food gathering. This is evident by the vast amount of documentation recorded from the region.

This evidence indicates a lifestyle of educational value of traditional occupation, and therefore demands the respect of the historical value that this particular and surrounding area provides.

We are a registered Aboriginal Corporation under the Federal Governments Aboriginal Corporations Act and we are registered with the Office of Environment and Heritage, formally the Department of Environment, Climate Change and Water (DECCW).

Representatives of the Awabakal Traditional Owners Aboriginal Corporation involvement is crucial during any consultation process and subsequent assessment, given that our People have a primary connection with this area for thousands of years, and the Cultural Knowledge held by us relating to our Cultural Heritage and Traditional Country.

We would appreciate confirmation regarding our involvement in the proposed project at your earliest convenience, and if you require any further information please do not hesitate in contacting me.

If you require any further information please do not hesitate in contacting me.

Yours sincerely,

Kerrie Brauer
Director | Administration

Awabakal Traditional Owners Aboriginal Corporation
ABN: 90 203 408 390 | ICN: 4411
PO Box 253 Jesmond NSW 2299 Australia
T: 61 2 49 58 81 70 | E: info@awabakal.com.au | www.awabakal.com.au



PO BOX 86
CLARENCE TOWN
NSW 2321

Date: 19 June 2011

**Attention: The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
KINGSTON ACT 2604**

**Re: Registration of Interest Regarding the Proposed Capital Dredging Project
for the South Arm Hunter River Environmental Assessment.**

Dear Sir/Madam

ALLA (Hello in Awabakal Language)

We are writing to you regarding the **Registration of Interest Regarding the Proposed Capital Dredging Project for the South Arm Hunter River Environmental Assessment**. We would like to notify you of the **Awabakal Descendants Traditional Owners Aboriginal Corporations** registration of interest for the proposed project and that it is our desire to be consulted in regard to any Aboriginal archaeological management or consultation that is to take place for any area located within the Traditional Awabakal Tribal area.

We are a registered Aboriginal Corporation under the Federal Governments **Aboriginal Corporations Act** to carry out business within Australia in regard to the representation of our people through this corporation known as the **Awabakal Descendants Traditional Owners Aboriginal Corporation**.

Being the direct descendants of the Traditional Awabakal People of the Lake Macquarie/Newcastle area we take this opportunity in a few sentences to quickly formalise our position with you.

Our great great great Grandmother was one of the first Aboriginal People to be recorded in the Lake Macquarie and Newcastle area in 1828 when the Reverend L.E. Threlkeld made the first list of the Aboriginal People of the Lake Macquarie and Newcastle districts from his mission station at Belmont. At Warner's Bay our great great great Grandmother and her daughter, our great great Grandmother, were recorded by Jonathon Warner in 1833 and then again at Toronto in 1836 by L.E. Threlkeld at his mission there. We also have many well documented instances, as well as oral history of our People, which were also recorded by the Rev. L.E. Threlkeld among others regarding our people living in and around the Newcastle and Lake Macquarie areas. Subsequently, our people still live and maintain our Cultural ties with our Traditional Country and are concerned with the overall welfare of our Cultural Heritage and desire to be involved in all the affairs that may affect that Cultural Heritage which is vital to our People in maintaining connectedness in respect of our Traditional Country.

The area referred to is located within the Traditional Tribal Country of our People, the Awabakal. This is why it is crucial for the correct People to be involved in this process and any information relevant to this area to be accurate and forthcoming at the outset of this project. This can only be accomplished by involving those who are the direct Descendants of the original People and that were born and raised in the Traditional Country of their Ancestors and as a result also hold that Traditional Cultural Knowledge of the proposed project area. Our Traditional Tribal area is significant to us because our people have lived around Newcastle and Lake Macquarie for many thousands of years, these resource rich areas were utilised on many occasions to hunt, fish and carry on Traditions that have now been passed down for centuries from one generation to another. Subsequently, there are many sites located within our Traditional Country which provide tangible evidence of the Cultural Heritage of our people and of which identification and information regarding the locations and significance of many of these is only held by the Awabakal People who hold this knowledge.



It must also be emphasised that this area is highly significant to our People; the land surrounding the Hunter River and the river itself was the source of many rich resources of which our people have depended on for thousands of years. As a result, due to the occupation of this area by our People, many archaeological deposits now make up the Awabakal Cultural Heritage that is located within this area but also connect to the many other sites located within our Traditional Tribal Country.

As already explained, this area and every part of our Traditional Country are special to us, not just for the Physical aspect but also the Spiritual and Oral aspect which, when all combined, give us our complete Culture. Our Cultural Heritage and Traditional Tribal Country are two of the reasons why we take every opportunity to make ourselves available for consultation concerning the very important issues and decisions that need to be made in regard to protecting what is Culturally ours, handed onto us as a legacy from our Ancestors and what also gives us the right through birth to be called Awabakal People.

Given the opportunity to take part in this consultation and any subsequent assessment process, I (being the nominated representative for this corporation) would make representation on behalf of our People and provide the necessary qualifications which are vital in delivering all aspects of the **Cultural Knowledge** of the proposed project area (as required by the OEH (formerly DECCW) Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010)¹. I am also physically capable to undertake any potential assessments/surveys due to spending many hours walking our Awabakal Country and carrying out assessments/surveys for Cultural Heritage and educational purposes.

As far as field identification or assessment/survey techniques are concerned and as previously outlined, I was brought up in the bush around Newcastle, Lake Macquarie and the mountains and have many years of experience spending most of my life being instructed and shown much by my Father and Grandmother in regard to our places, stories, tools/weapons and foods and how to acquire/make and use them. I have also been actively involved with Aboriginal archaeological heritage, consultation and assessments/surveys conducted within our Awabakal Country over many years. Our corporation has successfully worked with and accompanied many archaeological consultants from well known companies, (located from within and outside our area) into the field and have taken part in many projects which required a detailed consultation process and where monitoring was necessary or excavation was required and carried out to locate artefacts or to gather information which aimed to provide a greater understanding of our People both now and in the future and also add to the research potential by identifying primarily the use of certain artefacts, the type used and the utilisation and significance of place along with the underlying connection that exists between each site.

Some of the archaeological consultants/companies we have worked with on many occasions include, AECOM, ENSR, AHMS, ERM, Insite Heritage, RPS, Umwelt and many others on major and minor projects located within our Traditional area. We have provided assistance and advice for a diverse range of proponents/developers from large mining companies and government departments through to small private developers. We are presently involved with many ongoing long term projects (one being the Landcom Sanctuary Estate close to Fletcher), working with organisations to see favourable outcomes for all those involved and through these processes endeavouring to secure long term preservation and protection in relation to all issues pertaining to Awabakal Cultural Heritage.

It is imperative that we be involved with this consultation and any subsequent assessment process because of our People's intimate connection to this area for thousands of years and as a consequence the **Cultural Knowledge** held by us regarding our Traditional Country.

Also as far as communicating the results of any consultation or assessment process back to stakeholder community and returning advice on the response, as Managing Director of our corporation, I have the capacity and occasion to contact our members for any comments and information that may be pertinent to this project and also have the necessary experience in production and reporting of any information required in written format in relation to any Cultural Heritage Report that is produced. We pride ourselves on the fact that we promptly address all correspondence including all aspects of Cultural Heritage Reporting supplying information that will help facilitate in an outcome that expedites the conclusion of the consultation and assessment phase and will hopefully see an acceptable outcome for our People's Cultural Heritage as well as the proponent and the archaeological consultants. Being involved in many important projects and developments necessitating Cultural Heritage Consultation and Field Assessments within our Traditional Country over the years we have had the opportunity on many occasions to supply our responses after reviewing draft Cultural Heritage Assessment Reports and have done this within the prescribed/allotted timeframes.

¹ Page 8, section 3.3.1, NSW DECCW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010



We also hold all relevant insurances needed to participate in the event of possible fieldwork/assessments taking place and all representatives of our corporation are covered by public liability and workers compensation insurance. These certificates of currency are supplied separately to this letter (*when requested*) due to confidentiality.

Our letter regarding terms of engagement and schedule fees for our representative to take part in any fieldwork/assessments which may result from the consultation process would be inclusive of all relevant and associated costs for us to participate in this process and like our insurance documents are supplied separately to this letter for confidentiality reasons (*when requested*).

We hope this addresses any queries you may have, if not and further information is required please don't hesitate to contact us ASAP. Our contact details are as follows.

NGI NOA (Farewell in Awabakal Language)

Shane Frost-Managing Director: Awabakal Descendants Traditional Owners Aboriginal Corporation
Email: shenefrost@bigpond.com Phone: 49964325 Fax: 49964325 Mobile: 0428320671



Barkuma Neighbourhood Centre Trading as...

Gidawaa Walang

Wiradjuri Meaning - Goanna Turning the Stone

Cultural Heritage Consultancy

...To keep our Culture...



ABN: 58 290 659 800
76 Lang Street,
Kurri Kurri NSW 2327
Phone: (02) 4937 1094
Fax: (02) 4936 4449
Mobile: 0411 196 991

6th June 2011

The Secretary
Navin Officer Heritage
Consultants Pty Ltd
4/71 Leichardt Street
ACT 2604

The Secretary

Re: Newcastle Port- Aboriginal Heritage

Gidawaa Walang Cultural Heritage Consultancy would like to register our interest in the above project. Our interest comes from various members of our community including Elders.

Our organisation is made up of members, staff, management and community from various tribal boundaries including Awabakal. We have been involved in Culture and Heritage work for over 12 years in the Hunter and have participated in a number of projects eg; Hunter Expressway.

I would like to thank you for the opportunity to register our interest in the project.

Yours sincerely

Ann Hickey
Project Officer



22/06/2011 11:38

0240286943

CACATUA GENERAL SERV

PAGE 01



Cacatua Culture Consultants

Entity of Cacatua Pty Ltd

ABN: 87 145 062 480 ACN: 145 062 480

21st June 2011

The Secretary
Navin in Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
Kingston ACT 2604

RE: **Capital Dredging Project- South Arm, Hunter River
Environmental Assessment**

Glenda Hyde,

Thank you for your letter dated 7th June 2011. We would like to express our interest in being involved in the above Proposed Capital dredging project- south arm, Hunter River environmental assessment.

Cacatua Consulting is a small Aboriginal owned consulting business created out of concerns and aspirations to advocate for best practice cultural heritage conservation management and to assist proponents and Archaeologists to undertake cultural heritage archaeological assessment according with CHMA and AHIP processes and approved conditions. We aim to provide both quality Aboriginal cultural heritage assessment works and reporting while ensuring compliance to work specific practices.

Our Organisation is fully insured and registered with OEH (DECCW)/EPRG. Our staff has undertaken work on all types of sites. Please do not hesitate to contact us if you require more information.

Yours truly

Tegan McCormack
CCC Administration

Email: cacatua@resetsl.net.au

UNIT 1b, 11 Glenwood Drive THORNTON NSW 2322 Ph: 02 4028 6942 Fax: 02 4028 6943

65 Jaeger Avenue, GUNNEDAH NSW 2380 Mob: 0403 765 019 Fax: 02 6742 1491

22 Ibis Parade WOODBERRY NSW 2322 Ph: 02 4964 4885 Fax: 02 4964 4635



16/06/2011 14:13 FAX

002



Mur-roo-ma Inc

ABN : 978 077 194 84

Phone / Fax : 02 49281910

Mobile : 0402 82 74 82

E-mail : murroomainc1@gmail.com

To Navin Officer

16/6/2011

Re Capital Dredging Project South Arm Hunter River

Environmental Assessment

Thank you for the opportunity to have an input into this project.

Mur-roo-ma Inc would like to register their interest in the above project

We are local Worimi traditional owners with extensive Cultural Knowledge and 20 years experience in sites investigations of our local area

and would like to formally offer our services through our knowledge

holders Mr Anthony Anderson and Mrs Rebecca Young and to share our knowledge to create the best outcome for all concerned. Mur-roo-ma Inc

has relevant insurances which can be forward if requested ,

Please don't hesitate to contact me if you need any further information.

Kind regards

Anthony Anderson

Worimi Traditional Custodian

CEO of Mur-roo-ma Inc



COMMENTS ON METHODOLOGY



PO BOX 86
CLARENCE TOWN
NSW 2321

Date: 31 July 2011

Attention: The Secretary
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street
KINGSTON ACT 2604

**Re: Comments Regarding the Capital Dredging Project for the South Arm Hunter River
Newcastle Port-Cultural Heritage Assessment Methodology for the Information of Aboriginal
Stakeholders.**

Dear Sir/Madam

ALLA (Hello in Awabakal Language)

We are writing to you with our comments/response **Regarding the Capital Dredging Project for the South Arm Hunter River Newcastle Port-Cultural Heritage Assessment Methodology for the Information of Aboriginal Stakeholders.** We would like to notify you of the **Awabakal Descendants Traditional Owners Aboriginal Corporations** have reviewed the methodology document and have provided below in point form our responses;

It must be said that we are disappointed with the methodology in its current form. We believe that much of the content does not take into account previous uses of the area by our People or the landforms that existed prior to and early European arrival in the area. We believe that the methodology needs drastic revision before we could agree with it. This revision should be the result of a concerted effort by the archaeological consultants and the proponent after an acceptable consultation period with the Aboriginal Stakeholders. To date this methodology is the only consultation we have had and it looks like, by reading the methodology, that you have already made your decisions about dealing or should we say not dealing with **OUR** Cultural Heritage. Again we need to reiterate that, in our opinion, this consultation and methodology process so far is not satisfactory.

- On page 3 of the methodology under heading **'Have any previous assessments been conducted'** there is a statement that says **'...it is unlikely that there would be any relics, items or places of Aboriginal significance remaining within the locality (Worley Parsons 2011:21)**. We disagree with this statement!
 - a. The Hunter River itself is of great significance to the Awabakal People and has been a source of subsistence, providing resources over thousands of years. It also features within other areas of our Cultural Heritage and to accept this statement as is and allude to the fact that it is unlikely that places of Aboriginal significance remains within the locality is offensive to say the least and displays a disregard for our Cultural Heritage.
- There is also a discrepancy/anomaly on page 3 under the heading **'Have any previous assessments been conducted'** in the 3rd paragraph. You give a date of 1862 for the shoreline mapping overlay and then in Figure 2 on page 4 it shows the redline that represents the shoreline and gives it a date of 1865. Which is it 1862 or 1865?? This needs clarification!
- To also express that **'this conclusion is also supported by a comparison of the former natural shoreline of the Hunter River with the current port configuration'** could be misleading within the context of many thousands of years occupation of the area by our People.
 - a. The former (natural) shoreline is only taken into account back to 1862/5 and 1912. There has been **NO** consideration given to the fact that shorelines can be subject to considerable change due to modifications in the landscape/environment especially after catastrophic events and the fact that it has had many thousands of years to do so, which consequently, is intertwined with the occupation of the area by our People.



- b. An example of what can be hidden can be shown in an excavation that took place in the area of Hunter Street beside Cottage creek, in which we were involved. It provided data that showed that the river was at one stage flowing in the area that is now occupied by Hunter Street and that there were several layers of sand dunes and occupation then deposited over top of this same area at later dates (dates up to six and a half thousand years). This area provided thousands of artefacts up to a depth of over 2 metres deep. The quantity of water worn artefacts at over 2 metres deep continued in high numbers and it is expected would have continued if excavated further but water seepage prevented this. The topsoil had already been stripped off to over a metre before our excavation was started; therefore we were still finding artefacts at what was originally a depth of over 3 metres.
 - c. The overlay of previously recorded shorelines only gives us an insight of change within the last 149 years (if it is based on the 1862 date) or 146 years (if based on the 1865 date).
 - d. Also it can be seen that there are some significant differences between the 1862/65 shoreline and the 1912 shoreline in Figure 2. There may have been some modifications to some of these areas by human/unnatural intervention, but it would be expected that not all of these differences should be attributed to man. Some of these changes would have been the result of natural processes. Therefore if there have been changes to the natural shoreline between the years 1862/5 and 1912, a period of no more than 50 years, then what have the changes been over many thousands of years??
- Some of the 1862/5 and 1912 shorelines (not to mention possible older shorelines) will be impacted by the berth dredging as can be seen by the red and yellow lines in Figure 2. This should then be taken into account as well.
- We also disagree with the decision not to conduct an assessment/walkover by the Aboriginal Stakeholders within the areas in question. The statement on page 3, last paragraph which says **'...this project does not require an archaeological field surveyor assessment component and should focus on the required Aboriginal Community consultation program'** does not allow the Aboriginal Stakeholders the opportunity to view the area so as to allow us to make an informed decision about our Cultural Heritage. Unfortunately, this decision seems to have already been made for us by the proponent. This is not the colonial era now! Or is it??
- We draw your attention to page 7 under heading **'Stage 2 Terrestrial site visit'** it states that **'A site visit of the foreshore will be undertaken to record non-indigenous sites above water'**
- a. Why is it that the Aboriginal Stakeholders are precluded from a site visit and walk over?? Especially when at the very start of the methodology it states under the heading of **'What are the assessment requirements'** it says that **'This project has qualified for a Part 3A development under the Environmental Planning and Assessment Act 1979. The Director General of the Department of Planning has issued the following heritage assessment requirements relevant to the study.**
- Heritage –including but not limited to:**
- **Non-indigenous and Indigenous heritage items and values of the site and surrounding area (including known or probable maritime heritage sites and appropriate surveys)**
- b. We again draw your attention to the statement where it says **'Non-indigenous and indigenous heritage items and values of the site and surrounding area.'**
 - c. The areas surrounding these proposed sites have not been taken into consideration within the methodology and should be. We have connection between sites, and this also needs to be addressed.
- On page 5 under the heading **'Why is the Aboriginal community being consulted if there is no Aboriginal component to the archaeological field assessment?'** it says that **'Despite the absence of any potential for Aboriginal archaeological sites...'**



- a. We simply can't say that there will be an absence of potential Aboriginal archaeology! The "facts" set out before us in this methodology are not substantiated in any way or conclusive!! In our opinion, this is only based on speculation and not fact.
- Page 6 of the methodology provides us with another example of statements that are not consistent with seeing that consultation with the Aboriginal Community is fostered and considered as necessary.
- a. Under the heading of '**The Aboriginal community consultation program**' it follows a process outlined in 4 dot points saying that '**The following steps in the consultation program will be implemented:**
- **Provision of the proposed assessment methodology (this document) to registered stakeholders and Local Aboriginal Land Council with an invitation to comment within 21 day period;**
 - **All received responses will be considered and addressed and included in the final report;**
 - **Notification to all registered parties of the availability of the draft report, and where requested, provision of a copy of the draft with an invitation to comment within a 21 day period;**
 - **All received responses will be considered and addresses and included in the final report;**
- b. Obviously, after reading these points, it is a foregone conclusion that no matter what our comments are for this methodology all that is going to happen is that they '*will be considered and addressed and included in the final report*'. What about consideration, adoption and inclusion of our responses/comments in the **final methodology**!! This is the idea of sending the methodology to the Aboriginal Stakeholders for comment. It is giving our People the opportunity to comment on the methodology so that if we as the Aboriginal Stakeholders consider the methodology to be lacking in certain areas (and it is) regarding our Cultural Heritage then this gives us a platform to add our comments and allows for changes to be made to the methodology and to include our concerns within the methodology document (*not the final report*). What would be the use of us making comment on the methodology if it was going to be put into the final report, this make no sense!!
- If this is our only option, then so much for the consultation process!!!
- There is no inclusion within the methodology of a modification if presented with the case of monitoring of the sites or if artefacts are discovered during the dredging/development process.
- There is no information such as maps or reports included in the methodology regarding the number of Aboriginal Cultural Heritage sites registered on the OEH AHIMS Database or mentioned in historical documents within the surrounding locality of the proposed project.
- In the event of Aboriginal Cultural Heritage being discovered during the proposed development;
- a. What are the management procedures that are outlined to deal with this issue? and
- b. Where are they recorded/set out within the methodology?

We now look at the questions posed on page 7 under the heading of '**How can Aboriginal stakeholders have their say about this project and the proposed methodology?**'

We have already provided our response to the methodology but would also like to answer these questions as an extension and in conjunction with the previous concerns raised above;

You're Question;

- Do you have any information on the cultural values of the project area that you think should be considered as part of the cultural heritage assessment of this project?

Our answer;

- Yes we do, and this information is considered by us to be of a Culturally sensitive nature and will only be forthcoming if we consider it will be kept as such by those it is conveyed to.



You're Question;

- Do you agree with the assessment that there is no potential for Aboriginal archaeological sites in the project area?

Our answer;

- As you may have already concluded by our previous comments regarding this matter, NO WE DON'T agree.

You're Question;

- Do you have any comment on, or suggested changes to the assessment methodology?

Our answer;

- Yes we do.
 - a. As previously noted this methodology does not take into account any concerns we have.

You're Question;

- Do you have anything else to add?

Our answer;

- Yes we do!
 - a. How can the conclusions that this methodology draws in its current form be considered as adequately addressing the concerns of the Aboriginal Stakeholders/Community and being satisfactory consultation in regard to seeing the protection and preservation of our Cultural Heritage?
 - b. Where do you address in this methodology the Director General of the Department of Planning requirements issued for the following heritage assessment relevant to the study areas such as indigenous heritage items and values of the site and surrounding area?
- Unfortunately, this whole exercise comes across as if there was the need to tick the "We have consulted with the Aboriginal Community and carried out the consultation process part of the project" box and now that is done let's forget about it and move on. Our Cultural Heritage is very significant to us and we have lost many sites in the past due to industrial pursuits. We may seem a bit paranoid and rightly so, we don't want to see the continuation of what has transpired in the past. Our Cultural Heritage and us always seem to come off second best, we will not sit back and let this continue to happen!!

We would like all our concerns/comments that we have raised here addressed and added to a methodology that is redistributed to the Aboriginal Stakeholders to show that consultation is a priority. We would also like to see that the Aboriginal Stakeholders are given the opportunity and invited to conduct a walk over/assessment of the proposed project areas and the inclusion of the surrounding areas as part of this walk over. We would also like to see more consultation with the Aboriginal Stakeholders regarding our Cultural Heritage and connection to this area and what is being done to help preserve and protect our Cultural Heritage and those Cultural Heritage values as spoken of in the methodology.

We look forward to your reply and the opportunity for us to work together to accomplish and help bring about a better future for all our descendants.

We hope this addresses any queries you may have, if not and further information is required please don't hesitate to contact us at your earliest convenience. Our contact details are as follows.

NGI NOA (Farewell in Awabakal Language)

Shane Frost-Managing Director: Awabakal Descendants Traditional Owners Aboriginal Corporation
Email: shanefrost@bigpond.com Phone: 49964325 Fax: 49964325 Mobile: 0428320671

Cultural Heritage Sites - Physical reminders of our Ancestors; once they are gone, they are gone forever and impossible to bring back!! THINK first and make WISE decisions last!!

Please Note: This letter will also be sent to DoP and the OEH for their records.



Capital Dredging Project South Arm Hunter River NewcastleAntiVir checked.
From: Anthony Anderson [murroomainc1@gmail.com]
Sent: Wednesday, 20 July 2011 11:21 PM
To: Glenda Hyde
Subject: Capital Dredging Project South Arm Hunter River
Newcastle

Hi Glenda

Re Capital Dredging Project South Arm Hunter River Newcastle Port

Mur-roo-ma Inc has read and fully understands and agrees with the methodology for this project

The only comments i will make is K1 W1 W2 W3 would be the only concern for me as the the other locations

have previously been dredged if there was any sites or objects they would have been disturbed or destroyed

Not knowing the dredging process that will be used for K1 W1 W2 W3 if it is going to land fill we would like the opportunity

to inspect the land fill

If you need any more information please don't hesitate to contact me

Cheers

--

Anthony Anderson
CEO Mur-roo-ma Incorporated
Justice of The Peace



Nur-Run-Gee Pty Ltd
ABN 37 096 307 701



**INDIGENOUS ARCHAEOLOGIST
CULTURAL AND HERITAGE
CONSULTANT
LICENCED BUILDER**

22 Popplewell Road
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Phone: 02 49 201578
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goodman@kooee.com.au

22nd July 2011

Navin Officer Heritage Consultations P/L
Attention Glenda Hyde
4/71 Leichardt Street
Kingston ACT 2604

Re: Capital Dredging Project – South Arm, Hunter River Newcastle Port

Dear Glenda

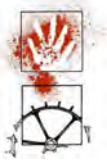
Thank you for the opportunity to comment on the proposed methodology for the draft report for the Capital Dredging Project – South Arm, Hunter River Newcastle Port.

After reading the methodology, Nur-Run-Gee P/L, agrees with and understands the assessment that Navin Officer have stated in the proposed methodology and finds they are acceptable.

Please do not hesitate to contact us if further information is required.

Yours Sincerely

Lennie Anderson OAM
Worimi Traditional Owner
Indigenous Archaeologist
Nur-Run-Gee Pty Ltd



1 August 2011

The Secretary
Navin Officer Heritage Consultants Pty Ltd
Number 4 Kingston Warehouse
71 Leichhardt Street
Kingston ACT 2604

Dear Glenda

Re: Comments Regarding the Cultural Heritage Assessment Methodology for the Information of Aboriginal Stakeholders for the Capital Dredging Project – South Arm, Hunter River Newcastle Port

With regard to the Proposed Cultural heritage Assessment Methodology for the Capital Dredging South Arm Project, we recognise the evaluation by Navin Officer Heritage Consultants appears to be reasonably comprehensive.

The Aboriginal Heritage Assessment Process involves both a cultural values assessment and an archaeological assessment.

"The participation of Aboriginal communities and Aboriginal owners in archaeological field assessments is based on the principle of Aboriginal partnership in all facets of Aboriginal heritage management. Such participation should not be construed as 'consultation'. It is not a substitute for an assessment of Aboriginal cultural interests or values in a particular area of land or particular sites, such assessments being separate from archaeological assessments. A 'cultural assessment' should not be thought of as a mere component of an archaeological assessment or investigation" (*NPWS 1997, Aboriginal Heritage Standards and Guidelines Kit, Partnership with Aboriginal Communities section, p2*).

With regard to the previous assessments that were conducted by Worley Parsons, we are concerned that the conclusion and outcomes within the Methodology is only being based on Historical Mapping from 1862, and that no other Aboriginal Cultural Heritage aspects of the area have been included and/or considered.

We therefore disagree with proposed Methodology which states that an Aboriginal Cultural Heritage assessment is not required, as we believe that the Aboriginal Cultural Heritage aspects pertaining to the South Arm - Hunter River Newcastle Port Project is being overlooked.



We believe that the proposed assessment methodology should provide the relevant background information outlined within the Aboriginal Cultural Heritage Assessment Methodology and Gathering Information Regarding the Cultural Significance of the region, as this would bring a more informative context to the proposed assessment methodology process.

We also believe that the Proposed Assessment Methodology may need to provide some further context to the discussion, for example:

- inclusion of the background environmental and archaeological information relating to the area within and surrounding the assessment site
- information on known sites should be provided, including map of site locations
- information relating to where the assessment area is in relation to other recorded sites
- estimate of extent of the area for the proposed excavation and dredging
- concerns that no modifications have been included within the Methodology in the event that monitoring may be necessary
- how will the presence of any Aboriginal objects encountered be managed

We believe that it is essential that Aboriginal Cultural and Heritage sites are located and recorded for the OEH AHIMS Database so that appropriate mitigation and monitoring processes can be initiated to protect and manage Aboriginal sites for the future.

If we are to achieve due diligence within a comprehensive process through a greater understanding of Aboriginal cultural heritage, both archaeologists and proponents need to take into consideration what these investigations mean to Aboriginal people as part of the healing and self-determination process.

We seek OEH's (Office of Environment and Heritage) serious consideration of the legacy of cumulative and continued proposed damage to our Cultural Heritage Values and examine intergenerational equity standards in determining approvals or non-approvals. Any approval and conditions must use best practice standards and intergenerational equity weighting in consideration in determining the future conservation of our cultural landscape.

Our people are concerned that the Aboriginal Cultural Heritage of the South Arm of the Hunter River is being overlooked, and believe that more consideration should be afforded to provide an essential element for the protection of potential sites in order to demonstrate Intergenerational Equity.

Of increasing concern is the apparent 'carte blanche' approvals rate for permits to destroy or damage areas identified as having high cultural heritage value by the Aboriginal Stakeholders, and that there is limited application of intergenerational equity for a measurable and tangible reporting regime.

The principal vision and aim of the Awabakal people is to protect the cultural heritage of our ancestors. Therefore the residual evidence of our people is held in high degree and is regarded as a cultural reminder that unites us with our country and spirituality.



The Newcastle region is regarded as highly significant to the Awabakal people, and in our view the region is part of the land that echoes the ethos of our cultural heritage. Therefore, any artifacts and/or residual evidence of our people are held in high regard and are considered a cultural reminder that unites us with our land and sea country, our past and spirituality and provides us with a visual generational legacy.

We reserve the right and reluctance to share our cultural heritage with others with respect to aspects of the cultural significance enabling us to protect our cultural knowledge and values.

We would like to thank Navin Office Heritage Consultants for the opportunity to comment and request a copy finalised methodology demonstrating how you have addressed all the Aboriginal stakeholder comments provided as we would like a copy of this for our records prior to the field survey.

If you require any further information please do not hesitate in contacting me.

Yours sincerely,

Kerrie Brauer
Director | Administration

Awabakal Traditional Owners Aboriginal Corporation
ABN: 90 203 408 390 | ICN: 4411
PO Box 253 Jesmond NSW 2299 Australia
T: 61 2 49 58 81 70 | E: info@awabakal.com.au | www.awabakal.com.au



COMMENTS ON SITE VISIT



14 September 2011

Newcastle Port Corporation
Attn: Andrew Wood
PO Box 663
Newcastle NSW 2300

Dear Andrew,

Re: Comments Regarding the Port Tour for the Capital Dredging Project – South Arm Hunter River

This letter is in regard to providing our comments for the recent Newcastle Port Tour for the Capital Dredging South Arm Hunter River Project. We would like to thank the Newcastle Port Corporation for the opportunity for the Awabakal Traditional Owners to be shown where the new berths are proposed to be located and to also provide feedback.

We therefore believe that the proposed sites for the new berths are being positioned and located appropriately. We also believe that the proposed new berths are being built on reclaimed land and therefore may not impact on visible Awabakal Cultural Heritage.

However we recommend that the Newcastle Port Corporation may need to consider the value of 'place' within the Heritage and Cultural weighting for the South Arm Hunter River Project, as this consideration is to insure the protection and conservation of Place & Objects which impact significantly on the spirituality, cultural, historic and general legacy needs of Aboriginal people to address inequalities in social and community well being.

We would like to thank the Newcastle Port Corporation for the opportunity to comment and If you require any further information please do not hesitate in contacting me.

Yours sincerely,

Kerrie Brauer
Director | Administration

Awabakal Traditional Owners Aboriginal Corporation
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ALLA Andrew,

This email is to confirm that we were in attendance for a tour of the Newcastle harbour by the Newcastle Port Corporation to view the areas relating to the Capitol Dredging Project area on September 2nd 2011. This tour gave us new insight into the project and subsequently we now have no objections to the project. We still reinforce the fact that if any Aboriginal Cultural Heritage is discovered during the course of this project, then all works should cease in the area of concern and all the Aboriginal Stakeholders to be notified immediately. We would also like to be informed periodically on the project's progress.

We thank you Andrew for the tour and the information provided and look forward to hearing from you in the future regarding the progress of the project.

NGI NOA
Shane Frost

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APPENDIX 3

ENDNOTES



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- ⁱ EJE Heritage. 2007. *Newcastle Port Corporation S170 Heritage and Conservation Register*, 5.
- ⁱⁱ *Opp Cit.*, EJE Heritage. 2007, 5.
- ⁱⁱⁱ *Ibid.*, 7.
- ^{iv} *Ibid.*, 7.
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- ^{vii} *Ibid.*, 7.
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- ^{xvii} *Opp Cit.*, EJE Heritage. 2007, 27.
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- ^{xlii} *Opp Cit.*, Suters Architects. 1997a, 2/31.
- ^{xliii} *Ibid.*, 2/31.
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- ^{xliv} *Opp Cit.*, EJE Heritage. 2007, 36.
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- lxxvi *Ibid.*, 16.
- lxxvii *Opp Cit.*, EJE Heritage. 2007, 38.
- lxxviii *Ibid.*, 38.
- lxxix *Opp Cit.*, Newcastle City Council Library. 2011, 15.
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- lxxxiv *Ibid.*, 44.
- lxxxv *Ibid.*, 46.
- lxxxvi *Ibid.*, 46.
- lxxxvii *Ibid.*, 46.
- lxxxviii *Ibid.*, 54.
- lxxxix Newcastle Industrial Heritage Association Online Collection
(<http://www.niha.org.au/mediagallery/media.php?f=1&s=20090326204003437>)
- xc Newcastle Industrial Heritage Association Online Collection
(<http://www.niha.org.au/mediagallery/media.php?f=0&sort=0&s=20090326204022710>)
- xcii Newcastle Industrial Heritage Association Online Collection
(<http://www.niha.org.au/mediagallery/media.php?f=0&sort=0&s=20090326210625246>)
- xciii Australian War Memorial Digital collection (<http://cas.awm.gov.au/item/302071>)
- xciv NSW Heritage Register Listing #3930019 of Crane Base 15, [Available Online]
http://www.heritage.nsw.gov.au/07_subnav_04_2.cfm?itemid=3930019.
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- xcviii The Australia ICOMOS, (1999) *Charter for the conservation of places of cultural significance*.

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APPENDIX 4

MAYFIELD 3 AND 4 ADDENDUM REPORTS

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CAPITAL DREDGING PROJECT SOUTH ARM, HUNTER RIVER - NEWCASTLE PORT

MAYFIELD BERTHS NO.3 AND 4



STATEMENT OF HERITAGE IMPACT

SEPTEMBER 2012

**NEWCASTLE
NSW**

CAPITAL DREDGING PROJECT SOUTH ARM, HUNTER RIVER - NEWCASTLE PORT

MAYFIELD BERTHS NO.3 AND 4

STATEMENT OF HERITAGE IMPACT

Prepared for:

GHD

By:

Chris Lewczak
Aleisha Buckler

September 2012

J11/34

Cover image: View of the BHP Steel works wharves and furnaces in 1932. (Source: Newcastle City Council - Cultural Collections. 1932. *Aerial view of Newcastle steelworks showing wharves and blast furnaces*. [Online] Available <http://collections.ncc.nsw.gov.au>.)

EXECUTIVE SUMMARY

Newcastle Port Corporation is developing an Environmental Impact Statement for the dredging of a number of berths in the South Arm of the Hunter River including Mayfield 1 to 7, Dyke 3, Kooragang 1 and the Walsh Point Conceptual Berth.

The proposed location for Mayfield Berths 3 and 4 will have a direct impact on the BHP steel wharves built in 1912, and listed as a heritage item on the *State Environmental Planning Policy (Major Projects) Amendment (Three Ports) 2009*. The wharves have previously been assessed in 2000 as part of the decommissioning of the BHP Waratah Steelworks. The assessment included an archival recording of the wharves prior to their removal, however, no Development Application was made.

The works will include dredging of the berths to a depth of 13.3 metres (NHTG). The actual dredge level includes an over-dredging allowance of an additional 0.5 metres in depth. This is provided as a buffer to allow for sedimentation that may occur between maintenance dredging programs. The works will include the removal of existing infrastructure currently adjacent to the proposed berth boxes. A retaining wall structure will be built to extend the existing seawall at the current Mayfield No.4 Berth. This wall will be constructed near the toe of the current bank on the site, with the area behind the wall to be back filled as part of the landside development. The extension of the current sheet pile wall will be extended on both sides to extend the entire length of both Mayfield No.3 and 4 berths. Specific dredging volumes for both berth areas will be a total of 65,000 m³.

The current timber wharve structure is considered to be in poor condition with sections of the wharf have collapsed. Many of the piles have eroded between the high and low water line and no longer support the structure. Other components of the sub-deck structure, including the headstocks and whaling braces are no longer present or are dilapidated. The deck of the wharves has buckled, resulting in the site being cordoned off.

Prior to the building of the BHP wharves in 1912, at least three other jetties were located within the proposed Mayfield No.3 and 4 Berth sites, including a ballast jetty, a jetty associated with the former smelting works and a coal shoot jetty. The construction of the BHP wharves in 1912 removed these previous structures, and it has been assessed that there is unlikely to be maritime archaeological remains present within the proposed Mayfield No.3 and 4 Berth areas.

Based on the research completed for this report, the proposed design and construction details for this project, the assessment and archival recording undertaken in 2000, the following recommendation can be made.

Recommendation 1

No further maritime archaeological or heritage work is required for the proposed Mayfield No.3 and 4 Berths project. The archival recording completed in 2000 for the proposed decommissioning of the wharf site is considered to be adequate, and no further archival recording work is required.

Conclusion

Newcastle Port Corporation has since received consent by Newcastle City Council to remove the timber wharves at Mayfield 3 and 4. These timber wharves have now been removed as the structure was degraded and had the potential to collapse and become a navigation hazard.

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1.0 INTRODUCTION

1.1 Background

Newcastle Port Corporation is developing an Environmental Impact Assessment for the dredging of a number of berths in the South Arm of the Hunter River including Mayfield 1 to 7, Dyke 3, Kooragang 1 and the Walsh Point Conceptual Berth.

The proposed capital dredging works will be assessed under Part 5.1 of the *Environmental Planning and Assessment Act 1979*. The Director General of the Department of Planning has issued the following heritage assessment requirements relevant to this study which include, but are not limited to:

- Non-indigenous and indigenous heritage items and values of the site and surrounding area (including known or probable maritime heritage sites and appropriate surveys); and,
- Consideration of the *NSW Heritage Manual* (NSW Heritage Office, 1996), *Assessing Heritage Significance Guidelines* (NSW Heritage Office, 2001) and *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC, 2005).

Cosmos Archaeology has been engaged by GHD to prepare a Statement of Heritage Impact (SoHI) for the proposed impacts to the existing timber wharves and any additional heritage items located at Mayfield Berths 3 and 4, that are listed as a heritage item in Schedule 1 of the *State Environmental Planning Policy (Major Projects) Amendment (Three Ports) 2009*.

1.2 Study Area and Proposed Works

The study area for this impact assessment is Mayfield Berths 3 and 4, which are proposed to be dredged as part of Capital Dredging Works within the South Arm of the Hunter River, Port of Newcastle (Figure 1 and Figure 2). The works will include dredging of the berths to a depth of 13.3 metres (NHTG), and will include dredging batters either side of each berth box as required. The works will include the removal of existing infrastructure currently adjacent to the proposed berth boxes. Subject to detailed design a retaining wall structure will be built to extend the existing seawall at the current Mayfield No.4 Berth. The proposed additional seawall structure is proposed to be an extension of the existing sheet pile wall already in place on the current Mayfield No.4 Berth. This wall will be constructed near the toe of the current bank on the site, with the area behind the wall to be back filled as part of the landside development. The extension of the current sheet pile wall will be extended on both sides to extend the entire length of both Mayfield No.3 and 4 berths. Specific dredging volumes for both berth areas will be a total of 65,000 m³.



LEGEND

- Berth Locations
- Existing Channel 15.2m (NHTG)
- ▲ Approved Channel Depth 15.2m to be dredged by others

1:13,000 (at A4)
 0 50 100 200 300 400
 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: Geocentric Datum of Australia (GDA)
 Grid: Map Grid of Australia 1994, Zone 56

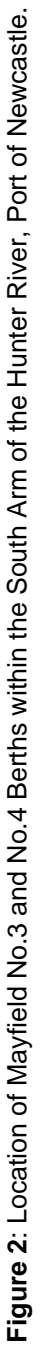


Newcastle Port Corporation
 Capital Strategic Dredging Project

Job Number 22-15683
 Revision 0
 Date 10 SEP 2012

Berth Locations

Figure 1: Location of Mayfield No.3 and No.4 Berths as part of the Capital Dredging works within the South Arm of the Hunter River, Port of Newcastle.



1.3 Study Objectives

This assessment will consider the impact on known registered heritage items and potential remains associated with earlier maritime development structures, within or adjacent to Mayfield Berths 3 and 4. The key objective of the assessment is to:

Prepare a Statement of Heritage Impact for the proposed impact to the existing timber wharves and any additional heritage items identified within and in the vicinity of Mayfield Berths 3 and 4.

1.4 Method of Approach

The following methodology was used to meet the objectives of the impact assessment:

Statutory Heritage Issues

A search of statutory listings was undertaken to identify existing heritage items within the proposed development area at Mayfield Berths 3 and 4. The results of this search can be found in Section 2.0.

Historical Background and Previous Heritage Reports

A historical background is provided in Section 3.0 which is drawn from information previously compiled for a separate decommissioning project in 2000, which includes the existing timber wharves. A Statement of Heritage Impact and Archival Recording were also undertaken as part of this earlier project and these heritage reports are summarised in Section 4.0.

Site Inspection

A brief site inspection was undertaken on the 7th of July 2011 and the data from this inspection has been incorporated into this assessment. This information is also supplemented with additional photographs supplied by the Newcastle Port Corporation and GHD. Details of the site inspection are presented in Section 5.0.

Significance Assessment

A significance assessment has previously been prepared in 2000 as part of an earlier Statement of Heritage Impact for the timber wharves. This significance assessment will be used for this impact assessment and can be found in Section 7.0.

Impact Assessment

An impact assessment of the existing timber wharves and any additional maritime archaeological remains identified in the vicinity of Mayfield Berths 3 and 4 is provided in Section 8.0, and is based on the proposed dredging plans. This assessment was conducted in accordance with NSW Office of Environment and Heritage guidelines.

Management and Mitigation Recommendations

Management advice is provided in Section 9.0 regarding the legislative requirements for permits and / or consents under the NSW Heritage Act 1977, SEPP Major Projects (Three Ports) 2009 and local planning instruments.

Based on the findings of the impact assessment, mitigation measures proportional to the assessed cultural heritage significance of the identified heritage items are also provided.

2.0 STATUTORY ISSUES

2.1 Introduction

In NSW heritage protection stems from the *NSW Heritage Act 1977*, the *NSW Environmental Planning and Assessment Act 1979* and the *Commonwealth Environment Protection & Biodiversity Conservation Act 1999*.

2.2 NSW Heritage Act 1977

The *NSW Heritage Act 1977* is the primary piece of State legislation affording protection to all items of environmental heritage (natural and cultural) in NSW, including places, buildings, works, relics and moveable objects identified as significant based on the heritage values outlined in the Australia ICOMOS *Burra Charter* – which are discussed in Section 6.0. The State Heritage Register is a statutory list of places and items of State heritage significance. Under the *NSW Heritage Act 1977*, approval is required from the Heritage Council of NSW for works that result in the alteration or modification of items listed on this register.

In addition to items listed on the State Heritage Register, various cultural heritage sites, items and archaeological features and deposits are afforded automatic statutory protection by the relic provisions of the *NSW Heritage Act 1977*. A relic is defined in the Act as:

...any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and is of State or local heritage significance.¹

Sections 139 to 145 of the Act prevent the disturbance or excavation of any land if there is reasonable cause to suspect that a relic will be discovered, exposed, moved, damaged or destroyed, unless an excavation permit has been issued by the Heritage Council of NSW. The type of permit required depends on whether area has been listed on the State Heritage Register - a s60 permit is required to disturb or excavate sites listed on the State Heritage Register, and a s140 permit is required to excavate sites which are not listed.

In some circumstances - usually where development is minor in nature and will have minimal impact on the heritage significance of a site - an excavation permit may not be required as the development may qualify for a standard exemption, for sites listed on the State Heritage Register; or an exception, for sites not listed on the State Heritage Register.

2.2.1 Newcastle Port Corporation s170 Heritage and Conservation Register

Under s170 of the *NSW Heritage Act 1977*, all State government agencies are required to identify and effectively manage heritage assets under their ownership and control. The Newcastle Port Corporation (NPC) Heritage and Conservation Register has been established in accordance with this legal obligation to record all items of local or State heritage significance owned or under its control.

State government agencies must maintain the items listed on their individual Heritage and Conservation Registers with due diligence in accordance with *State Owned Heritage Management Principles* (2005).²

¹ NSW Heritage Act 1977, Section 4 – Definitions.

² NSW Heritage Act 1977, Section 170A – Heritage Management by Government Instrumentalities.

2.3 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* establishes the framework for cultural heritage values to be formally assessed in the land use planning and development consent process. The Act requires that environmental impacts, including those to cultural heritage items and places, are considered prior to land development. The Act also requires local governments to prepare planning instruments such as Local Environmental Plans (LEP) in accordance with the Act to provide guidance on the level of environmental assessment required.

2.3.1 State Environmental Planning Policy (Major Projects) Three Ports 2009

State Environmental Planning Policies (SEPP) are prepared by the NSW Department of Planning under the *Environmental Planning and Assessment Act 1979*. SEPP (Major Projects) Three Ports 2009 is directed towards facilitating the streamlining of port related investment and infrastructure. The SEPP includes Port Botany, Port Kembla and Newcastle Port. The 2009 amendment states that consent from relevant Local Council is required if a development involves:

- (a) Demolishing or moving a heritage item;
- (b) Altering a heritage item that is a building by making structural changes to its interior; and
- (c) Erecting a building on land on which a heritage item is located.

(Part 1 Division 2 Clause 21(1))

Consent for work is not required if:

- (a) The applicant has notified the consent authority of the proposed development and the consent authority has advised the applicant in writing before any work is carried out that it is satisfied that the proposed development:
 - (i) Is of a minor nature, or is for the maintenance of the heritage item; and
 - (ii) Will not adversely affect the significance of the heritage item, or
- (b) The development is limited to the removal of a tree or other vegetation that the council is satisfied is a risk to human life or property; or
- (c) The development is exempt development.

(Part 1 Division 2 Clause 21(2))

The SEPP requires any development within the vicinity of a listed heritage item to:

...require a heritage impact statement to be prepared that assesses the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item concerned.

Consent from Council is not required as this project is being assessed under Part 5.1 of the EP&A Act. *SEPP (State and Regional Development) 2011*, applies to this project and overrides the requirements of the *SEPP (Major Project) Three Ports 2009*.

2.32 Newcastle Local Environmental Plan (Draft 2011)

Newcastle Port has been annexed from the draft Newcastle LEP (2011) and has been included within the State Environmental Planning Policy (Major Projects) as amendment Three Ports 2009.

2.4 Statutory Heritage Register Search

Statutory registers provide legal protection for heritage items. There are three types of statutory listings for cultural heritage sites, objects and places in NSW: local listing on the heritage schedule of a council's Local Environmental Plan (LEP), or a State Agency's s170 Heritage and Conservation Register; State listing on the NSW State Heritage Register; and National listing on the National Heritage List.

2.4.1 National Heritage List

The National Heritage List is a register of natural and cultural places with outstanding heritage significance to the Australian nation. Each entry is assessed by the Australian Heritage Council as having exceptional heritage value and is protected under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

There are no heritage items listed on the National Heritage List within, or immediately adjacent to, Mayfield Berths 3 and 4.

2.4.2 NSW State Heritage Register

The NSW State Heritage Register is a statutory list of places and items of State heritage significance. The Register lists a diverse range of places, including archaeological sites, that are particularly important to the State and which enrich our understanding of the history of NSW. Places and items listed on the Register are legally protected under the NSW *Heritage Act 1977* and approval is required from the Heritage Council of NSW prior to undertaking work that results in their alteration or modification.

There are no heritage items listed under the NSW Heritage Act 1977 within or immediately adjacent to, Mayfield Berths 3 and 4.

2.4.3 Newcastle Port Corporation s170 Heritage and Conservation Register

There are no heritage items listed on the Newcastle Port Corporation s170 Heritage and Conservation Register in the vicinity of Mayfield Berths 3 and 4 to date as the site is yet to be formally owned by the Corporation. The register will be updated once ownership for the area is passed to the Corporation.

2.4.4 State Environmental Planning Policy (Major Projects) Three Ports 2009

Heritage items that are located within the Newcastle Port area are listed under Section 21(7) of SEPP (Three Ports) 2009. There is one item that is located within or adjacent to Mayfield Berths 3 and 4:

Original Timber Wharves, 99 Selwyn Street, Mayfield North.

2.5 Summary of Statutory Protection

The Original Timber Wharves associated with the BHP Steelworks is listed under the SEPP (Major Projects) Three Ports 2009 and is the only heritage item listed within or in the immediate vicinity of Mayfield Berths 3 and 4.

3.0 HISTORICAL BACKGROUND

The following historical background is not a detailed history of Newcastle, but instead focuses on known cultural activity that has taken place in the vicinity of Mayfield Berths 3 and 4 in the South Arm of the Hunter River. This background has been prepared primarily from information contained in secondary sources; particularly previous heritage reports (see Section 4.0).

The Waratah Coal Company operated in Port Waratah from the early 1860s and operated a coal shoot capable of shipping “about 50 tonnes per house”.³ In 1866, the Wallaroo Mining and Smelting company secured a lease on property owned by Waratah Coal and opened a smelting works which became known as the Hunter River Copper Company Works (Figure 3 and Figure 4).⁴ Copper was smelted at Port Waratah until the early 1890s, until the works closed as a result of falling copper prices and damage to the site caused by flooding in 1893.⁵ The Waratah Coal Company subsequently sold their land to the Broken Hill Proprietary Company (BHP) in 1896.⁶



Figure 3: Chart of Port Waratah in 1869 showing the coal and copper smelting works.⁷

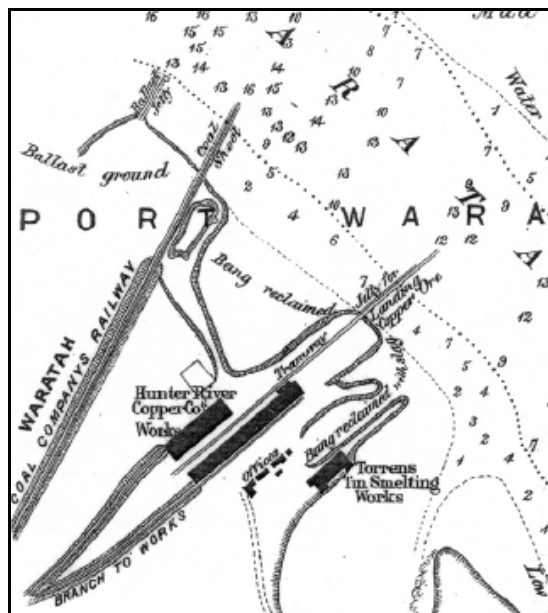


Figure 4: Chart of Port Waratah in 1875 showing the Waratah Coal Company and Hunter River Copper Company smelting works.⁸

³ EJE Heritage. 2007. Newcastle Port Corporation s170 Heritage and Conservation Register, 30.

⁴ Umwelt (Australia) Pty Ltd. 2005. *Assessment of the Historical Archaeology and Research Design: Newcastle Steelworks Closure Area*, 31.

⁵ Suters Architects. 1997a. Newcastle City Wide Heritage Study, 2/31.

⁶ *Opp Cit.*, Suters Architects, 1997a, 2/31.

⁷ Allan, D. 1869. Chart of Newcastle Harbour and Port Waratah [Online] Available <http://nla.gov.au/nla.map-f52>.

⁸ National Library of Australia. 1875. *Plan of the Port of Newcastle*. [Online] Available <http://nla.gov.au/nla.map-rm1525>.

Following their success in the silver lead industry, BHP decided to enter the steel business and established a steelworks in Newcastle, transforming the city into the industrial capital of Australia.⁹ Eager to facilitate the BHP operation at Newcastle, the State Government removed silt from the harbour - to a depth of 25 ft - to provide access to the approaching shipping channels for the import and export of raw materials and finished product.¹⁰ The site where the steelworks buildings were to be built was very low lying and often flooded - leading to it being reclaimed with sand dredged from the harbour (Figure 5 to Figure 7).¹¹



Figure 5: Port Waratah in 1909 - showing land reclamations on the site.¹²



Figure 6: Port Waratah c1936 - showing land reclamations for the BHP Steel works.¹³



Figure 7: Port Waratah 1956 - showing land reclamations for the BHP Steel works.¹⁴

⁹ *Opp Cit.*, Suters Architects. 1997a, 2/6.

¹⁰ *Opp Cit.*, EJE Heritage. 2007, 36.

¹¹ Newcastle City Council Library. 2011. Newcastle, NSW: Historical, Industrial and Scenic, 22.

¹² NSW Department of Lands. 1909. *Parish of Newcastle, County of Northumberland*. [Online] Available <http://nla.gov.au/nla.map-vn39100>.

¹³ NSW Department of Lands. 1936. *Parish - Newcastle; County - Northumberland*. Image ID 13914402.

¹⁴ NSW Department of Lands. 1956. *Parish - Newcastle; County - Northumberland*. Image ID 10873502.

Construction of a timber wharf for the delivery of raw materials and shipping of the finished product began on the site in as early 1912 (Figure 8).¹⁵ The first section of the Original Wharf structure was 600 ft long and supported on turpentine piles.¹⁶ The plant officially opened in 1915 and expanded rapidly; by 1918 a second blast furnace was constructed and a third planned.¹⁷ The wharf facilities were expanded in 1916 - 17, to a total of 1,300 ft in length; able to accommodate four steamers simultaneously.¹⁸ Rail tracks ran along the length of the wharf to carry wagons to receive cargo.¹⁹



Figure 8: Construction of the BHP Steelworks wharf in 1912.

Following World War I, the head of BHP - Essington Lewis - encouraged overseas steel processing firms to establish themselves close to the BHP works in Port Waratah.²⁰ During the 1920s and 1930s, the Titan Manufacturing Company, the Australian Wire Rope Works Company, Bullivants Australian Company, the Commonwealth Steel Company, Ryland Brothers, Lysaght Brothers and Stewart and Lloyds Pty Ltd all established factories in Newcastle during the 1920s and 1930s.²¹ In most cases these plants were eventually taken over by the BHP.²²

Extensions and maintenance to the wharf was undertaken throughout the 1920s and 1930s to cater for an increase in trade (Figure 9). In 1925 the wharf was extended by a further 225 ft and a section of wharf under the ore bridges was double reinforced and concreted. Piles and beams were also repaired or replaced during the late 1920s and throughout the 1930s, including the replacement of 22 single piles in 1928.²³ Further repairs were undertaken in 1936 along the rail lines and to the wharf face.

¹⁵ NSW Heritage Branch. 2008. NSW Heritage Database - Original Timber Wharves. [Online] Available <http://www.heritage.nsw.gov.au>.

¹⁶ EJE Architecture. April 2000. Statement of Heritage Impact - Proposed Demolition of the Original Timber Wharves, 3.

¹⁷ Newcastle Industrial Heritage Association Inc. 2009. *Steel - early years*. [Online] Available <http://www.niha.org.au>.

¹⁸ *Opp Cit.*, NSW Heritage Branch. 2008, <http://www.heritage.nsw.gov.au>.

¹⁹ *Ibid.*, <http://www.heritage.nsw.gov.au>.

²⁰ Suters Architects. 1997b. *Newcastle Archaeological Management Plan*, 11.

²¹ *Opp Cit.*, Suters Architects. 1997a, 2/6.

²² *Ibid.*, Suters Architects. 1997a, 2/31.

²³ *Ibid.*, Suters Architects. 1997a, 2/31.

Approximately 17 headstocks were renewed and structural timbers were replaced with 40 long, 14" x 12" steel "I" beams, 23 in total.²⁴ Repairs to Berth No. 3 were undertaken in 1937 and faulty decking was also replaced as well as timber on the wharf face.²⁵ In the following year wharf maintenance was continued with 49 piles being replaces throughout the full length of the wharf.²⁶

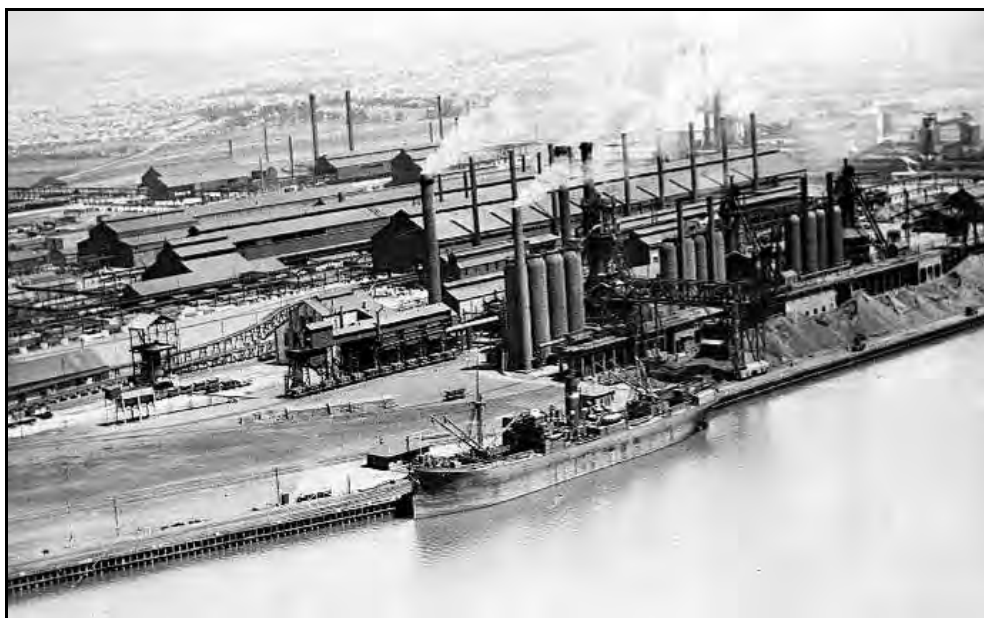


Figure 9: View of the BHP Steel works wharves and furnaces in 1932.²⁷

During World War II facilities for the production of munitions were installed at the steelworks, and it was also used for shipbuilding, with more than 50 tug boats constructed for the US Army and the British Navy.²⁸

During the 1950s the size of bulk carrier vessels increased dramatically and the wharves underwent further extensions in 1959 and again in 1964 in order to accommodate the larger vessels (Figure 10).²⁹ Dredging was increased to 35 ft below low water which in turn led to new piles being driven to bear on sandstone - these piles were 45 to 65 ft in length.³⁰ The wharves continued to be an essential part of the steelworks up until September 1999, when the BHP steelworks closed.³¹ Apart from a few significant heritage items, most plant and structures on the steelworks site were subsequently demolished in 2000.³²

²⁴ *Opp Cit.*, EJE Architecture. April 2000, 3.

²⁵ *Ibid.*, 3.

²⁶ *Ibid.*, 3.

²⁷ Newcastle City Council - Cultural Collections. 1932. *Aerial view of Newcastle steelworks showing wharves and blast furnaces*. [Online] Available <http://collections.ncc.nsw.gov.au>.

²⁸ *Opp Cit.*, Newcastle Industrial Heritage Association Inc. 2009. [Online] Available <http://www.niha.org.au>.

²⁹ *Opp Cit.*, Suters Architects. 1997a, 2/31.

³⁰ *Opp Cit.*, EJE Architecture. April 2000, 3.

³¹ *Opp Cit.*, NSW Heritage Branch. 2008. [Online] Available <http://www.heritage.nsw.gov.au>.

³² *Ibid.*, <http://www.heritage.nsw.gov.au>.



Figure 10: BHP Ore Carrier *Iron Wyalla* docked at berths with timber wharf in foreground c1965.³³

³³ EJE Architecture. September 2000. Archival Record - Waterfront Precinct Heritage Building, Main Site BHP Port Waratah Steelworks, Newcastle - Wharves.

4.0 PREVIOUS HERITAGE REPORTS

Following the closure of the BHP steel works in Newcastle, the Mayfield site was proposed for redevelopment as a major Multi Purpose Terminal in 2000. A heritage assessment was undertaken as part of an Environmental Impact Assessment for the project, and approval was sought to demolish 15 heritage listed items in the area, including the Original Timber Wharves. Statements of Heritage Impact and Archival Recording of the individual heritage items were then undertaken.

EJE Architecture prepared the SoHI for the proposed demolition of the Original Timber Wharves in April 2000.³⁴ It was found that none of the original wharf elements were visible and likely not to exist as a result of almost continual maintenance, structural upgrading and production-driven design modifications. Some of the existing single bollards along the wharf edge were observed to be of a similar form and scale to the original items shown on design drawings, and thus it was suggested that they were possible remains from the original wharf structure.³⁵

The Original Timber Wharves were assessed to have State level cultural heritage significance. Details of this significance assessment are provided in Section 7.0. The SoHI concluded that the heritage significance of the Original Timber Wharves was invested in the iron and steel making process, rather than the built fabric of the structure itself.³⁶ Therefore, it was stated that as the site had been decommissioned, this had an impact on the interpretation of the significance of the item and that retaining these structures, which could not be re-used or regenerated, would require significant expenditure to maintain and stabilise.³⁷

The SoHI found that the removal of any surviving original wharf elements to enable development on the site would impact on the significance of the item; however, this impact would be mitigated by fully recording the items in accordance with NSW Heritage Guidelines and retaining any of the surviving structure which would then be capped.³⁸

Following the results of the SoHI, archival recording of the Original Timber Wharves was undertaken in September 2000.³⁹ The approach taken in recording the Original Timber Wharves was based on NSW Heritage Guidelines relating to the preparation of archival records and photographic recording. Following their Archival Recording, partial demolition of the Original Timber Wharves was then undertaken.

The results of the SoHI and Archival Record undertaken by EJE Architecture were subsequently incorporated into the *Assessment of the Historical Archaeology and Research Design: Newcastle Steelworks Closure Area* (May 2005) prepared by Umwelt Australia Pty Ltd, and later the *Mayfield Site Port Related Activities Concept Plan - Environmental Assessment* (July 2010) prepared by AECOM Australia Pty Ltd.

³⁴ *Opp Cit.*, EJE Architecture. April 2000.

³⁵ *Ibid.*, 4.

³⁶ *Ibid.*, 6.

³⁷ AECOM Australia Pty Ltd. July 2010. Mayfield Site Port Related Activities Concept Plan - Environmental Assessment, ES14.

³⁸ *Opp Cit.*, EJE Architecture. April 2000, 6.

³⁹ *Opp Cit.*, EJE Architecture. September 2000.

5.0 SITE INSPECTION

A brief site inspection was undertaken on the South Arm of the Port of Newcastle on the 28th July 2011 by Chris Lewczak (Senior Archaeologist with Cosmos Archaeology) and Andrew Wood (Project Manager, Newcastle Port Corporation). The survey briefly inspected the existing timber wharf within the proposed location of the Mayfield No. 3 and 4 Berth sites. The inspection was a terrestrial based inspection only. GHD and Newcastle Ports Corporation have supplied photographs of the existing timber wharves from a recent boat inspection.

The existing timber wharf currently on the site is approximately 81 m long and is in a dilapidated condition. The wharf was timber decked and consists of three timber piles per bent, whaling bracing at approximately the high water line, and timber headstocks that have been attached with steel plates (Figures 11 & 12). The bents are approximately 1.5 m apart. At a later stage steel girders have been used to repair some of the whaling bracing, as well as used to repair failing timber headstocks. This work may relate to the 1920s repair and upgrade of the timber wharf; however, it is possible they are from more recent repairs. The timber wharf abuts the 1920s wharf reinforced concrete extension at the south-eastern end (See Figures 13-15).

Many of the timber piles have been eroded between the high and low water line, or have sheared off and are no longer present. The lower whaling bracing between the piles along a bent are missing, with the exception of a few original timber or steel braces used in the 1920s repair works. Sections of the above pile structure, including the headstocks and, predominately, the decking, have buckled with section falling into the harbour. Section which have fallen into the harbour cause risks to shipping and pleasure craft from the risk of collision. Near the mid-section of the wharf a section of the wharf, including decking, beams, headstocks and piles has been removed (Figures 15 to 17). Another section further to the south has also collapsed. As to the state of the wharf, access to the wharf decking has been cordoned off due to the unsafe and decaying nature of the structure.



Figure 11: Southern end of the BHP Timber Wharf (known as Original Timber Wharf) showing the condition of the sub-deck structure. (Photograph GHD)



Figure 12: Section of the BHP Timber Wharf (known as Original Timber Wharf) showing the condition of the sub-deck structure. (Photograph GHD)



Figure 13: Section of the BHP Timber Wharf (known as Original Timber Wharf) showing the condition of the sub-deck structure, and section of wharf already removed. (GHD)



Figure 14: Section of the BHP Timber Wharf (known as Original Timber Wharf) showing the section of wharf already removed. (Photograph GHD)



Figure 15: Section of the BHP Timber Wharf (known as Original Timber Wharf) showing the section of wharf already removed. (Photograph Newcastle Ports Corporation).



Figure 16: Section of the decking present on the BHP Timber Wharf (known as Original Timber Wharf) (Photograph Newcastle Ports Corporation).



Figure 17: Section of the decking present on the BHP Timber Wharf (known as Original Timber Wharf) (Photograph Newcastle Ports Corporation).

6.0 ARCHAEOLOGICAL POTENTIAL

By having an understanding of the history of the Newcastle Harbour, and specifically of the construction history of the area immediately adjacent to the proposed dredging areas, the archaeological potential for relics to be present within each area can be assessed. This archaeological potential will be based on the historical maps, plans and history that have been gathered for this report.

Prior to the construction of the Dyke and the reclamation works that occurred within Newcastle harbour, the general location of Mayfield Berths No.3 and 4 were to the north-west of a small channel in the harbour. There were three jetties built in this area prior to the construction of the BHP wharves in 1912. The 1869 plan of the harbour shows there were three “T” shaped jetties, labelled Ballast Wharf, Coal Shoot and one associated with the Copper Smelting Works (Figure 18). All three jetties appear on a c.1890 parish plan of Port of Newcastle (Figure 19). The ballast wharf is considered likely to be associated with the reclamation works as a number of these types of jetties were constructed along the Dyke during the reclamation works. As these jetties were only temporary, it is unlikely that this jetty was a substantial structure as they were proposed to be replaced at the conclusion of the reclamation works. The jetties associated with the Coal Shoot (in the vicinity of Mayfield Berth No.4) and the jetty for the Copper Smelting Works (Mayfield Berth No.3), are likely to be more substantial structures. Both of these jetties extended out approximately to the near shore boundary of the proposed dredge area. This area was filled in and later reclaimed for the 1912 BHP expansion of the site. It is likely both jetties were removed prior to the new wharf being constructed, as any remains associated with the former jetty that extended beyond the 1912 jetty would have been a navigational hazard for ships berthing at the steel works wharf. The method for removal of these piles is unknown, and the potential exists that piles remain below the current seabed.

It is unlikely that stratified archaeological deposits are present in Mayfield Berths No.3 or No.4 as ongoing dredging during and after the completion of the 1912 BHP steel wharves has likely removed these deposits.



Figure 18: 1869 Parish Map of Newcastle showing the proposed location of Mayfield No.3 and No.4 berths (in RED)



Figure 19: c1890 plan of Port of Newcastle showing Mayfield No.3 and No.4 Berths (in RED).

7.0 ASSESSMENT OF SIGNIFICANCE

7.1 Introduction

Cultural heritage significance is defined in the Australian ICOMOS *Burra Charter* as “...aesthetic, historic, scientific or social value for past, present or future generations.”⁴⁰

The cultural significance of a place or item can be contained in its fabric, setting, use, associations or relation to other places and objects.⁴¹

Accurate assessment of the cultural significance of sites, places and items is an essential component of the NSW heritage assessment and planning process. A clear determination of a site’s cultural significance allows informed planning decisions to be made whilst ensuring that heritage values are maintained, enhanced, or minimally affected by development. The NSW heritage assessment criteria encompass the four values outlined in the Burra Charter. The standard criteria applied when assessing the cultural significance of a site in NSW are:

- (a) *An item is important in the course or pattern of NSW’s cultural or natural history (or the cultural or natural history of the local area);*
- (b) *An item has strong or special associations with the life or works of a person, or group of persons, of importance in NSW’s cultural or natural history (or the cultural or natural history of the local area);*
- (c) *An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);*
- (d) *An item has strong or special associations with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;*
- (e) *An item has potential to yield information that will contribute to an understanding of NSW’s cultural or natural history (or the cultural or natural history of the local area);*
- (f) *An item possesses uncommon, rare or endangered aspects of NSW’s cultural or natural history (or the cultural or natural history of the local area); and,*
- (g) *An item is important in demonstrating the principal characteristics of a class of NSW’s cultural or natural places; or cultural and natural environments.*⁴²

⁴⁰ Australia ICOMOS Inc. 2000. *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* 1999, Article 1.2.

⁴¹ *Opp Cit.*, Australia ICOMOS. 2000, Article 1.2.

⁴² NSW Heritage Office. 2001. *Assessing Heritage Significance*, 9.

7.2 Evaluation of Original Timber Wharves

A significance assessment of the Original Timber Wharves was previously undertaken in 2000 as part of a Statement of Heritage Impact and Archival Recording; this assessment is reproduced below.⁴³

Criterion (a) *An item is important in the course or pattern of NSW's cultural or natural history (or the cultural or natural history of the local area)*

Although very little, if any, of the original timber construction remains, these early wharves are a reminder of the importance of the harbour in David Baker's decision to build the steelworks at Newcastle. As the site where the raw materials were unloaded and, before the construction of the product wharves, where finished product left the works, the wharves played an essential role in the overall functioning of the steelworks. Structure from subsequent period remains interpretable.

The Original Timber Wharves and subsequent wharf structures not only represent the first element in the construction and later development of the Newcastle Steelworks but, if elements still exist, also form an important element which traces the development and growth of shipping into Newcastle from 1913 to the present.

Further, because of the importance of the wharves in the receipt of raw materials and despatch of finished products over the life of the Newcastle Steelworks, they illustrate a continually developing support element to the manufacture of iron and steel and thus the continuity of industrial processes of highest level significance. Although earliest fabric has been concealed or lost, subsequent wharf fabric elements remain and remain capable of interpreting the evolution of the structure over at least the last three quarters of a century.

For these reasons, if still existing, remnant earliest wharf structure will have **State** significance.

Criterion (b) *An item has strong or special associations with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area)*

The Original Timber Wharves were not assessed to be significant under this criterion.

Criterion (c) *An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)*

The wharves are not associated with particular technical innovation or achievement and are not aesthetically distinctive. For this reason they do not have Aesthetic significance.

⁴³ EJE Architecture. April 2000. Statement of Heritage Impact - Proposed Demolition of the Original Timber Wharves.

Criterion (d) *An item has strong or special associations with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons*

Any remnants of the Original Timber Wharves are associated with the development of iron and steel making on the Newcastle steelworks site. If existing they are integral with the identification of the steelworks site and, with the remainder of the site, are held in high esteem by generations of the BHP and wider community. As such they have **Local** significance.

Criterion (e) *An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)*

Archival information and photographs illustrate the growth of the Original Timber Wharf as an important benchmark in the development of Newcastle as a port. If any elements still exist, they will have high level potential to reveal historical / archaeological information of value to the region and are therefore of **Local** significance.

Criterion (f) *An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area)*

The Original Timber Wharves were not assessed to be significant under this criterion.

Criterion (g) *An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural and natural environments*

Any remnants of early Wharf structure is a regionally significant benchmark site of its type, demonstrating quick response, relatively simple technology. While the old structure is no longer in evidence and the more recent structure does not contain evidence of unique technology, any original evidence will nevertheless be of regional uniqueness and thus of **Local** significance.

8.0 HERITAGE IMPACT ASSESSMENT

8.1 Proposed works

The proposed works are to remove the remains of the existing timber wharf to create two Mayfield Berths Nos. 3 and 4. The proposed works will also include the extension of the current sheet pile wall behind the existing timber wharf at Mayfield Berth No. 4 in both directions to expand the entire length of both proposed new berths. The seawall will follow the same alignment as the existing structure, which is located near the toe of the embankment. Dredging associated with the new berths will be to a depth of 13.3 metres (NHTG) (Figure 2).

8.2 Impact Assessment

As the proposed works will have a direct impact to the timber wharf listed on the SEPP (Three Ports) as a heritage item, an impact assessment will be prepared for the timber wharf.

The current condition of the wharf is considered to be poor with sections of the wharf already collapsed and removed. As such the current structure cannot be reused. The condition of the wharf is such that repairs to the structure are likely not to be possible without removing all of the existing structure and rebuilding a new, similar, timber wharf. This is also not an option as the significance of the heritage item would be considered to be lost through the removal of all of the existing original fabric. Stabilisation of the current structure through minimal repair has not been considered. A 'do nothing' approach is also not considered to be appropriate as the wharf is likely to continue to degrade and collapse, thereby becoming a navigation hazard to shipping and small craft in the harbour.

- *What aspects of the Proposal respect or enhance the heritage significance of the item/study area?*

There are no aspects of the current proposal that respect or enhance the heritage significance of the remains of the timber wharf.

- *What aspects of the proposal could have a detrimental effect on the heritage significance of the item/study area?*

The proposed dredging works will remove the entire remains of the timber wharf present at the proposed site of Mayfield Berths No.3 and 4.

- *Have more sympathetic options been considered and discounted? Why?*

Alternatives to the proposed removal of the remains of the timber wharf have not been considered. There is limited space available for the creation of berths within the southwest arm of the Hunter River. For the area to be usable as a berthing pocket the existing timber jetty would need to be removed and a new structure built. The existing wharf cannot be reinstalled or reused as the structure is not considered to be structurally sound. Repair of the item is also not an option as the timber structure would have to be replaced almost in its entirety, thereby removing the original fabric and significance of the heritage item. Retention of the structure 'as is' on the site would result in the loss of a possible berth pocket, and the item would eventually collapse and would be removed as a possible navigation hazard.

- *Are the proposed changes sympathetic to the heritage item/study area? In what way? (e.g. form, proportions, design)*

The design of the berth is not considered to be sympathetic to the remaining timber wharf as the current design includes the total removal of the item. The design of the berthing pocket at Mayfield Berths Nos.3 and 4 has been done to meet the safety and operational requirements needed for the berth.

9.0 CONCLUSIONS AND RECOMMENDATIONS

9.1 Summary of Findings

The key findings of the assessments are as follows:

- The proposed Mayfield No.3 and No.4 Berths within the south arm of the Hunter River for Port of Newcastle has the potential to impact on the heritage listed Original Timber Wharves;
- The former BHP steel wharf in the location of Mayfield No.3 and 4 have previously been assessed and archival recording of the wharves has been completed;
- The current condition of the wharves has been assessed as being poor with many sections of the structure being collapsed or missing;
- The potential for archaeological remains associated with earlier jetties near Mayfield Berths No.3 and No.4 is considered to be low, with the former jetties removed prior to the construction of the 1912 steel works wharf to remove any navigational hazards;
- The proposed works will remove the current timber wharf structure and dredge the area to create two new berths within the South Arm of the Hunter River;
- Retention of the wharves in their current state, or through extensive repair, is not considered to be a viable option as the significance of the heritage item will be lost through the removal of original fabrics; and
- An archival record of the wharves was undertaken in 2000 as part of the decommissioning of the BHP steel works site.

9.2 Management Recommendations

Based on the research completed for this report, the proposed design and construction details for this project, the following recommendation can be made.

Recommendation 1

No further maritime archaeological or heritage work is required for the proposed Mayfield No.3 and 4 Berths project. The archival recording completed in 2000 for the proposed decommissioning of the wharf site is considered to be adequate, and no further archival recording work is required.

Conclusion

Newcastle Port Corporation has since received consent by Newcastle City Council to remove the timber wharves at Mayfield 3 and 4. These timber wharves have been removed as the structure was degraded and had the potential to collapse and become a navigation hazard.

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LEGISLATION

Environmental Planning and Assessment Act 1979
Newcastle Local Environmental Plan 2011 (draft)
NSW Heritage Act 1977
SEPP (Major Projects) Three Ports 2009



Appendix G

Flora and Fauna Database Search Results

Data from the BioNet Atlas of NSW Wildlife website, which holds records from a number of custodians are only indicative and cannot be considered a comprehensive inventory, and may contain errors. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded). Copyright the State of NSW through the Office of Environment and Heritage.

Search criteria : Public Report of all Valid Records of Threatened (listed on TSC Act 1995) Animals and Hunter-Central Rivers CMA returned a total of 51,515 records of 285 species.

Report generated on 25/05/2012 1:54 PM

Kingdom	Scientific Name	Common Name	Legal Status
Fauna	<i>Mixophyes balbus</i>	Stuttering Frog	E1
Fauna	<i>Mixophyes iteratus</i>	Giant Barred Frog	E1
Fauna	<i>Adelotus brevis</i>	Tusked Frog population in the Nandewar and New England Tableland Bioregions	E2
Fauna	<i>Crinia tinnula</i>	Wallum Froglet	V
Fauna	<i>Heleioporus australiacus</i>	Giant Burrowing Frog	V
Fauna	<i>Phyloria sphagnicalus</i>	Sphagnum Frog	V
Fauna	<i>Pseudophryne australis</i>	Red-crowned Toadlet	V
Fauna	<i>Litoria aurea</i>	Green and Golden Bell Frog	E1
Fauna	<i>Litoria booroolongensis</i>	Booroolong Frog	E1
Fauna	<i>Litoria brevipalmata</i>	Green-thighed Frog	V
Fauna	<i>Litoria daviesae</i>	Davies' Tree Frog	V
Fauna	<i>Litoria littlejohni</i>	Littlejohn's Tree Frog	V
Fauna	<i>Litoria subglandulosa</i>	Glandular Frog	V
Fauna	<i>Caretta caretta</i>	Loggerhead Turtle	E1
Fauna	<i>Chelonia mydas</i>	Green Turtle	V
Fauna	<i>Dermochelys coriacea</i>	Leathery Turtle	E1
Fauna	<i>Aprasia parapulchella</i>	Pink-tailed Legless Lizard	V
Fauna	<i>Varanus rosenbergi</i>	Rosenberg's Goanna	V
Fauna	<i>Hoplocephalus bungaroides</i>	Broad-headed Snake	E1
Fauna	<i>Hoplocephalus bitorquatus</i>	Pale-headed Snake	V
Fauna	<i>Hoplocephalus stephensii</i>	Stephens' Banded Snake	V
Fauna	<i>Dromaius novaehollandiae</i>	Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	E2
Fauna	<i>Leipoa ocellata</i>	Malleefowl	E1
Fauna	<i>Anseranas semipalmata</i>	Magpie Goose	V
Fauna	<i>Oxyura australis</i>	Blue-billed Duck	V
Fauna	<i>Stictonetta naevosa</i>	Freckled Duck	V
Fauna	<i>Phaethon rubricauda</i>	Red-tailed Tropicbird	V
Fauna	<i>Ptilinopus magnificus</i>	Wompoo Fruit-Dove	V
Fauna	<i>Ptilinopus regina</i>	Rose-crowned Fruit-Dove	V
Fauna	<i>Ptilinopus superbus</i>	Superb Fruit-Dove	V
Fauna	<i>Diomedea exulans</i>	Wandering Albatross	E1
Fauna	<i>Thalassarche cauta</i>	Shy Albatross	V
Fauna	<i>Thalassarche melanophrys</i>	Black-browed Albatross	V
Fauna	<i>Ardenna carneipes</i>	Flesh-footed Shearwater	V
Fauna	<i>Macronectes giganteus</i>	Southern Giant Petrel	E1
Fauna	<i>Pterodroma leucoptera leucoptera</i>	Gould's Petrel	V

Fauna	<i>Pterodroma neglecta neglecta</i>	Kermadec Petrel (west Pacific subspecies)	V
Fauna	<i>Pterodroma nigripennis</i>	Black-winged Petrel	V
Fauna	<i>Pterodroma solandri</i>	Providence Petrel	V
Fauna	<i>Puffinus assimilis</i>	Little Shearwater	V
Fauna	<i>Sula dactylatra</i>	Masked Booby	V
Fauna	<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	E1
Fauna	<i>Bataurus paicilaptilus</i>	Australasian Bittern	E1
Fauna	<i>Ixobrychus flavicallis</i>	Black Bittern	V
Fauna	^^ <i>Erythroriorchis radiatus</i>	Red Goshawk	E4A
Fauna	^^ <i>Hamirostra melanasternon</i>	Black-breasted Buzzard	V
Fauna	^^ <i>Lophoictinia isura</i>	Square-tailed Kite	V
Fauna	<i>Circus assimilis</i>	Spotted Harrier	V
Fauna	<i>Hieraaetus morphnoides</i>	Little Eagle	V
Fauna	<i>Pandion cristatus</i>	Eastern Osprey	V
Fauna	^ <i>Falca hypoleucos</i>	Grey Falcon	E1
Fauna	<i>Burhinus grallarius</i>	Bush Stone-curlew	E1
Fauna	<i>Esacus magnirostris</i>	Beach Stone-curlew	E4A
Fauna	<i>Haematopus fuliginasus</i>	Sooty Oystercatcher	V
Fauna	<i>Haematopus longirastris</i>	Pied Oystercatcher	E1
Fauna	<i>Charadrius leschenaultii</i>	Greater Sand-plover	V
Fauna	<i>Charadrius mongolus</i>	Lesser Sand-plover	V
Fauna	<i>Irediparra gallinacea</i>	Comb-crested Jacana	V
Fauna	<i>Rastratula australis</i>	Australian Painted Snipe	E1
Fauna	<i>Calidris alba</i>	Sanderling	V
Fauna	<i>Calidris ferruginea</i>	Curlew Sandpiper	E1
Fauna	<i>Calidris tenuirostris</i>	Great Knot	V
Fauna	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	V
Fauna	<i>Limosa limosa</i>	Black-tailed Godwit	V
Fauna	<i>Xenus cinereus</i>	Terek Sandpiper	V
Fauna	<i>Turnix maculosus</i>	Red-backed Button-quail	V
Fauna	<i>Gygis alba</i>	White Tern	V
Fauna	<i>Onychoprion fuscata</i>	Sooty Tern	V
Fauna	<i>Sternula albifrons</i>	Little Tern	E1
Fauna	^^ <i>Callacephalon fimbriatum</i>	Gang-gang Cockatoo	V
Fauna	^ <i>Calyptarhynchus lathamii</i>	Glossy Black-Cockatoo	V
Fauna	^^ <i>Lathamus discolor</i>	Swift Parrot	E1
Fauna	^^ <i>Neophema pulchella</i>	Turquoise Parrot	V
Fauna	<i>Glossopsitta pusilla</i>	Little Lorikeet	V
Fauna	^^ <i>Ninox connivens</i>	Barking Owl	V
Fauna	^^ <i>Ninox strenua</i>	Powerful Owl	V
Fauna	^^ <i>Tyto novaehollandiae</i>	Masked Owl	V
Fauna	^^ <i>Tyto tenebricosa</i>	Sooty Owl	V
Fauna	<i>Tyto langimembris</i>	Eastern Grass Owl	V
Fauna	<i>Atrichornis rufescens</i>	Rufous Scrub-bird	V
Fauna	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	V
Fauna	<i>Chthonicola sagittata</i>	Speckled Warbler	V

Fauna	<i>Anthochaera phrygia</i>	Regent Honeyeater	E4A
Fauna	<i>Certhionyx variegatus</i>	Pied Honeyeater	V
Fauna	<i>Epthianura albifrons</i>	White-fronted Chat	V
Fauna	<i>Grantiello picto</i>	Painted Honeyeater	V
Fauna	<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	V
Fauna	<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	V
Fauna	<i>Daphoenositta chrysoptera</i>	Varied Sittella	V
Fauna	<i>Coracina lineata</i>	Barred Cuckoo-shrike	V
Fauna	<i>Pachycephala olivacea</i>	Olive Whistler	V
Fauna	<i>Melanodryas cucullata cucullata</i>	Hooded Robin (south-eastern form)	V
Fauna	<i>Petroica boodang</i>	Scarlet Robin	V
Fauna	<i>Petroica phoenicea</i>	Flame Robin	V
Fauna	<i>Petroica rodinogaster</i>	Pink Robin	V
Fauna	<i>Stagonopleura guttata</i>	Diamond Firetail	V
Fauna	<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V
Fauna	<i>Dasyurus viverrinus</i>	Eastern Quoll	E1
Fauna	<i>Phascogale tapoetofo</i>	Brush-tailed Phascogale	V
Fauna	<i>Planigale maculata</i>	Common Planigale	V
Fauna	<i>Isodon obesulus obesulus</i>	Southern Brown Bandicoot (eastern)	E1
Fauna	<i>Phascogale cinerea</i>	Koala, Hawks Nest and Tea Gardens population	E2
Fauna	<i>Phascogale cinerea</i>	Koala	V
Fauna	<i>Cercartetus nanus</i>	Eastern Pygmy-possum	V
Fauna	<i>Petaurus australis</i>	Yellow-bellied Glider	V
Fauna	<i>Petaurus norfolcensis</i>	Squirrel Glider	V
Fauna	<i>Aepyprymnus rufescens</i>	Rufous Bettong	V
Fauna	<i>Potorous tridactylus</i>	Long-nosed Potoroo	V
Fauna	<i>Macropus parma</i>	Parma Wallaby	V
Fauna	<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	E1
Fauna	<i>Thylogale stigmatica</i>	Red-legged Pademelon	V
Fauna	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V
Fauna	<i>Syconycteris australis</i>	Common Blossom-bat	V
Fauna	<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V
Fauna	<i>Mormopterus norfolkensis</i>	Eastern Freetail-bat	V
Fauna	<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V
Fauna	<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V
Fauna	<i>Kerivoula papuensis</i>	Golden-tipped Bat	V
Fauna	<i>Miniopterus australis</i>	Little Bentwing-bat	V
Fauna	<i>Miniopterus schreibersii</i>	Eastern Bentwing-bat	V
Fauna	<i>Myotis macropus</i>	Southern Myotis	V
Fauna	<i>Nyctophilus timoriensis</i> (South-eastern form)	Greater Long-eared Bat	V
Fauna	<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V
Fauna	<i>Vespadelus troughtoni</i>	Eastern Cave Bat	V
Fauna	<i>Mastomys fuscus</i>	Broad-toothed Rat	V

Fauna	<i>Mastacomys fuscus</i>	Broad-toothed Rat at Barrington Tops in the local government areas of Gloucester, Scone and Dungog	E2
Fauna	<i>Pseudomys gracilicaudatus</i>	Eastern Chestnut Mouse	V
Fauna	<i>Pseudamys oralis</i>	Hastings River Mouse	E1
Fauna	<i>Dugong dugon</i>	Dugong	E1
Fauna	<i>Arctocephalus forsteri</i>	New Zealand Fur-seal	V
Fauna	<i>Arctocephalus pusillus doriferus</i>	Australian Fur-seal	V
Fauna	<i>Eubalaena australis</i>	Southern Right Whale	E1
Fauna	<i>Megaptera novaeangliae</i>	Humpback Whale	V
Fauna	<i>Physeter macrocephalus</i>	Sperm Whale	V
Fauna	<i>Petalura gigantea</i>	Giant Dragonfly	E1
Flora	<i>Cynanchum elegans</i>	White-flowered Wax Plant	E1
Flora	<i>Marsdenia longiloba</i>	Slender Marsdenia	E1
Flora	<i>Parsonsia darrigoensis</i>	Milky Silkpod	V
Flora	<i>Tylophora waollsii</i>	Cryptic Forest Twiner	E1
Flora	<i>Astrotricha crassifolia</i>	Thick-leaf Star-hair	V
Flora	<i>Olearia cordata</i>		V
Flora	<i>Ozathamnus tessellatus</i>		V
Flora	<i>Picris evae</i>	Hawkweed	V
Flora	<i>Rutidosis heterogama</i>	Heath Wrinklewort	V
Flora	<i>Senecio linearifolius</i> var.		E1
Flora	<i>Senecio spathulatus</i>	Coast Groundsel	E1
Flora	<i>Senecio squarrosus</i>	Swamp Groundsel	E1
Flora	<i>Stemmacantha australis</i>		E4
Flora	<i>Lepidium hyssopifolium</i>	Aromatic Peppergrass	E1
Flora	<i>Allacasuarina defungens</i>	Dwarf Heath Casuarina	E1
Flora	<i>Allocasuarina simulans</i>	Nabiac Casuarina	V
Flora	<i>Wilsonia backhousei</i>	Narrow-leafed Wilsonia	V
Flora	<i>Hibbertia pracumbens</i>	Spreading Guinea Flower	E1
Flora	<i>^^Lastreopsis hispida</i>	Bristly Shield Fern	E1
Flora	<i>Tetratheca glandulosa</i>		V
Flora	<i>Tetratheca juncea</i>	Black-eyed Susan	V
Flora	<i>^^Leucopogon confertus</i>	Torrington Beard-heath	E1
Flora	<i>Dracophyllum macranthum</i>		V
Flora	<i>Epacris purpurascens</i> var. <i>purpurascens</i>		V
Flora	<i>Styphelia perileuca</i>	Montane Green Five-corners	V
Flora	<i>Amperea xiphoclada</i> var.		E4
Flora	<i>Baloghia marmorata</i>	Jointed Baloghia	V
Flora	<i>Chamaesyce psammogeton</i>	Sand Spurge	E1
Flora	<i>Monotaxis macrophylla</i>	Large-leafed Monotaxis	E1
Flora	<i>Senna acclinis</i>	Rainforest Cassia	E1
Flora	<i>^^Indigofera efoliata</i>	Leafless Indigo	E1
Flora	<i>^^Pultenaea</i> sp. <i>Olinda</i>		E1
Flora	<i>Dillwynia tenuifolia</i>		V
Flora	<i>Kennedia retrorsa</i>		V
Flora	<i>Pultenaea glabra</i>	Smooth Bush-Pea	V

Flora	<i>Pultenaea maritima</i>	Coast Headland Pea	V
Flora	<i>Swainsana calutaides</i>	Bladder Senna	E1
Flora	<i>Swainsana sericea</i>	Silky Swainson-pea	V
Flora	^^ <i>Acacia dangarensis</i>		E1
Flora	^^ <i>Acacia pendula</i>	Acacia pendula population in the Hunter catchment	E2
Flora	<i>Acacia ausfeldii</i>	Ausfeld's Wattle	V
Flora	<i>Acacia bynaeana</i>	Bynoe's Wattle	E1
Flora	<i>Acacia caurtii</i>	North Brother Wattle	V
Flora	<i>Acacia pubescens</i>	Downy Wattle	V
Flora	<i>Acacia terminalis subsp.</i>	Sunshine Wattle	E1
Flora	<i>Velleia perfoliata</i>		V
Flora	<i>Halaragis exalata subsp. velutina</i>	Tall Velvet Sea-berry	V
Flora	<i>Maundia triglachinaides</i>		V
Flora	<i>Prastanthera askania</i>	Tranquillity Mintbush	E1
Flora	<i>Prastanthera cinealifera</i>	Singleton Mint Bush	V
Flora	<i>Prastanthera cryptandraides</i> <i>subsp. cryptandraides</i>	Wollemi Mint-bush	V
Flora	<i>Prastanthera densa</i>	Villous Mint-bush	V
Flora	<i>Prastanthera discalar</i>		V
Flora	<i>Prastanthera junanis</i>	Somersby Mintbush	E1
Flora	<i>Prastanthera marifolia</i>	Seaforth Mintbush	E4A
Flora	<i>Prastanthera stricta</i>	Mount Vincent Mint-bush	V
Flora	^^ <i>Lindsaea fraseri</i>	Fraser's Screw Fern	E1
Flora	^^ <i>Lindsaea incisa</i>	Slender Screw Fern	E1
Flora	<i>Tinaspora tinosporoides</i>	Arrow-head Vine	V
Flora	<i>Daphnandra sp. C Illawarra</i>	Illawarra Socketwood	E1
Flora	^^ <i>Baeckea kandos</i>		E1
Flora	^^ <i>Callistemon linearifolius</i>	Netted Bottle Brush	V
Flora	<i>Angophora inopina</i>	Charmhaven Apple	V
Flora	<i>Darwinia biflora</i>		V
Flora	<i>Darwinia glaucophylla</i>		V
Flora	<i>Darwinia peduncularis</i>		V
Flora	<i>Eucalyptus camaldulensis</i>	Eucalyptus camaldulensis population in the Hunter catchment	E2
Flora	<i>Eucalyptus camfieldii</i>	Camfield's Stringybark	V
Flora	<i>Eucalyptus cannonii</i>	Capertee Stringybark	V
Flora	<i>Eucalyptus costrensis</i>	Singleton Mallee	E1
Flora	<i>Eucalyptus corticosa</i>	Creswick Apple Box	V
Flora	<i>Eucalyptus frocta</i>	Broken Back Ironbark	V
Flora	<i>Eucalyptus glaucina</i>	Slaty Red Gum	V
Flora	<i>Eucalyptus nicholii</i>	Narrow-leaved Black Peppermint	V
Flora	<i>Eucalyptus oblonga</i>	Eucalyptus oblonga DC. at Bateau Bay, Forresters Beach and Tumby Umbi in the Wyong local government	E2
Flora	<i>Eucalyptus oresbia</i>	Small-fruited Mountain Gum	V
Flora	<i>Eucalyptus parramattensis subsp.</i> <i>decadens</i>		V

Flora	<i>Eucalyptus parramattensis</i> subsp. <i>parramattensis</i>	Eucalyptus parramattensis C. Hall. subsp. parramattensis in Wyong and Lake Macquarie local government	E2
Flora	<i>Eucalyptus pulverulenta</i>	Silver-leafed Gum	V
Flora	<i>Eucalyptus pumila</i>	Pokolbin Mallee	V
Flora	<i>Eucalyptus seeana</i>	Eucalyptus seeana population in the Greater Taree local government area	E2
Flora	<i>Eucalyptus</i> sp. <i>Howes Swamp</i>		E1
Flora	<i>Homoranthus darwinoides</i>		V
Flora	<i>Leptospermum deanei</i>		V
Flora	<i>Melaleuca biconvexa</i>	Biconvex Paperbark	V
Flora	<i>Melaleuca graveana</i>	Grove's Paperbark	V
Flora	<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	E1
Flora	^ <i>Caladenia parphyrea</i>		E1
Flora	^ <i>Caladenia tessellata</i>	Thick Lip Spider Orchid	E1
Flora	^ <i>Chiloglottis platyptera</i>	Barrington Tops Ant Orchid	V
Flora	^ <i>Corybas dowlingii</i>	Red Helmet Orchid	E1
Flora	^ <i>Cryptastylis hunteriana</i>	Leafless Tongue Orchid	V
Flora	^ <i>Cymbidium canaliculatum</i>	Cymbidium canaliculatum population in the Hunter Catchment	E2
Flora	^ <i>Dendrobium melaleucaphilum</i>	Spider orchid	E1
Flora	^ <i>Diuris arenaria</i>	Sand Doubletail	E1
Flora	^ <i>Diuris bracteata</i>		E1
Flora	^ <i>Diuris flavescens</i>	Pale Yellow Doubletail	E4A
Flora	^ <i>Diuris pedunculata</i>	Small Snake Orchid	E1
Flora	^ <i>Diuris praecox</i>	Rough Doubletail	V
Flora	^ <i>Diuris tricolor</i>	Pine Donkey Orchid population in the Muswellbrook local government area	E2
Flora	^ <i>Diuris tricolor</i>	Pine Donkey Orchid	V
Flora	^ <i>Diuris venosa</i>	Veined Doubletail	V
Flora	^ <i>Genoplesium insignis</i>	Variable Midge Orchid	E1
Flora	^ <i>Genoplesium littorale</i>	Tuncurry Midge Orchid	E4A
Flora	^ <i>Prasaphyllum fuscum</i>	Slaty Leek Orchid	E4A
Flora	^ <i>Pterostylis cucullata</i>	Leafy Greenhood	V
Flora	^ <i>Pterostylis elegans</i>	Elegant Greenhood	V
Flora	^ <i>Pterostylis gibbasa</i>	Illawarra Greenhood	E1
Flora	^ <i>Pterostylis nigricans</i>	Dark Greenhood	V
Flora	^ <i>Rhizanthella slateri</i>	Rhizanthella slateri (Rupp) M.A. Clem. & Cribb in the Great Lakes local government area	E2
Flora	^ <i>Rhizanthella slateri</i>	Eastern Australian Underground	V
Flora	^ <i>Thelymitra</i> sp. <i>adorata</i>	Wyong Sun Orchid	E4A
Flora	<i>Muehlenbeckia costata</i>	Scrambling Lignum	V
Flora	<i>Persicaria elatior</i>	Tall Knotweed	V
Flora	^^ <i>Persaania pauciflora</i>	North Rothbury Persoonia	E4A
Flora	<i>Banksia conferta</i> subsp. <i>conferta</i>		E4A
Flora	<i>Grevillea guthrieana</i>	Guthrie's Grevillea	E1
Flora	<i>Grevillea obtusiflora</i>		E1

Flora	<i>Grevillea parviflora subsp.</i>	Small-flower Grevillea	V
Flora	<i>Grevillea shiressii</i>		V
Flora	<i>Hakea archaeoides</i>	Big Nellie Hakea	V
Flora	<i>Macadamia tetraphylla</i>	Rough-shelled Bush Nut	V
Flora	<i>Persoonia hirsuta</i>	Hairy Geebung	E1
Flora	<i>Clematis fawcettii</i>	Northern Clematis	V
Flora	<i>Pomaderris bodalla</i>	Bodalla Pomaderris	V
Flora	<i>Pomaderris brunnea</i>	Brown Pomaderris	V
Flora	<i>Pomaderris queenslandica</i>	Scant Pomaderris	E1
Flora	<i>Pomaderris reperta</i>	Denman Pomaderris	E4A
Flora	<i>Pomaderris sericea</i>	Silky Pomaderris	E1
Flora	<i>Asperula asthenes</i>	Trailing Woodruff	V
Flora	<i>^Leonema lamprophyllum subsp. obovatum</i>	Leonema lamprophyllum subsp. obovatum population in the Hunter Catchment	E2
Flora	<i>Asterolasia buxifolia</i>		E1
Flora	<i>Asterolasia sp. "Dungowan Creek"</i>	Dungowan Starbush	E1
Flora	<i>Boronia ruppil</i>	Rupp's Boronia	E1
Flora	<i>Boronia umbellata</i>	Orara Boronia	V
Flora	<i>Zieria lasiocaulis</i>	Willi Willi Zieria	E1
Flora	<i>Thesium australe</i>	Austral Toadflax	V
Flora	<i>Cupaniopsis serrata</i>	Smooth Tuckeroo	E1
Flora	<i>Derwentia blakelyi</i>		V
Flora	<i>Euphrasia arguta</i>		E4A
Flora	<i>Euphrasia ciliolata</i>	Polblue Eyebright	V
Flora	<i>Lindernia alsinoides</i>	Noah's False Chickweed	E1
Flora	<i>Commersonia rosea</i>		E1
Flora	<i>Lasiopetalum longistomineum</i>		V
Flora	<i>Rulingia procumbens</i>		V
Flora	<i>Rulingia prostrata</i>	Dwarf Kerrawang	E1
Flora	<i>Pimelea curviflora var. curviflora</i>		V
Flora	<i>Tasmannia glaucifolia</i>	Fragrant Pepperbush	V
Flora	<i>Tasmannia purpurascens</i>	Broad-leaved Pepperbush	V
Flora	<i>Zannichellia palustris</i>		E1

Hunter CMA Subregion Search

CMA Sub-region	Profile ID	Scientific Name	Common Name	Occurrence	Geographic Restrictions
Hunter/Central Rivers - Hunter	10006	<i>Acacia bynoeana</i>	Bynoe's Wattle	Known	
Hunter/Central Rivers - Hunter	10053	<i>Angophora inopina</i>	Charmhaven Apple	Known	East of Kurri Kurri
Hunter/Central Rivers - Hunter	10056	<i>Anseranas semipalmata</i>	Magpie Goose	Known	east of Cessnock
Hunter/Central Rivers - Hunter	10105	<i>Botaurus poiciloptilus</i>	Australasian Bittern	Known	east of Cessnock
Hunter/Central Rivers - Hunter	10113	<i>Burhinus grallarius</i>	Bush Stone-curlew	Known	
Hunter/Central Rivers - Hunter	10128	<i>Calidris tenuirostris</i>	Great Knot	Known	within 5 km of the coast and tidal influenced water bodies
Hunter/Central Rivers - Hunter	10129	<i>Callistemon linearifolius</i>	Netted Bottle Brush	Known	
Hunter/Central Rivers - Hunter	10140	<i>Calyptorhynchus lathami</i>	Glossy Black-Cockatoo	Known	
Hunter/Central Rivers - Hunter	10146	<i>Caretta caretta</i>	Loggerhead Turtle	Predicted	within 1 km of the coast and tidal influenced water bodies
Hunter/Central Rivers - Hunter	10155	<i>Cercartetus nanus</i>	Eastern Pygmy-possum	Predicted	
Hunter/Central Rivers - Hunter	10157	<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	Known	
Hunter/Central Rivers - Hunter	10160	<i>Chamaesyce psammogeton</i>	Sand Spurge	Predicted	
Hunter/Central Rivers - Hunter	10161	<i>Charadrius leschenaultii</i>	Greater Sand-plover	Known	
Hunter/Central Rivers - Hunter	10162	<i>Charadrius mongolus</i>	Lesser Sand-plover	Known	
Hunter/Central Rivers - Hunter	10171	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	Known	
Hunter/Central Rivers - Hunter	10183	<i>Crinia tinnula</i>	Wallum Froglet	Known	
Hunter/Central Rivers - Hunter	10187	<i>Cryptostylis hunteriana</i>	Leafless Tongue Orchid	Predicted	
Hunter/Central Rivers - Hunter	10196	<i>Cynanchum elegans</i>	White-flowered Wax Plant	Known	
Hunter/Central Rivers - Hunter	10207	<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	Known	
Hunter/Central Rivers - Hunter	10239	<i>Diuris pedunculata</i>	Small Snake Orchid	Known	
Hunter/Central Rivers - Hunter	10240	<i>Diuris praecox</i>	Rough Doubletail	Predicted	East of Maitland
Hunter/Central Rivers - Hunter	10243	<i>Diuris tricolor</i>	Pine Donkey Orchid	Known	
Hunter/Central Rivers - Hunter	10250	<i>Dromaius novaehollandiae</i> - endangered population	Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	Known	Component of Subregion that occurs within NSW North Coast Bioregion or Port Stephens LGA only.
Hunter/Central Rivers - Hunter	10275	<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	Known	
Hunter/Central Rivers - Hunter	10287	<i>Eucalyptus camfieldii</i>	Camfield's Stringybark	Predicted	
Hunter/Central Rivers - Hunter	10294	<i>Eucalyptus fracta</i>	Broken Back Ironbark	Known	shallow soils on the upper and northern escarpment of the Broken Back Range, near Cessnock.
Hunter/Central Rivers - Hunter	10295	<i>Eucalyptus glauca</i>	Slaty Red Gum	Known	
Hunter/Central Rivers - Hunter	10305	<i>Eucalyptus parramattensis</i> subsp. <i>decadens</i>	<i>Eucalyptus parramattensis</i> subsp. <i>decadens</i>	Known	
Hunter/Central Rivers - Hunter	10309	<i>Eucalyptus pumila</i>	Pokolbin Mallee	Known	
Hunter/Central Rivers - Hunter	10331	<i>Falstrelus tasmaniensis</i>	Eastern False Pipistrelle	Known	
Hunter/Central Rivers - Hunter	10354	<i>Goodenia macbarronii</i>	Narrow Goodenia	Known	
Hunter/Central Rivers - Hunter	10357	<i>Grantiella picta</i>	Painted Honeyeater	Known	
Hunter/Central Rivers - Hunter	10373	<i>Grevillea parviflora</i> subsp. <i>parviflora</i>	Small-flower Grevillea	Known	
Hunter/Central Rivers - Hunter	10385	<i>Haematopus fuliginosus</i>	Sooty Oystercatcher	Known	
Hunter/Central Rivers - Hunter	10386	<i>Haematopus longirostris</i>	Pied Oystercatcher	Known	
Hunter/Central Rivers - Hunter	10412	<i>Hoplocephalus bitorquatus</i>	Pale-headed Snake	Known	
Hunter/Central Rivers - Hunter	10414	<i>Hoplocephalus stephensi</i>	Stephens' Banded Snake	Known	Within 10 km radius of Cessnock
Hunter/Central Rivers - Hunter	10416	Hunter Lowland Redgum Forest in the Sydney Basin and New South Wales North Coast Bioregions	Hunter Lowland Redgum Forest in the Sydney Basin and New South Wales North Coast Bioregions	Known	
Hunter/Central Rivers - Hunter	10435	<i>Irediparra gallinacea</i>	Comb-crested Jacana	Known	
Hunter/Central Rivers - Hunter	10441	<i>Ixobrychus flavicollis</i>	Black Bittern	Predicted	
Hunter/Central Rivers - Hunter	10449	Kurri Sand Swamp Woodland in the Sydney Basin Bioregion	Kurri Sand Swamp Woodland in the Sydney Basin Bioregion	Known	poorly drained sands within a 10 km radius of Kurri Kurri
Hunter/Central Rivers - Hunter	10455	<i>Lathamus discolor</i>	Swift Parrot	Known	
Hunter/Central Rivers - Hunter	10478	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	Known	
Hunter/Central Rivers - Hunter	10479	<i>Limosa limosa</i>	Black-tailed Godwit	Known	
Hunter/Central Rivers - Hunter	10483	<i>Litoria aurea</i>	Green and Golden Bell Frog	Known	
Hunter/Central Rivers - Hunter	10485	<i>Litoria brevipalmata</i>	Green-thighed Frog	Known	
Hunter/Central Rivers - Hunter	10495	<i>Lophoctinia isura</i>	Square-tailed Kite	Known	
Hunter/Central Rivers - Hunter	10511	<i>Maundia triglochinos</i>	<i>Maundia triglochinos</i>	Predicted	
Hunter/Central Rivers - Hunter	10514	<i>Melaleuca biconvexa</i>	Biconvex Paperbark	Predicted	
Hunter/Central Rivers - Hunter	10516	<i>Melaleuca groveana</i>	Grove's Paperbark	Predicted	
Hunter/Central Rivers - Hunter	10519	<i>Melanodryas cucullata cucullata</i>	Hooded Robin (south-eastern form)	Known	
Hunter/Central Rivers - Hunter	10523	<i>Meliphaga gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	Known	
Hunter/Central Rivers - Hunter	10533	<i>Miniopterus australis</i>	Little Bentwing-bat	Known	
Hunter/Central Rivers - Hunter	10534	<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	Known	
Hunter/Central Rivers - Hunter	10544	<i>Mormopterus norfolkensis</i>	Eastern Freetail-bat	Known	
Hunter/Central Rivers - Hunter	10549	<i>Myotis macropus</i>	Southern Myotis	Known	
Hunter/Central Rivers - Hunter	10555	<i>Neophema pulchella</i>	Turquoise Parrot	Known	
Hunter/Central Rivers - Hunter	10561	<i>Ninox connivens</i>	Barking Owl	Known	
Hunter/Central Rivers - Hunter	10562	<i>Ninox strenua</i>	Powerful Owl	Known	
Hunter/Central Rivers - Hunter	10568	<i>Nyctophilus timoriensis</i> (South-eastern form)	Greater Long-eared Bat	Known	
Hunter/Central Rivers - Hunter	10580	<i>Oxyura australis</i>	Blue-billed Duck	Known	
Hunter/Central Rivers - Hunter	10585	<i>Pandion cristatus</i>	Eastern Osprey	Known	
Hunter/Central Rivers - Hunter	10590	<i>Persicaria elatior</i>	Tall Knotweed	Known	
Hunter/Central Rivers - Hunter	10599	<i>Persoonia pauciflora</i>	North Rothbury Persoonia	Known	only occurs in Cessnock and Maitland LGAs
Hunter/Central Rivers - Hunter	10601	<i>Petaurus australis</i>	Yellow-bellied Glider	Known	
Hunter/Central Rivers - Hunter	10604	<i>Petaurus norfolcensis</i>	Squirrel Glider	Known	
Hunter/Central Rivers - Hunter	10605	<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	Known	
Hunter/Central Rivers - Hunter	10613	<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	Known	
Hunter/Central Rivers - Hunter	10616	<i>Phascogale cinerea</i>	Koala	Known	
Hunter/Central Rivers - Hunter	10621	<i>Phyllothea ericifolia</i>	<i>Phyllothea ericifolia</i>	Known	
Hunter/Central Rivers - Hunter	10635	<i>Planigale maculata</i>	Common Planigale	Predicted	
Hunter/Central Rivers - Hunter	10656	<i>Pomaderris queenslandica</i>	Scant Pomaderris	Known	
Hunter/Central Rivers - Hunter	10657	<i>Pomaderris reperta</i>	Denman Pomaderris	Known	
Hunter/Central Rivers - Hunter	10660	<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	Known	
Hunter/Central Rivers - Hunter	10672	<i>Prostanthera cineolifera</i>	Singleton Mint Bush	Known	
Hunter/Central Rivers - Hunter	10673	<i>Prostanthera cryptandroides</i> subsp. <i>cryptandroides</i>	Wollemi Mint-bush	Predicted	
Hunter/Central Rivers - Hunter	10692	<i>Pseudophryne australis</i>	Red-crowned Toadlet	Known	Triassic sandstone areas
Hunter/Central Rivers - Hunter	10697	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Known	
Hunter/Central Rivers - Hunter	10701	<i>Pterostylis gibbosa</i>	Illawarra Greenhood	Known	
Hunter/Central Rivers - Hunter	10707	<i>Ptilinopus magnificus</i>	Wompoo Fruit-Dove	Known	
Hunter/Central Rivers - Hunter	10708	<i>Ptilinopus regina</i>	Rose-crowned Fruit-Dove	Known	

Hunter CMA Subregion Search

CMA Sub-region	Profile ID	Scientific Name	Common Name	Occurrence	Geographic Restrictions
Hunter/Central Rivers - Hunter	10709	<i>Ptilinopus superbus</i>	Superb Fruit-Dove	Known	
Hunter/Central Rivers - Hunter	10722	<i>Chthonicola sagittata</i>	Speckled Warbler	Known	
Hunter/Central Rivers - Hunter	10734	<i>Rostratula australis</i>	Australian Painted Snipe	Known	
Hunter/Central Rivers - Hunter	10736	<i>Rulingia prostrata</i>	Dwarf Kurrumbidgee	Predicted	
Hunter/Central Rivers - Hunter	10737	<i>Rutidosis heterogama</i>	Heath Winklewort	Known	South and east of Jerrys Plains
Hunter/Central Rivers - Hunter	10741	<i>Saccolaimus flaviventris</i>	Yellow-bellied Shearwater	Known	
Hunter/Central Rivers - Hunter	10748	<i>Scotoplanes rostratus</i>	Greater Broad-nosed Bat	Known	
Hunter/Central Rivers - Hunter	10768	<i>Stagonopleura guttata</i>	Diamond Firetail	Known	
Hunter/Central Rivers - Hunter	10769	<i>Sterna albifrons</i>	Little Tern	Known	
Hunter/Central Rivers - Hunter	10771	<i>Stictonetta naevosa</i>	Freckled Duck	Known	
Hunter/Central Rivers - Hunter	10786	Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Known	
Hunter/Central Rivers - Hunter	10787	River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Known	
Hunter/Central Rivers - Hunter	10788	Sydney Freshwater Wetlands in the Sydney Basin Bioregion	Sydney Freshwater Wetlands in the Sydney Basin Bioregion	Known	
Hunter/Central Rivers - Hunter	10794	<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	Predicted	
Hunter/Central Rivers - Hunter	10799	<i>Tetratheca juncea</i>	Black-eyed Susan	Known	
Hunter/Central Rivers - Hunter	10820	<i>Tyto novaehollandiae</i>	Masked Owl	Known	
Hunter/Central Rivers - Hunter	10821	<i>Tyto tenebrosa</i>	Sooty Owl	Known	
Hunter/Central Rivers - Hunter	10829	<i>Vespertilio corollae</i>	Eastern Cave Bat	Known	
Hunter/Central Rivers - Hunter	10833	Warkworth Sands Woodland of the Sydney Basin Bioregion	Warkworth Sands Woodland of the Sydney Basin Bioregion	Known	
Hunter/Central Rivers - Hunter	10837	White Box Yellow Box Black's Red Gum Woodland	White Box Yellow Box Black's Red Gum Woodland	Known	
Hunter/Central Rivers - Hunter	10841	<i>Anthochaera phrygia</i>	Regent Honeyeater	Known	
Hunter/Central Rivers - Hunter	10843	<i>Xenus cinereus</i>	Terek Sandpiper	Known	
Hunter/Central Rivers - Hunter	10847	<i>Zannichellia palustris</i>	Zannichellia palustris	Known	
Hunter/Central Rivers - Hunter	10866	Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Predicted	intertidal zone of estuaries and lagoons
Hunter/Central Rivers - Hunter	10867	Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Predicted	within 2 km of the sea, but may occasionally be found further inland within reach of maritime influence
Hunter/Central Rivers - Hunter	10928	<i>Eucalyptus castrensis</i>	Singleton Mallee	Known	the Singleton Training Area
Hunter/Central Rivers - Hunter	10929	Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Known	
Hunter/Central Rivers - Hunter	10939	<i>Pultenaea maritima</i>	Coast Headland Pea	Known	within 1 km of the coast
Hunter/Central Rivers - Hunter	10942	Lower Hunter Spotted Gum - Ironbark Forest in the Sydney Basin Bioregion	Lower Hunter Spotted Gum - Ironbark Forest in the Sydney Basin Bioregion	Known	Only in Sydney Basin Bioregion component of this subregion
Hunter/Central Rivers - Hunter	10945	Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Known	
Hunter/Central Rivers - Hunter	10967	<i>Acacia pendula</i> - endangered population	<i>Acacia pendula</i> population in the Hunter catchment	Known	
Hunter/Central Rivers - Hunter	10968	<i>Eucalyptus camaldulensis</i> - endangered population	<i>Eucalyptus camaldulensis</i> population in the Hunter catchment	Known	
Hunter/Central Rivers - Hunter	10975	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	Known	
Hunter/Central Rivers - Hunter	20001	Alteration of habitat following subsidence due to longwall mining	Alteration of habitat following subsidence due to longwall mining	Predicted	
Hunter/Central Rivers - Hunter	20002	Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	Predicted	
Hunter/Central Rivers - Hunter	20003	Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations	Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations	Predicted	
Hunter/Central Rivers - Hunter	20004	Competition from feral honey bees, <i>Apis mellifera</i> L.	Competition from feral honey bees, <i>Apis mellifera</i> L.	Predicted	
Hunter/Central Rivers - Hunter	20005	Introduction of the Large Earth Bumblebee <i>Bombus terrestris</i> (L.)	Introduction of the Large Earth Bumblebee <i>Bombus terrestris</i> (L.)	Predicted	
Hunter/Central Rivers - Hunter	20006	Bushrock removal	Bushrock removal	Predicted	
Hunter/Central Rivers - Hunter	20007	Loss or degradation (or both) of sites used for hill-topping by butterflies	Loss or degradation (or both) of sites used for hill-topping by butterflies	Predicted	
Hunter/Central Rivers - Hunter	20008	Predation by the Feral Cat <i>Felis catus</i> (Linnaeus, 1758)	Predation by the Feral Cat <i>Felis catus</i> (Linnaeus, 1758)	Predicted	
Hunter/Central Rivers - Hunter	20009	Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	Predicted	
Hunter/Central Rivers - Hunter	20010	Invasion of the Yellow Crazy Ant, <i>Anoplolepis gracilipes</i> (Fr. Smith) into NSW	Invasion of the Yellow Crazy Ant, <i>Anoplolepis gracilipes</i> (Fr. Smith) into NSW	Predicted	
Hunter/Central Rivers - Hunter	20011	Removal of dead wood and dead trees	Removal of dead wood and dead trees	Predicted	
Hunter/Central Rivers - Hunter	20012	Herbivory and environmental degradation caused by feral deer	Herbivory and environmental degradation caused by feral deer	Predicted	
Hunter/Central Rivers - Hunter	20014	High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	Predicted	
Hunter/Central Rivers - Hunter	20015	Predation by the European Red Fox <i>Vulpes Vulpes</i> (Linnaeus, 1758)	Predation by the European Red Fox <i>Vulpes Vulpes</i> (Linnaeus, 1758)	Predicted	
Hunter/Central Rivers - Hunter	20016	Predation by <i>Gambusia holbrooki</i> Girard, 1859 (Plague Minnow or Mosquito Fish)	Predation by <i>Gambusia holbrooki</i> Girard, 1859 (Plague Minnow or Mosquito Fish)	Predicted	
Hunter/Central Rivers - Hunter	20017	Competition and habitat degradation by Feral Goats, <i>Capra hircus</i> Linnaeus 1758	Competition and habitat degradation by Feral Goats, <i>Capra hircus</i> Linnaeus 1758	Predicted	
Hunter/Central Rivers - Hunter	20018	Invasion of native plant communities by exotic perennial grasses	Invasion of native plant communities by exotic perennial grasses	Predicted	

Hunter CMA Subregion Search

CMA Sub-region	Profile ID	Scientific Name	Common Name	Occurrence	Geographic Restrictions
Hunter/Central Rivers - Hunter	20020	Predation, habitat degradation, competition and disease transmission by Feral Pigs, <i>Sus scrofa</i> Linnaeus 1758	Predation, habitat degradation, competition and disease transmission by Feral Pigs, <i>Sus scrofa</i> Linnaeus 1758	Predicted	
Hunter/Central Rivers - Hunter	20021	Importation of Red Imported Fire Ants <i>Solenopsis invicta</i> Buren 1972	Importation of Red Imported Fire Ants <i>Solenopsis invicta</i> Buren 1972	Predicted	
Hunter/Central Rivers - Hunter	20023	Clearing of native vegetation	Clearing of native vegetation	Predicted	
Hunter/Central Rivers - Hunter	20024	Competition and grazing by the feral European Rabbit, <i>Oryctolagus cuniculus</i> (L.)	Competition and grazing by the feral European Rabbit, <i>Oryctolagus cuniculus</i> (L.)	Predicted	
Hunter/Central Rivers - Hunter	20025	Anthropogenic Climate Change	Anthropogenic Climate Change	Predicted	
Hunter/Central Rivers - Hunter	20026	Infection of native plants by <i>Phytophthora cinnamomi</i>	Infection of native plants by <i>Phytophthora cinnamomi</i>	Predicted	
Hunter/Central Rivers - Hunter	20027	Invasion of native plant communities by <i>Chrysanthemoides monilifera</i>	Invasion of native plant communities by <i>Chrysanthemoides monilifera</i>	Predicted	
Hunter/Central Rivers - Hunter	20030	Hunter Valley Weeping Myall Woodland of the Sydney Basin Bioregion	Hunter Valley Weeping Myall Woodland of the Sydney Basin Bioregion	Known	
Hunter/Central Rivers - Hunter	20031	<i>Pomaderris bodalla</i>	<i>Bodalla Pomaderris</i>	Known	
Hunter/Central Rivers - Hunter	20043	Invasion and establishment of the Cane Toad (<i>Bufo marinus</i>)	Invasion and establishment of the Cane Toad (<i>Bufo marinus</i>)	Predicted	
Hunter/Central Rivers - Hunter	20044	Invasion, establishment and spread of <i>Lantana</i> (<i>Lantana camara</i> L. sens. Lat)	Invasion, establishment and spread of <i>Lantana</i> (<i>Lantana camara</i> L. sens. Lat)	Predicted	
Hunter/Central Rivers - Hunter	20049	<i>Cymbidium canaliculatum</i> - endangered population	<i>Cymbidium canaliculatum</i> population in the Hunter Catchment	Known	Must be within Hunter catchment as defined by Australias River Basins (Geoscience Australia 1997)
Hunter/Central Rivers - Hunter	20052	Invasion and establishment of exotic vines and scramblers	Invasion and establishment of exotic vines and scramblers	Predicted	
Hunter/Central Rivers - Hunter	20065	Invasion and establishment of Scotch Broom (<i>Cytisus scoparius</i>)	Invasion and establishment of Scotch Broom (<i>Cytisus scoparius</i>)	Predicted	
Hunter/Central Rivers - Hunter	20073	Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions	Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions	Known	
Hunter/Central Rivers - Hunter	20075	<i>Diuris tricolor</i> - endangered population	Pine Donkey Orchid population in the Muswellbrook local government area	Known	Within Muswellbrook LGA
Hunter/Central Rivers - Hunter	20076	<i>Leionema lamprophyllum</i> subsp. <i>obovatum</i> - endangered population	<i>Leionema lamprophyllum</i> subsp. <i>obovatum</i> population in the Hunter Catchment	Predicted	
Hunter/Central Rivers - Hunter	20079	Loss of Hollow-bearing Trees	Loss of Hollow-bearing Trees	Predicted	
Hunter/Central Rivers - Hunter	20098	Lower Hunter Valley Dry Rainforest in the Sydney Basin and NSW North Coast Bioregions	Lower Hunter Valley Dry Rainforest in the Sydney Basin and NSW North Coast Bioregions	Known	
Hunter/Central Rivers - Hunter	20108	Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	Predicted	
Hunter/Central Rivers - Hunter	20114	Hunter Valley Vine Thicket in the NSW North Coast and Sydney Basin Bioregions	Hunter Valley Vine Thicket in the NSW North Coast and Sydney Basin Bioregions	Known	
Hunter/Central Rivers - Hunter	20116	Predation and hybridisation by Feral Dogs, <i>Canis lupus familiaris</i>	Predation and hybridisation by Feral Dogs, <i>Canis lupus familiaris</i>	Predicted	
Hunter/Central Rivers - Hunter	20126	Central Hunter Grey Box - Ironbark Woodland in the NSW North Coast and Sydney Basin Bioregions	Central Hunter Grey Box - Ironbark Woodland in the NSW North Coast and Sydney Basin Bioregions	Known	
Hunter/Central Rivers - Hunter	20127	Central Hunter Ironbark - Spotted Gum - Grey Box Forest in the NSW North Coast and Sydney Basin Bioregions	Central Hunter Ironbark - Spotted Gum - Grey Box Forest in the NSW North Coast and Sydney Basin Bioregions	Known	
Hunter/Central Rivers - Hunter	20129	<i>Petroica phoenicea</i>	Flame Robin	Known	
Hunter/Central Rivers - Hunter	20130	Hunter Valley Footslopes Slaty Gum Woodland in the Sydney Basin Bioregion	Hunter Valley Footslopes Slaty Gum Woodland in the Sydney Basin Bioregion	Known	
Hunter/Central Rivers - Hunter	20131	<i>Hieraaetus morphnoides</i>	Little Eagle	Known	
Hunter/Central Rivers - Hunter	20133	<i>Petroica boodang</i>	Scarlet Robin	Known	
Hunter/Central Rivers - Hunter	20134	<i>Circus assimilis</i>	Spotted Harrier	Known	
Hunter/Central Rivers - Hunter	20135	<i>Daphoenositta chrysoptera</i>	Varied Sittella	Known	
Hunter/Central Rivers - Hunter	20141	Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions	Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions	Known	
Hunter/Central Rivers - Hunter	20143	<i>Epthianura albifrons</i>	White-fronted Chat	Known	
Hunter/Central Rivers - Hunter	20153	Invasion of Native Plant Communities by African Olive <i>Olea europaea</i> L. subsp. <i>cuspidata</i> (Wall ex G.Don Ciferri)	Invasion of Native Plant Communities by African Olive <i>Olea europaea</i> L. subsp. <i>cuspidata</i> (Wall ex G.Don Ciferri)	Predicted	
Hunter/Central Rivers - Hunter	20240	<i>Bothriochloa biloba</i>	Lobed Bluegrass	Known	
Hunter/Central Rivers - Hunter	20257	<i>Prasophyllum</i> sp. <i>Wybong</i>	<i>Prasophyllum</i> sp. <i>Wybong</i>	Known	



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 about the EPBC Act including significance guidelines, forms and application process details can be found at <http://www.environment.gov.au/epbc/assessmentsapprovals/index.html>

Report created: 25/05/12 13:22:23

[Summary](#)

[Details](#)

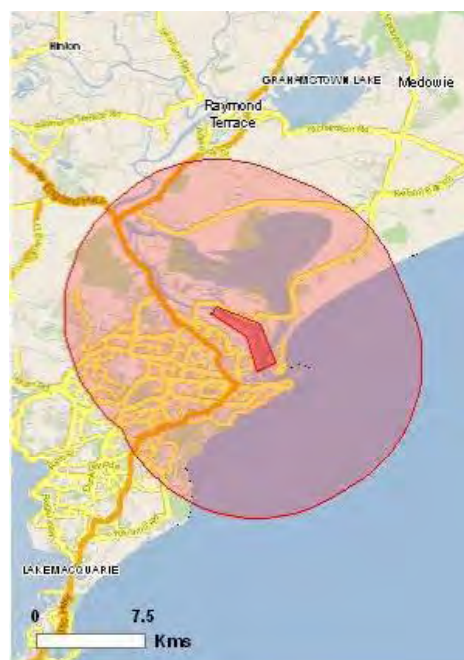
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

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[Coordinates](#)

Buffer: 10.0Km



Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see <http://www.environment.gov.au/epbc/assessmentsapprovals/guidelines/index.html>

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	1
Threatened Ecological Communities:	2
Threatened Species:	56
Migratory Species:	68

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 and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage/index.html>

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.

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. Information on EPBC Act permit requirements and application forms can be found at <http://www.environment.gov>.

Commonwealth Lands:	16
Commonwealth Heritage Places:	2
Listed Marine Species:	87
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves:	None

Extra Information

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

Place on the RNE:	146
State and Territory Reserves:	6
Regional Forest Agreements:	1
Invasive Species:	15
Nationally Important Wetlands:	4

Details

Matters of National Environmental Significance

Wetlands of International Significance (RAMSAR)	[Resource Information]
Name	Proximity
Hunter estuary wetlands	Within Ramsar site

Commonwealth Marine Areas	[Resource Information]
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Approval may be required for a proposed activity that is likely to have a significant impact on the environment in a Commonwealth Marine Area, when the action is outside the Commonwealth Marine Area, or the environment anywhere when the action is taken within the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred

Name
EEZ and Territorial Sea

Threatened Ecological Communities	[Resource Information]
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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
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Threatened Species		[Resource Information]
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Name	Status	Type of Presence
BIRDS		
Anthochaera phrygia Regent Honeyeater [82338]	Endangered	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat likely to occur within area
Diomedea exulans amsterdamensis Amsterdam Albatross [82330]	Endangered	Species or species habitat may occur within area
Diomedea exulans antipodensis Antipodean Albatross [82269]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans exulans Tristan Albatross [82337]	Endangered	Foraging, feeding or related behaviour may occur within area
Diomedea exulans gibsoni Gibson's Albatross [82271]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Species or species habitat may 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
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Macronectes giganteus 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
Pterodroma leucoptera leucoptera Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Sternula nereis nereis Fairy Tern (Australian) [82950]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta salvinii Salvin's Albatross [82343]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	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 melanophris impavida Campbell Albatross [82449]	Vulnerable	Species or species habitat may occur within area
FISH		
Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area
FROGS		
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area
Litoria littlejohni Littlejohn's Tree Frog, Heath Frog [64733]	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 may 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 may occur within area
Eubalaena australis Southern Right Whale [40]	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
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may 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
Potorous tridactylus tridactylus Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species

Name	Status	Type of Presence
Pseudomys novaehollandiae New Holland Mouse [96]	Vulnerable	habitat may occur within area Species or species habitat known to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
PLANTS		
Allocasuarina defungens Dwarf Heath Casuarina [21924]	Endangered	Species or species habitat likely to occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
Diuris praecox Newcastle Doubletail [55086]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus camfieldii Camfield's Stringybark [15460]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus parramattensis subsp. decadens Earp's Gum, Earp's Dirty Gum [56148]	Vulnerable	Species or species habitat likely to occur within area
Grevillea parviflora subsp. parviflora Small-flower Grevillea [64910]	Vulnerable	Species or species habitat likely to occur within area
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat known to occur within area
Persicaria elatior Knotweed [5831]	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
Rulingia prostrata Dwarf Kerrawang [13534]	Endangered	Species or species habitat likely to occur within area
Tetratheca juncea Black-eyed Susan [21407]	Vulnerable	Species or species habitat known to occur within area
REPTILES		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat 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 likely 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

Name	Status	Type of Presence
Natator depressus Flatback Turtle [59257]	Vulnerable	habitat likely to occur within area Species or species habitat likely to occur within area
SHARKS		
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat may occur within area
Carcharodon carcharias Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
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 may occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding likely to occur within area
Ardea ibis Cattle Egret [59542]		Breeding likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered*	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable*	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered*	Foraging, feeding or related behaviour may occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Species or species habitat may occur within area
Diomedea gibsoni Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
Macronectes giganteus 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
Pterodroma leucoptera leucoptera Gould's Petrel [26033]	Endangered	Species or species

Name	Threatened	Type of Presence
Puffinus leucomelas Streaked Shearwater [66541]		habitat may occur within area Species or species habitat may occur within area
Sterna albifrons Little Tern [813]		Breeding may occur within area
Thalassarche bulleri Buller's Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta (sensu stricto) Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat may occur within area
Thalassarche impavida Campbell 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*	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Species or species habitat may occur within area
Migratory Marine Species		
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]		Species or species habitat may occur within area
Carcharodon carcharias Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat 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 likely to occur within area
Dugong dugon Dugong [28]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur

Name	Threatened	Type of Presence
Lagenorhynchus obscurus Dusky Dolphin [43]		within area Species or species habitat may occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to 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 likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]		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
Myiagra cyanoleuca Satin Flycatcher [612]		Breeding likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Breeding may occur within area
Xanthomyza phrygia Regent Honeyeater [430]	Endangered*	Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Roosting known to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding likely to occur within area
Ardea ibis Cattle Egret [59542]		Breeding likely to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]		Roosting known to occur within area

Name	Threatened	Type of Presence
Calidris ferruginea Curlew Sandpiper [856]		Roosting known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]		Roosting known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]		Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]		Roosting known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Roosting known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Numenius madagascariensis Eastern Curlew [847]		Roosting known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Vulnerable*	Species or species habitat likely to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [\[Resource Information \]](#)

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

Name
Commonwealth Land -
Commonwealth Land - Australian & Overseas Telecommunications Corporation
Commonwealth Land - Australian Broadcasting Corporation
Commonwealth Land - Australian Postal Commission

Name
Commonwealth Land - Australian Postal Corporation
Commonwealth Land - Australian Telecommunications Commission
Commonwealth Land - Commonwealth Bank of Australia
Commonwealth Land - Commonwealth Trading Bank of Australia
Commonwealth Land - Defence Housing Authority
Commonwealth Land - Defence Service Homes Corporation
Commonwealth Land - Director of War Service Homes
Commonwealth Land - Telstra Corporation Limited
Defence - ADF CAREERS REFERENCE CENTRE
Defence - OFFICES
Defence - STOCKTON RIFLE RANGE
Defence - TS TOBRUK

Commonwealth Heritage Places		[Resource Information]
Name	State	Status
Historic		
Fort Wallace	NSW	Listed place
Nobbys Lighthouse	NSW	Listed place

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]		Roosting known to occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat may occur within area
Ardea alba		
Great Egret, White Egret [59541]		Breeding likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Breeding likely to occur within area
Arenaria interpres		
Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris canutus		
Red Knot, Knot [855]		Roosting known to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]		Roosting known to occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Roosting known to occur within area
Calidris ruficollis		
Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris		
Great Knot [862]		Roosting known to occur within area
Calonectris leucomelas		
Streaked Shearwater [1077]		Species or species habitat may occur within area
Catharacta skua		
Great Skua [59472]		Species or species habitat may occur within area
Charadrius bicinctus		
Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii		
Greater Sand Plover, Large Sand Plover [877]		Roosting known to occur

Name	Threatened	Type of Presence within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]		Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered*	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable*	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered*	Foraging, feeding or related behaviour may occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Species or species habitat may occur within area
Diomedea gibsoni Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area
Himantopus himantopus Black-winged Stilt [870]		Roosting known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Roosting known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Macronectes giganteus 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

Name	Threatened	Type of Presence
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
Myiagra cyanoleuca Satin Flycatcher [612]		Breeding likely to occur within area
Numenius madagascariensis Eastern Curlew [847]		Roosting known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Breeding may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Vulnerable*	Species or species habitat likely to occur within area
Sterna albifrons Little Tern [813]		Breeding may occur within area
Thalassarche bulleri Buller's Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta (sensu stricto) Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat may occur within area
Thalassarche impavida Campbell 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*	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Species or species habitat may occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area

Name	Threatened	Type of Presence
Fish		
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		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
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus abdominalis Bigbelly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		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
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
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
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf 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

Name	Threatened	Type of Presence
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short- tailed Pipefish [66280]		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

Mammals

Arctocephalus forsteri 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
Dugong dugon Dugong [28]		Species or species habitat may occur within area

Reptiles

Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat 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 likely 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 likely to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans

Name	Status	Type of Presence
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]		Species or species habitat may occur within

[Resource Information]

Name	Status	Type of Presence area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]	Endangered	Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]		Species or species habitat likely to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]	Vulnerable	Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may 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

Places on the RNE [\[Resource Information \]](#)

Note that not all Indigenous sites may be listed.

Name	State	Status
Natural		
Glenrock Ornithological Area	NSW	Indicative Place
Newcastle Bight Coastal Area	NSW	Indicative Place
Awabakal Nature Reserve	NSW	Registered
Hunter Estuary Wetlands	NSW	Registered
Indigenous		
Stockton Rifle Range	NSW	Indicative Place
Nobbys Head (Former Island)	NSW	Registered
Historic		
Albion Hotel	NSW	Indicative Place
Argyle House	NSW	Indicative Place
Baptist Tabernacle	NSW	Indicative Place
Beach Hotel	NSW	Indicative Place
Bellevue Hotel	NSW	Indicative Place
Burrundulla	NSW	Indicative Place
Burwood Colliery Managers residence and staff housing (former)	NSW	Indicative Place
Carrington Council Chambers (former)	NSW	Indicative Place
Carrington Public School	NSW	Indicative Place
Centennial Hotel (former)	NSW	Indicative Place
Centennial Park	NSW	Indicative Place
City Bank (former)	NSW	Indicative Place
Civic Railway Station	NSW	Indicative Place

Name	State	Status
Clarens House	NSW	Indicative Place
Colliery Inn Hotel	NSW	Indicative Place
Copse of Acacia Karroo	NSW	Indicative Place
Cosmopolitan Hotel (former)	NSW	Indicative Place
Cottage	NSW	Indicative Place
Cottage	NSW	Indicative Place
Croudace House & Garden	NSW	Indicative Place
Dairy Farmers Building (former)	NSW	Indicative Place
Drungalee	NSW	Indicative Place
Eddy Street Residences	NSW	Indicative Place
Gregson Park	NSW	Indicative Place
Hamilton Public School (Including Infants School)	NSW	Indicative Place
Hamilton Station Hotel	NSW	Indicative Place
Hamilton Volunteer Fire Station (former)	NSW	Indicative Place
Hunter District Water Board Building	NSW	Indicative Place
Hunter Street Tramway Substation (former)	NSW	Indicative Place
Ingall House	NSW	Indicative Place
Islington Park	NSW	Indicative Place
Jubilee Methodist Church	NSW	Indicative Place
Lambton Park	NSW	Indicative Place
Lambton Post Office (former)	NSW	Indicative Place
Locomotive Depot (including Roundhouse)	NSW	Indicative Place
Lyrique Theatre	NSW	Indicative Place
Masonic Temple (former)	NSW	Indicative Place
Mayfield House	NSW	Indicative Place
McDonalds Building	NSW	Indicative Place
Mine Managers Office (former)	NSW	Indicative Place
National Australia Bank	NSW	Indicative Place
Newcastle Hotel	NSW	Indicative Place
Newcastle Showground & Grandstands	NSW	Indicative Place
Newcastle Synagogue	NSW	Indicative Place
Nobbys Head Wreck, PS Commodore	NSW	Indicative Place
Ocean View Hotel	NSW	Indicative Place
Pensioners Hall	NSW	Indicative Place
Police Station and Residence (former)	NSW	Indicative Place
Racecourse Inn (former)	NSW	Indicative Place
Regent Theatre (former)	NSW	Indicative Place
Regional Museum	NSW	Indicative Place
School of Arts (former)	NSW	Indicative Place
St Andrews Presbyterian Church	NSW	Indicative Place
St Augustines Anglican Church	NSW	Indicative Place
St Peters Anglican Church Group	NSW	Indicative Place
T Walsh Building	NSW	Indicative Place
Terminus Hotel	NSW	Indicative Place
The Junction Soldiers Monument - WW1	NSW	Indicative Place
Trialba	NSW	Indicative Place
Wallsend Park (part) & Wal Herd Park	NSW	Indicative Place
War Memorial	NSW	Indicative Place
Wickham Infants School (former)	NSW	Indicative Place
Wickham Public School (former)	NSW	Indicative Place
Wickham School of Arts (former)	NSW	Indicative Place
Wolfe Street Automatic Telephone Exchange	NSW	Indicative Place
Air Force Club	NSW	Registered
Band Rotunda	NSW	Registered
Bishopscourt	NSW	Registered
Bogey Hole, the Commandants Bath	NSW	Registered
Bond Store Group	NSW	Registered
Bryn-Y-More	NSW	Registered
Buchanan Terrace Group	NSW	Registered
Castlemaine Brewery (former)	NSW	Registered
Christ Church Anglican Cathedral	NSW	Registered
Claremont	NSW	Registered
Convict Lumber Yard Site	NSW	Registered
Court Chambers	NSW	Registered
Court House Column (former)	NSW	Registered
Coutts Sailors Home (former)	NSW	Registered

Name	State	Status
Customs House (former)	NSW	Registered
David Cohen and Company Warehouse (former)	NSW	Registered
Department of Public Works Building (former)	NSW	Registered
Earp Gillam and Company Bond Store (former)	NSW	Registered
Fort Scratchley Above Ground Buildings	NSW	Registered
Fort Scratchley Group	NSW	Registered
Fort Wallace	NSW	Registered
Great Northern Hotel	NSW	Registered
Harbour Master's Residence (former)	NSW	Registered
Hillside	NSW	Registered
Hunter Street Technical College and Trades Hall Group	NSW	Registered
Hydraulic Power Station	NSW	Registered
Irelands Bond Store (former)	NSW	Registered
James Fletcher Hospital Group	NSW	Registered
Jesmond	NSW	Registered
King Edward Park	NSW	Registered
Lance Villa	NSW	Registered
Lance Villa Group	NSW	Registered
Leading Light Tower Remnants	NSW	Registered
Leading Light tower	NSW	Registered
Masonic & City Bowling Club Gates & Piers	NSW	Registered
Medical Superintendents Residence (former)	NSW	Registered
Minumbah	NSW	Registered
Newcastle Conservation Area	NSW	Registered
Newcastle Courthouse	NSW	Registered
Newcastle East Public School (former)	NSW	Registered
Newcastle Post Office	NSW	Registered
Newcastle Post Office Annex (former)	NSW	Registered
Newcastle Post Office Group	NSW	Registered
Newcastle Railway Station	NSW	Registered
Nobbys Lighthouse	NSW	Registered
Olympic Hall (former)	NSW	Registered
Park	NSW	Registered
Police Offices Including Stables	NSW	Registered
Police Station (former)	NSW	Registered
Police Station and Watchhouse	NSW	Registered
Public School	NSW	Registered
Railway Paymasters Office (former)	NSW	Registered
Segenhoe	NSW	Registered
Shalamah	NSW	Registered
Shandon	NSW	Registered
Shepherds Hill Cottage and Surrounds	NSW	Registered
Soldiers Baths	NSW	Registered
St Andrews Presbyterian Church	NSW	Registered
St Johns Anglican Church Group	NSW	Registered
St Marys Star of the Sea Catholic Church	NSW	Registered
St Phillips Presbyterian Church	NSW	Registered
Stanton Catchlove and Company Bond Store (former)	NSW	Registered
Station Masters Residence (former)	NSW	Registered
Terrace House	NSW	Registered
Terrace Row Group	NSW	Registered
The Boltons Including Fences	NSW	Registered
The Mission Theatre	NSW	Registered
The Newcastle Club	NSW	Registered
The Terrace Houses Group	NSW	Registered
Tomago House Chapel	NSW	Registered
Tomago House, Grounds, Trees and Chapel	NSW	Registered
Victoria Theatre (former)	NSW	Registered
Wallsend Civic Precinct	NSW	Registered
Wallsend Courthouse	NSW	Registered
Wallsend Post Office Including Original Stables	NSW	Registered

State and Territory Reserves	[Resource Information]
Name	State
Awabakal	NSW
Glenrock	NSW

Name	State
Hunter Wetlands	NSW
Tilligerry	NSW
Worimi	NSW
Worimi	NSW

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

Note that all areas with completed RFAs have been included.

Name	State
North East NSW 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 Resources Audit,

Name	Status	Type of Presence
Frogs		

[Bufo marinus](#)

Cane Toad [1772]	Species or species habitat likely to occur within area
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Mammals

[Felis catus](#)

Cat, House Cat, Domestic Cat [19]	Species or species habitat likely to occur within area
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[Oryctolagus cuniculus](#)

Rabbit, European Rabbit [128]	Species or species habitat likely to occur within area
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[Vulpes vulpes](#)

Red Fox, Fox [18]	Species or species habitat likely to occur within area
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Plants

[Alternanthera philoxeroides](#)

Alligator Weed [11620]	Species or species habitat likely to occur within area
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[Asparagus asparagoides](#)

Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]	Species or species habitat likely to occur within area
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[Cabomba caroliniana](#)

Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]	Species or species habitat likely to occur within area
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[Chrysanthemoides monilifera](#)

Bitou Bush, Boneseed [18983]	Species or species habitat may occur within area
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[Genista sp. X Genista monspessulana](#)

Broom [67538]	Species or species habitat may occur within area
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[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
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[Lycium ferocissimum](#)

African Boxthorn, Boxthorn [19235]	Species or species habitat may occur within area
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[Pinus radiata](#)

Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]	Species or species habitat may occur within area
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[Rubus fruticosus aggregate](#)

Blackberry, European Blackberry [68406]	Species or species habitat likely to occur
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Name	Status	Type of Presence
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii		within area
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

Nationally Important Wetlands	[Resource Information]
Name	State
Hexham Swamp	NSW
Kooragang Nature Reserve	NSW
Lake Macquarie	NSW
Shortland Wetlands Centre	NSW

Coordinates

-32.88145 151.74214,-32.88145 151.74303,-32.87728 151.746,-32.88859 151.77277,
-32.91208 151.78259,-32.91863 151.77099,-32.89632 151.76415,-32.88145 151.74214

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 Heritage and Register of National Estate properties, Wetlands of International 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

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

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.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

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.

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:

- [Department of Environment, Climate Change and Water, New South Wales](#)
- [Department of Sustainability and Environment, Victoria](#)
- [Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [Department of Environment and Natural Resources, South Australia](#)

- [-Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts](#)
- [-Environmental and Resource Management, Queensland](#)
- [-Department of Environment and Conservation, Western Australia](#)
- [-Department of the Environment, Climate Change, Energy and Water](#)
- [-Birds Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-SA 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, Atherton and Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [-State Forests of NSW](#)
- [-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.

Threatened Biota Habitat Table

Databases Searched

DEC (2005a) Threatened species profiles- threatened ecological communities known or predicted to occur within the Hunter CMA subregion.

DEC (2005b) Threatened species profiles- threatened reptiles known or predicted to occur within the Hunter/Central Rivers marine zone CMA subregion.

DSEWPac (2011) EPBC PMST Online Search 4 August 2011 - 10 km buffer.

DPI (2011) Records viewer search for threatened fish - Hunter/Central Rivers CMA.

OEH (2011) NSW Wildlife Atlas Search - threatened species results within a 10 km buffer

Likelihood of Occurrence

The likelihood of occurrence is defined as follows:

<i>Known</i>	Species known to occur within the site (e.g. breeding and foraging habitat; foraging habitat; movement corridors).
<i>High</i>	Presence of potential high value habitat (e.g. breeding and foraging habitat; important movement corridors).
<i>Moderate</i>	Presence of potential medium value habitat (e.g. disturbed breeding conditions; constrained foraging habitat; movement corridors).
<i>Low</i>	Presence of potential low value habitat (e.g. disturbed conditions; isolated small habitat area; fragmented movement corridors).
<i>Unlikely</i>	No preferred habitat or corridors present.

Matters considered in determining the likelihood of occurrence include:

- Known natural distributions including prior records (database searches) and site survey results.
- Geological/ soil preferences.
- Specific habitat requirements (e.g. aquatic environs, seasonal nectar resources, tree hollows etc).
- Climatic considerations (e.g. wet summers; snow fall).
- Home range size and habitat dependence.
- Topographical preferences (e.g. ridgetops, coastal headlands, midslopes, closed depressions).

Threatened biota known or predicted from the locality, habitat association and likelihood of occurring within the study area

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
Threatened Ecological Communities						
Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	EEC	-	Coastal Saltmarsh occurs on the landward side of mangrove stands in intertidal zones along the shores of estuaries and lagoons that are permanently or intermittently open to the sea. This community is characterised by <i>Baumea juncea</i> , <i>Juncus kraussii</i> , <i>Sarcocornia quinqueflora</i> , <i>Sporobolus virginicus</i> , <i>Triglochin striata</i> , <i>Isolepis nodosa</i> , <i>Samolus repens</i> , <i>Selliera radicans</i> , <i>Suaeda australis</i> and <i>Zoysia macrantha</i> , with occasional scattered mangroves occurring throughout the saltmarsh. Saltpans and tall reeds may also occur. This community occurs in the intertidal zone along the NSW coast.	Predicted to occur within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.	
Central Hunter Grey Box – Ironbark Woodland in the NSW North Coast and Sydney Basin Bioregions	EEC	-	Occurs on Permian sediments in the Hunter Valley. Typically forms a woodland dominated by <i>Eucalyptus crebra</i> , <i>Brachychiton populneus</i> subsp. <i>populneus</i> and <i>Eucalyptus moluccana</i> . A shrub layer may also be present and common shrub species include <i>Notelaea microcarpa</i> var. <i>microcarpa</i> , <i>Breynia oblongifolia</i> , <i>Bursaria spinosa</i> subsp. <i>spinosa</i> , <i>Cassinia quinquefaria</i> and <i>Dodonaea viscosa</i> . Ground cover can be moderately dense to dense, and consist of numerous forbs and grass species, and a small number of ferns, sedges and twiners.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.	
Central Hunter Ironbark - Spotted Gum - Grey Box Forest in the NSW North Coast and Sydney Basin Bioregions	EEC	-	Generally occurs on Permian sediments in the Hunter Valley. Typically forms an open forest to woodland dominated by <i>Eucalyptus crebra</i> , <i>Corymbia maculata</i> and <i>Eucalyptus moluccana</i> . A sparse layer of small trees may be present in some areas, typically including <i>Allocasuarina luehmannii</i> or <i>Acacia parvipinnula</i> . The shrub layer is typically sparse or absent in some cases, through to moderately dense. Ground cover can be sparse to moderately dense, and consists of numerous forbs, a few grass species, and a limited number of ferns, sedges or other herbs.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.	

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions.		EEC	-	Freshwater Wetlands on Coastal Floodplains occur in coastal areas subject to periodic flooding in which standing fresh water persists for at least part of the year in most years. Typically occurring on silts, muds or humic loams in low-lying parts of floodplains, alluvial flats, depressions, drainage lines, backswamps, lagoons and lakes, it may also occur in backbarrier landforms where floodplains adjoin coastal sandplains, generally below 20 m elevation on level areas. Structure and composition of the community varies spatially and temporally depending on the water regime, though is usually dominated by herbaceous plants and has few woody species.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.
Sydney Freshwater Wetlands in the Sydney Basin Bioregion		EEC	-	Occurs on sand dunes and low-nutrient sandplains along coastal areas in the Sydney Basin bioregion. It is known from the Lake Macquarie, Wyong, Gosford, Pittwater, Warringah, Woollahra, Waverley, Botany, Rockdale, Randwick, Sutherland and Wollongong local government areas, but is likely to occur elsewhere within the bioregion. Has been extensively cleared and filled and remnants are often small and disturbed. Largely restricted to freshwater swamps in swales and depressions on sand dunes and low nutrient sandplains such as those of the Warriewood and Tuggerah soil landscapes.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.
Hunter Lowland Redgum Forest in the Sydney Basin and NSW North Coast Bioregions		EEC	-	Hunter Lowland Redgum Forest is an open structure forest. Characteristic canopy species include <i>Eucalyptus tereticornis</i> and <i>E. punctata</i> . Frequently occurring species include <i>Angophora costata</i> , <i>Corymbia maculata</i> , <i>E. crebra</i> and <i>E. moluccana</i> . Mid-storey stratum is open and sparse, characterised by species such as <i>Breynia oblongifolia</i> , <i>Leucopogon juniperinus</i> , <i>Daviesia ulicifolia</i> and <i>Jacksonia scoparia</i> . The ground cover comprises grasses and herbs. Occurring from Muswellbrook to the Lower Hunter in the Sydney Basin and North Coast bioregions, it has been recorded from the Maitland, Cessnock, Port Stephens, Muswellbrook and Singleton LGAs, though may occur elsewhere in these bioregions.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
Lower Hunter Valley Dry Rainforest in the Sydney Basin and NSW North Coast bioregions		VEC	-	Lower Hunter Valley Dry Rainforest mainly occurs on the Barrington footslopes along the northern rim of the Hunter Valley Floor, where it occupies gullies and steep hillslopes with south facing aspects. It is also known from south of the Hunter River at Mt Bright and Mt View. Lower Hunter Valley Dry Rainforest has been recorded from the local government areas of Cessnock, Maitland and Port Stephens, and is also likely to occur or have occurred in Muswellbrook, Singleton, Upper Hunter and Dungog LGAs.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.
Hunter Valley Footslopes Slaty Gum Woodland in the Sydney Basin Bioregion		VEC		Hunter Valley Footslopes Slaty Gum Woodland mainly occurs on the southern side of the Hunter Valley from near Bulga to the Bylong/Goulburn River National Park area. It occurs on colluvial soils on exposed footslopes associated with the interface between Triassic Narrabeen sandstones and Permian sediments. Hunter Valley Footslopes Slaty Gum Woodland is known to occur in Singleton, Muswellbrook and Upper Hunter LGAs, and may occur in the Mid-western Regional LGA.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area..
Hunter Valley Vine Thicket in the NSW North Coast and Sydney Basin Bioregions		EEC	-	Hunter Valley Vine Thicket has a highly restricted geographic distribution in the central Hunter Valley. The community occurs mostly as patches of less than 10 ha, with a few larger patches exceeding 100 ha. Approximately 85% of the pre-European distribution of the community remains. The largest occurrence is at Brushy Hill adjacent to Glenbawn Dam, north east of Scone. The only stand known to occur in a conservation reserve is at Mt Dangar within the Goulburn River National Park. Hunter Valley Vine Thicket has been recorded from the local government areas of Muswellbrook, Singleton, and Upper Hunter but may occur elsewhere within the Sydney Basin Bioregion and NSW North Coast Bioregion.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
Hunter Valley Weeping Myall Woodland of the Sydney Basin Bioregion		EEC	EEC	This Woodland community ranges from a dense to open tree canopy to about 15 m tall, depending on disturbance and regrowth history. This woodland is dominated by <i>Acacia pendula</i> , with <i>Eucalyptus crebra</i> , <i>A. salicina</i> and/or trees within the <i>A. homalophylla</i> <i>A. melvillei</i> complex also occurring. Understorey species may or may not be present, and can include <i>Canthium buxifolium</i> , <i>Dodonaea viscosa</i> , <i>Geijera parviflora</i> , <i>Notelaea microphylla</i> var. <i>microphylla</i> and <i>Senna zygomphylla</i> as well as a dense to sparse ground-layer comprised of grasses and herbs. This community only occurs in the Muswellbrook and Singleton LGAs, however may occur elsewhere in the Upper Hunter LGA within the Brigalow Belt South bioregion. A section of this community occurring in the brown clay soil at Jerry's Plains in the Hunter Valley is listed as Critically Endangered under the Commonwealth listing.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.
Kurri Sand Swamp Woodland in the Sydney Basin Bioregion		EEC	-	Known to occur within the Kurri Kurri- Cessnock area of the lower Hunter, on soils derived from poorly-drained Tertiary sand deposits. It is a low woodland or heathland rarely higher than 15m with a shrubby understorey. Dominant canopy species include <i>Eucalyptus parramattensis subsp decadens</i> and <i>Angophora bakeri</i> .	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.
Littoral Rainforest in the NSW North Coast, Sydney Basin and SE Corner Bioregions		EEC	-	Littoral Rainforest is generally a closed forest, the structure and composition of which is strongly influenced by its proximity to the ocean. Plant species of this community are predominantly rainforest species, with vines potentially comprising a major component of the canopy. The canopy layer is dominated by rainforest species, with scattered emergent individuals of sclerophyll species, such as <i>Angophora costata</i> , <i>Banksia integrifolia</i> , <i>Eucalyptus botryoides</i> and <i>Eucalyptus tereticornis</i> also occurring in many stands. There is considerable floristic variation between stands with localised variants occurring in some regions. Littoral Rainforest occurs only on the coast and is found in the NSW North Coast Bioregion, Sydney Basin Bioregion and South East Corner Bioregion.	Predicted to occur within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
Lower Hunter Spotted Gum - Ironbark Forest in the Sydney Basin Bioregion		EEC	-	Restricted to an approx. 65x35km area centred on Cessnock-Beresford in the central and lower Hunter Valley. Occurs on Permian geology and is strongly associated with yellow podsolic and solodic soils of the Lower Hunter Aberdare, Branxton and Neath landscapes. Undisturbed remnants are typically open forests, but may occur as woodland or dense sapling thickets if disturbed. The canopy is dominated by <i>Corymbia maculata</i> and <i>Eucalyptus fibrosa</i> , with a shrub layer marked by <i>Acacia parvipinnula</i> , <i>Daviesia ulicifolia</i> , <i>Bursaria spinosa</i> , <i>Melaleuca nodosa</i> and <i>Lissanthe strigosa</i> and a diverse understorey.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.
River-Flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions		EEC	-	This community is found on the river flats of the coastal floodplains and is characterised by a tall open canopy layer of eucalypts, up to or exceeding 40 m in height. Though composition varies considerably, characteristic tree species include <i>Eucalyptus tereticornis</i> , <i>E. amplifolia</i> , <i>Angophora floribunda</i> and <i>A. subvelutina</i> . <i>Eucalyptus baueriana</i> and <i>E. botryoides</i> . <i>E. saligna</i> and <i>E. grandis</i> may occur north of Sydney. <i>Melaleuca decora</i> , <i>M. styphelioides</i> , <i>Backhousia myrtifolia</i> , <i>Melia azaderach</i> , <i>Casuarina cunninghamiana</i> and <i>C. glauca</i> may also occur.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.
Swamp Oak Floodplain forest of the NSW North Coast, Sydney basin and South East Corner Bioregions		EEC	-	Swamp Oak Floodplain is found on coastal floodplains of NSW. It has a dense to sparse tree layer dominated by Swamp Oak. Lilly Pilly (<i>Acmena smithii</i>), Cheese Trees (<i>Glochidion</i> spp.) and Paperbarks (<i>Melaleuca</i> spp.) may be present. Tree diversity decreases with latitude, and <i>Melaleuca ericifolia</i> is the only abundant tree in this community south of Bermagui. The understorey is characterised by frequent occurrences of vines, a sparse cover of shrubs, and a continuous groundcover of forbs, sedges, grasses and leaf litter. Varying salinity levels alter groundcover species	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.
Swamp Sclerophyll forest on Coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions		EEC	-	Swamp Sclerophyll Forest on Coastal Floodplains is characterised by an open to dense tree layer of eucalypts and paperbarks, with trees up to or higher than 25 m. This community includes areas of fern land and tall reed or sedge land, where trees are sparse or absent	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland		EEC	CEEC	White Box Yellow Box Blakely's Red Gum Woodland is an open woodland or forest community, and is characterized by White Box (<i>Eucalyptus albens</i>), Yellow Box (<i>E. melliodora</i>) and Blakely's Red Gum (<i>E. blakelyi</i>). Intact sites contain a high diversity of plant species, including dominant and additional tree species, shrubs, climbers, grass species and a high diversity of herbs. Intact stands that contain diverse upper and mid-storeys and groundlayers are rare. Modified sites include the following areas where the main tree species are present ranging from an open woodland formation to a forest structure, with the groundlayer predominantly being composed of exotic species. On sites where the trees have been removed, only the grassy groundlayer and some herbs remain. The Commonwealth listing of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland differs slightly from the NSW listing. Areas that are part of the listed ecological community must have either an intact tree layer and predominately native ground layer or an intact native ground layer with a high diversity of native plant species but no remaining tree layer. Box-Gum Woodland is found from the Queensland border in the north, to the Victorian border in the south. It occurs in the tablelands and western slopes of NSW.	Occurs within Hunter CMA subregion (DEC 2005a) Predicted within 10km (DSEWPac 2011a)	Unlikely, no suitable habitat present within study area.
Warkworth Sands Woodland of the Sydney Basin Bioregion		EEC	-	Warkworth Sand Woodland occurs on aeolian sand deposits south of Singleton in the Hunter Valley and is confined to a small area near Warkworth, about 15 km south-west of Singleton in the Hunter Valley. Only approximately 800 hectares of Warkworth Sands Woodland remains, none of which occurs within a conservation reserve. It is currently known to occur only in the Singleton LGA, but may occur elsewhere in the Sydney Basin Bioregion.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.
Lowland Rainforest of Subtropical Australia		-	CEEC	Lowland Rainforest of Subtropical Australia is the ecological community of subtropical rainforest and some related, structurally complex forms of dry rainforest, excluding Littoral Rainforest. It is associated with a range of high-nutrient geological substrates, notably basalts and fine-grained sedimentary rocks, on coastal plains and plateaux, footslopes and foothills. Lowland Rainforest, in a relatively undisturbed state, has a closed canopy, characterised by a high diversity of trees.	Predicted within 10km (DSEWPac 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
Endangered Populations						
<i>Acacia pendula</i> – endangered population	Weeping Myall population in the Hunter catchment	EP	-	Within the Hunter catchment the species typically occurs on heavy soils, sometimes on the margins of small floodplains, but also in more undulating locations.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.
<i>Dromaius novaehollandiae</i> – endangered population	Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	EP	-	On the NSW north coast, Emus occur in a range of predominantly open lowland habitats, including grasslands, heathland, shrubland, open and shrubby woodlands, forest, and swamp and sedgeland communities, as well as the ecotones between these habitats. The population is now isolated and largely restricted to coastal and near-coastal areas between Ballina - Evans Head and Red Rock. There have also been some recent records from the Port Stephens area. The population of Emus in the NSW North Coast Bioregion and Port Stephens LGA is of significant conservation value as the last known population in northern coastal NSW.	Occurs within Hunter CMA subregion (DEC 2005a) and Port Stephens LGA	Unlikely, no suitable habitat present within study area; site is isolated from Port Stephens LGA
<i>Eucalyptus camaldulensis</i> – endangered population	River Red Gum population in the Hunter Catchment	EP	-	May occur with <i>Eucalyptus tereticornis</i> , <i>Eucalyptus melliodora</i> , <i>Casuarina Cunninghamiana</i> subsp. <i>Cunninghamiana</i> and <i>Angophora floribunda</i> . Most of the occurrences are on private land and there are no known occurrences in conservation reserves. Prior to European settlement, it is likely that the species formed extensive stands of woodland and open woodland on the major floodplains of the Hunter and Goulburn rivers, especially in areas where water impoundment occurs after flood. Since settlement, most of the floodplains have been cleared of woody vegetation. Flood mitigation works now prevent most minor floods from inundating floodplains. These flow changes, coupled with the clearing of native vegetation, have greatly reduced the extent of habitat favourable to the River Red Gum in the Hunter catchment.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Leionema lamprophyllum</i> subsp. <i>obovatum</i> – endangered population	<i>Leionema lamprophyllum</i> subsp. <i>obovatum</i> – endangered population in the Hunter catchment	EP	-	<p><i>Leionema lamprophyllum</i> subsp. <i>obovatum</i> occurs in dry eucalypt forest on exposed rocky terrain. The Hunter Catchment population is considered to be highly genetically isolated due to the distance to the nearest recorded occurrence of this taxon, and the lack of specialised mechanisms for long distance dispersal of seed or pollen.</p> <p>The total number of mature individuals of <i>L. lamprophyllum</i> subsp. <i>obovatum</i> in the Hunter Catchment population is estimated to be very low with only 4 individuals currently known. The Hunter Catchment population occurs near Pokolbin, where it is found on a rocky cliff line in a dry eucalypt forest.</p>	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.
<i>Cymbidium canaliculatum</i> population in the Hunter Catchment	<i>Cymbidium canaliculatum</i> population in the Hunter Catchment	EP	-	<p>The <i>Cymbidium canaliculatum</i> population typically grows in the hollows, fissures, trunks and forks of trees in dry sclerophyll forest or woodland. It usually occurs singly or as a single clump, which can form large colonies on trees, between two and six metres from the ground. Within the Hunter Catchment, <i>Cymbidium canaliculatum</i> is most commonly found in <i>Eucalyptus albens</i> (White Box) dominated woodlands, much of which may constitute the EEC 'White Box Yellow Box Blakely's Red Gum Woodland'.</p> <p>In NSW the species is restricted to the north-eastern quarter of the State, occurring chiefly in inland districts and north of the Hunter River, through the north western slopes, northern tablelands and north coast into south-eastern Queensland.</p>	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.
<i>Diuris tricolor</i> – endangered population	Pine Donkey Orchid population in the Muswellbrook local government area	EP	-	<i>Diuris tricolor</i> is found in sclerophyll woodland and derived grassland on flats or small rises, on a range of substrates including sandy or loamy soils. The population of <i>Diuris tricolor</i> in the Muswellbrook Local Government Area, in the upper Hunter Valley, comprises a number of occurrences, ranging from a few scattered individuals to a few thousand plants. The area of occupancy of the population is less than 50 km ² . Therefore, the geographic distribution of the population is estimated to be highly restricted.	Occurs within Hunter CMA subregion (DEC 2005a)	Unlikely, no suitable habitat present within study area.
Threatened plants						
<i>Allocasuarina defungens</i>	Dwarf Heath Casuarina	E	E	This species is a straggly shrub to 2 m high growing from a tuber. It grows mainly in tall heath on sand, but has also been known to occur on clay soils and sandstone. It can also extend onto exposed nearby coastal hills or headlands adjacent to sand plains.	Predicted within 10km (DSEWPac 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Cryptostylis hunteriana</i>	Leafless Tongue Orchid	V	V	This species is a leafless, saprophytic tongue orchid, which is reliant on a symbiotic relationship with the micorrhizal fungus found in decaying plant matter. Flowering occurs between November and February, producing green, red and black flowers carried on an axillary raceme. Foliage is absent, with the leaves reduced to scales. <i>C. hunteriana</i> grows in a range of habitats including swampy heaths on sandy soils, scrubby swamp fringes, through to bare hillsides in tall eucalypt forest. Potential habitat typically occurs in woodland dominated by Scribbly Gum (<i>Eucalyptus sclerophylla</i>), Silvertop Ash (<i>Eucalyptus sieberi</i>), Red Bloodwood and Black She-oak. This species appears to prefer open areas in the understorey and is often found in association with the Large Tongue Orchid (<i>Cryptostylis subulata</i>) and the Tartan Tongue Orchid (<i>Cryptostylis erecta</i>).	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Diuris praecox</i>	Rough Double Tail	V	V	This species is known to occur on hills and slopes of near-coastal districts in open forests that have a grassy to fairly dense understorey. This species flowers during winter and is only detectable during the flowering season. It has a restricted distribution between Ourimbah to Nelson Bay.	Predicted within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Eucalyptus camfieldii</i>	Camfield's Stringybark	V	V	This species is usually a mallee to 4 m tall although it can grow to a straggly tree to 9 m. It occurs on poor coastal country in shallow sandy soils overlying Hawkesbury sandstone often in coastal heath, mostly on exposed sandy ridges. Stands usually occur near the boundary of tall coastal heaths and low open woodland of the slightly more fertile inland areas. Associated species frequently include stunted species of Narrow-leaved Stringybark (<i>E. oblonga</i>), Brown Stringybark (<i>E. capitellata</i>) and Scribbly Gum (<i>E. haemastoma</i>).	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Eucalyptus parramattensis</i> subsp <i>decadens</i>	Earp's Gum	V	V	This woodland tree grows from 8-10m, and occasionally up to 15m, and generally occupies deep, low-nutrient sands, often those subject to periodic inundation or where water tables are relatively high. It occurs in dry sclerophyll woodland with dry heath understorey and also occurs as an emergent in dry or wet heathland. Often where this species occurs, it is a community dominant. There are two separate meta-populations of the tree: The Kurri Kurri meta-population is bordered by Cessnock—Kurri Kurri in the north and Mulbring—Abedare in the south. Large aggregations of the sub-species are located in the Tomalpin area. The Tomago Sandbeds meta-population is bounded by Salt Ash and Tanilba Bay in the north and Williamstown and Tomago in the south. In the Kurri Kurri area, Very little is known about the biology or ecology of this species, apart from the flowering period which is from November to January. Propagation mechanisms are currently poorly known while seed dispersal is likely to be effected by wind and animals.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Euphrasia arguta</i>		V	CE	This species grows in grassy forests or regrowth vegetation following clearing of a firebreak and in grassy areas near rivers. Current known populations are located only in the Nundle State Forest, more than 200 km from the site.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Grevillea parviflora</i> subsp <i>parviflora</i>	Small-flower Grevillea	V	V	The habitat for this species are broad, and are known to occur in areas supporting heath, shrubby woodland and forest on light clay or sandy soils, and often in disturbed areas such as on the fringes of tracks. It has been known to flower over two periods throughout the year, July to December and April to May.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Grevillea shiressii</i>	-	V	V	This species is known only from two populations near Gosford, on tributaries of the lower Hawkesbury River north of Sydney (Mooney Mooney Creek and Mullet Creek). Both populations occur within the Gosford Local Government Area. Grows along creek banks in wet sclerophyll forest with a moist understorey in alluvial sandy or loamy soils. Flowers mainly late winter to Spring (July-December), with seed released at maturity in October.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Melaleuca biconvexa</i>	Biconvex Paperbark	V	V	This species occurs in damp areas often near streams or low-lying areas on alluvial soils of low slopes or sheltered aspects. The flowering period for this species is short with flowering taking place over a 3 - 4 week period during September and October. This species is conspicuous and could be easily identified outside the flowering period.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Muehlenbeckia costata</i>	Scrambling Lignum	V	-	Occurs in scattered locations from Queensland to the Blue Mountains. Grows in coarse sandy soils and peat in heath, mallee and open eucalypt woodland on granite or acid volcanic outcrops at higher altitudes. It is an early successional species with large numbers appearing after bush fires, but most plants live only 2-3 years.	Predicted within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Persicaria elatior</i>	Tall Knotweed	V	V	This erect herb grows to 90cm in damp places, especially beside streams and lakes. Occasionally in swamp forest or associated with disturbance. Tall Knotweed has been recorded in south-eastern NSW (Mt Dromedary (an old record), Moruya State Forest near Turlinjah, the Upper Avon River catchment north of Robertson, Bermagui, and Picton Lakes. In northern NSW it is known from Raymond Terrace and the Grafton area.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Pterostylis gibbosa</i>	Illawarra Greenhood	E	E	The Illawarra Greenhood is a deciduous orchid that is only visible above the ground between late summer and spring, and only when soil moisture levels can sustain its growth. Grows in open forest or woodland, on flat or gently sloping land with poor drainage, and is known from a small number of populations in the Illawarra, Nowra and Hunter regions. In the Hunter region, the species grows in open woodland dominated by Narrow-leaved Ironbark (<i>E. crebra</i>), Forest Red Gum and Black Cypress Pine (<i>Callitris endlicheri</i>).	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Pultenaea maritima</i>	Coast Headland Pea	V	-	This prostrate, mat-forming shrub with hairy stems occurs in NSW from Newcastle to Byron Bay on 16 headlands. The species occurs in grasslands, shrublands and heath on exposed coastal headlands.	Predicted within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Rulingia prostrata</i>	Dwarf Kerrawang	E	E	This species is a prostrate shrub that forms mats to more than 1 m across, occurring on sandy, sometimes peaty soils in a wide variety of habitats.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Rutidosia heterogama</i>	Heath Wrinklewort	V	V	Small perennial herb of the daisy family to 30cm. Grows in heath on sandy soils and moist areas in open forest, and has been recorded along disturbed roadsides. The species has a scattered distribution on coastal locations between Wyong and Evans Head and on the New England Tablelands from Torrington and Ashford south to Wandsworth south-west of Glen Innes.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	E	V	This species is a small to medium rainforest tree, found only in NSW in a narrow linear coast strip from Bulahdelah to Conjola State Forest. On the central coast it occurs on gravels, sands, silts and clays in riverside gallery rainforests and remnant littoral rainforest communities.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Tetratheca juncea</i>	Black-eyed Susan	V	V	This species is usually found in low open forest / woodland with a mixed shrub understorey and grass groundcover, but has been recorded in heath and moist forest habitats. The majority of populations occur on low nutrient soils associated with the Awaba Soil Landscape. Prefers well drained sites with cooler, southerly aspects (although has been found on slopes with a variety of aspects). Confined to the Northern Sydney Basin bioregion and southern North Coast bioregion in the Wyong, Lake Macquarie, Newcastle, Port Stephens, Great Lakes and Cessnock LGAs.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Zannichellia palustris</i>	-	E	-	This species of semi-submerged aquatic plant occurs in fresh or slightly saline stationary or slowly flowing water in the lower Hunter region of NSW. In NSW the species behaves as an annual, dying back each summer. Flowering occurs during warm months.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
Threatened fauna species						
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE	E, M	This species inhabits dry open forest and woodlands, particularly Box-Ironbark woodland and riparian forests of River Sheoak, with an abundance of mature trees, high canopy cover and abundance of mistletoes. This species breeds in only three known key areas: the Capertee Valley and the Bundarra-Barraba region in NSW and Chiltern-Albury in Victoria. In NSW they are confined to the two main breeding areas and surrounding fragmented regions. Non-breeding flocks are sporadically seen in coastal areas, foraging in flowering Spotted Gum and Swamp Mahogany forests, presumably in response to drought or resource availability.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E	E	This species favours permanent freshwater wetlands with tall dense reedbeds particularly bullrushes (<i>Typha</i> spp.) and spikerushes (<i>Eleocharis</i> spp.) with adjacent shallow, open water for foraging. It is widespread but uncommon and may be found over most of NSW except the far north-west. It hides during the day amongst dense reeds or rushes and feeds mainly at night on frogs, fish, yabbies, spiders, insects and snails.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Calidris ferruginea</i>	Curlew Sandpiper	E	M	This species mainly occurs on intertidal mudflats in sheltered coastal areas. It forages on mudflats and nearby shallow water. Widespread east of the Great Divide, especially in coastal regions of NSW.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Diomedea exulans amsterdamensis</i>	Amsterdam Albatross	-	E, M	The Amsterdam Albatross is a marine, pelagic seabird. It nests in open patchy vegetation (among tussocks, ferns or shrubs) near exposed ridges or hillocks on Amsterdam Island. It sleeps and rests on ocean waters when not breeding.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Diomedea exulans antipodensis</i>	Antipodean Albatross	-	V, M	The Antipodean Albatross is marine, pelagic and aerial. It is endemic to New Zealand and breeds on New Zealand offshore islands, but may forage off the coast of NSW.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Diomedea exulans exulans</i>	Tristan Albatross	-	E, M	This species breeds on the Inaccessible and Gough Islands in the Atlantic Ocean. There is currently only one definitive record of the Tristan Albatross from Australian waters.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Diomedea exulans gibsoni</i>	Gibson's Albatross	V	V, M	As for Antipodean Albatross. <i>D. antipodensis</i> was split into <i>D. antipodensis</i> and <i>D. gibsoni</i> . However, in 2006 the ACAP Taxonomy Working Group concluded that available data do not warrant the recognition of Gibson's and Antipodean albatrosses as separate species.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Diomedea exulans</i>	Wandering Albatross	E	V, M	This species of marine bird has the greatest wingspan of any living bird (3.5 m). It visits Australian waters extending from Fremantle, Western Australia, across the southern water to the Whitsunday Islands in Queensland between June and September, though it has been recorded along the length of the NSW coast. Breeding occurs on a number of offshore islands on exposed ridges amongst open patchy vegetation. They are predominately night feeders taking fish and cephalopods such as squid, crustaceans and carrion from pelagic inshore and offshore waters.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Fregetta grallaria grallaria</i>	White-bellied Storm Petrel	V	V	This species has a wide oceanic distribution in the south Pacific and Atlantic Oceans, ranging into tropical waters from various breeding grounds. In Australia, breeds only on offshore islands in the Lord Howe Island group. This species is marine and pelagic with vagrant birds occurring in coastal NSW waters, particularly after storm events. They feed on squid and crustaceans. Nests are generally located in chambers within caves, cliff and rock crevices, on boulder beaches, slopes and plateaux. Individuals breed in late summer from December to February.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Lathamus discolor</i>	Swift Parrot	E	E	The Swift Parrot breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. Favoured feed trees include winter flowering species such as Swamp Mahogany, Spotted Gum, Red Bloodwood, Mugga Ironbark, and White Box. Commonly used lerp infested trees include Grey Box, Inland Grey Box and Blackbutt and Swift Parrots will return to some foraging sites on a cyclic basis depending on food availability. Following winter they return to Tasmania where they breed from September to January, nesting in old trees with hollows and feeding in forests dominated by Tasmanian Blue Gum.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Macronectes giganteus</i>	Southern Giant Petrel	E	E, M	This species of large marine bird has a circumpolar pelagic range from Antarctica to approximately 20° S and is a common visitor off the coast of NSW. Over summer, the species nests in small colonies amongst open vegetation on Antarctic and subantarctic offshore islands, including Macquarie and Heard Islands and in the Australian Antarctic territory. It is an opportunistic scavenger and predator, often trailing fishing boats feeding on marine carcasses. It also feeds of smaller birds including penguins.	Recorded within 10km (OEH 2011) Predicted to occur within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Macronectes halli</i>	Northern Giant-Petrel	V	V, M	The Northern Giant-Petrel is marine and oceanic. It mainly occurs in sub-Antarctic waters, but extends into subtropical waters mainly between winter and spring. It frequents both oceanic and inshore waters near breeding islands and in the non-breeding range. During its first year, it probably occurs mainly on continental shelves, slopes and cold eastern boundary currents off South America, South Africa, Australia and New Zealand. It may be more oceanic from its second year. It is attracted to land at sewage outfalls, and scavenges at colonies of penguins and seals. It breeds on sub-Antarctic islands.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Pandion cristatus</i>	Eastern Osprey	V	M	This species occurs in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. It is mostly found in coastal areas but occasionally travel inland along major rivers. It requires extensive areas of open fresh, brackish or saline water for foraging. This species occurs in low numbers in NSW and the breeding population is small and fragmented.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Pterodroma leucoptera leucoptera</i>	Gould's Petrel	E	E, M	Gould's Petrel is a pelagic marine species, spending much of its time foraging at sea and coming ashore only to breed. The Australian subspecies breeds and roosts on two islands off NSW, Cabbage Tree and Boondelbah Islands, and the at-sea distribution is poorly known	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Pterodroma neglecta neglecta</i>	Kermadec Petrel	V	V	This is a marine species that breeds on offshore islands. Vagrant individuals can sometimes be found in NSW coastal waters, particularly after storm events	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Rostratula australis</i>	Australian Painted Snipe	E	V	This species is found in permanent and temporary shallow inland and coastal wetlands (can be freshwater or brackish), particularly where there is a cover of vegetation. Individuals have been known to use artificial wetlands such as sewage ponds, dams and water-logged grasslands. This species is most common in eastern Australia, with records at scattered locations throughout much of NSW.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Rostratula benghalensis</i>	Painted Snipe (was Australian Painted Snipe)	E	V, M	Normally found in permanent or ephemeral shallow inland wetlands, either freshwater or brackish. This cryptic species nests on the ground amongst tall reed-like vegetation near water. It emerges from the dense growth at dusk to feed on mudflats and the water's edge taking insects, worm and seeds. This species prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Sternula nereis nereis</i>	Fairy Tern	-	V	This species breeds on coastal beaches and islands, disperses to coastal seas and occasionally inland. Common resident in coastal waters.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Thalassarche bulleri</i>	Bullers Albatross	-	V, M	This species breeds in New Zealand but is a regular visitor off the NSW coast. It is marine and pelagic, inhabiting subtropical and subantarctic waters of the southern Pacific Ocean. In Australia, Buller's Albatross are seen over inshore, offshore and pelagic waters. Breeding habitat of Buller's Albatross occurs on subtropical and subantarctic islands and rock stacks in the New Zealand region	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Thalassarche cauta cauta</i>	Shy Albatross	V	V, M	This species of large marine bird occurs in the circumpolar regions of the southern ocean and along the east coast of Australia from Stradbroke Island in QLD along the entire south coast to Carnarvon in WA. Uncommon north of Sydney, this species is commonly recorded off southeast NSW between July and November, and has been recorded in Ben Boyd National Park. It feeds primarily on fish, crustaceans, offal and squid and breeds on off-shore islands on cliffs, crevices and slopes on nests made from mud, rock, bones and plant material. Breeding occurs September - December.	Predicted to occur within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Thalassarche cauta salvini</i>	Salvin's Albatross	-	V, M	This species is abundant throughout the year on all continental shelf areas around New Zealand. Small numbers of non-breeding adults regularly fly across the Tasman Sea to south-east Australian waters. It breeds on Bounty, Snares and Penguin Islands.	Predicted to occur within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Thalassarche cauta steadi</i>	White-capped Albatross	-	V, M	The White-capped Albatross is probably common off the coast of south-east Australia throughout the year. Breeding colonies occur on islands south of New Zealand	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Thassalarche melanophris</i>	Black-browed Albatross	V	V, M	This species is a large sea bird with a wingspan of up to 2.4 m. It inhabits Antarctic, subantarctic, subtropical marine, and coastal waters over upwellings and boundaries of currents and can tolerate water temperatures between 0 and 24 degrees Celsius. It spends most of its time at sea, breeding on small isolated islands.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Thalassarche melanophris impavida</i>	Campbell's Albatross	V	V, M	Campbell albatrosses occur in Antarctic and subantarctic waters and in the subtropical South Pacific Ocean. They breed only on subantarctic Campbell Island, south of New Zealand. Non-breeding birds often forage over the continental slopes around Tasmania, Victoria and New South Wales.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Ixobrychus flavicollis</i>	Black Bittern	V	-	Inhabits terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation from southern NSW to Cape York and the Kimberley, as well as SW WA. May occur in flooded grassland, forest, woodland, rainforest and mangroves as long as there is permanent water. This species may roost by day in trees or within reeds on the ground. Nests are located in branches overhanging water and breeding takes place from December to March.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Ninox connivens</i>	Barking Owl	V	-	In NSW populations of Barking Owls are widespread on the coastal plain and foothills and the inland slopes and plains. They are sparse on the higher parts of the tablelands, in the arid zone west of the Darling River and are rare or absent in the dense, wet forests of the eastern fall of the Great Dividing Range. The Barking Owl lives in forests and woodlands of tropical, temperate and semi-arid zones. Their habitat is typically dominated by eucalypts, often red gum species and, in the tropics, paperbarks. It usually roosts in or under dense foliage in large trees including rainforest species of streamside gallery forests, River She-oak <i>Casuarina cunninghamiana</i> , other <i>Casuarina</i> and <i>Allocasuarina</i> species, eucalypts, <i>Angophora</i> or <i>Acacia</i> species. Roost sites are often near watercourses or wetlands. It typically breeds in hollows of large eucalypts or paperbarks, usually near watercourses or wetlands.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	E	-	Primarily inhabits permanent freshwater wetlands and surrounding vegetation including swamps, floodplains, watercourses and billabongs, freshwater meadows, wet heathland, farm dams and shallow floodwaters. Will also forage in inter-tidal shorelines, mangrove margins and estuaries. Feeds in shallow, still water. This species breeds during summer, nesting in or near a freshwater swamp.	Recorded within 10km (OEH 2011)	Unlikely, marginal areas of low quality foraging habitat within study area.
<i>Limosa limosa</i>	Black-tailed Godwit	V	M	Primarily a coastal species, <i>L. limosa</i> is usually found in sheltered bays, lagoons and estuaries with large intertidal mudflats and/or sandflats where it is frequently recorded in mixed flocks with Bar-tailed Godwits. Inland, it can be found on mudflats and in water less than 10 cm deep, around muddy lakes and swamps. Individuals have also been recorded in wet fields and sewerage treatment works. This species feeds on a variety of insects, crustaceans, molluscs, worms, larvae, spiders, fish eggs, frog eggs and tadpoles present in soft mud or shallow water. Roosting and loafing occurs on low banks of mud, sand and shell bars.	Recorded within 10km (OEH 2011)	Unlikely, marginal areas of low quality foraging habitat within study area.
<i>Oxyura australis</i>	Blue-billed Duck	V	-	This species is a partly migratory bird that travels short-distances between breeding swamps and over-wintering lakes. It prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. Nesting occurs in Cumbungi over deep water between September and February, as well as in trampled vegetation of Lignum, sedges or Spike-rushes, where a bowl-shaped nest is constructed. Young birds disperse in April-May from their breeding swamps in inland NSW to non-breeding areas on the Murray River system and coastal lakes. The species is completely aquatic, swimming low in the water along the edge of dense cover.	Recorded within 10km (OEH 2011)	Unlikely. No suitable habitat within study area.
<i>Limicola falcinellus</i>	Broad-billed Sandpiper	V	M	This species favours sheltered parts of the coast such as estuarine sandflats and mudflats, harbours, embayments, lagoons, salt marshes, and reefs as feeding and roosting habitat. Occasionally, individuals may be recorded in sewage farms or within shallow fresh-water lagoons. Broad-billed Sandpipers roost on banks on sheltered sand, shell or shingle beaches.	Recorded within 10km (OEH 2011)	Unlikely, marginal areas of low quality foraging habitat within Study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Burhinus grallarius</i>	Bush Stone-curlew	E	-	This species inhabits open forests and woodlands with a sparse grassy ground layer and fallen timber and general lack of shrubby understorey, or in structurally similar tidal and estuarine habitats near the coast. Generally not found on the escarpments but at lower elevations on the coast or west of the Great Divide, typically in areas of above 300 mm annual rainfall. Largely nocturnal, being especially active on moonlit nights, it feeds on insects and small vertebrates, such as frogs, lizards and snakes and will forage in a range of habitats including irrigated/pasture improved paddocks, playing fields, waste disposal facilities, mangroves, saltmarsh, mudflats, swamps and woodland remnants. Nests are on the ground in a scrape or small bare patch, often in cleared or disturbed areas without native vegetation	Recorded within 10km (OEH 2011)	Unlikely, marginal areas of low quality foraging habitat within Survey Area.
<i>Irediparra gallinacea</i>	Comb-crested Jacana	V	-	This species of bird occurs throughout coastal Australia and well inland in the north from the Kimberley to Sydney. Vagrants occasionally appear further south, possibly in response to unfavourable conditions further north in NSW. Inhabits permanent wetlands with a good surface cover of floating vegetation, especially water-lilies. Pairs and family groups forage across floating vegetation, feeding primarily on insects and other invertebrates, as well as some seeds and other vegetation. Breeds in spring and summer in NSW, in a nest of floating vegetation.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Stagonopleura guttata</i>	Diamond Firetail	V	-	This species is known to occur in grassy eucalypt woodlands, including Box-Gum Woodlands, and Snow Gum (<i>Eucalyptus pauciflora</i>) Woodlands, riparian areas (rivers and creeks), and sometimes in lightly wooded farmland (DEC 2007).	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Stictonetta naevosa</i>	Freckled Duck	V	-	This species prefers permanent freshwater swamps and creeks with heavy growth of <i>Typha</i> , Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds. They generally rest in dense cover during the day, usually in deep water. Nesting usually occurs between October and December but can take place at other times when conditions are favourable and nests are usually located in dense vegetation at or near water level.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	V	-	This species is nomadic, spending summer in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests and winter at lower altitudes in drier more open eucalypt forest and woodlands, particularly in coastal areas. This species nests in hollow-bearing trees close to water with breeding taking place between October and January. Breeding usually occurs in tall mature sclerophyll forests that have a dense understorey, and occasionally in coastal forests	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Calyptrorhynchus lathamii</i>	Glossy Black-Cockatoo	V	-	This species is highly specialised, feeding almost exclusively on the seeds extracted from the wooden cones of she-oak species. Its key food species on the coast and tablelands are <i>Allocasuarina torulosa</i> and <i>A. littoralis</i> , with some <i>A. distyla</i> taken. Inland, its key food species include <i>A. verticillata</i> and <i>Casuarina cristata</i> ; also <i>A. inophloia</i> , <i>A. diminuta</i> , <i>A. gymnanthera</i> , and sometimes <i>A. leuhmannii</i> . It is uncommon although widespread throughout suitable forest and woodland habitats, from central QLD to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW. This species needs suitable hollows in living and dead trees for nesting and breeds between March and August.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Tyto longimembris</i>	Eastern Grass Owl	V	-	This species is found in areas of tall grass, including grass tussocks, in swampy areas, grassy plains, swampy heath, and in cane grass or sedges on flood plains. In NSW it is more likely to be resident in the north-east. Grass Owl numbers can fluctuate greatly, increasing especially during rodent plagues.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Calidris tenuirostris</i>	Great Knot	V	M	This species breeds in Siberia. In Australia, it occurs within sheltered, coastal habitats containing large, intertidal mudflats or sandflats where individuals forage for invertebrates.	Recorded within 10km (OEH 2011)	Unlikely, marginal areas of low quality foraging habitat within study area
<i>Charadrius leschenaultii</i>	Greater sand-plover	V	M	This species is almost entirely restricted to coastal areas in NSW, occurring mainly on sheltered sandy, shelly or muddy beaches or estuaries with large intertidal mudflats or sandbanks. It roosts during high tide on sandy beaches and rocky shores; begins foraging activity on wet ground at low tide, usually away from the edge of the water.	Recorded within 10km (OEH 2011)	Unlikely, marginal areas of low quality foraging habitat within study area

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Charadrius mongolus</i>	Lesser Sand-plover	V	M	This species breeds in central and north-eastern Asia and migrates south in Winter. In Australia it is found on the entire coastline but is most common in the Gulf of Carpentaria and along the east coast of Qld and northern NSW. Rarely recorded south of the Shoalhaven, and internationally important sites in NSW include the Hunter River estuary, Tuggerah Lakes and the Clarence River estuary. Nationally important sites in NSW include the Richmond River estuary, Shoalhaven River estuary and Botany Bay. In NSW the species is almost entirely coastal and favours the beaches of sheltered bays, mudflats, harbours and lagoons. It forages for crustaceans, molluscs and worms on wet ground at low tide, usually away from the water's edge.	Recorded within 10km (OEH 2011)	Unlikely, marginal areas of low quality foraging habitat within study area
<i>Dasyornis brachypterus</i>	Eastern Bristlebird	E	E	Inhabits low dense vegetation in a broad range of habitat types including sedgeland, heathland, swampland, shrubland, sclerophyll forest and woodland, and rainforest. It occurs near the coast, on tablelands and in ranges. Found in habitats with a variety of species compositions, but are defined by a similar structure of low, dense, ground or understorey vegetation.		Unlikely, no suitable habitat present within study area.
<i>Hieraaetus morphnoides</i>	Little Eagle	V	-	The Little Eagle occupies habitats rich in prey within open eucalypt forest, woodland or open woodland. Sheoak or acacia woodlands and riparian woodlands of interior NSW are also used. For nest sites it requires a tall living tree within a remnant patch, where pairs build a large stick nest in winter and lay in early spring. The Little Eagle is distributed throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Glossopsitta pusilla</i>	Little Lorikeet	V	-	Distributed in dry, open eucalypt forests and woodlands from the coast to the western slopes of the Great Dividing Range, extending westwards to the vicinity of Albury, Parkes, Dubbo and Narrabri. Usually forage in small flocks, often with other species of lorikeet. They feed primarily on nectar and pollen of profusely-flowering eucalypts and a variety of other species including melaleucas and mistletoes. On the western slopes and tablelands White Box <i>Eucalyptus albens</i> and Yellow Box <i>E. meliodora</i> are particularly important food sources for pollen and nectar respectively. Nest hollows have small openings (approximately 3cm diameter) and are mostly found in living, smooth-barked eucalypts, especially Manna Gum <i>Eucalyptus viminalis</i> , Blakely's Red Gum <i>E. blakelyi</i> and Tumbledown Gum <i>E. dealbata</i> .	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Sternula albifrons</i>	Little Tern	E	M	Migrating from eastern Asia, the Little Tern is found on the north, east and south-east Australian coasts. In NSW, it arrives from September to November, occurring mainly north of Sydney, with smaller numbers found south to Victoria, and is almost exclusively coastal, preferring sheltered environments, however also occurs several kilometres from the sea in harbours, rivers, and inlets. It breeds through spring and summer, nesting in small, scattered colonies on low dunes or sandy beaches just above high tide mark near estuary mouths or adjacent to coastal lakes and islands. The nest is a scrape in the sand, which may be lined with shell grit, seaweed or small pebbles. Their diet consists of small fish, crustaceans, insects, annelids and molluscs sourced from shallow water in channels and estuaries, and in the surf on beaches.	Recorded within 10km (OEH 2011)	Unlikely, marginal areas of low quality foraging habitat within study area
<i>Anseranas semipalmata</i>	Magpie Goose	V	-	This species of water bird is found in shallow wetlands containing dense rushes or sedges, and nearby dry land used for grazing. It occurs across most of NSW. It feeds on grasses, bulbs and rhizomes and roosts in tall vegetation within wetland areas. Breeding is strongly influenced by rainfall and water levels, and occurs predominately in monsoonal areas. Nests are formed in trees over deep water.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Sula dactylatra</i>	Masked Booby	V	-	This species of large seabird occurs on Lord Howe Island and on coastal areas of the North Coast of NSW as well as throughout the tropical and subtropical seas of the world. The breeding population on Lord Howe Island is the most southerly breeding colony in the world, remaining at Lord Howe Island year around though ranging widely for food before returning to breed. Nesting occurs on high open areas where they can take off directly into the wind in a nest made from a rough platform of trodden grass. Breeding sites on Lord Howe Island include King Point and Muttonbird Point on the main Island, and Ball's Pyramid, Muttonbird Island and the Admiralty Islets.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Tyto novaehollandiae</i>	Masked Owl	V	-	This species occurs in dry eucalypt woodlands at altitudes from sea level to 1100 m and roosts and breeds in hollows and sometime caves in moist eucalypt forested gullies. It hunts along the edges of forests and roadsides and has a home range covering between 500 ha and 1000 ha. Prey for this species are principally terrestrial mammals but arboreal species may also be taken. Masked Owls are sparsely distributed from southern QLD to SA and WA. It has also been recorded on the Nullarbor plain.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Haematopus longirostris</i>	Pied Oystercatcher	V	-	Primarily a coastal species, favouring intertidal flats of inlets and bays, open beaches and sandbanks. It nests on the ground just above the tideline in the littoral zone of beaches and estuaries.	Recorded within 10km (OEH 2011)	Unlikely, marginal areas of low quality foraging habitat within study area
<i>Ninox strenua</i>	Powerful Owl	V	-	This species is a nocturnal, solitary and sedentary species. They occur in a number of vegetation types ranging from woodland and open sclerophyll forest to tall open wet forest and rainforest. However, this species does prefer large tracts of vegetation. Powerful Owls nest in large tree hollows (at least 0.5 m deep), in large eucalypts (diameter at breast height of 80-240 cm) that are at least 150 years old with breeding taking place from late summer to late autumn. Pairs of Powerful Owls are believed to have high fidelity to a small number of hollow-bearing nest trees and will defend a large home range of 400 - 1,450 ha. It forages within open and closed woodlands as well as open areas.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Pterodroma solandri</i>	Providence Petrel	V	M	The Providence Petrel is a marine, pelagic seabird that inhabits the subtropical and tropical waters of the south-west Pacific Ocean. This species breeds only on Lord Howe and Phillip Islands off the east coast of Australia.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Ptilinopus regina</i>	Rose-crowned Fruit-dove	V	-	This species is a small colourful rainforest pigeon found on the coast and ranges of eastern NSW and QLD. It occurs mainly in sub-tropical and dry rainforest, and occasionally in moist eucalypt and swamp forest where fruit is plentiful.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Petroica boodang</i>	Scarlet Robin	V	-	In NSW this species occupies open forests and woodlands from the coast to the inland slopes. It breeds in drier eucalypt forests and temperate woodlands, often on ridges and slopes, within an open understorey of shrubs and grasses and sometimes in open areas. Abundant logs and coarse woody debris are important structural components of its habitat. In autumn and winter it migrates to more open habitats such as grassy open woodland or paddocks with scattered trees.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Tyto tenebricosa</i>	Sooty Owl	V	-	The Sooty Owl lives in the moist eucalypt forests and rainforests of the coastal, escarpment and eastern tablelands regions of NSW. It is more common in the north of its range, and does not occur in the western tablelands or further west in NSW. Habitat for this species is limited mainly to the tall, moist eucalypt forests and rainforests of the escarpment and coastal areas. Sooty Owls occur in both steep and undulating country but are strongly associated with sheltered gullies, particularly those with a tall, rainforest understorey. The species roosts in hollows in live or occasionally dead eucalypt or rainforest trees in moist forest, amongst dense foliage in rainforest gullies or in caves recesses or ledges in cliffs or banks. Pairs nest in old hollow trees in eucalypt or rainforest trees within 100m of streams in unlogged and unburnt gullies, or in caves. Hollows are greater than 40cm wide and 100cm deep and are surrounded by canopy trees. Hollow entrances are at least 16 m above ground, in trees of at least 120 cm diameter at breast height.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Haematopus fuliginosus</i>	Sooty Oystercatcher	V	-	This species of large wader favours rocky headlands, rock shelves, exposed reefs with rock pools, beaches and muddy estuaries, where it forages on exposed rock or coral at low tide for limpets and mussels. Breeding occurs in spring and summer, almost exclusively on offshore islands, and occasionally on isolated promontories. The nest is a shallow scrape on the ground, or small mound of pebbles, shells, or seaweed.	Recorded within 10km (OEH 2011)	Unlikely, marginal areas of low quality foraging habitat within study area
<i>Circus assimilis</i>	Spotted Harrier	V	-	The Spotted Harrier occurs throughout the Australian mainland, except in densely forested or wooded habitats of the coast, escarpment and ranges, and rarely in Tasmania. Individuals disperse widely in NSW and comprise a single population. The Spotted Harrier occurs in grassy open woodland including acacia and mallee remnants, inland riparian woodland, grassland and shrub steppe (e.g. chenopods). It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands. The species builds a stick nest in a tree and lays eggs in spring (or sometimes autumn).	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Lophoictinia isura</i>	Square-tailed Kite	V	-	Although this species shows a preference for timbered watercourses, they have been found in a variety of habitats including woodlands and open forests. It appears to occupy large hunting grounds and breeds from July - February with nests generally located along of near watercourses. It is a solitary bird, and a specialised predator, taking small passerines, especially honeyeaters and their eggs and nestlings as well as large insects in the tree canopy. It generally hunts low over open forest, woodlands and mallee communities, heaths, and other low scrubby habitats that are rich in passerines. This species prefers a structurally diverse landscape with a broad range of habitats and appears to utilise a large range greater than 100 km ² .	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Ptilinopus superbis</i>	Superb Fruit-dove	V	M	A small pigeon that inhabits rainforest and similar closed forests where it forages high in the canopy. It may also forage in eucalypt or acacia woodland where there are fruit-bearing trees. Occurs principally in NE Qld to NE NSW, becoming much less common further south and is largely confined to pockets of suitable habitat as far south as Moruya, with vagrants as far south as Tasmania.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Xenus cinereus</i>	Terek Sandpiper	V	M	This species is a medium sized migratory wader. It has been recorded on lagoons, creeks and estuaries throughout Australia, however tends to favours mud banks and sandbanks located near mangroves, but can also occur on rocky pools and reefs. Primarily a coastal species, this species is occasionally spotted around brackish pools up to 10 km inland. <i>X. cinereus</i> roosts communally amongst mangroves of dead trees, often with other wader species, breaking into smaller flocks or solitary birds when feeding.	Recorded within 10km (OEH 2011)	Unlikely, marginal areas of low quality foraging habitat within study area
<i>Neophema pulchella</i>	Turquoise Parrot	V	-	This species occurs in open eucalypt woodlands and forests, typically with a grassy understorey. It favours the edges of woodlands adjoining grasslands or timbered creek lines and ridges. A granivorous species, the Turquoise Parrot feeds on the seeds of native and introduced grasses and other herbs. Grasslands and open areas provide important foraging habitat for this species while woodlands provide important roosting and breeding habitat. This species nests in tree hollows, logs or posts from August to December.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-	The Varied Sittella is sedentary and inhabits most of mainland Australia except the treeless deserts and open grasslands, with a nearly continuous distribution in NSW from the coast to the far west. It inhabits eucalypt forests and woodlands, especially rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. It builds a cup-shaped nest of plant fibres and cobwebs in an upright tree fork high in the living tree canopy, and often re-uses the same fork or tree in successive years.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Epthianura albifrons</i>	White-fronted Chat	V	-	This species occurs from southern Queensland to Western Australia and down to Tasmania, mostly in temperate to arid climates and very rarely in sub-tropical areas. It is found in damp open habitats, particularly wetlands containing saltmarsh areas that are bordered by open grasslands. Along the coast they are found in estuarine and marshy habitats with vegetation <1m tall, and in open grasslands and areas bordering wetlands. Inland, they are often observed in grassy plains, saltlakes and saltpans along waterway margins.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Ptilinopus magnificus</i>	Wompoo Fruit-dove	V	-	This species is a large and dramatically beautiful rainforest pigeon, almost twice the size of other coloured fruit-doves. It occurs in, or near rainforest, low elevation moist eucalypt forest and brush box forests, feeding on a diverse range of tree and vine fruits and is locally nomadic - following ripening fruit; some of its feed trees rely on species such as this to distribute their seeds. The Wompoo fruit-dove is most often seen in mature forests, but also found in remnant and regenerating rainforest.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Carcharias taurus</i>	Grey Nurse Shark	CE	CE	In Australia, the Grey Nurse Shark is now restricted to two populations, one on the east coast from southern Queensland to southern NSW and the other around the south-west coast of Western Australia. The species has been recorded at varying depths, but is generally found between 15–40 m and is often observed hovering motionless just above the seabed, in or near deep sandy-bottomed gutters or rocky caves, and in the vicinity of inshore rocky reefs and islands.	Predicted within 10km (DSEWPac 2011a)	Unlikely, no suitable habitat present within study area.
<i>Carcharodon carcharias</i>	Great White Shark	V	V, M	In Australia this species has been recorded from all coastal areas except the Northern Territory. They can be found from close inshore around rocky reefs, surf beaches and shallow coastal bays to outer continental shelf and slope areas and can move across ocean basins (e.g. between Australia and SAfrica).	Predicted within 10km (DSEWPac 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Rhinocodon typus</i>	Whale Shark	-	V, M	In Australia, the Whale Shark is known from NSW, QLD, NT, WA and occasionally Victoria and SA, but it is most commonly seen in waters off northern WA, NT and QLD. This species of shark is often seen far offshore, but also comes close inshore and sometimes enters lagoons of coral atolls. It is a suction filter feeder and feeds on a variety of planktonic and nektonic prey, including small crustaceans, small schooling fishes such as sardines, anchovies and mackerel and, to a lesser extent, on small tuna and squid.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Epinephelus daemeli</i>	Black Cod	V	-	In Australia the species ranges from southern Qld to Kangaroo Island. Adult black cod are usually found in caves, gutters and beneath bomboras on rocky reefs. They are territorial and often occupy a particular cave for life. Small juveniles are often found in coastal rock pools, and larger juveniles around rocky shores in estuaries.	Note - Worley Parsons 2009 report	Unlikely, no suitable habitat present within study area.
<i>Crinia tinnula</i>	Wallum Froglet	V	-	This species of amphibian inhabits acid paperbark swamps and sedge swamps along the northern and central coast regions of NSW. It is generally not associated with disturbed habitats (Renwick 2006).	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Litoria aurea</i>	Green and Golden Bell Frog	E	V	This species inhabits marshes, natural and artificial freshwater to brackish wetlands, dams and instream wetlands. It prefers sites containing bullrushes (<i>Typha</i> spp.) or spikerushes (<i>Eleocharis</i> spp.), which are unshaded and have a grassy area and/or rubble as shelter/refuge habitat nearby. They are active by day and breed during the summer months (DEC 2006). Plague Minnow (<i>Gambusia holbrooki</i>) is a key threatening process as they feed on green and Golden Bell Frog eggs and tadpoles. DEC have a recovery plan for this species.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Litoria littlejohni</i>	Littlejohns Treefrog	V	V	Littlejohn's Tree Frog has a distribution that includes the plateaus and eastern slopes of the Great Dividing Range from Watagan State Forest (90 km north of Sydney) south to Buchan in Victoria. It occurs along permanent rocky streams with thick fringing vegetation associated with eucalypt woodlands and heaths among sandstone outcrops, hunting either in shrubs or on the ground. Breeding is triggered by heavy rain and can occur from late winter to autumn, but is most likely to occur in spring when conditions are favourable. Males call from low vegetation close to slow flowing pools and eggs are laid in loose gelatinous masses attached to small submerged twigs. Eggs and tadpoles are mostly found in slow flowing pools that receive extended exposure to sunlight, but will also use temporary isolated pools.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Balaenoptera musculus</i>	Blue Whale	E	V, M	Blue Whale sightings in Australian waters have been widespread, and it is likely that the whales occur right around the continent at various times of the year. However, much of the Australian continental shelf and coastal waters have no particular significance to the whales and are used only for migration and opportunistic feeding. The only known areas of significance to Blue Whales are feeding areas around the southern continental shelf, notably the Perth Canyon, in Western Australia, and the Bonney Upwelling and adjacent upwelling areas of South Australia and Victoria	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Dugong dugon</i>	Dugong	V	-	Dugongs are considered occasional visitors to NSW coastal and estuarine waters. Dugongs were sighted in coastal and estuarine waters containing <i>Halophila</i> seagrasses around Wallis Lake, Port Stephens, Lake Macquarie and Brisbane Water in the summer of 2002/2003. The presence of Dugongs in these areas at this time coincided with warm water temperatures	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Eubalaena australis</i>	Southern Right Whale	V	E, M	Southern Right Whales have been recorded in the coastal waters of all Australian states with the exception of the Northern Territory, though they are principally recorded off WA and western SA. Known major calving areas occur in shallow, sandy areas off the coasts of Western and South Australia. Feeding areas are thought to be in deeper offshore waters at higher latitudes.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Megaptera novaeangliae</i>	Humpback Whale	V	V, M	Large marine mammal that can grow to 16m in length and is found in oceanic and coastal waters worldwide. They have a stocky body with a broad rounded head, a small dorsal fin and very long flippers. The back and sides of the body are black as is the underside, which often has some white on it. The flippers and underside in some of the tail-flukes are usually mostly white. The population of Australia's east coast migrates from summer cold-water feeding grounds in Subantarctic waters to warm-water winter breeding grounds in the central Great Barrier Reef. They are regularly observed in NSW waters in June and July, on northward migration and October and November, on southward migration.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V	E	This species has a preference for mature wet forest habitats, particularly in areas of 600mm rainfall p.a. , but has been recorded from a range of environments including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Den sites are found in hollow-bearing trees, fallen logs, small caves, rock crevices, boulder fields and rocky-cliff faces. Females occupy home ranges of up to 750 ha and males up to 3,500 ha, which are usually traversed along densely vegetated creek lines.	Predicted to occur within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Petaurus norfolcensis</i>	Squirrel Glider	V	-	This species of glider is widely though sparsely distributed throughout eastern Australia. In NSW it inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas. This species prefers a diversity of food supplies including acacia gum, eucalypt sap, nectar, honeydew and manna, with invertebrates and pollen providing protein, and requires an abundant supply of tree-hollows for nesting and shelter.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Petrogale penicillata</i>	Brush-tailed Rock Wallaby	E	V	In more recent years this rock-wallaby appears to have become restricted to rock outcrops containing suitable caves and tunnels or very dense undergrowth to provide shelter.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Phascolarctos cinereus</i>	Koala	V	V	The Koala has a fragmented distribution throughout eastern Australia. It is limited to areas of preferred feed trees (includes any of over 70 eucalypt and 30 non-eucalypt species) in eucalypt woodlands and forests.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	V	-	This species prefers dry sclerophyll forest with a sparse groundcover of herbs, grasses, shrubs or leaf litter. They also inhabit heath, swamps, rainforest and wet sclerophyll forest. They forage mostly in rough barked trees and feed mostly on arthropods but will eat other invertebrates, nectar and occasionally small vertebrates.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Potorous tridactylus</i>	Long-Nosed Potoroo	V	V	This species of small mammal is generally restricted to areas with high annual rainfall, inhabiting coastal heath and dry and wet sclerophyll forests. Its major habitat requirement is relatively thick ground cover with occasional open areas and may consist of grass trees, sedges, ferns or heath, or low shrubs of tea-trees and Melaleucas where soil is light and sandy. It feeds on the fruiting bodies of underground-fruiting fungi, roots, tubers, insects and their larvae, and other soft-bodied animals in the soil. Breeding occurs biannually in late winter / early spring and in late summer, with one young being reared (Johnston 1995). In NSW it is generally restricted to coastal heaths and forests east of the Great Dividing Range, with a n annual rainfall exceeding 760 mm.	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Pseudomys novaehollandiae</i>	New Holland Mouse	-	V	The New Holland Mouse occurs in disjunct, coastal populations in SE Australia from Tasmania to Queensland. In NSW it has been found in a variety of coastal habitats including heathland, woodland, dry sclerophyll forest with a dense shrub layer and vegetated sand dunes (Wilson and Bradtke 1999). It is commonly referred to as a 'disturbance enhanced' or early successional species as populations have demonstrated the capacity to recolonise and increase in size in areas of regenerating native vegetation after wildfire, clearing and sandmining. The species' presence has been strongly correlated with the density of understorey vegetation, and with a high floristic diversity in regenerating heath (Lock and Wilson 1999).	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	V	-	This species occurs along the east coast from Cape York to Castlemaine in Victoria, generally east of the Great Dividing Range (Churchill 2008). It is known from a variety of habitats from open grasslands to woodlands, wet and dry sclerophyll forests and rainforest. It has a direct flight pattern and forages above the canopy in forested areas or close to the ground in open areas (Churchill 2008). It is essentially a cave bat but also utilises man-made habitats such as road culverts, storm-water tunnels and other man-made structures. Maternity caves have very specific humidity and temperature regimes and there are only 4 known maternity caves in NSW, near Wee Jasper, Bungonia, Kempsey and Texas. Breeding takes place in October and females may travel several hundred kilometres to the nearest maternal colony (Churchill 2008).	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V	-	This species of bat inhabits moist forest generally with trees larger than 20 m and roosts in eucalypt hollows, underneath bark or in buildings. Diet consists of moths, beetles and other insects, which it collects within or just below the tree canopy. This species hibernates during winter and breeding takes place in late spring.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Mormopterus norfolkensis</i>	Eastern Freetail-bat	V	-	This species occurs from southern NSW to southern QLD in dry sclerophyll forest and woodland east of the Great Dividing Range. It forages in natural and artificial openings in the vegetation, typically within a few kilometres of its roost. The species roosts primarily in tree hollows but has also been recorded from man-made structures or under bark. Females give birth in late November/early December and lactation lasts until late January (Churchill 2008).	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V	-	This species occurs on the east coast and Great Dividing Range from the Atherton Tablelands in QLD to northern Victoria. It inhabits a variety of habitats from woodland to wet and dry sclerophyll forests and rainforest, as well as remnant paddock trees and timber-lined creeks, typically in areas below 500m elevation (Hoye and Richards 2008, Churchill 2008). It has a direct flight pattern and forages for insects (and potentially other bats) in relatively uncluttered areas, using natural or man-made openings in denser habitats. It generally roosts in tree hollows or fissures but may also roost under exfoliating bark or in the roofs of old buildings. The young are born in January in communal maternal roosts in suitable hollow trees (Hoye and Richards 2008, Churchill 2008).	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V	This species roosts in camps generally located within 20 km of a regular food source and are commonly found in gullies, close to water and in vegetation with a dense canopy. This species is known to forage in areas supporting subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps on the nectar and pollen of native trees, in particular eucalypts, melaleucas and banksias. Grey-headed Flying-fox show a regular pattern of seasonal movement with much of the population moving to northern NSW and QLD during May and June to exploit winter flowering tree species (Eby and Law 2008). This species will also forage in urban gardens and cultivated fruit crops.	Recorded within 10km (OEH 2011) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	This species is distributed between south-eastern QLD to NSW from the coast to the western slopes of the divide. This species roosts in caves, rock crevices and mines and has been most commonly recorded from dry sclerophyll forests and woodlands. In southern Sydney appears to be largely restricted to the interface between sandstone escarpments and fertile valleys (DSEWPaC 2011b). <i>C. dwyeri</i> is an insectivorous species that flies relatively slowly over the canopy or along creek beds (Churchill 2008).	Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Myotis macropus</i>	Large-footed (southern) Myotis	V	-	Primarily a coastal species that forages over streams and watercourses feeding on fish and insects which it catches by raking its feet across the water surface, it will occur inland along large river systems. Breeding takes place during November or December, roosting in a variety of habitats including caves, mine shafts, hollow-bearing trees, stormwater channels, buildings, under bridges and in dense foliage.	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Miniopterus australis</i>	Little Bentwing-Bat	V	-	The Little Bentwing Bat occurs from Cape York to Sydney in NSW. This species congregates in maternal roost caves during summer. In NSW, there is only one known breeding colony which shares a cave with a colony of Eastern Bentwing-bats, and females will travel over 200 km to reach this site. Outside the breeding season, this bat will roost in caves, tunnels and mines and has been recorded in a tree hollow on one occasion. It forages for insects beneath the canopy of well-timbered habitats including rainforests, wet and dry sclerophyll forests, paperbark swamps and vine thickets (Churchill 2008, Hoyer and Hall 2008).	Recorded within 10km (OEH 2011)	Unlikely, no suitable habitat present within study area.
<i>Caretta caretta</i>	Loggerhead Turtle	E	E, M	This species of turtle is found in tropical and temperate waters off the Australian coast. In NSW, they are seen as far south as Jervis Bay and have been recorded nesting on the NSW north coast and feeding around Sydney. Adults are ocean-dwellers, foraging in deeper water for fish, jellyfish and bottom-dwelling animals. Eggs are laid in nests dug into beaches in tropical regions during the warmer months.	Known within Hunter/Central Rivers marine zone CMA (DEC 2005b) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.
<i>Chelonia mydas</i>	Green Turtle	V	V, M	This species of sea turtle is found in tropical and coastal waters of the north and central coast of Australia, occasionally venturing into southern waters. Adults feed on marine plant material, however are carnivorous when young. Eggs are laid in nests dug into beaches throughout the species range including NSW.	Recorded within 10km (OEH 2011) Known within Hunter/Central Rivers marine zone CMA (DEC 2005b) Predicted within 10km (DSEWPaC 2011a)	Unlikely, no suitable habitat present within study area.

Scientific Name	Common Name	TSC Act	EPBC Act	Habitat Association	Nature of Record	Likelihood of Occurrence
<i>Dermochelys coriacea</i>	Leatherback Turtle	V	E, M	This species of sea turtle have been recorded feeding in the coastal waters of all Australian States and are a highly pelagic species, venturing close to shore mainly during the nesting season. Adults feed mainly on pelagic soft-bodied creatures such as jellyfish and tunicates, which occur in greatest concentrations at the surface in areas of upwelling or convergence. The regular appearance in cool temperate waters is probably due to the seasonal occurrence of large numbers of jellyfish.	Known within Hunter/Central Rivers marine zone CMA (DEC 2005b) Predicted within 10km (DSEWPac 2011a)	Unlikely, no suitable habitat present within study area.
<i>Eretmochelys imbricate</i>	Hawksbill Turtle		V, M	This species of sea turtles have been seen in temperate regions as far south as northern NSW. It migrates up to 2400 km between foraging areas and nesting beaches. Australia holds the largest breeding populations in the world, and the largest rookeries (nesting aggregations). Hawksbill Turtles are pelagic, spending their first five to ten years drifting on ocean currents often found in association with rafts of Sargassum. Once Hawksbill Turtles reach 30 to 40 cm curved carapace length, they settle and forage in tropical tidal and sub-tidal coral and rocky reef habitat. They primarily feed on sponges and algae.	Predicted within 10km (DSEWPac 2011a)	Unlikely, no suitable habitat present within study area.
<i>Hoplocephalus bungaroides</i>	Broad-headed Snake	E	V	The broad-headed snake is largely confined to sandstone within the coast and ranges in an area within approximately 250 km of Sydney. This species is found in rock crevices and under flat sandstone rocks on exposed cliff edges during autumn, winter and spring. It moves from the sandstone rocks to shelters in hollows in large trees within 200 m of escarpments in summer. This snake species feeds mostly on geckos and small skinks; will also eat frogs and small mammals occasionally. It produces live young from January to March.	Predicted within 10km (DSEWPac 2011a)	Unlikely, no suitable habitat present within study area.
<i>Natator depressus</i>	Flatback Turtle	-	V, M	In Australia, the Flatback Turtle is found only in the tropical waters of northern Australia. It is one of only two species of sea turtle without a global distribution. Nesting is confined to Australia and four genetic stocks are recognised (Eastern QLD, Torres Strait and Gulf of Carpentaria, NT and WA). Adults inhabit soft bottom habitats over the continental shelf. Little is known about the diet, however juveniles are known to eat gastropod molluscs, squid and siphonophores (soft corals, hydroids, jellyfish)	Predicted within 10km (DSEWPac 2011a)	Unlikely, no suitable habitat present within study area.

All information in this table is taken from NSW OEH and Commonwealth DSEWPac Threatened Species profiles (DEC 2005a &b; DSEWPac 2011a) unless otherwise stated.

The codes used in this table are: CE – Critically Endangered; E – Endangered; V – Vulnerable; EP – Endangered Population; CEEC – Critically Endangered Ecological Community; EEC – Endangered Ecological Community; M – Migratory Species; Prel. – subject to preliminary determination by the NSW Scientific Committee.



Appendix H

Noise and Vibration Guide

Noise and Vibration Guide

This noise and vibration guide provides details on the technical terms and methodology used in the noise and vibration assessment for the Environmental Impact Statement (EIS). Refer to Chapter 11 of the EIS for the findings and conclusions of the assessment.

Policies, Guidelines and Standards

The noise and vibration assessment references a number of relevant guidelines and standards. The *Interim Construction Noise Guideline* 2009 was referenced to assess potential impacts from construction noise. The *Road Noise Policy* 2011 was referenced to assess potential impacts from traffic related to spoil haulage. The following sections provide an outline of these relevant policies, guidelines and standards.

Construction Noise

Interim Construction Noise Guideline DECCW 2009

The NSW Department of Environment and Climate Change (now Office of Environment and Heritage) *Interim Construction Noise Guideline* 2009 (ICNG) is the primary guideline used to assess noise impacts from construction activities. The ICNG focusses on applying a range of work practices to minimise construction noise impacts and protect the majority of residences and other sensitive land uses.

The ICNG provides noise management levels for construction noise at residential and other sensitive receivers. These management levels are calculated based on the Rating Background Level (RBL) at nearby residential locations.

Construction Equipment and Indicative Sound Power Levels

Table 1 provides an indicative list of construction equipment/plant that would be used during construction as well as their corresponding sound power levels (noise energy at the source). Noise levels were sourced from:

- BS5228-1:2009 *Code of Practice for Noise and Vibration on Construction and Open Sites Part 1: Noise*.
- AS2436: 2010 *Guide to Noise and Vibration Control on Construction, Maintenance and Demolition Sites*.

Table 1 Construction Equipment and Sound Power Estimates dB(A)

Task	Location	Equipment	Estimated Sound Power Level (L _w) dB(A)
Excavation	At Berths / Adjacent to Berths	Dredge (such as long reach excavator, barges, tugs)	106
		Mobile cranes	99
		Dual cabs	84
Sheet Piling	At Berths	Sheet Piling Rig	118

Task	Location	Equipment	Estimated Sound Power Level (L _w) dB(A)
Site compound and stockpiling for transport	Walsh Point, Kooragang	Excavators	102
		Loader	107
		Dozer	107
		Dual cabs	84
		Semi-Trailer	108

Traffic Noise

Road Noise Policy DECCW 2011

In July 2011, the former Department of Environment, Climate Change and Water (now Office of Environment and Heritage) replaced the *Environment Criteria for Road Traffic Noise* with the *Road Noise Policy 2011* (RNP). The RNP aims to identify strategies that address the issue of road traffic noise from existing roads, new road projects, road redevelopment projects and new traffic generating developments.

The RNP provides traffic noise 'assessment criteria' for residential receivers in the vicinity of existing and new roadways. The assessment criteria consider:

- ▶ Whether the road project is a new or existing road corridor
- ▶ The existing level of noise exposure
- ▶ Whether the road project involves the construction of a new road or substantial changes to the alignment or design of an existing road
- ▶ Whether the volume or composition of traffic flows would substantially change.

Table 2 shows the assessment criteria relevant to the Project. The type detailed in the RNP that is relevant to the Project is "*existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments*".

Table 2 RNP Road Traffic Noise Assessment Criteria for Residential Land Uses

Road Category	Type of Project / Land Use	Assessment Criteria – dB(A)	
		Day (7 am–10 pm)	Night (10 pm–7 am)
Freeway/arterial/ sub-arterial roads	Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments	60 L _{Aeq} , (15 hour) (external)	55 L _{Aeq} , (15 hour) (external)

Table 3 shows the criteria used to assess a development's potential to increase noise impacts based on increases in traffic caused by a proposed development.

Table 3 RNP Relative Increase Criteria for Residential Land Uses

Road Category	Type of Project / Land Use	Total Traffic Noise Level Increase–dB(A)	
		Day (7 am–10 pm)	Night (10 pm–7 am)
Freeway/ arterial/ sub-arterial roads	New road corridor / redevelopment of existing road / land use development with the potential to generate additional traffic on existing road	Existing Traffic $L_{Aeq, (15 \text{ hour})} + 12\text{dB}$ (external)	Existing Traffic $L_{Aeq, (9 \text{ hour})} + 12\text{dB}$ (external)

Vibration

The assessment of potential vibration impacts from construction activities referenced the RTA *Environmental Noise Management Manual* (ENMM) and British Standard 5228:2009 (BS5228:2009). The vibration propagation prediction methods from the ENMM and BS5228 provide indications of the potential impacts of vibratory piling at various distances from the works.

Vibration from the construction of the Project would come from piling works. Sheet piling typically generates lower vibration levels than standard piling.

RTA ENMM Prediction Method

The Roads and Maritime Services (former RTA) developed the ENMM as a guide for staff, consultants and other contractors to assess and manage noise and vibration impacts from traffic, road construction and maintenance. The ENMM provides guidance for the assessment and measurement of vibration impacts from construction activities, including piling.

The ENMM shows that vibration levels are inversely proportional to distance from the source. Field variations show that the distance relationship generally varies between $d^{-0.8}$ and $d^{-1.6}$, rather than d^{-1} . Simply, vibration impacts reduce with distance. Refer to the distance attenuation section below for more details.

British Standard 5228:2009 Prediction Method

British Standard 5228:2009 (BS 5228) was developed to protect workers and residents from noise and vibration impacts from construction activities. It lists vibration prediction formula for a variety of construction activities.

The predicted vibration velocity (ppv, mm/s) for vibratory piling is based around the three confidence bands of 50 percent, 33.3 percent, and 5 percent representing the likelihood of the predicted value being exceeded. For the 5 percent confidence band, 95 percent of the time the vibrations generated by vibratory piling would be less severe at the applicable distance.

Vibration Levels

Table 4 presents typical vibration levels produced by sheet piling. These velocities were sourced from the ENMM and BS 5228.

Figure 1 presents the confidence band ranges for vibratory piling. The lower line for each band represents steady-state operation while the higher line for each band represents run-up/run-down conditions, which are expected to generate more severe vibration.

Table 4 Typical Vibration Levels –Piling

Item	Peak Particle Velocity at 10 m (mm/s)	Prediction Method / Source
Impact piling	12 to 30	RTA ENMM
Vibratory piling (run up/run down)	3.8 to 16.8	BS5228
Vibratory piling (normal operations)	3.0 to 13.3	BS5228
Vibratory piling (steady state)	2.4 to 10.6	BS5228

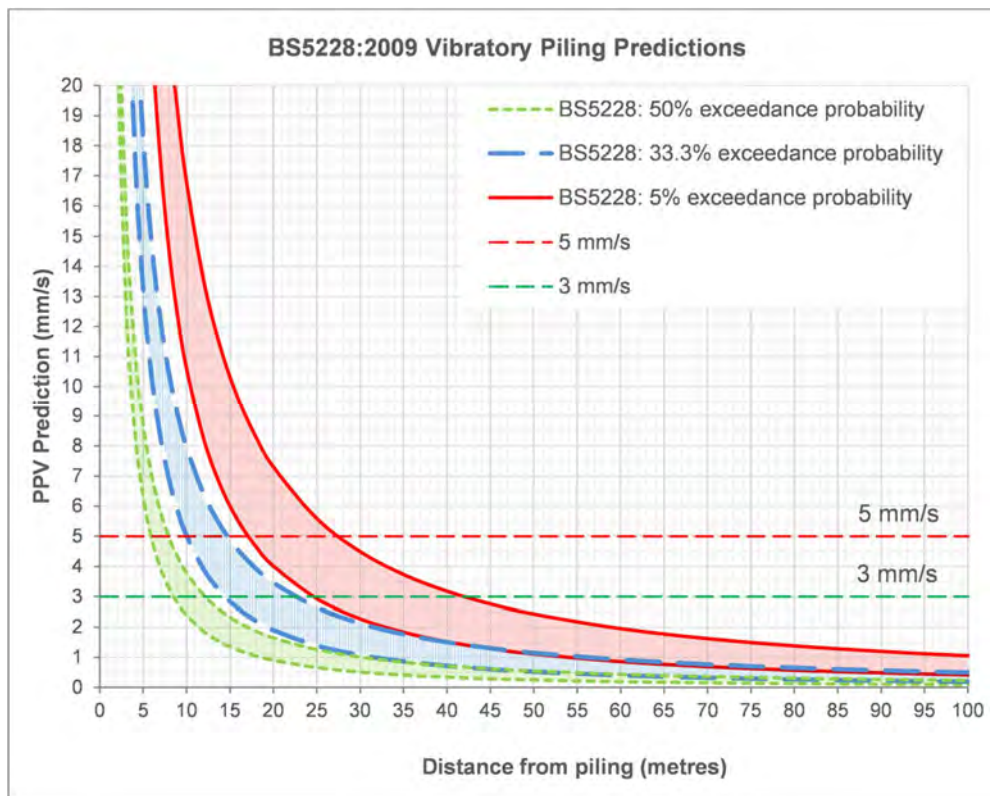


Figure 1 British Standard 5228:2009 Vibratory Piling Predictions

Distance Attenuation Relationship

Construction noise impacts associated with the Project were estimated using the distance attenuation relationship described in the equation below:

$$SPL = SWL - 20 \log(d) + 10 \log(Q) - 11$$

Where d = distance

(m) between source and receiver

Q = Directivity index (2 for a flat surface)

SPL = sound pressure level at the distance d from the source

SWL = sound power level of the source

Propagation calculations take into account sound intensity losses due to:

- Hemispherical spreading.
- Meteorological effects.
- Atmospheric absorption.
- Directivity.
- Ground absorption.
- Shielding.

Glossary and Abbreviations

Term	Definition
AMMM	Additional Mitigation Measures Matrix
Attenuation	Refers to the reduction in strength of something (such as noise, light, concentrations of metals)
AVTG	Assessing Vibration a Technical Guideline, (NSW Office of Environment and Heritage)
BS	British Standards
dB	Decibel - the unit of sound pressure level, calculated as a logarithm of the intensity of sound
dB(A)	Unit used to measure 'A-weighted' sound pressure levels. 'A-weighted' is applied to measured or predicted sound levels in order to compensate for the non-linearity of human hearing
ENMM	Environmental Noise Management Manual
Frequency	Number of cycles per second of a vibrating object or medium
Hz	Hertz - the unit of frequency equal to one cycle per second
ICNG	Interim Construction Noise Guideline
L ₁₀	Noise level exceeded for 10% of the measurement period. This represents the upper intrusive noise level and is often used to represent traffic/ music noise
L ₉₀	Noise level exceeded for 90% of the measurement period. This represents the background noise level excluding nearby sources
LA90 (Time)	The A-weighted sound pressure level that is exceeded for 90 per cent of the time over which a given sound is measured. This is considered to represent the background noise eg LA90 (15 min)
L _{Aeq} (day/evening/night)	The A-weighted long term average sound level as defined in ISO1996-2: 1987, determined over all of the (day, evening or night) periods of a year
L _{Aeq} (Time)	Equivalent sound pressure level: the steady sound level that, over a specified period of time, would produce the same energy equivalence as the fluctuating sound level actually occurring
mm/s	Millimetres per second

Term	Definition
Noise	<p>(1) Undesired sound. By extension, noise is any unwarranted disturbance within a useful frequency band, such as undesired electric waves in a transmission channel or device.</p> <p>(2) Erratic, intermittent, or statistically random oscillation (ANSI S1.1-1994: noise)</p>
Noise Criteria	Noise criteria curves used to evaluate existing listening conditions at ear level by measuring sound levels at loudest locations in a room. NC criteria can be referred to equivalent dBA levels.
PPV	Peak Particle Velocity
Rating Background Level (RBL)	<p>The overall single-figure background level representing each assessment period (day/evening/night) over the whole monitoring period (as opposed to over each 24 hour period used for the assessment background level). This is the level used for assessment purposes. It is defined as the median value of:</p> <ul style="list-style-type: none"> • All the day assessment background levels over the monitoring period for the day (7 am to 6 pm). • All the evening assessment background levels over the monitoring period for the evening (6 pm to 10 pm). • All the night assessment background levels over the monitoring period for the night (10 pm to 7 am)
RBL	Rating Background Level
Sensitive receiver	<p>An area or place potentially affected by noise or vibration which includes:</p> <ul style="list-style-type: none"> • A residential dwelling • An educational institution, library, childcare centre or kindergarten • A hospital, surgery or other medical institution • An active (sports field, golf course) or passive (eg national park) recreational area • Commercial or industrial premises
Sound power level	Sound power level, L_w , is often quoted on machinery to indicate the total sound energy radiated per second.
VDV	Vibration Dose Value (VDV) as defined in BS6472: 1992 is calculated by taking the fourth root of the integral of the fourth power of acceleration after it has been frequency-weighted. The frequency-weighted acceleration is measured in m/s^2 and the time period over which the VDV is measured is in seconds



Appendix I

Sea Dumping Licence - Crown Land

Jackie Braithwaite

From: Paul McBeath [Paul.McBeath@lpma.nsw.gov.au]
Sent: Thursday, 2 June 2011 11:22 AM
To: James Lawson
Subject: RE: Newcastle Port Corporation - Sea Dumping Licence - RI 450488

Good morning James

Please be advised that the expiry date for RI 450488 has been amended to 7 June 2012 to coincide with the extended Sea Dumping Permit (expiry date 8 June 2012) as requested.
It would be appreciated if you could forward a copy of the new Sea Dumping Permit by email to me at your earliest convenience.

Regards Paul

Paul McBeath Senior Natural Resource Management Officer
Crown Lands Division
NSW Department of Primary Industries
Cnr Banks St & New England Hwy East Maitland 2323| PO Box 6 East Maitland 2323
T: (02) 49 379302 F: (02) 49 342252 E: paul.mcbeath@lpma.nsw.gov.au

(Where possible please send all correspondence and documents to this office electronically)
Office hours for general enquiries & account payments between 9:00am – 12:30pm weekdays | Appointments may be made between 8.30am - 4.30pm weekdays | Accounts can be paid at any Australia Post Office

WARNING: This message is intended for the addressee named and may contain confidential / privileged information. If you are not the intended recipient, please delete and notify sender. Views expressed in this message are those of the individual sender, and are not necessarily the views of the NSW Department of Primary Industry. You should scan any attached files for viruses.

From: James Lawson [mailto:James.L@newportcorp.com.au]
Sent: Wednesday, 1 June 2011 12:10 PM
To: Paul McBeath
Cc: Rob Micheli
Subject: RE: Newcastle Port Corporation - Sea Dumping Licence - RI 450488

Paul,

Thanks for returning my call – this is to confirm the expiry date of the 1 year extension for the Sea Dumping Permit is 8th June 2012, and I understand that you will be updating the Sea Dumping Licence RI 450488 to reflect the extension.

Regards,

James Lawson
Safety & Environment Manager

Newcastle Port Corporation
Cnr Scott & Newcomen Streets (PO Box 663) Newcastle NSW 2300 Australia
T: 02 4985 8226 F: 02 4985 8309 M: 0439 418 204
E: james.l@newportcorp.com.au W: www.newportcorp.com.au

From: James Lawson
Sent: Wednesday, 1 June 2011 10:21 AM
To: 'rob.micheli@lpma.nsw.gov.au'
Cc: 'paul.mcbeath@lpma.nsw.gov.au'
Subject: RE: Newcastle Port Corporation - Sea Dumping Licence - RI 450488

Rob,

I met with SEWPaC representatives yesterday to discuss the progress of NPC's Sea Dumping Permit. In relation to the one (1) year extension, SEWPaC indicated that NPC will be granted the extension before the current Sea Dumping Permit expires on 8th June 2011. The letter needs to be signed by the Minister's delegate - I will forward for your records when I receive.

SEWPaC re-confirmed that no Port has been issued with a 10 year permit and all been issued with a 1 year extension - of which some are on a further 1 year extension. They could not provide a timeline for when the permits would be given a ten year permit.

Further to my e-mail below, Could you please advise the mechanism for the current expiry date (7th June 2011) to be extended in line with SEWPaC's advice. Please contact me for further information on 4985 8226.

Furthermore, NPC will be providing a formal response to SEWPaC in relation to providing clarification to points raised by SEWPaC in their assessment of the application and long term monitoring and management plan

Regards,

James Lawson
Safety & Environment Manager

Newcastle Port Corporation
Cnr Scott & Newcomen Streets (PO Box 663) Newcastle NSW 2300 Australia
T: 02 4985 8226 F: 02 4985 8309 M: 0439 418 204
E: james.l@newportcorp.com.au W: www.newportcorp.com.au

From: James Lawson
Sent: Friday, 27 May 2011 2:02 PM
To: 'rob.micheli@lpma.nsw.gov.au'
Cc: Jackie Braithwaite
Subject: Newcastle Port Corporation - Sea Dumping Licence - RI 450488

Rob,

Further to my telephone conversation with Paul McBeath today regarding Newcastle Port Corporation's (NPC) - Sea Dumping Licence - RI 450488, I would like confirmation on the mechanism to extend the licence beyond the expiry date of 7th June 2011. The licence is linked to the Sea Dumping Permit (5 year) issued by the Federal Environment Department (SEWPaC - formerly DEWHA) which expires on 8 June 2011. I spoke to Stewart Veitch late last year regarding the change from a 5 year to 10 year permit and the application process, given the link to the Licence (RI 450488) and the need to update accordingly when the new 10 year permit is issued.

NPC submitted the application to SEWPaC on 1 March 2011, and also wrote to on 28 April 2011 to extend the Sea Dumping Permit by 1 year to allow the application to be assessed and also for the permit not to lapse (on advice from SEWPaC during the pre-application process). It should be noted that SEWPaC advised that no Port has been issued with a 10 year permit and all been issued with a 1 year extension - of which some are on a further 1 year extension. I am meeting with SEWPaC representatives on Tuesday for further advice.

Could you please advise the mechanism for the current expiry date (7th June 2011) to be extended in line with SEWPaC's advice. Please contact me for further information on 4985 8226.

Regards,

James Lawson
Safety & Environment Manager

Newcastle Port Corporation
Cnr Scott & Newcomen Streets (PO Box 663) Newcastle NSW 2300 Australia
T: 02 4985 8226 F: 02 4985 8309 M: 0439 418 204
E: james.l@newportcorp.com.au W: www.newportcorp.com.au

This message is intended for the addressee named and may contain confidential information. If you are not the intended recipient, please delete it and notify the sender. Views expressed in this message are those of the individual sender, and are not necessarily the views of the Newcastle Port Corporation.

Please consider the environment before you print this e-mail...

This message is intended for the addressee named and may contain confidential information. If you are not the intended recipient, please delete it and notify the sender. Views expressed in this message are those of the individual sender, and are not necessarily the views of the Land and Property Management Authority. This email message has been swept by MIMESweeper for the presence of computer viruses.

Please consider the environment before printing this email.

L I C E N C E

Lands Office Ref.

07/5453

Crown Lands Act 1989 - Section 34A

Licence Number

RI 450488

MINISTER

The Minister for Lands, being the Minister administering the Crown Lands Act 1989, (hereinafter referred to as the Minister)

grants to

LICENSEE name & address

NEWCASTLE PORT CORPORATION ABN 50 825 884 846

C/- Ms Tracey Moylan

Safety & Environment Manager

PO Box 663

NEWCASTLE NSW 2300

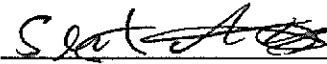
(hereinafter referred to as the Holder)

a Licence pursuant to the provisions of Section 34A of the Crown Lands Act 1989 in respect of the land described hereunder in Parts 1 and 2 and subject to the terms and conditions contained in the following pages and Schedule 1, and in any additional Schedules or documents referred to in Schedule 1.

EXECUTION

Dated this 6th day of August 2009

THE MINISTER


as delegate of the Minister

Stewart Veltch
Prgrm Mgr, Commercial
Central Coast - Hunter
Crown Lands Division

THE HOLDER

In consideration of the grant of this Licence, the Company agrees to be bound by the terms, conditions and provisions of the Licence.

The Common Seal of was affixed in accordance with its articles of association in the presence of (See note below):


signature

GENERAL MANAGER OPERATIONS
position

6/8/09
Date

signature

position

Date

(Note: To be ruled through if executing this licence without seal - Corporations Law s. 127)

DESCRIPTION OF LANDS

PART 1

Local Govt. Area	NEWCASTLE		
County	GLOUCESTER,NORTHUMBERLAND		
Parish	NEWCASTLE,STOCKTON		
Suburb	NEWCASTLE,NEWCASTLE EAST,STOCKTON		
Status:	Lot	Section	DP
Crown land located near	105		1104195

PART 2

Plan/diagram: Schedule 3	Area: 400ha
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TEXT DESCRIPTION: Crown land below the High Water Mark and being part Reserve 1012028 for the Public Purpose of Access and Public Requirements, Tourism Purposes and Environmental and Heritage Conservation otified 11 August 2006 and opposite Lot 105 DP 1104195 at Nobbys Headland, Newcastle.

Note - a Table of Contents appears at the end of this Licence (6.001)

***** End of Description of Land (Crown Land) *****

1. Definitions

In this Licence unless the contrary intention appears:

"CLA" means the Crown Lands Act 1989

"Commencement Date" means the date on which this Licence is stated to commence.

"Department" means the Department administering the Crown Lands Act 1989.

"Holder" means the person described as the Holder on the front page of this Licence.

"Improvements" means all buildings structures facilities works and pontoons situated on or in the land or which under the terms of this Licence are to be situated on or in the land.

"Land" means the land specified in Parts 1 and 2 of this Licence under the heading "DESCRIPTION OF LAND" (including any submerged land and waterway) or where the context so admits any part thereof.

"Licence" means this Licence including the Schedules and Annexures hereto.

"Minister" means the Minister referred to on the front page of this Licence as the Minister and where not repugnant to the context includes the Successors of Minister and the servants and agents of the Minister.

"Pontoon" means a floating landing stage.

"Premises" means the Land the Improvements and the Holder's Plant and where the context so permits any part of the foregoing.

"Rent" means the rent provided for in this Licence.

"Term" means the period commencing on the "Commencement Date" and terminating on the "Termination Date".

"Termination Date" means the date on which the Licence is revoked or ceases to have effect in accordance with the provision of this Licence. (6.002)

2. Plurals and Genders

- (a) Words importing the singular number shall include the plural and vice versa.
- (b) Words importing the masculine gender shall include the feminine or neuter and vice versa.
- (c) Any reference to a person shall be deemed to include a reference to a corporation and vice versa. (6.004)

3. Contra Proferentum

No rules of construction shall apply to the disadvantage of a party on the basis that that party was responsible for the preparation of this Licence or any part of it. (6.005)

4. Headings Plans and Code Numbers

- (a) Headings (and subheadings within clauses) marginal notes the matter appearing in Column 1 of Schedule 1 and the Table of Contents have been inserted for guidance only and shall be deemed not to form any part of the Licence.
- (b) Any plan or diagram attached or annexed to this licence, which purports to depict the land shall be deemed not to form any part of the licence unless that plan or diagram is referred to in PART 2 in the DESCRIPTION OF LAND.
- (c) The code number appearing at the end of each clause of the Licence shall be deemed not to form part of the Licence. (6.006)

5. Clauses and Schedules

References to Clauses Parts and Schedules are references to clauses parts and schedules of this Licence. (6.007)

6. Statutes

- (a) A reference to a statute statutory instrument or ordinance includes amendments to that statute statutory instrument or ordinance whether by subsequent statutes statutory instruments or ordinances or otherwise and any statute statutory instrument or ordinance passed in substitution for the statute statutory instrument or ordinance referred to or incorporating any of its provisions.
- (b) A reference to a statute includes a reference to any regulation made thereunder. (6.008)

7. Joint and Several Covenants

Any covenant or agreement on the part of two or more persons shall be deemed to bind them jointly and severally. (6.009)

8. Severability

Any provision of this Licence which is prohibited or unenforceable in any jurisdiction shall as to such jurisdiction be ineffective to the extent of such prohibition or inability to enforce without invalidating the remaining provisions of such provision in any other jurisdiction. (6.010)

9. Applicable Law

This Licence shall be construed and interpreted in accordance with the law of New South Wales. (6.011)

10. Licence a "Holding" for purposes of the CLA

The Holder acknowledges that this Licence is a Holding within the meaning of the CLA and the Holder is a Holder within the meaning of that Act and the provisions of that Act relating to holdings and holders apply to this Licence and the Holder. (6.012)

11. Performance of Functions etc

Any power authority duty or function conferred or imposed upon the Minister under this Licence may be exercised or performed by any person authorised by the Minister. (6.013)

12. Authorised Officer

Where under this Licence the Minister is empowered to authorise any person to perform or exercise any power authority duty or function under this Licence such person shall be validly authorised if he is authorised to exercise any power authority duty or function conferred by any Licence granted by the Minister or any Licence of a specified type or any Licence within a specified locality. (6.014)

13. Minister as Public Authority

The Minister and Holder acknowledge that nothing in this Licence can in any way restrict or otherwise affect the Minister's unfettered discretion as to the use of the Minister's statutory powers as a public authority. (6.015)

14. Approval by the Minister

- (a) In any case where pursuant to this Licence the doing or executing of any act matter or thing by the Holder is dependent upon the approval or consent of the Minister such approval or consent shall not be effective unless given in writing and may be given or withheld by the Minister in the Minister's absolute discretion and may be given subject to such conditions as the Minister may determine unless otherwise herein provided.
- (b) The Holder expressly agrees that any failure to comply with a condition imposed by the Minister will constitute a failure by the Holder to comply with a condition of this Licence. (6.016)

15. Opinion of the Minister

Any opinion to be formed by the Minister for the purposes of this Licence may be formed by the Minister on such grounds and material as the Minister determines to be sufficient after consultation if the Minister deems it necessary with any New South Wales Government Department or other public authority the Standards Association of Australia or any other body whose objects and functions are relevant. In forming any such opinion the Minister shall be deemed to be exercising merely administrative functions. (6.017)

16. Holder to pay Cost of Work

Whenever the Holder is required in this Licence to do or effect any act matter or thing then the doing of such act matter or thing shall unless this Licence otherwise provides be at the sole risk cost and expense of the Holder. (6.018)

17. Notices

- (a) All notices or communications required to be or which may be given or served by the Minister to or upon the Holder under this Licence or which may be convenient to be given or served in connection with this Licence shall be in writing and shall be sufficiently given or served if left at or sent by ordinary post addressed to the Holder at his address specified in Column 2 of Item 1 of Schedule 1 or at the Premises or at such other place as notified in writing by the Holder to the Minister.
- (b) All notices or communications required to be or which may be given or served by the Holder to or upon the Minister under this Licence or which may be convenient to be given or served in connection with this Licence shall be in writing and shall be sufficiently given or served if signed by the Holder or if the Holder is a corporation by the Secretary of the Holder or the person acting as such for the time being and if left at or sent by ordinary post addressed to the person specified in Column 2 of Item 2 of Schedule 1.

- (c) Any notice or communication given or served by post shall be deemed to have been duly given or served at the time when it would in the ordinary course be delivered. (6.019)

18. Manner of Payment of Rent and Other Moneys

The rent and other moneys payable in accordance with this Licence shall be paid to the Director-General, Department of Lands at the address specified in Column 2 of Item 3 of Schedule 1 or to such other person or at such other address as the Minister may from time to time direct by notice in writing served on the Holder. (6.020)

19. Time to be of the Essence

The Minister and the Holder expressly agree that where in any provision of this Licence the Holder is given or allowed a specified time within which to undertake or do any act or thing or any power is conferred or any event occurs after the lapsing of a specified time time shall be the essence of the contract in that regard. (6.021)

20. Permitted Use

- (a) This Licence confers on the Holder a right to occupy the Premises for the purpose specified or referred to in Column 2 of Item 4 in Schedule 1.
- (b) The Holder will not use the Premises or allow them to be used for any purpose other than the purpose specified in Column 2 of Item 4 in Schedule 1. (6.023)

21. No Exclusive Possession

The Holder acknowledges that this licence does not confer exclusive Possession of the Premises upon the Holder. (6.023A)

22. Holder not to Commit Nuisance etc

The Holder will not at any time during the Term of this Licence:

- (a) carry on or permit to be carried on at the premises any noxious nuisance or offensive trade business.
- (b) do or permit to be carried on at the premises any act matter or thing which results in nuisance damage or disturbance to the Minister or owners or occupiers of adjoining or neighbouring lands or buildings.
- (c) use the premises for any illegal activity. (6.024)

23. Commencement and Revocation of Licence (set Period)

- (a) This Licence shall commence on the date (and where a time is specified or referred to - the time) specified or referred to in Column 2 of Item 8 of Schedule 1 and shall continue in force until the date (and where a time is specified or referred to - the time) specified or referred to in Column 2 of Item 9 of Schedule 1 or until this Licence is revoked by the Minister.
- (b) The Minister may in his absolute discretion revoke this Licence at any time either before or after the date specified to in Column 2 of Item 9 of Schedule 1 by serving on the Holder a notice in writing revoking this Licence. The notice must be served by the Minister on the Holder at least twelve (12) months prior to the date specified in the notice at which time the Licence becomes revoked.

- (c) A revocation made under this clause shall take effect on the date specified in the notice or where no date is specified in the notice twelve (12) months from the date on which the notice is served on the Holder.
- (d) This Licence shall be deemed to be revoked immediately following expiration, revocation or relinquishment of the Permit.
- (e) Except as may be expressly provided for in this Licence the Holder acknowledges and agrees that the Holder will not be entitled to any compensation costs or damages in respect of the revocation of this Licence notwithstanding that the Licence is revoked before the date specified or referred to in Column 2 of Item 9 of Schedule 1. (6.029)

24. Termination of Licence on Determination of Native Title

- (a) Notwithstanding any other provision of this Licence this Licence shall terminate in the event that an approved determination is made under any statute relating to native title that native title exists in the land or part thereof.
- (b) Except as may be expressly provided for in this Licence the Holder acknowledges and agrees that the Holder will not be entitled to any compensation costs or damages in respect of the termination of this Licence by operation of this clause. (6.029A)

25. Payment of Rent (CPI)

- (a) For the purposes of this clause:

"Initial Rent" means the rent specified in Column 2 of Item 11 of Schedule 1.

"CPI Review Date" means each anniversary date of the Commencement Date.

"CPI Review Period" means the period between each CPI Review Date.

"Due Date" means each anniversary date of the Commencement Date.

"Market Rent Review Date" means the date of the expiration of each period of years as specified in Column 2 of Item 12 of Schedule 1 calculated from the Commencement Date.

"Market Rent Review Period" means the period between each Market Rent Review Date.

- (b) The Holder covenants with the Minister that the Holder will during the whole of the Term pay to the Minister in accordance with the provisions of this clause without demand free of exchange and without deduction whatsoever the rent hereinafter provided.
- (c) The Holder will pay to the Minister on the commencement Date the Initial Rent and thereafter shall pay on each Due Date rent in advance adjusted as hereinafter provided.
- (d) (i) On the CPI Review Date the rent shall be adjusted in accordance with the following formula:

$$R = B \times \frac{C}{D}$$

where:

R represents the adjusted rent;

- B represents the annual rent payable during the year preceding the CPI Review Date;
 - C represents the Consumer Price Index number for the last quarter for which such a number was published before the CPI Review Date; and
 - D represents the Consumer Price Index number for the last quarter for which such a number was published before the immediately preceding CPI Review Date (or if there is no immediately preceding CPI Review Date then the Commencement Date).
- (ii) In this clause "Consumer Price Index number" in relation to a quarter means the number for that quarter appearing in the Consumer Price Index (All Groups Index) for Sydney published by the Australian Statistician. In the event that such index be discontinued or abolished the Minister may at his absolute discretion nominate another Index.
- (iii) If the reference base for the Consumer Price Index is changed regard shall be had only to Index numbers published in terms of the new reference base or to Index numbers converted to the new reference base in accordance with an arithmetical conversion factor specified by the Australian Statistician.
- (iv) Any rent adjusted under this subclause shall be adjusted to the nearest whole dollar.
- (e) In addition to the indexation review provided for in subclause (d) on the first Market Rent Review Date after commencement and thereafter on each Market Rent Review Date the rent may be redetermined by the Minister pursuant to the provisions of Sections 142 and 143 of the CLA.
- (f) A redetermination of rent for the purposes of subclause (e) shall be deemed to have been made on the Market Rent Review Date if it is made at any time within the period of six months before the market Rent Review Date.
- (g) Where the Minister does not redetermine the rent as provided for in subclause (e) he may redetermine the rent pursuant to the provisions of Sections 142 and 143 of the CLA at any time prior to the next Market Rent Review Date and no succeeding Market Rent Review Date shall be postponed by reason of the operation of this subclause.
- (h) Where the Minister does not redetermine the rent on the First Market Rent Review Date or a Market Rent Review Date as provided for in subclause (e) the Holder may by notice in writing served on the Minister require that the Minister redetermine the rent pursuant to the provisions of Sections 142 and 143 of the CLA. Where the Holder requires the Minister to redetermine the rent under this subclause he shall pay on demand the costs of the Minister (or so much of the cost as the Minister may require) in making that determination.
- (i) Subject to the provision of subclause (j) a redetermination of rent as provided for in subclauses (e) (g) and (h) shall take effect and be due and payable from the date of issue of the notice of redetermination under Section 142 of the CLA even if an objection or appeal under that Section has been lodged. On the completion of the objection and appeal process any necessary adjustments shall be made.
- (j) A redetermination of rent made before its relevant Market Rent Review Date as provided for in subclause (f) shall take effect from the relevant Market Rent Review Date even if an objection or appeal under Section 142 of the CLA has been lodged. On the completion of the objection and appeal process any necessary adjustments shall be made.
- (k) The Holder acknowledges that the Minister may make a direction under Section 152 of the CLA in respect of any rent payable under this Licence. (6.031)

26. Continuing Obligation

The obligation of the Holder to pay the Rent shall be a continuing one during the term of this Licence and shall not abate in whole or in part or be affected by any cause whatsoever. (6.037)

27. Goods and Services Tax**(a) Definitions**

In this clause the expressions "GST", "supply", and "taxable supply" have the meanings given to those expressions in the A New Tax System (Goods and Services Tax) Act 1999.

(b) Amounts GST Exclusive

With the exception of any amount payable under this clause, unless otherwise expressly stated all amounts stated to be payable under this Licence are exclusive of GST.

(c) Responsibility for GST

(i) Despite any other provision in this Licence, if GST is imposed on any supply made under this Licence, the recipient must pay to the supplier an amount equal to the GST payable on the taxable supply.

(ii) The recipient must pay the amount referred to in subclause (c)(i) in addition to and at the time payment for the taxable supply is required to be made under this Licence.

(d) Valuer/Umpire to return GST Exclusive Value

Any valuer or umpire returning a valuation must return a GST exclusive market value for it in any case where the valuation is for the purpose of determining a supply value to which GST is to be added under this Licence. (6.040A)

28. Holder not to Impose Liability on Minister

Subject to any other provision of this Licence the Holder will not without the written consent of the Minister by any act matter or deed or by failure or omission cause or permit to be imposed on the Minister any liability of the Holder under or by virtue of this Licence. (6.042)

29. Holder not to undertake development without consent notwithstanding any other provision of this Licence

The Holder will not undertake any development within the meaning of the Environmental Planning and Assessment Act 1979 contrary to the provisions of that Act or in breach of any restriction condition or prohibition imposed by an Environmental Planning Instrument or condition of a development consent. (6.043)

30. Development Consent

The Holder will not undertake any activity on or within the Premises for which consent is required under the Environmental Planning and Assessment Act 1979 or any Instrument made thereunder without first obtaining such consent and in accordance with any condition or requirement of that consent. (6.044)

31. Compliance with Statutes

- (a) The Holder will comply with the requirements of all statutes regulations or by-laws and requirements of all relevant public and local authorities in so far as they apply in relation to the use and occupation of the premises.
- (b) The Holder will forthwith on being served with a notice by the Minister comply with any notice or direction served on the Minister by a competent authority relating to the destruction of noxious animals or plants or pests or the carrying out of repairs alterations or works on or to the Premises. (6.045)

32. Occupational Health and Safety Act 2000

- (a) The Holder accepts responsibility to undertake activities in accordance with the Occupational Health and Safety Act 2000 and agrees to keep and maintain the utilised areas of the Premises in the manner which complies with the said Act.
- (b) In the case of multiple licensed use holders the operation of Clause 56 (Schedule 2) of this Licence requires the Holder to reference an agreed Operational Protocol as a requirement and condition of this Licence however the agreed Operational Protocol shall not render the operation of Clause 32(a) of this Licence invalid. (6.046)

33. Holder not to deal with Licence or part with possession of Premises

Subject to any other provision of this Licence the Holder will not during the Term of this Licence transfer or create any interest in the Licence or authorise or permit any person to occupy the Premises. (6.047)

34. Revocation on the Request of the Holder

The Holder may at any time by notice served on the Minister request that this Licence be revoked and the Minister if he is satisfied that the Holder has complied with the conditions and provisions of this Licence or the CLA will as soon as practicable comply with such a request. (6.051)

35. Interest on Overdue Money

The Holder shall pay interest on any money due and payable under this Licence to the Minister at the rate prescribed from time to time under the provisions of Section 148 of the CLA and any such interest shall for the purposes of this Licence be deemed to be Rent in arrears. (6.052)

36. Failure to pay money or Undertake Works

- (a) Where under this Licence the Holder is required to pay any money to a third party and neglects to do so for a period of 14 days after the money became due and payable it shall be lawful for but not obligatory upon the Minister (and without prejudice to any rights and powers arising from such default) to pay such money as if it were the Holder and the Holder will reimburse the Minister in respect of any such payments on demand.
- (b) Where under this Licence the Holder is required to do or cause to be done any work or thing and the Holder neglects to do the work or thing for a period of 14 days after that work or thing was due or required to be done it shall be lawful for but not obligatory upon the Minister (and without prejudice to any rights and powers arising from such default) to do or effect such work or thing as if the Minister were the Holder and for that purpose the Minister the Minister's officers agents contractors and workmen may enter upon the whole or any part of the Premises and there remain for the purposes of doing or effecting any such work or thing and the Holder will reimburse the Minister for the cost of the doing or effecting the work or thing on

demand. For the purposes of this clause the word cost shall include any sums paid for any insurance indemnities under the laws relating to workers compensation.

- (c) The Holder expressly agrees that any money or cost payable to the Minister under this clause shall constitute a debt owed by the Holder to the Minister and may be recovered by the Minister accordingly.
- (d) Where the Premises has a common boundary with other land owned leased or held by the Holder (hereinafter called the "other land"). The Holder irrevocably grants to the Minister the Minister's officers agents contractors and workmen a licence to enter upon the said other land for the purpose of gaining access to the Premises or for the purpose of undertaking any work or thing authorised permitted or contemplated by this Clause.

In exercising any power conferred by this subclause the Minister the Minister's servants employees and agents will not be liable for any reasonable damage suffered or occasioned to the other land or anything constructed thereon.

- (e) The Holder expressly agrees that the provisions of this clause shall continue after the expiration or sooner determination of this Licence and the Minister may make any payment or effect any work or thing authorised by this clause after the expiration or sooner determination of this Licence as if such expiration or sooner determination had not taken place. (6.053)

37. Release of the Minister from Liability

- (a) For the purposes of this clause the term Minister shall include the officers, employess, agents, contractors and workmen of the Minister and of the Department.
- (b) The holder agrees to occupy use and keep the Premises at the risk of the Holder and hereby releases to the full extent permitted by law the Minister from all claims and demands of every kind resulting from any accident damage or injury occurring therein arising from the Holder's occupation or use of the Premises for the use permitted except to the extent that any such claims and demands arise wholly or in part from the negligence or willful act or omission on the part of the Minister and the Holder EXPRESSLY AGREES that the Minister and the Department shall have no responsibility or liability for any loss of or damage to improvements fixtures and/or personal property of the Holder or any agent contractor or servant of the Holder or of any member of the public whilst in or upon the Premises.
- (c) The release referred to in the foregoing subclause shall not apply where the operation of Clause 38(d) of this Licence renders the Holder not liable to the Minister or the Department in respect of a claim or demand to which the release would otherwise apply.
- (d) The Holder expressly agrees that the obligations of the Holder under this clause shall continue after the expiration or other determination of this Licence in respect of any act deed matter or thing happening before such expiration or determination for a maximum period of eight (8) years after expiry or determination. (6.055)

38. Indemnities and Limit on Liability

- (a) For the purposes of this clause the term Minister shall include the officers, employees, agents, servants, contractors and workmen of the Minister and of the Department.
- (b) The Holder agrees that the Holder will indemnify and keep indemnified the Minister from and against all actions suits claims demands proceedings losses damages compensation sums of money costs legal costs charges and expenses whatsoever ("Claims") to which the Minister shall or may be or become liable for arising from the Holder's occupation or use of the Premises for the use permitted except to the extent that any such Claims arise wholly or in part from the negligence or willful act or omission on the part of the Minister.

- (c) The Holder expressly agrees that the obligations of the Holder under this clause shall continue after the expiration or other determination of this Licence in respect of any act deed matter or thing happening before such expiration or determination.
- (d) The liability of the Holder under this Clause and generally to the Minister and the Department shall be limited the amount recovered by the Holder under any policy of insurance held by the Holder pursuant to this Licence or the amount of \$100 million in the aggregate, whichever is the greater. (6.056)

39. Insurance - Public Risk

In connection with this Licence, the Holder must obtain or cause to be obtained, effective as of the Commencement Date and maintain or cause to be maintained for the duration of the Term (unless otherwise specified below) a public risk insurance in connection the Premises and the use permitted under this Licence for at least \$100 million for each occurrence. Such insurance must name the Holder and note as interested parties the Minister and the Department. (6.057)

40. Pollution Liability

In connection with this Licence, the Holder will maintain for the duration of the Term of this Licence contractors' pollution liability and pollution liability insurance with a limit of \$100 million for each incident. Such insurance must name the Holder as insured and must note the Minister and the Department as interested parties. The Minister and Department acknowledges that for the purpose of this Clause the Holder satisfies the obligation of this Clause if it holds a "Professional and Indemnity (P&I) (Marine Liability)" insurance policy.

41. No Aggregate Limit

Each policy taken out under Clauses 39 and 40 must have no aggregate limit with respect to claims that can be made under it and must cover events occurring during such policies' currency regardless of when the claims are made.

42. Insurance - Workers Compensation

The Holder will (without in any way limiting the liability of the Holder under any other provision of this Licence) forthwith take out and thereafter during the Term keep current insurance against any liability which may arise at common law or by virtue of any relevant workers compensation legislation in connection with the performance of work or provision of services on or about the Premises and the operation thereof so that the Minister and the Department will be indemnified against all claims for death or bodily injury by any person at all times. (6.058)

43. Provisions Re Policies

- (a) The Holder must:
 - (i) comply with and abide by the terms and conditions of the insurances arranged under this Licence which insure the Holder and note the Minister and the Department as interested parties; and
 - (ii) pay or cause to be paid all premiums which are payable within or by the terms of such insurances arranged.
 - (iii) bear or cause to be borne any excesses or deductibles under insurances required by Clauses 39, 40 and 42; .
 - (iv) give the Minister certificates of currency evidencing the currency of the policies taken out under Clauses 39, 40 and 42.

- (b) In connection with those and all required policies, the Holder;
- (i) must not and must ensure that its contractors do not allow any insurance to lapse be varied or cancelled without the Minister's consent (not to be unreasonable withheld or delayed); and
 - (ii) must notify the Minister immediately if a policy is cancelled or if an event in connection with this Licence occurs which could materially prejudice coverage or give rise to a claim under a policy and ensure that its contractors do the same; and
 - (iii) must use all reasonable endeavours to ensure that the Holder and the Holder's employees do not do anything that could materially affect coverage under any insurance taken out under Clauses 39, 40 and 42 in respect of claims in connection within this Licence;
- (c) To avoid doubt, neither the Holder nor the Holder's employees will be in breach of this Clause because either or both of them commit an act or do something which results in the making of a claim or the notification to the insurer of circumstances which may lead to a claim under a policy of insurance the subject of Clauses 39, 40 and 41;
- (d) With the exception of workers compensation insurance, the insurance effected by the Holder under Clauses 39 and 40 which insures more than one person comprising the insured must include a clause in which the insurer agrees:
- (i) to waive all rights of subrogation or action against any of the other persons comprising the insured; and
 - (ii) that the term 'insured' applies to each of the persons comprising the insured as if a separate policy of insurance had been issued to each of them (subject to overall sum insured not being increased as a result); and
 - (iii) that any non-disclosure by one insured does not prejudice the right of the other innocent insured to claim under that insurance. (6.065)

44. Settlement of Claims

Upon settlement of a claim under any insurance required by this Licence covering loss of or damage to any property owned by the Minister:

- (a) to the extent that the Minister has directed that its property not be reinstated the moneys received must be paid to the Minister; and
- (b) to the extent that any of the Minister's property is to be reinstated, then the Minister is to be reimbursed for the moneys paid or to be paid.

45. Premises to be kept in clean and tidy condition

The Holder will at all times during the Term keep the Premises in a clean and tidy condition and will (subject to any other provision of this Licence) on the Termination Date leave the Premises in a clean and tidy condition. (6.088)

46. Minister's Right to Enter Inspect and Repair

The Minister and the Department and the their officers, employees, agents, servants, contractors and workmen may at all reasonable times upon giving to the Holder reasonable notice (except in the case of emergency when no notice shall be required) enter upon the Premises and view the state thereof

and may serve upon the Holder a notice in writing of any defect (the remedying of which is the Holder's obligation hereunder to the extent that any action or omission by or on behalf of the Holder has caused or contributed to the defect) requiring the Holder to remedy the same within the period specified in the notice being a period not less than fourteen days. (6.090)

47. Costs of the Minister

The Holder will pay:

- (a) the Minister's reasonable legal costs and all duties fees charges and expenses of or incidental to the preparation completion and stamping and registration of this Licence application for the consent of the Minister hereunder to a maximum of \$10,000 (excluding GST) and of or incidental to any and every breach or default by the Holder hereunder and in or incidental to the exercise or attempted exercise of any right power privilege authority or remedy of the Minister under or by virtue of this Licence and the fees of all professional consultants properly incurred by the Minister in consequence of or in connection with any breach or default by the Holder hereunder or an application for the Minister's consent hereunder;
- (b) all expenses reasonably incurred by the Minister or the Department in any entry inspection examination consultation or the like which discloses a breach by the Holder of any covenant of this Licence. (6.191)

48. No Holding Out

The Holder will not in connection with the Premises or otherwise directly or indirectly hold out or not permit to be held out to any member of the public any statement act deed matter or thing indicating that the Premises or the business conducted or operated thereon or any part or parts thereof are or is being carried on or managed or supervised by the Minister nor shall the Holder act as or represent itself to be the servant or agent of the Minister. (6.192)

49. Holder to Yield Up

The Holder will forthwith upon the revocation of this Licence peaceably surrender and yield up to the Minister the Premises in good condition reasonable wear and tear excepted together with all conveniences amenities and appurtenances relating thereto clear and free from rubbish and in good and substantial repair order and condition in every case having regard to the age of what is being surrendered or yielded up. (6.199)

50. No Right to Purchase etc

The Holder expressly acknowledges that the grant of this Licence does not confer a right to purchase the land or to the grant of a lease or to the grant of a further licence. (6.200)

51. Special Conditions

The special conditions specified or referred to in Column 2 of Item 71 of Schedule 1 shall be deemed to be conditions and provisions of this Licence. (6.201)

***** End of Licence Clauses *****

SCHEDULE 1

Item	Paragraph No	Column 1 (description of variable particulars)	Column 2 - (particulars)
1	17	Holder's Address for service of notices	PO Box 663 NEWCASTLE NSW 2300
2	17	Minister's Address for service of notices	Department of Lands PO Box 6 EAST MAITLAND NSW 2323
3	18	Address for payment of rent	Department of Lands PO Box 2155 DANGAR NSW 2309
4	20	Purpose for which Premises may be used	Dumping of Dredge Spoil by the Holder(s) or their authorised agents or contractors
8	23	Commencement Date	The date specified on page 1 of the Licence being the date of the execution of the Licence.
9	23	Expiry Date	7th June 2011
11	25	Initial Rent	\$50,000.00
12	25	Market Rent Review Period	3 years
19	39	Insurance - Public Risk	\$100 Million
71	51	Special conditions or provisions	Annexed as Schedule 2

***** End of Schedule 1 *****

SCHEDULE 2

52. Compliance with Sea Dumping Permit

The Holder will expressly comply with the conditions of any Sea Dumping Permit issued by the Department of the Environment, Water, Heritage and the Arts, Port Marine Section (the "Permit") and undertakes to provide the Minister with a copy of the Sea Dumping Permit.

53. Compliance with Legislation/Regulations

The Holder will ensure that the Permitted Use complies with all relevant State and Commonwealth legislation and/or regulations and any authorisations/permits issued under those statutes.

54. Coordination of Licensed Use of Premises

In the event that the Permitted Use of the Premises is to be effected under Licence concurrently by more than one Licence Holder, an agreed Operational Protocol shall become a requirement and condition of this Licence, to be submitted for approval of the Minister, and applicable to all approved Licence Holders.

55. Reporting Obligations

Any and all reports by the Holder under conditions of approval of the Permit are to be fully reported to the Minister prior to or contemporaneously to its report to the Department of Environment, Water, Heritage and the Arts. The Holder will provide reports to the Minister both in accord and in compliance with approval conditions of the Permit, and as obliged under approval conditions of the Permit on the date specified in such approval condition. The Holder will also make available to the Minister, on request by or on behalf of the Minister, the records referred to in the approval conditions of the Permit.

The Holder expressly agrees that the obligations of the Holder under this Clause shall continue after the expiration or other determination of this Licence until such time as the reporting obligations of the Holder under the permit cease.

The Holder shall expressly report to the Minister any and all non-compliance with legislation and/or regulations and any authorisations/permits issued or amended, as per this Special Condition (i.e. "Reporting Obligations" of this Licence, within 48 hours of any such non-compliance becoming known.

56. Reimbursement of Licensor

In the event of the Holder failing to fulfill its obligations under the Permit the Holder acknowledges it will reimburse the Minister for any works undertaken regarding the monitoring/reporting/compliance as required under the terms and conditions of the Permit or any approvals issued and required by any and all applicable regulatory authorities in relation to the Permitted Use.

57. Stockton Beach Nourishment Program

- a) In the event that the Holder intends to place sand from the Newcastle Port entrance channel offshore from Stockton for the purposes of beach nourishment, an environmental assessment of the activity in the form of a Review of Environmental Factors (REF) must be undertaken. The REF is to be approved by the Minister or a delegate of the Minister. Any placement of sand from the Newcastle Port entrance offshore from Stockton will be in strict compliance with the requirements of the REF. The Minister acknowledges that the placement of sand dredged from the Newcastle Port entrance channel for the purposes of Stockton Beach Nourishment program will not attract any fee.

- b) The Holder acknowledges that the Minister will be required as will the Holder as a Third party to make application to Minister Administering the Coastal Protection Act 1979 seeking conditional concurrence for placement of dredge material off Stockton Beach.
- c) The Holder acknowledges that:
 - I. the placement of dredge material off Stockton Beach will be in accordance with any conditional concurrence issued by Minister Administering the Coastal Protection Act 1979;
 - II. the issue of any conditional concurrence by Minister Administering the Coastal Protection Act 1979 will require an alteration to this licence for additional special conditions to reflect the conditional concurrence and any REF.
- d) The Holder will expressly comply with the conditions of any conditional concurrence issued by Minister Administering the Coastal Protection Act 1979 for placement of dredge material off Stockton Beach.

58. 2009 Placement of Dredge material off Stockton Beach

- a) The Minister acknowledges that the Holder will deposit dredge material from maintenance dredging of The Entrance Channel offshore at Stockton Beach in accordance with Review of Environmental Factors dated 16 July 2009 completed by WooleyParsons on behalf of the Holder.
- b) The Minister and Holder acknowledge that the placement of dredge material referred to in condition 58 a) will be placed in area referenced in Figure 3.3 Schedule 3.
- c) The Holder acknowledges that the placement of dredge material referred to in condition 58 a) will be in accordance with conditional concurrence issued by Minister Administering Coastal Protection Act 1979 dated 28 July 2009.
- d) The Holder acknowledges that conditional concurrence referred to in condition 58 c) is valid until 30 June 2011.
- e) The Holder acknowledges that the conditional concurrence issued by Minister Administering Coastal Protection Act 1979 dated 28 July 2009 permits the Holder to undertake the maintenance dredging of up to 150,000 cubic metres of sediment from Area E, Figure 1.1 Schedule 3, and disposal of the spoil offshore of Stockton Beach.
- f) Compliance with Conditional Concurrence

The Holder will expressly comply with the conditions of conditional concurrence dated 28 July 2009 and undertakes to:

- I. prior to the commencement of dredging of Area E, Newcastle Port Corporation is to notify the Department of Environment and Climate Change (Coastal and Estuaries Unit, Hunter) and Minister at the address indicated at Item 2 Schedule 1.
- II. for each dredging operation and at the termination of the concurrence, Newcastle Port Corporation is to provide to the Department of Environment and Climate Change (Coastal and Estuaries Unit, Hunter) and Minister at the address indicated at Item 2 Schedule 1 a report on the details of dredging that has occurred in Area E, including quantities dredged and when this occurred.

- III. for each dredging operation that entails 10,000 cubic metres of dredging or greater, Newcastle Port Corporation is to undertake hydrographic surveys, before and after the dredging operation, of Area E and the disposal site, including an area 250 metres beyond the extent of the sites, and provide copies of those surveys to the Department of Environment and Climate Change (Coastal and Estuaries Unit, Hunter) and Minister at the address indicated at Item 2 Schedule 1.

The Holder and the Minister acknowledge that in terms of condition 58 f) III. that Department of Environment and Climate Change (Coastal and Estuaries Unit, Hunter) consider the hydrographic survey information provided in the Review of Environmental Factors dated 16 July 2009 is sufficient to fulfil the requirement of a survey before the commencement of the initial dredging operation.

The Holder and the Minister acknowledge that in terms of condition 58 f) III. that Department of Environment and Climate Change (Coastal and Estuaries Unit, Hunter) accepts that the 250 metre survey beyond the extent of the sites may not be achieved due to survey equipment limitations and safety concerns.

Department of Environment and Climate Change (Coastal and Estuaries Unit, Hunter) accept that to meet the full objectives of condition 58 f) III. the extent of the survey required for Area E may be limited to the footprint of the dredge operation and 250 metres around it.

Further to this Department of Environment and Climate Change (Coastal and Estuaries Unit, Hunter) considers the post dredging hydrographic survey the extent of the area to fulfil the requirements of condition 58 f) III. both dredge and disposal areas is shown as the shaded area on drawing NC 1337 Schedule 3.

***** End of Schedule 2 *****

SCHEDULE 3

Department of Lands

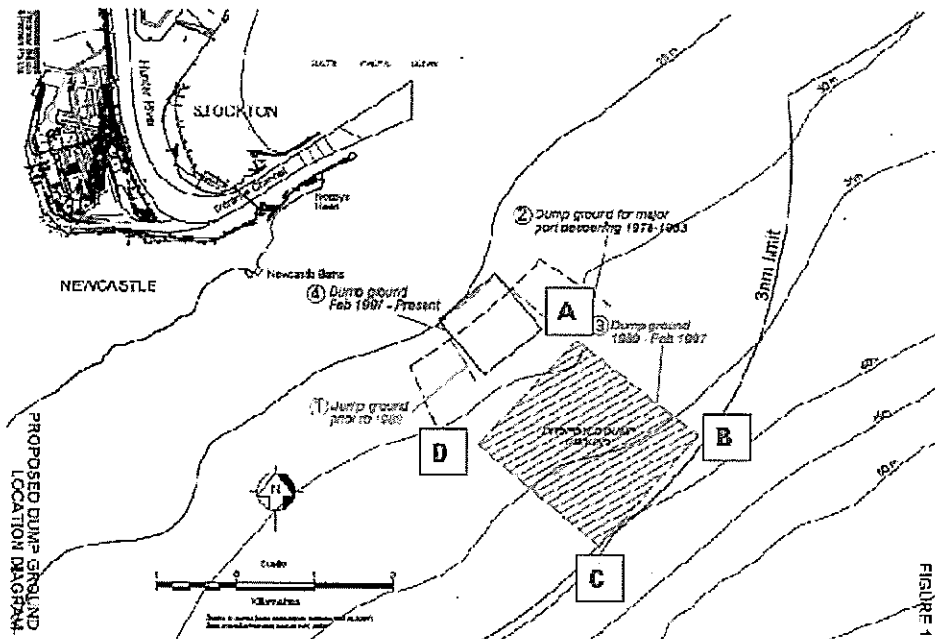


FIGURE 1

Co-ordinates Index

- A 151°50.1403 E, 32°56.145 S
- B 151°51.1399 E, 32°56.8113 S
- C 151°50.3403 E, 32°57.6114 S
- D 151°49.3402 E, 32°56.8947 S

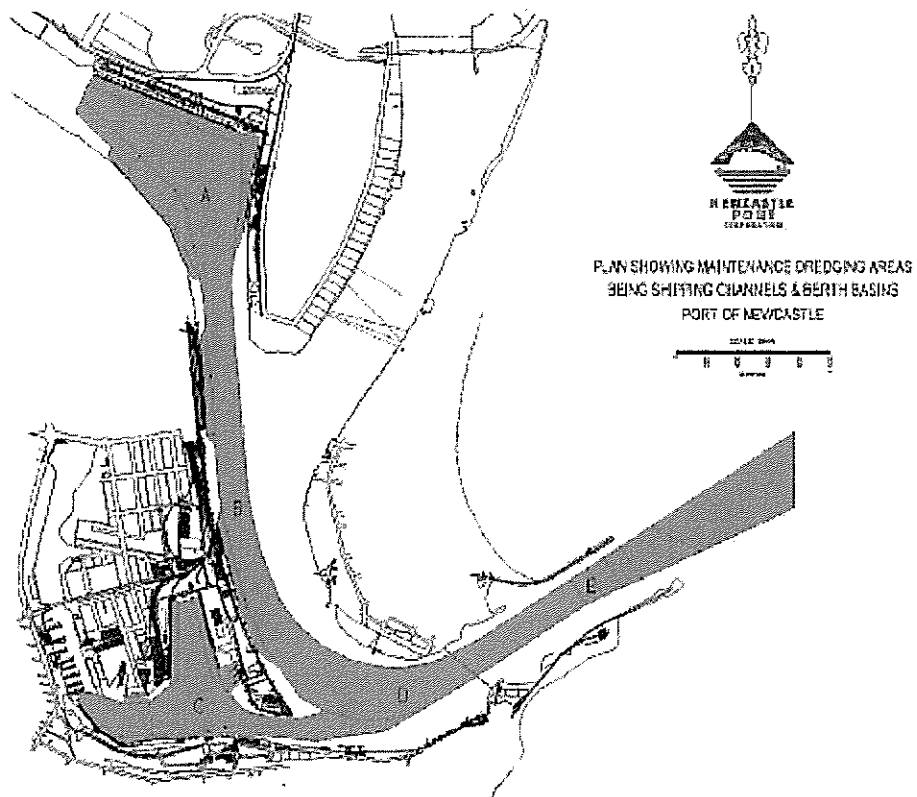
LICENCE NO:	450488	LOCALITY:	NEWCASTLE
FILE REF:	07/5453	PARISH:	NEWCASTLE
SCALE:	NOT TO SCALE	TOTAL AREA LICENSED:	400HA app
DATE DRAWN:	26 March 2009		

FIGURE 3.3



SCHEDULE 3

FIGURE 1.1



NEWCASTLE PORT MAINTENANCE DREDGE AREAS

SCHEDULE 3

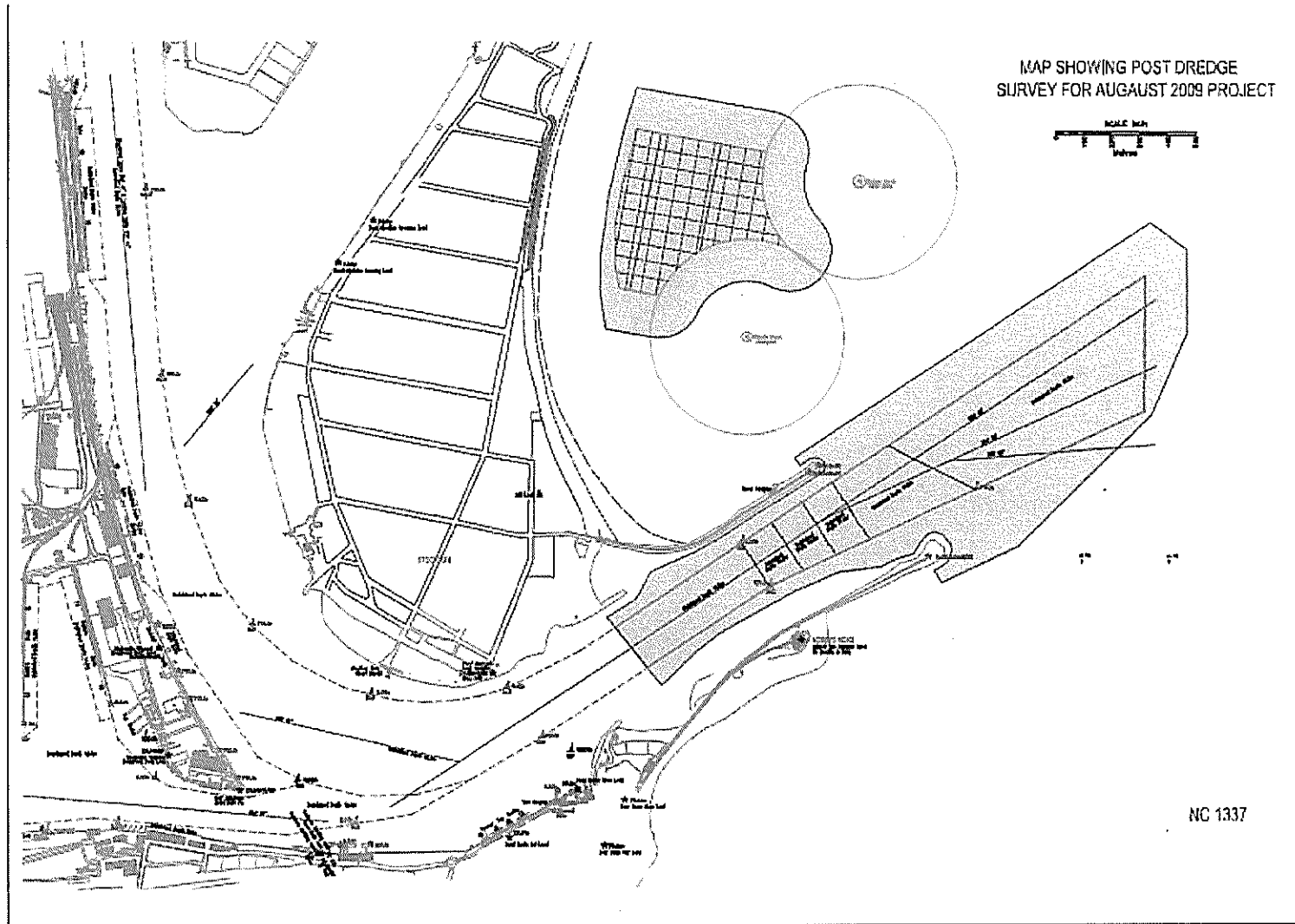


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L I C E N C E

Lands Office Ref.

09/04891

Crown Lands Act 1989 - Section 34A

Licence Number

RI 450958

MINISTER

The Minister for Lands, being the Minister administering the Crown Lands Act 1989, (hereinafter referred to as the Minister)

grants to

LICENSEE
name & address

NEWCASTLE PORT CORPORATION ABN 50 825 884 846
C/- Ms Tracey Moylan
Safety & Environment Manager
PO Box 663
NEWCASTLE NSW 2300
(hereinafter referred to as the Holder)

a Licence pursuant to the provisions of Section 34A of the Crown Lands Act 1989 in respect of the land described hereunder in Parts 1 and 2 and subject to the terms and conditions contained in the following pages and Schedule 1, and in any additional Schedules or documents referred to in Schedule 1.

EXECUTION

Dated this

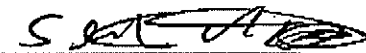
6th

day of

August

2009

THE MINISTER



as delegate of the Minister

Stewart Veltch
Prgrm Mgr, Commercial
Central Coast - Hunter
Crown Lands Division

name and position

THE HOLDER

In consideration of the grant of this Licence, the Company agrees to be bound by the terms, conditions and provisions of the Licence.

The Common Seal of was affixed in accordance with its articles of association in the presence of (See note below):



signature

GENERAL MANAGER OPERATIONS

position

6/8/09

Date

signature

position

Date

(Note: To be ruled through if executing this licence without seal - Corporations Law s. 127)

DESCRIPTION OF LANDS

PART 1

Local Govt. Area	NEWCASTLE		
County	GLOUCESTER,NORTHUMBERLAND		
Parish	NEWCASTLE,STOCKTON		
Suburb	NEWCASTLE,NEWCASTLE EAST,STOCKTON		
Status:	Lot	Section	DP
Crown land located near	105		1104195

PART 2

Plan/diagram: Schedule 3	Area: 39.2ha
--------------------------	--------------

TEXT DESCRIPTION: Crown land below the High Water Mark and being part Reserve 1012028 for the Public Purpose of Access and Public Requirements, Tourism Purposes and Environmental and Heritage Conservation Notified 11 August 2006 and adjoining Lot 105 DP 1104195 at Newcastle Harbour.

Note - a Table of Contents appears at the end of this Licence (6.001)

***** End of Description of Land (Crown Land) *****

1. Definitions

In this Licence unless the contrary intention appears:

"CLA" means the Crown Lands Act 1989

"Commencement Date" means the date on which this Licence is stated to commence.

"Department" means the Department administering the Crown Lands Act 1989.

"Holder" means the person described as the Holder on the front page of this Licence.

"Improvements" means all buildings structures facilities works and pontoons situated on or in the land or which under the terms of this Licence are to be situated on or in the land.

"Land" means the land specified in Parts 1 and 2 of this Licence under the heading "DESCRIPTION OF LAND" (including any submerged land and waterway) or where the context so admits any part thereof.

"Licence" means this Licence including the Schedules and Annexures hereto.

"Minister" means the Minister referred to on the front page of this Licence as the Minister and where not repugnant to the context includes the Successors of Minister and the servants and agents of the Minister.

"Pontoon" means a floating landing stage.

"Premises" means the Land the Improvements and the Holder's Plant and where the context so permits any part of the foregoing.

"Rent" means the rent provided for in this Licence.

"Term" means the period commencing on the "Commencement Date" and terminating on the "Termination Date".

"Termination Date" means the date on which the Licence is revoked or ceases to have effect in accordance with the provision of this Licence. (6.002)

2. Interpretation - Extractive Resources

In this Licence unless the contrary intention appears

"Extract" means to remove, win, dig up mine or take away a material on or from the Land and the words "Extraction" "Extracted" and "Extracting" have the same meaning.

"material" means the substances authorised by the Licence to be extracted from the land and includes any other substance necessarily taken by the Holder when extracting such first mentioned substances. (6.003)

3. Plurals and Genders

- (a) Words importing the singular number shall include the plural and vice versa.
- (b) Words importing the masculine gender shall include the feminine or neuter and vice versa.

- (c) Any reference to a person shall be deemed to include a reference to a corporation and vice versa. (6.004)

4. Contra Proferentum

No rules of construction shall apply to the disadvantage of a party on the basis that that party was responsible for the preparation of this Licence or any part of it. (6.005)

5. Headings Plans and Code Numbers

- (a) Headings (and subheadings within clauses) marginal notes the matter appearing in Column 1 of Schedule 1 and the Table of Contents have been inserted for guidance only and shall be deemed not to form any part of the Licence.
- (b) Any plan or diagram attached or annexed to this licence, which purports to depict the land shall be deemed not to form any part of the licence unless that plan or diagram is referred to in PART 2 in the DESCRIPTION OF LAND.
- (c) The code number appearing at the end of each clause of the Licence shall be deemed not to form part of the Licence. (6.006)

6. Clauses and Schedules

References to Clauses Parts and Schedules are references to clauses parts and schedules of this Licence. (6.007)

7. Statutes

- (a) A reference to a statute statutory instrument or ordinance includes amendments to that statute statutory instrument or ordinance whether by subsequent statutes statutory instruments or ordinances or otherwise and any statute statutory instrument or ordinance passed in substitution for the statute statutory instrument or ordinance referred to or incorporating any of its provisions.
- (b) A reference to a statute includes a reference to any regulation made thereunder. (6.008)

8. Joint and Several Covenants

Any covenant or agreement on the part of two or more persons shall be deemed to bind them jointly and severally. (6.009)

9. Severability

Any provision of this Licence which is prohibited or unenforceable in any jurisdiction shall as to such jurisdiction be ineffective to the extent of such prohibition or inability to enforce without invalidating the remaining provisions of such provision in any other jurisdiction. (6.010)

10. Applicable Law

This Licence shall be construed and interpreted in accordance with the law of New South Wales. (6.011)

11. Licence a "Holding" for purposes of the CLA

The Holder acknowledges that this Licence is a Holding within the meaning of the CLA and the Holder is a Holder within the meaning of that Act and the provisions of that Act relating to holdings and holders apply to this Licence and the Holder. (6.012)

12. Performance of Functions etc

Any power authority duty or function conferred or imposed upon the Minister under this Licence may be exercised or performed by any person authorised by the Minister. (6.013)

13. Authorised Officer

Where under this Licence the Minister is empowered to authorise any person to perform or exercise any power authority duty or function under this Licence such person shall be validly authorised if he is authorised to exercise any power authority duty or function conferred by any Licence granted by the Minister or any Licence of a specified type or any Licence within a specified locality. (6.014)

14. Minister as Public Authority

The Minister and Holder acknowledge that nothing in this Licence can in any way restrict or otherwise affect the Minister's unfettered discretion as to the use of the Minister's statutory powers as a public authority. (6.015)

15. Approval by the Minister

- (a) In any case where pursuant to this Licence the doing or executing of any act matter or thing by the Holder is dependent upon the approval or consent of the Minister such approval or consent shall not be effective unless given in writing and may be given or withheld by the Minister in the Minister's absolute discretion and may be given subject to such conditions as the Minister may determine unless otherwise herein provided.
- (b) The Holder expressly agrees that any failure to comply with a condition imposed by the Minister will constitute a failure by the Holder to comply with a condition of this Licence. (6.016)

16. Opinion of the Minister

Any opinion to be formed by the Minister for the purposes of this Licence may be formed by the Minister on such grounds and material as the Minister determines to be sufficient after consultation if the Minister deems it necessary with any New South Wales Government Department or other public authority the Standards Association of Australia or any other body whose objects and functions are relevant. In forming any such opinion the Minister shall be deemed to be exercising merely administrative functions. (6.017)

17. Holder to pay Cost of Work

Whenever the Holder is required in this Licence to do or effect any act matter or thing then the doing of such act matter or thing shall unless this Licence otherwise provides be at the sole risk cost and expense of the Holder. (6.018)

18. Notices

- (a) All notices or communications required to be or which may be given or served by the Minister to or upon the Holder under this Licence or which may be convenient to be given or served in

connection with this Licence shall be in writing and shall be sufficiently given or served if left at or sent by ordinary post addressed to the Holder at his address specified in Column 2 of Item 1 of Schedule 1 or at the Premises or at such other place as notified in writing by the Holder to the Minister.

- (b) All notices or communications required to be or which may be given or served by the Holder to or upon the Minister under this Licence or which may be convenient to be given or served in connection with this Licence shall be in writing and shall be sufficiently given or served if signed by the Holder or if the Holder is a corporation by the Secretary of the Holder or the person acting as such for the time being and if left at or sent by ordinary post addressed to the person specified in Column 2 of Item 2 of Schedule 1.
- (c) Any notice or communication given or served by post shall be deemed to have been duly given or served at the time when it would in the ordinary course be delivered. (6.019)

19. Manner of Payment of Rent and Other Moneys

The rent and other moneys payable in accordance with this Licence shall be paid to the Director-General, Department of Lands at the address specified in Column 2 of Item 3 of Schedule 1 or to such other person or at such other address as the Minister may from time to time direct by notice in writing served on the Holder. (6.020)

20. Time to be of the Essence

The Minister and the Holder expressly agree that where in any provision of this Licence the Holder is given or allowed a specified time within which to undertake or do any act or thing or any power is conferred or any event occurs after the lapsing of a specified time time shall be the essence of the contract in that regard. (6.021)

21. Permitted Use

- (a) This Licence confers on the Holder a right to occupy the Premises for the purpose specified or referred to in Column 2 of Item 4 in Schedule 1.
- (b) The Holder will not use the Premises or allow them to be used for any purpose other than the purpose specified in Column 2 of Item 4 in Schedule 1. (6.023)

22. No Exclusive Possession

The Holder acknowledges that this licence does not confer exclusive Possession of the Premises upon the Holder. (6.023A)

23. Holder not to Commit Nuisance etc

The Holder will not at any time during the Term of this Licence:

- (a) carry on or permit to be carried on at the premises any noxious nuisance or offensive trade business.
- (b) do or permit to be carried on at the premises any act matter or thing which results in nuisance damage or disturbance to the Minister or owners or occupiers of adjoining or neighbouring lands or buildings.
- (c) use the premises for any illegal activity. (6.024)

24. Commencement and Revocation of Licence (after Notice)

- (a) This Licence shall commence on the date (and where a time is referred to - the time) specified or referred to in Column 2 of Item 6 of Schedule 1 and shall continue in force until it is revoked in accordance with the provisions of this clause.
- (b) The Minister may in his absolute discretion after giving to the Holder such period of notice as is specified or referred to in Column 2 of Item 7 of Schedule 1 of his intention to revoke this Licence (as provided for in subclause (e)) revoke this Licence at any time by serving on the Holder a notice in writing revoking this Licence.
- (c) Notwithstanding the provisions of subclause (b) if the Holder fails to comply with any term covenant condition or provision of this Licence the Minister may in his absolute discretion forthwith revoke this Licence without giving any notice of intention to do so by serving on the Holder a notice in writing revoking this Licence.
- (d) A revocation made under this clause shall take effect on the date specified in the notice or where no date is specified in the notice on the date on which the notice is served on the Holder.
- (e) The notice of intention to revoke this Licence shall be in writing and shall be served on the Holder.
- (f) Except as may be expressly provided for in this Licence the Holder acknowledges and agrees that the Holder will not be entitled to any compensation costs or damages in respect of the revocation of this Licence. (6.028)

25. Termination of Licence on Determination of Native Title

- (a) Notwithstanding any other provision of this Licence this Licence shall terminate in the event that an approved determination is made under any statute relating to native title that native title exists in the land or part thereof.
- (b) Except as may be expressly provided for in this Licence the Holder acknowledges and agrees that the Holder will not be entitled to any compensation costs or damages in respect of the termination of this Licence by operation of this clause. (6.029A)

26. Licence subject to Native Title

- (a) In this clause the word "waters" and the expressions "native title rights and interests" and "approved determination of native title" have the same meaning as in the Commonwealth Native Title Act 1993.
- (b) This Licence is granted subject to any native title rights and interests existing in relation to that part of the premises that consist of waters.
- (c) The Holder expressly agrees not to interfere with the exercise or enjoyment of any native title rights and interests in respect of the waters within the premises by any person entitled to exercise or enjoy such rights and interests.
- (d) Notwithstanding any other provision of this Licence the Minister by notice in writing may terminate this Licence in the event that any approved determination of native title is made that native title rights and interests exist in relation to the land or waters within the premises.
- (e) Except as may be expressly provided for in this Licence the Holder acknowledges and agrees that the Holder will not be entitled to any compensation costs or damages in respect of the

termination of this Licence under this clause or the loss or benefit of any improvement authorised to be constructed by this Licence. (6.029B)

27. Payment of Rent (CPI)

- (a) For the purposes of this clause:

"*Initial Rent*" means the rent specified in Column 2 of Item 11 of Schedule 1.

"*CPI Review Date*" means each anniversary date of the Commencement Date.

"*CPI Review Period*" means the period between each CPI Review Date.

"*Due Date*" means each anniversary date of the Commencement Date.

"*Market Rent Review Date*" means the date of the expiration of each period of years as specified in Column 2 of Item 12 of Schedule 1 calculated from the Commencement Date.

"*Market Rent Review Period*" means the period between each Market Rent Review Date.

- (b) The Holder covenants with the Minister that the Holder will during the whole of the Term pay to the Minister in accordance with the provisions of this clause without demand free of exchange and without deduction whatsoever the rent hereinafter provided.

- (c) The Holder will pay to the Minister on the commencement Date the Initial Rent and thereafter shall pay on each Due Date rent in advance adjusted as hereinafter provided.

- (d) (i) On the CPI Review Date the rent shall be adjusted in accordance with the following formula:

$$R = B \times \frac{C}{D}$$

where:

R represents the adjusted rent;

B represents the annual rent payable during the year preceding the CPI Review Date;

C represents the Consumer Price Index number for the last quarter for which such a number was published before the CPI Review Date; and

D represents the Consumer Price Index number for the last quarter for which such a number was published before the immediately preceding CPI Review Date (or if there is no immediately preceding CPI Review Date then the Commencement Date).

- (ii) In this clause "Consumer Price Index number" in relation to a quarter means the number for that quarter appearing in the Consumer Price Index (All Groups' Index) for Sydney published by the Australian Statistician. In the event that such index be discontinued or abolished the Minister may at his absolute discretion nominate another Index.
- (iii) If the reference base for the Consumer Price Index is changed regard shall be had only to Index numbers published in terms of the new reference base or to Index numbers

converted to the new reference base in accordance with an arithmetical conversion factor specified by the Australian Statistician.

- (iv) Any rent adjusted under this subclause shall be adjusted to the nearest whole dollar.
- (e) In addition to the indexation review provided for in subclause (d) on the first Market Rent Review Date after commencement and thereafter on each Market Rent Review Date the rent may be redetermined by the Minister pursuant to the provisions of Sections 142 and 143 of the CLA.
- (f) A redetermination of rent for the purposes of subclause (e) shall be deemed to have been made on the Market Rent Review Date if it is made at any time within the period of six months before the market Rent Review Date.
- (g) Where the Minister does not redetermine the rent as provided for in subclause (e) he may redetermine the rent pursuant to the provisions of Sections 142 and 143 of the CLA at any time prior to the next Market Rent Review Date and no succeeding Market Rent Review Date shall be postponed by reason of the operation of this subclause.
- (h) Where the Minister does not redetermine the rent on the First Market Rent Review Date or a Market Rent Review Date as provided for in subclause (e) the Holder may by notice in writing served on the Minister require that the Minister redetermine the rent pursuant to the provisions of Sections 142 and 143 of the CLA. Where the Holder requires the Minister to redetermine the rent under this subclause he shall pay on demand the costs of the Minister (or so much of the cost as the Minister may require) in making that determination.
- (i) Subject to the provision of subclause (j) a redetermination of rent as provided for in subclauses (e) (g) and (h) shall take effect and be due and payable from the date of issue of the notice of redetermination under Section 142 of the CLA even if an objection or appeal under that Section has been lodged. On the completion of the objection and appeal process any necessary adjustments shall be made.
- (j) A redetermination of rent made before its relevant Market Rent Review Date as provided for in subclause (f) shall take effect from the relevant Market Rent Review Date even if an objection or appeal under Section 142 of the CLA has been lodged. On the completion of the objection and appeal process any necessary adjustments shall be made.
- (k) The Holder acknowledges that the Minister may make a direction under Section 152 of the CLA in respect of any rent payable under this Licence. (6.031)

28. Continuing Obligation

The obligation of the Holder to pay the Rent shall be a continuing one during the term of this Licence and shall not abate in whole or in part or be affected by any cause whatsoever. (6.037)

29. Holder to Pay Rates etc

The Holder will when the same become due for payment pay all (or in the first and last year of the term of this Licence the appropriate proportionate part) rates taxes (including Land Tax) assessments duties charges and fees whether municipal local government parliamentary or otherwise which are at any time during the currency of this Licence lawfully charged upon imposed or levied in respect of the Premises or on the Minister or the Holder on account thereof and will if required by the Minister produce to the Minister the receipts for such payments within ten business days after the respective due dates for payment AND in case such rates taxes duties and fees so covenanted to be paid by the Holder are not paid when the same shall become due the Minister may if the Minister thinks fit pay the same and any such sum or sums so paid may be recovered by the Minister as if such sums were rent in arrears. (6.039)

30. Holder to Pay Other Charges

The Holder will pay all other fees charges and impositions which are at any time during the Term payable in respect of the Premises or on account of the use and occupation of the Premises by the Holder. (6.040)

31. Goods and Services Tax

(a) Definitions

In this clause the expressions "GST", "supply", and "taxable supply" have the meanings given to those expressions in the A New Tax System (Goods and Services Tax) Act 1999.

(b) Amounts GST Exclusive

With the exception of any amount payable under this clause, unless otherwise expressly stated all amounts stated to be payable under this Licence are exclusive of GST.

(c) Responsibility for GST

- (i)** Despite any other provision in this Licence, if GST is imposed on any supply made under this Licence, the recipient must pay to the supplier an amount equal to the GST payable on the taxable supply.
- (ii)** The recipient must pay the amount referred to in subclause (c)(i) in addition to and at the time payment for the taxable supply is required to be made under this Licence.

(d) Valuer/Umpire to return GST Exclusive Value

Any valuer or umpire returning a valuation must return a GST exclusive market value for it in any case where the valuation is for the purpose of determining a supply value to which GST is to be added under this Licence. (6.040A)

32. Holder to Pay for Services

The Holder will as and when the same become due for payment pay to the Minister or to any other person or body authorised to supply the same all proper charges for gas electricity water or other services supplied to or consumed in or on the Premises and will also pay all charges in respect of any telephone services connected to the Premises. (6.041)

33. Holder not to Impose Liability on Minister

Subject to any other provision of this Licence the Holder will not without the written consent of the Minister by any act matter or deed or by failure or omission cause or permit to be imposed on the Minister any liability of the Holder under or by virtue of this Licence. (6.042)

34. Holder not to undertake development without consent notwithstanding any other provision of this Licence

The Holder will not undertake any development within the meaning of the Environmental Planning and Assessment Act 1979 contrary to the provisions of that Act or in breach of any restriction condition or prohibition imposed by an Environmental Planning Instrument or condition of a development consent. (6.043)

35. Development Consent

The Holder will not undertake any activity on or within the Premises for which consent is required under the Environmental Planning and Assessment Act 1979 or any Instrument made thereunder without first obtaining such consent and in accordance with any condition or requirement of that consent. (6.044)

36. Compliance with Statutes

- (a) The Holder will comply with the requirements of all statutes regulations or by-laws and requirements of all relevant public and local authorities in so far as they apply in relation to the use and occupation of the premises.
- (b) The Holder will forthwith on being served with a notice by the Minister comply with any notice or direction served on the Minister by a competent authority relating to the destruction of noxious animals or plants or pests or the carrying out of repairs alterations or works on or to the Premises. (6.045)

37. Occupational Health and Safety Act 2000

The Holder accepts responsibility for the control of the whole of the Premises for the purpose of the Occupational Health and Safety Act 2000 and agrees to keep and maintain the Premises in a manner which complies with the said Act. (6.046)

38. Holder not to deal with Licence or part with possession of Premises

Subject to any other provision of this Licence the Holder will not during the Term of this Licence transfer or create any interest in the Licence or authorise or permit any person to occupy the Premises. (6.047)

39. Revocation on the Request of the Holder

The Holder may at any time by notice served on the Minister request that this Licence be revoked and the Minister if he is satisfied that the Holder has complied with the conditions and provisions of this Licence or the CLA will as soon as practicable comply with such a request. (6.051)

40. Interest on Overdue Money

The Holder shall pay interest on any money due and payable under this Licence to the Minister at the rate prescribed from time to time under the provisions of Section 148 of the CLA and any such interest shall for the purposes of this Licence be deemed to be Rent in arrears. (6.052)

41. Failure to pay money or Undertake Works

- (a) Where under this Licence the Holder is required to pay any money to a third party and neglects to do so for a period of 14 days after the money became due and payable it shall be lawful for but not obligatory upon the Minister (and without prejudice to any rights and powers arising from such default) to pay such money as if it were the Holder and the Holder will reimburse the Minister in respect of any such payments on demand.
- (b) Where under this Licence the Holder is required to do or cause to be done any work or thing and the Holder neglects to do the work or thing for a period of 14 days after that work or thing was due or required to be done it shall be lawful for but not obligatory upon the Minister (and without prejudice to any rights and powers arising from such default) to do or effect such work or thing as if the Minister were the Holder and for that purpose the Minister the Minister's officers agents contractors and workmen may enter upon the whole or any part of the

Premises and there remain for the purposes of doing or effecting any such work or thing and the Holder will reimburse the Minister for the cost of the doing or effecting the work or thing on demand. For the purposes of this clause the word cost shall include any sums paid for any insurance indemnities under the laws relating to workers compensation.

- (c) The Holder expressly agrees that any money or cost payable to the Minister under this clause shall constitute a debt owed by the Holder to the Minister and may be recovered by the Minister accordingly.
- (d) Where the Premises has a common boundary with other land owned leased or held by the Holder (hereinafter called the "other land"). The Holder irrevocably grants to the Minister the Minister's officers agents contractors and workmen a licence to enter upon the said other land for the purpose of gaining access to the Premises or for the purpose of undertaking any work or thing authorised permitted or contemplated by this Clause.

In exercising any power conferred by this subclause the Minister the Minister's servants employees and agents will not be liable for any reasonable damage suffered or occasioned to the other land or anything constructed thereon.

- (e) The Holder expressly agrees that the provisions of this clause shall continue after the expiration or sooner determination of this Licence and the Minister may make any payment or effect any work or thing authorised by this clause after the expiration or sooner determination of this Licence as if such expiration or sooner determination had not taken place. (6.053)

42. Release of the Minister from Liability

- (a) For the purposes of this clause the term Minister shall include the officers, employees, agents, contractors and workmen of the Minister and the Department.
- (b) The holder agrees to occupy use and keep the Premises at the risk of the Holder and hereby releases to the full extent permitted by law the Minister from all claims and demands of every kind resulting from any accident damage or injury occurring therein arising from the Holder's occupation or use of the Premises for the use permitted except to the extent that any such claims and demands arise wholly or in part from the negligence or willful act or omission on the part of the Minister and the Holder **EXPRESSLY AGREES** that the Minister shall have no responsibility or liability for any loss of or damage to fixtures and/or personal property of the Holder or any agent or servant of the Holder or of any member of the public whilst in or upon the Premises.
- (c) The Holder expressly agrees that the obligations of the Holder under this clause shall continue after the expiration or other determination of this Licence in respect of any act deed matter or thing happening before such expiration or determination until such act deed matter or things is remedied to the satisfaction of the Minister. (6.055)

43. Indemnities and Limit on Liability

- (a) For the purposes of this clause the term Minister shall include the officers, employees, agents, contractors and workmen of the Minister and the Department.
- (b) The Holder agrees that the Holder will indemnify and keep indemnified the Minister from and against all actions suits claims demands proceedings losses damages compensation sums of money costs legal costs charges and expenses whatsoever ("Claims") to which the Minister shall or may be or become liable for arising from the Holder's occupation or use of the Premises for the use permitted except to the extent that any such Claims arise wholly or in part from the negligence or willful act or omission on the part of the Minister.

- (c) The Holder expressly agrees that the obligations of the Holder under this Clause shall continue after the expiration or other determination of this Licence in respect of any act deed matter or thing happening before such expiration or determination.
- (d) The liability of the Holder under this Clause and generally to the Minister and the Department shall be limited to the amount recovered by the Holder under any policy of insurance held by the Holder pursuant to this Licence or the amount of \$100 million in the aggregate, whichever is the greater. (6.056)

44. Pollution Liability

In connection with this Licence, the Holder will maintain for the duration of the Term of this Licence contractor's pollution liability insurance with a limit of \$100 million for each incident. Such insurance must name the Holder as insured and must note the Minister and the Department as interested parties. The Minister and the Department acknowledges that for the purposes of this Clause the Holder satisfies the obligation of this Clause if it holds a "Professional and Indemnity (P&I) (Marine Liability) insurance policy.

45. Insurance - Public Risk

In connection with this Licence, the Holder must obtain or cause to be obtained , effective as of the Commencement Date of this Licence and maintain or cause to be maintained for the duration of the Term (unless otherwise specified below) a public risk insurance in connection with the Premises and the use permitted under this Licence for at least \$100 million for each occurrence. Such insurance must name the Holder and note as interested parties the Minister and the Department. (6.057)

46. Insurance - Workers Compensation

The Holder will (without in any way limiting the liability of the Holder under any other provision of this Licence) forthwith take out and thereafter during the Term keep current insurance against any liability which may arise at common law or by virtue of any relevant workers compensation legislation in connection with the performance of work or provision of services on or about the Premises and the operation thereof so that the Minister will be indemnified against all claims for death or bodily injury by any person at all times. (6.058)

47. Provisions Re Policies

- (a) The Holder must:
 - (i) comply with and abide by the terms and conditions of the insurances arranged under this Licence which insure the Holder and the Minister and the Department of Lands; and
 - (ii) pay or cause to be paid all premiums which are payable within or by the terms of such insurances arranged.
 - (iii) bear or cause to be borne any excesses or deductibles under insurances required by Clauses 43, 44 and 46; .
 - (iv) give the Minister certificates of currency evidencing the currency of the policies taken out under Clauses 43, 44 and 46.
- (b) In connection with those and all required policies, the Holder;
 - (i) must not and must ensure that its contractors do not allow any insurance to lapse be varied or cancelled without the Minister's consent (not to be unreasonable withheld or delayed); and

- (ii) must notify the Minister immediately if a policy is cancelled or if an event in connection with this Licence occurs which could materially prejudice coverage or give rise to a claim under a policy and ensure that its contractors do the same; and
 - (iii) must use all reasonable endeavours to ensure that the Holder and the Holder's employees do not do anything that could materially affect coverage under any insurance taken out under Clauses 43, 44 and 46 in respect of claims in connection within this Licence;
- (c) To avoid doubt, neither the Holder nor the Holder's employees will be in breach of this Clause because either or both of them commit an act or do something which results in the making of a claim or the notification to the insurer of circumstances which may lead to a claim under a policy of insurance the subject of Clauses 43, 44 and 46;
- (d) With the exception of workers compensation insurance, the insurance effected by the Holder under Clauses 43 and 44 which insures more than one person comprising the insured must include a clause in which the insurer agrees:
- (i) to waive all rights of subrogation or action against any of the other persons comprising the insured; and
 - (ii) that the term 'insured' applies to each of the persons comprising the insured as if a separate policy of insurance had been issued to each of them (subject to overall sum insured not being increased as a result); and
 - (iii) that any non-disclosure by one insured does not prejudice the right of the other innocent insured to claim under that insurance. (6.065)

48. Settlement of Claims

Upon settlement of a claim under any insurance required by this Licence covering loss of or damage to any property owned by the Minister:

- (a) to the extent that the Minister has directed that its property not be reinstated the moneys received must be paid to the Minister; and
- (b) to the extent that any of the Minister's property is to be reinstated, then the Minister is to be reimbursed for the moneys paid or to be paid.

49. Premises to be kept in clean and tidy condition

The Holder will at all times during the Term keep the Premises in a clean and tidy condition and will (subject to any other provision of this Licence) on the Termination Date leave the Premises in a clean and tidy condition. (6.088)

50. Minister's Right to Enter Inspect and Repair

The Minister and the Minister's agents may at all reasonable times upon giving to the Holder reasonable notice (except in the case of emergency when no notice shall be required) enter upon the Premises and view the state of repair thereof and may serve upon the Holder a notice in writing of any defect (the repair of which is the Holder's obligation hereunder) requiring the Holder within fourteen days to repair the same. (6.090)

51. Compliance with Legislation/Regulations

The Holder will ensure that the Permitted Use complies with all relevant State and Commonwealth legislation and/or regulations and any authorisations/permits issued under those statutes.

52. Costs of the Minister and The Department

The Holder will pay:

- (a) the Minister's reasonable legal costs and all duties fees charges and expenses of or incidental to the preparation completion and stamping and registration of this Licence application for the consent of the Minister hereunder to a maximum of \$10,000 (excluding GST) and of or incidental to any and every breach or default by the Holder hereunder and in or incidental to the exercise or attempted exercise of any right power privilege authority or remedy of the Minister under or by virtues of this Licence and the fees of all professional consultants properly incurred by the Minister in consequence of or in connection with any breach or default by the Holder hereunder or an application for the Minister's consent hereunder;
- ☐ (b) all expenses reasonably incurred by the Minister or the Department in any entry inspection examination consultation or the like which discloses a breach by the Holder of any covenant of this Licence. (6.191)

53. No Holding Out

The Holder will not in connection with the Premises or otherwise directly or indirectly hold out or not permit to be held out to any member of the public any statement act deed matter or thing indicating that the Premises or the business conducted or operated thereon or any part or parts thereof are or is being carried on or managed or supervised by the Minister nor shall the Holder act as or represent itself to be the servant or agent of the Minister. (6.192)

54. No Waiver

☐ No waiver by the Minister of any breach of any covenant obligation or provision in this Licence either express or implied shall operate as a waiver of another breach of the same or of any other covenant obligation or provision in this Licence contained or implied. None of the provisions of this Licence shall be taken either at law or in equity to have been varied waived discharged or released by the Minister unless by its express consent in writing. (6.193)

55. Holder to Yield Up

The Holder will forthwith upon the revocation of this Licence peaceably surrender and yield up to the Minister the Premises in good condition reasonable wear and tear excepted together with all conveniences amenities and appurtenances relating thereto clear and free from rubbish and in good and substantial repair order and condition in every case having regard to the age of what is being surrendered or yielded up. (6.199)

56. No Right to Purchase etc

The Holder expressly acknowledges that the grant of this Licence does not confer a right to purchase the land or to the grant of a lease or to the grant of a further licence. (6.200)

57. Special Conditions

The special conditions specified or referred to in Column 2 of Item 71 of Schedule 1 shall be deemed to be conditions and provisions of this Licence. (6.201)

***** End of Licence Clauses *****

SCHEDULE 1

Item	Paragraph No	Column 1 (description of variable particulars)	Column 2 - (particulars)
1	18	Holder's Address for service of notices	PO Box 663 NEWCASTLE NSW 2300
2	18	Minister's Address for service of notices	Department of Lands PO Box 6 EAST MAITLAND NSW 2323
3	19	Address for payment of rent	Department of Lands PO Box 2155 DANGAR NSW 2309
4	21	Purpose for which Premises may be used	Maintenance Dredging by the Holder or their authorised agents or contractors
6	24	Commencement Date	The date specified on page 1 of the Licence being the date of the execution of the Licence.
7	24	Notice of intention to Revoke	Twelve (12) months
11	27	Initial Rent	\$401.00
12	27	Market Rent Review Period	3 years
19	44	Insurance - Public Risk	\$100 Million
71	57	Special conditions or provisions	Annexed as Schedule 2

***** End of Schedule 1 *****

SCHEDULE 2

58. Compliance with Development Consent

The Holder will expressly comply with the conditions of Development Consent DA-134-3-2003-i (Port Consent) granted 9 August 2005.

59. Dredge Fee

- a) The Holder acknowledges that they will be required to pay a fee of \$500 per day or part thereof for each day that dredging occurs within the Premises.
- b) The Holder acknowledges that:
 - I. prior to commencing dredge operations the Holder will notify the Minister at address indicated at Item 2 of Schedule 1; and
 - II. at the expiration of dredge operations the Holder will notify the Minister at address indicated at Item 2 of Schedule 1.
- c) The holder acknowledges that the Minister will issue a tax invoice to cover the period of dredge operations as notified in condition 59 b) at the daily rate notified in condition 59 a)

***** End of Schedule 2 *****

SCHEDULE 3



LICENCE NO: 450958
FILE REF: 09/04891
SCALE: NOT TO SCALE
DATE DRAWN: 20 May 2009

LOCALITY: NEWCASTLE
PARISH: NEWCASTLE, STOCKTON
TOTAL AREA LICENSED: 39.2ha

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