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27 September 2018

**RE: Formal submission in strong support of a marine park with sanctuary zones in the Hawkesbury Shelf Marine Bioregion.**

To the Marine Estate Management Authority,

The Nature Conservation Council of NSW (NCC) and the Australian Marine Conservation Society (AMCS) welcome the opportunity to contribute to phase 3 of the public consultation of the Hawkesbury Shelf Bioregion (HSB) assessment, including the proposal for a marine park for the bioregion.

NCC is the peak environment organisation in NSW, representing over 150 community member groups with a combined support base of over 60,000 people across the state. AMCS is the national peak body for marine conservation in Australia representing 260,000 supporters.

**INTRODUCTION**

Our organisations strongly support the proposed Marine Park with sanctuary zones and request that the conservation benefits of the Marine Park be further enhanced by the inclusion of additional sanctuary zones and other complementary measures.

Our organisations have been at the forefront of advocacy for the marine environment for decades and want our ocean estuaries, bays and harbour to be clean and healthy and filled with diverse and abundant marine life. We are confident we share this view with the NSW public and coastal stakeholder groups, who are seeking the same outcome from this proposal.

We note and welcome the Government's commitment to enhancing marine biodiversity for the HSB. NSW residents are coastal people - we love the beach, are proud of our coasts and harbours, and love to get out on the water boating, swimming, surfing, diving and fishing. Our amazing ocean backyard is

central to our lifestyle. In the Sydney region our coastal waters are our pride and joy, and our greatest natural asset.

Our Harbour, beaches and bays in the Sydney region also contribute hugely to our economy. Over 13 million visitors travel from across the world or interstate to experience it, contributing over \$11 billion to the NSW economy each year.<sup>1</sup> It is globally unique to have a big city so connected to the coast, with relatively healthy waters with wild and natural places. With so much at stake it is crucial to protect our beautiful blue backyard.

We acknowledge the significant amount of work that has gone into the NSW marine estate management process over the last six years and welcome the holistic strategy that has been finalised by the Marine Estate Management Authority. Establishing and maintaining our network of multi-use marine parks in NSW is part of the NSW Marine Estate Statewide Strategy which complements other Government reforms and initiatives including Aboriginal cultural heritage reforms, the Commercial Fisheries Business Adjustment Program, Aboriginal cultural fishing reforms, the NSW Climate Change Policy Framework, biosecurity reforms, land management and biodiversity reforms, Crown land reforms, the Regional Ports Strategy, the NSW Freight and Ports Plan, NSW Boating Now and the Moorings Review program.<sup>2</sup>

Overall we strongly support the draft environmental, economic, cultural, social, scientific, educational and governance objectives of the proposed marine park.

We strongly support the creation of a multi-use marine park for the Hawkesbury Shelf marine bioregion including no take or sanctuary zones. Below we outline a number of recommendations to ensure that this marine protected area will meet the first objective in the Marine Estate Management Act which is (a) To provide for the management of the marine estate of New South Wales consistent with the principles of ecologically sustainable development in a manner that: (i) promotes a biologically diverse healthy and productive marine estate and (ii) facilitates the maintenance of ecosystem integrity<sup>3</sup>.

We are deeply concerned by the announcement of Minister Blair before the public consultation was completed that “there will be no loss of fishing rights or access under the proposed marine park sites put forward” and “as a result the NSW Government has taken lockouts off the table”. Fishing is acknowledged through the Government’s own threat and risk assessment process as a risk to the marine environment. The Minister’s pre-emptive announcement has significantly impacted the integrity of this consultation process.

## **RECOMMENDATIONS**

The scientific research is unequivocal; a large scale marine park with sanctuary zones is needed to protect the marine biodiversity of the bioregion and to protect the interests of those that rely on the marine environment for income (eg. tourism, fishing) and enjoyment (swimming, snorkeling, fishing etc).

Our organisations cannot recommend anything less than a large-scale multiple-use marine park with a comprehensive, adequate and representative (CAR) network of marine sanctuaries for the Hawkesbury

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<sup>1</sup> Destination NSW 2017: Travel to Sydney Snapshot June 2017.  
<https://www.destinationnsw.com.au/wp-content/uploads/2014/04/Sydney-YE-Jun-17.pdf>

<sup>2</sup> NSW Marine Estate Strategy 2018 – 2018, pages 24- 28  
[https://www.marine.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0007/815596/Marine-Estate-Management-Strategy-2018-2028.pdf](https://www.marine.nsw.gov.au/__data/assets/pdf_file/0007/815596/Marine-Estate-Management-Strategy-2018-2028.pdf)

<sup>3</sup> Marine Estate Management Act 2014 No 72 <https://www.legislation.nsw.gov.au/#/view/act/2014/72/part1/sec3>

Shelf Bioregion, however, we note that the government's consultation is for a marine park with a network of 25 smaller areas throughout the bioregion. Our submission responds to that proposal.

Our organisations make the following recommendations regarding the proposed marine park:

- The marine park must include adequate sanctuary zones comprising a minimum of 30% of the bioregion as recommended by the scientific community in order to allow marine biodiversity to recover and thrive and to provide baseline monitoring areas as scientific reference sites to monitor the threats and the effectiveness of marine management initiatives in this region. Other marine parks in NSW protect at least 6% of the bioregion in sanctuary zones. The Great Barrier reef marine park has more than 30% sanctuary protection. A marine park area without sanctuary zones is not an effective marine park at all. The science and a number of international agreements and recommendations support a greater proportion of protection. For example, a key recommendation from the IUCN World Parks Congress hosted in Sydney in 2014 was to urgently increase the ocean area that is protected with a well-connected system of marine protected areas (sanctuary zones) which should include at least 30% of each marine habitat.<sup>4</sup>
- The sanctuary zones should be designed to meet the internationally recognised CAR principles for design of marine protected areas ensuring that they will be comprehensive, adequate and representative<sup>5</sup>. The science demonstrates clearly and unequivocally, marine sanctuary zones are essential for biodiversity conservation and ecosystem health and resilience. Without sanctuary zones other initiatives throughout the bioregion, such as water quality measures, will be less effective at reducing the threats to our marine environment and the social values that are derived from them. We have included a list of sites with high environmental value should be considered for marine sanctuary zoning as part of the proposed marine park for the Hawkesbury Shelf Bioregion (see **Appendix 1**).
- That the marine park for the Hawkesbury shelf be consistent with other marine parks in NSW by having large outer boundaries. Having a large marine park with multiple-use zoning allows for better management of the park, when compared with the smaller, multi-site marine park as proposed. The current system of disconnected and small aquatic reserves have been shown to have limitations for protecting conservation values<sup>6</sup>.
- There must be adequate funding provided for management of the new marine park including public and stakeholder education about the marine park and zoning schemes and compliance monitoring to ensure that the marine park zoning rules are adhered to.
- The final park proposal must also include measures to improve water quality and restore marine habitats throughout the bioregion.

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<sup>4</sup> ICUN World Parks Congress (2014) A strategy of innovative approaches and recommendations to enhance implementation of marine conservation in the next decade.

<https://drive.google.com/drive/u/0/search?q=world%20parks%20congress>

<sup>5</sup> The Ecology Centre, The University of Queensland: MPA Design Principles for Australia May 2009

<sup>6</sup> Sydney Institute of Marine Science (2015) [http://www.sims.org.au/wp-content/uploads/2015/08/1507\\_Sydney-Reef-study-finds-protection-zones-failing-to-stop-species-loss-SIMS1pdf](http://www.sims.org.au/wp-content/uploads/2015/08/1507_Sydney-Reef-study-finds-protection-zones-failing-to-stop-species-loss-SIMS1pdf)

## **ADDITIONAL COMMENTS AND BACKGROUND INFORMATION**

We provided the following detailed comments as background to and in addition to the specific recommendations we make above.

### **A bioregion under threat**

The final NSW Marine Estate Threat and Risk Assessment<sup>7</sup> (TARA) identified that the Hawkesbury Shelf Bioregion is the most threatened bioregion in the state. This is linked in part to being the region with the highest population level, and also the region with the least amount of protection. The case for improved protection is clear and strong.

The government has previously identified fifteen priority threats that represent 'HIGH' and 'MODERATE' risks to the environmental assets of the Hawkesbury Bioregion. Eleven of these threats were also recognised to be increasing.

The Hawkesbury Shelf Marine Bioregion Assessment discussion paper<sup>8</sup> (the discussion paper) recognises the existing aquatic reserves within the HSB fail to meet internationally recognised conservation planning principles of comprehensiveness, adequacy and representativeness (CAR). The 2.4% sanctuary coverage of the HSB proposed by the government falls well below other marine parks in NSW and below internationally recommended protection levels. The discussion paper also recognises that less than 1% of the Hawkesbury Shelf Bioregion is currently protected. In contrast, marine sanctuaries provide a high level of protection for other bioregions across NSW. Marine sanctuaries make up between 12% (Solitary Islands) and 27.5% (Cape Byron) of those marine parks.

We are concerned that as proposed, the marine park is inadequate to ensure the conservation of the marine biodiversity of this bioregion. As noted, the IUCN recommends that 30% of each marine habitat be fully protected from extractive activities in a network of highly protected marine protected areas<sup>9</sup>.

As recognised in the Hawkesbury Shelf discussion paper, only spatial management provides any mitigation value against climate change which one of the greatest threats to the assets and benefits provided by the marine estate. This is consistent with scientific understanding of the value of marine parks for increasing the resilience of the marine environment to the impacts of climate change (warming sea temperatures, coral bleaching, sea level rise, increasing storm events and ocean acidification), but also the capacity to recover from these disturbances<sup>10</sup>.

In 2016 scientists reported the first identified temperate coral bleaching within Sydney Harbour<sup>11</sup>. Fully protected sanctuary zones based on CAR principles have the greatest ability to build resilience in the marine environment. Reducing our contribution to climate change is also an important part of our responsibility to managing the marine environment.

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<sup>7</sup> Marine Estate Management Authority; NSW Marine Estate Threat and Risk Assessment Report Final Report August 2017

<sup>8</sup> Marine Estate Management Authority (2014) - Hawkesbury Shelf Marine Bioregion Assessment discussion paper Suggested management initiatives

[https://www.marine.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0009/595044/hawkesbury-shelf-discussion-paper.pdf](https://www.marine.nsw.gov.au/__data/assets/pdf_file/0009/595044/hawkesbury-shelf-discussion-paper.pdf)

<sup>9</sup> IUCN Resolution: Wcc-2016-Res.050-EN

[https://portals.iucn.org/library/sites/library/files/resrecfiles/WCC\\_2016\\_RES\\_050\\_EN.pdf](https://portals.iucn.org/library/sites/library/files/resrecfiles/WCC_2016_RES_050_EN.pdf)

<sup>10</sup> Roberts Et al (2017) PNAS: Marine reserves can mitigate and promote adaptation to climate change

<sup>11</sup> ABC News (2016) Coral bleaching found in Sydney Harbour, rising sea temperature maybe cause, scientists say.  
<http://www.abc.net.au/news/2016-04-19/coral-bleaching-found-in-sydney-harbour,-rising-sea-temperatures/7336>

A marine park with sanctuary zones has the potential to address more of the high and moderate risks identified by the TARA compared with any other measure. A well designed marine park will also help build resilience against cumulative threats identified such as climate change, multiple threats to fish assemblages and wildlife, threats to cultural heritage including Aboriginal and non-aboriginal heritage values and water quality than any of the other individual initiatives. However we note that the benefits of spatial management would be significantly reduced if anything less than a large-scale multi-use marine park with adequate sanctuary zones was established.

In addition, our organisations are concerned that given the large number of risk ratings which are based on limited data there is a need for a management response that is based on the precautionary principle. This is consistent with the objects of the Marine Estate Management Act. A large-scale multi-use CAR marine park with sanctuary zones provides the best precautionary response for biodiversity conservation and risk management.

We have thriving marine parks to our north and south, but none throughout the Hawkesbury Shelf Bioregion. The NSW marine parks around Jervis Bay, Port Stephens, and Cape Byron are highly valued destinations for all types of ocean users with flourishing tourism and recreational fishing opportunities. This is a wonderful opportunity to protect our coastal lifestyle that is so important to the people who call this part of the NSW coast home.

### **The case for a Sydney marine park**

A multi-use marine park with adequate sanctuary zones will protect the biodiversity values of the bioregion and ensure all users can continue to enjoy Sydney's wonderful coastal lifestyle in their own way. It will further enhance the iconic value of Sydney's marine environment for local businesses and as a major drawcard for national and international tourism<sup>12</sup>.

A marine park would not need to impede existing commercial activities within and beyond the Harbour. Marine parks with a network of fully protected marine sanctuaries exist adjacent to major cities and ports at Brisbane (Moreton Bay Marine Park) and Melbourne (Port Phillip Heads Marine National Park).

### **Scientific support for marine parks**

There is strong scientific support for a marine park for the central region. In 2010 the Ocean Science Council of Australia (OSCA) and Australian Marine Science Association (AMSA) along with 152 scientists signed a letter to leaders supporting marine protected areas and calling for 10% of all state and Federal oceans and coastal seas to be fully protected in sanctuary zones<sup>13</sup>. "Australia has committed, through international agreements, to 'effectively protect' at least 10% of its oceans and coastal seas.

The Australian Marine Science Association's position statement has called for Australian governments to protect at least 10% of State and Commonwealth marine waters in no-take (sanctuary) zones, with rare or vulnerable ecosystems protected at higher levels and 30% recommended<sup>14</sup>.

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<sup>12</sup> Centre for Policy Development (2015) Our Harbour Our Asset report by CPD fellow Caroline Hoisington on the economic value of Sydney Harbour.

<sup>13</sup> Ocean Science Council of Australia (2010) Science statement marine protected areas [http://www.meeuwig.org/wp-content/uploads/2015/08/2010\\_ScienceStatement\\_Marine-Protected-Areas.pdf](http://www.meeuwig.org/wp-content/uploads/2015/08/2010_ScienceStatement_Marine-Protected-Areas.pdf)

<sup>14</sup> Australian Marine Sciences Association (2012) Position Statement on Marine Protected Areas [https://www.amsa.asn.au/sites/default/files/AMSA\\_MPA\\_PositionStatement\\_June2012\\_final.pdf](https://www.amsa.asn.au/sites/default/files/AMSA_MPA_PositionStatement_June2012_final.pdf)

A 2015 survey of marine life on rocky reefs around Sydney<sup>15</sup> showed that partially protected aquatic reserves are not sufficient to protect fish life. The survey found that aquatic reserves with only partial protection were no better than unprotected areas in terms of both the number of fish species and number of large fish (sized 25cm or more). “Fully protected no-take zones, like the Cabbage Tree Bay Aquatic Reserve, had greater abundance and diversity of large fish”.

NSW’s other marine parks are working. A new peer-reviewed study<sup>16</sup> of the Solitary Islands Marine Park shows species are important to recreational fishers, such as snapper and grey morwong, were bigger and more abundant in sanctuary zones than in partially protected zones or waters open to fishing. In the Port-Stephens Marine Park<sup>17</sup>, snapper were almost twice as big and three times more abundant in sanctuary zones.

New research has shown that over a ten year period some inshore Australian fish populations have declined by 31%. This is despite Australia’s fisheries management comparing favourably with standards in many overseas fisheries. A greatly expanded network of marine parks with sanctuary zones is needed as an important part of reversing this trend and to ensure naturally functioning food webs and fish for the future<sup>18</sup>.

### **Community support for existing marine parks**

Recreational fishing thrives in existing NSW marine parks where between 73 and 88 percent of the marine park area is available for recreational fishing. Support for sanctuary zones within marine parks is high for recreational fishers and this support increases with age of the marine park.<sup>19</sup>

ReachTEL polling conducted one week after the announcement of the marine park for the HSB in Four key coastal electorates in Sydney and the Central Coast found that over 75% support for the proposed marine park with sanctuary zones<sup>20</sup>.

There is strong public support for marine parks and sanctuaries. The six existing marine parks in NSW are holiday hotspots, including for recreational fishing. Surveys in areas with existing marine parks have shown that more than 80% of people, including those who fish, support local marine parks and sanctuaries.

In 2008 government commissioned polling from the Solitary Islands Marine Park<sup>21</sup> found 82% of resident recreational fishers supported the marine park. In the Jervis Bay Marine Park 82% of recreational fishers

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<sup>15</sup> Sydney Institute of Marine Science (2015) [http://www.sims.org.au/wp-content/uploads/2015/08/1507\\_Sydney-Reef-study-finds-protection-zones-failing-to-stop-species-loss-SIMS1.pdf](http://www.sims.org.au/wp-content/uploads/2015/08/1507_Sydney-Reef-study-finds-protection-zones-failing-to-stop-species-loss-SIMS1.pdf)

<sup>16</sup>Malcolm et. al., 2018. Targeted fishes are larger and more abundant in ‘no-take’ areas in a subtropical marine park. *Estuarine, Coastal and Shelf Science*, [online] 212. Available at: <https://www.sciencedirect.com/science/article/pii/S0272771417310582> [accessed 11 September 2018].

<sup>17</sup>Harasti et. al., 2018. Increase in Relative Abundance and Size of Snapper *Chrysophrys auratus* Within Partially-Protected and No-Take Areas in a Temperate Marine Protected Area. *Frontiers in Marine Science*, [online] 5. Available at: [https://www.openchannels.org/sites/default/files/literature/increase\\_in\\_relative\\_abundance\\_and\\_size\\_of\\_snapper\\_chrysophrys\\_auratus\\_within\\_partially-protected\\_and\\_no-take\\_areas\\_in\\_a\\_temperate\\_marine\\_protected\\_area.pdf](https://www.openchannels.org/sites/default/files/literature/increase_in_relative_abundance_and_size_of_snapper_chrysophrys_auratus_within_partially-protected_and_no-take_areas_in_a_temperate_marine_protected_area.pdf) [accessed 11 September 2018].

<sup>18</sup> Aquatic Conservation (2018) Rapid declines across Australian fishery shock indicate global sustainability targets will not be achieved without an expanded network of ‘no-fishing’ reserves.

<sup>19</sup> Navarro, M. & Langlois, T (2018) Recreational fishers’ support for no-take marine reserves is high and increases with reserve age.

<sup>20</sup> ReachTEL Poll (2018) Support for marine conservation and Sydney Marine Park available from NCCNSW

<sup>21</sup> NSW Marine Parks Authority 2009, Solitary Islands Marine Park: zoning plan review report. <http://www.mpa.nsw.gov.au/pdf/SolitaryIslands-ReviewReport.pdf>

support the sanctuary zones in the marine park<sup>22</sup>. Polling of over 1000 residents of NSW in 2014 found that 93% of people support marine sanctuaries and amongst recreational fishers that support is 91%.<sup>23</sup>

The Marine Estate Management Strategy is an opportunity to fill the gap in the NSW marine park network and put in place the important protection required to ensure the marine environment of the bioregion can continue to be enjoyed by all users and we conserve the unique marine life that call this region home.

### **Business case for marine parks**

A Sydney Marine Park, like marine parks across the NSW coast, would further highlight the iconic status of the Region's environment and serve to boost tourism potential. Council and tourism bodies across NSW actively promote local marine parks and they feature heavily in tourism advertising. The Narooma Chamber of Commerce and Tourism proudly boasts on its website that since the introduction of the Batemans Marine Park "those who regularly fish in the area have supported bigger and more plentiful catches".<sup>24</sup>

A study in 2015 of the economic value of Sydney Harbour recognised that tourism already presented the highest revenue relating to harbour use. There is the potential for this value to be expanded within the rest of the bioregion through declaration of a marine park.<sup>25</sup>

A marine parks authority commissioned survey of businesses in the first six years after the creation of the Solitary Islands Marine Park estimated turnover for businesses surveyed increased 20% or an additional \$3 million, with increased employment. The survey indicated most of this growth was due to an increase in visitation to the area.<sup>26</sup>

The diving industry, along with other passive recreation tourism operators, relies on the health and abundance of fish stocks and habitat to support marine life. The NSW diving industry directly contributes \$513m and indirectly contributes a further \$969m annually to the NSW economy.<sup>27</sup>

With a growing population and more and more people using and enjoying the beach and ocean in many different ways we risk loving our marine environment to its detriment. A marine park for the bioregion will recognise the importance of these areas to the community and provide coastal businesses an opportunity to showcase world-class protection.

### **Consultation process**

The consultation process has been lengthy, this is now the fifth round of community consultation in six years on the issue of marine estate reforms in NSW.

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<sup>22</sup> NSW Marine Parks Authority 2008, Jervis Bay Marine Park Community Survey Final Report. <http://www.mpa.nsw.gov.au/pdf/jbmp-community-survey-2008.pdf>

<sup>23</sup> Galaxy Research (2014) Community attitude Survey prepared for the Dive Industry Association of Australia. Available by contacting NCC

<sup>24</sup> Batemans Bay Marine Park Website <http://www.narooma.org.au/batemans-marine-park/>

<sup>25</sup> Centre for Policy Development (2015) Our Harbour Our Asset report by CPD fellow Caroline Hoisington on the economic value of Sydney Harbour

<sup>26</sup> NSW Marine Parks Authority (2008) Solitary Islands Marine Park: summary of social, cultural and economic uses <http://www.mpa.nsw.gov.au/review/SIMPsocialcultecon08180.pdf>.

<sup>27</sup> Centre for Conservation Geography (2015) The scuba dive industry in Australia - Towards estimates of economic size and impact. [http://conservationgeography.org/sites/default/files/AustralianScubaDiveIndustryEconomicSize\\_31\\_03\\_2015\\_1pm.pdf](http://conservationgeography.org/sites/default/files/AustralianScubaDiveIndustryEconomicSize_31_03_2015_1pm.pdf)

During the 2016 submission process to the Hawkesbury Shelf discussion paper there were 2,933 entries and submissions that could be identified as directly addressing the spatial management initiative which includes marine parks. Most of the submissions received were specifically in response to this initiative. Over 2,000 people (more than two-thirds) supported the introduction of a multi-use marine park in Sydney.<sup>28</sup>

The announcement by Primary Industries Minister Niall Blair two-thirds of the way through this current consultation process is a breach of faith between the government and the community. The government appears to have made a significant decision prior to giving the community a chance to have their say, pre-empting the outcomes of the consultation.

The announcement has made it extremely difficult for community members to clearly state their support or opposition to the proposed marine park. It is unclear whether community members are to take in to account the announcement that there will be no restrictions on fishing when they are making a submission and stating whether they support or oppose the proposal. For example, if someone supported the original proposal which included sanctuaries but wanted there to be greater sanctuary protection, should they put that they strongly support, or strongly oppose the proposal?

### **Comments on water quality and pollution**

Water quality is a significant threat for the Hawkesbury Shelf Bioregion. Addressing water quality should go hand in hand with a marine park with sanctuary zones. We support initiatives outlined in the Marine Estate Management Strategy (the strategy) to reduce diffuse water runoff in acknowledgement of the significant threat it poses to water quality.

We support the banning of single use plastic bags to bring NSW in line with the other states and territories of Australia to tackle the issue of plastic pollution in the marine environment. Gross pollutant stormwater traps are recommended to be installed on every storm water drain in the Central NSW region and these need to be checked and cleared periodically.

We encourage the establishment of a marine litter working group as outlined in the strategy. We encourage such a working group to fund and work cooperatively with organisations and community groups that have been working on the ground tackling plastic pollution for many years such as Tangaroa Blue and Project Aware Dive Against Debris.

Oyster reef restoration projects are urgently needed to allow the natural biological process of oyster filter feeding to filter out contaminants and fine sediment particles in the water column to ensure clean and clear water where light is able to penetrate to enable plants such as seagrass to photosynthesise. Australia's shellfish ecosystems are considered 99% functionally extinct.<sup>29</sup> Other states such as SA, QLD and WA have followed the lead of the USA in commencing oyster restoration projects and NSW is lagging behind.

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<sup>28</sup> Marine Estate Management Authority (2017) HAWKESBURY SHELF MARINE BIOREGION ASSESSMENT Phase 2 Community Engagement Report on Suggested Management Initiative  
[https://www.marine.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0006/726729/Hawkesbury-Shelf-Phase-2-Community-Engagement-Report.pdf](https://www.marine.nsw.gov.au/__data/assets/pdf_file/0006/726729/Hawkesbury-Shelf-Phase-2-Community-Engagement-Report.pdf)

<sup>29</sup> Beck MW, Brumaugh RD, Airoidi L, Carranza A, Coen LD, Crawford C, Defeo O, Edgar GJ, Hancock B, Kay MC, Lenihan HS, Luckenbach MW, Toropova CL, Zhang G and Guo X (2011) Oyster reefs at risk and recommendations for conservation, restoration, and management. *Bioscience* 61: 107-116.



If you have any questions regarding this submission please contact Marine Campaigner Sharnie Connell on (02) 9516 1488 or [sharnie@marineparkforsydney.org.au](mailto:sharnie@marineparkforsydney.org.au)

Yours sincerely,



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## **Appendix 1: Sites of high environmental value in the Hawkesbury Bioregion**

Site	Location	Environmental Values
Hexham Swamp	Hexham	Ramsar wetlands, saltmarsh, migratory birds
Lake Macquarie	Newcastle	Seagrass, saltmarsh, juvenile fish
Tuggerah Lake	Doyalson	Wetlands, seagrass, juvenile fish
Wamberal Lagoon	Wamberal	Wetlands, migratory birds
Brisbane Water and Hawkesbury River	Broken Bay	Seagrass, mangrove, saltmarsh, juvenile fish, juvenile scalloped hammerhead nursery site near Lion island.
Bouddi Marine Extension	Bouddi	Diverse marine communities due to history of protection
Barrenjoey headland	Palm Beach	Weedy seadragons, blue groper, seagrass, Australian fur seals
Bangalley headland	Whale Beach	Encrusting corals, Port Jackson sharks, grey nurse sharks
Bungan Head	Newport	Diverse intertidal communities (IPA)
Mona Vale Headland	Mona Vale	Diverse intertidal communities (IPA)
Narrabeen Head	Narrabeen	Intertidal organisms; sea hares, anemones
Narrabeen Lagoon	Narrabeen	Intermittent estuary, seagrass, wading birds
Long Reef basin and headland	Long Reef	Grey nurse sharks, blue devil fish
Dee Why Lagoon and Headland	Dee Why	Mature intermittent estuary, wading birds, diverse intertidal communities
Freshwater headland	Freshwater	Rays, blue groper, wobbegongs
Cabbage Tree Bay	Manly	High biodiversity due to established sanctuary zone, high biomass esp. large fish, giant cuttlefish breeding site, black

		cod, grey nurse sharks, wobbegong aggregations, tropical species recruitment, hawksbill turtles
Shelly Beach Headland	Manly	Diverse intertidal communities
Bluefish Point	North Head	Weedy seadragons, sea fans, giant cuttlefish
The Blocks, Waterfall, Old Man's Hat	North Head	Sponge gardens, giant cuttlefish, sea fans, blue groper, tropical species recruitment
North Harbour	Manly	Seagrass, little penguins - critical habitat nesting site of the last mainland colony of little penguins in NSW. , green turtles, high diversity, tropical species recruitment
Fairlight	Fairlight	Green corals, turtles, blue morwong, wobbegongs
Middle Head	Mosman	Green corals, sponges
Chowder Bay	Clifton Gardens	Seahorses, anglerfish, pipefish, seagrass, tropical species recruitment
Camp Cove	Watson's Bay	Seahorses, seagrass, green corals, juvenile Port Jackson sharks, pipefish, tropical species recruitment
The Gap / Colours Reef	Watson's Bay	Soft corals, giant cuttlefish, weedy seadragons
North Bondi	Bondi	Blue devilfish, weedy seadragons, Port Jackson shark aggregation
Bronte / Coogee	Bronte Coogee	Blue groper, blue devil fish, wobbegongs, black cod, weedy seadragons
Long Bay	Long Bay	Diverse intertidal communities
Magic Point	Malabar	Grey nurse sharks, weedy seadragons
Cape Banks	La Perouse	Weedy seadragons, blue devilfish, Australian fur seals
Botany Bay (generally)	Botany Bay	Only ocean embayment in the bioregion

Bare Island	La Perouse	High biodiversity in small fish and invertebrates esp nudibranchs, weedy seadragons, Sydney pygmy pipehorse, Bare Island anglerfish
Inscription Point	Kurnell	Weedy seadragons, soft corals, diverse intertidal communities
Towra Point	Botany Bay	Seagrass, Ramsar wetland, mangrove, wading birds
Boat Harbour	Kurnell	Crayweed remnants, isolation / diverse marine communities
Shiprock to Lilli Pilli	Port Hacking	Soft corals, pineapplefish, black cod
Cabbage Tree Point / The Basin	Port Hacking	Diverse intertidal communities, fish nursery, seagrass
Oak Park	Cronulla	Blue groper, weedy seadragons
Lake Illawarra	Port Kembla	Wetland, seagrass, saltmarsh, black cod, wading birds, juvenile fish
Five Islands	Port Kembla	Australian fur seal colony, fairy penguins