

liquid or solid wastes or emissions?			
6. Will the activity involve the emission of dust, odours, noise, vibration or radiation in the proximity of residential or urban areas or other sensitive locations?	<input checked="" type="checkbox"/>	Negligible	<p>Drills used during the installation process will cause temporarily noise, vibration, and increase turbidity whilst in use.</p> <p>Noise, vibration and increased turbidity from drilling will only occur for brief periods of time in a highly localised area. These effects will be unnoticeable from above the water. Mitigation unnecessary.</p> <p>Work will be carried out between 7am and 5pm Monday to Friday. Equipment will have been serviced to ensure that they do not emit excessive noise.</p>

Biological impacts during construction and operation

	Applicable	Likely impact (negligible, low, medium or high or N/A)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/Mitigation Measures
1. Is any vegetation to be cleared or modified? (includes vegetation of conservation significance or cultural landscape value)	<input checked="" type="checkbox"/>	Low	<p>The project will involve reproductively mature crayweed collected from the fringes of Sydney where healthy populations still exist. No flora or fauna will be collected within Cabbage Tree Bay.</p> <p>The proposed works involve attaching crayweed to bare rocky reef and will promote biodiversity by creating habitat for important species. There is a low risk of divers damaging existing marine flora and fauna within Cabbage Tree Bay.</p>	<p>Installations will only occur on bare rocky reef.</p> <p>Only experienced divers trained in correct buoyancy control will undertake works to reduce the risk of damage to the existing marine flora and fauna of Cabbage Tree Bay.</p>

Biological impacts during construction and operation

	Applicable	Likely impact (negligible, low, medium or high or N/A)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/Mitigation Measures
<p>2. Is the activity likely to have a significant effect on threatened species or ecological communities, their habitats, or any Area of Outstanding Biodiversity Value?</p>	<input checked="" type="checkbox"/>	<p>N/A: Terrestrial vegetation Low: Marine life</p>	<p>Terrestrial vegetation in surrounding areas include Endangered Ecological Communities. Protected flora and fauna in the area include: Little Penguin (<i>Eudyptula minor</i>) - The proposed sites are located within Cabbage Tree Bay, and not at or near any known nesting area of the Endangered Manly Point Little Penguin population. Green Turtle (<i>Chelonia mydas</i>) – Green Turtles, listed as vulnerable, have been sighted in Cabbage Tree Bay. Grey Nurse Shark (<i>Carcharias Taurus</i>) – Grey Nurse Shark are listed at critically endangered. Whilst Cabbage Tree Bay is not listed as critical Grey Nurse Shark habitat, sightings have occurred. <i>Halophila spp.</i> are present in Cabbage Tree Bay. All seagrasses are protected under NSW Fisheries Management Act 1994.</p>	<p>In the case of disturbance to the listed protected fauna, or other protected fauna, sightings will be reported, and work will cease in order to prevent disturbance if necessary. All divers or other workers involved in this project will be educated regarding recognising these species. Only experienced divers trained in correct buoyancy control will undertake works to reduce the risk of damage to the existing marine flora and fauna of Cabbage Tree Bay. If used, vessel will be anchored away from seagrass habitat. The proposed installation sites are on rocky reefs barren of vegetation and works comply with the Aquatic Reserves Notice (2015) as it does not take, gather, destroy, injure or interfere with any fish or marine vegetation.</p>
<p>3. Does the activity have the potential to endanger, displace or disturb fauna (including</p>	<input checked="" type="checkbox"/>	<p>Low</p>	<p>This project has the potential to cause minor, temporary disturbance to marine fauna. Previous restoration works have not shown any endangerment, major disturbance or</p>	<p>In the case of disturbance greater than a minor disturbance, work will cease, and the incident will be reported to council.</p>

Biological impacts during construction and operation

	Applicable	Likely impact (negligible, low, medium or high or N/A)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/Mitigation Measures
fauna of conservation significance) or create a barrier to their movement?			<p>perturbation aside from immediate disturbance while works are taking place.</p> <p>No activities will create a barrier to the movement of marine fauna.</p>	
4. Is the activity likely to cause a threat to the biological diversity or ecological integrity of an ecological community?	<input checked="" type="checkbox"/>	Negligible	<p>Baseline studies have shown no decrease in biodiversity or abundance of marine life from prior to after installation.</p> <p>Installation of structures for crayweed restoration will promote the biological diversity and ecological integrity of Cabbage Tree Bay and surrounding marine areas.</p>	N/A
5. Is the activity likely to introduce priority weeds, vermin, feral species or genetically modified organisms into an area?	<input checked="" type="checkbox"/>	Low	<p>Equipment may have been exposed to invasive alga <i>Caulerpa taxifolia</i> although the risk is low as it does not co-exist with crayweed.</p>	All gear has been washed thoroughly since exposure to <i>Caulerpa taxifolia</i> .
6. Is the activity consistent with any applicable recovery threat abatement plans?	<input checked="" type="checkbox"/>	Negligible	N/A	N/A

Community impacts during construction and operation			
	Applicable? *	Likely impact (negligible, low, medium or high or negative or positive; or N/A)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)
			Safeguards/Mitigation Measures
1. Is the activity likely to affect community services or infrastructure?	<input type="checkbox"/>	N/A	N/A
2. Does the activity affect sites of importance to local or broader community for their recreational or other values or access to these sites?	<input checked="" type="checkbox"/>	High Positive & Negligible Negative	Impacts on the community will be positive. The installation will facilitate community engagement and education, consistent with the <i>Marine Estate Management Act (2014)</i> in 'facilitating social and recreational use, as well as education'. Works are minor and will temporarily impact on access whilst they are being completed.
3. Is the activity likely to affect economic factors, including employment, industry and property value?	<input type="checkbox"/>	N/A	N/A
4. Is the activity likely to have an impact on the safety of the	<input checked="" type="checkbox"/>	Low, Negative	Installations will be monitored and maintained on a regular basis to ensure they do not become hazardous.

community?				
5. Is the activity likely to cause a bushfire risk?	<input type="checkbox"/>	N/A	N/A	N/A
6. Will the activity affect the visual or scenic landscape?	<input checked="" type="checkbox"/>	High, Positive	Crayweed restoration will enhance underwater aesthetics for the enjoyment of swimmers, snorkellers and scuba divers. The large seaweed is aesthetically pleasing and has a beautiful golden colour, specific to only this species. Moreover, the barren habitat the crayweed replaces is often perceived as ugly and unwanted, as urchin barrens in and around Sydney are an increasing problem.	As the project progresses, the subtidal visual impact of the structures will be reduced as they are covered overgrown by encrusting or turfing algae. Once significant recruitment of juvenile crayweed occurs, the mats and bolts will be removed, such that no artificial structures remain
7. Is the activity likely to cause noise, visual impacts, loss of privacy, glare or overshadowing to members of the community, particularly adjoining landowners?	<input checked="" type="checkbox"/>	Low, Negative	The proposed works are subtidal not in proximity to any residential or commercial areas. Drills used during the installation process will cause brief noise, vibration, and increase turbidity. If used, fuel powered vessel will result in minor exhaust and noise emissions	Works will be confined to hours 0700-1700, Monday to Friday. Equipment will have been serviced to ensure that they do not emit excessive noise. If used, vessel will be anchored away from busy areas to reduce impact.
8. Is the activity likely to affect the use of, or the community's ability to use, natural resources?	<input checked="" type="checkbox"/>	Low, Positive	During installation works, access to small sections of Cabbage Tree Bay may be restricted (albeit minimal) due to the presence of, scientists, volunteers and equipment.	Community engagement, volunteer and educational opportunities will enhance the experience of swimming and diving at Cabbage Tree Bay. As crayweed establishes, the increased biodiversity will further enhance these recreational activities.

Review of Environmental Factors – Temporary structure to the subtidal rock reef at Cabbage Tree Bay

	Applicable?*	Likely impact (negligible, low, medium or high or negative or positive; or N/A)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/Mitigation Measures
1. Is the activity likely to result in the degradation of the reserve or any other area reserved for conservation purposes?	<input checked="" type="checkbox"/>	Negligible, Positive	Crayweed promotes biodiversity by creating habitat for important species such as the eastern rock lobster and abalone. Crayweed also contributes to detritus in soft sediment habitats, an important food source that underpins food webs of key fish species including mullet and bream	Baseline studies have shown no decrease in biodiversity or abundance of marine life from prior to after installation.
2. Is the activity likely to involve the use, wastage, destruction or depletion of natural resources including water, fuels, timber or extractive materials?	<input checked="" type="checkbox"/>	Negligible, Negative	If used, a powered vessel will use fuel.	Vessels used will be serviced regularly to ensure they are not leaking fuel and are operating efficiently.

Review of Environmental Factors – Temporary structure to the subtidal rock reef at Cabbage Tree Bay
 Aboriginal cultural heritage impacts during construction and operation

	Applicable? *	Likely impact (negligible, low, medium or high or negative or positive; or N/A)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/Mitigation Measures
1. Does the activity of places or significance to the Aboriginal community or other cultural values?	<input checked="" type="checkbox"/>	Negligible, Negative	There are no listed Aboriginal Places within the study area. The foreshore bordering the study area is identified as having high to extremely high potential for Aboriginal Heritage. The proposed works are subtidal location it is unlikely that any new artefacts will be discovered during the project.	Any aboriginal heritage items will be reported immediately, and works will be halted.
2. Is the activity likely to affect wild resources or access to these resources, which are used or valued by the Aboriginal community?	<input type="checkbox"/>	N/A	N/A	N/A
3. Does the activity affect areas nominated or declared as Aboriginal Places?	<input checked="" type="checkbox"/>	Negligible, Negative	There are no listed Aboriginal Places within the study area. The foreshore bordering the study area is identified as having high to extremely high potential for Aboriginal Heritage. The proposed works are subtidal location it is unlikely that any new artefacts will be discovered during the project.	Any aboriginal heritage items will be reported immediately, and works will be halted.
4. Does the activity affect areas subject to Native Title claims?	<input type="checkbox"/>	N/A	N/A	N/A

5 Work Health and Safety

Staff from the Sydney Institute of Marine Science and the University of New South Wales will have Safe Work Method Statements and Risk Assessments as part of the works proposed.

6 Conclusions & Recommendations

This project has the support of the community, crown, fisheries and council.

The proposed works have been assessed and are not expected to pose any significantly negative impact to Cabbage Tree Bay or its surrounds.

There will be some minor, short-term impacts during the works, however the long-term outcomes will be environmentally beneficial to Cabbage Tree Bay. The project will also facilitate community engagement and education, generating further interest and support for the aquatic reserve.

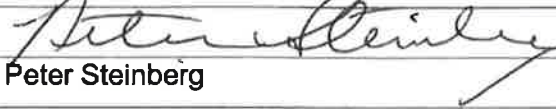
Native flora and fauna species, including *Halophila spp.*, will not be negatively impacted by the works and it is concluded that the proposed activity will not result in adverse impacts on the environment as such, an Environmental Impact Statement is not required.

Factors considered under clause 228 of the EP&A Regulation 2000


The factors considered under clause 228 under the EPA Regulation 2000	Acceptable
(a) any environmental impact on a community,	Yes
(b) any transformation of a locality,	Yes
(c) any environmental impact on the ecosystems of the locality,	Yes
(d) any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality.	Yes
(e) any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations,	Yes
(f) any impact on the habitat of protected fauna (within the meaning of the <i>National Parks and Wildlife Act 1974</i>),	Yes
(g) any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air	Yes
(h) any long-term effects on the environment,	Yes
(i) any degradation of the quality of the environment,	Yes
(j) any risk to the safety of the environment	Yes
(k) any reduction in the range of beneficial uses of the environment	Yes
(l) any pollution of the environment	Yes
(m) any environmental problems associated with the disposal of waste	Yes
(n) any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply	Yes
(o) any cumulative environmental effect with other existing or likely future activities	Yes
(p) any impact on coastal processes and coastal hazards, including those under projected climate change conditions.	Yes

7 Declaration


To the best of my knowledge the information contained in this report is correct.

Signature	
Name (printed)	Peter Steinberg
Position	Director and CEO at Sydney Institute of Marine Science
Date	22/2/2019

Permissible & complies with clause 228 of the Environmental Planning and Assessment Regulations 2000:

Signature	
Name (printed)	Adrian Turnbull
Position	Manager, Coast & Waterways
Date	7.3.2019

Approved by:

Signature	
Name (printed)	Adrian Turnbull
Position	Manager, Coast & Waterways
Date	7.3.2019

Noting the support of NSW Department of Primary Industries as subject matter experts, and the provision of an Aquatic Reserve Permit for the activity.

8 References

Relevant Legislation

Coastal Management Act 2016, available at <https://legislation.nsw.gov.au/#/view/act/2016/20>

Contaminated Land Management Act 1997, available at <http://www.legislation.nsw.gov.au/maintop/view/inforce/act+140+1997+cd+0+N>

Environmental Planning and Assessment Act, 1979, available at <http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N>

Environment Protection and Biodiversity Conservation Act, 1999, available at <http://www.comlaw.gov.au/Series/C2004A00485>

Fisheries Management Act 1994, available at <http://www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N>

Heritage Act 1997, available at <http://www.legislation.nsw.gov.au/maintop/view/inforce/act+136+1977+cd+0+N>

National Parks and Wildlife Act 1974, available at <http://www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N>

Protection of the Environment Operation Act 1997, available at <http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N>

State Environmental Planning Policy (Coastal Management), available at <https://www.legislation.nsw.gov.au/#/view/EPI/2018/106>

State Environmental Planning Policy (Infrastructure) 2007, available at <http://www.legislation.nsw.gov.au/maintop/view/inforce/epi+641+2007+cd+0+N>

Threatened Species Conservation Act 1995, available at <http://www.legislation.nsw.gov.au/maintop/view/inforce/act+101+1995+cd+0+N>

Water Act 1912, available at <http://www.legislation.nsw.gov.au/maintop/view/inforce/act+44+1912+cd+0+N>

Water Management Act 2000, available at <http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N>

Pittwater Local Environmental Plan 2014
<https://legislation.nsw.gov.au/#/view/EPI/2014/320/historical2017-08-25/part1>

9 Appendices

Appendix A

EPBC Act Protected Matters Report



**Department of
Primary Industries**

NSW DEPARTMENT OF PRIMARY INDUSTRIES – Aquatic Reserve Permit

**Marine Estate Management Regulation 2017
Aquatic Reserve Notification 2015**

Permit No: AR1-2018

Expiry Date: 01-Sept-2020

This permit and all conditions herein extend to all employees of the Permittee, and other persons acting on behalf of or at the direction of the Permittee for the purposes specified in this permit.

Permit is granted to:

Permittee: Sydney Institute of Marine Science
ABN: 84 117 222 063
Address: 19 Chowder Bay Road, Mosman 2088

Contacts: Primary contact: Prof. Peter Steinberg, Director, Sydney Institute of Marine Science
Contact details: 0422 048 730; p.steinberg@unsw.edu.au
Other contacts:
Prof. Adriana Verges: a.verges@unsw.edu.au
Dr Ezequiel Marzinelli: e.marzinelli@sydney.edu.au

Use and entry authorised to the following Aquatic Reserve: Cabbage Tree Bay Aquatic Reserve

Permitted zone/s and location/s: Works only permitted within the sites outlined in the application

Permitted activities being: For environmental rehabilitation and research purposes.
Restore crayweed macroalgal forests at three sites within the Aquatic Reserve.
Attach small plastic mats to rock using flat metal bars which are connected by 6-15 stainless steel screws per mat (see photos at www.operationcrayweed.com). Some existing algae may be covered. Adult crayweed is attached to the mat with cable ties.
Once significant recruitment of juvenile crayweed occurs, the mats and bolts will be removed so that no artificial structures remain. Usually removed after 6-18 months.

Permitted activities being: Organised educational activities:
Communication with, and education of, the general public on the purpose of the project and the need to avoid interfering with the structures.

Permitted activities being:	Organised research activities: Observation, photography, visual surveys and handling of specimens to take measurements Temporary installation of mats, metal bars, screws and cable ties
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Vessel/vehicle #1:	Eddy
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Registration number:	24358
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Passenger capacity:	5
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Vessel/vehicle #2:	Rampage
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Registration number:	425229
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Passenger capacity:	6
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Frequency and duration:

The Activity must be conducted in accordance with the details above and subject to conditions stated on the following pages.



Scott Hansen
Director General
NSW Department of Primary Industries
(Delegate of the Minister for Primary Industries and Minister for the Environment)

Date: 30.11.18

WARNINGS

- 1) This permit is not transferable.
- 2) All activities, the subject of this permit, must be undertaken in accordance with the provisions of the laws in force from time to time in the State of New South Wales and, in particular, the provisions of the *Marine Estate Management Act 2014*, the Marine Estate Management Regulation 2017, and the Marine Estate Management (Management Rules) Regulation 1999 and the Aquatic Reserve Notification 2015.
- 3) A breach by the Permittee/s or any person to whom this permit extends, of the *Marine Estate Management Act 2014*, the Marine Estate Management Regulation 2017, the Marine Estate Management (Management Rules) Regulation 1999 or the Aquatic Reserve Notification 2015 including any permit condition contained herein may result in the variation, suspension or cancellation of this permit or in a fine.

STANDARD CONDITIONS

- 4) The Permittee must ensure that when operations are conducted in the Aquatic Reserve under this permit, the permit or a certified copy of the permit is held at the site or sites of operation and on vessels during transit to and from that site or sites.
- 5) The Permittee must produce a copy of this permit on site when requested by an Authorised Officer.
- 6) The Permittee must inform staff and participants in the program of any restrictions applying under this permit.
- 7) The Permittee must notify the Department of Primary Industries – Fisheries within seven (7) days of:
 - a) any change to the Permittee details; and/or
 - b) the cessation of operations to which this permit relates.
- 8) Where the activity, the subject of this permit, relates, requires a licence or permit issued by other government agencies, it is a condition of this permit that other license/s or permit/s is issued and current.
- 9) The Permittee must ensure that any waste is managed, transported, reused, stored, collected received and disposed of in an environmentally satisfactory manner pursuant to *NSW Protection of the Environment Operations Act 1997*, and that all reasonable measures regarding the control and prevention of pollution and waste from being introduced into the Aquatic Reserve are implemented.
- 10) Vessel interchange with another vessel of similar size and passenger capacity is permitted for a period of less than 72 hours if such an interchange is of an unexpected nature resulting from maintenance or repairs of the permitted vessel/s or for a period exceeding 72 hours subject to written approval from the Department of Primary Industries – Fisheries.

SPECIFIC CONDITIONS

- 11) Consistency - All activities conducted under this permit must be undertaken in accordance with the permit application and supporting documents which were supplied to DPI Fisheries to support the permit application.
NB: If there is an inconsistency between the conditions of this consent and the permit application and supporting documents the conditions of this consent prevail to the extent of the inconsistency.
- 12) Environmental safeguards and mitigation measures as outlined below must be implemented:
 - a) Any invertebrates that may be crushed by the mats, and can be relocated, need to be relocated within the immediate vicinity. No fauna are to be purposefully killed or harmed by these works, including sea urchins.
 - b) All non-biodegradable materials used are to be securely fixed in place so that they cannot become detached in storm conditions.
 - c) All non-biodegradable materials are to be completely removed from the Aquatic Reserve once the crayweed has established.
 - d) No vessels are to be launched within the Aquatic Reserve.
 - e) Anchoring of boats within the Aquatic Reserve, if necessary, is only permitted on bare sediment and not within seagrass or on rocky reef.
 - f) Prior to use at the site and/or entry into the waterway, tools and equipment are to be appropriately cleaned, degreased and serviced.

- g) No crayweed is to be taken from any Aquatic Reserve, Marine Park, Intertidal Protected Area or the marine extension of Bouddi National Park for use as donor plants. No crayweed is to be taken from any other area without a permit to harm marine vegetation under the *Fisheries Management Act 1994*.
- 13) Communication and educational materials explaining this project are to be made available to the general public via web pages, Northern Beaches Council, Friends of Cabbage Tree Bay, local dive shops and while the installation of structures is underway, on site at Shelly Beach/Marine Parade, Manly. These materials also need to include a safety warning to not interfere with the structures in place.
- 14) Notification of Fish Kills – DPI (Fisheries) must be notified immediately if any fish kills result from the works. In such case all works must cease until the issue is rectified and approval is given to proceed.
- 15) Fuel and Oil/s Management - Potential for fuel, oils and hydraulic fluid to spill/leak from boats into the Aquatic Reserve must be managed through steps including:
- a) boats and equipment must be inspected for fuel, oil and hydraulic leaks prior to start and at the end of the day,
 - b) machinery or equipment, including hand-held equipment, must not be refuelled below Mean High Water Mark,
- 16) Scuba diving and snorkelling can cause damage to marine species and habitats. The Permittee must ensure all staff and researchers undertaking these activities, minimise harm or disturbance by:
- a) undertaking diver buoyancy control training,
 - b) ensuring gauges and other equipment do not hang loose,
 - c) avoiding bracing or standing on reefs,
 - d) avoiding damage to seagrass beds,
 - e) not participating in, or encouraging fish feeding.
- 17) The Permittee/s must display their university logo and a research banner while undertaking the permitted activities.
- 18) The Permittee must ensure that all vessels used in connection with activities permitted herein are clearly marked "Research Vessel" while being used for those activities.
- 19) The Permittee/s must ensure that the crayweed sites are in a safe and tidy condition and do not present a hazard to other Aquatic Reserve users.
- 20) The Permittee/s must not leave any unnecessary equipment or material in the Aquatic Reserve and must remove all equipment and material at the conclusion of the research activity or on expiry of the permit whichever is sooner.
- 21) The Permittee/s must avoid interrupting the activities of other park users.

NOTIFICATION AND SITE SUPERVISION CONDITIONS

- 22) The Permittee must notify the **Aquatic Reserve Planning Officer (by phone 02 4222 8339)** and the **Sydney North Fisheries Office (by phone 0428 035 062 and by email wollstonecraft.fisheries@dpi.nsw.gov.au)** 48 hours prior to the commencements of works within the Aquatic Reserve of the commencement of these works.
- 23) The Permittee must notify the **Aquatic Reserve Planning Officer (by phone 02 4222 8339)** and the **Sydney North Fisheries Office (by phone 0428 035 062 and by email wollstonecraft.fisheries@dpi.nsw.gov.au)** of any alterations to the scheduled works at least 48 hours prior to the commencements of the works.
- 24) All activities may be subject to inspection by an Authorised Officer, nominated by the Department of Primary Industries – Fisheries. The Authorised Officer is authorised to stop or suspend activities that in his/her opinion are likely to cause environmental or social harm.
- 25) The Permittee and its employees, contractors, sub-contractors and agents must comply with all directions of the Authorised Officer in relation to the works as are reasonably necessary for the conservation, protection and preservation of the Aquatic Reserve and property and things in the Aquatic Reserve.
-

REPORTING CONDITIONS

- 26) The Permittee must provide a copy of any published reports and results obtained as a result of the research conducted within the Aquatic Reserve to the Aquatic Reserve Planning Officer, PO Box 5106, Wollongong 2520.

NATIVE TITLE CONDITIONS

- 27) In the event that native title rights and interests are, or would be, affected by the grant of this Permit and this Permit is not authorised under the *Native Title Act 1993* (Cth) so that the Permit may be 'invalid' within the meaning of the *Native Title Act 1993* (Cth) then:
- a) The Permittee agrees that it will not seek to recover any compensation, damages, costs, losses or expenses whatsoever resulting from the invalidity from the Department of Primary Industries – Fisheries;
 - b) The parties agree that the valid parts of the Permit continue in force unaffected by the invalid parts.
- 28) The Permittee must not interfere with or prevent any person holding native title in the Aquatic Reserve from having reasonable access to the Aquatic Reserve.

INTERPRETATION AND DEFINITIONS

A word or phrase in this permit has the same meaning as the word or phrase has in the NSW *Marine Estate Management Act 2014*, NSW Marine Estate Management (Management Rules) Regulation 1999 and the NSW *Marine Estate Management Regulation 2017*.

A reference to a date includes that date.



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

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

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 29/01/19 15:11:20

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

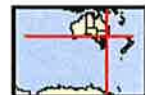
[Caveat](#)

[Acknowledgements](#)



This map may contain data which are
©Commonwealth of Australia
(Geoscience Australia), ©PSMA 2010

[Coordinates](#)
Buffer: 1.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	67
Listed Migratory Species:	56

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	1
Commonwealth Heritage Places:	1
Listed Marine Species:	75
Whales and Other Cetaceans:	14
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	2
Regional Forest Agreements:	None
Invasive Species:	46
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

National Heritage Properties [\[Resource Information \]](#)

Name	State	Status
Historic		
North Head - Sydney	NSW	Listed place

Listed Threatened Ecological Communities [\[Resource Information \]](#)

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

Name	Status	Type of Presence
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Coastal Upland Swamps in the Sydney Basin Bioregion	Endangered	Community may occur within area
Eastern Suburbs Banksia Scrub of the Sydney Region	Endangered	Community known to occur within area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area
Posidonia australis seagrass meadows of the Manning-Hawkesbury ecoregion	Endangered	Community likely to occur within area

Listed Threatened Species [\[Resource Information \]](#)

Name	Status	Type of Presence
Birds		
Anthochaera phrygia		
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat likely to occur within area
Botaurus poiciloptilus		
Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Dasyornis brachypterus		
Eastern Bristlebird [533]	Endangered	Species or species habitat likely to occur within area
Diomedea antipodensis		
Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni		
Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora		
Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely

Name	Status	Type of Presence to occur within area
<u>Diomedea exulans</u> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<u>Diomedea sanfordi</u> Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
<u>Fregetta grallaria grallaria</u> White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
<u>Grantiella picta</u> Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
<u>Lathamus discolor</u> Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
<u>Limosa lapponica baueri</u> Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area
<u>Limosa lapponica menzbieri</u> Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
<u>Macronectes giganteus</u> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<u>Macronectes halli</u> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<u>Numenius madagascariensis</u> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<u>Pachyptila turtur subantarctica</u> Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
<u>Phoebastria fusca</u> Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
<u>Pterodroma leucoptera leucoptera</u> Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
<u>Pterodroma neglecta neglecta</u> Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area
<u>Rostratula australis</u> Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
<u>Sternula nereis nereis</u> Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area
<u>Thalassarche bulleri</u> Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
<u>Thalassarche bulleri platei</u> Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Fish		
Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area
Frogs		
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Isodon obesulus obesulus Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species

Name	Status	Type of Presence
<u>Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</u>		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat likely to occur within area
<u>Pseudomys novaehollandiae</u>		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area
<u>Pteropus poliocephalus</u>		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Plants		
<u>Acacia terminalis subsp. terminalis MS</u>		
Sunshine Wattle (Sydney region) [88882]	Endangered	Species or species habitat known to occur within area
<u>Caladenia tessellata</u>		
Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat likely to occur within area
<u>Cryptostylis hunteriana</u>		
Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area
<u>Eucalyptus camfieldii</u>		
Camfield's Stringybark [15460]	Vulnerable	Species or species habitat likely to occur within area
<u>Genoplesium baueri</u>		
Yellow Gnat-orchid [7528]	Endangered	Species or species habitat likely to occur within area
<u>Melaleuca biconvexa</u>		
Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area
<u>Pelargonium sp. Striatellum (G.W.Carr 10345)</u>		
Omeo Stork's-bill [84065]	Endangered	Species or species habitat may occur within area
<u>Persoonia hirsuta</u>		
Hairy Geebung, Hairy Persoonia [19006]	Endangered	Species or species habitat known to occur within area
<u>Pimelea curviflora var. curviflora</u>		
[4182]	Vulnerable	Species or species habitat may occur within area
<u>Syzygium paniculatum</u>		
Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat known to occur within area
<u>Thesium australe</u>		
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
<u>Caretta caretta</u>		
Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
<u>Chelonia mydas</u>		
Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
<u>Dermochelys coriacea</u>		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
<i>Eretmochelys imbricata</i> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
<i>Hoplocephalus bungaroides</i> Broad-headed Snake [1182]	Vulnerable	Species or species habitat likely to occur within area
<i>Natator depressus</i> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

Sharks

Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species

[[Resource Information](#)]

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

Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within

Name	Threatened	Type of Presence area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur

Name	Threatened	Type of Presence within area
<u>Eretmochelys imbricata</u> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
<u>Lagenorhynchus obscurus</u> Dusky Dolphin [43]		Species or species habitat may occur within area
<u>Lamna nasus</u> Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
<u>Manta alfredi</u> Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat known to occur within area
<u>Manta birostris</u> Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
<u>Megaptera novaeangliae</u> Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
<u>Natator depressus</u> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
<u>Orcinus orca</u> Killer Whale, Orca [46]		Species or species habitat may occur within area
<u>Rhincodon typus</u> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
<u>Sousa chinensis</u> Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
<u>Cuculus optatus</u> Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
<u>Hirundapus caudacutus</u> White-throated Needletail [682]		Species or species habitat known to occur within area
<u>Monarcha melanopsis</u> Black-faced Monarch [609]		Species or species habitat known to occur within area
<u>Monarcha trivirgatus</u> Spectacled Monarch [610]		Species or species habitat may occur within area
<u>Motacilla flava</u> Yellow Wagtail [644]		Species or species habitat likely to occur within area
<u>Myiagra cyanoleuca</u> Satin Flycatcher [612]		Species or species habitat known to occur within area
<u>Rhipidura rufifrons</u> Rufous Fantail [592]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
<u>Actitis hypoleucos</u> Common Sandpiper [59309]		Species or species

Name	Threatened	Type of Presence
Calidris acuminata Sharp-tailed Sandpiper [874]		habitat known to occur within area Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

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

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

Name

Commonwealth Land - Australian Telecommunications Commission

Commonwealth Heritage Places [\[Resource Information \]](#)

Name	State	Status
Historic		
North Head Artillery Barracks	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]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea gibsoni Gibson's Albatross [64466]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Limosa lapponica Bar-tailed Godwit [844]	Threatened	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Sterna albifrons Little Tern [813]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area

Name	Threatened	Type of Presence
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche sp. nov. Pacific Albatross [66511]	Vulnerable*	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
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 Big-belly 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 known to 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

Name	Threatened	Type of Presence
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
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 Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata		
Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area
Caperea marginata		
Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Delphinus delphis		
Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat 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]		Species or species habitat may occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Sousa chinensis		
Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to 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

State and Territory Reserves

[\[Resource Information \]](#)

Name	State
North Head	NSW
Sydney Harbour	NSW

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, 2001.

Name	Status	Type of Presence
Birds		
<i>Acridotheres tristis</i> Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
<i>Alauda arvensis</i> Skylark [656]		Species or species habitat likely to occur within area
<i>Anas platyrhynchos</i> Mallard [974]		Species or species habitat likely to occur within area
<i>Carduelis carduelis</i> European Goldfinch [403]		Species or species habitat likely to occur within area
<i>Carduelis chloris</i> European Greenfinch [404]		Species or species habitat likely to occur within area
<i>Columba livia</i> Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
<i>Lonchura punctulata</i> Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
<i>Passer domesticus</i> House Sparrow [405]		Species or species habitat likely to occur within area
<i>Passer montanus</i> Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
<i>Pycnonotus jocosus</i> Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
<i>Streptopelia chinensis</i> Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
<i>Sturnus vulgaris</i> Common Starling [389]		Species or species habitat likely to occur within area
<i>Turdus merula</i> Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Frogs		
<i>Rhinella marina</i> Cane Toad [83218]		Species or species

Name	Status	Type of Presence habitat known to occur within area
Mammals		
<i>Bos taurus</i> Domestic Cattle [16]		Species or species habitat likely to occur within area
<i>Canis lupus familiaris</i> Domestic Dog [82654]		Species or species habitat likely to occur within area
<i>Felis catus</i> Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
<i>Lepus capensis</i> Brown Hare [127]		Species or species habitat likely to occur within area
<i>Mus musculus</i> House Mouse [120]		Species or species habitat likely to occur within area
<i>Oryctolagus cuniculus</i> Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
<i>Rattus norvegicus</i> Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
<i>Rattus rattus</i> Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
<i>Vulpes vulpes</i> Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
<i>Alternanthera philoxeroides</i> Alligator Weed [11620]		Species or species habitat likely to occur within area
<i>Anredera cordifolia</i> Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
<i>Asparagus aethiopicus</i> Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
<i>Asparagus asparagoides</i> Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
<i>Asparagus plumosus</i> Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
<i>Asparagus scandens</i> Asparagus Fern, Climbing Asparagus Fern [23255]		Species or species habitat likely to occur within area
<i>Cabomba caroliniana</i> Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
<i>Chrysanthemoides monilifera</i> Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area

Name	Status	Type of Presence
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Dolichandra unguis-cati Cat's Claw Vine, Yellow Trumpet Vine, Cat's Claw Creeper, Funnel Creeper [85119]		Species or species habitat likely to occur within area
Genista linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892] Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area