



Draft Wonboyn Lake Entrance Management Policy

October 2020



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Wonboyn Lake Entrance Management Policy

Directorate	Community, Planning and Environment
Responsible Officer	Manager Planning and Sustainability

Objectives

The Wonboyn Lake Entrance Management Policy (the Policy) provides a framework which assists in the management of the entrance to the Wonboyn Lake estuary. This Policy aims to:

- Minimise interference with natural entrance opening processes and minimise associated impacts on ecological processes;
- Accommodate future climate change considerations and in particular sea level rise and rainfall variability;
- Minimise risks to public and private safety associated with excessive inundation of foreshores and associated infrastructure;
- Conserve or enhance the biological diversity and flora and fauna communities of the estuarine lakes systems;
- Clearly establish triggers for initiating artificial entrance openings;
- Determine procedures to be initiated for entrance operations including entrance breakouts;
- Determine key responsibilities for management of the entrance;
- Detail the procedure for monitoring of lake entrances; and
- Provide a transition period for oyster farmers and residents to adjust infrastructure above the long-term trigger level of 1.4m

Implementing this Policy will ensure that Council:

- Minimises the impacts to the public and private landholders resulting from inundation of assets, infrastructure and foreshore lands;
- Facilitates the vertical natural migration of riparian and estuarine ecological communities in response to sea level rise over the long term;
- Minimises impacts on local fisheries resources and other ecological species, where possible; and
- Enables continued existing use of fringing riparian lands for as long as practical.

Estuary Characteristics

Wonboyn Lake is one of the largest estuaries in the Bega Valley and is classified as a wave-dominated barrier estuary. The catchment is comprised of five sub-catchment areas including Bull Creek, Stevens Creek, Watergums Creek, Narrabarba Creek and an un-named creek. Approximately 94% of the catchment is forested being either NSW Forests (90%) or National Park and Nature Reserve (4%), with the remainder being rural residential land. The entrance is typically open; however, closures occurred in 2004, 2009 and 2019 during prolonged dry periods with low catchment inflows.

Waterway uses include commercial oyster aquaculture, recreational boating and swimming. Due the historically open state of the Wonboyn entrance, foreshore recreational and commercial infrastructure has been built at relatively low elevation in order to be functional in a tidal environment. Generally, the when the lake is open water levels fluctuate between 0.1-0.4 metres above the Australian height datum (m AHD). Extended periods of closure are problematic for the oyster industry due to impacts on temperature and salinity within the lake and inundation of foreshore infrastructure including jetties and leases.

Review of Environmental Factors

A Review of Environmental Factors (REF) has been undertaken in the development of this Policy, and outlines the potential impacts of implementing the Policy on the estuary environment. Importantly, the REF also details the mitigation measures to be adopted in order to minimise potential impacts in accordance with Part 5 of the *Environmental Planning and Assessment Act 1979*. The REF considered the economic, ecological, social and hydrological impacts of managing the Wonboyn Lake estuary entrance to alleviate flooding, with the intention to return to a more natural opening regime in the long term. Key findings from the REF included:

- Artificial opening of the entrance in line with this Policy may result in minor adverse impacts on sedimentation in the lower estuary, which may in turn impact on the system hydraulics and hydrology.
- Artificial opening of the entrance has the potential to have both positive and negative impacts on water quality at different areas of the estuary.
- The proposed accessway, for machinery to travel to the entrance, would occur mostly within an existing track; however, there may be some damage to ground covers and low growing shrubs, some lopping of overhead canopy or removal of coast tea tree (*Leptospermum laevigatum*) and Tree Broome-heath (*Monotoca elliptica*). This is expected to be minimal and not result in permanent removal of vegetation.
- It is unlikely that implementation of the Policy would have any direct impact on any terrestrial mammal species. Likewise, there are no identified impacts on aquatic fauna by implementing the Policy.
- If not implemented with appropriate precautions and mitigation measures, mechanical entrance opening could have a major impact on a number of resident and migratory threatened shorebird species. However, management techniques for mitigation of impacts are included in the Policy.
- The process of clearing vegetation may have an impact on endangered green and Golden Bell frog. A test of significance assessment (in accordance with Section 5A of the *Environmental Planning and Assessment Act 1979*) has been carried out for this species and determined the lifecycle of the species is unlikely to be disrupted by implementing the policy. Not implementing the policy would allow water levels to exceed typical values which may potentially lead to adverse effects on the life cycle;
- There is the potential for both positive and negative impacts on Aboriginal objects and places. There is potential for further impacts to disturbed and subsurface deposits along the access track due to machinery accessing the lake entrance to undertake the works. Mitigation measures have been proposed, and an Aboriginal Heritage Impact Permit (AHIP) has been granted by the NSW Heritage Office;

- The Policy will have significant positive impacts on recreational activities, and commercial activities within the lake, with the oyster industry highly dependent on regular tidal exchange.

Land to which this Policy Applies and Review Period

This Policy applies to lands located at the ocean entrance of the Wonboyn Lake estuary and the surrounding foreshore environments. The REF for management of the Wonboyn Lake entrance considered the wider Wonboyn Lake estuary and catchment.

This Policy is to be reviewed and revised every four years with trigger heights to be raised progressively as described in this Policy.

Climate Change

This Policy applies the precautionary principle in considering the uncertainty associated with sea level rise projections and future greenhouse gas emissions and acknowledges that trigger values for opening Wonboyn Lake will need to be revised as more certainty about the rate and impacts of sea level rise occurs.

For strategic land use planning and development assessment purposes, Bega Valley Shire Council has applied sea level rise planning benchmarks of:

- 40cm rise by 2050; and
- 90cm rise by 2100.

These benchmarks need to be taken into account in managing existing and future infrastructure around Wonboyn Lake. The benchmarks are consistent with the most credible information currently available for regional and global sea level rise projections for the two planning periods and align with the benchmarks previously adopted by the NSW Government through its *Sea Level Rise Policy Statement* (2009, now repealed) and the majority of other coastal councils.

Council has committed to review its sea level rise benchmarks following release of five-yearly Intergovernmental Panel on Climate Change assessment reports, and associated localised assessments conducted by relevant Australian and NSW Government agencies.

Entrance Management Principles

The NSW Department of Primary Industries (DPI) fish habitat management policies and guidelines support “*minimal interference with ICOLL entrance barriers and advocate natural processes being allowed to operate to the greatest extent possible*”. In line with this position, Bega Valley Shire Council has prepared entrance management policies that broadly aim for minimal or no opening with the long-term goal to retain and progressively reinstate natural behaviour, with consideration to potential impacts of future sea level rise. To achieve this goal, Wonboyn Lake requires the progressive removal, relocation or modification of assets and activities that are affected by inundation. In adopting this philosophy affected communities

will benefit by reducing their risk exposure both under existing and changed climate conditions in the long term.

The Wonboyn Lake Entrance Management Policy will be implemented in accordance with the general principles and philosophy applied across Bega Valley Shire, set out below.

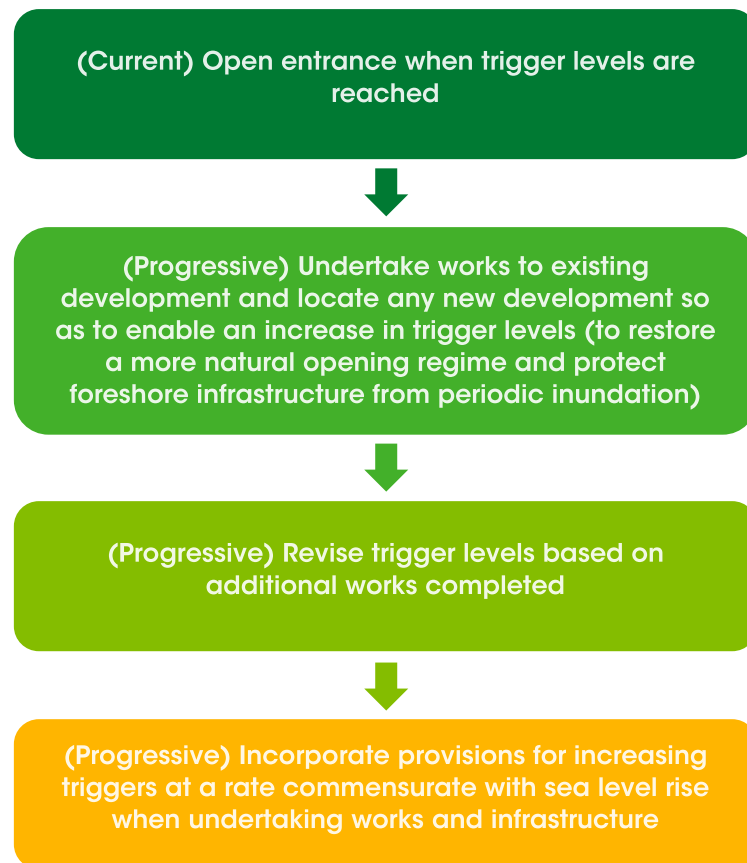


Figure 1: Bega Valley Shire General ICOLL Entrance Management Philosophy

Monitoring

Water levels in Wonboyn Lake are monitored electronically by Manly Hydraulics Laboratory through an automatic water level recorder located in Myrtle Cove. These data can be viewed in real time via Manly Hydraulics Laboratory's web site at <https://mhl.nsw.gov.au/Station-220452>.

Entrance Management

The decision-making process for artificially opening the Wonboyn Lake entrance is outlined in Figure 2 and Figure 3. The detailed procedure for implementing an artificial opening of the Wonboyn Lake entrance is outlined in Council's Safe Work Method Statement (D20/82936).

Due to the low-lying infrastructure situated around Wonboyn Lake, an interim set of triggers are in place for five years to allow for the oyster industry and private land holders to adjust

infrastructure to withstand longer periods of inundation and higher water levels. After this five-year period the trigger levels will be raised in line with the future policy below. The following conditions are required to initiate an opening of the entrance channel:

Interim Trigger (five years from adoption of the Policy)

The entrance to Wonboyn Lake may be opened in the following circumstances:

- Water level at or above 1m AHD; or
- Water level between 0.75m – 1m AHD either for a period of at least 2 months, or significant rainfall is predicted in the catchment (100mm+) and/or other exceptional circumstances including water quality (water temperature over 31°C and/or salinity <24ppt persisting over a period of two weeks). For exceptional circumstance openings or openings below 1m, Council will consider an opening based on the advice of Council Environment staff; approval required from DPI Fisheries, DPIE Biodiversity and Conservation Division and; consultation with the Wonboyn Oyster Industry, DPI Food Authority and DPI Aquaculture.

No more than two lower level openings (0.75m-1m AHD) are to be undertaken within a 12-month period.

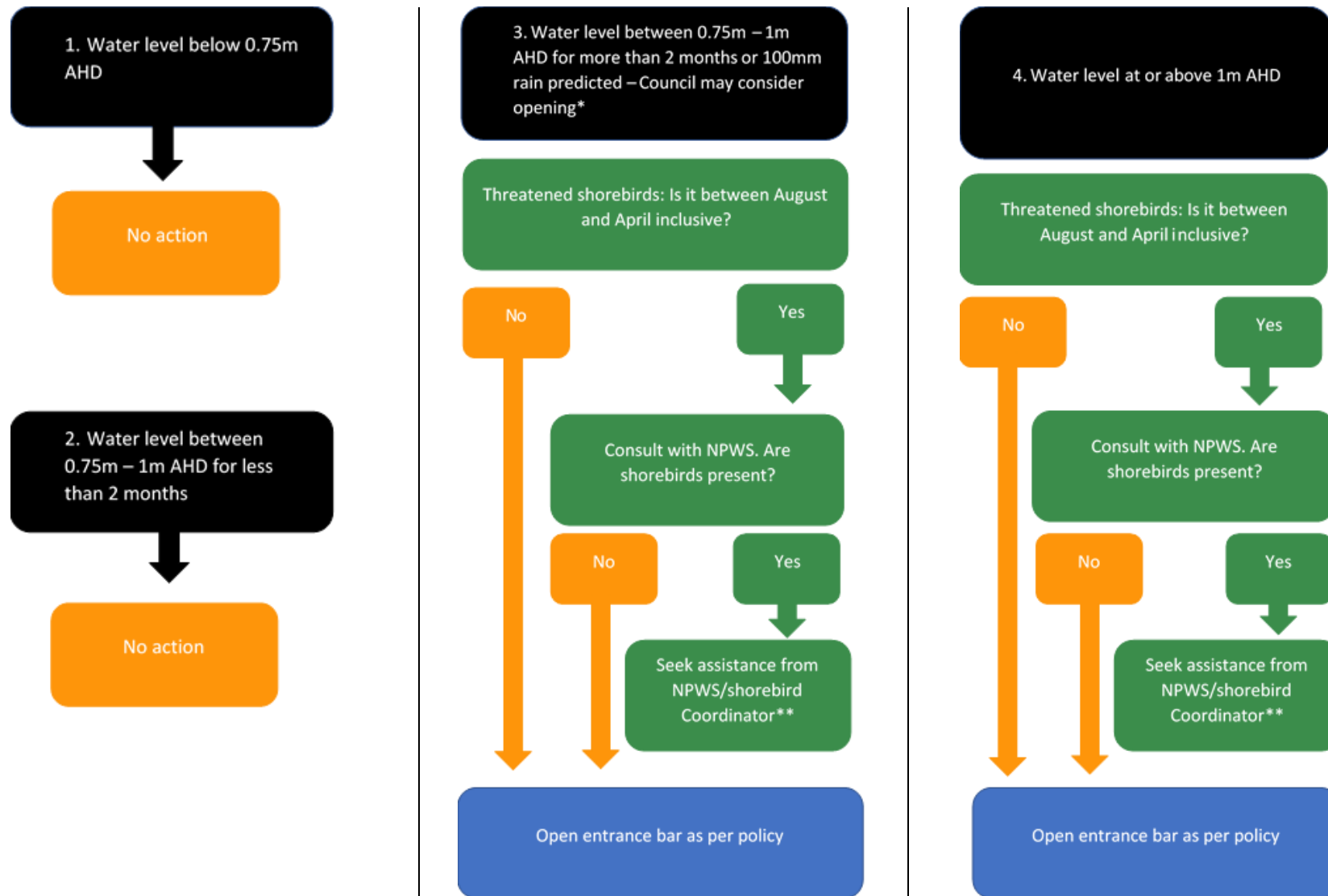
Due to the importance of a sustained opening in this estuary, all efforts will be made to open the lake at the highest possible levels and under the most suitable conditions to achieve sufficient scour with consideration given to forecast rain events, tides, swell conditions and sea level.

Long Term Trigger (for the period five to ten years after Policy adoption)

The entrance to Wonboyn Lake may be opened in the following circumstances:

- Water level at or above 1.4m; or
- Water level at or above 1m and significant rainfall is predicted in the catchment (100mm+)
- Water level is between 1m and 1.4 m for at least 2 months and/or other exceptional circumstances including water quality (water temperature over 31°C and/or salinity <24ppt persisting over a period of two weeks). Exceptional circumstance openings will be based on the advice of Council Environment staff, approval required from DPI Fisheries, DPIE Biodiversity and Conservation Division and consultation with the Wonboyn Oyster Industry, DPI Food Authority and DPI Aquaculture.

Note: Trigger values are only for entrance management, not for land use planning or development assessment (refer to BVSC Local Environmental Plan 2013 for direction on this issue).



* The decision for opening at lower levels is at the discretion of Council officers. Council may consider opening if exceptional circumstances are occurring. No more than two lower level openings (0.75m-1m AHD) are to be undertaken within a 12-month period. ** Deferral of entrance opening may occur, if unacceptable impacts on the breeding success of threatened shorebirds are likely and an acceptable course of action cannot be determined.

Figure 2: Wonboyn Lake Entrance Management Decision Flow Chart (Interim Trigger)



* The decision for opening at lower levels is at the discretion of Council officers. Council may consider opening if exceptional circumstances are occurring. **Deferral of entrance opening may occur, if unacceptable impacts on the breeding success of threatened shorebirds are likely and an acceptable course of action cannot be determined.

Figure 3: Wonboyn Lake Entrance Management Decision Flow Chart (Long Term Trigger)

Revising Breakout Levels and Works Required to Achieve Levels

This Policy advocates a minimal entrance intervention, with preference for returning to an “as natural as possible” breakout regime. In order to achieve this, a number of measures will need to be considered. These are likely to include:

- Progressive and opportunistic raising of assets, including sheds and jetties, that are currently affected by inundation at levels at or slightly above 1.4 m AHD, with higher priority for assets below 1.0m AHD
- Adjustments to oyster lease infrastructure to be operational during variable water heights
- Other modification works that alleviate impacts of extended inundation on existing assets;
- Requiring all new development below an elevation of 3.0 m AHD around Wonboyn Lake foreshore to be designed to withstand expected periodic inundation. NB habitable floors levels of residential dwellings are not permitted below 3m AHD

Appendix 2 provides a series of maps and figures documenting the various assets and infrastructure that have the potential to be inundated during high lake water levels, and the level at which inundation would occur.

Mitigation of Impacts to Threatened Shorebirds

A key finding of the REF undertaken for this Policy is that the proposed entrance management works have the potential to have direct impacts on resident and migratory threatened shorebirds. A number of mitigation measures have been incorporated into the entrance management process to minimise impacts to threatened shorebirds, including:

- Selection of an access route that minimises the extent to which heavy machinery need to move through areas typically used by shorebirds;
- Consideration of the time of year with regards to key aspects of shorebird breeding cycle, which occur from August through until April;
- If the entrance is to be opened between August and April (inclusive), consultation with NPWS’s Shorebird Recovery Coordinator, to identify if shorebirds are present either in the general area for excavator access or for the lake entrance breakout zone. The monitoring undertaken as a part of the South Coast Shorebird Recovery Program will inform this process.
- If shorebirds are present in the area, seeking assistance from the Shorebird Recovery Coordinator to provide on-site adaptive management to minimise impacts to shorebirds. This may include localised adjustment in the access route or temporary movement of fencing and signs. Deferral of entrance opening may occur, if unacceptable impacts on the breeding success of threatened shorebirds are likely and an acceptable course of action cannot be determined.

Mitigation of Impacts to Aboriginal Heritage Items

The Aboriginal Cultural Heritage Assessment Report (ACHAR) undertaken as a part of the REF for the entrance management, no impacts to Aboriginal places or items in the area of the entrance opening were identified. There is, however, potential for further impacts to disturbed and subsurface deposits along the access track (Figure 4). The proposed mitigation measures to be implemented as a part of the Policy to minimise the impacts beyond those already realised include:

- Eden Aboriginal Land Council will be notified prior to any opening and given the opportunity to be on site to supervise access;
- Council staff will supervise to ensure works are carried out as per the Policy;
- Impacts to the ground surface along the access track be minimised; and
- Wherever possible access along the beach section to be restricted to the corridor within the intertidal and wave runup zone.

Penalties

Council has the authority to penalise persons opening the lake without appropriate authorisation under Section 623(1) of the *Local Government Act 1993*. In some circumstances it is also illegal under Fisheries legislation to conduct non-authorised opening of the lake entrance.

Relevant Legislation

The Policy broadly complies with various NSW Government initiatives for environmental management of coastal lakes, and will be applied with full consideration of the following Australian and NSW legislation and policies:

- *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999*;
- *NSW Environmental Planning & Assessment Act 1979*;
- *NSW Local Government Act 1993*;
- *NSW Fisheries Management Act 1994*;
- *NSW Crown Lands Management Act 2016*;
- *Biodiversity Conservation Act 2016*;
- *NSW National Parks and Wildlife Act 1974*;
- *NSW Marine Parks Act 1997*;
- *NSW Coastal Management Act 2016*;
- *NSW Coastal Management SEPP 2018*; (
- *NSW Marine Estate Management Act 2014*;
- *NSW Flood Prone Land Policy and Floodplain Development Manual*;
- *NSW Coastal Management Manual*
- *Fisheries NSW policy and guidelines for fish habitat conservation and management 2013*;
- *Bega Valley Local Environment Plan 2013*;
- *Bega Valley Development Control Plan 2013*.

Contacts

All key contacts (Table 1) will be advised of any intention to undertake entrance works prior to the activities.

Table 1: Wonboyn Lake Entrance Management Policy - Contacts	
Organisation	Contact Details
Bega Valley Shire Council	Coastal Management Officer Number: (02) 6499 2222 Email: council@begavalley.nsw.gov.au
Department of Planning, Industry and Environment (Biodiversity & Coasts Division)	Senior Natural Resource Officer Number: (02) 4224 4150 Email: rog.illawarra@environment.nsw.gov.au
Department of Primary Industries (Fisheries)	Regional Assessment Officer Number: (02) 4428 3406
Threatened Species Unit Manager, South Branch, Queanbeyan	Number: (02) 6229 7188 Fax: (02) 6229 7001
National Parks and Wildlife Service Merimbula	Number: (02) 6495 5000 Fax: (02) 4476 0833
National Parks and Wildlife Service	Shorebird Coordinator Number: (02) 4476 0819
Crown Lands (Goulburn)	Group Leader Number: (02) 4824 3707
Eden Local Aboriginal Land Council	Email: CEO@edenlalc.org.au
Eden Police Station	Number: (02) 6496 1444
Eden State Emergency Service	Number: 138 737 (general enquiries)
Wonboyn Lake Oyster Farmers	Name: Kel & Caroline Henry Email: knchenry@wonboynoysters.com.au
DPI Fisheries - Commercial Fisheries & Aquaculture	Program Leader Aquaculture Number: 0419 185 365
DPI Biosecurity and Food Safety – NSW Food Authority	Manager NSW Shellfish Program Email: food.nswsp@dpi.nsw.gov.au

Policy Version Control

Policy title	Communications
Policy No.:	[TBC]
Directorate	Community, Environment and Planning

Outcome Area	
Goal(s)	5. Our air and water is pristine and our natural environment and rural landscapes are protected.
Responsible Officer	Manager Planning and Sustainability
Version	
Adopted	
Next revision	Four years after adoption

Relevant Documents

- Wonboyn Entrance Management Policy -Review of Environmental Factors
- AHIP C0002183 Bega ICOLLS
- ICOLL Entrance Management Policies – Review of Environmental Factors - Appendix J ACHAR (Oct 2016)
- WORKS019 DRAFT Safe Work Method Statement



Appendix 1: Approval Checklist

The following is a list of potential legislation and permits/approvals that may be required for the carrying out of artificial entrance openings. Consent has been granted for a period of 5 years for all necessary approvals in line with this Policy and accompanying REF.

Wonboyn Lake Entrance Management Policy – Approval Checklist		
Relevant Act	Approvals Required	Approval Body
Crown Lands Act 1989	Approval to carry out activities on Crown Land	Crown Lands
NSW Fisheries Management Act 1994	Permit for destruction of marine vegetation, if applicable Permit for dredging and reclamation ¹	DPIE (NSW Fisheries)
Biodiversity Conservation Act 2016	Species Impact Statement (SIS), if applicable ²	DPIE
National Parks and Wildlife Act 1974	Aboriginal Heritage Impact Permit (AHIP)	DPIE

Notes:

1. Dredging permit under section 200 of the FM Act 1994 not required as long as dredging has been authorised under the Crown Lands Act and the Department of Lands consults with NSW Fisheries prior to authorising.
2. Based on the REF undertaken for the entrance management works, a SIS would only be required in the case that impacts to shorebirds from a mechanical entrance opening cannot be suitably managed and mitigated through the identified mitigation measures.

Appendix 2: Assets at Risk of Inundation

In developing this Policy and establishing suitable trigger levels for artificially opening Wonboyn Lake, a survey of both public and private assets at risk of inundation was undertaken by Council and DPIE. These assets are mapped and charted in the Figure 5 (western foreshore) and Figure 6 (eastern foreshore).

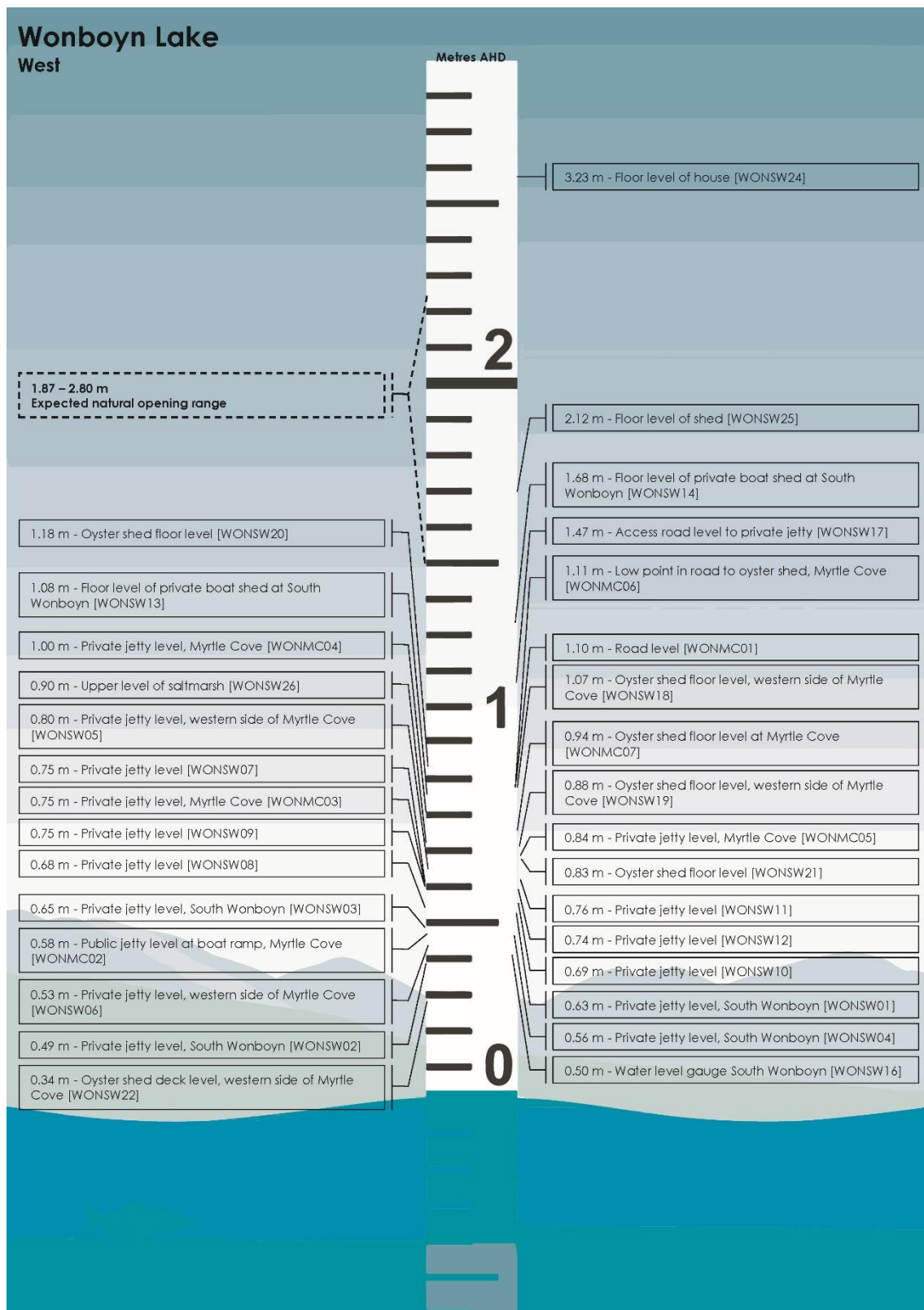


Figure 5 – Assets around the western foreshore of Wonboyn Lake

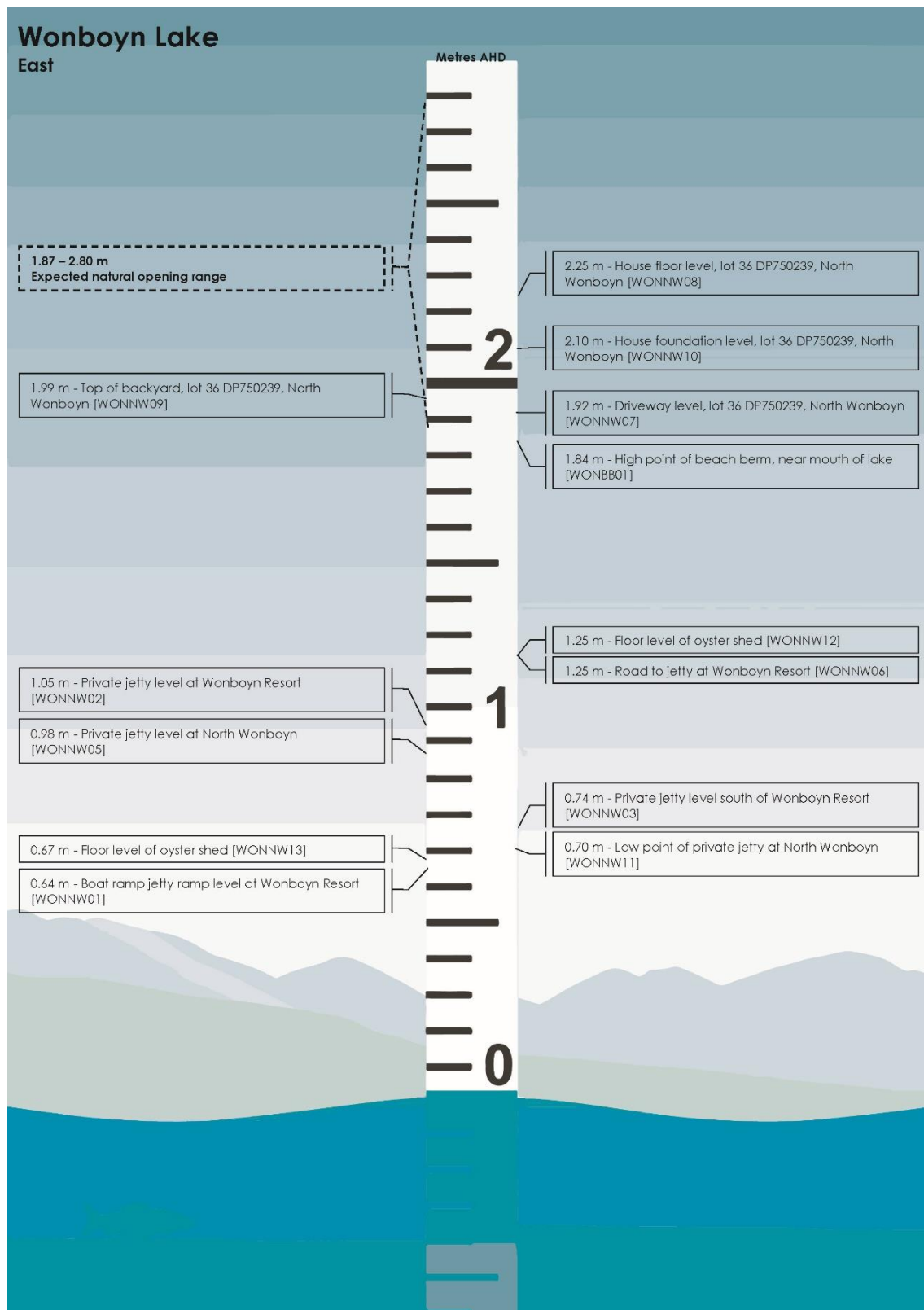


Figure 6 – Assets around the eastern foreshore of Wonboyn Lake