

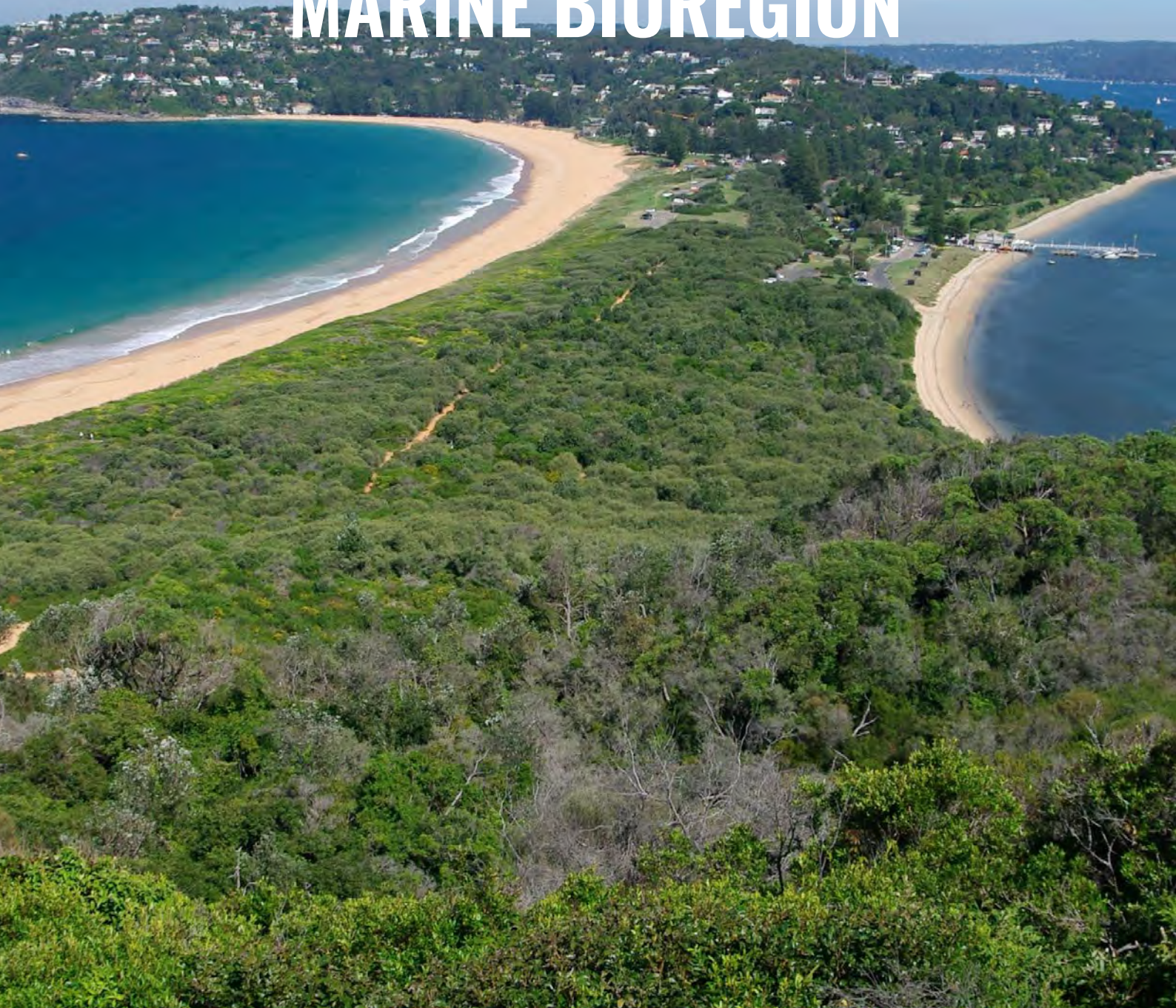
PART 2

**DISCUSSION PAPER**

Site proposals

ENHANCING CONSERVATION of MARINE BIODIVERSITY

HAWKESBURY SHELF  
**MARINE BIOREGION**



*Enhancing conservation of marine biodiversity –  
Hawkesbury Shelf marine bioregion – PART 2*

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**More information**

NSW Marine Estate Management Authority  
[www.marine.nsw.gov.au](http://www.marine.nsw.gov.au)

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# Executive summary

The **Hawkesbury Shelf marine bioregion** (the bioregion) includes the estuaries, coastline and marine waters from Newcastle to Wollongong. The bioregion is renowned for its beauty above and below the water. Its beaches, bays and harbour are the 'blue backyard' for millions of NSW residents and an iconic and valuable part of the NSW marine environment.

This discussion paper describes how we propose to manage the priority threats that impact the **Hawkesbury Shelf marine bioregion**. The proposal includes establishing a marine park which will aim to enhance the conservation of marine biodiversity and maximise environmental, social, cultural and economic benefits to the NSW community. The proposed marine park will consist of a suite of management changes at 25 discrete or non-contiguous sites to provide localised reductions in risk from some threats to enhance community benefits.

The marine park proposal is in addition to and will complement the initiatives under the *Marine Estate Management Strategy 2018-2028* (the Strategy). The Strategy addresses priority threats to the NSW marine estate identified in the statewide Threat and Risk Assessment (TARA).

The discussion paper is presented into two parts:

- **PART 1** – outlines the context and approach for enhancing marine biodiversity in the bioregion
- **PART 2 (this document)** – is the site proposal which describes the proposed management at 25 discrete sites within a marine park in the bioregion.

The proposal meets the requirements of the *Marine Estate Management Act 2014* which guides how the marine estate is to be managed in NSW. The draft site objectives, described in this paper align with the objects of the Act.

Zones will be used to manage the network of 25 sites within the proposed marine park. The zones proposed to be used for management are listed below. The zones may change depending on community feedback and the outcome of the final marine park, to ensure the appropriate zone type is used to attain the site objectives.

- **Sanctuary zones** are proposed to enhance biodiversity at a site and also deliver a range of other environmental, social, economic and cultural benefits depending on the objectives for the particular site. A range of activities can occur within this zone type including scuba diving, snorkelling, swimming and boating. Fishing and other extractive activities are restricted unless otherwise authorised for example research and monitoring or Aboriginal cultural use.
- **Conservation zones** are proposed to enhance some aspects of biodiversity at a site while also delivering economic benefits that are consistent with ecologically sustainable development, specifically Aboriginal cultural use and lobster and abalone fishing by commercial and recreational fishers.
- **Special purpose zones** are proposed to address a particular threat or enhance a particular use at a site. For example, to provide for recreational fishing or scuba diving only at a site (to reduce potential for social conflict) or protect intertidal species to address moderate risks from recreational hand gathering.

The Marine Estate Management Authority (the Authority) is seeking your views about the sites and the management changes proposed at each.

Your input to this discussion paper will inform the final marine park proposal that will be considered by the NSW Government later in 2018. Existing management rules will remain in place, and none of the proposals in this discussion paper will be implemented until the NSW Government announces the outcome.

# Sites for inclusion in the proposed marine park

Twenty-five sites have been selected by the Authority for inclusion in the proposed marine park (Figure 1). They include the 10 existing aquatic reserves in the bioregion, the Bouddi National Park marine extension (changes are proposed at some of these sites), and an additional 14 sites, of which some are new to the marine protected area network and others that currently have management arrangements in place.

The process the Authority applied to site selection is outlined in Appendix 4 of Part 1. It also included the consideration of more than 50 sites nominated by the NSW community for additional protection in the bioregion (Appendix 3 of Part 1) during consultation in 2015 and 2016.

Zones will be used to manage the network of 25 sites within the proposed marine park. The zones proposed to be used for management are listed below. The zones may change depending on community feedback and the outcome of the final marine park, to ensure the appropriate zone type is used to meet the site objectives (Table 1).

Current management of the 25 sites in the proposed marine park, relative to the zone types proposed, is shown in Table 2 with more detail in the description of each site.

**Table 1. Types of zones proposed in the marine park**

Zone	Description
<b>Sanctuary zone</b>	Enhance biodiversity at a site and also deliver a range of other environmental, social, economic and cultural benefits depending on the objectives for the particular site. A range of activities can occur within this zone types including scuba diving, snorkelling, swimming and boating. Fishing and other extractive activities are restricted unless for it otherwise authorised for example research and monitoring or Aboriginal cultural use.
<b>Conservation zone</b>	Enhance some aspects of biodiversity at a site while also delivering economic benefits that are consistent with ecologically sustainable development, specifically Aboriginal cultural use and lobster and abalone fishing by commercial and recreational fishers.
<b>Special purpose zone</b>	Address a particular threat or enhance a particular use at a site. For example, provide for recreational fishing or scuba diving only at a site (to reduce potential for social conflict), or protect intertidal species to address moderate risks from recreational hand gathering.

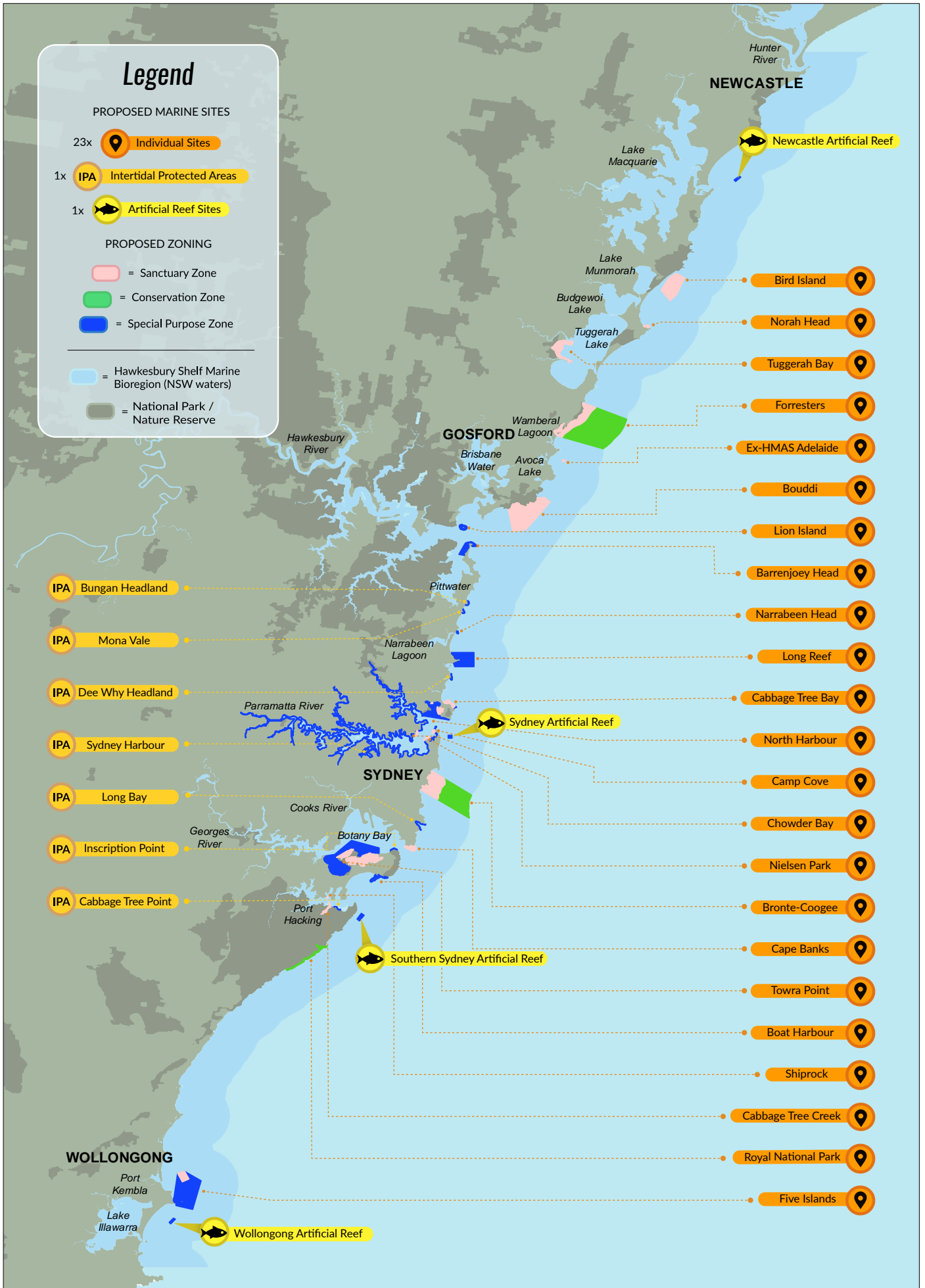


Figure 1. Overview of proposed marine park sites in the Hawkesbury Shelf marine bioregion

**Table 2. Sites proposed in the marine park, arranged from north to south**

<p>Sites in the current management column have spatial management rules in place, such as the current aquatic reserves in the bioregion:</p>	<p> <span style="display: inline-block; width: 15px; height: 15px; background-color: #fce4ec; border: 1px solid #ccc; margin-right: 5px;"></span> sanctuary zone or no-take equivalent  <span style="display: inline-block; width: 15px; height: 15px; background-color: #c8e6c9; border: 1px solid #ccc; margin-right: 5px;"></span> proposed conservation zone  <span style="display: inline-block; width: 15px; height: 15px; background-color: #00796b; color: white; border: 1px solid #ccc; margin-right: 5px;"></span> proposed special purpose zone  <span style="display: inline-block; width: 15px; height: 15px; background-color: #bbdefb; border: 1px solid #ccc; margin-right: 5px;"></span> currently managed to conserve some components of biodiversity and provide for some types of extractive activities.         </p>
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Sites	Current management (hectares)	Proposed management (hectares)			Site identified during community consultation
		Sanctuary zone	Conservation zone	Special purpose zone	
Bird Island		674			✗
Norah Head		20			✓
Tuggerah Bay		461			✓
Forresters		586	2844		✓
Ex-HMAS Adelaide	9	9			✓
Bouddi National Park	252	1484			✓
Lion Island				45	✓
Barrenjoey Head	28			133	✓
Bungan Headland IPA	7			7	✓
Mona Vale Headland IPA	3			3	✓
Narrabeen Head	7			7	✓
Long Reef	77			514	✓
Dee Why Headland IPA	2			2	✓
Cabbage Tree Bay	18	52		7	✓
North Harbour	257	51		325	✓
Sydney Harbour IPA	251			251	✓
Chowder Bay		13		1	✓
Camp Cove		11			✓
Nielsen Park		17			✓
Bronte-Coogee	36	676	1352		✓
Long Bay IPA	10			10	✓
Inscription Point IPA	3			3	✓
Cape Banks	18	69			✓
Towra Point	556   892	556		1241	✓
Boat Harbour	65			65	✓
Shiprock	2	2			✓
Cabbage Tree Point IPA	3			3	✓
Cabbage Tree Creek		23			✓
Offshore Artificial Reefs				86	✓
Royal National Park			85		✓
Five Islands		123		1263	✓
<b>Total area (% of the bioregion)</b>	<b>2496 (1.3%)</b>	<b>4827 (2.4%)</b>	<b>4281 (2.2%)</b>	<b>3966 (2.0%)</b>	

Note: IPA = Intertidal Protected Area. IPAs are discussed as one site in the site descriptions.

Towra Point Aquatic Reserve currently has two management zones: a refuge zone that allows some forms of extraction, and a sanctuary zone that prohibits all fishing.

Magic Point Critical Habitat for grey nurse shark (*Carcharias taurus*) is not included in the table but is in the bioregion. [Current fishing rules](#) to reduce threats to grey nurse shark continue to apply at this location.

Offshore artificial reefs includes four reefs off Newcastle, Sydney, Southern Sydney and Wollongong.

# Have your say

You are invited to provide feedback through an online submission form available at [www.marine.nsw.gov.au](http://www.marine.nsw.gov.au).

Alternatively, you can post your submission to:

Submission – Enhancing conservation of marine biodiversity in the Hawkesbury Shelf marine bioregion – Discussion paper  
NSW Marine Estate Management Authority  
Locked Bag 1  
Nelson Bay NSW 2315

If you want more information to inform your submission, refer to the NSW marine estate website

[www.marine.nsw.gov.au](http://www.marine.nsw.gov.au).

If you have any queries, you can email

[contact.us@marine.nsw.gov.au](mailto:contact.us@marine.nsw.gov.au)

The Authority may publish your submission unless you advise otherwise. Publication of submissions will usually include your name and the name of your organisation, if relevant. The Authority will remove contact details such as your email address, postal address and telephone number. At the Authority's discretion, certain submissions (or part of submissions) may not be published due to their length, content, appropriateness or confidentiality. All submissions received could be disclosed, if requested, in accordance with the *Government Information (Public Access) Act 2009*.

## Questions in the online submission form

### **General questions**

The proposed marine park in combination with the Marine Estate Management Strategy effectively address the identified priority threats and enhance benefits, in particular marine biodiversity conservation in the bioregion (*choose from Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree*). Why?

Provide general comments on the proposed marine park sites (*free-form text box and option to upload a file*).

### **For each of the 25 proposed sites**

How do you use or what benefits do you gain from this site? (*List of check boxes*)

Are there any positive outcomes you anticipate from the proposed management changes at this site?

Are there any negative outcomes you anticipate from the proposed management changes at this site?

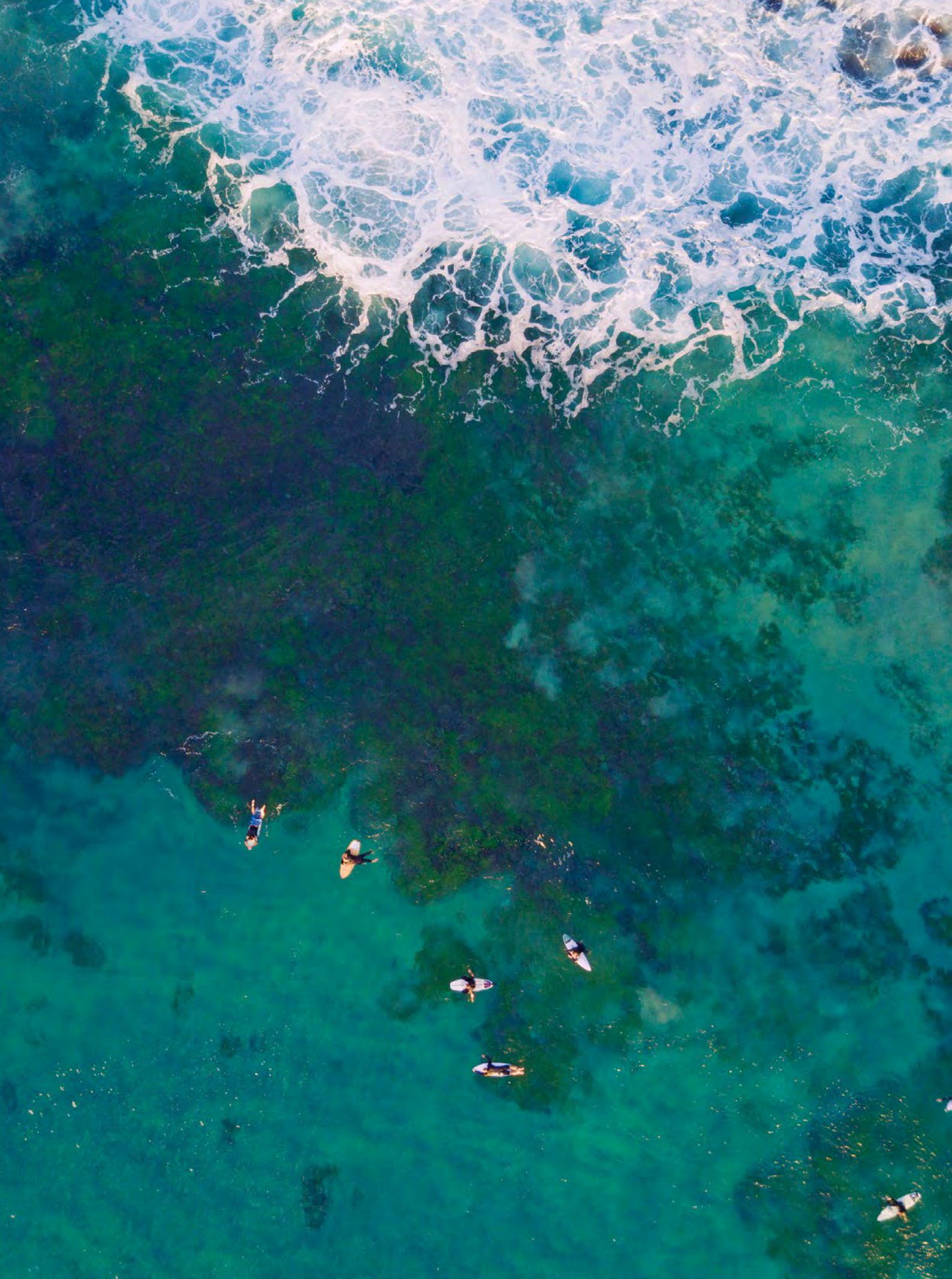
### **Evaluation questions**

Was the submission form (this survey) easy to understand? (*yes/no, comment*)

Did the submission form (this survey) allow you to say what you wanted to say about the proposed marine park as set out in this discussion paper? (*yes/no, comment*)

### **Other**

Would you like to be kept informed about marine estate reforms, news and community engagement opportunities? (*yes/no*)



# What's next?

Your input to this discussion paper will inform the final marine park proposal to enhance conservation of marine biodiversity in the bioregion. The NSW Government will consider the final proposal later in 2018. Existing management rules will remain in place, and none of the proposals in this discussion paper will be implemented until the NSW Government announces the outcome.

The *Marine Estate Management Strategy 2018–2028* (the Strategy) incorporates consultation on the broader suite of measures to address threats to the environmental assets and social, cultural and economic benefits of the bioregion.

## THE SITES

Information about the 25 sites proposed for inclusion in the marine park is provided in this paper, listed from north to south. The benefits communities derive from the bioregion, and threats to those benefits, are the basis for the objectives and management rules proposed for each site.

## WHAT ARE THE BENEFITS COMMUNITIES DERIVE FROM THE BIOREGION?

There are four categories of benefits that communities derive from the bioregion: social, cultural, economic, and environmental benefits (Table 3).

**Social benefits** are benefits that the community derives from the bioregion associated with human interaction and relationship with the environment.

**Cultural benefits** are associated with Aboriginal cultural heritage and use such as traditions, cultural practices and language.

**Economic benefits** are benefits derived by the community from the bioregion that are of an economic or financial nature.

**Environmental benefits** are the physical and biological elements of the marine estate (for example, habitat and associated biodiversity).

















## LEGEND - SITE ICONS

**Table 3. Social, cultural, economic and environmental benefits the community derives from the Hawkesbury Shelf marine bioregion; see Part 1 of the discussion paper for descriptions of the benefits**

SOCIAL, CULTURAL & ECONOMIC BENEFITS		BENEFITS TO ENVIRONMENTAL ASSETS	
	Participation (safety, health and wellbeing)		Estuarine and ocean waters
	Participation (socialising and sense of community)		Saltmarsh
	Enjoyment - biodiversity and beauty (social intrinsic benefit)		Seagrass
	Scientific reference sites		Beaches and mudflats
	Education and learning		Mangroves
	Enjoyment (consumptive use e.g. catching a fish)		Shallow soft sediments
	Aboriginal cultural heritage and use		Deep soft sediments
	Indirect values (intrinsic and bequest)		Rocky shores
	Viability of businesses (employment and value of production)		Shallow reefs
	Direct values (individual enjoyment)		Deep reefs
			Planktonic assemblages
			Fish assemblages
			Species and communities protected under the Fisheries Management Act 1994 (FMA)
			Species protected under the Biodiversity Conservation Act 2016 (BCA)
			Biodiversity

## WHAT ARE THE THREATS TO BENEFITS COMMUNITIES DERIVE FROM THE BIOREGION?

Table 4. Social, cultural, economic and environmental threats to the benefits the community derives from the Hawkesbury Shelf marine bioregion

THREATS	
Social, cultural and economic	 Habitat disturbance
	 Wildlife disturbance (shorebirds, turtles, whales) by dog walkers, four-wheel drives, and vessels and other activities
	 Reductions in abundance of species and trophic levels
	 Climate change (over the next 20 years)
	 Inadequate, inefficient regulation or over regulation (agencies)
	 Lack of, or ineffective community engagement or participation in, governance
	 Lack of community awareness of the marine estate and associated threats and benefits
	 Lack of compliance with regulations (users) or lack of compliance effort (agencies)
	 Limited or lack of access infrastructure to the marine estate
	 Loss of public access
	 Conflict over resource access and use
Environmental	 Boating and boating infrastructure
	 Climate change (over the next 20 years)
	 Fishing – commercial*
	 Fishing – recreational*

\* Some fishing methods pose a minimal or low risk to the marine estate. Key examples include the lobster and abalone fisheries, spearfishing and Aboriginal cultural use.

## SITE OBJECTIVES

The following table highlights the objectives that apply at each site and benefits expected from the proposed marine park.

Table 5. Objectives for site – orange-coloured cells are the primary objectives at each site and unshaded cells with a tick (✓) are secondary objectives

Objectives		Bird Island	Norah Head	Tuggerah Bay	Forresters	Ex-HMAS Adelaide	Bouddi National Park	Lion Island	Barrenjoey Head	Narrabeen Head	Long Reef	Cabbage Tree Bay	North Harbour	Chowder Bay	Camp Cove	Nielsen Park	Bronte-Coogee	Cape Banks	Towra Point	Boat Harbour	Shiprock	Cabbage Tree Creek	Royal National Park	Five Islands	IPAs*	Artificial Reefs	
		Environmental	Enhance the conservation of marine biodiversity	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reduce risks to identified threatened and protected species of the bioregion	✓		✓	✓	✓	✓	✓	✓				✓	✓		✓	✓	✓		✓	✓	✓	✓		✓			
Reduce risks to identified habitats of the bioregion	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	
Economic	Promote marine ecotourism in the bioregion	✓	✓		✓	✓	✓				✓	✓	✓		✓	✓	✓	✓				✓	✓	✓	✓		
Continue to provide for marine economic opportunities consistent with ecologically sustainable development, e.g. low-risk commercial fishing activities				✓		✓	✓	✓	✓	✓	✓	✓			✓	✓	✓			✓			✓	✓	✓		✓
Establish and maintain public infrastructure to support access and use of the bioregion, e.g. moorings, boat ramps					✓			✓	✓	✓	✓	✓					✓		✓								✓
Cultural	Maintain and support Aboriginal cultural use of the marine estate		✓		✓		✓	✓	✓				✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	
Social	Enhance the intrinsic benefits derived by the community from the marine estate	✓	✓	✓	✓		✓					✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓			
	Enhance bequest values for current and future generations	✓	✓	✓	✓		✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓			
	Reduce conflicts between users of the marine estate		✓		✓	✓	✓		✓	✓		✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
	Provide enhanced recreational experiences for particular user groups	✓	✓		✓	✓	✓					✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓












\* The IPAs (Intertidal Protected Areas) in the bioregion under consideration have the same set of objectives.

Objectives		Bird Island	Norah Head	Tuggerah Bay	Forresters	Ex-HMAS Adelaide	Bouddi National Park	Lion Island	Barrenjoey Head	Narrabeen Head	Long Reef	Cabbage Tree Bay	North Harbour	Chowder Bay	Camp Cove	Nielsen Park	Bronte-Coogee	Cape Banks	Towra Point	Boat Harbour	Shiprock	Cabbage Tree Creek	Royal National Park	Five Islands	IPAs*	Artificial Reefs
		Scientific & education	Enhance opportunities for scientific research, education and learning including Aboriginal culture	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Provide baseline monitoring areas (scientific reference sites)	✓	✓	✓	✓		✓						✓	✓	✓	✓	✓	✓	✓	✓		✓	✓				
Governance	Ensure appropriate mechanisms exist for community involvement in the management of the marine estate	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		
	Promote stewardship of the marine estate		✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
	Reduce regulatory complexity in the bioregion to improve self-compliance					✓	✓					✓	✓				✓								✓	✓

## ACTIVITIES PERMITTED AT PROPOSED SITES

The range of activities permitted at each site is described using the standard legend outlined below (Table 6). For each site, a table listing current activities and suggested permissible activities contains a tick (✓) against the activity to indicate it would be permitted, or a cross (✗) to indicate the activity would not be permitted.

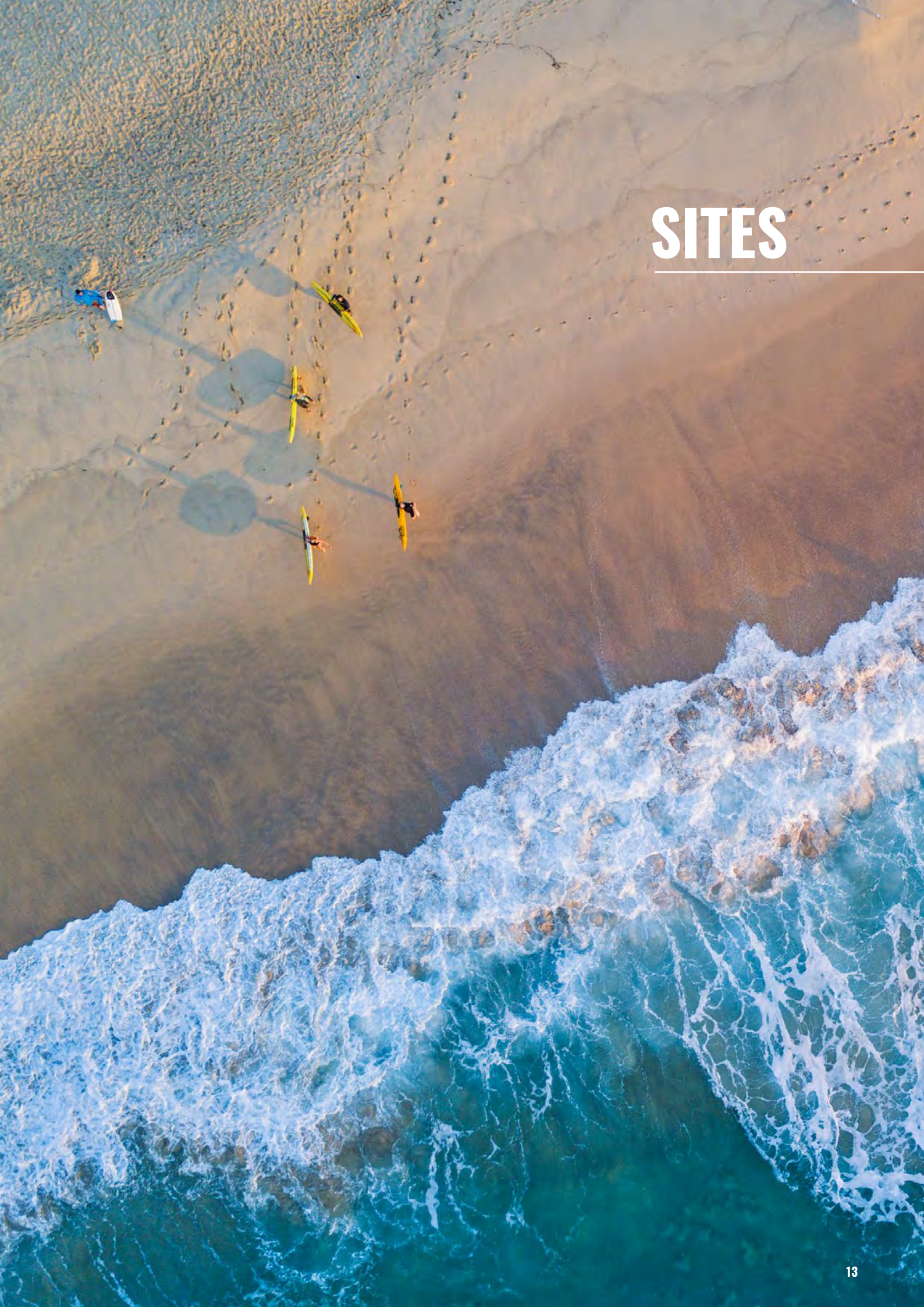
**Table 6. Legend for individual site tables – suggested permissible activities**

Management rules	
Activities	 Boating
	 Anchoring
	 Spearfishing
	 Line fishing
	 Commercial fishing
	 Hand gathering (collection of intertidal invertebrates)
	 Abalone fishing
	 Marine vegetation (collection of marine vegetation for bait and other purposes)
	 Lobster fishing
	 Scuba diving
	 Aboriginal cultural heritage and use



# SITES

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# BIRD ISLAND

Bird Island is offshore of Birdie Beach, south of Wybung Head, on the Central Coast.

A 674 hectare sanctuary zone is proposed around Bird Island, incorporating significant areas of shallow reef (0–20 metres) and deep reef (more than 20 metres) (Figure 2).

## CURRENT MANAGEMENT

No specific spatial management arrangements are in place at this site, beyond existing regulations that generally apply to activities in the marine estate, such as NSW fishing rules and restrictions.

## SITE OBJECTIVES

The primary objectives for the proposed Bird Island site are to:

- enhance the conservation of marine biodiversity
- reduce risks to identified threatened and protected species of the bioregion
- reduce risks to identified habitats of the bioregion
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- provide baseline monitoring areas (scientific reference sites).

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

The reef surrounding the island includes complex shallow and deep reef habitat that supports a diverse range of fish species. Bird Island itself is a nature reserve that provides habitat for more than 20 species of birds, including some threatened species listed under the *Biodiversity Conservation Act 2016*.

Some recreational and commercial fishing takes place in the area.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

















The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 7.

## PROPOSED MANAGEMENT RULES

It is proposed to prohibit the removal of or harm to marine biodiversity from moderate-high risk activities to habitats, fish assemblages and threatened and protected species (Table 8). This includes fishing of any kind (commercial and recreational), hand gathering and collecting. Spearfishing and charter fishing, although assessed as low risk, would also be prohibited to provide comprehensive protection for fish assemblages and threatened and protected marine species and to maintain the value of the site as a scientific reference site.

Some activities would continue because they present a minimal–low risk to fish assemblages and threatened and protected marine species. The activities include swimming, snorkelling, scuba diving, recreational boating and Aboriginal cultural use.

Table 7. Threats and expected benefits

		Environmental							Social, cultural, economic		
Threats											
	Commercial fishing	Recreational fishing	Climate change					Habitat disturbance	Reduction in species	Wildlife disturbance	
Benefits											
	Shallow reefs	Deep reefs	Rocky shores	Fish assemblages	Species protected under BCA	Species protected under FMA	Biodiversity	Intrinsic & bequest	Scientific reference sites	Aboriginal cultural heritage & use	

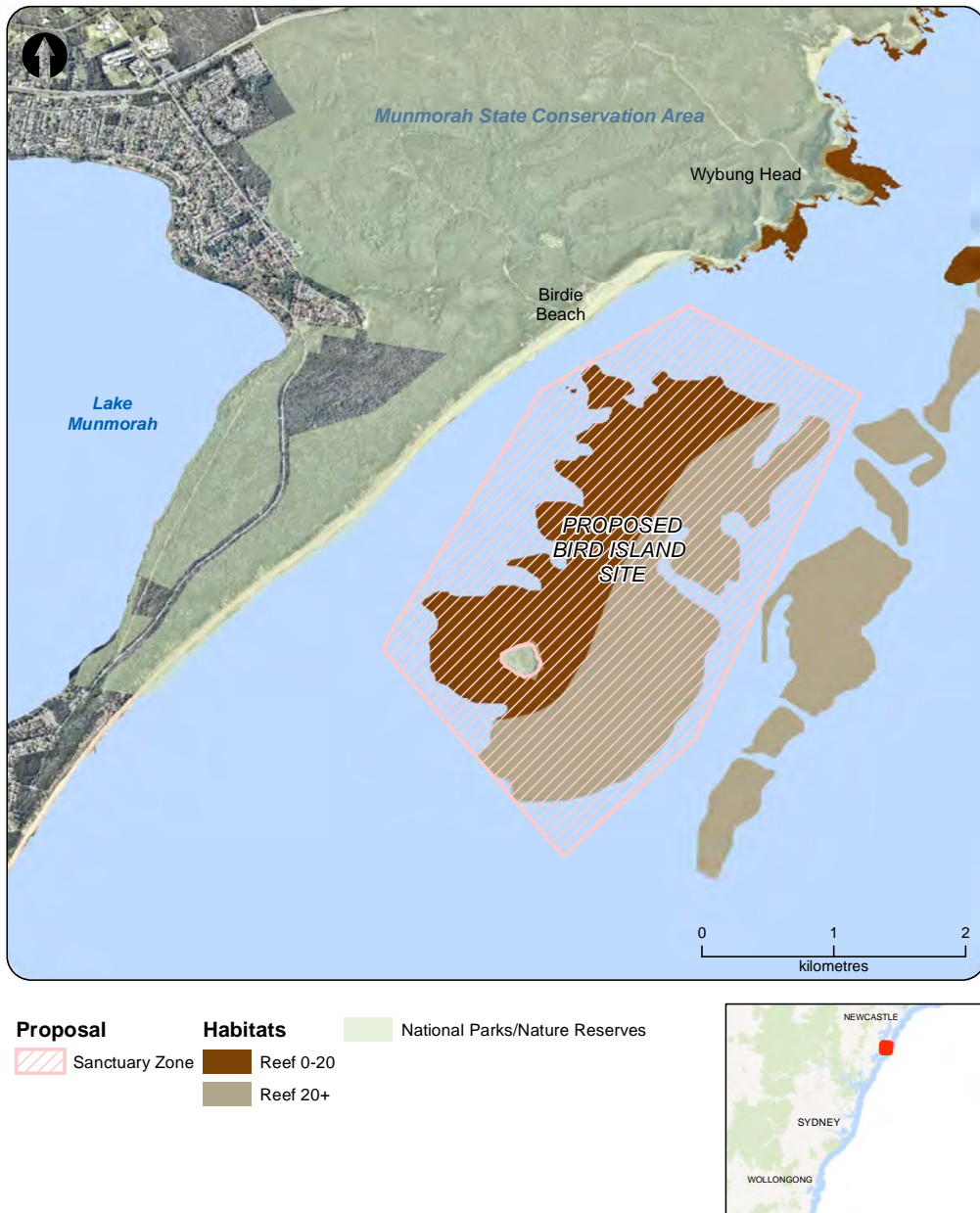


Figure 2. Proposed Bird Island site

Table 8. Current activities and suggested permissible activities in the proposed Bird Island site

Bird Island	Boating	Anchoring	Line fishing	Spear fishing	Lobster fishing	Abalone fishing	Scuba diving /snorkelling	Hand gathering	Collecting marine vegetation	Commercial fishing	Aboriginal cultural heritage & use
Current	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ <sup>1</sup>	✓
Proposed sanctuary zone	✓	✓	✗	✗	✗	✗	✓	✗	✗	✗	✓

<sup>1</sup> Subject to existing NSW commercial fishing rules and regulations

## FEEDBACK FROM COMMUNITY ENGAGEMENT

This site has not been identified for further protection.

# NORAH HEAD

Norah Head is a prominent headland on the Central Coast, just north of The Entrance.

A 20 hectare sanctuary zone is proposed on the northern side of Norah Head, immediately east of the boat ramp (Figure 3). The area includes intertidal rocky shores, beaches and shallow subtidal reef.

## CURRENT MANAGEMENT

No specific spatial management arrangements are in place at this site, beyond existing regulations that generally apply to activities in the marine estate, such as NSW fishing rules and restrictions.

## SITE OBJECTIVES

The primary objectives for the proposed Norah Head site are to:

- enhance the conservation of marine biodiversity
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- reduce conflicts between users of the marine estate
- provide enhanced recreational experiences for particular user groups
- provide baseline monitoring areas (scientific reference sites)
- promote stewardship of the marine estate.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

The site includes shallow rocky reef as well, beaches and intertidal rocky shores. The site is popular as a swimming and snorkelling area and includes a partially man-made pool.

The area has significance to the local Aboriginal communities. Spiritual sites and evidence of past cultural use, including as a camp and fishing trap site, have been recorded in the Aboriginal Heritage Information Management System (AHIMS).

Recreational line fishing, spearfishing, collecting and commercial fishing takes place in the area.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE


















The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 9.

## PROPOSED MANAGEMENT RULES

The removal or harm of marine biodiversity and habitats would be prohibited in this sanctuary zone, including fishing of any kind, and hand gathering or collecting (Table 10). Spearfishing and charter fishing would also be prohibited to provide comprehensive protection for fish assemblages and threatened and protected marine species and to maintain the value of the area as a scientific reference site.

Activities that can continue in this zone are those identified as presenting a minimal–low risk to fish assemblages and to threatened and protected marine species. Examples of these activities include swimming, snorkelling, scuba diving, recreational boating and Aboriginal cultural use.

Table 9. Threats and expected benefits

	Environmental					Social, cultural, economic						
Threats	 Commercial fishing	 Recreational fishing	 Climate change			 Conflict	 Habitat disturbance	 Reduction in species				
Benefits	 Beaches & mudflats	 Rocky shores	 Shallow reefs	 Fish assemblages	 Biodiversity	 Intrinsic & bequest	 Scientific reference sites	 Participation (wellbeing)	 Participation (socialising)	 Enjoyment (biodiversity & beauty)	 Aboriginal cultural heritage & use	

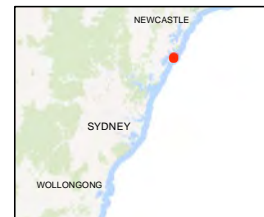
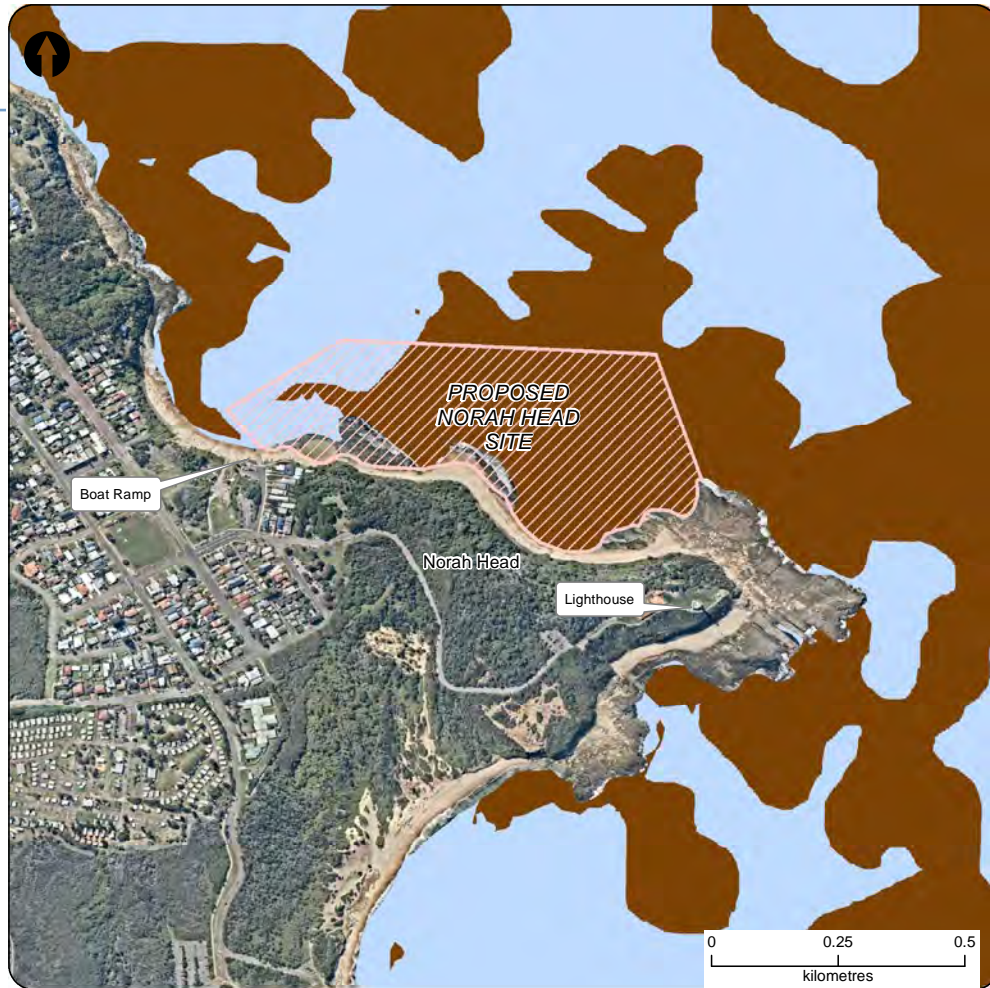













Figure 3. Proposed Norah Head site

Table 10. Current activities and suggested permissible activities in the proposed Norah Head site

Norah Head											
Current	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ <sup>1</sup>	✓
Proposed sanctuary zone	✓	✓	✗	✗	✗	✗	✓	✗	✗	✗	✓

1 Subject to existing NSW commercial fishing rules and regulations

## FEEDBACK FROM COMMUNITY ENGAGEMENT

The conservation value of Norah Head was identified during community engagement, as was the popularity of the area for recreational activities such as fishing.

# TUGGERAH BAY

Tuggerah Bay is a large bay on the western side of Tuggerah Lake, between Wyong River and Ourimbah Creek.

A 461 hectare sanctuary zone is proposed along the shoreline of Tuggerah Bay (Figure 4) to better conserve the dense seagrass beds in the shallow waters.

## CURRENT MANAGEMENT

No specific spatial management arrangements are in place at this site, other than existing regulations that generally apply to activities in the marine estate, such as NSW fishing rules and restrictions.

## SITE OBJECTIVES

The primary objectives for the proposed Tuggerah Bay site are to:

- enhance the conservation of marine biodiversity
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- provide baseline monitoring areas (scientific reference sites).

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

Tuggerah Bay contains extensive seagrass beds (mostly *Zostera* spp.), which cover almost half of the bay. The bay is a significant threatened and protected shorebird habitat. The proposed reserve would enhance the protection of the adjacent national parks estate (Tuggerah Nature Reserve and the Tuggerah State Conservation Area).

Tuggerah Lake is an important and economically productive commercial fishing area under the Estuary General endorsement.

The site has potential value as a scientific reference site to monitor threat reduction in an estuarine context.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 11.
















## PROPOSED MANAGEMENT RULES

Moderate–high risk activities, such as fishing, hand gathering and collecting, would be prohibited (Table 12). Some activities identified as minimal–low risk would continue, such as swimming, snorkelling, scuba diving, Aboriginal cultural use and recreational boating (noting that anchoring in seagrass is not permitted).

## FEEDBACK FROM COMMUNITY ENGAGEMENT

Community engagement indicated that Tuggerah Lake has a high conservation value. This view was put forward by community members as well as the National Parks Association of NSW, Nature Conservation Council of NSW, and the Australian Museum.

Table 11. Threats and expected benefits

	Environmental						Social, cultural, economic		
Threats	 Commercial fishing	 Recreational fishing	 Boating	 Climate change			 Reduction in species	 Habitat disturbance	
Benefits	 Saltmarsh	 Seagrass	 Beaches & mudflats	 Fish assemblages	 Species protected under BCA	 Biodiversity	 Intrinsic & bequest	 Scientific reference sites	 Aboriginal cultural heritage & use

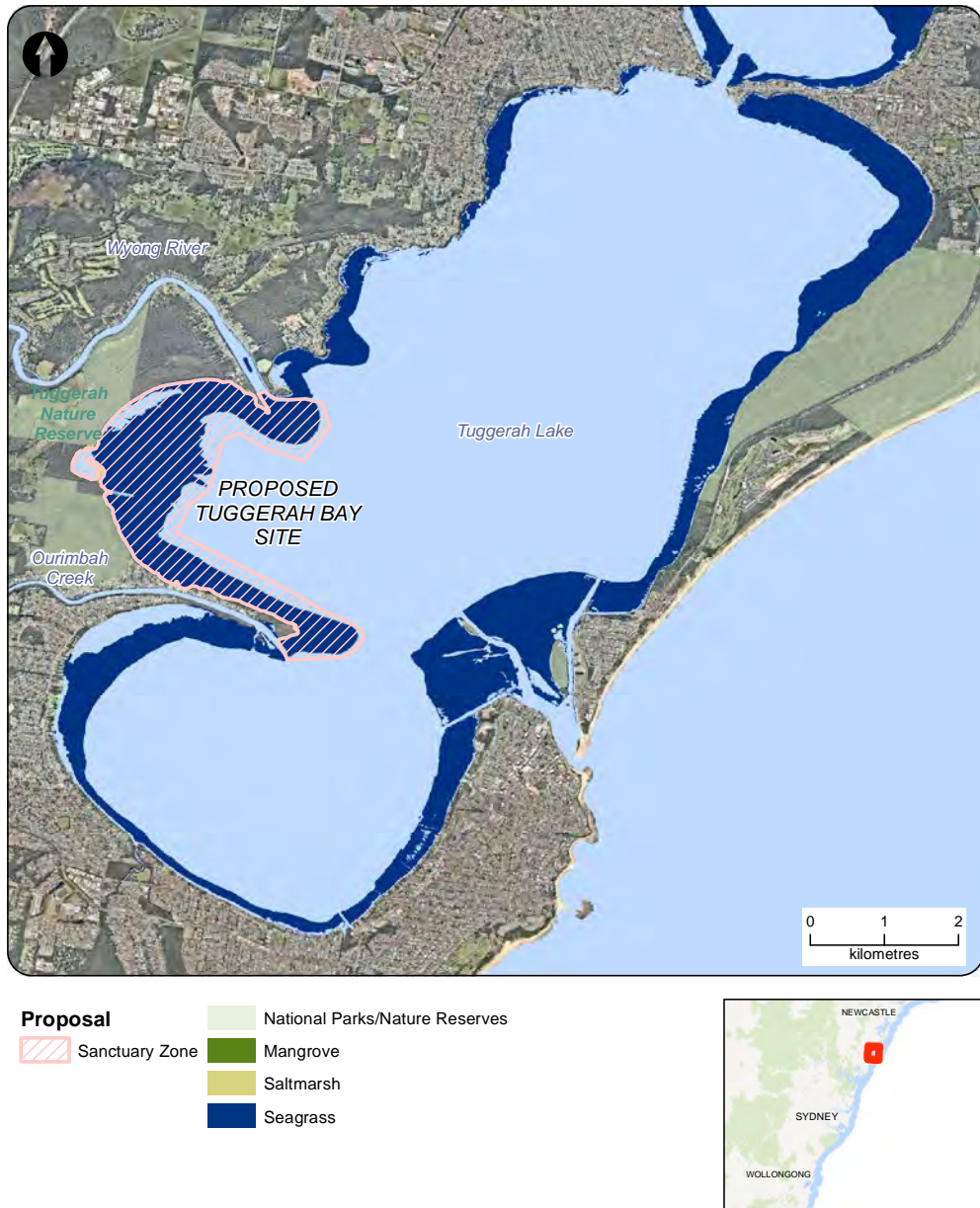











Table 12. Current activities and suggested permissible activities in the proposed Tuggerah Bay site

Tuggerah Bay									
Current	✓	✓ <sup>1</sup>	✓	✓	✓	✓	✓	✓ <sup>2</sup>	✓
Proposed Sanctuary Zone	✓	✓ <sup>1</sup>	×	×	✓	×	×	×	✓

1 Not in seagrass areas

2 Subject to existing NSW commercial fishing rules and regulations

# FORRESTERS

The proposed Forresters site is on the Central Coast, between Bateau Bay and Wamberal Lagoon. It includes Crackneck Point, the rocky shores adjacent to Wyrabalong Nature Reserve, Forresters Beach and Wamberal Beach, and it extends seaward to the three-nautical-mile limit of state waters.

A large site is proposed, covering a total of 3430 hectares. This consists of a 586 hectare sanctuary zone along the shoreline, from the southern end of Bateau Bay south to the entrance to Wamberal Lagoon (and the lagoon itself), and seaward to the 20 metre depth contour (Figure 5). Seaward of this, it is proposed to establish a 2844 hectare conservation zone, extending from the 20 metre depth contour out to three nautical miles (Figure 5).

## SITE OBJECTIVES

The primary objectives for the proposed Forresters site are to:

- enhance the conservation of marine biodiversity
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- reduce conflicts between users of the marine estate
- provide baseline monitoring areas (scientific reference sites).

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

The proposed area at Forresters includes a wide diversity of connected habitats from a coastal lagoon and beach through to a complex network of sand, shallow and deep reefs. The coastal shoreline boundary is adjacent to Wyrabalong National Park and the Wamberal Lagoon Nature Reserve.

Wamberal Lagoon and adjacent beach are important habitats for threatened and protected waterbirds and shorebirds. The area is also popular for swimming and passive sports such as kayaking and paddle boarding.

The rock platforms in this area are popular for walking, particularly at Wamberal and in the Bateau Bay area, which has natural freshwater springs and, at Crackneck Point, the only coastal rock platform stand of mangroves in the bioregion. Wyrabalong Coastal Walk, Indian Head (Forresters Beach) and Crackneck Point are popular sightseeing and whale watching locations. Forresters Beach to Crackneck includes some popular surf breaks. The area is also used by recreational fishers and spearfishers.

The area has significance to the local Aboriginal communities. Spiritual sites and evidence of past cultural use, such as artefacts and use as a burial site, have been recorded in the Aboriginal Heritage Information Management System and in the Wamberal Lagoon Nature Reserve Plan of Management.

Lobster, Ocean Trap and Line and Ocean Trawl commercial fishing takes place in the area.

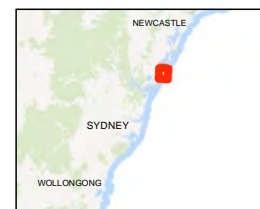
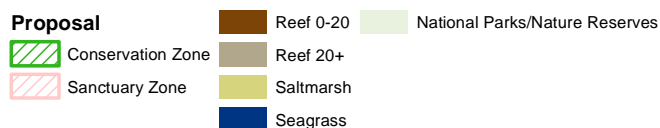
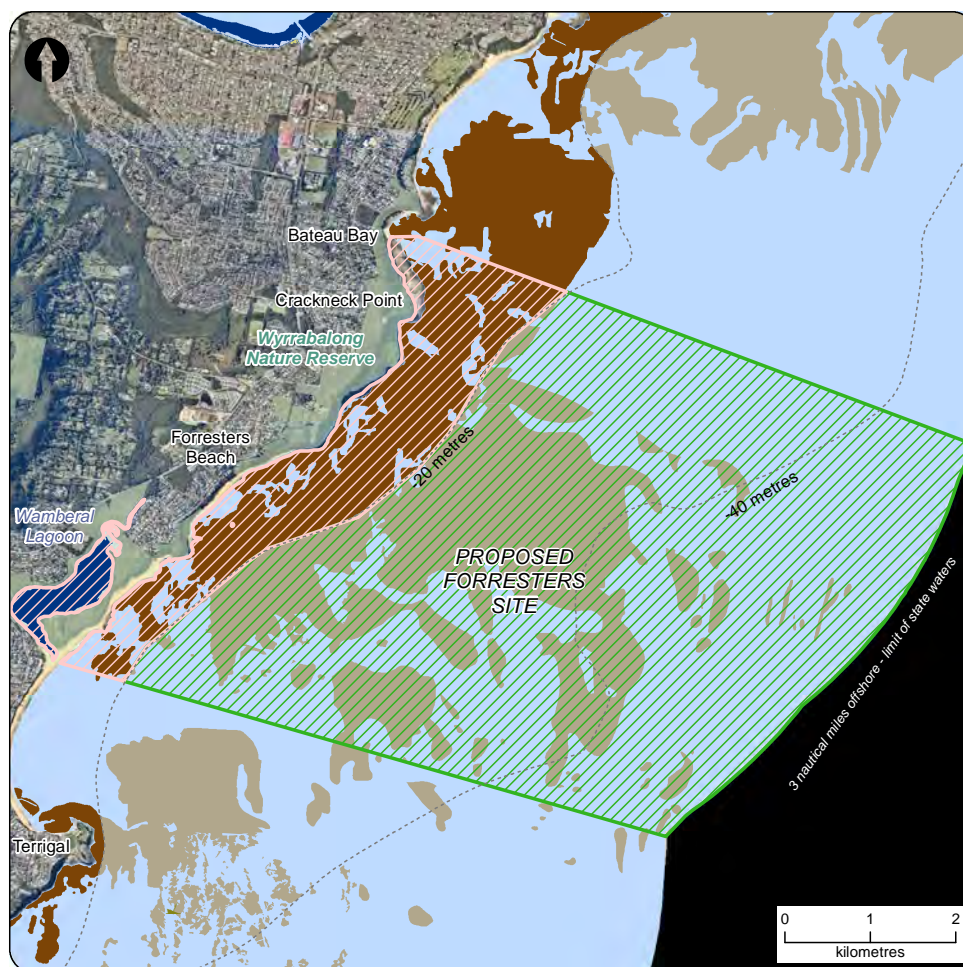
## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 13.

**Table 13. Threats and expected benefits**

	Environmental				Social, cultural, economic		
Threats	Climate change	Commercial fishing	Recreational fishing		Reduction in species	Habitat disturbance	Conflict
Benefits	Deep soft sediment	Rocky shores	Shallow reefs	Deep reefs	Scientific reference sites	Aboriginal cultural heritage & use	Intrinsic and bequest
	Fish assemblages	Species protected under FMA	Species protected under BCA	Biodiversity	Participation (wellbeing)	Participation (socialising)	Enjoyment (biodiversity & beauty)












- 1 Subject to existing NSW commercial fishing rules and regulations
- 2 Except for lobster and abalone fishing. Existing commercial fishing restrictions and closures would continue to apply where relevant



**Figure 5. Proposed Forresters site**

# FORRESTERS

**Table 14. Current activities and suggested permissible activities in the proposed Forresters site**

Forresters	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ <sup>1</sup>	✓
Proposed conservation zone	✓	✓	✗	✗	✓	✓	✓	✗	✗	✗ <sup>2</sup>	✓
Proposed sanctuary zone	✓	✓	✗	✗	✗	✗	✓	✗	✗	✗	✓

1 Subject to existing NSW commercial fishing rules and regulations

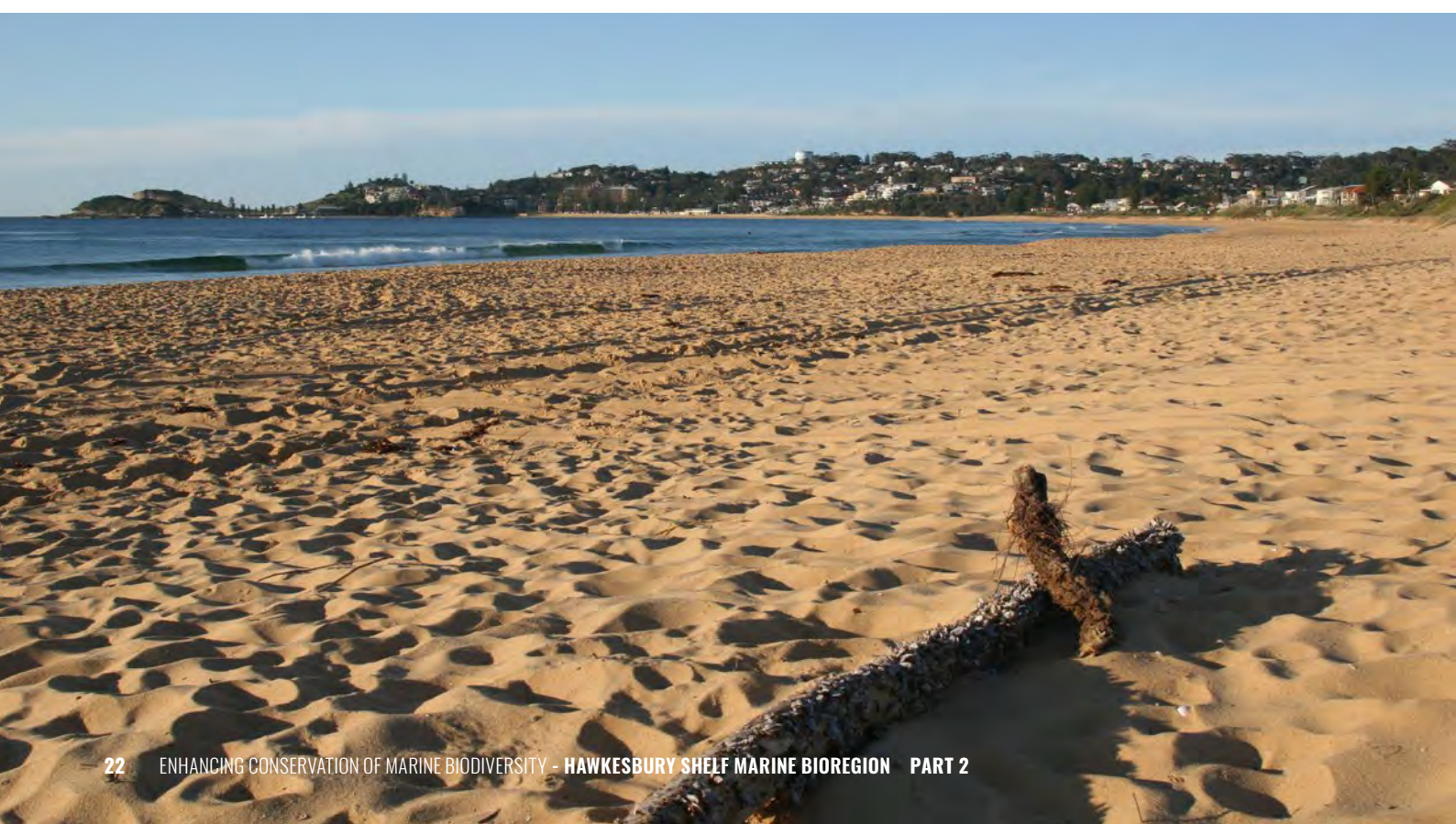
2 Except for lobster and abalone fishing. Existing commercial fishing restrictions and closures would continue to apply where relevant

## PROPOSED MANAGEMENT RULES

All extractive activities would be prohibited in the proposed sanctuary zone except for research and Aboriginal cultural use (Table 14). In the proposed conservation zone, all fishing would be prohibited except for lobster and abalone fishing and Aboriginal cultural use.

## FEEDBACK FROM COMMUNITY ENGAGEMENT

During community engagement, many beaches and headlands of the Central Coast were identified as being of high conservation value, including Crackneck Point, Bateau Bay and Wamberal. Feedback also highlighted concerns about overharvesting from rock platforms on the Central Coast (and elsewhere); the perceived lack of policing of rules around collecting on rock platforms was of particular concern.





# EX-HMAS ADELAIDE

The Ex-HMAS Adelaide is a former Australian naval warship that was sunk to create an artificial dive reef off Avoca Beach on the Central Coast. It sits in approximately 30 metres of water.

## CURRENT MANAGEMENT

The nine hectare site around the wreck is currently managed by way of a Crown Reserve under the *Crown Land Management Act 2016*. Fishing activities are prohibited under several fisheries management regulations under the *Fisheries Management Act 1994*.

## SITE OBJECTIVES

The primary objectives for the proposed Ex-HMAS Adelaide site are to:

- promote marine ecotourism in the bioregion
- establish and maintain public infrastructure to support access and use of the bioregion, for example moorings, boat ramps
- reduce conflicts between users of the marine estate
- provide enhanced recreational experiences for particular user groups
- reduce regulatory complexity in the bioregion to improve self-compliance.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

The wreck is valued by local diving groups and provides a tourist attraction for the region, which benefits the local economy.

## PROPOSED MANAGEMENT RULES

It is proposed to transfer management of this area from a Fishing Closure to a Sanctuary Zone to reduce legislation volume and complexity in the bioregion. No changes to management rules or closure boundaries are proposed.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 15.

## PROPOSED MANAGEMENT RULES

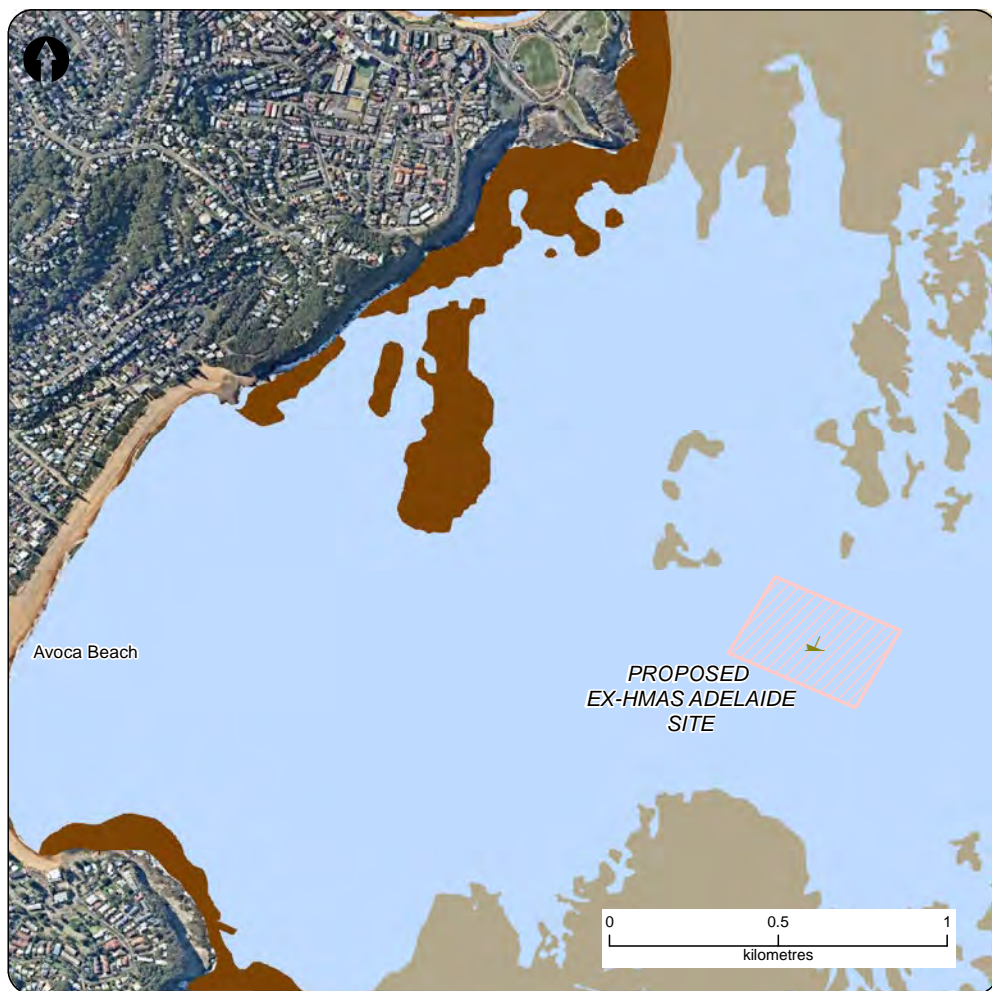
It is proposed to introduce a sanctuary zone (Figure 6) and repeal the existing fishing regulations to reduce the volume and complexity of regulations in the bioregion.

## FEEDBACK FROM COMMUNITY ENGAGEMENT

This site was not identified for further protection during community engagement.

Table 15. Threats and expected benefits

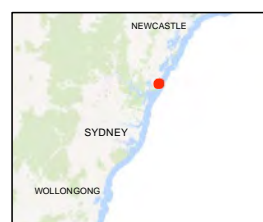
	Environmental	Social, cultural, economic				
Threats		 Lack of access infrastructure	 Conflict	 Regulation		
Benefits		 Participation (wellbeing)	 Participation (socialising)	 Enjoyment (biodiversity & beauty)	 Viability of business	 Individual enjoyment



**Proposal**












- Reef 0-20
- Sanctuary Zone
- Reef 20+

NOTE: No changes are proposed to the current management rules at this site



**Figure 6. Proposed Ex-HMAS Adelaide site**

**Table 16. Current activities and suggested permissible activities in the proposed Ex-HMAS Adelaide site**

Ex-HMAS Adelaide	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current fishing closure	× <sup>1</sup>	× <sup>2</sup>	×	×	×	×	✓	×	×	×	✓
Proposed sanctuary zone	× <sup>1</sup>	× <sup>2</sup>	×	×	×	×	✓	×	×	×	✓

1 A no boating zone applies in the area marked by buoys

2 Access to the dive site is by moorings managed by a permit system. Fees apply

# BOUDDI

The proposed Bouddi site is on the northern shore of Broken Bay, adjacent to the Bouddi National Park.

An expansion to the existing closure is proposed, covering the shoreline from the southern headland of Little Beach, south-west along the shoreline to Gerrin Point, and seaward to include an area of 1484 hectares (Figure 8). This area would include deep rocky reefs as part of a continuous reef system extending from the shoreline to depths of around 40 metres.

## CURRENT MANAGEMENT

The existing protected area, including the 252 hectare marine extension between Gerrin Point and Third Point (Figure 7), is managed as part of Bouddi National Park. All types of fishing are prohibited by a time-limited fishing closure under the *Fisheries Management Act 1994*.

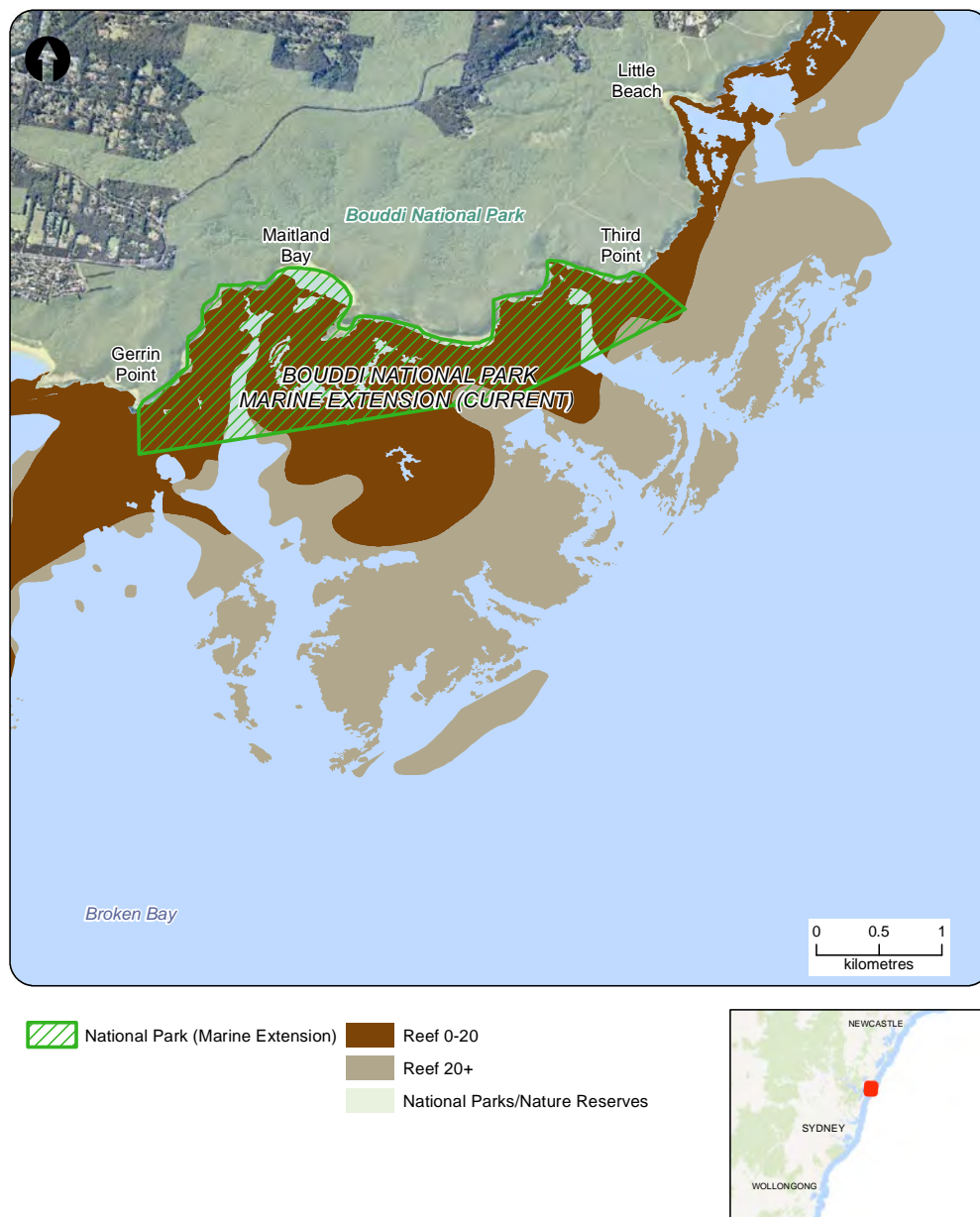


Figure 7. Current Bouddi National Park Marine Extension

## SITE OBJECTIVES

The primary objectives for the proposed Bouddi site are to:

- enhance the conservation of marine biodiversity
- reduce risks to identified habitats of the bioregion
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- enhance opportunities for scientific research, education and learning, including Aboriginal culture
- provide baseline monitoring areas (scientific reference sites)
- ensure appropriate mechanisms exist for community involvement in the management of the marine estate
- promote stewardship of the marine estate
- reduce regulatory complexity in the bioregion to improve self-compliance.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

This area consists of intertidal rocky shores, shallow and deep rocky reef, beaches and shallow and deep soft sediments. The subtidal reef habitats include urchin barrens, turfing algae, algal fringe, kelp forests and sponge-dominated reef.






















The area has significance to the local Aboriginal communities. Spiritual sites and evidence of past cultural use, such as grinding grooves and shell midden, have been recorded in the Aboriginal Heritage Information Management System.

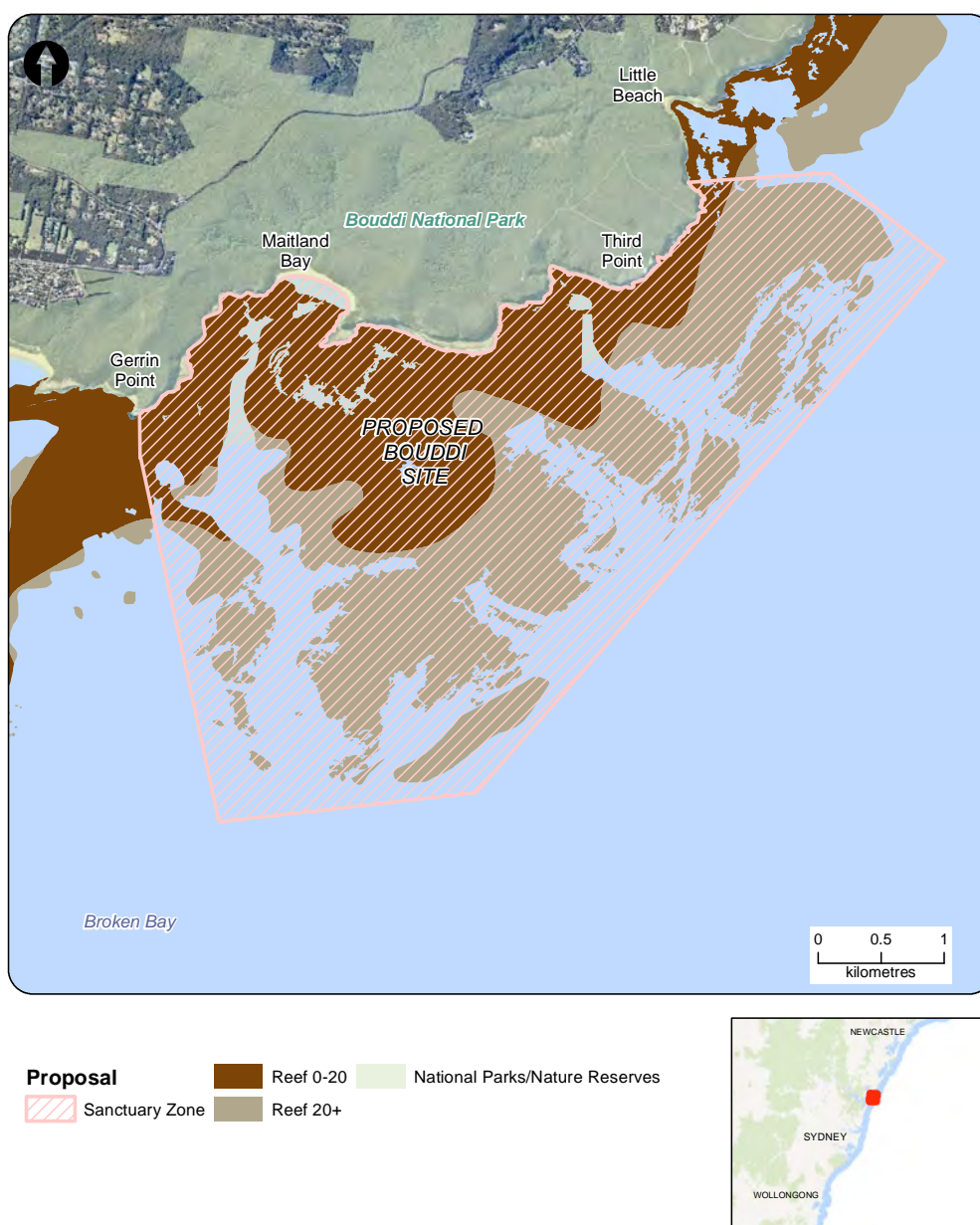
Some Ocean Trap and Line and Sea Urchin and Turban Shell commercial fishing takes place in the area.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE












The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 13.

Table 17. Threats and expected benefits

	Environmental				Social, cultural, economic			
Threats	 Commercial fishing	 Recreational fishing	 Climate change		 Habitat disturbance	 Reductions in species	 Lack of awareness	
Benefits	 Deep soft sediment	 Rocky shores	 Shallow reefs	 Deep reefs	 Aboriginal cultural heritage & use	 Intrinsic & bequest	 Viability of businesses	 Scientific reference sites
	 Fish assemblages	 Species protected under FMA	 Species protected under BCA		 Education & learning	 Participation (socialising)	 Participation (wellbeing)	 Enjoyment (biodiversity & beauty)



**Table 18. Current activities and suggested permissible activities in the proposed Bouddi site**

Bouddi	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current fishing closure	✓	✓	✗	✗	✗	✗	✓	✗	✗	✗	✓
Proposed sanctuary zone	✓	✓	✗	✗	✗	✗	✓	✗	✗	✗	✓

## PROPOSED MANAGEMENT RULES

The removal of, or harm to, marine life and habitats would be prohibited, including fishing by any method, hand gathering and collecting marine organisms throughout the proposed Bouddi site (Figure 8 and Table 18). These restrictions would provide comprehensive protection for fish assemblages, marine vegetation and threatened and protected marine species. The proposal would help to maintain the areas value as a scientific reference site. Activities that are minimal-low risk, such as swimming, snorkelling, diving, recreational boating and Aboriginal cultural use would continue.

## FEEDBACK FROM COMMUNITY ENGAGEMENT

The high conservation value of Bouddi was identified by community members and peak conservation stakeholder groups such as the National Parks Association of NSW and the Nature Conservation Council of NSW. Submissions noted that the existing Bouddi fishing closure has both positive and negative effects on stakeholders.



# LION ISLAND

Lion Island is located in Broken Bay. A special purpose zone is proposed covering a 45 hectare area within 200 metres of the Island (Figure 9).

## CURRENT MANAGEMENT

Lion Island was dedicated as a fauna reserve in 1956 and reclassified as a nature reserve under the *National Parks and Wildlife Act 1974*. No specific spatial management arrangements are in place other than existing regulations that generally apply to activities in the marine estate, such as NSW fishing rules and restrictions.

## SITE OBJECTIVES

The primary objective for the proposed Lion Island site is to:

- reduce risks to identified threatened and protected species of the bioregion.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

The waters surrounding Lion Island are important for the little penguin (*Eudyptula minor*), which is listed as a threatened species under the *Biodiversity Conservation Act 2016*.

The area has significance to the local Aboriginal communities. Spiritual sites and evidence of past cultural use, including shell middens, have been recorded.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 19.







## PROPOSED MANAGEMENT RULES

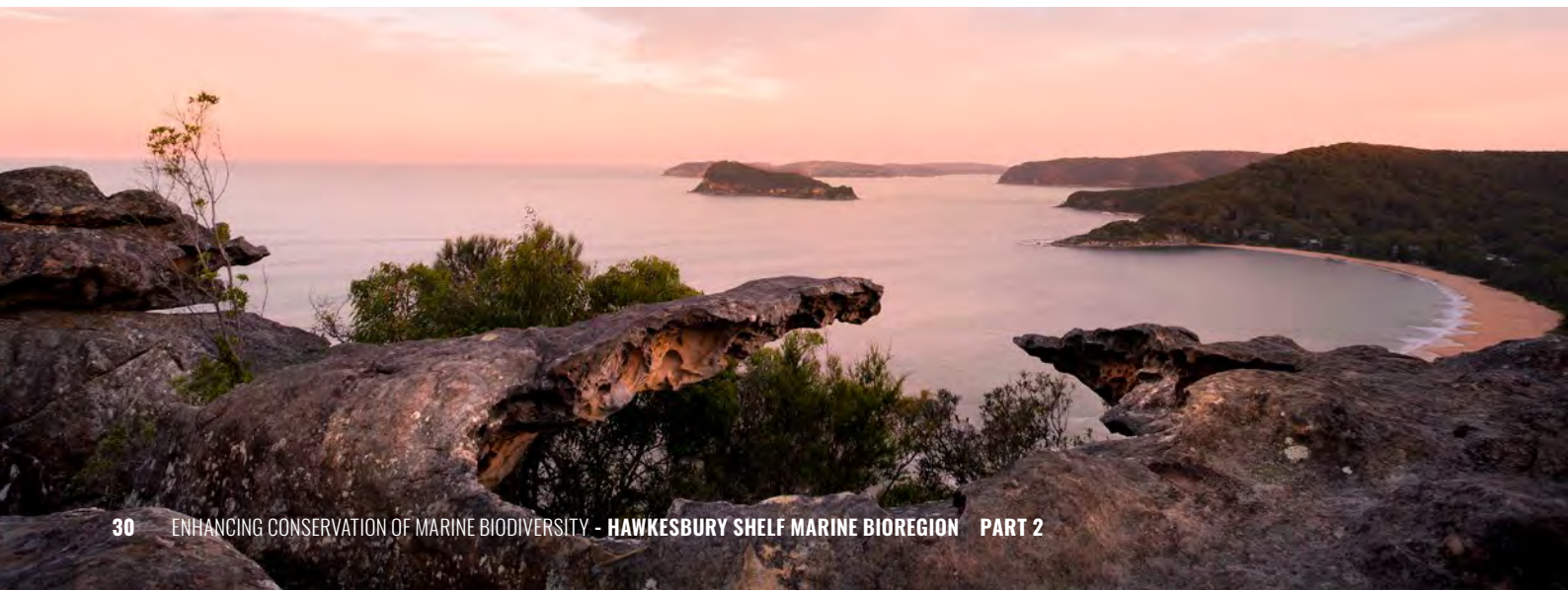
Vessel speed restrictions (8 knots) are proposed in all waters within 200 metres of Lion Island to reduce the chance of vessel strike to little penguins. Hand gathering and collecting marine vegetation would be prohibited (Table 20).

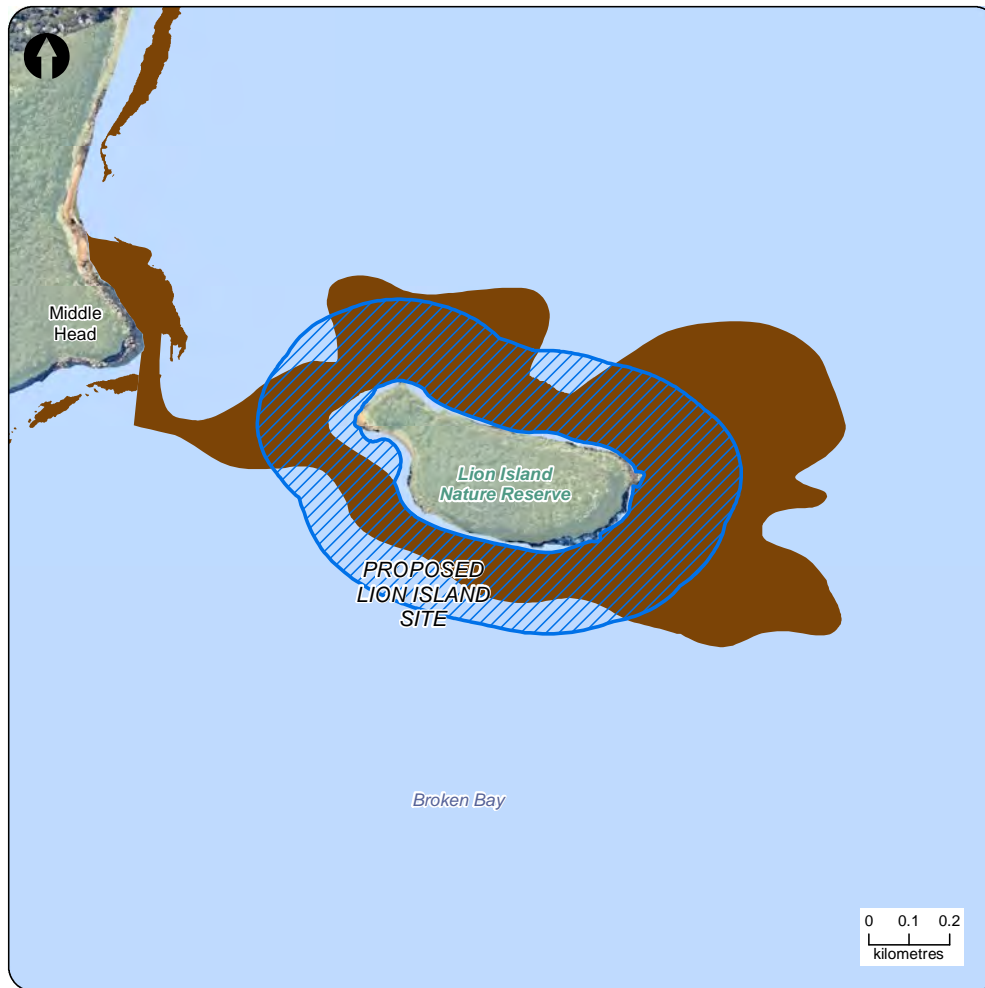
## FEEDBACK FROM COMMUNITY ENGAGEMENT

Lion Island was identified as having conservation value during community engagement. The National Parks Association of NSW (Southern Sydney Branch) described this site as having high biodiversity value.

Table 19. Threats and expected benefits

	Environmental		Social, cultural, economic
Threats	 Boating	 Recreational fishing	 Wildlife disturbance
Benefits	 Rocky shores	 Species protected under BCA	 Enjoyment (biodiversity & beauty)





**Proposal**

- Special Purpose Zone
- Estuarine Reef 0-20
- National Parks/Nature Reserves



Figure 9. Proposed Lion Island site

Table 20. Current activities and suggested permissible activities in the proposed Lion Island site

Lion Island											
Current	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ <sup>1</sup>	✓
Proposed special purpose zone	✓ <sup>2</sup>	✓	✓	✓	✓	✓	✓	×	×	✓ <sup>1</sup>	✓

1 Subject to existing NSW commercial fishing rules and regulations

2 Boating speed restrictions would apply

# BARRENJOEY HEAD

Barrenjoey Head is located at the northern end of the Palm Beach isthmus. The iconic Headland is part of a national park, has an historic lighthouse and is the southern head of Broken Bay, at the entrance to Pittwater.

The proposed special purpose zone would extend the current Barrenjoey Head Aquatic Reserve (Figure 10) to cover a total area of 133 hectares and include the adjacent seagrass, including the endangered population of *Posidonia australis* (Figure 11).

## CURRENT MANAGEMENT

The existing Barrenjoey Head Aquatic Reserve was established in March 2002. The reserve covers 28 hectares, extending around the headland and including the area between the mean high water mark and out to 100 metres offshore from the mean low water mark. Collecting cunjevoi, invertebrates and marine vegetation is prohibited, with the exception of rock lobsters, abalone, sea lettuce and bait weed. Recreational fishing competitions and collecting for scientific and educational purposes require a permit.

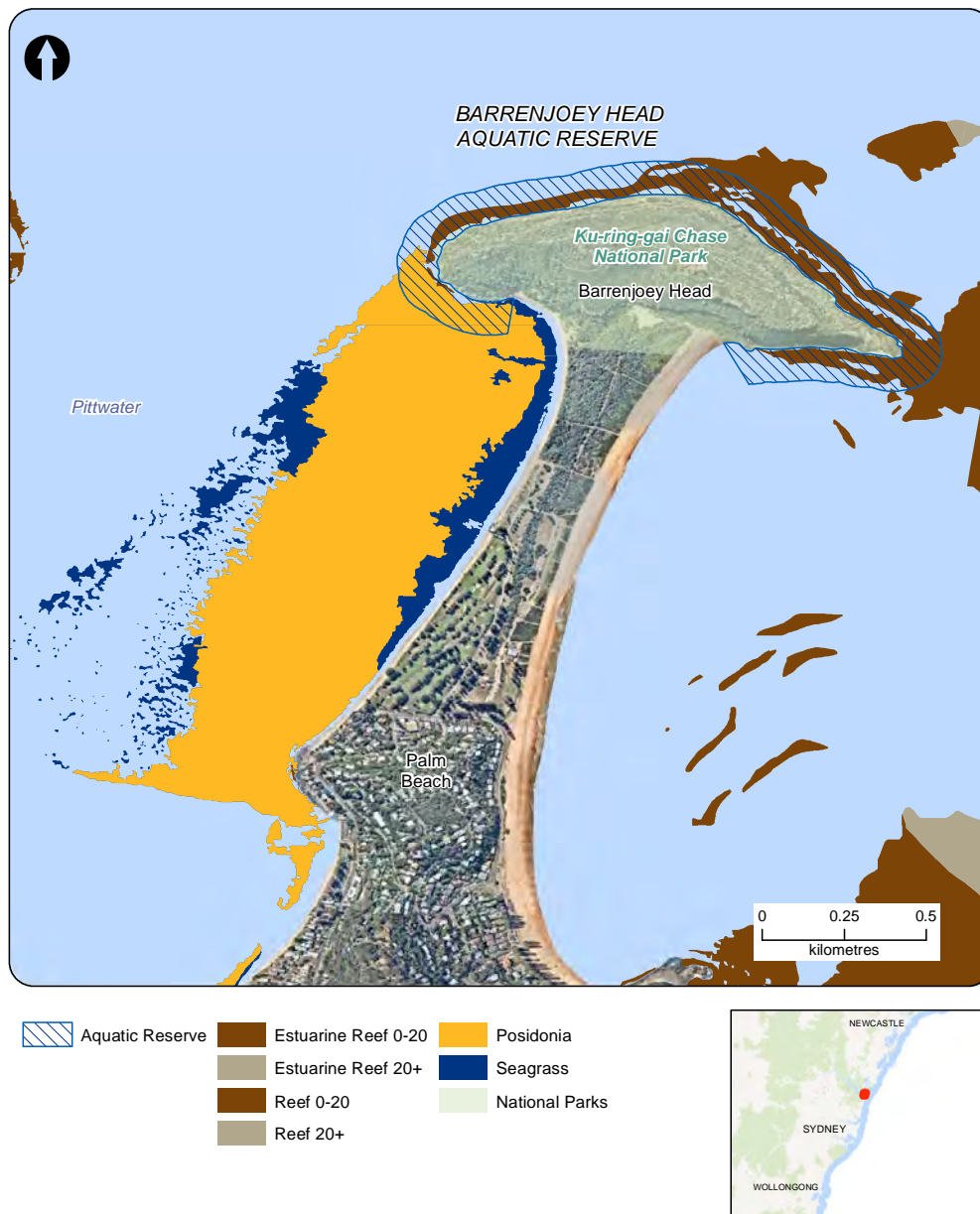


Figure 10. Current Barrenjoey Head Aquatic Reserve and marine habitats

A fishing closure under the *Fisheries Management Act 1994* prohibits netting by recreational and commercial fishers from Barrenjoey Head to Stokes Point; the aim is to limit the potential spread of marine algae, *Caulerpa taxifolia*.

## SITE OBJECTIVES

The primary objectives for the proposed Barrenjoey Head site are to:

- reduce risks to identified threatened and protected species of the bioregion
- reduce risks to identified habitats of the bioregion
- continue to provide for marine economic opportunities that are consistent with ecologically sustainable development, for example low-risk commercial fishing activities
- establish and maintain public infrastructure to support access and use of the bioregion, for example moorings, boat ramps.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

The existing aquatic reserve contains a variety of habitats. The combination of estuarine and oceanic influences supports the wide variety of marine life found here. The northern facing shoreline contains a relatively steep intertidal area dominated by large boulders, and a narrow strip of subtidal reef dominated by turf algae and some kelp. There are extensive seagrass beds located adjacent to the western side of the isthmus, including a large area of an endangered population of seagrass, *Posidonia australis*, which is listed under the *Fisheries Management Act 1994*. Significant damage to seagrass from anchoring, propellers, and swing moorings is evident from aerial imagery (Figure 11).

Table 21. Threats and expected benefits














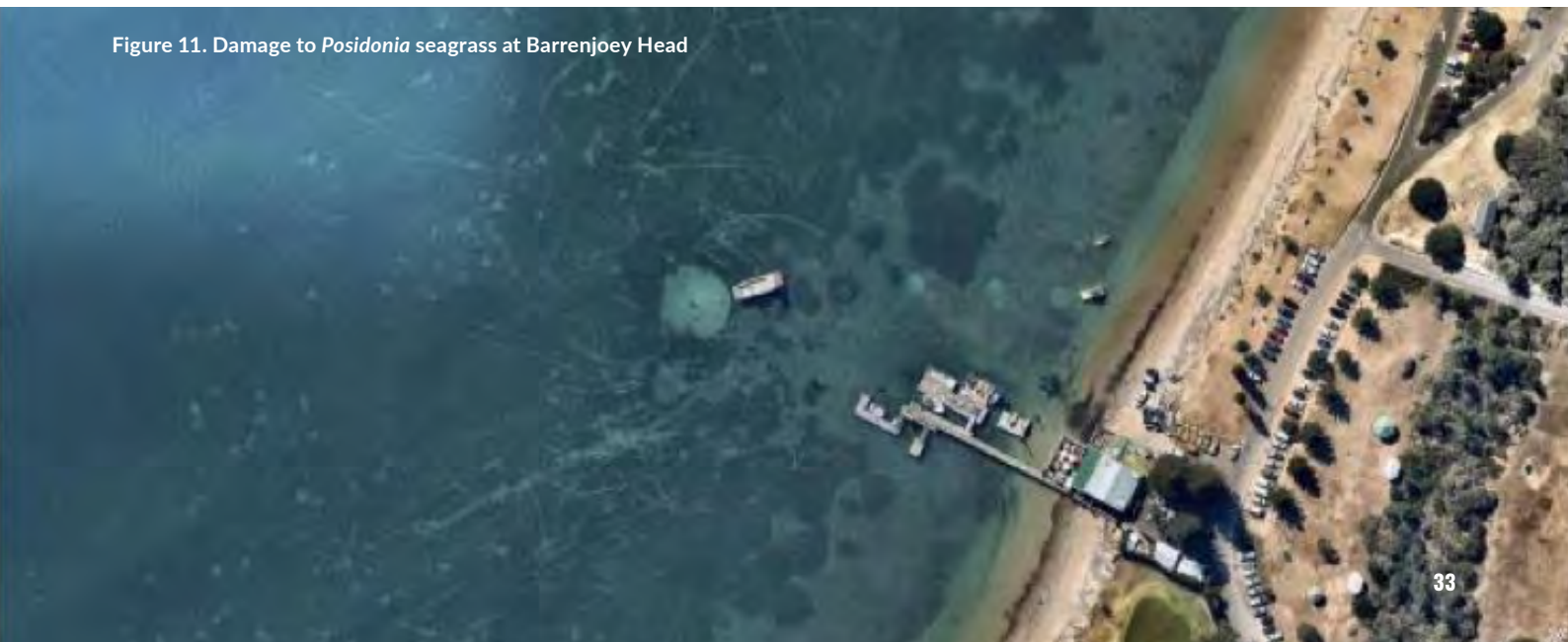
	Environmental				Social, cultural, economic			
Threats	 Boating	 Recreational fishing			 Habitat disturbance	 Lack of access infrastructure	 Wildlife disturbance	
Benefits	 Seagrass	 Rocky shores	 Species protected under FMA	 Biodiversity	 Enjoyment (biodiversity and beauty)	 Viability of business	 Individual enjoyment	 Enjoyment (consumptive use)

Figure 11. Damage to *Posidonia* seagrass at Barrenjoey Head



# BARRENJOEY

Barrenjoey Headland and its surrounding waters are frequented by many user groups. Passive recreation (walking, swimming, kayaking, paddle boarding) is popular here. Boats frequently shelter in the Pittwater side of the headland. Surfing is popular on the ocean side at the northern end of Palm Beach. Barrenjoey Headland is also used by recreational line fishers and spearfishers.

The area has significance to the local Aboriginal communities. Spiritual sites and evidence of past cultural use, such as shell middens, have been recorded in the Aboriginal Heritage Information Management System.

Some Ocean Trap and Line commercial fishing takes place in the area.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 21.

## PROPOSED MANAGEMENT RULES

Fishing rules that apply to the existing aquatic reserve would be adopted in the proposed special purpose zone (Table 22).












Boating and moorings at the site would be reviewed and restrictions developed with boating stakeholders to reduce damage to seagrass from propellers and moorings. Anchoring in seagrass would not be permitted.

Aboriginal cultural use and recreational activities, such as swimming, snorkelling and scuba diving, would continue to be permitted.

## FEEDBACK FROM COMMUNITY ENGAGEMENT

The conservation value of Barrenjoey Head was identified by community members and peak conservation stakeholders – the National Parks Association of NSW and Nature Conservation Council of NSW. Concerns regarding the establishment of a no-take area at this site were raised by recreational fishers and spearfishers as it is reported to be a safe area to spearfish and fish from small vessels.

**Table 22. Current activities and suggested permissible activities in the proposed Barrenjoey Head site**

Barrenjoey Head	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current aquatic reserve	✓	✓ <sup>1</sup>	✓	✓	✓	✓	✓	×	× <sup>2</sup>	✓ <sup>3</sup>	✓
Proposed special purpose zone	✓ <sup>4</sup>	✓ <sup>1</sup>	✓	✓	✓	✓	✓	×	× <sup>2</sup>	✓ <sup>3</sup>	✓

1 Not in seagrass areas

2 Except for sea lettuce and bait weed

3 Subject to existing NSW commercial fishing rules and regulations

4 Boating and moorings at the site would be reviewed and restrictions developed with boating stakeholders to reduce damage to seagrass from propellers and moorings

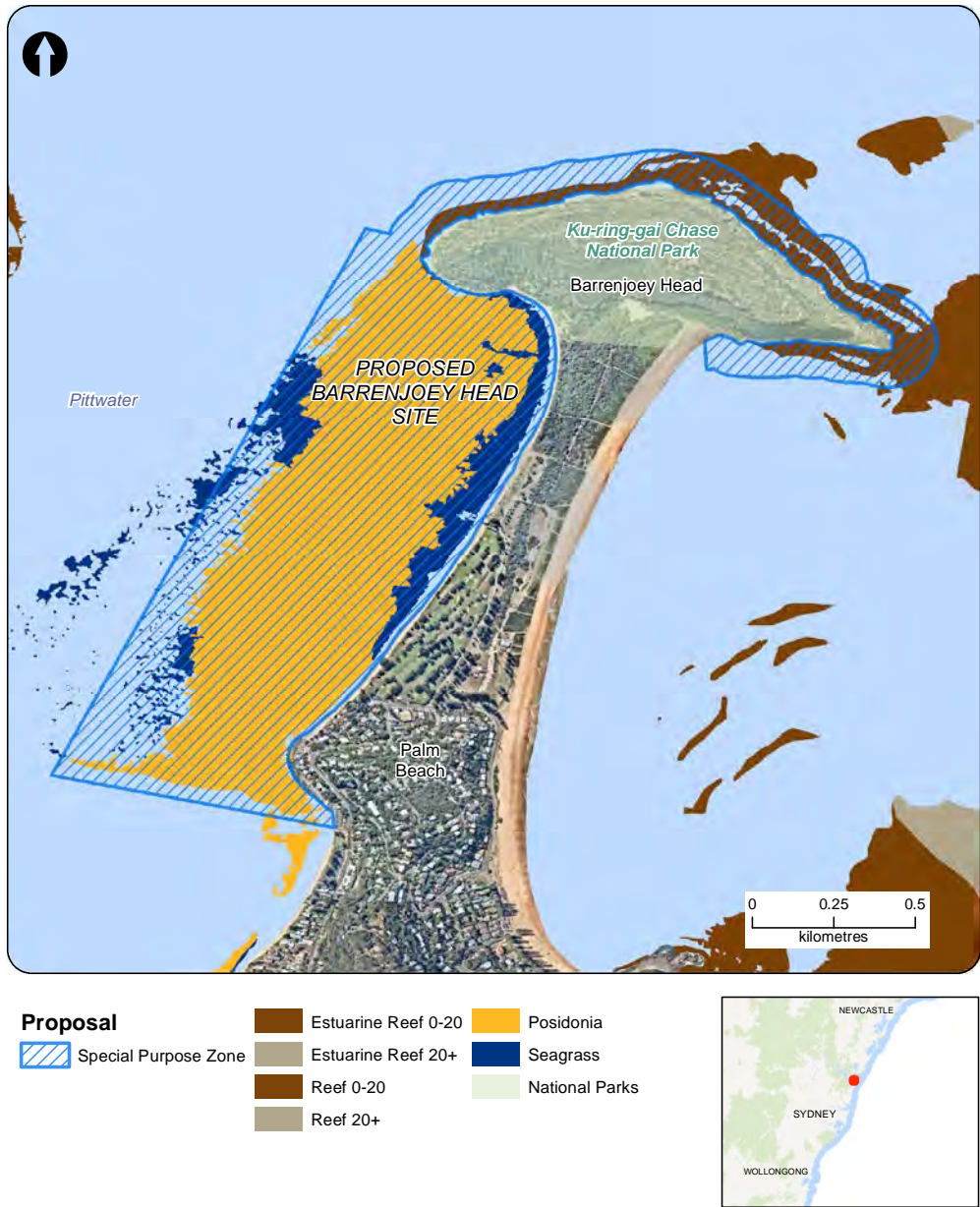


Figure 12. Proposed Barrenjoey Head site



# NARRABEEN HEAD

The site is located at North Narrabeen Headland on Sydney’s northern beaches.

It is proposed to establish a special purpose zone to replace the existing aquatic reserve. No changes to management rules are proposed.

## CURRENT MANAGEMENT

Narrabeen Head Aquatic Reserve was established in March 2002. It covers seven hectares and extends from the southern end of Turimetta Beach, to the western extremity of the rock baths at Narrabeen Head, covering the area from the mean high water mark to a distance of 100 metres offshore of the mean low water mark. Collection of cunjevoi, marine invertebrates and seaweed is prohibited in the reserve, with the exception of lobster, abalone, sea lettuce and bait weed. Recreational fishing competitions and collecting for scientific and educational purposes require a permit.

## SITE OBJECTIVES

The primary objectives for the proposed Narrabeen Head site are to:

- enhance opportunities for scientific research, education and learning including Aboriginal culture
- promote stewardship of the marine estate.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

The site primarily consists of rocky shore, shallow rocky reef, beach and shallow soft sediments. It contains a diverse array of marine algae, invertebrates and fishes. Birds such as oystercatchers, cormorants, sea gulls and sea eagles also forage in the area.

Narrabeen Head Aquatic Reserve was declared primarily to facilitate educational activities on the rocky shore. As such, it is highly valued for education and regularly used as a marine field study site by school groups. The Coastal Environment Centre at Narrabeen, run by Pittwater Council, conducts environmental education activities in the local area as do private education companies Eco-treasures and AUSECO.

The reserve is currently used for a wide variety of recreational activities, including snorkelling, scuba diving, swimming, sunbathing, picnics, recreational boating, line and spear fishing, walking and dog walking.

The site is located adjacent to the North Narrabeen National Surfing Reserve.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 23.



## PROPOSED MANAGEMENT RULES

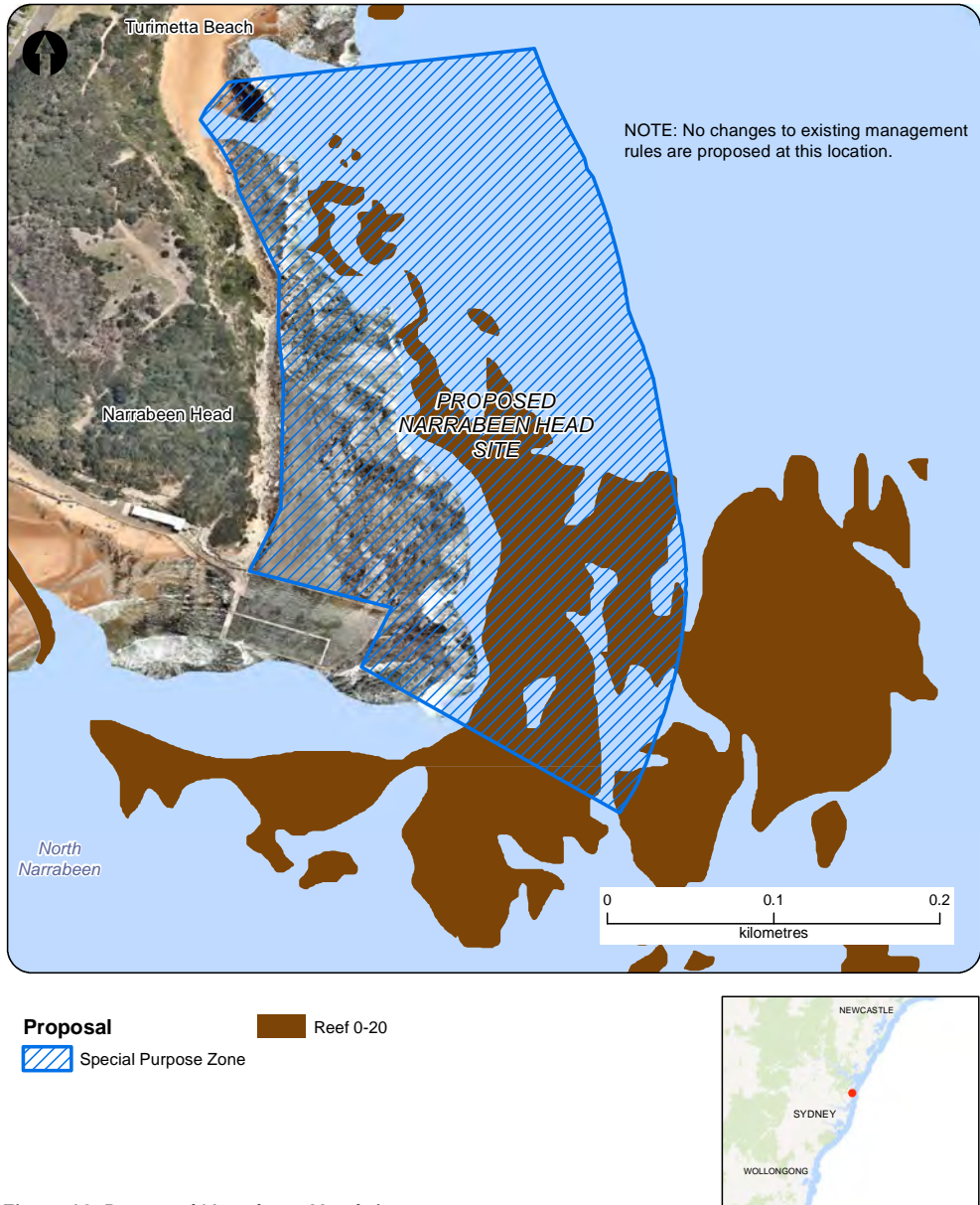
The proposed seven hectare special purpose zone (Figure 13) would maintain the existing boundaries and current fishing rules, with continued access to the reserve as an educational area and for Aboriginal cultural use. The assessment found that there were limited opportunities for further threat reduction at the site as it has limited subtidal environmental assets. There is also little opportunity for further enhancing social and cultural benefits.

## FEEDBACK FROM COMMUNITY ENGAGEMENT

The high environmental value of Narrabeen Head was identified by peak conservation stakeholders – the National Parks Association of NSW and the Nature Conservation Council of NSW.

Table 23. Threats and expected benefits

	Environmental	Social, cultural, economic	
Threats	 Recreational fishing	 Lack of awareness	 Reductions in species
Benefits	 Rocky shores	 Scientific reference sites	 Education & learning



**Table 24. Current activities and suggested permissible activities in the proposed Narrabeen Head site**

Narrabeen Head	Boating	Anchoring	Line fishing	Spear fishing	Lobster fishing	Abalone fishing	Scuba diving /snorkelling	Hand gathering	Collecting marine vegetation	Commercial fishing	Aboriginal cultural heritage & use
Current aquatic reserve	✓	✓	✓	✓	✓	✓	✓	×	× <sup>1</sup>	✓ <sup>2</sup>	✓
Proposed special purpose zone	✓	✓	✓	✓	✓	✓	✓	×	× <sup>1</sup>	✓ <sup>2</sup>	✓

1 Except for sea lettuce and bait weed

2 Subject to existing NSW commercial fishing rules and regulations

# LONG REEF

Long Reef is a prominent beach, headland and rock platform on Sydney's northern beaches, between Collaroy and Dee Why.

The proposed special purpose zone would expand the existing Long Reef Aquatic Reserve to include the adjacent subtidal reef. It is proposed to establish this zone as a site managed for sustainable recreational fishing.

## CURRENT MANAGEMENT

The existing Long Reef Aquatic Reserve (Figure 14) was established in 1980 and is the oldest aquatic reserve in NSW. It covers 77 hectares, extending from Collaroy Rock Baths to Long Reef Surf Lifesaving Club and seaward from the mean high water mark to a distance of 100 metres offshore of the mean low water mark. Collecting, destroying or interfering with cunjevoi, invertebrates and marine vegetation is prohibited. Finfish may be taken by spear or line. Collecting for scientific and educational purposes require a permit.

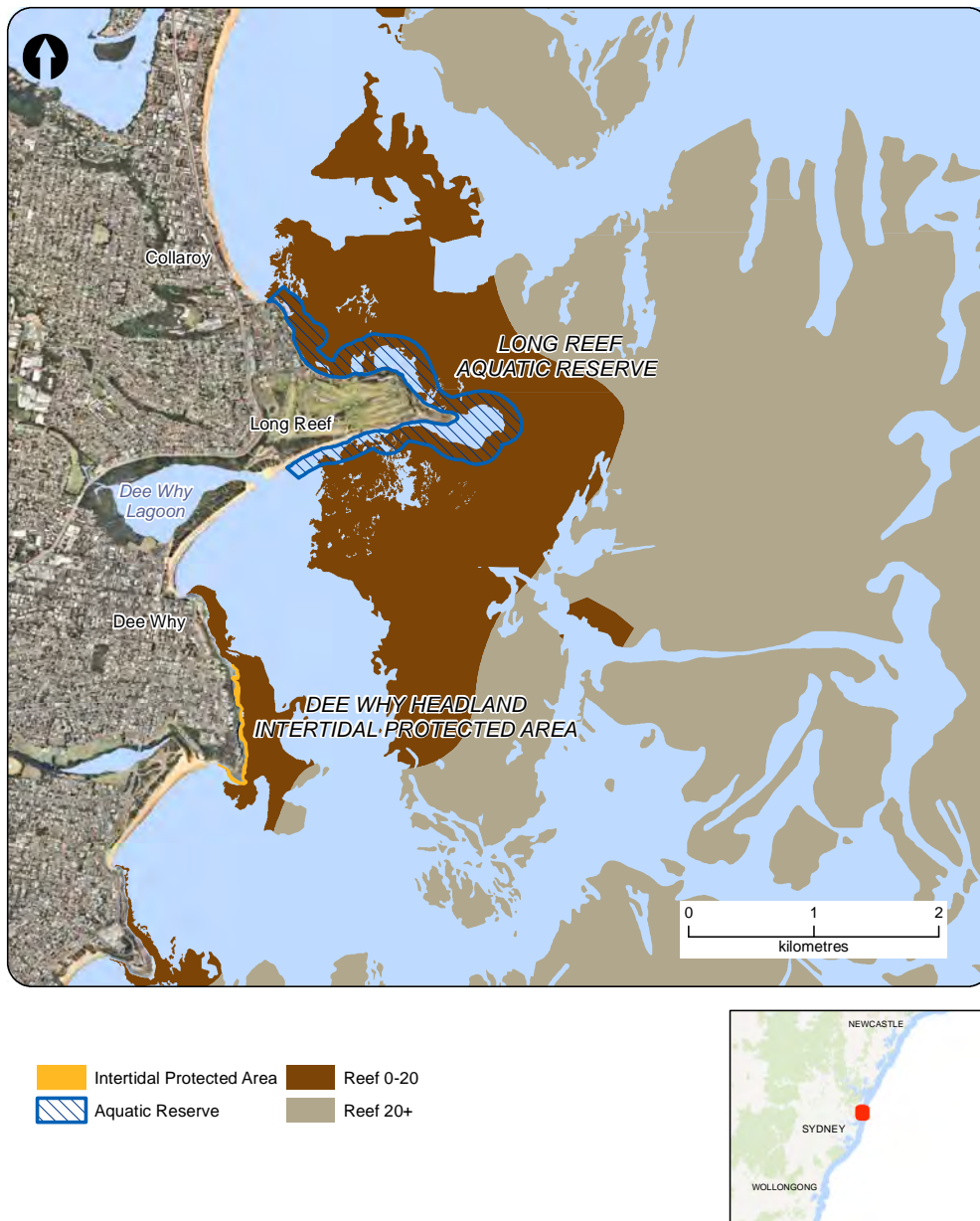


Figure 14. Current Long Reef Aquatic Reserve

## SITE OBJECTIVES

The primary objectives for the proposed Long Reef site are to:

- promote marine ecotourism in the bioregion
- enhance bequest values for current and future generations
- provide enhanced recreational experiences for particular user groups
- enhance opportunities for scientific research, education and learning including Aboriginal culture
- ensure appropriate mechanisms exist for community involvement in the management of the marine estate
- promote stewardship of the marine estate.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

The site consists of a rock platform that projects from the coastline and provides rocky shore and shallow reef habitat with a full range of wave exposure and aspect. The reef platforms and reef complex extending across the shelf are together one of the best examples of a wide range of interconnected reef habitats in the bioregion. The reefs include caves and overhangs and deep gutters.

Long Reef is dominated by extensive intertidal, shallow and deep rocky reefs that extend as continuous habitats several kilometres offshore. The Long Reef rocky shore is uncommon in that it extends in all compass directions and incorporates a wide range of exposed and sheltered habitats: it is one of the most extensive intertidal rock platforms in NSW. A range of threatened and protected species utilise habitats at this site and adjacent areas, including black rockcod (*Epinephelus daemeli*), weedy seadragon (*Phyllopteryx taeniolatus*), grey nurse shark, and many species of seabirds and local and migratory wader birds.

Long Reef Headland is popular with many user groups for recreation (walking, swimming, kayaking, paddle boarding) and boating. It is recognised as one of the most iconic fishing locations in the region.

















Commercial fishers regularly fish in the waters offshore from Long Reef.

The Long Reef rock platform is a focal point for marine education and stewardship programs, with school excursions and community groups regularly visiting the reserve to learn about marine life.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 25.

Table 25. Threats and expected benefits

	Environmental		Social, cultural, economic			
Threats	 Commercial fishing	 Recreational fishing	 Lack of awareness	 Regulations		
Benefits	 Rocky shores	 Shallow reefs	 Education & learning	 Participation (wellbeing)	 Participation (socialising)	 Enjoyment (biodiversity & beauty)
	 Deep reefs	 Fish assemblages	 Enjoyment (consumptive use)	 Intrinsic & bequest	 Viability of business	 Individual enjoyment

# LONG REEF

## PROPOSED MANAGEMENT RULES

A 514 hectare special purpose zone is proposed at Long Reef. This would incorporate the current aquatic reserve and extend the current rules of the reserve, which permit line or spearfishing for finfish (fish with a backbone) only, and prohibit the collection of all marine invertebrates and plants whether dead or alive except for Aboriginal cultural use.

Other management methods that address the threats caused by recreational fishing are to be trialled at this site in consultation with recreational fishers. Examples include catch-and-release fishing, gear-based restrictions, and specific bag and size limits. More information about the trial is described in the box below.

## FEEDBACK FROM COMMUNITY ENGAGEMENT

Long Reef was identified in Phase 1 and 2 community engagement. It was described as a site with high environmental values, in particular by peak conservation stakeholders – the National Parks Association of NSW and Nature Conservation Council of NSW. A local, community-based campaign resulted in many submissions in support of a no-take area at Long Reef.

Many submissions also raised concerns about a potential no-take area at this site, describing it as one of the safer rock platforms to fish from in NSW. Long Reef is reported to provide easy access for elderly fishers and has the only open ocean boat ramp on the northern beaches of Sydney. The Recreational Fishing Alliance, as well as a number of other submissions, listed Long Reef as a site of great importance for spearfishers, especially in adverse weather. Several submissions also raised concerns about possible negative impacts on kayak-based fishing at Long Reef.












### ALTERNATIVE APPROACHES TO ADDRESSING THREATS FROM RECREATIONAL FISHING – LONG REEF TRIAL SITE

**Peak stakeholders from the recreational fishing sectors have recommended to the NSW Government that alternative approaches be considered to address priority threats caused by recreational fishing as part of any proposal to expand marine protected areas in the Hawkesbury bioregion. These include:**

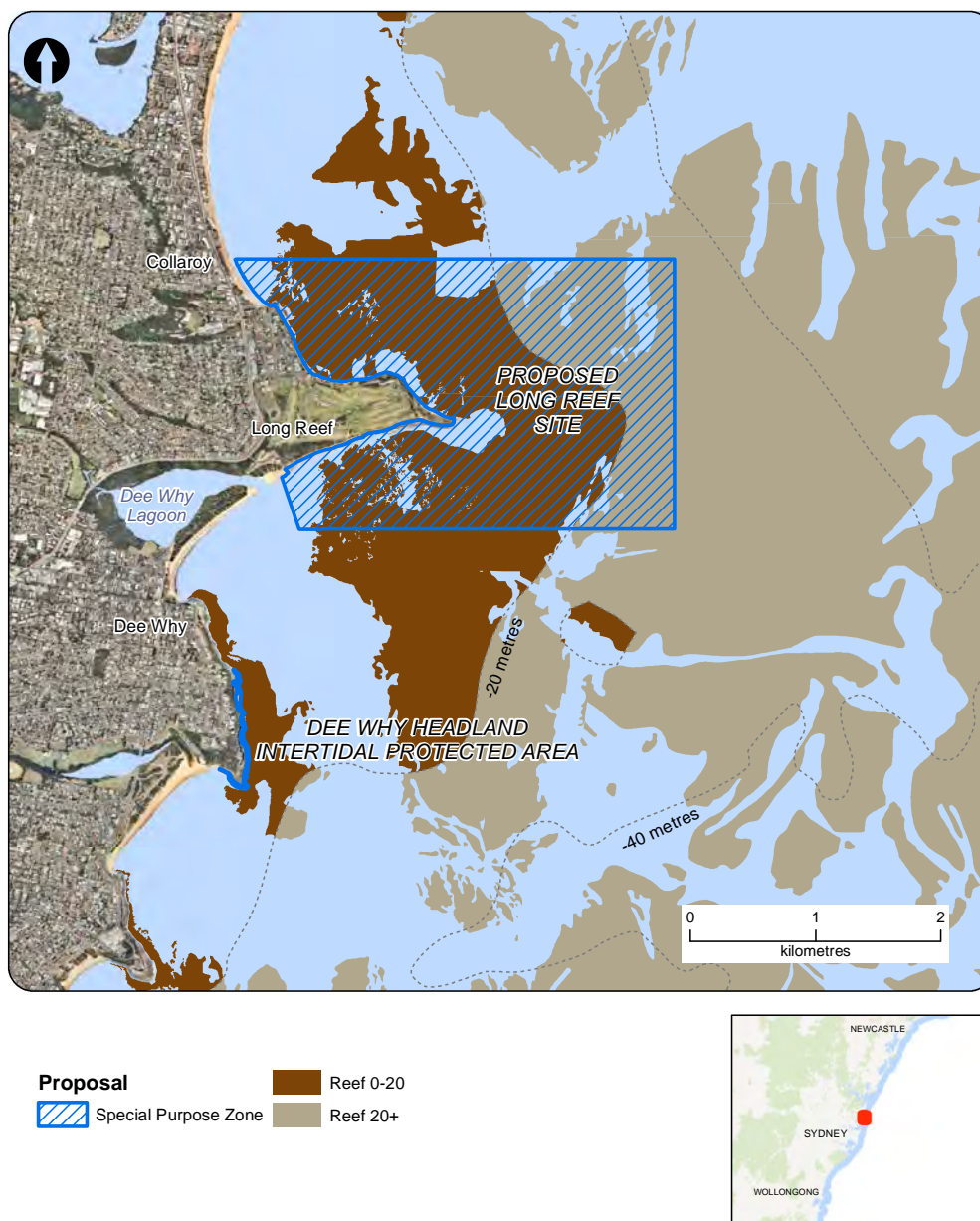
- catch-and-release fishing – where any fish caught are released alive and fish are caught in accordance with recommended catch-and-release [fishing gear and fish handling guidelines](#) promoted by Department of Primary Industries Fisheries
- reviewing recreational fishing bag and size limits in the bioregion to allow some take of fish and other recreationally caught species
- promoting the use of low-impact fishing gear (such as lures, trolling, circle hooks) to target pelagic fish, rather than bottom-set gear to target demersal fish that are associated with particular habitat sites (such as rocky reefs) and may be subject to higher rates of fishing pressure in high-use fishing areas
- seasonal restrictions to reduce impacts on certain species when they are known to be more readily accessible in an area of the bioregion.

Long Reef on Sydney's northern beaches has been chosen as a site to trial these alternative approaches. The trial will involve additional engagement with recreational fishers to determine the methods to be trialled and ways to monitor their effectiveness over time as part of the Marine Integrated Monitoring Program (MIM Program). Subject to the research outcomes, consideration will be given to expanding the measures to other sites.

**Table 26. Current activities and suggested permissible activities in the proposed Long Reef site**

Long Reef	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current	✓	✓	✓ <sup>1</sup>	✓ <sup>1</sup>	✗	✗	✓	✗	✗	✓ <sup>2</sup>	✓
Proposed special purpose zone	✓	✓	✓ <sup>3</sup>	✓ <sup>3</sup>	✗	✗	✓	✗	✗	✗	✓

- 1 Fishing for finfish only
- 2 Subject to existing NSW commercial fishing rules and regulations
- 3 Site-specific recreational fishing rules would apply. These would be established with guidance from recreational fishing stakeholders



**Figure 15. Proposed Long Reef site**

# CABBAGE TREE BAY

The proposed Cabbage Tree Bay site is south of Manly Beach. It is dominated by rocky shores and subtidal reefs. Shelly Beach, at the eastern end of Cabbage Tree Bay, is a key feature of the area.

The proposed site extends the current Cabbage Tree Bay Aquatic Reserve (Figure 16) to Blue Fish Point. The protected area would include a 52 hectare sanctuary zone that extends the current reserve from Shelly Beach Headland to 250 metres north-west of Blue Fish Point (Figure 17) and a seven hectare special purpose zone at Blue Fish Point.

## CURRENT MANAGEMENT

Cabbage Tree Bay Aquatic Reserve was established in 2002. It covers 18 hectares and extends from the southern end of Manly Beach at South Steyne to the northern end of Shelly Beach, encompassing all of Cabbage Tree Bay (Figure 16). Collecting, destroying or interfering with all forms of marine life, whether dead or alive, is prohibited. Shelly Beach Headland Intertidal Protected Area (IPA) adjoins the aquatic reserve and protects a small intertidal area by way of a regulation under the *Fisheries Management Act 1994*.

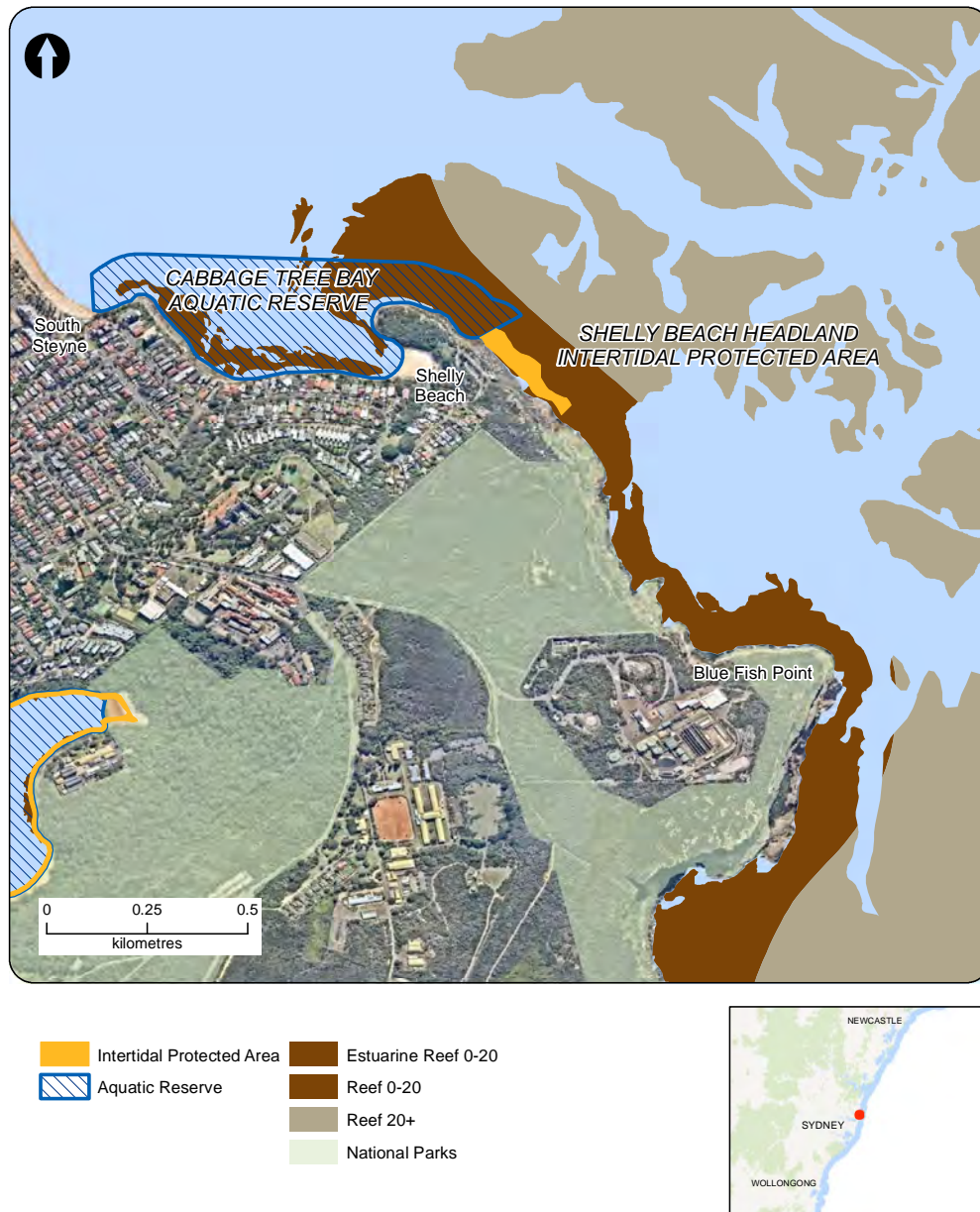


Figure 16. Current Cabbage Tree Bay Aquatic Reserve

## SITE OBJECTIVES

The primary objectives for the proposed Cabbage Tree Bay site are to:

- enhance the conservation of marine biodiversity
- reduce risks to identified habitats of the bioregion
- promote marine ecotourism in the bioregion
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- reduce conflicts between users of the marine estate
- provide enhanced recreational experiences for particular user groups
- enhance opportunities for scientific research, education and learning
- provide baseline monitoring areas (scientific reference sites)
- promote stewardship of the marine estate.

The secondary objectives that apply to this site are listed in Table 5.

























## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

Cabbage Tree Bay is a very popular area for a wide variety of user groups, including scuba divers, swimmers, snorkellers and surfers. The existing aquatic reserve removed some previous sources of conflict – such as conflict between spearfishers and swimmers.

There is *Zostera* and *Halophila* spp. seagrass in the bay, primarily along the southern side, although this is currently unmapped. Anchoring in this area is currently not permitted, although this is not well publicised, and vessels may be unaware they are anchoring in a seagrass area. Boating activity in the bay is significant during peak-use times, and user conflict between vessels and swimmers is not uncommon despite the small boating closure around Shelly Beach. The Bay provides safe haven for boats during strong southerly weather.












Cabbage Tree Bay is a west-facing embayment that provides protection from dominant south-easterly swells. This results in areas of sheltered beach and areas for seagrass to grow, which is uncommon on the NSW coast. There are areas of both intertidal and shallow rocky reef that vary in exposure, with those on the eastern side of the headland most exposed. A number of threatened and protected species are known to frequent the area, including blue groper, green turtles, black rockcod and weedy seadragon.

Table 27. Threats and expected benefits

	Environmental				Social, cultural, economic				
Threats	 Climate change	 Commercial fishing	 Recreational fishing		 Reductions in species	 Habitat disturbance	 Lack of awareness	 Conflict	
Benefits	 Seagrass	 Rocky shores	 Shallow reefs	 Deep reefs	 Scientific reference sites	 Viability of businesses	 Education & learning	 Individual enjoyment	 Intrinsic & bequest
	 Fish assemblages	 Species protected under FMA	 Species protected under BCA	 Biodiversity	 Participation (wellbeing)	 Participation (socialising)	 Enjoyment (biodiversity & beauty)	 Aboriginal cultural heritage & use	

# CABBAGE TREE BAY

**Table 28. Current activities and suggested permissible activities in the proposed Cabbage Tree Bay site**

Cabbage Tree Bay	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current aquatic reserve	✓ <sup>1</sup>	✓ <sup>2</sup>	×	×	×	×	✓	×	×	×	✓
Current IPA	✓	✓	✓	✓	✓	✓	✓	×	✓	✓ <sup>3</sup>	✓
Proposed special purpose zone	✓	✓	✓	✓	✓	✓	✓	×	×	✓ <sup>3</sup>	✓
Proposed sanctuary zone	✓ <sup>1</sup>	✓ <sup>2</sup>	×	×	×	×	✓	×	×	×	✓

- 1 Boating exclusion zone applies at Shelly Beach
- 2 Not in seagrass areas
- 3 Subject to existing NSW commercial fishing rules and regulations

Cabbage Tree Bay is part of the traditional lands of the Guringai (or Ku-ring-gai) people, and it is part of the Manly-Freshwater National Surfing Reserve. It is an area that has been regularly used for scientific research on rocky reef habitats.

Blue Fish Point is popular for recreational shore and boat-based fishing and for scuba diving. The location is considered hazardous in some swell conditions, and rock fishing fatalities have been reported here.

Some Ocean Trap and Line commercial fishing takes place in the area.

## PROPOSED MANAGEMENT RULES

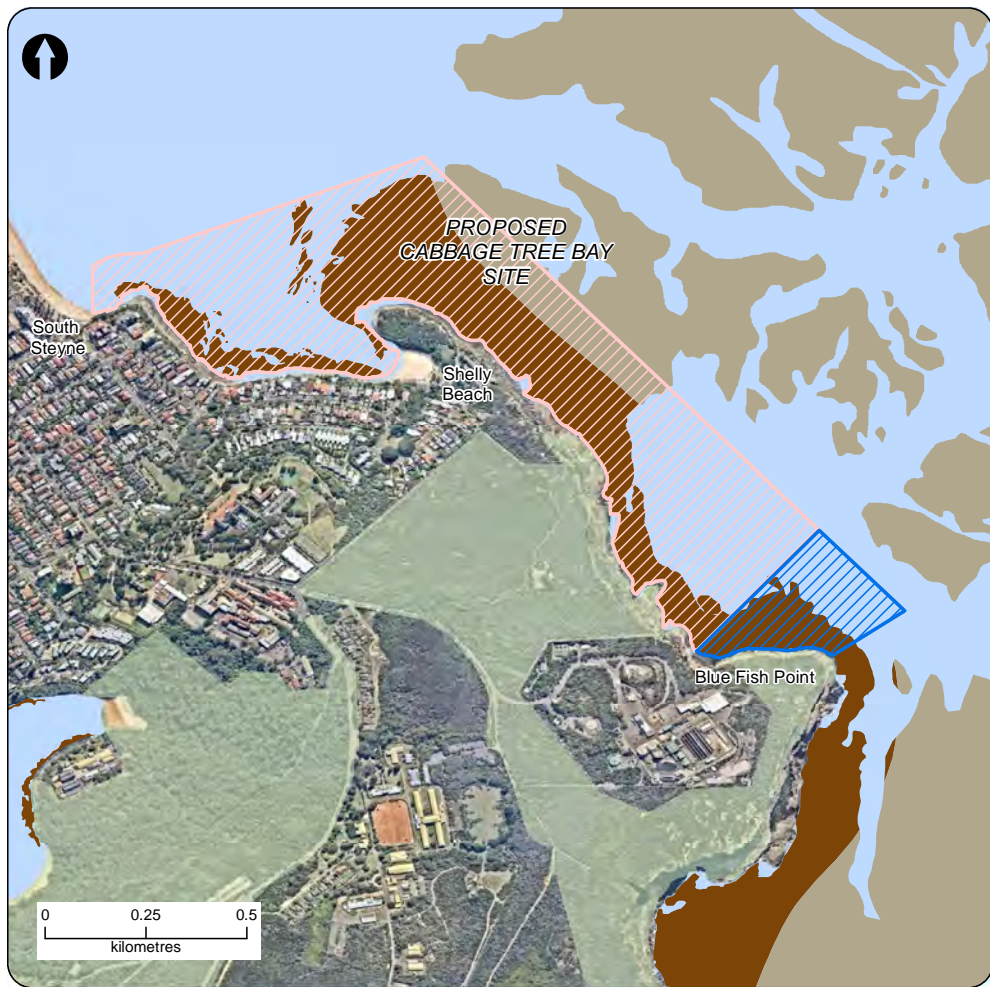
The proposal to extend the current reserve to 250 metres north-west of Blue Fish Point would prohibit all extractive activities in this zone except for Aboriginal cultural use (Table 28). This zone would also replace the existing Shelly Beach Headland IPA, which would increase protection of marine life and reduce the complexity of regulations.

Anchoring in seagrass habitat in Cabbage Tree Bay would also be restricted. Seagrass generally occurs at depths of eight metres or shallower, so anchoring inside much of Cabbage Tree Bay itself would be prohibited. Courtesy moorings (including environmentally friendly moorings) or a designated anchoring area could be considered to manage boating access and use.

The proposed seven hectare special purpose zone at Blue Fish Point would prohibit hand gathering of marine invertebrates, except for lobster and abalone.

## FEEDBACK FROM COMMUNITY ENGAGEMENT

The high environmental value of Cabbage Tree Bay was identified by peak conservation stakeholders – the National Parks Association of NSW and the Nature Conservation Council of NSW. The value of the existing Cabbage Tree Bay Aquatic Reserve was described several submissions, including from Manly Council, as was a proposal to extend the current boundaries of the reserve, typically to Blue Fish Point. This reserve was often cited as a model for marine management in the bioregion that should be replicated. Safety concerns about potential conflict between boats and passive water users were also raised.



- Proposal**
- Sanctuary Zone
  - Special Purpose Zone
  - Estuarine Reef 0-20
  - Reef 0-20
  - Reef 20+
  - National Parks

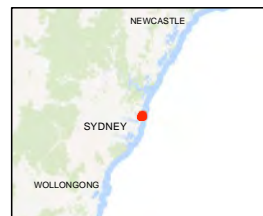


Figure 17. Proposed Cabbage Tree Bay site



# NORTH HARBOUR

North Harbour includes the part of Sydney Harbour north of a line from North Head to Grotto Point. It includes Manly Cove, Spring Cove and all bays and beaches in this area.

The proposed site extends the current North Harbour Aquatic Reserve (Figure 18) to include all of North Harbour (Figure 19). Three new zones would be created: a 325 hectare special purpose zone, and two sanctuary zones with a combined area of 51 hectares, one at Fairlight and the other at Spring Cove.

## CURRENT MANAGEMENT

The 257 hectare North Harbour Aquatic Reserve (Figure 18) was established in 1982 and spans the area between North Head and Dobroyd Head. All marine species other than finfish are protected in the reserve, which allows line fishing for finfish only. All other fishing and collection methods are prohibited.

All of Sydney Harbour is closed to commercial fishing. Recreational fishing for shellfish is prohibited throughout Sydney Harbour. Netting, trapping, and spearfishing is prohibited in North Harbour. Sydney Harbour IPA also covers the coastline in North Harbour but not Manly Cove.

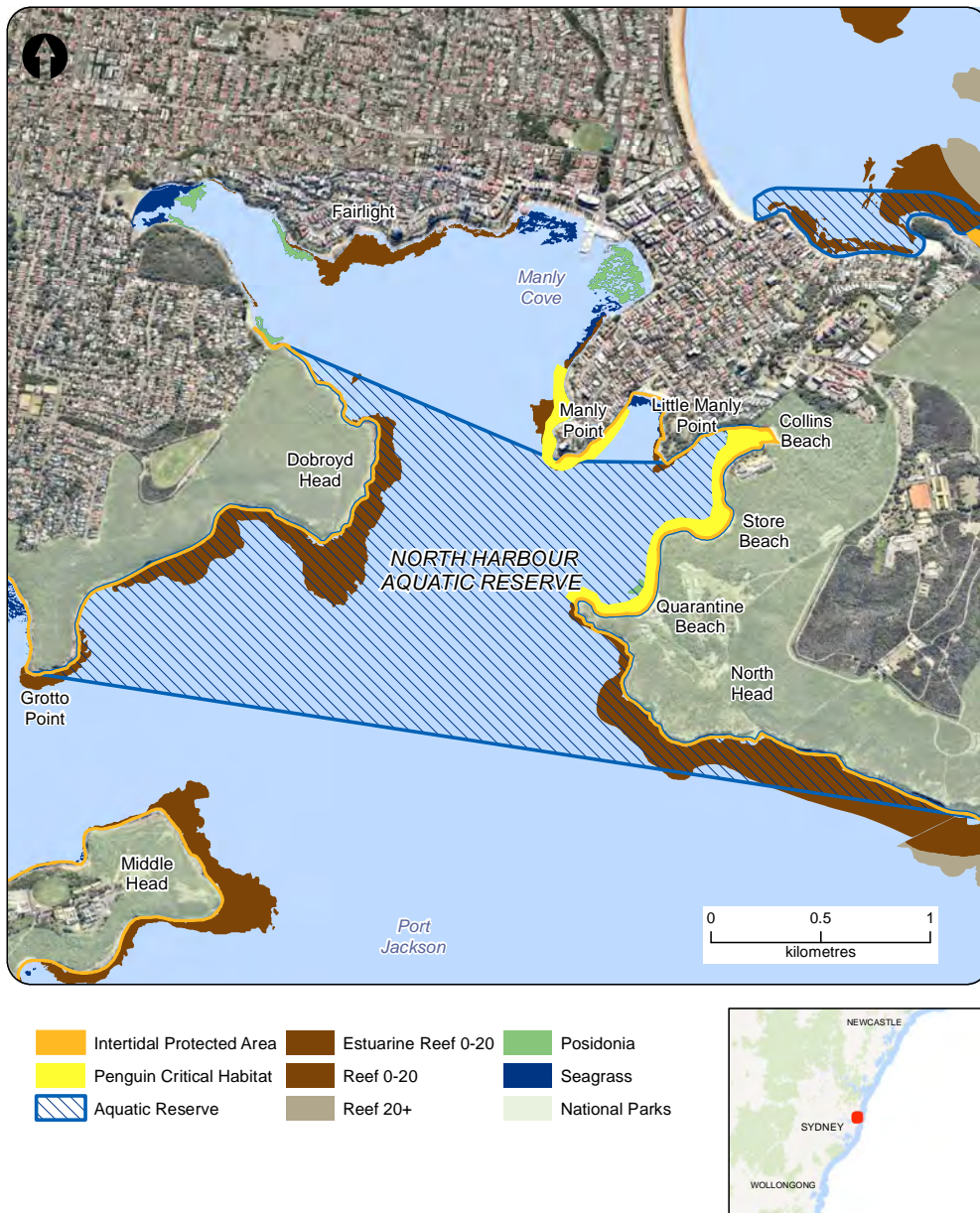


Figure 18. Current North Harbour Aquatic Reserve

Little Penguin critical habitat restrictions include restrictions on fishing, anchoring, mooring and boating around Cannae Point and in Spring Cove. Courtesy moorings, including environmentally friendly designs, have been installed at Quarantine Bay and Manly Cove West to reduce anchor damage to seagrass.

## SITE OBJECTIVES

The primary objectives for the proposed North Harbour site are to:

- enhance the conservation of marine biodiversity
- reduce risks to identified threatened and protected species of the bioregion
- reduce risks to identified habitats of the bioregion
- promote marine ecotourism in the bioregion
- continue to provide for marine economic opportunities that are consistent with ecologically sustainable development, for example low-risk commercial fishing activities
- establish and maintain public infrastructure to support access and use of the bioregion, for example moorings, boat ramps
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- reduce conflicts between users of the marine estate
- provide enhanced recreational experiences for particular user groups
- provide baseline monitoring areas (scientific reference sites)

- ensure appropriate mechanisms exist for community involvement in the management of the marine estate
- promote stewardship of the marine estate.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

North Harbour includes a wide variety of habitats such as rocky shores, shallow rocky reefs, shallow soft sediments, beaches and seagrass beds. Most of the western shoreline and smaller areas of the eastern shoreline are rocky shore and subtidal reef. Threatened and protected species are resident or are regularly observed in the area and include an endangered population of the seagrass *Posidonia australis* and little penguin. Dolphins and seals visit the area occasionally.























North Harbour area was used extensively by Aboriginal communities, known locally as the Gayemal clan of the Guringai tribe, who spent much of their time on the foreshores of Sydney Harbour. Spiritual sites and evidence of past cultural use, including art and middens, have been recorded in the Aboriginal Heritage Information Management System. Important shipwrecks are also located in North Harbour.

The site is a focal point for boating (yachting, kayaking, power boats) and public and private on-water transport to Manly and other places. Scuba diving, snorkelling, swimming and on-water recreation are popular activities.



# NORTH HARBOUR

Table 29. Threats and expected benefits

	Environmental				Social, cultural, economic			
Threats	 Boating	 Climate change	 Recreational fishing		 Conflict	 Habitat disturbance	 Reduction in species	 Lack of access infrastructure
Benefits	 Shallow reefs	 Deep reefs	 Rocky shores	 Fish assemblages	 Scientific reference sites	 Intrinsic & bequest	 Participation (wellbeing)	 Participation (socialising)
	 Species protected under FMA	 Species protected under BCA	 Biodiversity		 Enjoyment (biodiversity & beauty)	 Viability of businesses	 Individual enjoyment	 Aboriginal cultural heritage & use

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 29.

## PROPOSED MANAGEMENT RULES

Recreational fishing and boating would be permitted in the special purpose zone, although existing restrictions on spearfishing and lobster fishing would continue (Table 30). Line fishing would no longer be restricted to finfish and would now include species such as squid. Other forms of hand gathering, including abalone fishing and collecting marine vegetation, would be prohibited. All forms of commercial fishing would be prohibited in this zone. Aboriginal cultural use and other low-risk activities such as scuba diving and snorkelling would be permitted in this zone.

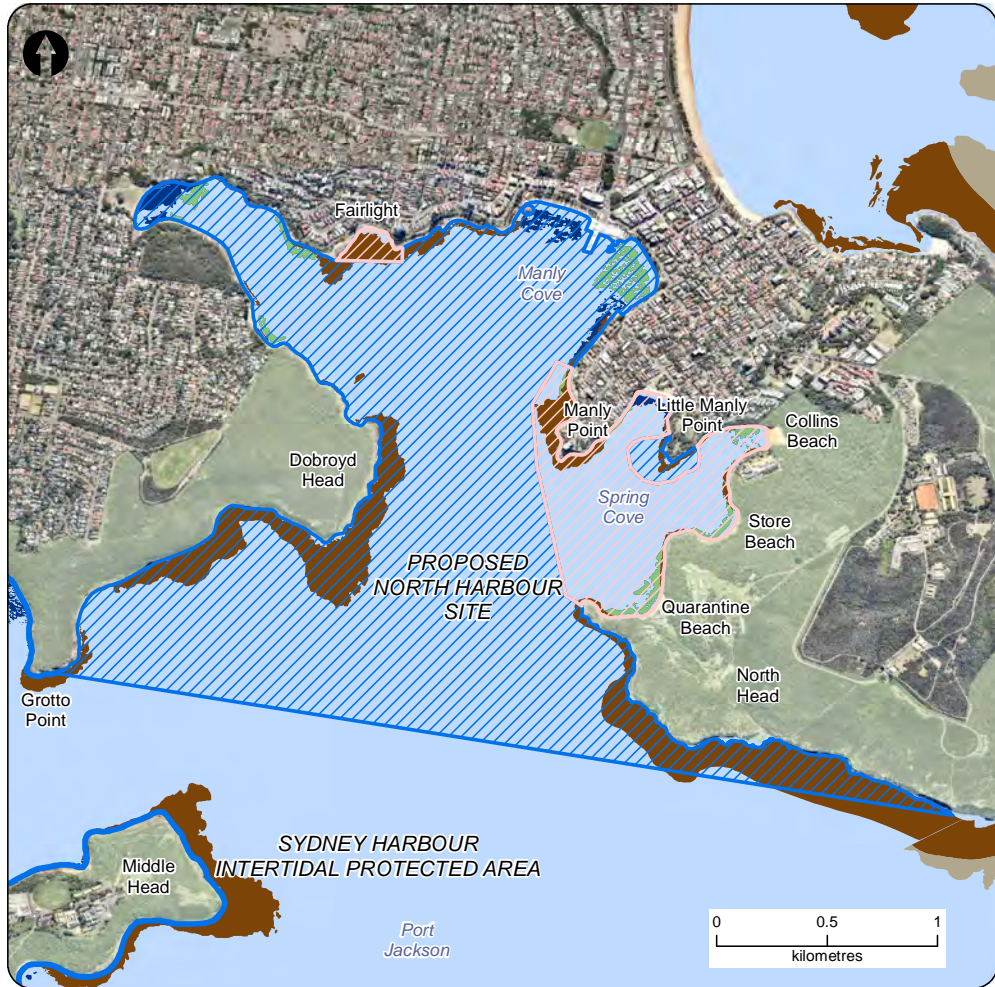
In the proposed Fairlight and Spring Cove sanctuary zones, the removal or harm of marine biodiversity and habitats would be prohibited, including fishing by any method, hand gathering and collecting marine vegetation except for Aboriginal cultural use (Table 30). Anchoring would be prohibited in seagrass areas to prevent damage to the endangered *Posidonia australis* seagrass, and courtesy moorings would remain in place. Little penguin critical habitat areas would be included in the Spring Cove Sanctuary Zone.

## FEEDBACK FROM COMMUNITY ENGAGEMENT

The high environmental value of North Head and North Harbour was identified by peak conservation stakeholders – the National Parks Association of NSW and Nature Conservation Council of NSW. Submissions proposed no-take areas at North Head, Spring Cove, and Old Man’s Hat.

The Recreational Fishing Alliance reported that North Harbour is a safe and easy to access recreational fishing spot for the young, elderly and disabled.

Comments supported a no-take area in Sydney Harbour (including for a Sydney Marine Park). Other submissions (including from the Recreational Fishing Alliance and the Australian National Sportfishing Association) proposed that Sydney Harbour be declared a recreational fishing haven.



- |                      |                     |                |
|----------------------|---------------------|----------------|
| <b>Proposal</b>      | Estuarine Reef 0-20 | Posidonia      |
| Sanctuary Zone       | Reef 0-20           | Seagrass       |
| Special Purpose Zone | Reef 20+            | National Parks |

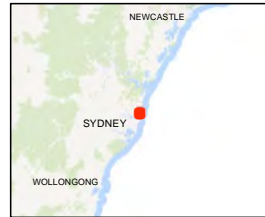













Figure 19. Proposed North Harbour site

# NORTH HARBOUR

Table 30. Current activities and suggested permissible activities in the proposed North Harbour site

North Harbour	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current aquatic reserve	✓	✓ <sup>1</sup>	✓ <sup>2</sup>	✗ <sup>3</sup>	✗	✗	✓	✗	✗	✗	✓
Proposed special purpose zone	✓	✓ <sup>1</sup>	✓ <sup>4</sup>	✗	✗	✗	✓	✗	✗	✗	✓
Proposed Fairlight Sanctuary Zone	✓	✓ <sup>1</sup>	✗	✗	✗	✗	✓	✗	✗	✗	✓
Proposed Spring Cove Sanctuary Zone	✓	✓ <sup>1</sup>	✗	✗	✗	✗	✓	✗	✗	✗	✓

1 Not in seagrass areas

2 Fishing for finfish only, and special fishing rules apply in Little Penguin critical habitat

3 Spearfishing is not currently permitted in North Harbour under a fishing closure

4 Line fishing would no longer be restricted to finfish, and would now include species such as squid



# CHOWDER BAY

**Chowder Bay is on the north shore of Sydney Harbour, near Mosman.**

A 14 hectare site is proposed for Chowder Head and part of Chowder Bay (Figure 20).

## CURRENT MANAGEMENT

The shoreline of the proposed area is part of the Sydney Harbour IPA, which protects all marine invertebrates and cunjevoi.

Chowder Bay is currently closed to spearfishing as part of a closure under the *Fisheries Management Act 1994*.

## SITE OBJECTIVES

The primary objectives for the proposed Chowder Bay site are to:

- enhance the conservation of marine biodiversity
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- provide baseline monitoring areas (scientific reference sites).

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

Chowder Bay has shallow reefs and is used for marine education. It is next to the Sydney Institute of Marine Science. The area is used for passive recreation such as swimming, kayaking, snorkelling and scuba diving as the water is generally clear and has some protection from westerly winds. The proposed reserve excludes the popular and easily accessible fishing wharf.

The area has significance to the local Aboriginal communities. Spiritual sites and evidence of past cultural use, including art, have been recorded in the Aboriginal Heritage Information Management System.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE















The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 31.

## PROPOSED MANAGEMENT RULES

A 13 hectare sanctuary zone is proposed for Chowder Head and part of Chowder Bay. In this zone, the removal or harm of marine biodiversity would be prohibited, including fishing by any method, anchoring in seagrass areas, harm to marine animals or plants, or collecting marine organisms whether dead or alive (Table 32). Permissible activities would include those that are minimal-low risk, such as swimming, snorkelling, scuba diving and Aboriginal cultural use.

A 1 hectare special purpose zone is proposed for the area surrounding the jetty and swimming enclosure. In this zone, recreational line fishing would be permitted but spearfishing and hand gathering would be prohibited, in line with current management rules.

**Table 31. Threats and expected benefits**

	Environmental					Social, cultural, economic			
Threats	 Boating	 Climate change	 Recreational fishing			 Habitat disturbance	 Reductions in species		
Benefits	 Seagrass	 Rocky shores	 Shallow reefs	 Fish assemblages	 Biodiversity	 Intrinsic & bequest	 Scientific references sites	 Enjoyment (biodiversity & beauty)	 Aboriginal cultural heritage & use

# CHOWDER BAY

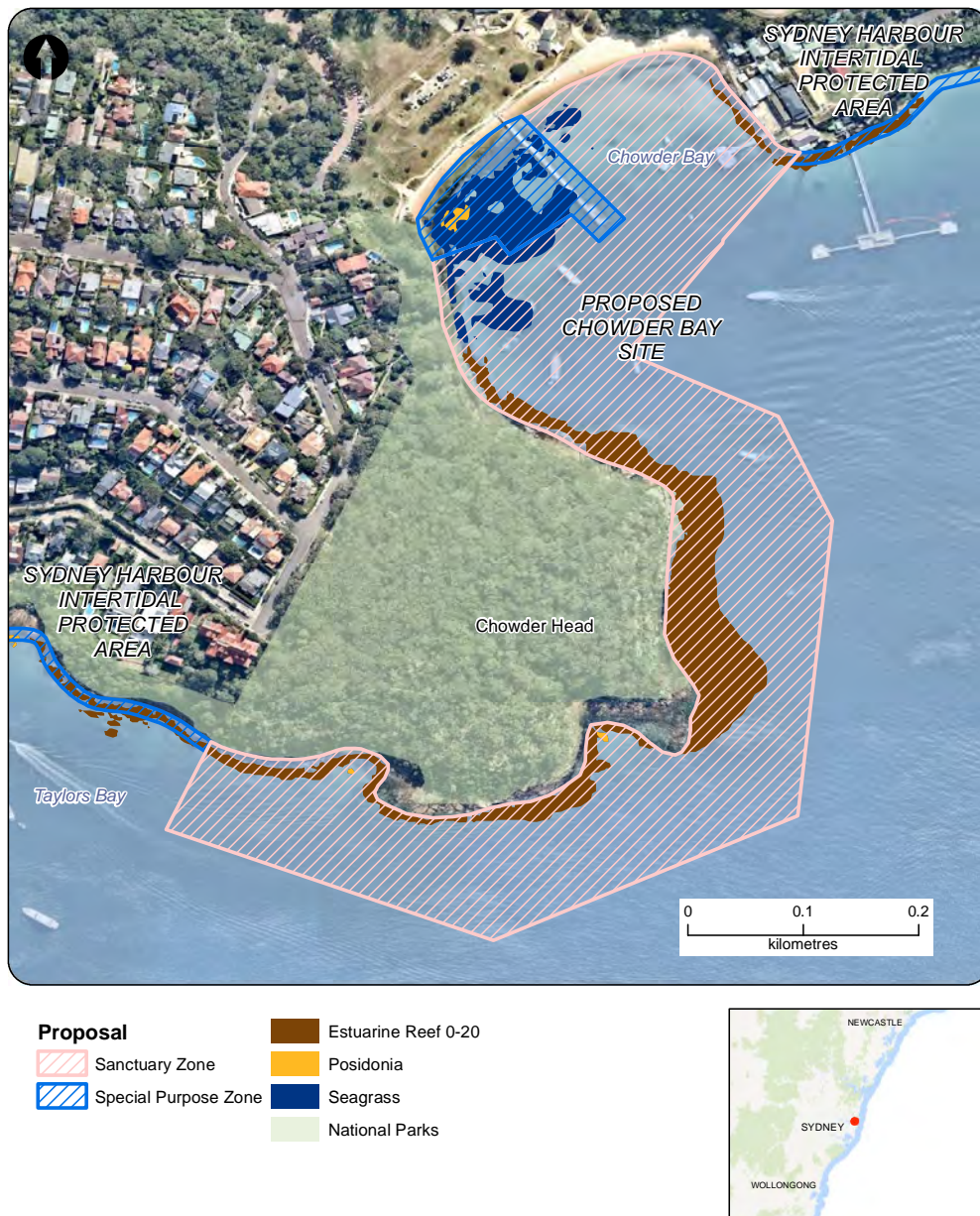













Figure 20. Proposed Chowder Bay site

**Table 32. Current activities and suggested permissible activities in the proposed Chowder Bay site**

Chowder Bay	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current	✓ <sup>1</sup>	✓ <sup>2</sup>	✓	×	✓	×	✓	×	✓	×	✓
Proposed special purpose zone	✓ <sup>1</sup>	✓ <sup>2</sup>	✓	×	✓	×	✓	×	×	×	✓
Proposed sanctuary zone	✓ <sup>1</sup>	✓ <sup>2</sup>	×	×	×	×	✓	×	×	×	✓

1 Partial exclusion area applies in Naval Waters

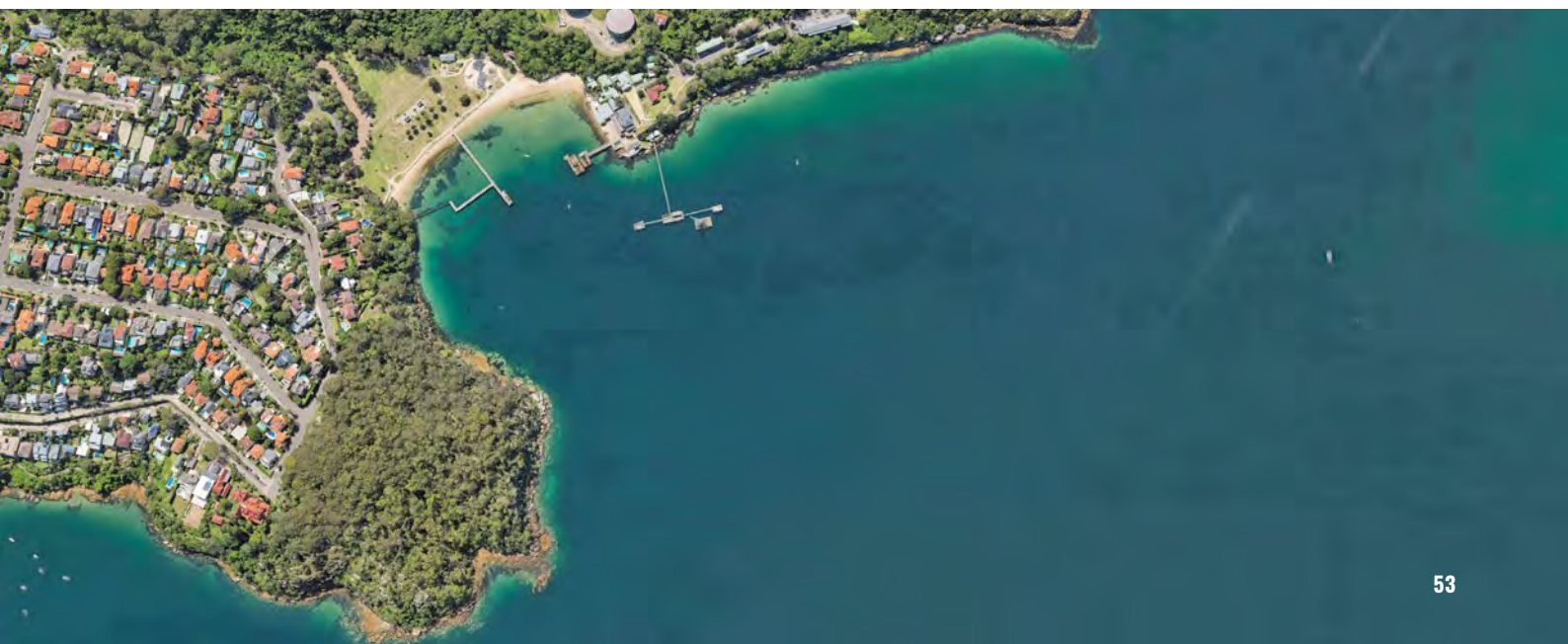
2 Not in seagrass areas

3 Intertidal area currently protected as part of Sydney Harbour IPA

## FEEDBACK FROM COMMUNITY ENGAGEMENT

The high environmental value of Chowder Bay was recognised by peak conservation stakeholders – the National Parks Association of NSW and Nature Conservation Council of NSW. The Sydney Institute of Marine Science states that this site is likely to be suitable for a baseline scientific monitoring site.

Comments supported a no-take area in Sydney Harbour (including for a Sydney Marine Park). Other submissions (including from the Recreational Fishing Alliance) proposed that Sydney Harbour be declared a recreational fishing haven.



# CAMP COVE

## Camp Cove is in Sydney Harbour, just inside South Head.

An 11 hectare site is proposed at Camp Cove, including Camp Cove Beach and Laings Point (Figure 21).

## CURRENT MANAGEMENT

The shoreline of the proposed area is already in the Sydney Harbour IPA, which covers the area from the mean high water mark to 10 metres seaward from the mean low water mark. Fishing is allowed. All taking, gathering and collecting of all invertebrates and other seashore animals is prohibited, including crabs, snails, worms, octopus, sea urchins, anemones, pipis, cockles, mussels, oysters, saltwater nippers and cunjevoi.

## SITE OBJECTIVES

The primary objectives for the proposed Camp Cove site are to:

- enhance the conservation of marine biodiversity
- promote marine ecotourism in the bioregion
- continue to provide for marine economic opportunities that are consistent with ecologically sustainable development, for example, low-risk commercial fishing activities
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations

- reduce conflicts between users of the marine estate
- provide enhanced recreational experiences for particular user groups
- provide baseline monitoring areas (scientific reference sites)
- ensure appropriate mechanisms exist for community involvement in the management of the marine estate
- promote stewardship of the marine estate.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

This area includes shallow estuarine rocky reef and a small area of seagrass. Fishing is popular around Laings Point. Camp Cove has a four-knot speed zone, and most of the beach is off limits to powered craft to reduce risks to swimmers and scuba divers.





















The beach and cove are very popular with swimmers, tourists, snorkellers and scuba divers.

The area has significance to the local Aboriginal communities. Spiritual sites and evidence of past cultural use, including art, have been recorded in the Aboriginal Heritage Information Management System.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 33.

Table 33. Threats and expected benefits

	Environmental			Social, cultural, economic			
Threats	 Boating	 Climate change	 Recreational fishing	 Conflict	 Habitat disturbance	 Reductions in species	
Benefits	 Seagrass	 Rocky shores	 Shallow reefs	 Intrinsic & bequest	 Scientific references sites	 Enjoyment (biodiversity & beauty)	 Participation (wellbeing)
	 Fish assemblages	 Species protected under FMA	 Biodiversity	 Participation (socialising)	 Viability of businesses	 Individual enjoyment	 Aboriginal cultural heritage & use

## PROPOSED MANAGEMENT RULES

In the proposed sanctuary zone, the removal or harm of marine biodiversity would be prohibited, including fishing by any method, anchoring in seagrass areas, harm to marine animals or plants, or collecting marine organisms whether dead or alive (Table 34).

Permissible activities would include those that are minimal–low risk, such as recreational boating, swimming, snorkelling, scuba diving and Aboriginal cultural use. Courtesy moorings would be considered to manage boating access in areas away from seagrass and scuba divers.

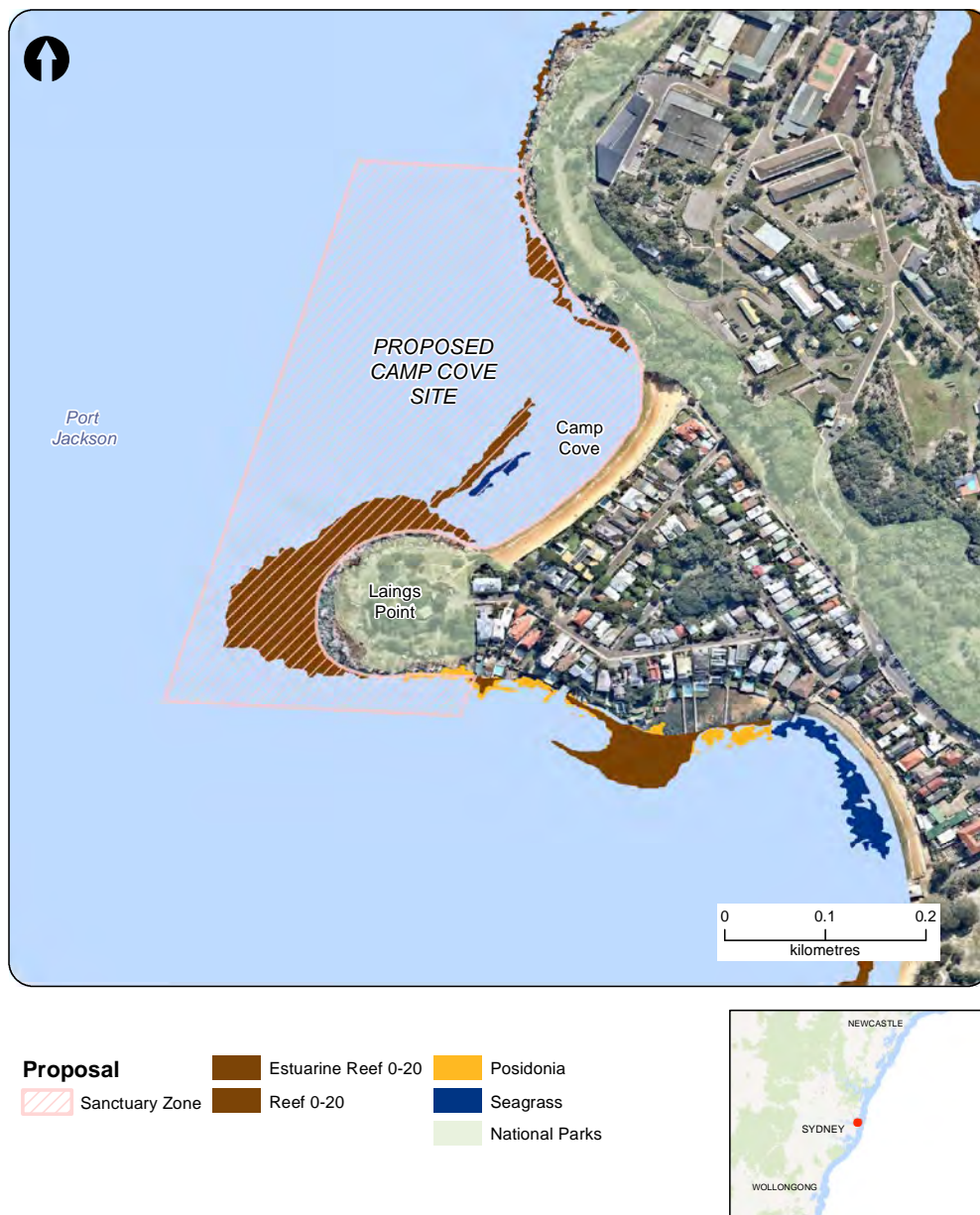













Figure 21. Proposed Camp Cove site

# CAMP COVE

Table 34. Current activities and suggested permissible activities in the proposed Camp Cove site

Camp Cove	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current	✓ <sup>1</sup>	✓ <sup>2</sup>	✓	✓	✓	×	✓	× <sup>3</sup>	✓	×	✓
Proposed sanctuary zone	✓ <sup>1</sup>	✓ <sup>2</sup>	×	×	×	×	✓	×	×	×	✓

- 1 Small exclusion area applies along Camp Cove Beach
- 2 Not in seagrass areas
- 3 Intertidal area currently protected as part of Sydney Harbour IPA

## FEEDBACK FROM COMMUNITY ENGAGEMENT

The high environmental value of Camp Cove was identified by community members as well as peak conservation stakeholders – the National Parks Association of NSW and Nature Conservation Council of NSW. Local dive groups described Camp Cove as a popular and safe site for tourist learning to dive.

Comments supported a no-take area in Sydney Harbour (including for a Sydney Marine Park). Other submissions (including from the Recreational Fishing Alliance) proposed that Sydney Harbour be declared a recreational fishing haven.



# NIELSEN PARK

Nielsen Park is in Vaucluse, in Sydney’s eastern suburbs.

A 17 hectare site is proposed extending north from Steele Point, including Shark Beach, and Bottle and Glass Point (Figure 22).

## CURRENT MANAGEMENT

The shoreline of the proposed area is already in the Sydney Harbour IPA, which covers the area from the mean high water mark to 10 metres seaward from the mean low water mark. Fishing is allowed. All taking, gathering and collecting of all invertebrates and other seashore animals is prohibited, including crabs, snails, worms, octopus, sea urchins, anemones, pipis, cockles, mussels, oysters, saltwater nippers and cunjevoi.

The site is adjacent to Sydney Harbour National Park.

## SITE OBJECTIVES

The primary objectives for the proposed Nielsen Park site are to:

- enhance the conservation of marine biodiversity
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- to reduce conflicts between users of the marine estate
- to provide enhanced recreational experiences for particular user groups

- provide baseline monitoring areas (scientific reference sites)
- ensure appropriate mechanisms exist for community involvement in the management of the marine estate
- promote stewardship of the marine estate.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

The site contains rocky shores, sandy beaches, shallow estuarine reef and some of the endangered Sydney Harbour population of *Posidonia australis* seagrass.

Snorkelling, swimming, and scuba diving are very popular in the area and the beach is one of Sydney Harbour’s most popular. The beach has a barrier shark net in place from October to April. This net is a well-known habitat for White’s seahorse (*Hippocampus whitei*).

The area has significance to the local Aboriginal communities. Spiritual sites and evidence of past cultural use, including shell middens, have been recorded.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 35.

Table 35. Threats and expected benefits

	Environmental			Social, cultural, economic		
Threats	 Boating	 Climate change	 Recreational fishing	 Conflict	 Habitat disturbance	 Reduction in species
Benefits	 Seagrass	 Rocky shores	 Shallow reefs	 Intrinsic & bequest	 Scientific reference sites	 Participation (wellbeing)
	 Fish assemblages	 Species protected under FMA	 Biodiversity	 Participation (socialising)	 Enjoyment (biodiversity & beauty)	 Aboriginal cultural heritage & use

# NIELSEN PARK

## PROPOSED MANAGEMENT RULES












In the proposed sanctuary zone, the removal or harm of marine biodiversity would be prohibited, including fishing by any method, hand gathering or collecting marine organisms (whether dead or alive). Permissible activities would include those that are minimal–low risk, such as swimming, snorkelling, scuba diving and Aboriginal cultural use.

Recreational boating would be permitted, but anchoring in seagrass areas would be prohibited (Table 36).



Figure 22. Proposed Nielsen Park site

**Table 36. Current activities and suggested permissible activities in the proposed Nielsen Park site**

Nielsen Park	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current	✓	✓ <sup>1</sup>	✓	✓	✓	×	✓	×	✓	×	✓
Proposed sanctuary zone	✓	✓ <sup>1</sup>	×	×	×	×	✓	×	×	×	✓

1 Not in seagrass areas

2 Intertidal area currently protected as part of Sydney Harbour IPA

## FEEDBACK FROM COMMUNITY ENGAGEMENT

Community consultation identified Nielsen Park for its high social value as a site for passive recreation and high environmental value. Conflict between fishers and beach users was reported. There was support for a no-take area in Sydney Harbour including a Sydney Harbour Marine Park.

The Recreational Fishing Alliance, Australian National Sportfishing Association and other submissions proposed that Sydney Harbour be declared a recreational fishing haven.



# BRONTE-COOGEE

**Bronte-Coogee is an area of exposed rocky shore, headlands and beaches in the eastern suburbs of Sydney. It includes Clovelly Bay and Gordons Bay.**

A large, 2028 hectare site is proposed for the area from South Bondi to the northern end of Coogee Beach and three nautical miles seaward (Figure 24). This proposed area expands on the existing Bronte-Coogee Aquatic Reserve and South Bondi IPA (Figure 23).

## CURRENT MANAGEMENT

Established in 2002, the existing Bronte-Coogee Aquatic Reserve covers 36 hectares and about four kilometres of coastline from the southern extremity of Bronte Beach to the rock baths at the northern end of Coogee Beach (Figure 23). Collection of marine invertebrates, cunjevoi

and marine vegetation is prohibited, with the exception of lobsters, abalone, sea lettuce and bait weed (Table 38). Other fish species may be taken by legal methods. Recreational fishing competitions and collecting for scientific and educational purposes require a permit. A smaller fishing closure encompasses Clovelly Bay and Gordons Bay and prohibits spearfishing and the collection of blue groper by any method.

The South Bondi (Mackenzies Point) IPA is to the north of the aquatic reserve (Figure 23). In that IPA, fishing is allowed, but all taking, gathering and collecting of all invertebrates and other seashore animals is prohibited, including crabs, snails, worms, octopus, sea urchins, anemones, pipis, cockles, mussels, oysters, saltwater nippers and cunjevoi.

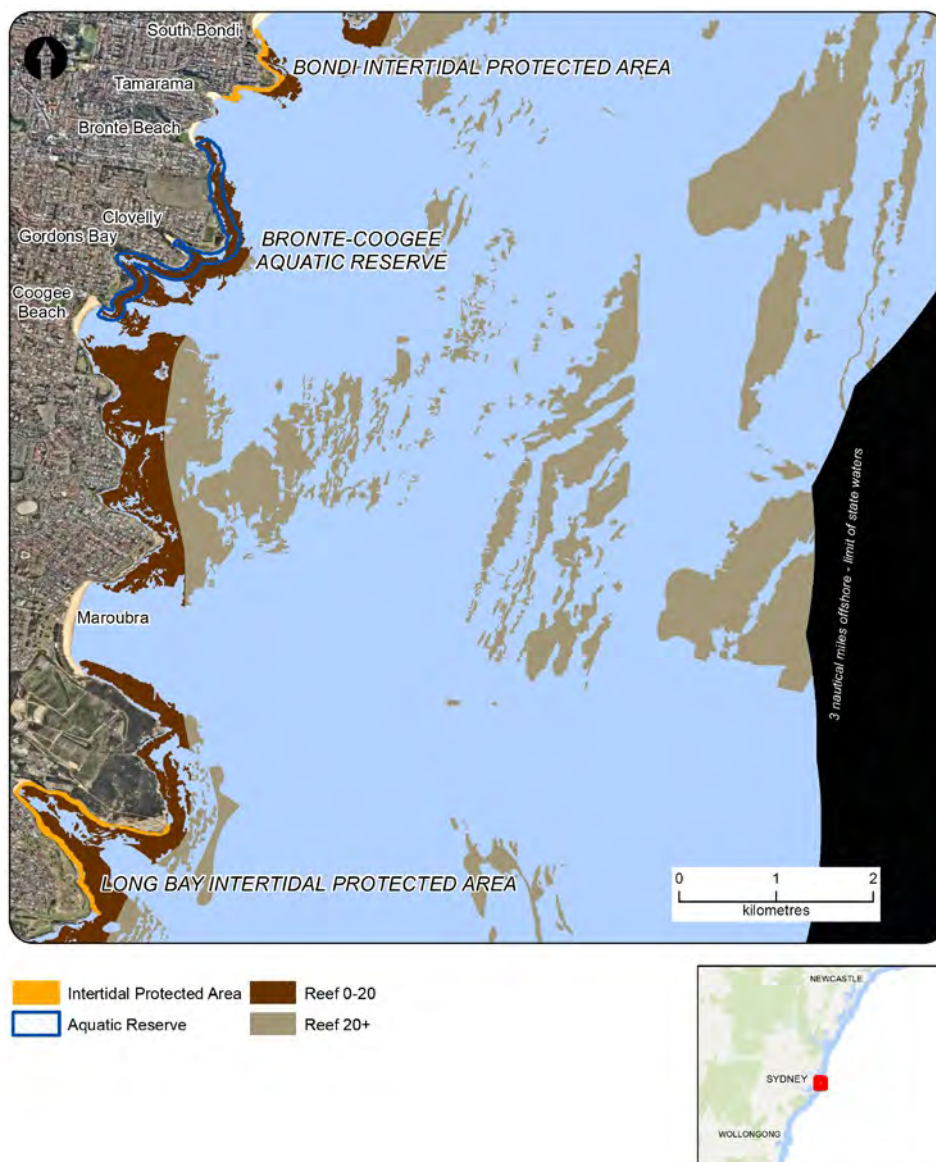


Figure 23. Current Bronte-Coogee Aquatic Reserve

## SITE OBJECTIVES

The primary objectives for the proposed Bronte-Coogee site are to:

- enhance the conservation of marine biodiversity
- promote marine ecotourism in the bioregion
- continue to provide for marine economic opportunities that are consistent with ecologically sustainable development, for example, low-risk commercial fishing activities
- establish and maintain public infrastructure to support access and use of the bioregion, for example moorings, boat ramps
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- reduce conflicts between users of the marine estate
- provide enhanced recreational experiences for particular user groups
- provide baseline monitoring areas (scientific reference sites)
- ensure appropriate mechanisms exist for community involvement in the management of the marine estate
- promote stewardship of the marine estate.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

The proposed site contains rocky shores, beaches, shallow and deep rocky reef, and shallow and deep soft sediment habitat. Rocky reefs have been documented to contain urchin-grazed barrens, fringe, kelp forests and sponge habitat. The assemblages associated with the intertidal and subtidal rocky reefs are consistent with those found more broadly in the region, and the area has been the focus of numerous scientific studies. The known threatened and protected species in the area includes the weedy seadragon (*Phyllopteryx taeniolatus*).























The area has a strong fishing heritage, and is used by the Gordons Bay and Coogee Bay Fishing Clubs and by recreational fishers and spearfishers. Scuba diving and snorkelling is popular, particularly in Gordons Bay and Clovelly Pool, which is well known as a place to see blue groper.

Some Ocean Trap and Line and Ocean Trawl commercial fishing takes place in the area.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 37.

**Table 37. Threats and expected benefits**

	Environmental				Social, cultural, economic			
Threats	 Climate change	 Commercial fishing	 Recreational fishing		 Conflict	 Habitat disturbance	 Reduction in species	 Lack of access infrastructure
Benefits	 Rocky shores	 Shallow reefs	 Deep reefs	 Fish assemblages	 Intrinsic & bequest	 Scientific reference sites	 Participation (wellbeing)	 Participation (socialising)
	 Species protected under FMA	 Species protected under BCA	 Biodiversity		 Enjoyment (biodiversity & beauty)	 Viability of business	 Individual enjoyment	 Aboriginal cultural heritage & use

# BRONTE-COOGEE

## PROPOSED MANAGEMENT RULES

The proposed site consists of a 676 hectare sanctuary zone and a 1352 hectare conservation zone. It replaces the existing aquatic reserve, fishing closure and the South Bondi (Mackenzies Point) IPA.

The proposed sanctuary zone extends from the south end of Bondi Beach to the north end of Coogee Beach and seaward to the 50-metre depth contour. No fishing of any sort would be permitted in this zone except for Aboriginal cultural use.

Seaward of the 50-metre depth contour, a conservation zone would extend to the three-nautical-mile limit of state waters (Figure 24). Fishing for lobster and abalone would be permitted in the proposed conservation zone, but other types of fishing would be prohibited except for Aboriginal cultural use (Table 38).

Activities identified as minimal–low risk can continue in both zones, including recreational boating, snorkelling and scuba diving.

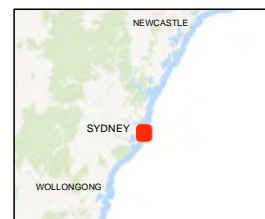
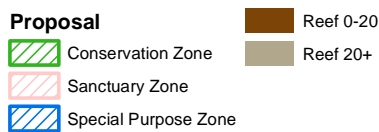
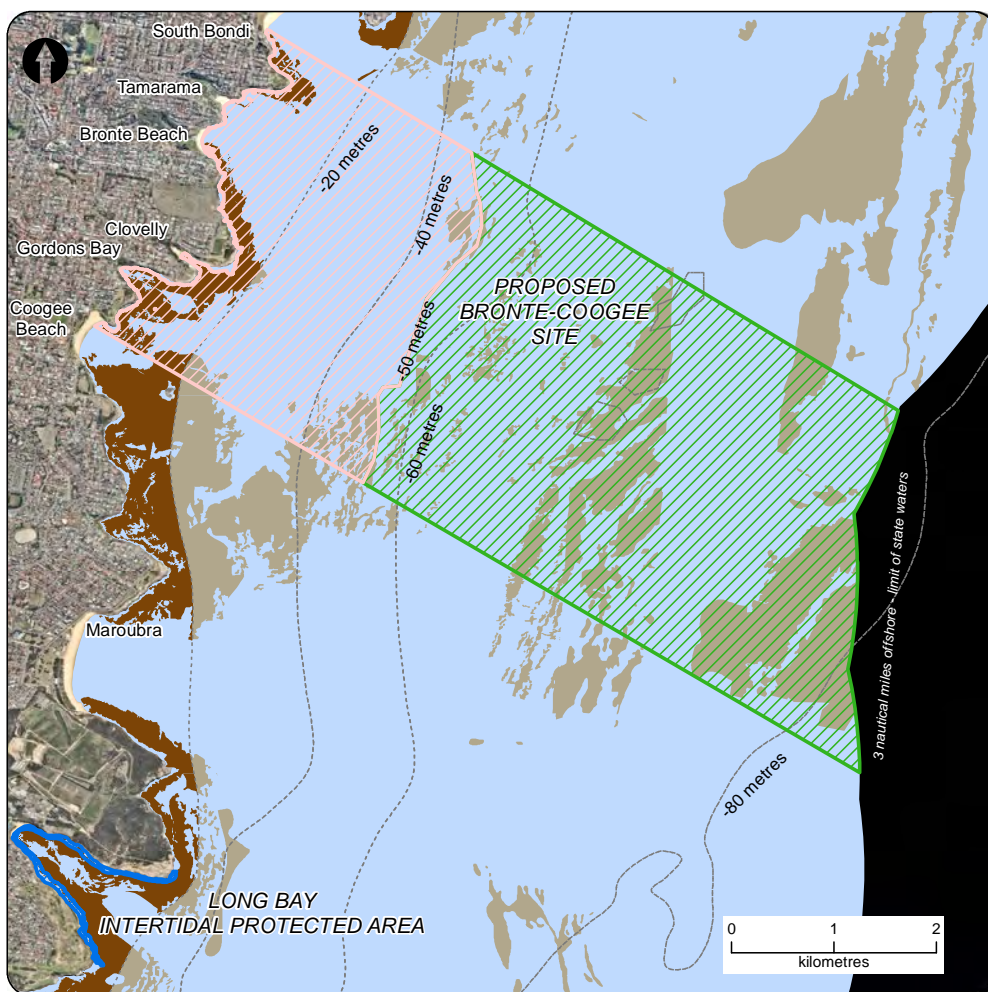













Figure 24. Proposed Bronte-Coogee site

**Table 38. Current activities and suggested permissible activities in the proposed Bronte-Coogee site**

Bronte-Coogee	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current aquatic reserve	✓	✓	✓ <sup>1</sup>	✓ <sup>2</sup>	✓	✓	✓	×	×	✓ <sup>3</sup>	✓
Proposed conservation zone	✓	✓	×	×	✓	✓	✓	×	×	×	✓
Proposed sanctuary zone	✓	✓	×	×	×	×	✓	×	×	×	✓

1 Fishing for blue groper not permitted in part of the aquatic reserve

2 Spearfishing not permitted in part of the aquatic reserve

3 Subject to existing NSW commercial fishing rules and regulations

4 Except for lobster and abalone fishing

## FEEDBACK FROM COMMUNITY ENGAGEMENT

The high environmental value of Bronte-Coogee was identified by community members, as well as by peak conservation stakeholders – the National Parks Association of NSW and Nature Conservation Council of NSW. Strengthening rules in the current aquatic reserve was proposed by local passive-use groups. Conflict between recreational fishers and passive users, and associated safety concerns, were also raised in submissions, including by Randwick City Council.



# CAPE BANKS

Cape Banks is on the northern side of the entrance to Botany Bay.

The proposed site expands the existing aquatic reserve (Figure 25) seaward so it incorporates adjacent shallow and deep reef areas to cover a total of 69 hectares (Figure 26).

## CURRENT MANAGEMENT

Cape Banks Aquatic Reserve was established in 2002. It covers 18 hectares from the foreshore at the bridge at Cape Banks to the Endeavour Light at Henry Head (Figure 25). Collecting marine invertebrates, cunjevoi and marine vegetation is prohibited, with the exception of lobster, abalone, sea lettuce and bait weed. Other fish species may be taken by legal methods. Recreational fishing competitions and collecting for scientific and educational purposes require a permit.

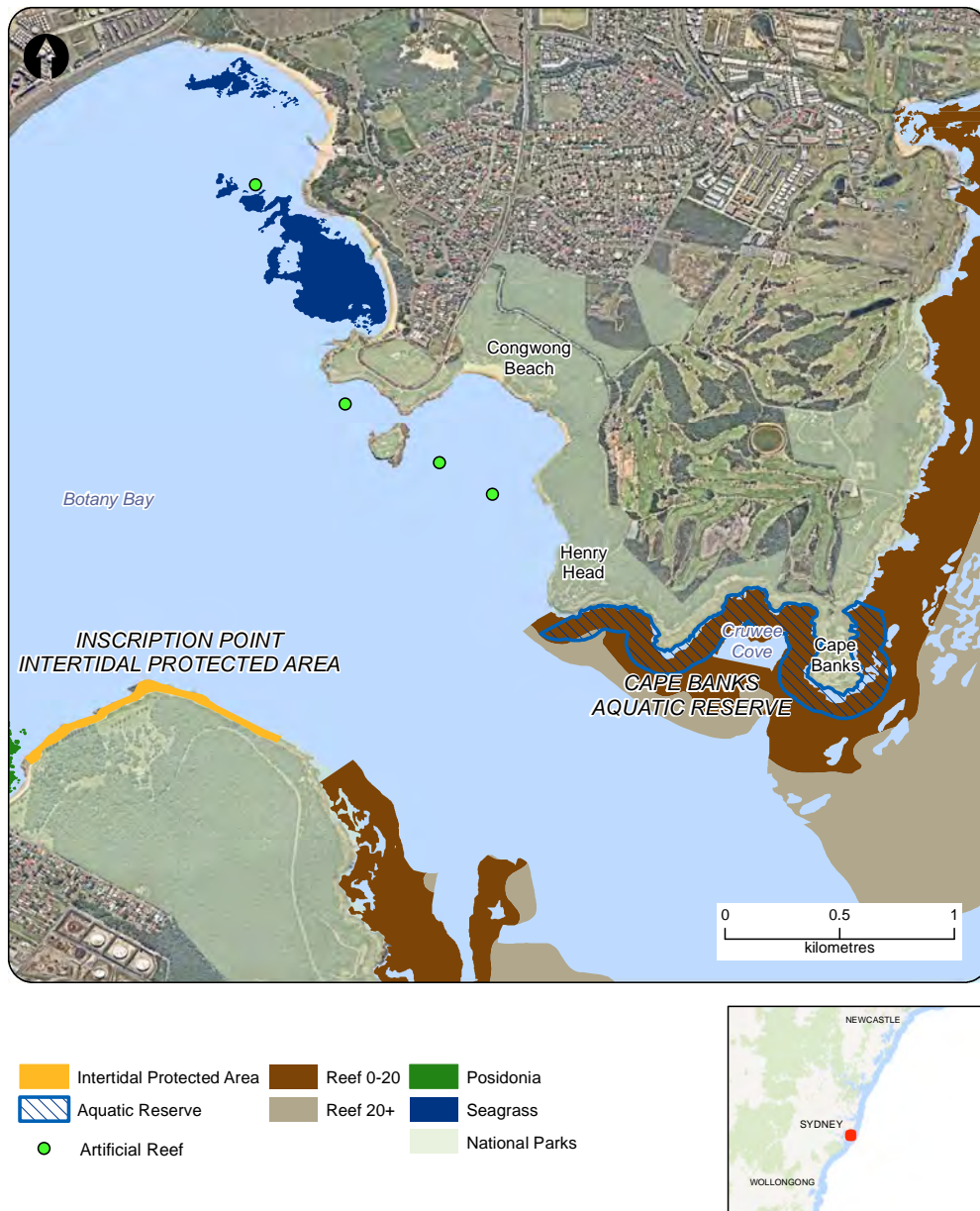


Figure 25. Current Cape Banks Aquatic Reserve

## SITE OBJECTIVES

The primary objectives for the proposed Cape Banks site are to:

- enhance the conservation of marine biodiversity
- maintain and support Aboriginal cultural use of the marine estate
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- enhance opportunities for scientific research, education and learning including Aboriginal culture
- provide baseline monitoring areas (scientific reference sites).

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

Cape Banks is adjacent to the Botany Bay National Park. It is a site of significant Aboriginal and non-Aboriginal heritage. Spiritual sites and evidence of past cultural use, including art, have been recorded in the Aboriginal Heritage Information Management System.

















It has been the site of extensive scientific research since the mid-1970s.

Some Ocean Trap and Line and Sea Urchin and Turban Shell commercial fishing takes place in the area.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 39.

**Table 39. Threats and expected benefits**

	Environmental				Social, cultural, economic		
Threats	 Climate change	 Commercial fishing	 Recreational fishing		 Habitat disturbance	 Reduction in species	 Lack of awareness
Benefits	 Rocky shores	 Shallow reefs	 Deep reefs	 Fish assemblages	 Aboriginal cultural heritage & use	 Intrinsic & bequest	 Scientific reference sites
	 Species protected under FMA	 Species protected under BCA	 Biodiversity				

## PROPOSED MANAGEMENT RULES

The proposed sanctuary zone (Figure 26) covers 69 hectares and would replace the existing Cape Banks Aquatic Reserve. All fishing would be prohibited in this zone (Table 40) except collection for scientific research purposes by permit and Aboriginal cultural use. Some activities identified as presenting a minimal–low risk to fish assemblages and threatened and protected marine species would continue in this zone. This includes snorkelling and scuba diving, and recreational boating.

# CAPE BANKS

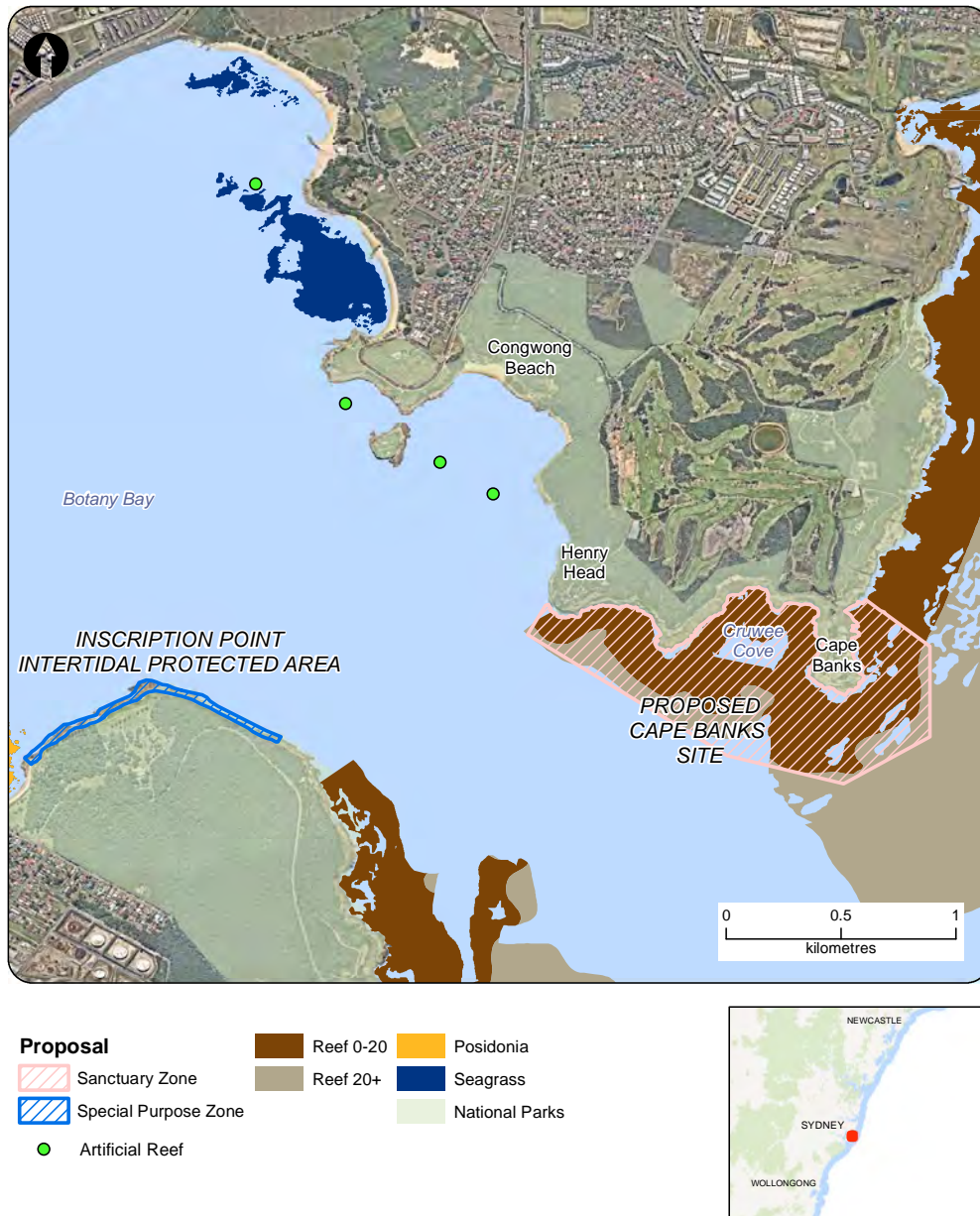













Figure 26. Proposed Cape Banks site

**Table 40. Current activities and suggested permissible activities in the proposed Cape Banks site**

Cape Banks	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current aquatic reserve	✓	✓	✓	✓	✓	✓	✓	✗ <sup>1</sup>	✗ <sup>1</sup>	✓ <sup>2</sup>	✓
Proposed sanctuary zone	✓	✓	✗	✗	✗	✗	✓	✗	✗	✗	✓

1 Except for lobster, abalone, sea lettuce and bait weed  
 2 Subject to existing NSW commercial fishing rules and regulations

## FEEDBACK FROM COMMUNITY ENGAGEMENT

The high environmental values of Cape Banks, and Botany Bay more broadly, were identified by peak conservation stakeholders – the National Parks Association of NSW and Nature Conservation Council of NSW.

Submissions from recreational fishers, including the Recreational Fishing Alliance and Shooters and Fishers Party, do not support any additional restrictions to fishing in Botany Bay, as fishing is already restricted in the existing Towra Point Aquatic Reserve, at the Botany

Bay breakwall, and in port and airport exclusion zones. Additionally, their view is that, as there is no commercial fishing in the bay, there is no need for a marine park: therefore, declaration of an additional protected area in Botany Bay would be in direct conflict with the current recreational fishing haven.



# TOWRA POINT

**Towra Point is in southern Botany Bay, between Kurnell and Taren Point.**

A large site is proposed, covering 1797 hectares (Figure 28). This proposed area expands on the existing Towra Point Aquatic Reserve (Figure 27).

## CURRENT MANAGEMENT

The current Towra Point Aquatic Reserve was established in 1987, and extends from Shell Point on the western side of Woollooware Bay to Bonna Point in the east. It covers an area of 1448 hectares (Figure 27) including Weeney Bay and Quibray Bay. It is divided into two zone types, a refuge zone and a sanctuary zone.

Collection of any fish, cunjevoi, invertebrates or marine vegetation, whether alive or dead, is prohibited from anywhere in the reserve except for Aboriginal cultural use. Hand-held lines and lawful recreational nets can be used to take fish within the refuge zone.

Oyster aquaculture occurs on leases in Woollooware Bay that were active when the aquatic reserve was declared.

Botany Bay has been a recreational fishing haven since 2002 and is closed to most commercial fishing. Fishing closures also apply in some parts of the Bay, such as a prohibition on taking shellfish on the eastern side of Taren Point adjacent to the aquatic reserve.

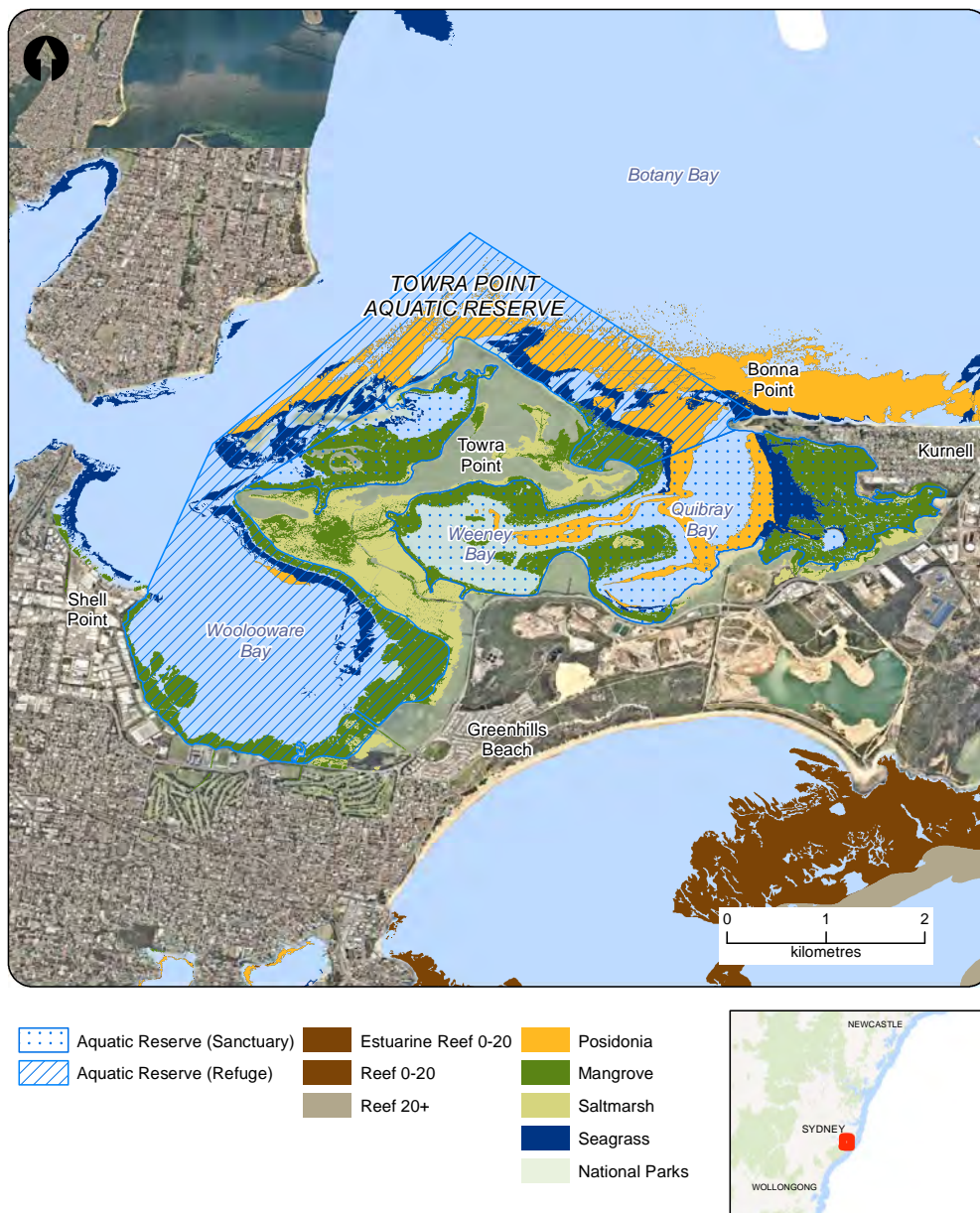


Figure 27. Current Towra Point Aquatic Reserve

## SITE OBJECTIVES

The primary objectives for the proposed Towra Point site are to:

- enhance the conservation of marine biodiversity
- reduce risks to identified threatened and protected species of the bioregion
- reduce risks to identified habitats of the bioregion
- establish and maintain public infrastructure to support access and use of the bioregion, for example moorings, boat ramps
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- provide baseline monitoring areas (scientific reference sites).

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

The reserve protects the largest and most diverse wetland complex in the Sydney region. The Reserve is adjacent to the Towra Point Nature Reserve, a wetland of International Importance and a declared [Ramsar site](#)<sup>1</sup>. It is an important nursery area for fish and invertebrates, it provides habitat for migratory seabirds, and it is rich in marine biodiversity.






















The reserve includes much of the remaining seagrass, mangrove and migratory wader bird habitats in Botany Bay. It contains large beds of the endangered population of *Posidonia australis* seagrass.

The area has significance to the local Aboriginal communities. Spiritual sites and evidence of past cultural use, including shell middens and art have been recorded.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 41.

**Table 41. Threats and expected benefits**

	Environmental				Social, cultural, economic			
Threats	 Boating	 Climate change	 Recreational fishing		 Habitat disturbance	 Wildlife disturbance	 Reduction in species	 Lack of access infrastructure
Benefits	 Saltmarsh	 Seagrass	 Mangroves	 Shallow reefs	 Intrinsic & bequest	 Scientific reference sites	 Aboriginal cultural heritage & use	 Participation (wellbeing)
	 Fish assemblages	 Species protected under FMA	 Species protected under BCA	 Biodiversity	 Participation (socialising)	 Enjoyment (biodiversity & beauty)		

<sup>1</sup> Ramsar sites are Wetlands of International Importance determined under the intergovernmental treaty known as the Convention on Wetlands or Ramsar Convention. This includes sites that contain representative, rare or unique wetland types and must be managed to maintain their ecological character and retain their essential functions and values for future generations.

# TOWRA POINT

## PROPOSED MANAGEMENT RULES

The proposed reserve maintains the existing sanctuary zone (556 hectares; Figure 27), but it also extends the boundaries of the existing refuge zone to incorporate additional adjacent *Posidonia australis* seagrass and shore bird habitat as a special purpose zone (1241 hectares; Figure 28).

In the sanctuary zone, removal or harm of marine biodiversity is prohibited, including fishing by any method, harm to marine animals or plants, anchoring in seagrass, hand gathering or collecting marine organisms whether dead or alive except for Aboriginal cultural use (Table 42).

In the proposed special purpose zone, subject to other **NSW fishing rules and regulations**, fish could be taken by recreational hand-held lines and crab traps. Crab traps are preferred to witches hats and hoop nets that are currently permitted in the refuge zone. Hand gathering and collecting would be prohibited. Anchoring would be permitted outside seagrass areas. Aquaculture on leases that were included in the original aquatic reserve declared in 1987 would continue.

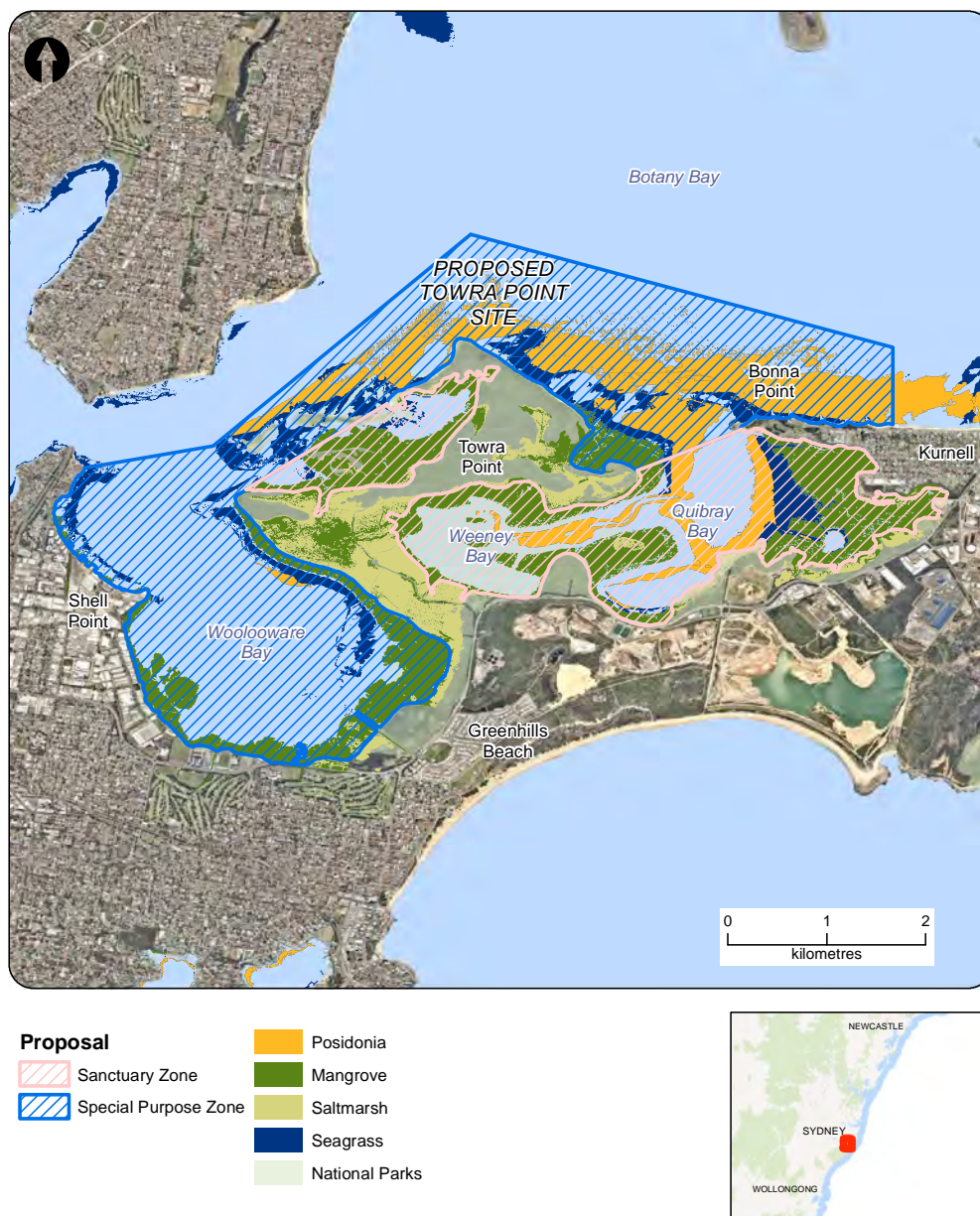













Figure 28. Proposed Towra Point site

**Table 42. Current activities and suggested permissible activities in the proposed Towra Point site**

Towra Point	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current aquatic reserve sanctuary zone	✓	✓ <sup>1</sup>	×	×	×	×	✓	×	×	×	✓
Current aquatic reserve refuge zone	✓	✓ <sup>1</sup>	✓	×	×	×	✓	×	×	×	✓
Proposed sanctuary zone	✓	✓ <sup>1</sup>	×	×	×	×	✓	×	×	×	✓
Proposed special purpose zone	✓	✓ <sup>1</sup>	✓	×	×	×	✓	×	×	×	✓

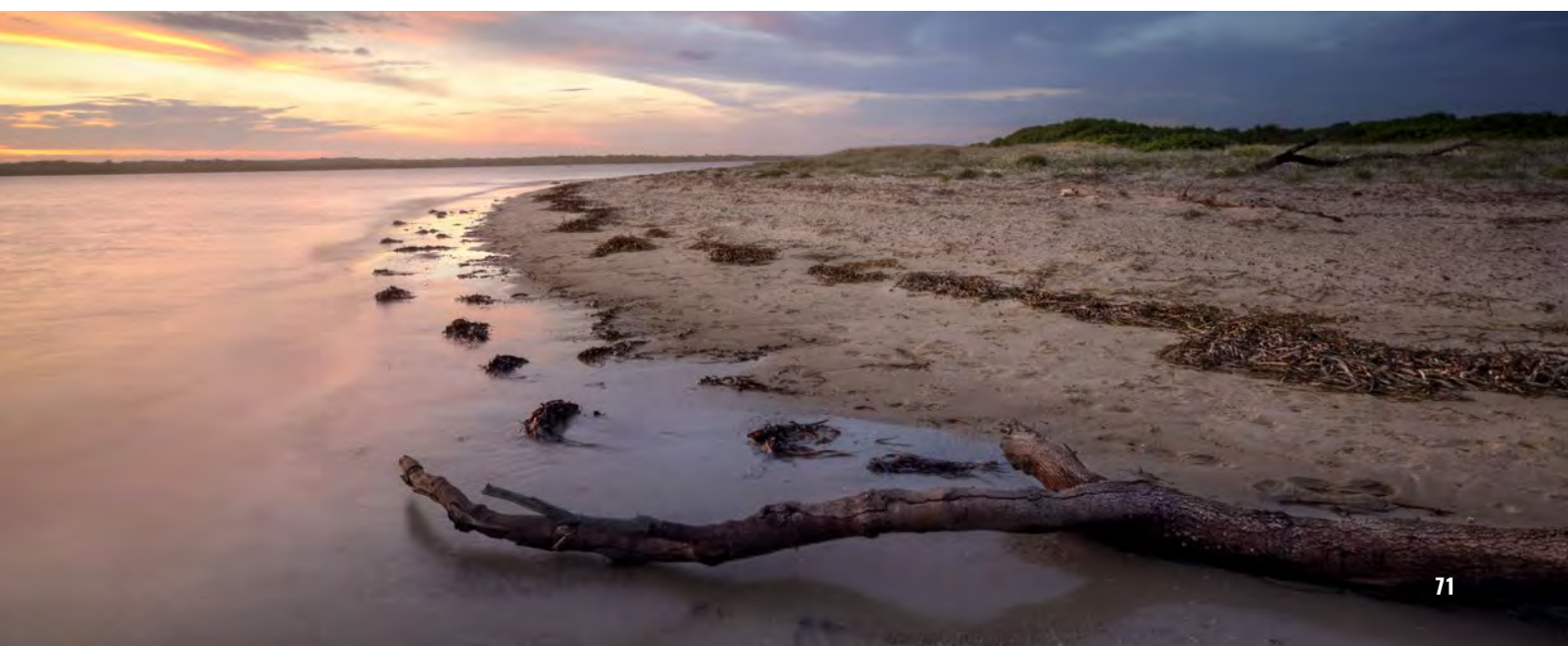
<sup>1</sup> Not in seagrass areas

## FEEDBACK FROM COMMUNITY ENGAGEMENT

Towra Point was identified as a site with high environmental values, in particular by peak conservation stakeholders – the National Parks Association of NSW and Nature Conservation Council of NSW. The Oatley Flora and Fauna Conservation Society made note of the significance of Towra Point as a nesting, roosting and feeding site for migratory shorebirds, and Sutherland Shire Council supported additional protection at this site.

Submissions from recreational fishers, including the Recreational Fishing Alliance and the Shooters and

Fishers Party, do not support any additional restrictions to fishing in the Botany Bay area, as fishing is already restricted in the existing Towra Point Aquatic Reserve, at the Botany Bay breakwall, and in the port and airport exclusion zones. Additionally, their view is that, as there is very little commercial fishing in the bay, there is no need for a marine park; therefore, declaration of an additional protected area in Botany Bay would be in direct conflict with its current status as a recreational fishing haven.



# BOAT HARBOUR

Boat Harbour is at the eastern end of Greenhills Beach, northeast of Cronulla.

It is proposed to establish a special purpose zone at the existing aquatic reserve. No changes to management rules are proposed (Figure 29).

## CURRENT MANAGEMENT

Boat Harbour Aquatic Reserve was established in 2002 and covers 65 hectares. It starts at the eastern end of Greenhills Beach, extends 100 metres perpendicularly to the reef at Merries Reef and Pimweli Rocks, and then extends east to three green ‘Sydney Water’ vents at Potter Point.

It is prohibited to collect cunjevoi or any other marine invertebrates, except for abalone, lobster, sea lettuce and bait weed. Line fishing and spearfishing are allowed, subject to other NSW fishing rules and regulations.

## SITE OBJECTIVES

The primary objective for the proposed Boat Harbour site is to:

- enhance the conservation of marine biodiversity.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

Boat Harbour is a relatively isolated location in the context of the Sydney region. The current reserve encompasses Pimweli Rocks and part of Merries Reef. It contains a beach and sandstone shoreline and other important marine habitats including boulder and subtidal reefs and soft sediments. The rocky shore provides a feeding ground for shorebirds, including threatened shorebird species such as sooty oystercatcher (*Haematopus fuliginosus*) and migratory waders.

The area has significance to the local Aboriginal communities. Spiritual sites and evidence of past cultural use have been recorded, including shell middens.

Some Ocean Trap and Line and Sea Urchin and Turban Shell commercial fishing takes place in the area.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 43.

## PROPOSED MANAGEMENT RULES

The proposed site maintains the existing boundaries and management arrangements of the current reserve with these rules applied to a 65 hectare special purpose zone (Figure 29).

## FEEDBACK FROM COMMUNITY ENGAGEMENT

Boat Harbour was identified as a site with high environmental values, in particular by peak conservation stakeholders – the National Parks Association of NSW and the Nature Conservation Council of NSW. The Oatley Flora and Fauna Conservation Society made note of the significance of Boat Harbour as a nesting, roosting and feeding site for migratory shorebirds.

The Recreational Fishing Alliance and others listed Boat Harbour as an important site for spearfishers because it provides easy access and protection from north-east winds.

Table 43. Threats and expected benefits


















	Environmental		Social, cultural, economic
Threats	 Recreational fishing		 Reduction in species
Benefits	 Rocky shores	 Species protected under BCA	 Biodiversity
			 Enjoyment (biodiversity & beauty)

Table 44. Current activities and suggested permissible activities in the proposed Boat Harbour site

Boat Harbour											
Current aquatic reserve	✓	✓	✓	✓	✓	✓	✓	×	× <sup>1</sup>	✓ <sup>2</sup>	✓
Proposed special purpose zone	✓	✓	✓	✓	✓	✓	✓	×	× <sup>1</sup>	✓ <sup>2</sup>	✓

- 1 Except for sea lettuce and bait weed
- 2 Subject to existing NSW commercial fishing rules and regulations

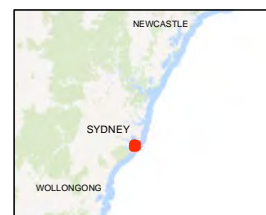


Figure 29. Proposed Boat Harbour site

# SHIPROCK

The site is located in Port Hacking, at the entrance to Burraneer Bay.

It is proposed to establish a sanctuary zone to replace the existing aquatic reserve. No changes to management rules are proposed. (Figure 30).

## CURRENT MANAGEMENT

The two hectare Shiprock Aquatic Reserve was established in 1982 off Turriel Point in Port Hacking. All fishing is prohibited in the Reserve.

## SITE OBJECTIVES

The primary objectives for the proposed Shiprock site are to:

- enhance the conservation of marine biodiversity
- promote marine ecotourism in the bioregion
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- reduce conflicts between users of the marine estate
- provide enhanced recreational experiences for particular user groups
- provide baseline monitoring areas (scientific reference sites)
- promote stewardship of the marine estate.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

A combination of strong currents, complex rocky reef and a sheltered estuarine position support a diverse environment inhabited by a wide variety of marine vegetation, invertebrates and fish. More than 130 species of fish have been recorded here, along with dense sponge communities. Accordingly, Shiprock is one of the best known sheltered diving sites in the Sydney area.

The area has significance to the local Aboriginal communities. Spiritual sites and evidence of past cultural use, including shell middens, have been recorded.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 45.

## PROPOSED MANAGEMENT RULES

Current management rules would be continued to help address threats and realise benefits at this site (Table 46).

## FEEDBACK FROM COMMUNITY ENGAGEMENT

The high environmental value of Shiprock was identified by peak conservation stakeholders – the National Parks Association of NSW and the Nature Conservation Council of NSW. Submissions generally identified this site as an important dive site, including for its easy land access for divers. Sutherland Shire Council supported additional protection at this site.

Table 45. Threats and expected benefits


	Environmental			Social, cultural, economic			
Threats	 Boating	 Climate change	 Recreational fishing	 Conflict	 Habitat disturbance	 Reduction in species	
Benefits	 Seagrass	 Rocky shores	 Shallow reefs	 Participation (wellbeing)	 Participation (socialising)	 Enjoyment - biodiversity & beauty	 Scientific reference sites
	 Fish assemblages	 Biodiversity		 Aboriginal cultural heritage and use	 Intrinsic & bequest	 Viability of businesses	 Individual enjoyment



Table 46. Current activities and suggested permissible activities in the proposed Shiprock site

Shiprock	Boating	Anchoring	Line fishing	Spear fishing	Lobster fishing	Abalone fishing	Scuba diving /snorkelling	Hand gathering	Collecting marine vegetation	Commercial fishing	Aboriginal cultural heritage & use
Current aquatic reserve	✓	✓ <sup>1</sup>	✗	✗	✗	✗	✓	✗	✗	✗	✓
Proposed sanctuary zone	✓	✓ <sup>1</sup>	✗	✗	✗	✗	✓	✗	✗	✗	✓

1 Not in seagrass areas

# CABBAGE TREE CREEK

Cabbage Tree Creek is near Maianbar on the southern side of Port Hacking, adjacent to the Royal National Park.

A 23 hectare sanctuary zone is proposed, incorporating all of Cabbage Tree Creek and The Basin (Figure 31).

## CURRENT MANAGEMENT

There are no current spatial management restrictions for this area.

## SITE OBJECTIVES

The primary objectives for the proposed Cabbage Tree Creek site are to:

- enhance the conservation of marine biodiversity
- reduce risks to identified threatened and protected species of the bioregion
- enhance the intrinsic benefits derived by the community from the marine estate
- enhance bequest values for current and future generations
- reduce conflicts between users of the marine estate
- provide enhanced recreational experiences for particular user groups
- provide baseline monitoring areas (scientific reference sites)
- promote stewardship of the marine estate.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

Cabbage Tree Creek is a small tidal creek on the southern side of Port Hacking. It is surrounded by the Royal National Park. The area contains extensive estuarine habitats including saltmarsh, seagrass and mangroves. The creek is popular with tourists and locals, and is used for swimming, snorkelling, kayaking, paddleboarding and fishing.

Boating access to the creek is limited due to the shallow water at the entrance to the creek, and a low footbridge over the creek. Upstream of the bridge, the creek opens into a deep basin with *Posidonia australis* seagrass around the margins.























The only commercial fishing that occurs in the area is hand gathering for saltwater nippers.

The area has significance to the local Aboriginal communities. Spiritual sites and evidence of past cultural use have been recorded including shell middens and grinding grooves.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 47.

Table 47. Threats and expected benefits

	Environmental				Social, cultural, economic			
Threats	 Boating	 Climate change	 Recreational fishing		 Habitat disturbance	 Wildlife disturbance	 Reduction in species	 Conflict
Benefits	 Saltmarsh	 Seagrass	 Beaches & mudflats	 Mangroves	 Participation (wellbeing)	 Participation (socialising)	 Enjoyment (biodiversity & beauty)	 Scientific reference sites
	 Shallow soft sediments	 Fish assemblages	 Species protected under FMA	 Biodiversity	 Aboriginal cultural heritage & use	 Intrinsic & bequest	 Individual enjoyment	

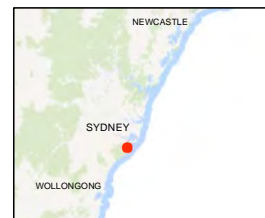
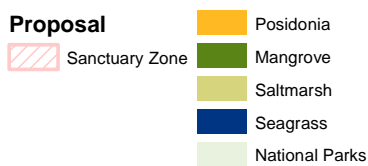
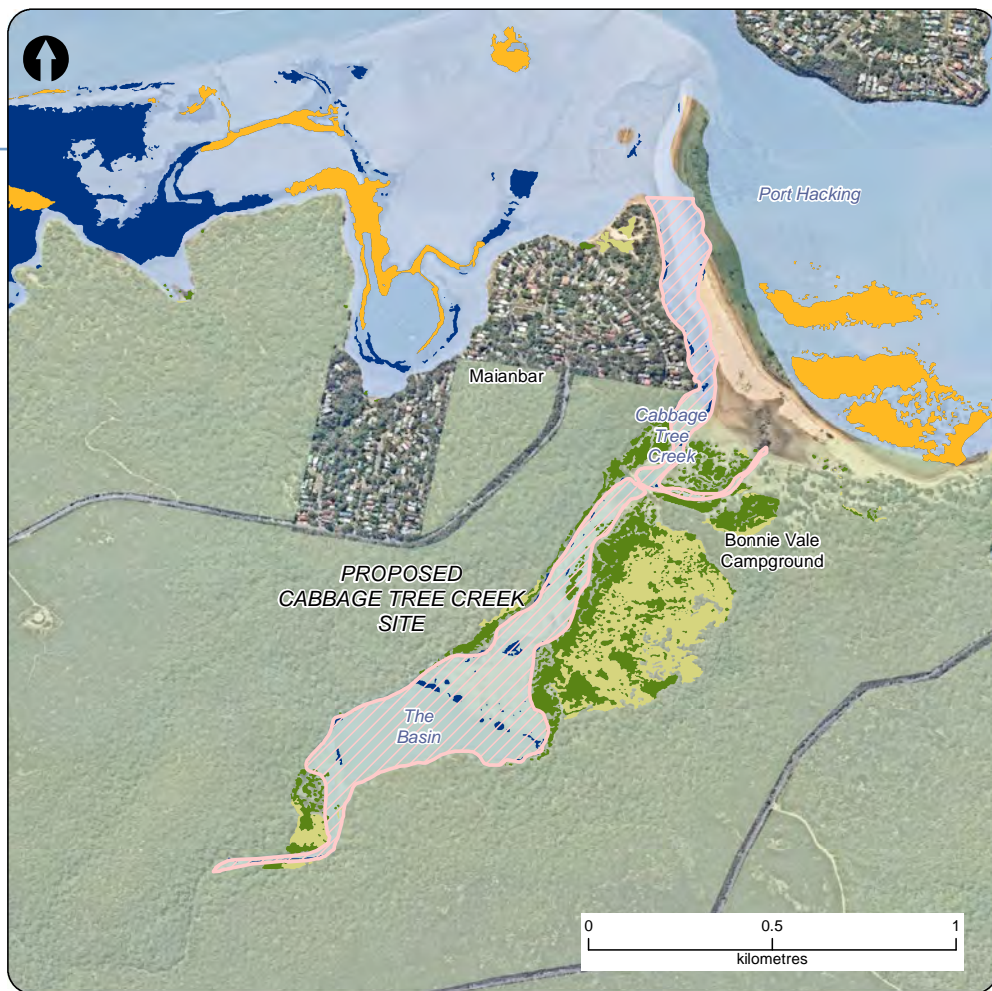


Figure 31. Proposed Cabbage Tree Creek site

## PROPOSED MANAGEMENT RULES

In this zone, removal or harm of marine biodiversity is prohibited, including fishing by any method, anchoring in seagrass areas, harm to marine animals or plants, or collecting marine organisms whether dead or alive (Table 48).

Permissible activities would include those that are minimal-low risk, such as recreational boating, swimming, snorkelling, scuba diving and Aboriginal cultural use.

## FEEDBACK FROM COMMUNITY ENGAGEMENT

Cabbage Tree Creek was identified as a site with high environmental values by peak conservation stakeholders – the National Parks Association of NSW and the Nature Conservation Council of NSW. Sutherland Shire Council supported additional protection at this site.

Table 48. Current activities and suggested permissible activities in the proposed Cabbage Tree Creek site

Cabbage Tree Creek											
Current	✓ <sup>1</sup>	✓ <sup>2</sup>	✓	×	✓	✓	✓	✓	✓	×	✓
Proposed sanctuary zone	✓ <sup>1</sup>	✓ <sup>2</sup>	×	×	×	×	✓	×	×	×	✓

1 Access is restricted by shallow waters and low clearance footbridge

2 Not in seagrass areas

3 Commercial fishing for saltwater nippers is currently permitted in Port Hacking

# OFFSHORE ARTIFICIAL REEFS

There are currently two offshore artificial reefs in the Hawkesbury bioregion, and two more are approved to be deployed.

The Sydney Offshore Artificial Reef is located east of The Gap, near South Head, at the entrance to Port Jackson. It is a single module and was deployed in 2011 in approximately 40 metres of water. It was deployed using funds from the Recreational Fishing Trust and is intended to benefit recreational fishers.

The Southern Sydney 'JD' Artificial Reef is about 2.5 kilometres southeast of Jibbon Point, offshore from the Royal National Park. It sits in about 30 metres of water and consists of 36 concrete modules over two areas measuring 100 metres by 100 metres each. It was deployed in 2017 using funds from the Recreational Fishing Trust and is intended to benefit recreational fishers.

Two additional artificial reefs are approved for deployment off the Newcastle area (Swansea) and Wollongong (Port Kembla). Commonwealth approval has been received and funding has been approved from the Recreational Fishing Trust.

It is proposed to establish special purpose zones at each of these four areas.

## CURRENT MANAGEMENT

Line fishing and spearfishing are permitted under general NSW fishing rules and regulations, and responsible fishing actions are promoted by a code of conduct. Scuba diving is not recommended due to safety concerns.

## SITE OBJECTIVES

The primary objectives for the proposed offshore artificial reef sites are to:

- continue to provide for marine economic opportunities that are consistent with ecologically sustainable development
- establish and maintain public infrastructure to support access and use of the bioregion
- reduce conflicts between users of the marine estate
- provide enhanced recreational experiences for particular user groups
- reduce regulatory complexity in the bioregion to improve self-compliance.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

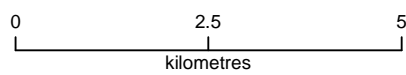
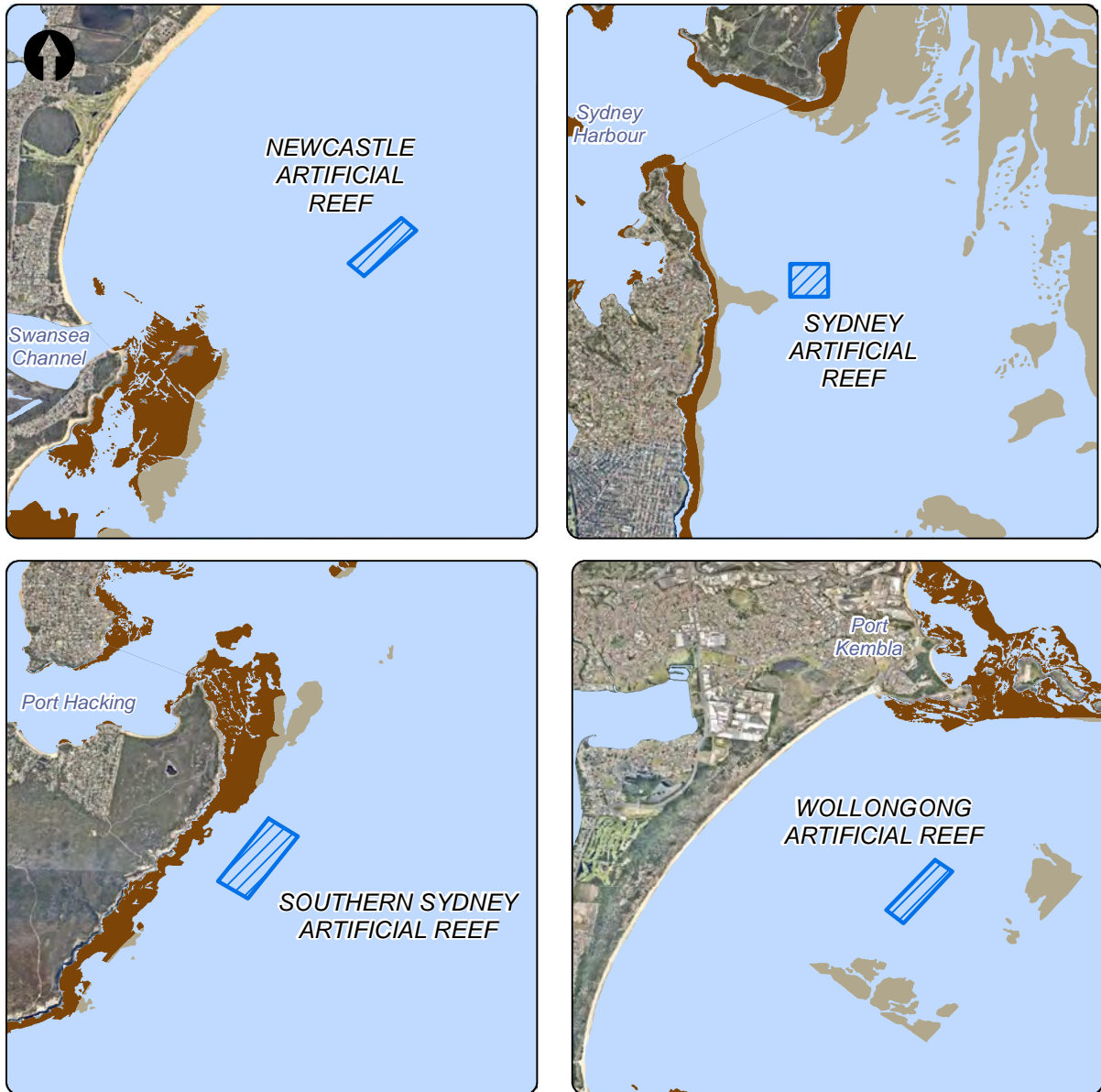
The artificial reefs are very popular with boat-based fishers. Some conflict has arisen in the past with scuba diving groups visiting the reefs.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE




The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 49.

Table 49. Threats and expected benefits

	Environmental	Social, cultural, economic				
Threats	 Lack of access infrastructure	 Conflict	 Regulation			
Benefits	 Participation (wellbeing)	 Participation (socialising)	 Enjoyment (biodiversity & beauty)	 Enjoyment (consumptive use)	 Viability of business	 Individual enjoyment



**Proposal**

	Special Purpose Zone		Reef 0-20
	Reef 20+		

NOTE: see Cape Banks map for Botany Bay Artificial Reefs









Figure 32. Offshore Artificial Reefs

# OFFSHORE ARTIFICIAL REEFS

## PROPOSED MANAGEMENT RULES

It is proposed to establish a 21 hectare special purpose zone surrounding the Sydney Artificial Reef, a 42 hectare special purpose zone around the Southern Sydney Artificial Reef, and 22 hectare special purpose zones at the Newcastle and Wollongong Artificial Reef locations; this will formalise the management rules that are currently in place as a code of conduct. No changes to management rules are proposed.

**Table 50. Current activities and suggested permissible activities in the proposed Offshore Artificial Reefs sites**

Offshore Artificial Reefs	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Scuba diving /snorkelling	 Commercial fishing
Current	✓	✓	✓	✓	× <sup>1</sup>	×
Proposed special purpose zone	✓	✓	✓	✓	×	×

1 Currently not advised under voluntary code of conduct

## FEEDBACK FROM COMMUNITY ENGAGEMENT

Feedback from recreational fishers identified safety issues and conflicts with scuba divers at recreational fishing infrastructure sites, such as fish aggregating devices and artificial reefs. Some submissions proposed a dive closure or exclusion zone at these sites as a way to manage these issues. The use of artificial reefs to offset site closures for line fishers and spearfishers was also proposed.

# ROYAL NATIONAL PARK

The proposed Royal National Park site is located south of Port Hacking, adjacent to the Royal National Park.

An 85 hectare conservation zone is proposed for the area from Martin Head southwards to the northern end of Garie Beach, including Wattamolla Beach and Wattamolla Lagoon, and 100 metres seaward from the mean high water mark (Figure 33).

## CURRENT MANAGEMENT

There are no current spatial management restrictions for this area.

## SITE OBJECTIVES

The primary objectives for the proposed Royal National Park site are to:

- enhance the conservation of marine biodiversity
- continue to provide for marine economic opportunities that are consistent with ecologically sustainable development
- maintain and support Aboriginal cultural use of the marine estate
- enhance bequest values for current and future generations
- reduce conflicts between users of the marine estate
- provide enhanced recreational experiences for particular user groups.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

The proposed reserve is in the waters offshore from Australia’s oldest national park. The area is, therefore, afforded some protection through management of the catchments as natural areas and by virtue of some of the remoteness and limited vehicle access to the coastal areas.

Features of the proposed area include rock platforms, cliffs, beaches and small lagoons. The fringing rocky reef along this coast is fairly narrow. The seabed is mostly sandy beyond this. The area is popular with bushwalkers, and passive recreation such as swimming, snorkelling, and scuba diving is popular at Wattamolla. There is vehicle access and limited parking at Wattamolla Beach. There is some shore-based and boat-based fishing in the area.


The area has significance to the local Aboriginal communities. Spiritual sites and evidence of past cultural use, including shell middens, have been recorded.

Lobster, Ocean Trap and Line and Sea Urchin and Turban Shell commercial fishing takes place in the area.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 51.

Table 51. Threats and expected benefits

	Environmental			Social, cultural, economic			
Threats	 Commercial fishing	 Recreational fishing		 Conflict	 Habitat disturbance	 Reduction in species	
Benefits	 Rocky shores	 Shallow reefs	 Fish assemblages	 Aboriginal cultural heritage and use	 Intrinsic & bequest	 Viability of businesses	 Participation (wellbeing)
	 Species protected under FMA	 Species protected under BCA	 Biodiversity	 Participation (socialising)	 Enjoyment (biodiversity & beauty)	 Individual enjoyment	

# ROYAL NATIONAL PARK

## PROPOSED MANAGEMENT RULES












In this zone, moderate–high risk activities are prohibited because of impacts on marine biodiversity, such as habitats, fish assemblages, and threatened and protected species (Table 52). These activities include recreational shore and boat-based line and trap fishing, hand gathering, collecting marine vegetation and commercial fishing from the Ocean Trap and Line and Sea Urchin and Turban Shell fisheries. Spearfishing would be prohibited to address user conflict between spearfishers and swimmers.

Activities that can continue in this zone present a minimal–low risk to fish assemblages and threatened and protected marine species listed under the *Fisheries Management Act 1994* or *Biodiversity Conservation Act 2016*. Examples of these activities include snorkelling, scuba diving, recreational boating, Aboriginal cultural use and lobster and abalone fishing.



Figure 33. Proposed Royal National Park site

**Table 52. Current activities and suggested permissible activities in the proposed Royal National Park site**

Royal National Park	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ <sup>1</sup>	✓
Proposed conservation zone	✓	✓	✗	✗	✓	✓	✓	✗	✗	✗ <sup>2</sup>	✓

1 Subject to existing NSW commercial fishing rules and regulations

2 Except for lobster and abalone fishing

## FEEDBACK FROM COMMUNITY ENGAGEMENT

The Royal National Park coastline and Wattamolla were included in this proposal as a result of community submissions. Wattamolla is perceived by community members as being relatively pristine due to its position in the Royal National Park, and submissions identified its importance as a popular snorkelling and diving location. In their submission, the National Parks Association of NSW (Southern Sydney Branch) proposed a marine park to adjoin the Royal National Park.

A number of submissions from recreational fishers, including the Recreational Fishing Alliance, raised concerns about a loss of spearfishing sites, especially safe and accessible ones along the coastline of the Royal National Park.



# FIVE ISLANDS

The Five Islands is a group of offshore islands and subtidal reefs located east of Port Kembla. It includes the foreshore and marine waters of the Five Islands Nature Reserve.

Two zones are proposed: a small, 123 hectare sanctuary zone around Flinders Islet, and a 1263 hectare special purpose zone around the other four islands in the group (Figure 34).

## CURRENT MANAGEMENT

The Five Islands Nature Reserve covers five small offshore islands (Flinders Islet, Bass Islet, Martin Islet, Big Island and Rocky Islet) of an area of approximately 26 hectares. It is an IUCN 1A nature reserve<sup>2</sup> under the *National Parks and Wildlife Act 1974*. The site offers protection for roosting birds of listed migratory species under both JAMBA and CAMBA<sup>3</sup>, so provisions under the *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999* must also be considered.

Landing of vessels on the Islands without a permit is prohibited, but there are currently no specific restrictions on other activities around the Five Islands.

## SITE OBJECTIVES

The primary objectives for the proposed Five Islands site are to:

- reduce risks to identified threatened and protected species of the bioregion
- reduce risks to identified habitats of the bioregion
- maintain and support Aboriginal cultural use of the marine estate
- provide enhanced recreational experiences for particular user groups.

The secondary objectives that apply to this site are listed in Table 5.

## ENVIRONMENTAL, SOCIAL, CULTURAL AND ECONOMIC VALUES

Five Islands consists of a cluster of small islands between 0.5 and 3.5 kilometres offshore. The islands provide an example of geological and geomorphologic processes related to the formation of the Sydney Basin and subsequent landscape evolution.

The islands are recognised habitat and breeding sites for the sooty oystercatcher, classified as 'vulnerable' under the *Biodiversity Conservation Act 2016*. They are also known breeding sites for the wedge-tailed shearwater (*Puffinus pacificus*) and the short-tailed shearwater (*Puffinus tenuirostris*), which are both listed under JAMBA, and habitat for the White-bellied Sea-eagle (*Haliaeetus leucogaster*) which is listed under CAMBA. The islands are also important haul out and feeding areas for Australian fur seal (*Arctocephalus pusillus*) and sea lions. A colony of little penguin is also known to use the area.

The waters around the islands are used by kayakers, scuba divers, recreational fishers and spearfishers.

The Five Islands are an important Aboriginal cultural site due to continuing cultural associations and occupation of the area. Sea level rise isolated the islands and would have submerged and eroded much evidence of Aboriginal use of the area, although middens remain on Big Island. The islands have significant Aboriginal cultural significance as Dreaming stories and as a ceremony site.

Five Islands is also of regional significance for its European cultural heritage values, particularly the local settlement history of the Illawarra.

Some Ocean Trap and Line, Ocean Haul, Ocean Trawl and Sea Urchin and Turban Shell commercial fishing takes place in the area.

<sup>2</sup> The International Union for Conservation of Nature (IUCN) classifies protected areas according to their management objectives. Category 1a: Strict Nature Reserve are protected areas that are strictly set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values.

<sup>3</sup> To ensure the conservation of important migratory birds the Australian Government has fostered international cooperation through a range of important agreements, including bilateral migratory bird agreements with Japan (JAMBA) and China (CAMBA).

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 53.

## PROPOSED MANAGEMENT RULES

The Flinders Islet sanctuary zone would prohibit all fishing except Aboriginal cultural use (Table 54).

The special purpose zone would prohibit the collection of marine vegetation, cunjevoi or any marine invertebrates except abalone and rock lobster.

















Access to the foreshore of the offshore islands would also be restricted.

## FEEDBACK FROM COMMUNITY ENGAGEMENT

Five Islands was identified as a site with high environmental values by peak conservation stakeholders – the National Parks Association of NSW and the Nature Conservation Council of NSW.

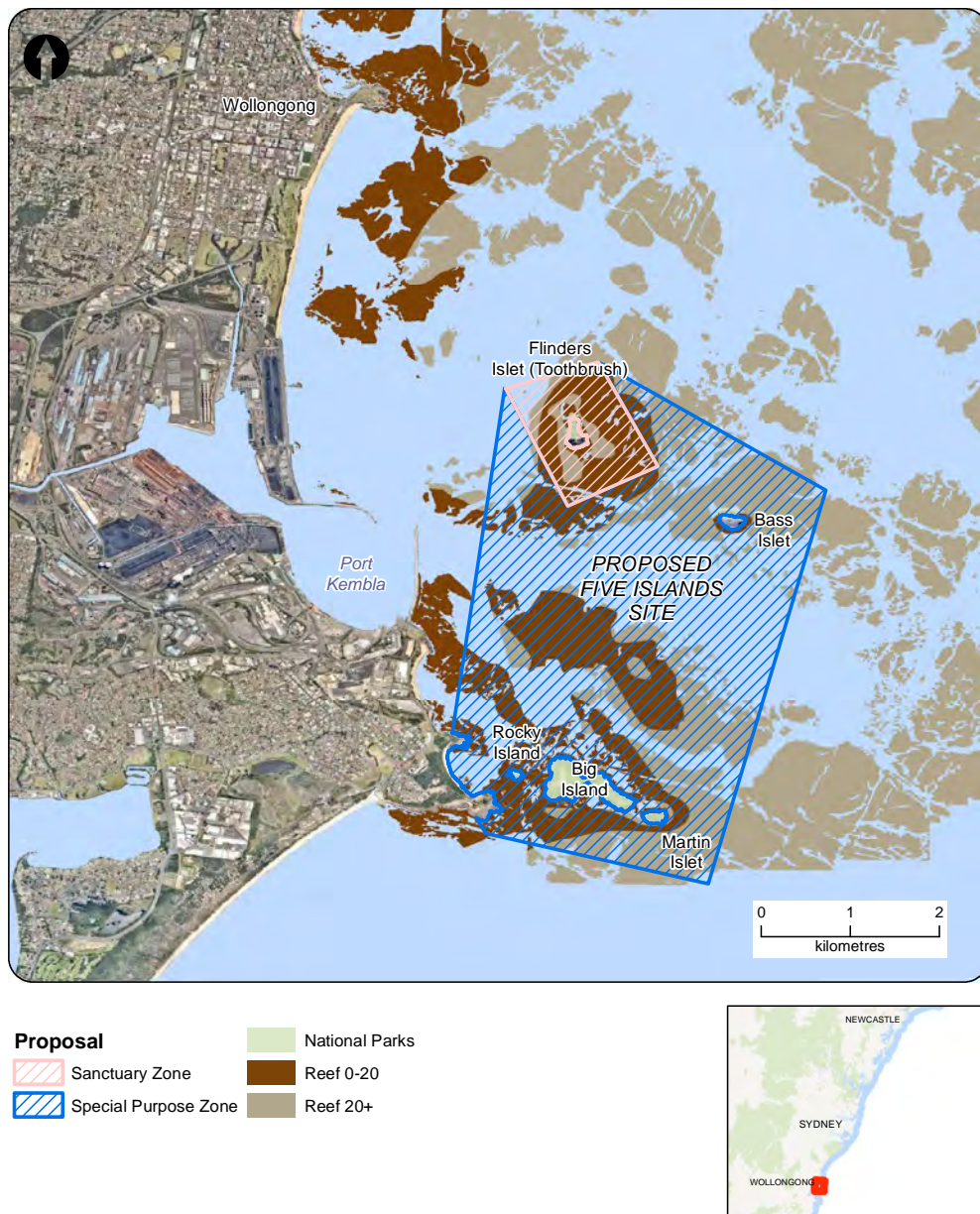
Submissions from recreational fishers and fishing groups raised concerns about a loss of fishing and spearfishing sites, especially safe and accessible sites in the Illawarra, including at Five Islands.

Table 53. Threats and expected benefits












	Environmental				Social, cultural, economic			
Threats	 Climate change	 Commercial fishing	 Recreational fishing		 Reduction in species	 Habitat disturbance		
Benefits	 Rocky shores	 Shallow reefs	 Deep reefs	 Fish assemblages	 Aboriginal cultural heritage & use	 Enjoyment (biodiversity & beauty)	 Participation (socialising)	 Participation (wellbeing)
	 Species protected under FMA	 Species protected under BCA	 Biodiversity					



# FIVE ISLANDS



**Table 54. Current activities and suggested permissible activities in the proposed Five Islands site**

Five Islands	 Boating	 Anchoring	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ <sup>1</sup>	✓
Proposed sanctuary zone	✓	✓	✗	✗	✗	✗	✓	✗	✗	✗	✓
Proposed special purpose zone	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓ <sup>1</sup>	✓

1 Subject to existing NSW commercial fishing rules and regulations



# INTERTIDAL PROTECTED AREAS

## CURRENT MANAGEMENT

There are currently nine IPAs in the Hawkesbury Bioregion: Bungan Headland, Mona Vale Headland, Dee Why Headland, Shelly Beach Headland, Sydney Harbour, Bondi, Long Bay, Inscription Point, and Cabbage Tree Point (Port Hacking). These IPAs extend from the mean high water mark to 10 metres seaward of the mean low water mark. They protect all species of cunjevoi and invertebrates except abalone, eastern rock lobster (*Sagmariasus verreauxi*) and southern rock lobster (*Jasus edwardsii*).

IPAs are currently managed by a fishing closure under the *Fisheries Management Act 1994*. It is proposed to transfer management of these areas to special purpose zones; the aim is to reduce legislation volume and complexity in the bioregion. No changes to rules or boundaries are proposed.

## SITE OBJECTIVES

The primary objectives for this proposal are to:

- enhance the conservation of marine biodiversity
- reduce regulatory complexity in the bioregion to improve self-compliance.

The secondary objectives that apply to this site are listed in Table 5.

## PRIORITY THREATS TARGETED TO ENHANCE BENEFITS AT THIS SITE

The threats that will be addressed at this site and expected benefits to be enhanced are listed in Table 55.








## PROPOSED MANAGEMENT RULES

No changes to management rules or closure boundaries are proposed, other than changes covered elsewhere in this paper: at Shelly Beach Headland (Figure 17) and the part of Sydney Harbour IPA covered by proposed new areas at North Harbour (Figure 19), Chowder Bay (Figure 20), Camp Cove (Figure 21), and Nielsen Park (Figure 22).










## FEEDBACK FROM COMMUNITY ENGAGEMENT

The importance of protecting intertidal habitats and species came through community feedback. Many submissions called for additional compliance and enforcement in these areas and expressed views that these areas are lacking baseline data, are not being actively managed, or add to the complexity of rules and a lack of consistency in management in the bioregion. Submissions proposed maintaining the current IPAs as well as increasing protection by converting them to sanctuary zones.

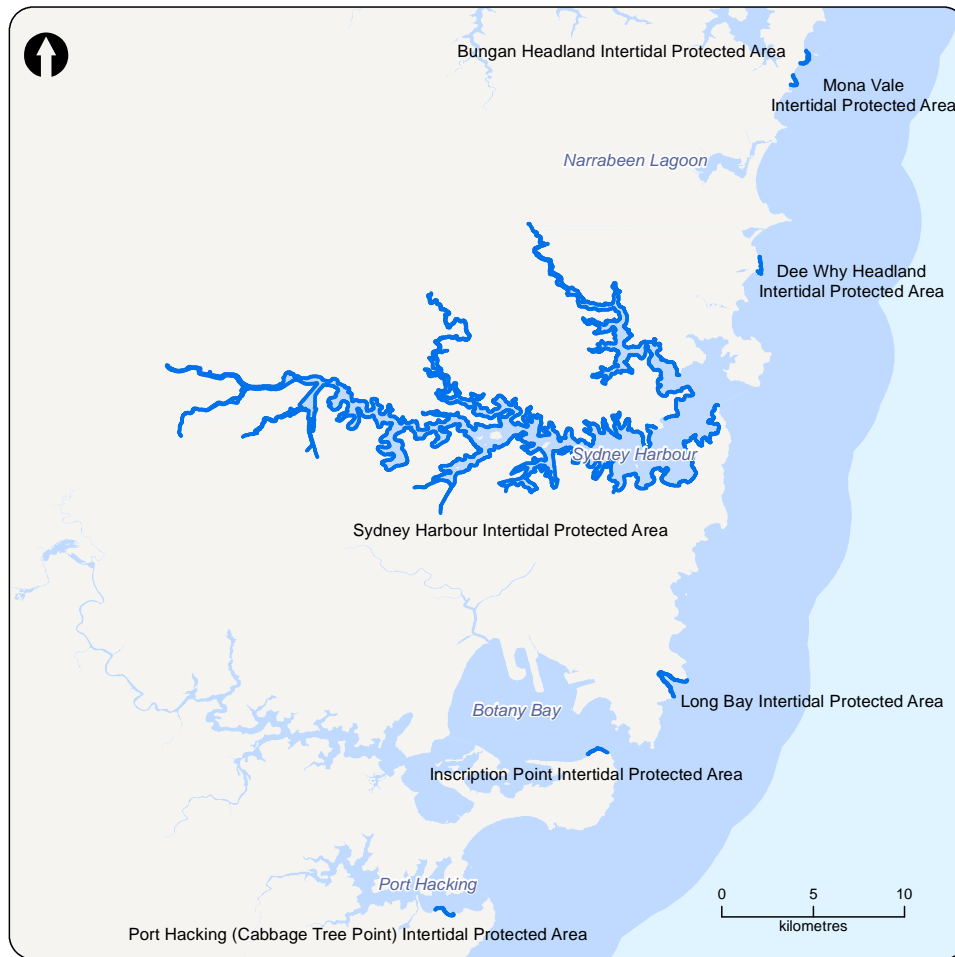
Table 55. Threats and expected benefits


	Environmental		Social, cultural, economic		
Threats	 Recreational fishing		 Reduction in species	 Habitat disturbance	 Regulation
Benefits	 Rocky shores	 Biodiversity	 Enjoyment (biodiversity & beauty)		

**Table 56. Current activities and suggested permissible activities in the proposed Intertidal Protected Areas IPA sites**

Intertidal protected areas <sup>1</sup>	 Line fishing	 Spear fishing	 Lobster fishing	 Abalone fishing	 Scuba diving /snorkelling	 Hand gathering	 Collecting marine vegetation	 Commercial fishing	 Aboriginal cultural heritage & use
Current	✓	✓	✓	✓	✓	✗	✓	✓ <sup>2</sup>	✓
Proposed special purpose zones	✓	✓	✓	✓	✓	✗	✓	✓ <sup>2</sup>	✓

- 1 Applies to Bungan Headland, Mona Vale, Dee Why Headland, Sydney Harbour, Long Bay, Inscription Point, and Port Hacking (Cabbage Tree Point) IPAs
- 2 Subject to existing NSW commercial fishing rules and regulations



 Intertidal Protected Area

NOTE: Shelly Head, South Bondi (Mackenzies Point) and the components of Sydney Harbour Intertidal Protected Area where other management options are proposed would be replaced by the new management rules at those sites.



**Figure 35. Intertidal Protected Areas (IPAs)**





PART 2

**DISCUSSION PAPER** Site proposals

ENHANCING CONSERVATION of MARINE BIODIVERSITY  
HAWKESBURY SHELF **MARINE BIOREGION**