



Draft Wallaga Lake Coastal Management Program

1 July 2024



Version control

Version	Filename	Revision Date	Reviewed by	Approved by
Version 1.0	20191028 Wallaga CMP Draft	28/10/2019	(Draft for internal review)	
Version 1.1	20191119 Wallaga CMP Draft	19/11/2019	Duncan Rayner	Grantley Smith
Version 1.2	20191211 Wallaga CMP Draft	11/12/2019	Duncan Rayner	Grantley Smith
Version 2.0	20240624 Wallaga CMP Draft	24/06/2024	Francois Flocard	Francois Flocard
Version 2.1	20240701 Wallaga CMP Draft	1/07/2024	Francois Flocard	Francois Flocard

This CMP has been prepared by Bega Valley Shire Council with contribution, support and writing of the documents provided by the Water Research Laboratory (WRL) of the University of New South Wales School of Civil and Environmental Engineering.

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Acknowledgement of Country

Bega Valley Shire Council acknowledges the traditional custodians of the lands and waters of the Shire, the people of the Yuin nation, and show our respect to the elders past, present and emerging. We also pay respect to the Djiringanj people, the traditional owners of the lands and waters of Wallaga Lake and its catchment.

Executive Summary

ES.1 Snapshot of the Wallaga Lake CMP

The coastal zone of the Bega Valley Shire is recognised as one of the most significant natural assets of the region, contributing to the environmental, cultural, social and economic value of the area. The *Wallaga Lake Coastal Management Program* represents one of Council's long-term investments in this natural asset, to preserve and enhance the environmental value and the ecosystem services that the estuary provides, to preserve and sustain the significant cultural value of the estuary and its catchment, and to strengthen its contribution to the economic profile of the Shire.

Developed within the NSW Coastal Management Framework, the CMP is a 10-year program of activities that includes improved planning, research and investigation, monitoring, physical works, community engagement and education. These initiatives target a reduction in risks to the estuary and surrounding assets from environmental stressors, coastal hazards and climate change, as well as improving the recreational value of the estuary to the community.

Implementation of the CMP will:

- Improve the health of the estuary through reduction of catchment-related impacts on sensitive ecosystems and environmental processes;
- Preserve aquatic and terrestrial ecosystems through improvement of water quality and removal of invasive and exotic vegetation;
- Preserve the cultural value of the estuary, its foreshore and catchment through improved management of cultural sites; and
- Enable climate-resilient and future proof development through risk-informed planning and development controls.

The overall cost for implementation of the Wallaga Lake CMP is estimated at \$2,435,000 across the 10-year implementation period. This includes investment in management actions to understand and monitor the health of the estuary (\$0.45 million), to reduce the impacts of catchment runoff and improve foreshore and fringing vegetation (\$0.54 million), to rehabilitate wetlands and riparian areas (\$0.44 million) and to manage the impacts of coastal hazards and climate change (\$0.2 million). While the major financial commitment for CMP is focussed on a small number of high priority threats, there are also a large number of lower value actions spread throughout the 10-year implementation period which aim to reduce the risk of all of the identified threats to the estuary.

The overarching objective of the CMP is to manage the coastal zone around the Wallaga Lake area consistent with the principles of ecologically sustainable development for the social, cultural and economic well-being of the people of the Shire. The CMP reflects the overarching themes of the *Bega Valley Shire Community Strategic Plan 2042*, as outlined in Figure ES.1.

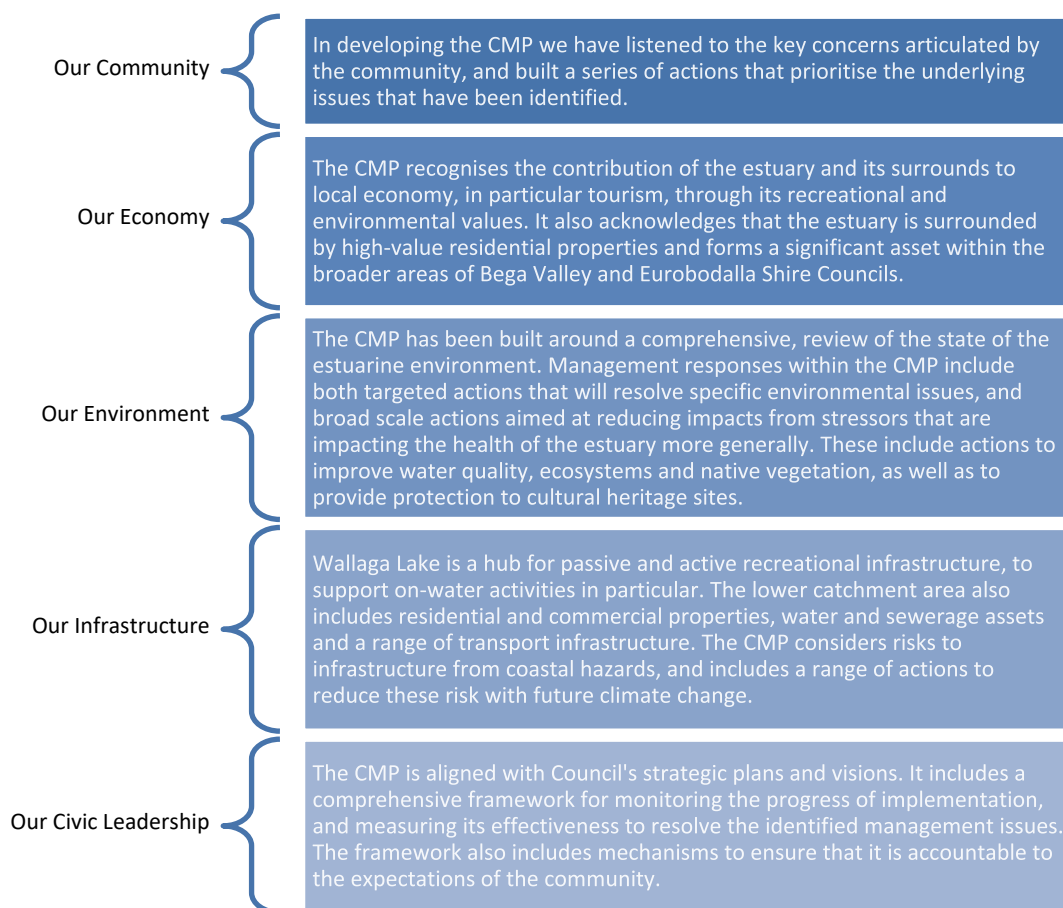


Figure ES.1 Bega Valley Shire Community Strategic Plan themes and links to Wallaga Lake CMP

The Wallaga Lake CMP responds to a contemporary, risk-based evaluation of threats and issues that considered the estuary itself, as well as the broader catchment area and adjacent Wallaga and Camel Rock Beaches. The CMP comprises a suite of management actions that will reduce the identified risks and sit within an implementation area defined by the envelope of *Coastal Management Areas* around the estuary. Nine broad threats were identified for Wallaga Lake during the development of the CMP, each containing one or more specific management issues:

1. Artificial Entrance Management;
2. Lack of Knowledge of Estuary Health and Condition;
3. Degradation of Vegetation Communities;
4. Degradation of Wetlands
5. Catchment Runoff and Urban Pollutants;
6. Degradation of Foreshore Areas and Tributary Banks
7. Coastal Hazards; and
8. Structure and Function of the Lake;
9. Biodiversity Loss

The CMP includes 26 tangible management actions arranged within nine different management responses. Each of the nine management responses have been developed to address the nine identified threats to the estuary. The CMP also includes a tenth management response which contains a series of cross-cutting actions that reduce the risk of multiple threats. Table ES.1 provides an overview of the nine management responses, including a summary of the 26 individual management actions and the issues that they aim to address. Summary maps for each management response are included in Map ES01 to Map ES10.

Many of the actions are targeted at improving the health of the estuary, which underpins the environmental, social and cultural value that the estuary provides to the local area and broader LGA. Other actions are proposed that will address the current and future risk posed by coastal hazards for assets located within the Coastal Use Area around the lake and adjacent areas. Management actions generally fall into the categories of:

- Improved land management and operational practices (e.g. improved management of vegetation within foreshore buffer zones, exclusion of cattle from riparian and wetland zones, minimising impacts on shorebirds);
- Rehabilitation works (e.g. weed eradication and revegetation, bank restoration and protection);
- Investigations to understand ongoing changes to the physical processes of the lake such as fluvial deltas and the road causeway;
- Strengthened planning controls (e.g. updated CMA mapping, updates to LEP and DCP to reflect contemporary coastal hazard mapping);
- Education, awareness and engagement activities; and
- Environmental data collection, analysis and monitoring programs.

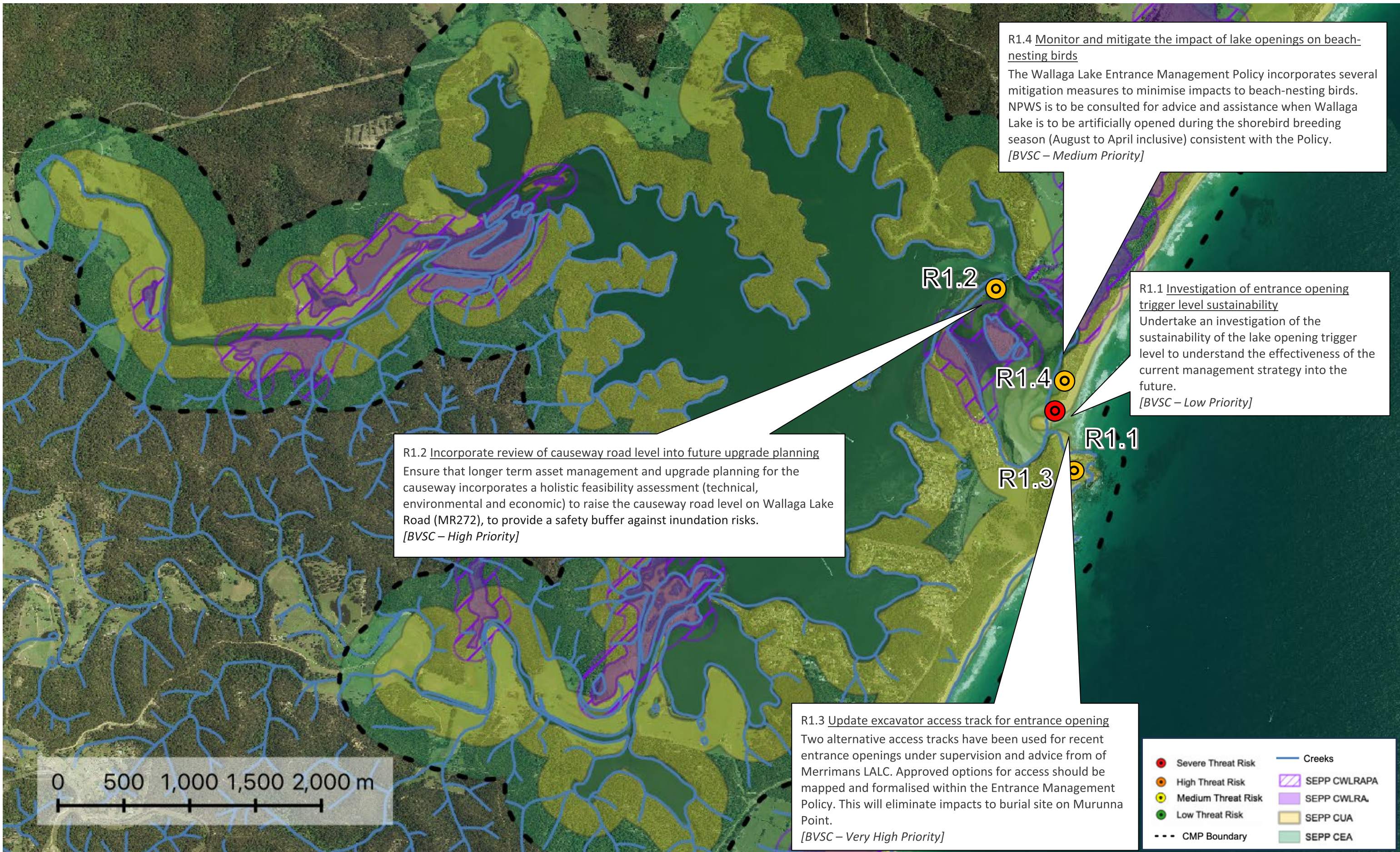
Table ES1: Summary of CMP Actions				
ID and Title of Management Action	Responsible Organisation/s	Priority	Implementation Timeframe	Threats/Issues Targeted
<i>Management Response for Threat 1: Artificial Entrance Management</i>				
R1.1 Investigation of entrance opening trigger level sustainability	Responsible: BVSC	Low	Short term	T1.1 Long-term sustainability of entrance opening trigger level
R1.2 Incorporate review of causeway road level into future upgrade planning	Responsible: BVSC Supporting: TfNSW	High	Contingent upon timing of future planning reviews for MR272 (currently un-scheduled)	T1.3 Inundation of low-lying assets when closed lake entrance
R1.3 Update excavator access track for entrance opening	Responsible: BVSC Supporting: Merrimans LALC, NPWS	Very High	Short term	T1.4 Impacts to Aboriginal burial site and midden on Murunna Point T1.5 Impacts to threatened beach-nesting birds from excavator access and opening of entrance
R1.4 Monitor and mitigate the impact of lake openings on beach-nesting birds	Responsible: BVSC Supporting: NPWS	Medium	Initial review: Short term Ongoing	T1.5 Impacts to threatened beach-nesting birds from excavator access and opening of entrance
<i>Management Response for Threat 2: Lack of Knowledge of Estuary Health and Condition</i>				
R2.1 Estuary health data collection program	Responsible: BVSC Supporting: DPI Fisheries	High	Updated MER data in main lake, Meads Bay, Black Lagoon: Short to medium term Updated and analysed aquatic vegetation data: Short term Updated information collected on fish assemblage: Long term Estuary health data sets updated every 5 to 10 years as needed (ongoing)	T2.1 Lack of estuary health monitoring data
R2.2 Updated bathymetric survey	Responsible: BVSC	Low	Short to medium term	T2.2 Lack of estuary health monitoring data T8.1 Wallaga Lake Road causeway T8.2 Narira Creek delta sedimentation
<i>Management Response for Threat 3: Degradation of Vegetation Communities</i>				
R3.1 Weed control program	Responsible: BVSC	High	Initial intensive control	T3.1 Invasive/exotic vegetation

Table ES1: Summary of CMP Actions				
ID and Title of Management Action	Responsible Organisation/s	Priority	Implementation Timeframe	Threats/Issues Targeted
			program: Short term Annual maintenance: Ongoing	
R3.2a Revegetation and signage program to rehabilitate view clearing areas	Responsible: BVSC	Very High	Initial revegetation work: Short to medium term Maintenance and awareness: ongoing	T3.2 Vegetation clearing and maintenance
R3.2b Improvement to foreshore areas of holiday parks	Responsible: BVSC Supporting: DPI Fisheries, Crown Lands	High	Initial engagement, planning, re-vegetation and stormwater improvements: Short term Maintenance: Medium term	T3.2 Vegetation clearing and maintenance
R3.2c Vehicle and boat access to Meads Bay, Fairhaven	Responsible: BVSC Supporting: DPI Fisheries	Very High	Medium term	T3.2 Vegetation clearing and maintenance
<i>Management Response for Threat 4: Degradation of Wetlands</i>				
R4.1 Remove cattle grazing from priority wetland areas	Responsible: BVSC Supporting: LLS, DPI Fisheries, Crown Lands	Very High	Short to medium term	T3.3 Cattle grazing to water's edge (vegetation impacts) T4.1 Cattle grazing in wetland areas (degradation of wetland quality)
<i>Management Response for Threat 5: Catchment Runoff and Urban Pollutants</i>				
R5.1 Review, remove and rehabilitate un-sealed roads and revegetate erodible areas	Responsible: BVSC	Low	Medium term	T5.1 Unsealed roads and foreshore tracks
R5.2 Improvements to requirements, monitoring and compliance of sediment controls for property developments.	Responsible: BVSC	Low	Short to medium term	T5.2 Sedimentation from development in catchment
<i>Management Response for Threat 6: Degradation of Foreshore Areas and Tributary Banks</i>				
R6.1 Bank stabilisation, implementation of grazing exclusion zone and riparian zone restoration	Responsible: LLS, BVSC Supporting: Crown Lands, DPI Fisheries	Medium	Short to medium term (Pilot Projects completed in parallel with R4.1). Longer term (ongoing rehabilitation of eroded riparian areas)	T3.3 Cattle grazing to water's edge (vegetation impacts) T4.1 Cattle grazing in wetland areas (degradation of wetland quality) 6.1 Degradation of foreshore areas - cattle grazing to water's edge (bank destabilisation)

Table ES1: Summary of CMP Actions				
ID and Title of Management Action	Responsible Organisation/s	Priority	Implementation Timeframe	Threats/Issues Targeted
<i>Management Response for Threat 7: Coastal Hazards</i>				
R7.1 Adaptation planning for low-lying assets	Responsible: BVSC	Medium	Short term	T1.3 Inundation of Low-lying Assets when closed Lake Entrance T7.1 Tidal inundation impacts on low-lying assets, habitat and areas T7.2 Coastal inundation impacts on low-lying assets and areas
R7.2 Undertake coastal hazard risk planning for holiday/caravan parks	Responsible: BVSC Supporting: Crown Lands	Low	Medium term	
R7.3 Develop a CVA and update relevant planning documents: a) Determine CVA based on best available hazard information and submit a Planning Proposal. b) Review and update LEP, DCP and SLR Policy to ensure consistency with the CMP and CVA.	Responsible: BVSC Supporting: DCCEEW	Low	Medium term	
R7.4 Review CEA, CUA and CWLRA and adjust mapping (if required)	Responsible: BVSC Supporting: DCCEEW	Low	Medium term	
R7.5 Dune rehabilitation program	Responsible: BVSC, ESC	Medium	Ongoing as needed	T7.3 Coastal erosion impacts on natural and built assets T7.4 Coastal entrance instability
R7.6 Analysis and mapping of entrance stability and migration	Responsible: BVSC	Low	Short term	T7.4 Coastal entrance instability
<i>Management Response for Threat 8: Structure and Function of the Lake</i>				
R8.1 Incorporate assessment of impacts and cost/benefit of causeway into future upgrade planning	Responsible: BVSC Supporting: TfNSW	Low	To be completed when causeway upgrade/maintenance plans are developed (not currently scheduled)	T8.1 Causeway impacts on hydrodynamics
R8.2 Investigation to quantify changes to Narira Creek delta and impacts on estuary	Responsible: BVSC Supporting: Crown Lands, BMP	High	Short term	T8.2 Sedimentation of entrance to Meads Bay
<i>Management Response for Threat 9: Biodiversity Loss</i>				
R9.1 Ensure "Threatened Shorebirds in Bega Valley Shire: Action Plan" is Implemented	Responsible: NPWS, BVSC	Very High	Ongoing	T9.1 Decline of threatened migratory shorebirds and beach-nesting birds

Table ES1: Summary of CMP Actions

ID and Title of Management Action	Responsible Organisation/s	Priority	Implementation Timeframe	Threats/Issues Targeted
<i>Cross-cutting Management Actions</i>				
R10.1 Continue supporting existing environmental community interest groups	Responsible: BVSC Supporting: FSC Landcare	Medium	Ongoing	T1.2: Community understanding of estuary processes and entrance management T3.1: Weeds around foreshore zones, in particular in urban areas. T3.2: View clearing of foreshore vegetation.
R10.2 Community engagement and information sessions and activities	Responsible: BVSC Supporting: NPWS, Merrimans LALC, FSC Landcare	Medium	Ongoing	T1.2 Community Understanding of Entrance Management T3.1: Weeds within lake creeks and foreshore zones. T3.2: View clearing of foreshore vegetation and impacts on vegetation from informal access T6.3: Degradation of Aboriginal heritage sites T9.1: Decline of threatened migratory shorebirds and beach-nesting birds
R10.3 Review and update interpretive signage as needed during CMP implementation period	Responsible: BVSC Supporting: NPWS, Merrimans LALC	Low	Long term	T1.2: Community understanding of entrance management and estuarine processes/environment T3.1: Weeds within lake creeks and foreshore zones T6.3/6.4: Degradation of Aboriginal heritage sites T9.1: Decline of threatened migratory shorebirds and beach-nesting birds

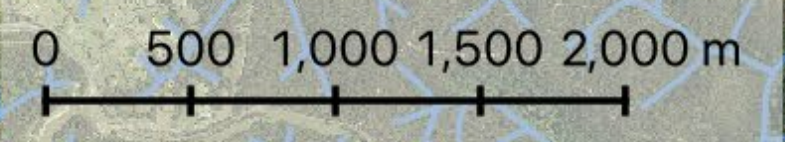


R1.4 Monitor and mitigate the impact of lake openings on beach-nesting birds
 The Wallaga Lake Entrance Management Policy incorporates several mitigation measures to minimise impacts to beach-nesting birds. NPWS is to be consulted for advice and assistance when Wallaga Lake is to be artificially opened during the shorebird breeding season (August to April inclusive) consistent with the Policy.
 [BVSC – Medium Priority]

R1.1 Investigation of entrance opening trigger level sustainability
 Undertake an investigation of the sustainability of the lake opening trigger level to understand the effectiveness of the current management strategy into the future.
 [BVSC – Low Priority]

R1.2 Incorporate review of causeway road level into future upgrade planning
 Ensure that longer term asset management and upgrade planning for the causeway incorporates a holistic feasibility assessment (technical, environmental and economic) to raise the causeway road level on Wallaga Lake Road (MR272), to provide a safety buffer against inundation risks.
 [BVSC – High Priority]

R1.3 Update excavator access track for entrance opening
 Two alternative access tracks have been used for recent entrance openings under supervision and advice from of Merrimans LALC. Approved options for access should be mapped and formalised within the Entrance Management Policy. This will eliminate impacts to burial site on Murunna Point.
 [BVSC – Very High Priority]



- Severe Threat Risk
- High Threat Risk
- Medium Threat Risk
- Low Threat Risk
- - - CMP Boundary
- Creeks
- ▨ SEPP CWRAPA
- ▨ SEPP CWLRA
- ▨ SEPP CUA
- ▨ SEPP CEA

Wallaga Lake Coastal Management Program	Map Location: Wallaga Lake	
	Map Title: Management Responses - Threat 1 - Artificial Entrance Management	
	Map ES1	Date: 12/06/2024 Rev: 2



R2.2 Updated bathymetric survey

An updated bathymetric survey is required for the full lake, with particular focus on:

- Area around the causeway and bridge, and between the bridge and the lake entrance;
- Narira and Dignams Creek tributaries at least up to the navigable limit (preferably beyond) and around the fluvial deltas where the tributaries join the lake.

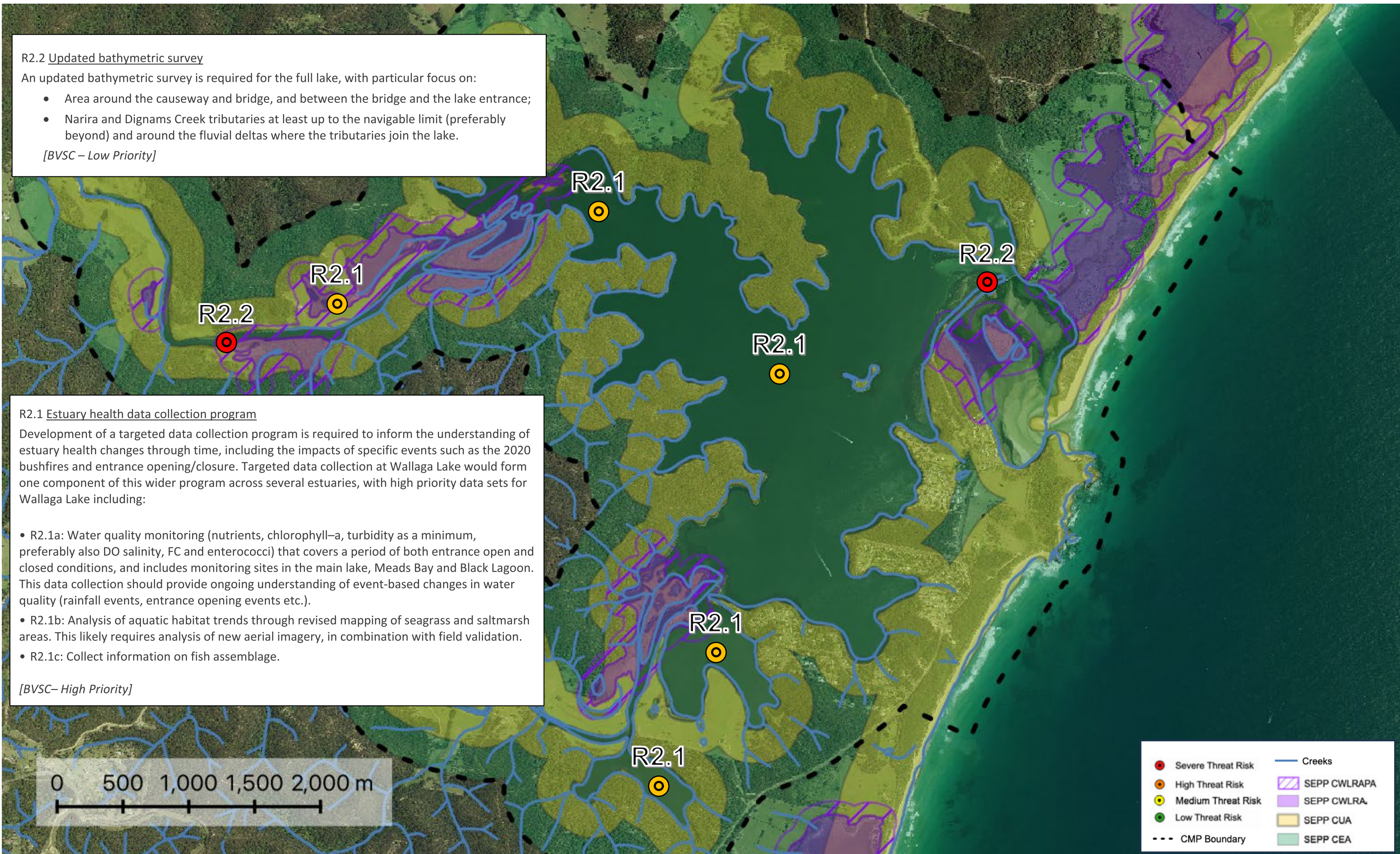
[BVSC – Low Priority]

R2.1 Estuary health data collection program

Development of a targeted data collection program is required to inform the understanding of estuary health changes through time, including the impacts of specific events such as the 2020 bushfires and entrance opening/closure. Targeted data collection at Wallaga Lake would form one component of this wider program across several estuaries, with high priority data sets for Wallaga Lake including:

- R2.1a: Water quality monitoring (nutrients, chlorophyll-a, turbidity as a minimum, preferably also DO salinity, FC and enterococci) that covers a period of both entrance open and closed conditions, and includes monitoring sites in the main lake, Meads Bay and Black Lagoon. This data collection should provide ongoing understanding of event-based changes in water quality (rainfall events, entrance opening events etc.).
- R2.1b: Analysis of aquatic habitat trends through revised mapping of seagrass and saltmarsh areas. This likely requires analysis of new aerial imagery, in combination with field validation.
- R2.1c: Collect information on fish assemblage.

[BVSC– High Priority]



Wallaga Lake
Coastal Management Program

Map Location: Wallaga Lake	
Map Title: Management Responses - Threat 2 – Lack of Knowledge of Estuary Health and Condition	
Map ES2	Date: 12/06/2024 Rev: 2



R3.2a Revegetation and signage program to rehabilitate view clearing areas

Continue Council's existing program of rehabilitating and revegetating foreshore areas that have been impacted by view clearing and inappropriate mowing. Support compliance monitoring and enforcement through appropriate informal signage in targeted areas (specific locations mapped within Regatta Point, Beauty Point and Fairhaven in particular). These responses will be reinforced by ongoing community education within the overall community engagement management response package for the Wallaga Lake community.

[BVSC – Very High Priority]

R3.1 Weed control program

An intensive species-targeted weed control program will be required, likely over several years, followed by annual spot checks and follow-up eradication. It is recommended that lantana control be the highest priority for eradication since the spread of this weed threatens native vegetation along the entire Far South Coast.

[BVSC – High Priority]

R3.2c Vehicle and boat access to Meads Bay, Fairhaven

Ensure ad-hoc vehicle access to the foreshore of Meads Bay off Fairhaven Point Way is stopped and rehabilitate the currently cleared vegetation/saltmarsh.

[BVSC – Very High Priority]

R3.2b Improvement to foreshore areas of holiday parks


Work with managers of Ingenia and Big 4 Holiday Parks to rationalise cleared areas of foreshore, and to improve foreshore vegetation quality while maintaining the necessary recreational functions.

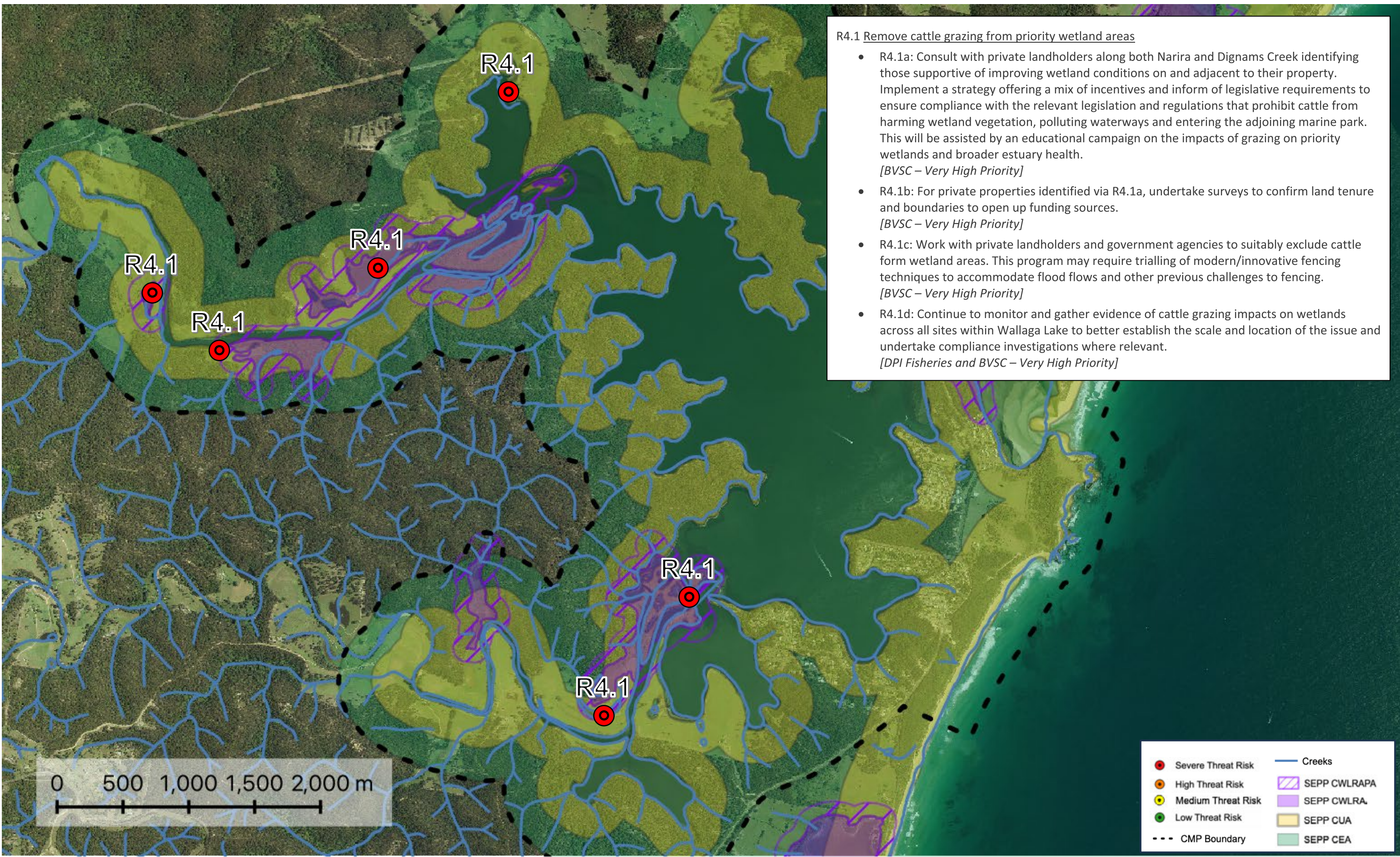
This should also look to improve stormwater management and disposal through the installation of vegetated buffers to filter and prevent scour from stormwater pipes that currently discharge onto the mown foreshore strip.

[BVSC – High Priority]

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● Severe Threat Risk	— Creeks
● High Threat Risk	▨ SEPP CWLRAPA
● Medium Threat Risk	▨ SEPP CWLRA
● Low Threat Risk	▨ SEPP CUA
- - - CMP Boundary	▨ SEPP CEA

Wallaga Lake Coastal Management Program	Map Location: Wallaga Lake	
	Map Title: Management Responses - Threat 3 – Degradation of Vegetation Communities	
	Map ES3	



R4.1 Remove cattle grazing from priority wetland areas

- R4.1a: Consult with private landholders along both Narira and Dignams Creek identifying those supportive of improving wetland conditions on and adjacent to their property. Implement a strategy offering a mix of incentives and inform of legislative requirements to ensure compliance with the relevant legislation and regulations that prohibit cattle from harming wetland vegetation, polluting waterways and entering the adjoining marine park. This will be assisted by an educational campaign on the impacts of grazing on priority wetlands and broader estuary health. [BVSC – Very High Priority]
- R4.1b: For private properties identified via R4.1a, undertake surveys to confirm land tenure and boundaries to open up funding sources. [BVSC – Very High Priority]
- R4.1c: Work with private landholders and government agencies to suitably exclude cattle from wetland areas. This program may require trialling of modern/innovative fencing techniques to accommodate flood flows and other previous challenges to fencing. [BVSC – Very High Priority]
- R4.1d: Continue to monitor and gather evidence of cattle grazing impacts on wetlands across all sites within Wallaga Lake to better establish the scale and location of the issue and undertake compliance investigations where relevant. [DPI Fisheries and BVSC – Very High Priority]

● Severe Threat Risk	— Creeks
● High Threat Risk	▨ SEPP CWLRA
● Medium Threat Risk	▨ SEPP CWLRA
● Low Threat Risk	▨ SEPP CUA
- - - CMP Boundary	▨ SEPP CEA

Wallaga Lake Coastal Management Program	Map Location: Wallaga Lake	
	Map Title: Management Responses - Threat 4 – Degradation of Wetlands	
	Map ES4	Date: 12/06/2024 Rev: 2



R5.2 Improvements to requirements, monitoring and compliance of sediment controls for property developments.

Recognising that this issue is relevant to developments within the catchment of many estuaries of BVSC, there are several improvements within Council's existing processes that can be implemented. These improvements include:

- Specialist training on sediment control methods for builders and site developers.
- Extended capacity of council officers to undertake monitoring and compliance of developments across the Shire.

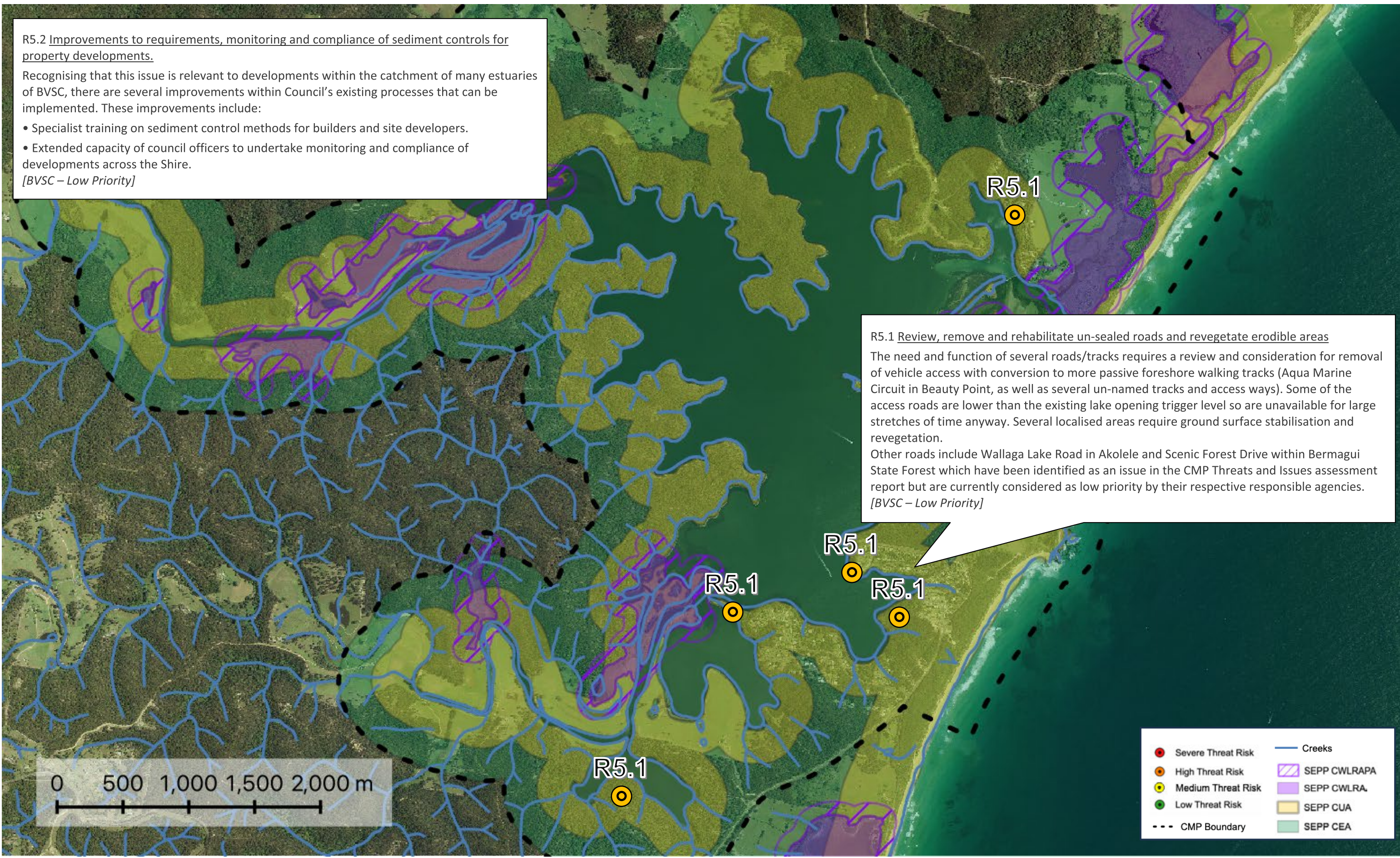
[BVSC – Low Priority]

R5.1 Review, remove and rehabilitate un-sealed roads and revegetate erodible areas

The need and function of several roads/tracks requires a review and consideration for removal of vehicle access with conversion to more passive foreshore walking tracks (Aqua Marine Circuit in Beauty Point, as well as several un-named tracks and access ways). Some of the access roads are lower than the existing lake opening trigger level so are unavailable for large stretches of time anyway. Several localised areas require ground surface stabilisation and revegetation.

Other roads include Wallaga Lake Road in Akolele and Scenic Forest Drive within Bermagui State Forest which have been identified as an issue in the CMP Threats and Issues assessment report but are currently considered as low priority by their respective responsible agencies.

[BVSC – Low Priority]



Wallaga Lake
Coastal Management Program

Map Location: Wallaga Lake
 Map Title: Management Responses - Threat 5 – Catchment Runoff and Urban Pollutants
 Map ES5
 Date: 12/06/2024
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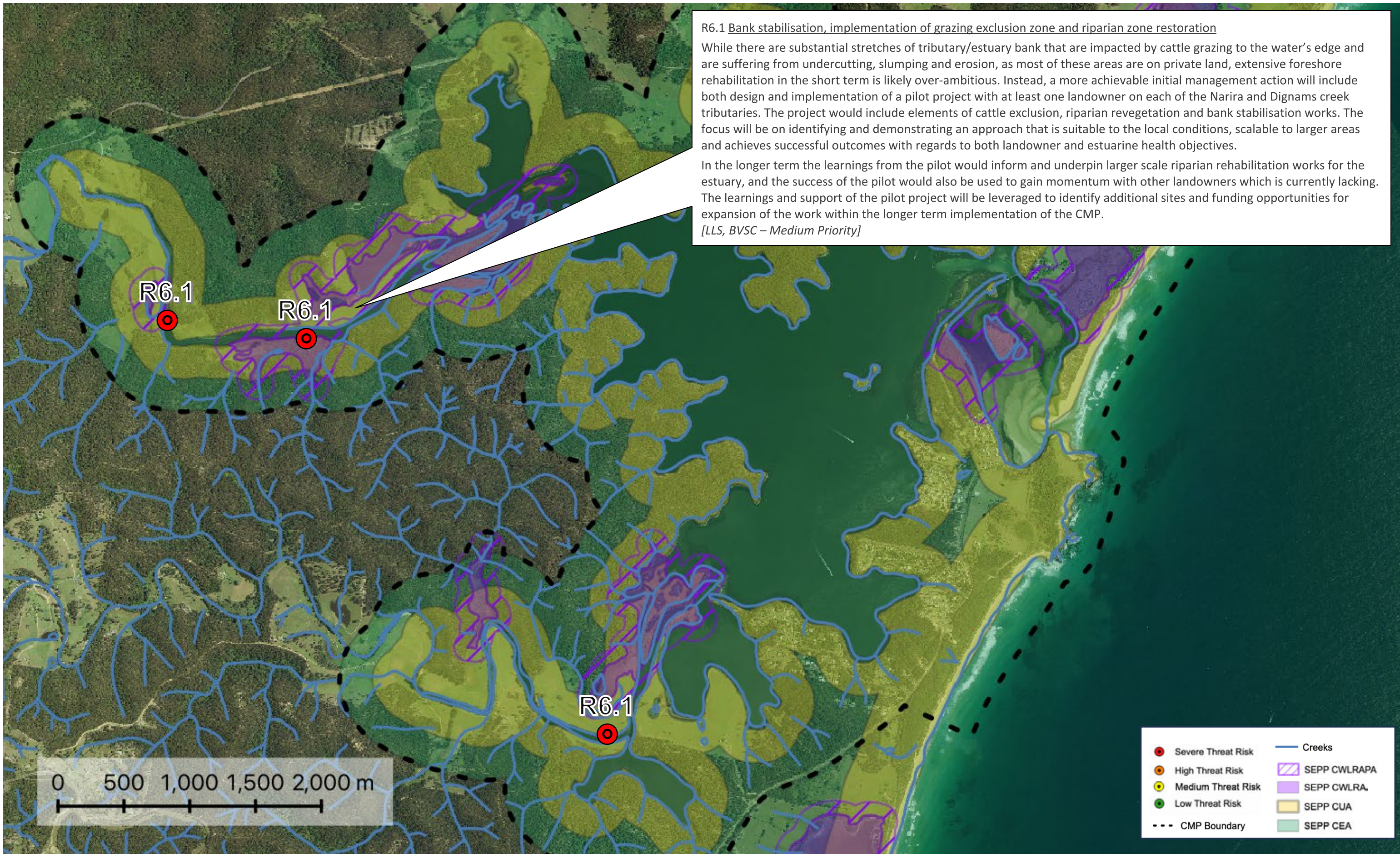


R6.1 Bank stabilisation, implementation of grazing exclusion zone and riparian zone restoration

While there are substantial stretches of tributary/estuary bank that are impacted by cattle grazing to the water's edge and are suffering from undercutting, slumping and erosion, as most of these areas are on private land, extensive foreshore rehabilitation in the short term is likely over-ambitious. Instead, a more achievable initial management action will include both design and implementation of a pilot project with at least one landowner on each of the Narira and Dignams creek tributaries. The project would include elements of cattle exclusion, riparian revegetation and bank stabilisation works. The focus will be on identifying and demonstrating an approach that is suitable to the local conditions, scalable to larger areas and achieves successful outcomes with regards to both landowner and estuarine health objectives.

In the longer term the learnings from the pilot would inform and underpin larger scale riparian rehabilitation works for the estuary, and the success of the pilot would also be used to gain momentum with other landowners which is currently lacking. The learnings and support of the pilot project will be leveraged to identify additional sites and funding opportunities for expansion of the work within the longer term implementation of the CMP.

[LLS, BVSC – Medium Priority]



Wallaga Lake
Coastal Management Program

Map Location: Wallaga Lake
 Map Title: Management Responses - Threat 6 – Degradation of Foreshore Areas and Tributary Banks
 Map ES6
 Date: 12/06/2024
 Rev: 2



R7.1 Adaptation planning for lying-assets around lake foreshore
 Prioritise low-lying assets to be raised and develop a plan/strategy to achieve this.
 [BVSC – Medium Priority]

R7.3 Develop a CVA and update relevant planning documents
 Introduce a Coastal Vulnerability Area (CVA) to incorporate a risk-based land-use planning approach for future development, and to adequately manage existing and future coastal risks.
 a) Determine CVA based on best available hazard information and submit a Planning Proposal.
 Review and update LEP, DCP and SLR Policy to ensure consistency with the CMP and CVA.
 [BVSC – Low Priority]

R7.4 Review CEA, CUA and CWLRA and adjust mapping (if required)
 Review the mapped CEA, CUA and CWLRA, adjust as required to ensure that the areas meet the intent for these CMAs as defined in the Coastal Management Manual and Resilience and Hazards SEPP, and submit a Planning Proposal.
 [BVSC – Low Priority]

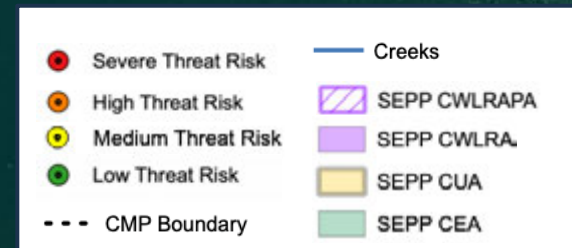
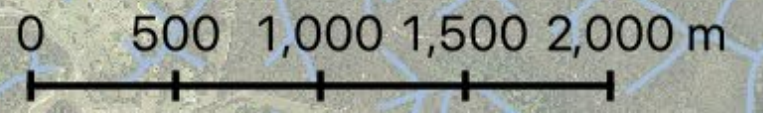
R7.2 Undertake coastal hazard risk planning for holiday/caravan parks
 Undertake a direct program of engagement and consultation with holiday parks (park owners and managers) that have threats from coastal hazards. This should include communication of information regarding the site-specific risks and working with park owners/managers to assist in developing Plans of Management for each park that acknowledges coastal hazard risks.
 [BVSC, Crown Lands – Low Priority]

R7.6 Analysis and mapping of entrance stability and migration
 Complete an assessment and mapping of the potential envelope of lake entrance migration. The mapped areas could subsequently be incorporated into the CVA and Planning Proposal covered in R7.3.
 [BVSC – Low Priority]

R7.5: Dune vegetation and maintenance program
 There is minimal infrastructure located behind Camel Rock Beach with only a lookout platform, and access tracks present. An access road runs behind the beach however this is situated behind over 50m of natural dune. There are no assets vulnerable to coastal erosion in the section of Wallaga Lake Beach covered by this CMP.

- R7.5a: Continue dune rehabilitation program on Camel Rock Beach and Wallaga Lake Beach, on an as-needs basis. The program should include strengthening of dune vegetation through weed control, revegetation and maintenance of access tracks and fencing as a priority defence against coastal hazards.
- R7.5b: If minor to moderate erosion occurs, restore foreshore access tracks and recreational infrastructure on a priority basis. This prioritisation should include safety inspections and repairs to beach observation platforms on an as-needs basis.

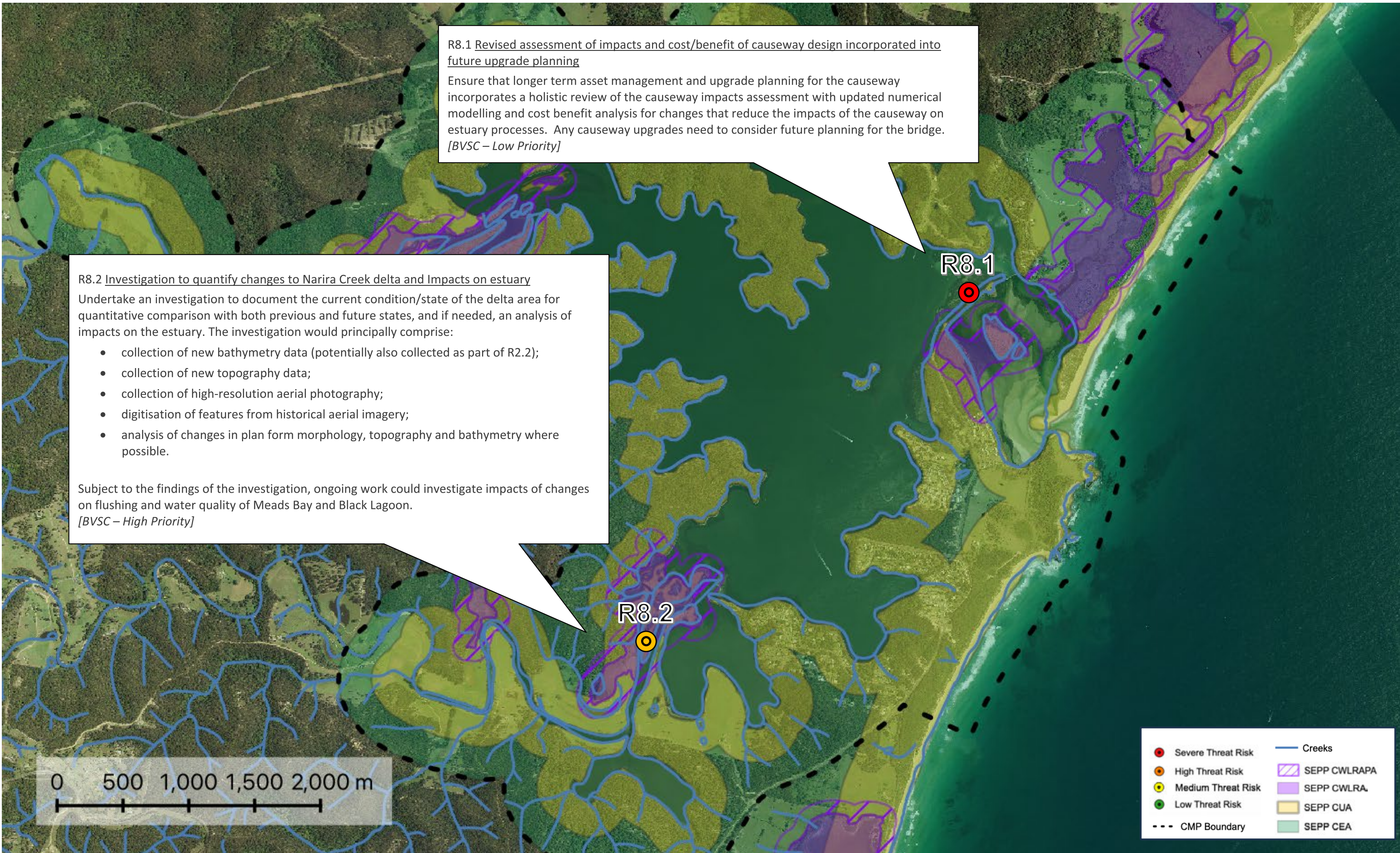
[BVSC, ESC – Medium Priority]



Wallaga Lake
 Coastal Management Program

Map Location: Wallaga Lake
 Map Title: Management Responses - Threat 7 – Coastal Hazards
 Map ES7
 Date: 12/06/2024
 Rev: 2



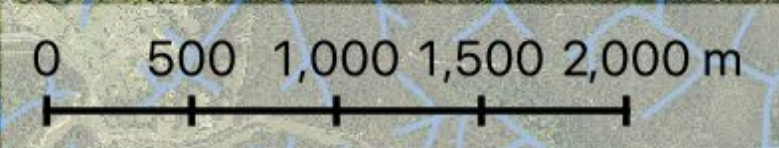


R8.1 Revised assessment of impacts and cost/benefit of causeway design incorporated into future upgrade planning
 Ensure that longer term asset management and upgrade planning for the causeway incorporates a holistic review of the causeway impacts assessment with updated numerical modelling and cost benefit analysis for changes that reduce the impacts of the causeway on estuary processes. Any causeway upgrades need to consider future planning for the bridge.
[BVSC – Low Priority]


R8.2 Investigation to quantify changes to Narira Creek delta and Impacts on estuary
 Undertake an investigation to document the current condition/state of the delta area for quantitative comparison with both previous and future states, and if needed, an analysis of impacts on the estuary. The investigation would principally comprise:

- collection of new bathymetry data (potentially also collected as part of R2.2);
- collection of new topography data;
- collection of high-resolution aerial photography;
- digitisation of features from historical aerial imagery;
- analysis of changes in plan form morphology, topography and bathymetry where possible.

Subject to the findings of the investigation, ongoing work could investigate impacts of changes on flushing and water quality of Meads Bay and Black Lagoon.
[BVSC – High Priority]



● Severe Threat Risk	— Creeks
● High Threat Risk	▨ SEPP CWRAPA
● Medium Threat Risk	▨ SEPP CWLRA
● Low Threat Risk	▨ SEPP CUA
- - - CMP Boundary	▨ SEPP CEA

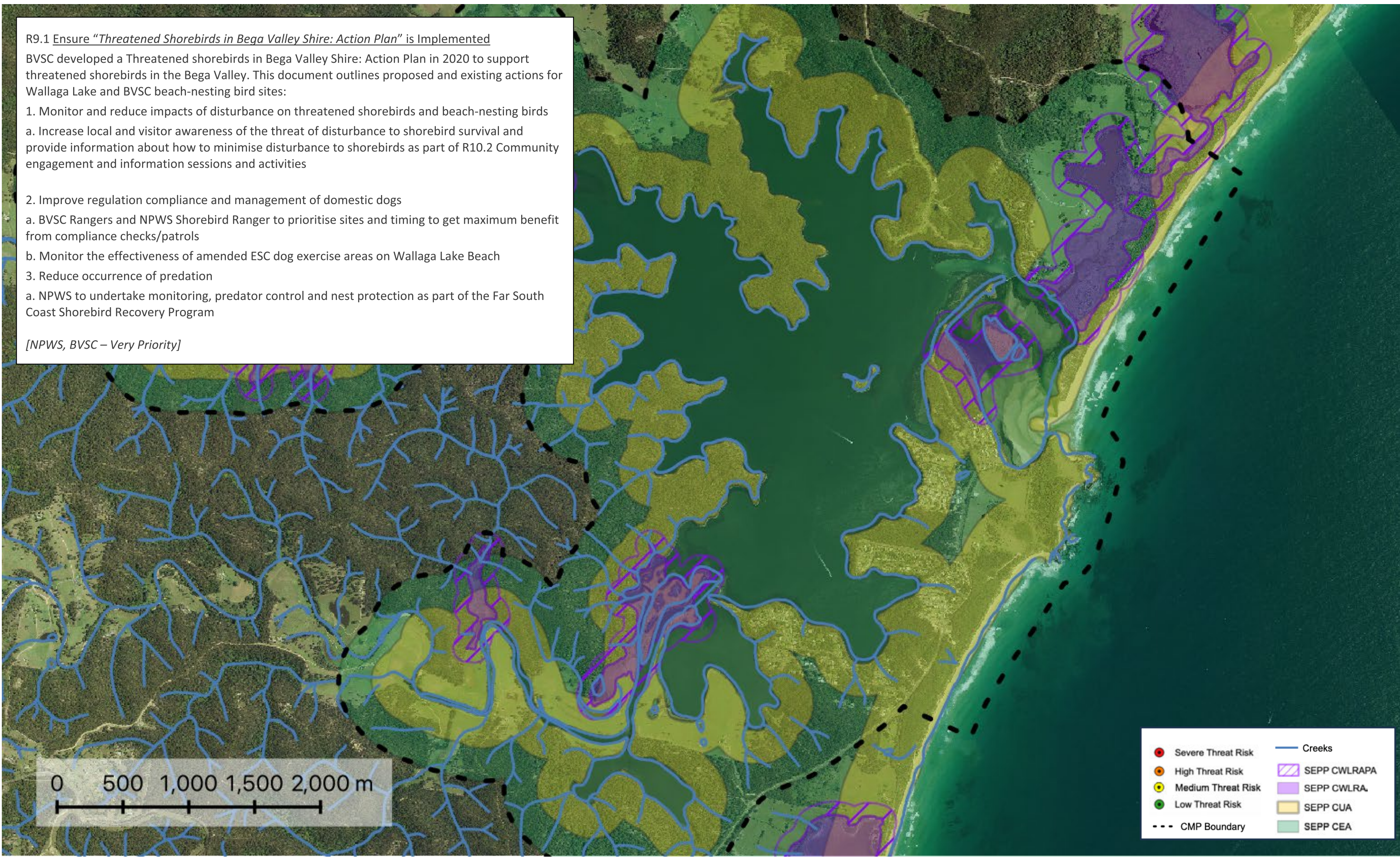
Wallaga Lake Coastal Management Program	Map Location: Wallaga Lake		
	Map Title: Management Responses - Threat 8 – Structure and Function of the Lake		
	Map ES8	Date: 12/06/2024 Rev: 2	

R9.1 Ensure *“Threatened Shorebirds in Bega Valley Shire: Action Plan”* is Implemented

BVSC developed a Threatened shorebirds in Bega Valley Shire: Action Plan in 2020 to support threatened shorebirds in the Bega Valley. This document outlines proposed and existing actions for Wallaga Lake and BVSC beach-nesting bird sites:

1. Monitor and reduce impacts of disturbance on threatened shorebirds and beach-nesting birds
 - a. Increase local and visitor awareness of the threat of disturbance to shorebird survival and provide information about how to minimise disturbance to shorebirds as part of R10.2 Community engagement and information sessions and activities
2. Improve regulation compliance and management of domestic dogs
 - a. BVSC Rangers and NPWS Shorebird Ranger to prioritise sites and timing to get maximum benefit from compliance checks/patrols
 - b. Monitor the effectiveness of amended ESC dog exercise areas on Wallaga Lake Beach
3. Reduce occurrence of predation
 - a. NPWS to undertake monitoring, predator control and nest protection as part of the Far South Coast Shorebird Recovery Program

[NPWS, BVSC – Very Priority]



● Severe Threat Risk	— Creeks
● High Threat Risk	▨ SEPP CWRAPA
● Medium Threat Risk	▨ SEPP CWRRA
● Low Threat Risk	▨ SEPP CUA
- - - CMP Boundary	▨ SEPP CEA

Wallaga Lake
Coastal Management Program

Map Location: Wallaga Lake

Map Title: Management Responses – Threat 9 – Biodiversity Loss

Map ES9

Date: 12/06/2024
Rev: 2



R10.1 Establishment of a community interest group

Establish a Landcare community volunteer interest group for Eden more broadly, to support the work of the Clean Curralo group on the lake and lower catchment. This would enable holistic participatory activities for maintaining sections of the lake and its broader catchment environs, and form a conduit for engagement with Council, the broader community and other stakeholders.

[BVSC – Medium Priority]

R10.2 Community engagement and information sessions and activities

An ongoing and pro-active program of community engagement initiatives is required, aimed at improving awareness of the lake and its natural processes, as well as ownership of the lake and issues. This could include for example, educational walks around the lake foreshore, bio-blitz, presentations, weed swaps, information sessions.

The focus of the engagement will be on areas such as:

- Natural processes of the lake and surrounding catchment
- Entrance management
- Awareness and conservation of migratory and beach nesting birds
- Myths and realities of lake health, water quality, fisheries
- Do’s and don’ts of living near the lake
- Weeds in the urban areas surrounding the lake
- Cultural heritage

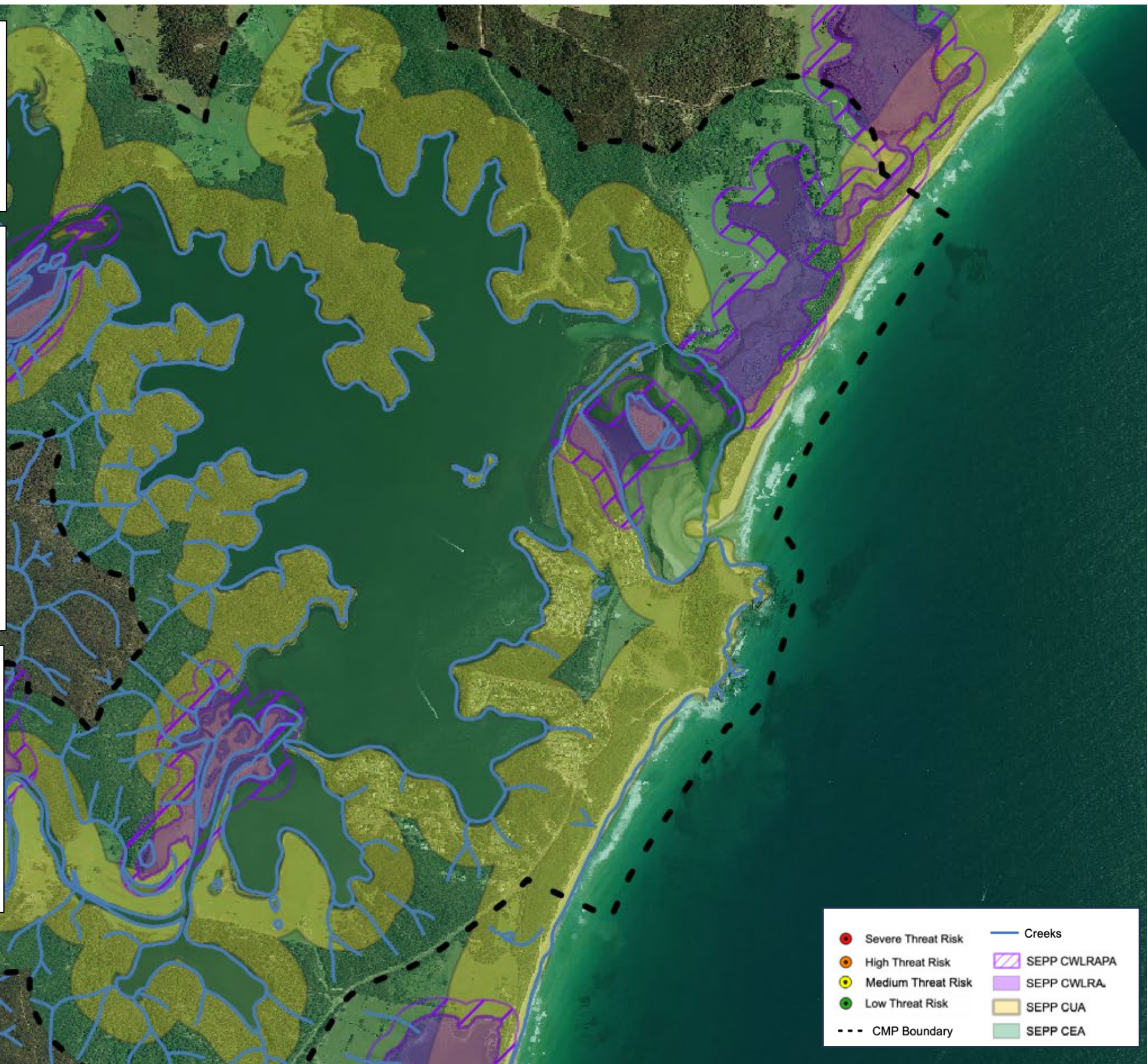
[BVSC – Medium Priority]

R10.3 Updated and new interpretive signage

Design and install updated interpretive signage with a focus on aspects such as:

- Natural processes and ecology of the lake and its catchment
- Management of the lake entrance
- Interaction of the natural and urban environments
- Cultural Heritage (Aboriginal and European)
- Previous and future changes for the lake
- Recreational features, equipment and access

[BVSC – Low Priority]



Wallaga Lake
Coastal Management Program

Map Location: Wallaga Lake
 Map Title: Management Responses - Community Engagement, Education and Participation
 Map ES10
 Date: 12/06/2024
 Rev: 2



ES.2 How was the CMP Developed?

The *Wallaga Lake Coastal Management Program* builds on the objectives of the previous Estuary Management Plan while also addressing current issues for the estuary. The process followed for developing the CMP was based on the five-stages outlined in the *Coastal Management Manual (2018)*, and is shown in Figure ES.2.

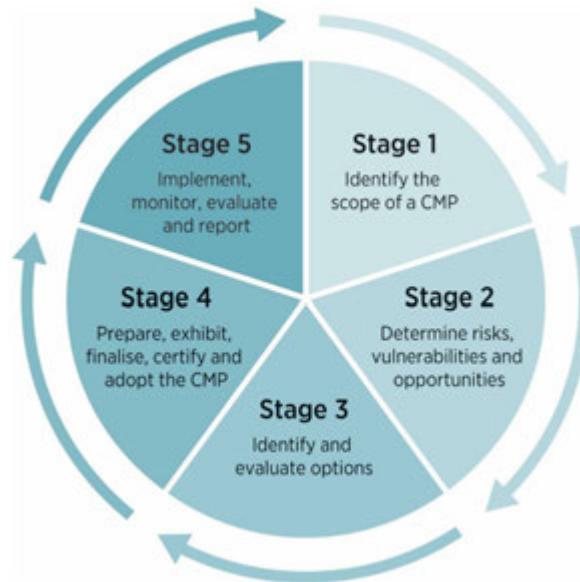


Figure ES.2: Five Stages of Developing a Coastal Management Program

Developing the CMP was a phased process spanning a number of years and has included a range of activities such as:

- CMP Stage 1:
 - Scoping and identifying the needs for the CMP within the context of the broader coastal zone of the Bega Valley Shire Local Government Area (see CMP Scoping Study, BVSC, 2022b);
- CMP Stage 2:
 - Collating and reviewing existing information and management plans (see CMP Scoping Study (BVSC, 2022b), Synthesis of Information (BVSC, 2024a), CMP Estuary Threats and Pressures Assessment (BVSC, 2024b));
 - Combining existing information with new field observations to build a contemporary understanding of threats and issues to the estuary (see CMP Estuary Threats and Pressures Assessment (BVSC, 2024b));
 - Evaluating and prioritising the threats in a risk assessment framework (see CMP Estuary Threats and Pressures Assessment (BVSC, 2024b));
- CMP Stage 3:
 - Developing a range of achievable management responses to further inform and where possible reduce the risks posed by threats (presented in this report);

- Evaluating and prioritising these management responses on the basis of their feasibility, viability and acceptability (presented in this report);
- CMP Stage 4:
 - Preparation of the CMP report (this document)
 - Collating feedback from stakeholders and community through formal review and exhibition processes.

The *Coastal Management Manual (2018)* requires Councils to follow a risk management process when evaluating threats and developing coastal management programs. In the estuarine management context this risk management approach involved identifying, evaluating, treating, communicating and monitoring risks to people, the environment, assets and infrastructure and to the general social, environmental, cultural and economic values of the estuary. For the Wallaga Lake CMP this risk management approach identified the likelihood and consequences of each specific management issue, to determine the relative risk level that it posed.

Consistent with the Mandatory Requirements for CMPs, consideration has also been given as to how each threat is likely to evolve with time across short (approximately 20 years), medium (approximately 50 years) and long (approximately 100 years) timeframes, if no intervention or risk management action is taken.

Engagement of key stakeholders and the broader community during preparation of the *Wallaga Lake CMP* was essential to developing a program that was both evidence-based and tangible. Engagement activities completed during the development of the CMP included:

- Establishing a CMP focus group to oversee the CMP development process, consult on key aspects, and form a conduit to provide information to respective agencies and constituencies. The focus group comprised key representatives from the community, BVSC (technical staff and elected councillors), ESC, DCCEEW, DPI Fisheries, Batemans Marine Park, National Parks, Crown Lands, LLS, Merrimans LALC, NSW Forestry, Transport for NSW and UNSW;
- A dedicated website for the development of the suite of BVSC CMPs, including a section specifically for the *Wallaga Lake CMP*;
- Formal and social media releases;
- An email contact group used to distribute project updates and for community members to provide input;
- Information drop-in sessions; and
- Exhibition of the draft CMP.

ES.3 How will the CMP be Implemented?

Bega Valley Shire Council is primarily responsible for coordinating and leading the implementation of the overall CMP, as well as implementation of specific actions within the CMP. This includes responsibility for coordinating budgetary processes within the IP&R framework using existing mechanisms such as Council's *Community Strategic Plan*, *Resourcing Strategy*, as well as Council's *Delivery Program* and *Operational Plan*. Responsibility for monitoring, evaluation and reporting on implementation of the CMP will also primarily sit with BVSC staff, supported by the Coast and Flood Management Committee. ESC also has

responsibility for implementation of management actions on the northern foreshore the estuary, as this sites within the ESC Local Government Area.

Throughout implementation of the CMP, BVSC will consider how best to implement the identified management actions, in alignment with the community’s priorities as identified through the Themes and Strategies of the Community Strategic Plan. Implementation of the CMP will be funded across a range of sources including a blend of Council budget allocations, existing Council staff resources and grant finance. Council’s responsibility for implementation of the CMP includes allocation, seeking and management of appropriate financial resources, through both internal Council budgetary processes as well as State Government grant programs and other sources.

The CMP report includes guidance on how the CMP will be implemented across the 10-year Implementation period, detailed within an *Implementation Plan* and a *Business Plan*. A framework is also proposed for Monitoring, Evaluation and Reporting (MER) of implementation of the CMP, with a series pragmatic implementation progress indicators identified for each management action.

CMP Implementation Plan	CMP Business Plan	Monitoring, Evaluation and Reporting Framework
<ul style="list-style-type: none"> • Provides an overarching timetable that sets out the flow of management actions throughout the 10-year Implementation Period • Identifies implementation progress indicators 	<ul style="list-style-type: none"> • Provides an indicative budget for CMP implementation, including cost estimates of individual management actions • Identifies potential funding sources and arrangements 	<ul style="list-style-type: none"> • Identifies a Monitoring, Evaluation and Reporting framework based on Annual Progress Reporting, Mid-Term Review, and Terminal Evaluation Report • Identifies an Estuary Health Monitoring Program, to help track CMP effectiveness and capture community concerns.

Figure ES.3: Components of the CMP Implementation Guidance

The Monitoring, Evaluation and Reporting (MER) program for the Wallaga Lake CMP provides a pragmatic mechanism to gauge implementation progress, and outlines the process for transparent reporting against the CMP targets. Importantly, the MER program goes further than this by also setting out a process to monitor the effectiveness of the CMP toward progressive achievement of the aspirations defined by the community and stakeholders, and defines opportunities for strategic review and re-alignment of the CMP priorities, if needed to achieve the overarching CMP objectives.