RCS Goal: “Increase the protection, enhancement and restoration of valuable natural resources to improve the health and sustainable productivity of the Corangamite catchment.”

The Corangamite CMA acknowledges the traditional custodians of the land and waters where we work and pay our respects to the Elders past and present.

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Executive summary

This report evaluates the progress and outcomes from implementation of the Corangamite Regional Catchment Strategy 2013-2019 (Corangamite RCS). The Corangamite RCS provides a strategic, integrated framework for the management of natural resources in the Corangamite Catchment Management region of Victoria. The major focus for this review was on gaps, new information and the lessons to date, and how these may impact the final 3 years of RCS implementation and the renewal of RCS’s in 2019. Performance of the RCS is also reported.

Methodology

Guidance questions provided by the Victorian Catchment Management Council (VCMC) and the Corangamite RCS MERI Plan were used as the basis of this review. The RCS MERI Plan includes eight Key Evaluation Questions (KEQ) that measure whether the five ‘outcomes of the RCS’ (as listed on pp56) have been achieved. Five of these related directly to VCMC guidance and were addressed for this review:

- KEQ 1 To what extent has the RCS contributed to changes in natural resource condition and extent?
- KEQ 2 To what extent have the four foundations for change been progressed?
- KEQ 3 To what extent has the RCS been implemented as planned?
- KEQ 4 To what extent has the RCS directly contributed to the outcomes achieved?
- KEQ 7 What could be done differently to improve implementation, and thereby maximise impact?

Methods included collation and analysis of data to show trends in the levels of participation, partnerships, knowledge sharing, and investment; and collation and analysis of data to show trends in on-ground actions to protect high value natural resources such as soils and agricultural land, waterways, native vegetation, threatened species, coasts, and aquifers. Effectiveness and impact of the RCS was looked at through an online survey of partners, semi-structured interviews with members of the Corangamite Community Advisory Group, an audit of the MERI Plan, internal reflection by CCMA staff and input at a workshop by the CCMA Board.

Results

KEQ 1 To what extent has the RCS contributed to changes in natural resource condition and extent?

For on-ground activities to protect and enhance high value natural resources; results have shown a significant increase in the recognition of and participation in sustainable management of soils and agricultural land; an increase in the amount of rivers, estuaries, wetlands, inland and coastal native vegetation areas under protection through contracted management. Results also indicate that investment is going towards high value and cost-effective projects, with the majority of investment being within RCS priority areas. Also a very high percentage (e.g. 87% for coastal projects) of the benefits that were available from pools of project proposals were purchased for a low proportion of the total proposal value (e.g. 40% for coastal projects).

KEQ 2 To what extent have the four foundations for change been progressed?

Results showed variable trends in all of the foundations; a strong breadth of participation in NRM within the Corangamite region and varying levels of the depth of this participation; and a large range of knowledge sharing activities, including new web portals and websites and new knowledge obtained in many areas including regionally specific climate change science and planning. For the most part partnerships are healthy and productive; there has been a marginal increase in investment with an array of new investors within the region and a new NRM planning portal to identify local priorities and joint priorities for investment.

KEQ 3 To what extent has the RCS been implemented as planned? KEQ 4 To what extent has the RCS directly contributed to the outcomes achieved? KEQ 7 What could be done differently to improve implementation, and thereby maximise impact?

Results relating to the use, impact and effectiveness of the RCS showed that 90% of online survey participants used the RCS at least sometimes, and that it was mainly used to understand regional priorities and plan for projects and/or on-ground works. Results also indicated a preference towards using RCS sub-strategies for details associated with this planning. Objectives and actions for natural resources were more commonly used (more than 70% use) than the objectives and actions for the four foundations for change (~50% use). Another
key findings was that the RCS should remain as a high level strategic document. It was also identified that protecting natural resources; continuing the focus on community participation, identifying joint priorities for investment; climate change; achieving practice change on private land; and integrating and coordinating management were the most important focus areas for both the short and longer-term, including renewal of the RCS.

Gaps and new knowledge
A large range of new knowledge and gaps have been identified throughout this review. Major themes and those that will have a major influence on the RCS and its implementation include:

- increasing aboriginal participation and addressing amendments to the *Aboriginal Heritage Act 2006*
- aligning to new State policy and strategy, including *Water for Victoria* and *Biodiversity 2037*
- adapting to climate change using new regionally specific climate change science and the Corangamite NRM Plan for Climate change
- improving efficiency for engagement activities and MERI for measuring participation (particularly the depth), partnerships and practice change
- RCS implementation and reporting needs to be more inclusive of partners and their activities
- expanding the NRM planning portal to integrate local and regional planning and investment
- the new Coastal and Marine Act, when complete brings some significant changes to the jurisdiction and management of coastal and marine areas.

Recommendations
Over sixty recommendations have been made throughout this report for now and for the renewal of the RCS. These are implementation focused and have been prioritised based on timeframe, significance and whether they are currently underway. Key themes for those that are of highest priority for attention in the final years of RCS implementation include:

RCS foundations

- Ensuring compliance with the changes to the *Aboriginal Heritage Act 2006* and improving Aboriginal engagement and participation through mechanisms such as the Aboriginal Participation Guidelines and a new Aboriginal Inclusion Plan.
- Develop a Customer Relationship Management system and establish a central MERI data repository for future RCS reporting.
- Review progress of the CCMA Community Engagement and Partnerships Strategy and establish baselines to measure participation (including more accurate reporting on depth of participation and Landcare involvement), practice change (investigate the level to which this is occurring) and engagement effectiveness.
- Incorporate the investment and activities of partners in future reporting, including the development of a ratio of landholder investment in NRM in the region.
- Re-run partnerships health survey to evaluate and compare partnership health for the final RCS review.
- Partner with local government to capture RCS objectives and goals in their planning, management and regulatory processes.
- Prepare for the next round of the National Landcare Programme and develop a community based summary to promote the RCS review, its achievements and remaining actions.

NRM themes

- Incorporate new information on Climate Change to better inform NRM and planning in the region.
- Determine the scope, timing and budget for an Agricultural Land Strategy.
- Review the *Water for Victoria* Plan and incorporate priority activities/actions as they relate to Corangamite CMA.
- Under the proposed new Marine and Coastal Act, ensure that matters relating to the transition of responsibilities to coastal CMAs are addressed.
• Continue the Rivers 2040 trial for the Moorabool and if successful expand to other priority waterways as listed in the Water for Victoria Water Plan (Great Ocean Road estuaries, and Barwon Rivers and the Western District Lakes).

**Conclusion**

In conclusion, the RCS mid-term review has provided an insight into many aspects of its implementation, and provided some new data for which baselines are now available to measure change over the final 3 years of implementation. Gaps and new knowledge that should be applied have been identified to improve the effectiveness of the RCS and its implementation. The recommendations, once addressed should provide an avenue to address these gaps, incorporate new knowledge and allow for improved implementation of the RCS going forward, through to the final RCS review and renewal in 2019.
Summary of recommendations

The recommendations made throughout Chapter 3, 4 and 5 of this report have been collated and presented here. The recommendations are sorted according to timeframe, being the financial year that they are expected to be addressed and/or commence.

Recommendations that are anticipated to be addressed in 2017/18 can be seen in Table A, recommendations for 2018/19 in Table B and for 2019/20 and beyond (including RCS renewal) in Table C. The recommendations are then prioritised into two levels:

1. **Priority** for implementation to commence within the allocated financial year
2. **Consider**: consider or investigate implementation within the financial year

The shading represents whether action/s to address each recommendation is *underway* or *not started*.

**Table A. Recommendations for 2017/18.**

Priority level: 1 = Priority; 2 = Consider or investigate

<table>
<thead>
<tr>
<th>Theme</th>
<th>No.</th>
<th>Recommendation</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation (Aboriginal)</td>
<td>3.2</td>
<td>Prioritise, implement and monitor actions for CMA businesses, staff and contractors in the Aboriginal participation guideline implementation plan and checklist.</td>
<td>1</td>
</tr>
<tr>
<td>Compliance</td>
<td>3.4</td>
<td>Set up due diligence systems and a process to ensure compliance with the changes to the <em>Aboriginal Heritage Act 2006</em>.</td>
<td>1</td>
</tr>
<tr>
<td>Implementation &amp; efficiency</td>
<td>3.5</td>
<td>Develop a Customer Relationship Management (CRM) system (assists with implementing 3.6-3.9).</td>
<td>1</td>
</tr>
<tr>
<td>MERI (participation)</td>
<td>3.6</td>
<td>Review progress in implementing the CMA Community Engagement Strategy and establish improved baselines to measure participation, practice change and engagement effectiveness.</td>
<td>1</td>
</tr>
<tr>
<td>MERI (investment)</td>
<td>3.13</td>
<td>Incorporate the investment of partners, including the development of a ratio of landholder investment in NRM in the region.</td>
<td>1</td>
</tr>
<tr>
<td>Investment</td>
<td>3.19</td>
<td>Prepare for the next round of the National Landcare Programme – including development of an RCS review summary document to assist in regional promotion (Recommendation 3.28).</td>
<td>1</td>
</tr>
<tr>
<td>Integration &amp; coordination (partnerships)</td>
<td>3.28</td>
<td>Develop in addition to the review document a community based summary to promote the RCS review, its achievements and remaining actions.</td>
<td>1</td>
</tr>
<tr>
<td>Soils and agricultural land</td>
<td>3.29</td>
<td>Determine the scope, timing and budget for an Agricultural Land Strategy (to integrate protection of soil health, natural resources and productivity on agricultural land with a focus on improved productivity and environmental outcomes) in consultation with the Land Health Steering Committee and seek funding opportunities for its development.</td>
<td>1</td>
</tr>
<tr>
<td>Waterways</td>
<td>3.45</td>
<td>Review the Water for Victoria Plan and incorporate priority activities/actions as they relate to Corangamite CMA, e.g. input to the Central Region Sustainable Water Strategy and Ballarat Integrated Water Management review and capturing shared benefits of water management.</td>
<td>1</td>
</tr>
<tr>
<td>MERI (data accuracy)</td>
<td>5.1</td>
<td>Establish a central MERI data repository and ensure RCS MERI Plan is resourced so it can use the most relevant and current data.</td>
<td>1</td>
</tr>
<tr>
<td>Knowledge sharing</td>
<td>3.10</td>
<td>Promote the CMA’s Knowledge Base and develop a knowledge management strategy to prioritise key tasks.</td>
<td>2</td>
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<tr>
<td>Theme</td>
<td>No.</td>
<td>Recommendation</td>
<td>Priority</td>
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<tr>
<td>Participation (Aboriginal)</td>
<td>3.3</td>
<td>Develop and implement an Aboriginal Inclusion Plan. Links to 4.2 and 3.2.</td>
<td>1</td>
</tr>
<tr>
<td>Knowledge sharing (climate change)</td>
<td>3.12</td>
<td>Use the Corangamite NRM Plan for Climate Change to incorporate regionally specific information on climate change into current and future NRM planning.</td>
<td>1</td>
</tr>
<tr>
<td>Investment</td>
<td>3.14</td>
<td>Capitalise on opportunities to capture additional external (landholder, community or other segments) investment and participation in regional NRM (e.g. crowd sourcing, Barwon Water investment into the Rivers 2040 trial site).</td>
<td>1</td>
</tr>
<tr>
<td>Investment &amp; joint priorities</td>
<td>3.16</td>
<td>Continue to support inclusion of Landcare local priorities into the NRM Planning Portal, and begin to work with local government, state agencies and Traditional Owners to incorporate their priority assets into the NRM planning portal.</td>
<td>1</td>
</tr>
<tr>
<td>Integration &amp; coordination (partnerships)</td>
<td>3.21</td>
<td>Use partnerships survey findings and individual reports to implement interventions to respond to the concerns identified by NRM NGOs.</td>
<td>1</td>
</tr>
<tr>
<td>Integration &amp; coordination (partnerships)</td>
<td>3.24</td>
<td>Promote RCS delivery to regional partner organisations through appropriate forums and the regional operating agreements (e.g. Parks Victoria, regional DELWP) and, in accordance with Recommendation 4.1 re-consider the need for an NRM regional alliance.</td>
<td>1</td>
</tr>
<tr>
<td>Waterways</td>
<td>3.31</td>
<td>Target promotion of waterway grants to priority waterways and upstream catchments.</td>
<td>1</td>
</tr>
<tr>
<td>MERI (waterways)</td>
<td>3.42</td>
<td>Improve data accuracy for reporting of future activities against priority waterways (through the CWS MERI Plan implementation); and provide for the ability to map on ground works onsite.</td>
<td>1</td>
</tr>
<tr>
<td>Investment</td>
<td>3.44</td>
<td>Increase the use of the NRM Planning Portal in waterway planning, engagement and project delivery.</td>
<td>1</td>
</tr>
<tr>
<td>Coasts</td>
<td>3.50</td>
<td>Continue to invest in high value coastal EVCs as a means of protecting habitat for a significant number of the regions threatened flora and fauna species.</td>
<td>1</td>
</tr>
<tr>
<td>RCS Performance &amp; effectiveness</td>
<td>4.1</td>
<td>Improve the awareness and implementation of the RCS and in particular its foundations with partners. Links to 5.2.</td>
<td>1</td>
</tr>
<tr>
<td>Participation (Aboriginal)</td>
<td>4.2</td>
<td>Increase Aboriginal and Traditional Owner involvement. Links to 3.3.</td>
<td>1</td>
</tr>
<tr>
<td>MERI (partnerships)</td>
<td>3.20</td>
<td>Improve consistency and accuracy of data records to report on changes to the number of partnerships.</td>
<td>2</td>
</tr>
<tr>
<td>Coasts &amp; marine</td>
<td>3.51</td>
<td>Continue with current RCS implementation until the new Marine and Coastal Act is completed, then adapt the RCS (at its renewal) accordingly.</td>
<td>2</td>
</tr>
</tbody>
</table>

Table B. Recommendations for 2018/19.

Priority level: 1 = Priority; 2 = Consider or investigate

<table>
<thead>
<tr>
<th>Theme</th>
<th>No.</th>
<th>Recommendation</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>MERI (participation)</td>
<td>3.7</td>
<td>Conduct further work to develop the IAP2 spectrum analysis (for measuring depth of engagement) into a more sophisticated MERI activity (including categorising events for the empower level of engagement).</td>
<td>1</td>
</tr>
<tr>
<td>MERI (participation)</td>
<td>3.8</td>
<td>Investigate the level to which landholder behaviour and practice change is occurring as a result of participation in NRM.</td>
<td>1</td>
</tr>
<tr>
<td>MERI (participation)</td>
<td>3.9</td>
<td>Revise the RCS MERI Plan to more accurately measure success for breadth and depth of Landcare involvement in NRM (using the Landcare Support Plan and/or Group Health Survey data). Explore the use of the NRM Portal</td>
<td>1</td>
</tr>
<tr>
<td>Integration &amp; coordination (partnerships)</td>
<td>3.22</td>
<td>Re-run partnerships health survey to evaluate and compare partnership health for the final RCS review.</td>
<td>1</td>
</tr>
<tr>
<td>Integration &amp; coordination (partnerships)</td>
<td>3.25</td>
<td>Partner with local government to capture RCS objectives and goals in their planning, management and regulatory processes. Links to recommendation 3.16 (inclusion of priorities into NRM planning portal).</td>
<td>1</td>
</tr>
<tr>
<td>Integration &amp; coordination (partnerships)</td>
<td>3.26</td>
<td>Promote the Our Catchment Our Communities projects as regional case studies of effective integrated catchment management.</td>
<td>1</td>
</tr>
<tr>
<td>Waterways</td>
<td>3.34</td>
<td>Incorporate new information on Climate Change to better inform the waterways works program – connectivity data, adaption pathways. Links to recommendation 3.12.</td>
<td>1</td>
</tr>
<tr>
<td>MERI (waterways)</td>
<td>3.41</td>
<td>Continue the Rivers 2040 trial for the Moorabool and if successful expand to other priority waterways as listed in the Water Plan for Victoria Water Plan (Great Ocean Road estuaries, and Barwon Rivers and the Western District Lakes).</td>
<td>1</td>
</tr>
<tr>
<td>Coasts &amp; marine</td>
<td>3.52</td>
<td>Ensure that matters relating to the transition of responsibilities to coastal CMAs (that have been identified in the Corangamite CMA submission to the Marine and Coastal Act Consultation Paper) are addressed.</td>
<td>1</td>
</tr>
<tr>
<td>Integration &amp; coordination (partnerships)</td>
<td>3.23</td>
<td>Set up methodology to evaluate whether partnerships have led to improved integration of catchment management.</td>
<td>2</td>
</tr>
<tr>
<td>Waterways</td>
<td>3.33</td>
<td>Investigate the use of the Environment Protection Authority ‘RiverMAP’ data for water quality metric for condition change assessments (RCS and CWS).</td>
<td>2</td>
</tr>
<tr>
<td>Waterways</td>
<td>3.35</td>
<td>Consider incorporating patch size and connectivity data from waterways works program to further progress Action 29 (identify and manage drought refuges) and future climate change actions.</td>
<td>2</td>
</tr>
<tr>
<td>Waterways</td>
<td>3.36</td>
<td>Examine opportunities to conduct fish surveys to establish population trends and develop a process to incorporate new sites into management decisions.</td>
<td>2</td>
</tr>
<tr>
<td>Native vegetation &amp; threatened species</td>
<td>3.47</td>
<td>Under the direction of Biodiversity 2037, assess the need for, and if required progress development of a regional biodiversity strategy or an alternative means of capturing regional priorities.</td>
<td>2</td>
</tr>
<tr>
<td>Native vegetation &amp; threatened species</td>
<td>3.48</td>
<td>Examine options to incorporate native vegetation and threatened species conservation actions of partners for future RCS implementation and reporting.</td>
<td>2</td>
</tr>
<tr>
<td>MERI (native vegetation)</td>
<td>3.49</td>
<td>Collate native vegetation quality data for the final RCS review, and consider using the Remnant Native Vegetation Investigation Discussion Paper (median habitat hectares scores, VEAC, 2011) as a basis comparison. Links to recommendation 3.56.</td>
<td>2</td>
</tr>
<tr>
<td>MERI (coasts)</td>
<td>3.53</td>
<td>Examine options to incorporate coastal vegetation and coastal threatened species conservation actions of partners for future RCS implementation and reporting.</td>
<td>2</td>
</tr>
<tr>
<td>MERI (native vegetation)</td>
<td>3.56</td>
<td>Seek support from DELWP to run modelling for the environmental accounts for native vegetation and wetlands for the final RCS review.</td>
<td>2</td>
</tr>
<tr>
<td>Underway</td>
<td>Participation</td>
<td>3.11</td>
<td>Promote the citizen science programs and investigate how the Waterwatch program and water quality data (as per EstuaryWatch) can be used for planning and decision making (moving to the collaborate level of engagement).</td>
</tr>
<tr>
<td>CMA effectiveness</td>
<td>5.5</td>
<td>Continue to implement VAGO recommendations: around the effectiveness of CMAs, e.g. Our Catchments Our Communities Program; catchment indicators reporting, and recent review of Ramsar obligations.</td>
<td>1</td>
</tr>
<tr>
<td>Theme</td>
<td>No.</td>
<td>Recommendation</td>
<td>Priority</td>
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<tr>
<td>Integration &amp; coordination (partnerships)</td>
<td>3.27</td>
<td>Consolidate the CCMA integrated delivery model for improved project integration across NRM themes.</td>
<td>2</td>
</tr>
<tr>
<td>MERI (soils and agricultural land)</td>
<td>3.30</td>
<td>Continue long-term regional soil health monitoring to understand soil health trends and the value of investment.</td>
<td>2</td>
</tr>
</tbody>
</table>

### Table C. Recommendations for 2019/20 and beyond.

Priority level: 1 = Priority; 2 = Consider or investigate

<table>
<thead>
<tr>
<th>Theme</th>
<th>No.</th>
<th>Recommendation</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation (Aboriginal)</td>
<td>3.1</td>
<td>Revise the Aboriginal and Traditional Owner objectives and actions in the RCS to align with to the objectives of the Indigenous Participation Program and the key aspects of cultural heritage compliance and Aboriginal participation.</td>
<td>1</td>
</tr>
<tr>
<td>Investment and knowledge sharing</td>
<td>3.18</td>
<td>Review the NRM planning portal to determine its effectiveness and appropriateness to use for RCS renewal, including as a planning tool for investment and for knowledge capturing and sharing. Links to 5.10.</td>
<td>1</td>
</tr>
<tr>
<td>Waterways</td>
<td>3.32</td>
<td>Strengthen the program logic for the waterways section of the RCS to improve alignment and cross-referencing between the Corangamite Waterway Strategy and RCS; including language consistency and expected outcomes and data to be used for MERI and reporting.</td>
<td>1</td>
</tr>
<tr>
<td>Waterways</td>
<td>3.37</td>
<td>Consider the impact of VAGO recommendations on management of Ramsar wetlands for RCS renewal.</td>
<td>1</td>
</tr>
<tr>
<td>Waterways</td>
<td>3.38</td>
<td>Revise floodplain objectives and actions to better align with the Water Act Statement of Obligations.</td>
<td>1</td>
</tr>
<tr>
<td>MERI/waterways</td>
<td>3.58</td>
<td>Build in new state-wide MERI approaches (e.g. links to the Rivers 2040 framework and statewide catchment indicators trial).</td>
<td>1</td>
</tr>
<tr>
<td>Climate change</td>
<td>5.6</td>
<td>Use the Corangamite NRM Plan for Climate Change to embed climate change into the next RCS.</td>
<td>1</td>
</tr>
<tr>
<td>RCS renewal planning</td>
<td>5.9</td>
<td>Examine use of a web portal format for next RCS, building on the NRM planning portal.</td>
<td>1</td>
</tr>
<tr>
<td>RCS renewal planning</td>
<td>5.10</td>
<td>Consider the scale of the next RCS and the role of the NRM Planning Portal. Links to 3.18.</td>
<td>1</td>
</tr>
<tr>
<td>RCS renewal planning</td>
<td>5.11</td>
<td>Review key state strategies and policy documents (e.g. Biodiversity 2037, Water for Victoria Plan and Our Catchments and Our Communities strategy) and incorporate relevant activities/ actions as they relate to Corangamite CMA</td>
<td>1</td>
</tr>
<tr>
<td>RCS renewal planning</td>
<td>5.12</td>
<td>Review the effectiveness of the four year Our Catchment Our Communities funded projects in delivering the objectives of the RCS.</td>
<td>1</td>
</tr>
<tr>
<td>Investment</td>
<td>3.15</td>
<td>Review progress with the Investment Recruitment Strategy.</td>
<td>2</td>
</tr>
<tr>
<td>RCS scale/planning</td>
<td>3.17</td>
<td>Use Landscape Zones as the planning unit for RCS renewal.</td>
<td>2</td>
</tr>
<tr>
<td>Waterways</td>
<td>3.39</td>
<td>Expand objective 17 (native fish) to include all rare or threatened riparian and aquatic species and include within the threatened species theme of the RCS.</td>
<td>2</td>
</tr>
<tr>
<td>Waterways</td>
<td>3.40</td>
<td>Include a greater focus on estuaries and their management for the RCS renewal.</td>
<td>2</td>
</tr>
<tr>
<td>Waterways</td>
<td>3.41</td>
<td>Include an action to facilitate projects that can improve our understanding of the distribution and condition of wetlands.</td>
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<tr>
<td><strong>Investment</strong></td>
<td>3.46</td>
<td>Investigate use of the Strategic Management Prospects (SMP) dataset to further our ability to make</td>
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<td></td>
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<td>cost-effective investment decisions (for biodiversity and in particular threatened species</td>
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<td></td>
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<td>conservation).</td>
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<tr>
<td><strong>Aquifers</strong></td>
<td>3.54</td>
<td>Consider the new information that will be available from new groundwater Local Management Plan</td>
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<td></td>
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<td>LMPs and the future review of the Central SWS.</td>
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<tr>
<td><strong>MERI</strong></td>
<td>3.55</td>
<td>Refresh the focus on progressing Action 45 (develop a broadscale and long-term reporting framework</td>
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<td></td>
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<td>for natural resource management) in conjunction with the RCS renewal.</td>
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<tr>
<td><strong>MERI</strong></td>
<td>3.57</td>
<td>Consider how results from the Regional Wellbeing Survey can be used as a way of demonstrating</td>
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<td></td>
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<td>community health and perceptions of environmental health. Consider becoming a partner in the</td>
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<td></td>
<td></td>
<td>Survey. (e.g. – Healthy Parks Health People approach).</td>
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<tr>
<td><strong>RCS renewal</strong></td>
<td>5.8</td>
<td>Use the survey results on preferred consultation methods to plan engagement activities for the RCS</td>
<td></td>
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<tr>
<td>planning</td>
<td></td>
<td>renewal.</td>
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<tr>
<td><strong>Underway</strong></td>
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<tr>
<td>RCS scope/</td>
<td>5.2</td>
<td>Continue the focus on natural resource protection, enhancement and restoration.</td>
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<tr>
<td>objectives</td>
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<tr>
<td>RCS scope/</td>
<td>5.3</td>
<td>Continue the focus on community participation, and in identifying joint priorities and investment.</td>
<td></td>
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<tr>
<td>objectives</td>
<td></td>
<td></td>
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<tr>
<td>Implementation</td>
<td>5.4</td>
<td>Allow for more detailed mapping capability (particularly for native vegetation), through an online</td>
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<tr>
<td>effectiveness</td>
<td></td>
<td>resource that is interactive and easily to update (e.g. NRM Planning Portal) and new mobile</td>
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<td>technology.</td>
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</table>
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1 Introduction

The Corangamite region extends across 1.3 million ha of land, with 78% in private ownership, 175 km of coast and has four catchment basins – Barwon, Lake Corangamite, Otway Coast and Moorabool. It includes all or part of the cities of Ballarat and Greater Geelong, the Borough of Queenscliffe, and the Shires of Colac Otway, Corangamite, Golden Plains, Moorabool, Moyne, and Surf Coast.

The Corangamite region is rich in environmental, social and economic assets and has an important cultural history. The region has highly diverse natural environments including the majestic forests of the Otway ranges, the spectacular and iconic coastline of the Great Ocean Road region and its neighbouring marine environments, the important wetlands, grasslands and volcanic features of the Victorian Volcanic Plains, high value rivers such as the Barwon, Aire, Gellibrand and Curdies, and internationally significant wetlands such as the Ramsar listed Lake Connewarre complex on the Bellarine Peninsula and the Western District Lakes. Agriculture is the dominant land use of the region and supports diverse and productive enterprises including sheep and cattle grazing, dairying, cropping, forestry and viticulture.

The Corangamite region will face a number of challenges over the next 20 years and beyond. Climate change, increasing population pressure and habitat degradation all pose a significant challenge to our region's natural assets and communities.

1.1 About the Regional Catchment Strategy

The Corangamite Regional Catchment Strategy 2013 (RCS) was developed over the course of 2012, under the provisions of the *Catchment and Land Protection Act 1994*, with substantial community input, and guidance by the Victorian Catchment Management Council and the then Department of Sustainability and Environment. In January 2013, the Strategy was approved by the Minister for Environment and Climate Change and the Minister for Water. The RCS builds on the considerable work carried out in the region under strategies developed in 1997 and 2003.

The Corangamite RCS provides a strategic, integrated framework for the management of natural resources in the Corangamite Catchment Management region of Victoria. It considers the challenges and opportunities in natural resource management and identifies where natural resources of high regional value exist. The RCS sets 25 objectives and 52 strategic actions in order to encourage greater participation, investment and management for the protection, enhancement and restoration of land, water and biodiversity resources.

The RCS is an overarching strategic framework for action, but not an action plan. It sets the following outcomes to measure success:

1. **Landscape change** – greater protection, enhancement and restoration of valuable natural resources contributing to a healthy and sustainably productive catchment.
2. **Participation** – greater breadth and depth of participation by the community, which includes individuals, private landholders, natural resource management groups, Aboriginal community members, agricultural and natural resource industries, agencies and investors, in effective and protective natural resource management, along with growth in natural resource management group membership.
3. Investment – increased investment from government, corporate, agricultural and natural resource industries, private and philanthropic sectors and the further development of investment priorities to meet the needs of all investors including community.

4. Integration and coordination – growth in, and maturing of, partnerships across the region, with a coordinated and integrated approach to natural resource management at the landscape scale.

5. Knowledge sharing – research undertaken to address knowledge gaps and increased knowledge sharing across the region for better management of the region’s natural resources.

1.2 RCS implementation plan and MERI plan

The RCS has both an Implementation Plan and a Monitoring Evaluation Reporting and Improvement (MERI) Plan. The RCS Implementation Plan documents timelines and details lead and partner agencies and groups responsible for carrying out the RCS actions. The list for each action is not exhaustive, it highlights those that will be key to delivery. The status of progress against each RCS action is recorded within the Implementation Plan and this status is updated biannually.

The MERI Plan guides monitoring and evaluation activities so that the outcomes set in the RCS can be reported in accordance with CaLP Act and VCMC requirements. The MERI Plan provides the purpose, audience and methodology for the evaluation and sets Key Evaluation Questions (KEQ). Its implementation forms the basis for the methodology of the RCS mid-term review. Whilst being developed prior to guidance being available for the mid-term reviews, many of the KEQ in MERI Plan align with the VCMC guidance questions and are therefore used in this review.

1.3 RCS mid-term reviews

The Catchment and Land Protection Act states that an RCS must “...provide for the review of the strategy” (s. 24 (2) (g)). All CMAs are required to undertake a mid-term review of their current RCSs. The Act does not stipulate how to approach the reviews or specify an agency to oversee the reviews. The Act does stipulate the Victorian Catchment Management Council (VCMC) will develop guidelines for CMAs to develop RCSs. To guide the reviews CMA CEOs and the VCMC executive established a series of questions (Table 1.1) ensuring a level of consistency at a state level.

<table>
<thead>
<tr>
<th>No.</th>
<th>Key question</th>
<th>Guiding questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td>How is the RCS performing?</td>
<td>Is it effective in supporting delivery of its priority strategic actions?</td>
</tr>
<tr>
<td>(ii)</td>
<td>How is implementation going?</td>
<td>How are we progressing with delivery of the 6 year programs? Is any corrective action required? If so, then what?</td>
</tr>
<tr>
<td>(iii)</td>
<td>Is the RCS still saying the things we think it should?</td>
<td>What new information has appeared? Is there new or additional information which needs to be considered (for the remaining life of this RCS, and to initiate our thinking for the 2019 RCS?) Is there anything which we plan to not take any further action on?</td>
</tr>
<tr>
<td>(iv)</td>
<td>What do our key stakeholders think?</td>
<td>What might any consultation look like?</td>
</tr>
<tr>
<td>(v)</td>
<td>What do we need to do to prepare for renewal in 2019?</td>
<td>Issues to be monitored? Issues to be investigated?</td>
</tr>
</tbody>
</table>
1.4 Purpose

The major focus for the mid-term review is to determine the lessons from the first three years of implementation of the 2013-2019 Corangamite Regional Catchment Strategy (RCS). The review will make recommendations for how these lessons may inform the final 3 years of RCS implementation and the renewal of RCS in 2019. Influence and performance of the RCS is also reported. The following KEQ from the RCS MERI Plan are answered in this mid-term review:

- KEQ1 To what extent has the RCS contributed to changes in natural resource condition and extent?
- KEQ2 To what extent have the four foundations for change been progressed?
  - 2.1 To what extent has the breadth and depth of participation changed?
  - 2.2 To what extent has investment and investor types changed?
  - 2.3 To what extent has growth in and effectiveness of partnerships occurred?
  - 2.4 To what extent has knowledge and skills changed?
- KEQ3 To what extent has the RCS been implemented as planned?
- KEQ4 To what extent has the RCS directly contributed to the outcomes achieved?
- KEQ7 What could be done differently to improve implementation, and thereby maximise impact?

2 Methodology

2.1 RCS MERI Plan

The RCS MERI Plan was used as the basis to inform this review. The MERI Plan includes eight Key Evaluation Questions (KEQ) that aim to measure whether the five ‘outcomes of the RCS’ (as listed on pp56) have been achieved. The KEQ can be broken into two categories:

1. Those that have outcomes set to measure success against the RCS objectives for the four foundations and the eight NRM themes (KEQ 1 and 2; outcomes listed in method column, Table 2.1)
2. Those that will evaluate the effectiveness, appropriateness, efficiency and legacy of the RCS (KEQ 3 – 8).

Five of the eight KEQ from the RCS MERI Plan are addressed as a part of this review. The sub-set of five were selected for the mid-term review for the following reasons:

- they aligned with the VCMC guidance and could be used to address these questions
- timeframes for collection and analysis of monitoring data (i.e. the 3-year reporting period) were adequate to demonstrate outcomes
- data was available and accessible.

The KEQ are presented in Table 2.1, along with the relevant VCMC guidance questions, the method for addressing the question and the relevant data sources.

The KEQ addressed from the RCS MERI Plan and how they link to the overall program logic for the RCS, as well as issues, assumptions and explanatory notes for data sources can be seen in the foundation and NRM categories results tables (Appendix 3).
<table>
<thead>
<tr>
<th>No.</th>
<th>VCMC guiding questions</th>
<th>RCS KEQ addressed</th>
<th>Method for addressing guiding question/KEQ</th>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td>How is the RCS performing? Is it effective in supporting delivery of its priority strategic actions?</td>
<td>KEQ3 To what extent has the RCS been implemented as planned? KEQ4 To what extent has the RCS directly contributed to the outcomes achieved?</td>
<td>Survey of partners, staff and Board Semi-structured interviews Internal reflection via staff and manager feedback Internal audit of MERI Plan</td>
<td>Survey and interview results Audit and staff feedback results 6-monthly Board RCS status reports RCS Program logic and MERI Plan CCMA Annual Reports VAGO audit results- effectiveness of Catchment Management Authorities Our Catchments Our Communities program</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>data source</td>
<td>data source</td>
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<tr>
<td>(ii)</td>
<td>How is implementation going? How are we progressing with delivery of the 6 year programs? Is any corrective action required? If so, then what?</td>
<td>KEQ1 To what extent has the RCS contributed to changes in natural resource condition and extent? Soils and agricultural land</td>
<td>Implementation of RCS MERI Plan and progress towards outcomes set in the program logic as measures of success. Implementation of RCS MERI Plan to report against the following outcomes (measures of success): 11.1 The number of events focussing on managing soil condition has increased. 11.2 The number of farming entities participating in innovative practices has increased. 12.1 High value natural resources have been considered in growth planning. 13.1 Participation of farming entities in extension and capacity building programs has increased. 13.2 The number of regional group or communities engaged in land health activities has increased.</td>
<td>See breakdown for NRM categories below. Land health program MERIT reporting South West Soils Agricultural Plan G21 and Great South Coast Regional Growth Plans Corangamite Waterway Strategy (CWS) IPAWS database Corangamite Floodplain Management Strategy (drafting so far)</td>
</tr>
<tr>
<td>16.1 Management outcome targets (MOTs) in Part C of the Corangamite Waterway Strategy 2014-2022 (based on protecting waterway values by reducing threats; threats are expected to be reduced by management actions and this forms the basis for MOTs)</td>
<td>Data on MOTs not available for this review, the following has been used to show changes to investment and condition of waterways: 15/16 waterways EOI evaluation results Ramsar VAGO audit Western District Lakes Ramsar site plan PlainsTender6 EOIs and management plans (wetlands) Seasonal Watering Plans and Environmental Water Management Plan VEAC Remnant Native Vegetation Investigation Discussion Paper 2010 (to assist in reporting native vegetation quality)</td>
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<tr>
<td>16.2 Delivery and resourcing of waterways programs has improved</td>
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<tr>
<td>Native vegetation and threatened species</td>
<td>19.3 Delivery and resourcing of biodiversity programs has improved.</td>
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<tr>
<td></td>
<td>Tender EOIs, management plans and EnSym modelling: PlainsTender3,4,5&amp;6; Conservation and Carbon Capture Project (Biofund) Corangamite Conservation Tender (VEPP) VVP small grants (round 1) VEAC Remnant Native Vegetation Investigation Discussion Paper 2010 (to assist in reporting native vegetation quality).</td>
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<td></td>
<td>19.4 A positive response can be measured against the Corangamite native vegetation environmental account.</td>
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<tr>
<td></td>
<td>Not measured for this review as timeframe to show change is inadequate. To show native vegetation quality and likely gains (losses not calculated) for this review EnSym data showing EVCs and bioregional conservation status has been used.</td>
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</tbody>
</table>
### Key Populations

20.1 Key populations (of threatened species) are known.
20.2 Appropriate resources have been allocated to effectively conserve threatened species.

EnSym modelling for threatened species at Tender sites:
- PlainsTender3,4,5&6
- Conservation and Carbon Capture Project (Biofund)
- Corangamite Conservation Tender (VEPP)
- DELWP Advisory Lists for Threatened Species (Plants, Vertebrate and Invertebrate Fauna)
- EPBC Migratory and Marine Species Lists

### Coasts and Marine

21.1 Coastal assets have been identified.
21.2 Management strategies have been adopted for identified (coastal) assets.
21.3 The asset based-framework has been adopted for coastal NRM.
21.4 Delivery and resourcing of coastal and marine biodiversity programs has improved.

Coastal Tender2&3
- Saltmarsh Protection Project
- Coastal small grants (round 4)
- Marine and Coastal Act Consultation Paper

### Aquifers

23.1 Groundwater resources have been appropriately managed to protect their health.

Western and Central Region Sustainable Water Strategies
- Salinity and yield of groundwater within GMUs using the Groundwater Hub of Southern Victoria.
- Southern Rural Water
| KEQ 2.1  To what extent has the breadth and depth of participation changed? | 1.1 Overall participation in NRM has increased.  
1.3 Growth has occurred in natural resource management group membership. | EstuaryWatch, Waterwatch and Landcare databases  
Landcare Support Plan  
Indigenous participation program MERIT reporting  
CCMA reporting spatial database  
Land health program MERIT reporting  
RLF MERIT reporting  
CCMA Annual Reports  
Tender applications: PlainsTender6  
CoastalTender3  
Grant applications: Regional Landcare Facilitator  
Corangamite Landcare program  
VVP small grants (round 1), coastal small grants (round 4)  
15/16 waterways EOIs |
| 2.2  To what extent has investment and investor types changed? | 1.2 All high priority community segments identified through the community engagement strategy are regularly participating in natural resource management. | Data not available for this review; IAP2 spectrum and target audience data used instead to analyse ‘depth’ of engagement and community segment. |
| 3.1 The proportion of non-government\(^1\) funding has increased (as a % of the aggregate funding).  
3.2 The number of new investors has increased.  
3.3 A net gain in government funding has been achieved. |  |

\(^1\) Refers to non-traditional (non-NRM) government sources. New sources of Government investment from these non-traditional sources are included (eg Department of Health and Human Services).
| 2.3 To what extent has growth in and effectiveness of partnerships occurred? | 2.1 New partnerships have been established.  
2.2 All partnerships identified as critical are adequately supported.  
2.3 50% of partnerships have achieved a minimum of a high level of effectiveness (they are healthy and productive).  
6.1 Partnerships have led to improved integration of catchment management. | Partnerships survey (2016)  
Community Engagement and Partnerships Strategy  
CCMA spatial data reporting tool |
|---|---|---|
| 2.4 To what extent has knowledge and skills changed? | 5.1 The number of registered cultural heritage sites has increased.  
8.1 Knowledge gaps have been identified and addressing them is underway.  
8.2 Knowledge and information is readily available and accessible.  
8.3 Knowledge and skills have increased (see also participation outcome 1.1). | Data not available for this review.  
IAP2 spectrum  
CCMA knowledge base  
Fire and planned burning evaluation (Forest Fire Management Victoria, DELWP)  
NRM Planning Portal  
Soil health knowledge base  
NRM Plan for Climate Change  
South West climate Change portal  
Corangamite Region Blue Carbon Stock Assessment and Report |
| 2.5 To what extent has practice change occurred? | 8.4 There is evidence of practice change in NRM agencies and the community. | Land health program MERIT reporting  
MBI Effectiveness Evaluation |
| What, if any, unanticipated positive or negative changes or other outcomes have resulted? | Internal reflection via staff and manager feedback  
Internal audit of MERI Plan | Audit and staff feedback results |
| (iii) | Is the RCS still saying the things we think it should?  
What new information has appeared?  
Is there new or additional information which needs to be considered (for the remaining life of this RCS, and to initiate our thinking for the 2019 RCS)?  
Is there anything which we plan to not take any further action on? | KEQ7 What could be done differently to improve implementation, and thereby maximise impact? | Survey of partners, staff and Board  
Semi-structured interviews  
Implementation of RCS MERI Plan and internal MERI Plan audit  
Internal reflection via staff and manager feedback | Survey and interview results  
Audit and staff feedback results  
VAGO audit results- effectiveness of Catchment Management Authorities  
Our Catchments Our Communities program  
Local Catchment Plans/NRM Planning Portal  
Marine and Coastal Act Consultation Paper  
RCS Program logic and MERI Plan |
| (iv) | What do our key stakeholders think?  
What might any consultation look like? | KEQ3 To what extent has the RCS been implemented as planned?  
KEQ4 To what extent has the RCS directly contributed to the outcomes achieved?  
KEQ7 What could be done differently to improve implementation, and thereby maximise impact? | Survey of partners, staff and Board  
Semi-structured interviews | Survey and interview results |
| (v) | What do we need to do to prepare for renewal in 2019?  
Issues to be monitored?  
Issues to be investigated? | KEQ7 What could be done differently to improve implementation, and thereby maximise impact? | Survey of partners, staff and Board  
Semi-structured interviews  
Internal reflection via staff and manager feedback  
Internal audit of MERI Plan  
Board workshop | Survey and interview results  
Board workshop results  
6-monthly Board RCS status reports  
RCS Program logic and MERI Plan  
VAGO audit results- effectiveness of Catchment Management Authorities  
Our Catchments Our Communities program  
Local Catchment Plans/NRM Planning Portal  
Marine and Coastal Act Consultation Paper |
2.2 RCS progress and outcome reporting

Section 3 of this report provides progress and outcome reporting for the RCS.

Section 3.1 (summary of progress against RCS actions) provides a snapshot of progress against the 48 RCS actions. Information is based on 6-monthly status reports provided to the CCMA Board. These reports use the RCS implementation plan and interpret the status of each of the 48 RCS actions. Actions are recorded as: complete; in progress (<50% complete); in progress (>50% complete); in progress (ongoing), not commenced; abandoned. These reports are intended to report status of actions only and not describe outputs or outcomes.

As per the RCS MERI Plan Sections 3.2 (outcomes for foundations), 3.3 (outcomes for natural resource categories) and reporting are based on the intermediate outcomes set out in the RCS program logic as well as the assumptions, evidence and data sources required to report on these outcomes. Issues, assumptions and notes against the evidence and data sources used in this review are provided in each of the results tables (Appendix 3 and 5-11). Data was collected from the listed lead agencies for RCS actions in accordance with the RCS Implementation Plan.

2.3 Online survey

An online survey of CCMA partners was conducted during October 2016. The purpose of this survey was to gather information on the effectiveness and use of the RCS as well as gaps and new information that needs to be considered for the remaining 3 years of this RCS, and for the renewal of the RCS in 2019. The survey was sent out to 165 individuals from 62 different organisations and groups, covering the 16 different community segments in accordance with the Corangamite Community Engagement and Partnerships Strategy 2014. Forty-three individuals responded, a 26% response rate. Those that did not participate were not followed up to determine the reasons for this, however, this may be useful information for future surveys (i.e. to find out whether they were time poor or felt they didn’t know enough about the RCS). Survey questions are provided in Appendix 1 and the results of this survey are discussed in Sections 4 and 5. The 16 community segments can also be viewed in Appendix 1.

2.4 Semi structured interviews

Semi-structured interviews were conducted in December 2016 with three members of the Corangamite CMA Community Advisory Group (CAG). The CAG was set up in 2013 to provide advice to the CMA on a range of regional natural resource management matters. It assists the CMA in understanding and responding to matters which are important to the catchment community. The CAG brings together community perspectives and knowledge with technical NRM expertise across the whole of the Authority’s NRM programs. It is intended to facilitate sharing of knowledge, information and perspectives between the Corangamite CMA, community, specialists, key agencies and industries.

The intent of these interviews was to gather detailed qualitative data on the influence of the RCS, gaps and new information that should be considered for the final 3-years of RCS implementation and the RCS renewal.

The interviews were designed to collect information from up to four participants that covered various community segments. Face to face interviews were sought but the option to conduct them via phone was provided. All members of CAG (excluding the two Board members) were invited to participate. Three accepted and completed interviews (one government member, one general community member, and one Landcare member).

To help prepare for the interviews participants were sent a copy of the questions prior to the interview and the interviews generally followed the semi-structured questions. One interview was face-to-face and two were via telephone. Interview questions can be viewed in Appendix 2.
3 RCS progress and outcomes

This section addresses the following VCMC guiding questions:

- How is implementation going?
- How are we progressing with delivery of the 6 year programs?
- Is any corrective action required? If so, then what?

This section is presented as a summary of progress against the RCS actions and then a report on the achievements against the outcomes as described in the RCS and the RCS MERI Plan. This section also addresses gaps, new information and changes that are relevant to each RCS theme.

3.1 Summary of progress against actions

![Progress Pie Chart]

**Figure 3.1. Overall progress of the 48 RCS actions.**

As shown in figure 3.1, of the 48 RCS actions, 21% are considered to be complete, over half are in progress but are ongoing in nature (e.g. conduct targeted extension and engagement activities), and 13% are in progress but less than 50% complete, 10% have either not commenced or have been abandoned.

One action has been abandoned, Action 40: Complete and implement the Victorian coastal asset-based framework, and adapt it to coastal resources in the Corangamite Region. This DELWP project has been discontinued.

Those that have not commenced include four actions:

- Action 5: Establish and maintain a regional alliance of partners to guide natural resource management directions, including reviewing, delivering and reporting on the RCS.
- Action 26: Develop a Corangamite agricultural land strategy to integrate protection of soil health, natural resources and productivity of agricultural land.
- Action 33: Develop, adopt and implement a new Corangamite Biodiversity Strategy.

Actions that have been abandoned or not commenced are discussed further in their relevant themes in section 3.2 and 3.3.
3.2 Outcomes for RCS foundations

The RCS stipulates it will have succeeded if it can achieve:

“Participation – greater breadth and depth of participation by the community, which includes individuals, private landholders, natural resource management groups, Aboriginal community members, agricultural and natural resource industries, agencies and investors, in effective and protective natural resource management, along with growth in natural resource management group membership.

Investment – increased investment from government, corporate, agricultural and natural resource industries, private and philanthropic sectors and the further development of investment priorities to meet the needs of all investors including community.

Integration and coordination – growth in, and maturing of, partnerships across the region, with a coordinated and integrated approach to natural resource management at the landscape scale.

Knowledge sharing – research undertaken to address knowledge gaps and increased knowledge sharing across the region for better management of the region’s natural resources.”

To determine whether these outcomes have been achieved, a series of KEQ were set in the RCS MERI Plan. This sub-section is based on answering those KEQ:

- KEQ2 To what extent have the four foundations for change been progressed?:
  - 2.1 To what extent has the breadth and depth of participation changed?
  - 2.2 To what extent has investment and investor types changed?
  - 2.3 To what extent has growth in and effectiveness of partnerships occurred?
  - 2.4 To what extent has knowledge and skills changed?
  - 2.5 To what extent has practice change occurred?

Through answering these KEQ, the following VCMC guidance questions are addressed:

- How is implementation going?
- How are we progressing with delivery of the 6 year programs?
- Is any corrective action required? If so, then what?

3.2.1 Foundation 1: Participation

Foundation 4: Knowledge Sharing

**KEQ:**
- To what extent has the breadth and depth of participation changed?
- To what extent has knowledge and skills changed?
- To what extent has practice change occurred?

Key achievements

**Participation**

An average of more than 13,000 people are participating in natural resource management in the region each year, including attending events, volunteering and participating in on-ground work through tender projects or small grants.

Over 840 events have been run in the Corangamite region over the 3-year reporting period.
Participation in tenders and small grant programs has more than doubled over the review period. These programs continue to gain involvement and collaboration with the regions private and public land managers to increase participation in the protection and restoration of high value natural resources.

Commencement of the Corangamite CMA Indigenous Participation Program in late 2013.

Six new Landcare groups have formed, four in the Bellarine Landscape Zone, one in Thompsons and one in the Otway Coast Landscape Zones.

Knowledge sharing

Accessibility to knowledge and information has improved greatly and continues to make use of new technologies. Three new web portals and 2 new websites have been developed to assist with knowledge sharing for climate change, soils, local planning, Waterwatch and Estuary Watch.

A guideline is now available to assist all Victorian CMAs to respond to regional variations in cultural diversity, experience in working with Traditional Owners and Aboriginal communities, and natural resource management priorities (View).

Over 400 knowledge sharing events have been run, including 7 EstuaryWatch ‘estuaries unmasked seminars’; a Victorian Volcanic Plains Research and Development Forum where 80 participants were presented the latest research on the VVP bioregion; the South West Soils Conference with 78 participants attending concurrent sessions and field trips under the theme of sustainable agriculture - healthy soils healthy profits.

The ‘Moorabool Stakeholder Advisory Committee’ and the ‘Lower Barwon Community Advisory Committee’ are 2 examples of where learnings of key investigations are shared with Government and Community members to increase knowledge and inform watering actions.

Skills

Peer learning, supported by the Regional Landcare Facilitator program, has connected groups and community members and led to the adoption of innovative approaches by the farming community.

Peer learning and mentoring between grassroots environment groups has been supported through three Corangamite Landcare Networks participating in the Community Learning for Environmental Action (CLEA) program, a three year Victorian Landcare Council (VLC) program.

Through the Corangamite CMA Indigenous Participation Program cultural awareness of more than 400 people in the region has been improved and the skills of more than 35 Aboriginal people have been increased through training and development opportunities.

Further information

Activities that have contributed to the RCS objectives and actions, and the outcome of achieving greater protection, enhancement and restoration of valuable natural resources, can be seen in the participation and knowledge sharing results tables, Appendix 3.

In addition details of activities, projects and programs are reported in CCMA Annual Reports and the Victorian CMAs Achievements Reports for the 13/14, 14/15 and 15/16 financial years.
Expected outcomes: Overall participation in NRM has increased; Growth has occurred in natural resource management group membership.

As shown in Figure 3.1, over 40,000 people have participated in NRM within the Corangamite region in some capacity over the review period. This includes attending events, participating in tenders and grants and volunteers. It cannot be concluded that overall participation has increased over the review period, with very even numbers of participants in each of the 3 financial years. There has however been an increased interest in participating in tenders and grants by more than double, with applications going from 74 to 150 to over 200 applicants. The number of successful applicants has increased from 13/14 but not between 14/15 and 15/16 due to the funding which has not increased over the RCS review period. The amount of hectares of on-ground activity covered by successful projects is reported in the waterways, native vegetation, threatened species and coasts themes, but after an initial increase has remained proportionate to the amount of contracts awarded for 14/15 and 15/16 (an average of over 20 hectares per contract).

Participation in events has remained at over 8,000 participants each year, NRM volunteers at over 4,000 and NRM groups at over 190 groups. Despite there not being an increase in participation at events or in NRM groups and volunteering, there is certainly a strong amount of participation within the region and we now have baseline data to draw comparisons for the next 3-years of RCS implementation.

Expected outcome: The depth of participation has increased

A detailed process to determine the depth of engagement of participants in NRM within the region has not been set up for this review. Each and every individual and their type and level of engagement with the CCMA is unique, in order to measure this appropriately and report on changes in the breadth and depth of participation a Customer Relationship Management system would need to be developed and relevant details of each engagement activity recorded.
However for this review, the available data was tested according to the depth of engagement by matching all engagement events and activities against the levels of engagement as set in the International Association for Public Participation (IAP2) spectrum. The IPA2 spectrum is a model for effective engagement that shows the types of engagement and the increasing level of public impact in decision making, from inform to consult, involve, collaborate and empower (see Appendix 4). The increasing level of public impact is considered in this review as an increasing level in the depth of engagement. Whilst this analysis is useful to look at the depth of engagement for the purpose of this review, further work is needed to develop this into a worthwhile MERI activity for future use. How the events were classified, data constraints and examples of activities that have contributed to this analysis are included in Appendix 3.

The analysis, as illustrated in Figure 3.2, shows that the number of participants at events was strongly biased towards ‘inform’ style of event. This can be attributed to the fact that many knowledge sharing events that occur such as presentations, field days and conferences attract large numbers of participants. The number of these types of events has remained steady throughout the reporting period. Over 20,000 people have attended this type of knowledge sharing event in the 3-year RCS review period. The number of involve events is higher than the number of inform events, this is mainly due to including each Waterwatch site that was monitoring in each reporting year (N=327) as an ‘involve’ style of event. Whilst it is necessary to include these sites to show participation at this level, it does skew the data slightly towards this style of event.

The number of events and participants in involve and collaborate style of events shows that a lesser number of people participated in a higher number of events. This is likely because a lower number of participants would be required for an event with a greater depth to its engagement (i.e. it is more feasible to collaborate properly with 4 than with 50 participants at once). This analysis has not been performed prior to this RCS review so this data should be considered as a baseline for which to measure change over the next 3-years of RCS implementation. The geographic distribution of these events according to the depth of engagement can be seen in figures 3.3 and 3.4. There is an even distribution across the region and individuals in almost any location have the opportunity to participate in events that vary in depth of engagement.
Figure 3.3. Number of and location of engagement events for the inform and consult levels of engagement.
Figure 3.4. Number of and location of engagement events for the involve and collaborate levels of engagement.
Expected outcome: High priority community segments are regularly participating in NRM

![Pie charts showing participation in events, publications, and plans]

Figure 3.5. Target audiences involved in various engagement activities.

Whilst a full analysis could not be performed for this review, target audience data has been used to show proportions and which community segments are being engaged (Figure 3.5). Land managers and the general community are the target audience for more than 73% of the events that were run during the RCS reporting period. Although the analysis does not determine which types of events under the IAP2 spectrum that participants are attending, it is likely that inform style of events (field days, presentations, conferences), of which a very high proportion were run, are the target for these two community segments.

This is a similar story for publications, of which most would be developed as a means of informing their target audiences. Again, the general community (83%) were the major target audience for publications.

The target audience for plans were mainly agency staff (36%) and NRM groups (28%) with general community and others being the target audiences for another 28%. This suggests that expertise is sought from agencies and NRM groups in conducting NRM planning more so than other community segments. It could also be generalised that these groups are engaged at higher levels under the IAP2 spectrum such as involve and collaborate.

It should be noted that this analysis refers to the target audiences and does not include other partners or groups that may have been involved in particular events or plans. Once again a Customer Relationship database would be ideal for tracking the involvement of high priority groups, both the number of individuals involved from these groups, and the depth of their engagement. Such a database could give a true picture of who we are engaging with, the proportion of high priority groups involved and the depth of this engagement.

Expected outcome: Knowledge and skills have increased

The number of knowledge sharing events can be seen in Figure 3.2 under the ‘inform’ category for events. These events include conferences, presentations and field days and are all valuable opportunities for knowledge sharing. There have been 490 of these events for the review period, with the number of events variable in each financial year. In addition, a large number of the events under the ‘involve’ category are training activities and many under the ‘collaborate’ category are participants in tender programs, who would have an increase in knowledge and skills by participating in the EOI, bid and management plan process. There have also been 122 training events run during the reporting period.

The number of plans and publications produced during the RCS review period is also used as a measure of availability and accessibility of knowledge and information. Forty-two publications were produced or revised throughout the RCS review period. A majority of these publications were written, with some visual publications (e.g. Youtube videos). It is anticipated that the number of visual publications would increase over the next 3 years of RCS implementation and that this method of informing and educating community segments would become more prevalent. Plans that have been developed during the RCS reporting period are included in see Appendix 3.
Increasing Traditional Owner and Aboriginal involvement and skills in NRM has been a focus throughout the reporting period, whilst progress has been made there is still further to go. The Corangamite CMA Indigenous Participation Program has commenced and has seen:

- Overall 15 Aboriginal cultural awareness sessions have been run and with over 400 participants.
- Four Aboriginal people from the Corangamite region were sponsored to attend the Indigenous Fire workshop at Cape York. Here participants learnt first-hand from traditional owners and experienced fire practitioners to understand indigenous community fire programs. This included demonstrations of research and monitoring techniques and contemporary management solutions dealing with weeds, climate change and strengthening sustainable livelihoods.
- Further details can be found in Appendix 3.

**Expected outcome: Knowledge and information is readily available and accessible**

Accessibility to knowledge and information has improved greatly and continues to make use of new technologies. Three new web portals and 2 new websites have been developed to assist with knowledge sharing:

- Accessibility to knowledge and information has improved greatly and continues to make use of new technologies. Four new web portals and 2 new websites have been developed to assist with knowledge sharing.
- Two new web portals have been added to the CCMA knowledge base. The soil health knowledge base is an online repository of soil health information and knowledge (Visit) and the NRM planning portal is testing how online mapping can be used to match local and regional priorities for catchment management (Visit).
- Availability and access for community and waterway managers to knowledge on waterway management and waterway condition data has improved through new websites for the EstuaryWatch (Visit) and Waterwatch (Visit).
- Regionally specific climate change information is now available online through the South West Climate Change portal (Visit). The portal contains the latest climate change research and information and the recently completed Corangamite NRM Plan for Climate Change. It can be used by NRM and other planners, land managers and community groups to adapt to a changing climate.

All such activity needs to continue to be promoted on the CCMA knowledge base.

**Gaps, new information and issues**

As discussed in section 3.2.3 (integration and coordination), concerns have been identified by NRM NGOs in the partnerships survey. These concerns are currently being responded to, and this should continue.

**Climate change**

Collaborative research partnerships have led to large range of new information on climate change specific to the Corangamite region. This is available on the South West climate Change portal (Visit) and covered the Corangamite NRM Plan for Climate Change. New regionally specific information includes: the predicted changes in climate and its likely impact on the region’s natural assets; guidance on developing adaptation and mitigation actions to address the impact of climate change on the region’s natural ecosystems; information on priority landscapes for carbon plantings and other carbon sequestration methods; strategies to build landscape integrity; directions on regional decision-making, community engagement and research needs to improve community understanding of the impact of climate change on natural assets.

**Expected outcome: There is evidence of practice change in NRM agencies and the community.**

Despite there being a KEQ and expected outcome for practice change, it has not directly been measured for this review as data was not available to perform an analysis. There is, however, an assumption that knowledge sharing and training events and participation in tender and grant programs improves knowledge and skills and hence behaviour and practice change occurs. This assumption should be investigated more thoroughly and methods set up to monitor and evaluate practice change for the final RCS review. This can determine whether participation in NRM is actually leading to improved practices that protect and enhance natural resources.
There are examples showing that practice change has occurred such as an independent evaluation of CCMA tender programs (Clear Horizon Consulting, 2015). The evaluation found that these tender programs (via market based instruments) are effective in changing landholder behaviour. Participation enabled them to increase the scale of actions that they would have applied anyway, or were a catalyst for action on that site, has led them to maintain the site in better environmental condition (than without participation). It has also led to most landholders undertaking other NRM activities on areas of their property not under contract and some landholders who were unsuccessful in obtaining funding did undertake some actions from their management plans, in particular weed and pest management.

Additionally, the development of a Customer Relationship Management system (as discussed above), could assist in a basic understanding and measuring practice change.

Cultural heritage

Amendments of the Aboriginal Heritage Act 2006 came into force on August 1 2016. The Aboriginal Heritage Amendment Act 2016 (the Amendment Act) establishes new provisions and changes that affect how cultural heritage is managed. The Corangamite CMA and NRM partners need to consider how the changes to this Act will affect existing processes and procedures relating to Aboriginal cultural heritage, and what due diligence systems or revised protocols might need to be adopted to comply with the Act. Some of the new provisions include:

- An increased role of Registered Aboriginal Parties (RAPs) as a primary approval body to determine cultural heritage permit applications.
- The introduction of the Preliminary Aboriginal Heritage Test (PAHT) system – a voluntary process allowing the Secretary to determine whether a cultural heritage management plan (CHMP) is required.
- Enabling the Secretary to establish an Activity Advisory Group (AAG) of Traditional Owners for a project in an area where there is no appointed RAP, to advise on the proposed activity and its impact on Aboriginal cultural heritage.
- The introduction of Aboriginal Cultural Heritage Land Management Agreements (ACHLMAs), between public land managers and a RAP to negotiate and agree on how cultural heritage will be managed for low-to-medium impact works and management activities in an area of land.
- Establishing new offence provisions, including that of extending criminal liability to officers of a body corporate in circumstances where a body corporate commits an offence under the Act and the officer has failed to exercise due diligence.

Aboriginal participation

In addition a new Aboriginal Participation Guideline for CMA’s was developed by the CMA Indigenous Network through the National Landcare Programme, DELWP and all 10 CMAs, which assists CMAs to improve Aboriginal engagement and involvement in NRM. The guidelines:

- Provides a framework for how CMAs can strengthen the effectiveness of their engagement and partnerships with Traditional Owners and Aboriginal communities.
- Recognises that each CMA region is different and that each will take its own approach in engaging with the diversity of Traditional Owners and Aboriginal communities within its region.
- Provides Traditional Owners and Aboriginal communities with an entry point for engaging with CMAs.

An Implementation Plan (Victorian CMAs, 2016b) supports the Guideline by providing information on how to turn the Guideline into action. This needs to be implemented and monitored through the Aboriginal participation checklist within the Plan.

The Corangamite CMA will be undertaking an Aboriginal cultural strengthening review and developing an Inclusion Plan/Strategy. Due to commence in 2017, this will cover all aspects of Aboriginal participation (including the Guideline Implementation Plan) that are relevant for the Corangamite CMA region. Once complete this will be the primary guiding plan for Aboriginal participation in the region.
Citizen science

Improvements regarding the implementation and use of citizen science programs have been identified. These include:

- Investigate how the Waterwatch program and water quality data can be used to assist in planning and decision making for rivers, particularly for priority reaches. This would significantly improve condition data for priority reach and move Waterwatch up a level to ‘collaborate’ on the IAP2 spectrum.
- Involve the Landcare program and use these networks to boost citizen science programs and activities.
- Collating and considering anecdotal evidence and the knowledge and experience of landholders and NRM volunteers.

Program logic and MERI

The RCS MERI Plan seeks to measure growth in NRM group membership. This needs to be revised as the actual number of members is difficult to determine due to fluidity and constant change of member numbers. Even if we could calculate more accurate totals, it is not possible to determine annually the number of members that have been active or inactive. To reflect more genuine participation of Landcare members (such as participation in on-ground and engagement or knowledge sharing activities) consider aligning to the Landcare Support Plan outcomes for partnerships, investment, membership, skills and knowledge (pp 22, View plan), and/or using Landcare Group Health Surveys reported in the Corangamite Landcare Annual Report Cards.

The objectives and Actions 4 and 14 for indigenous participation have been addressed through the Corangamite CMA Indigenous Participation Program (see Appendix 3). The RCS should be revised to more closely align to the objectives of this Program and cover the two key aspects of cultural heritage compliance and Aboriginal participation.

Measuring changes to engagement

Whilst the IAP2 spectrum analysis is useful to look at the depth of engagement for the purpose of this review, further work is needed to develop this into a worthwhile MERI activity for future use, including RCS implementation, MERI activities and RCS renewal. Having the ability to track an individual’s participation in NRM and report on the change across the IAP2 spectrum would give the truest indication of changes to the depth of participation in NRM within the region. This would be the ideal way to measure depth of engagement and can be achieved by developing a Customer Relationship Management system, whereby all associations and activities with individuals could be recorded and tracked. This could also give an understanding of which priority community segments are involved and to some degree it could incorporate basic information regarding practice change. Understanding a landholder history of involvement in NRM would also assist the Corangamite CMA staff to more effectively engage with individuals (and groups), as well as efficiency gains that can reduce corporate knowledge loss upon staff turnover.

Recommendations

3.1 Revise the Aboriginal and Traditional Owner objectives and actions in the RCS to align with to the objectives of the Indigenous Participation Program and the key aspects of cultural heritage compliance and Aboriginal participation.

3.2 Prioritise, implement and monitor actions for CMA businesses, staff and contractors in the Aboriginal participation guideline implementation plan and checklist.

3.3 Develop and implement an Aboriginal Inclusion Plan.

3.4 Set up due diligence systems and a process to ensure compliance with the changes to the Aboriginal Heritage Act 2006.

3.5 Develop a Customer Relationship Management (CRM) system (assists with implementing 6,7,8,9).

3.6 Review progress in implementing the CMA Community Engagement Strategy and establish improved baselines to measure participation, practice change and engagement effectiveness.
3.7 Conduct further work to develop the IAP2 spectrum analysis (for measuring depth of engagement) into a more sophisticated MERI activity (including categorising events for the empower level of engagement).

3.8 Investigate the level to which landholder behaviour and practice change is occurring as a result of participation in NRM.

3.9 Revise the RCS MERI Plan to more accurately measure success for breadth and depth of Landcare involvement in NRM (using the Landcare Support Plan and/or Group Health Survey data). Explore the use of the NRM Portal.

3.10 Promote the CMA’s Knowledge Base and develop a knowledge management strategy to prioritise key tasks.

3.11 Promote the citizen science programs and investigate how the Waterwatch program and water quality data (as per EstuaryWatch) can be used for planning and decision making (moving to the collaborate level of engagement).

3.12 Use the Corangamite NRM Plan for Climate Change to incorporate regionally specific information on climate change into current and future NRM planning.

4.2.2 Foundation 2: Investment

KEQ: To what extent has investment and investor types changed?

Key achievements

An Investment Recruitment Strategy has been completed to increase corporate and philanthropic investment for natural resource management in the region. This has resulted in an approach to partner with other agencies or organisations to bring additional funds into the region (not necessarily to the CMA). The investment snapshot below summarises funds received directly by the CMA or NRM partners within the region.

A not-for-profit group, The Corangamite Foundation, has been established to enhance the catchments of this special region and to bring people together to utilise and share their skills, passion and knowledge. The Foundation is a partnership between the Corangamite Catchment Management Authority and the Trust for Nature and has full Deductible Gift Recipient status. Funds invested into the Foundation are provided back to on-ground groups working on environmental change.

A tool that can arrange spatial information and be filtered to particular geographic areas or biophysical themes and assist in the development of plans, strategies and partnership projects has been established. The ‘NRM planning portal’ is now available and is a pilot project for testing how online mapping can be used to identify and match local and regional priorities and encourage partnership projects in the Corangamite CMA region.

Further information

Activities that have contributed to the RCS objectives and actions, and the outcome of achieving greater protection, enhancement and restoration of valuable natural resources, can be seen in the investment results table, Appendix 5.

In addition details of activities, projects and programs are reported in CCMA Annual Reports and the Victorian CMAs Achievements Reports for the 13/14, 14/15 and 15/16 financial years.
Expected outcomes: The proportion of other funding has increased; a net gain in government funding has been achieved.

Figure 3.6. Investment in the Corangamite region during the reporting period.

The investment from other\textsuperscript{2} sources has remained steady for the review period, and has increased slightly, by approximately $150K, from the previous 3-yr average (Figure 3.6). As a proportion of the aggregate funding this has also increased by 1.2%. Additional investment has been received by both the CMA and other NRM groups and programs with support from the CMA. Funding has been received from a number of new non-NRM government sources, corporate, philanthropic and universities. A total of ten new investors contributed over this period, this is in addition to the existing non-government or other sources of investment. Specifically they were City of Ballarat, the Metropolitan Waste and Resource Recovery Group, the Helen McPherson Smith Fund, Sunshine Fund, Grains Research & Development Corporation, Southern Farming Systems, Regional Universities Network, Federation University, Deakin University and Greenfleet. These investors have contributed to projects such as the regional Land Health program and the Caring for our Bays initiative.

The investment from Government sources has been variable, with an initial decrease from 13/14 to 14/15 and an increase of more than $3m to 15/16 (Figure 3.6). When averaged across the 3-year reporting period Government investment has been approximately $240K less than the previous 3-year period. It is anticipated however that the level of Government funding will continue at the higher level received in 15/16.

Expected outcomes: Local and joint priorities have been determined; landscape scale projects for joint priorities are developed and funded

The NRM planning portal is a pilot project is testing how online mapping can be used to identify local priorities and match these with regional priorities for NRM in the Corangamite region. The aim is to equip Landcare networks, community groups and other partners with the capability to identify ‘joint priorities’ and empower them to progress these projects in partnership. The project also provides access to a considerable knowledge base of spatial data, information and knowledge, to assist in setting local priorities. The portal currently includes regional priorities and local priorities for 4 of 15 Landscape Zones (Thompsons, Woady Yaloak, Bellarine and Leigh). The portal will also help develop more targeted funding bids, support the implementation of on ground activities, and develop funding for new investors such as corporate and philanthropic. The portal now sits as part of the CMA’s Knowledge Base on the CMA website (Figure 3.7, Visit). At this stage one project resulting from the portal has been funded to address upstream threats to the Western District Lakes in the Woady Yaloak Landscape Zone.

\textsuperscript{2} Other sources include all non-government investment and non-traditional or new sources of government investment (Federal, State or Local).
Gaps, new information and issues

Investment

Investment figures at this stage do not incorporate the investment of partner agencies, community groups or that of landholders in the region. This should be considered for the final review. Investment by landholders in particular would make a significant difference to total of ‘other’ (non-government investment) in the region. Whilst it is very difficult to determine the actual investment of landholders without asking each individual, an estimate could be made using a contribution ratio. There are a number of examples or opinions that have been provided, including that of the VCMC (VCMC, 2012) that is given at $1.50 and sometimes up to $4 for every dollar of government investment. Another figure has been quoted at $2.60 (per $1 of government investment) by the National Landcare Programme. However, neither of these sources provide a description on how the figures were derived.

Another study, looking into the effectiveness of market-based instruments (MBI) showed that cost sharing was a preferred option for 25% of private landholders (Clear Horizon Consulting, 2015), suggesting that 75% of participants prefer the option of full cost recovery if it is offered. The 2015/16 waterways EOI process confirms this as it did provide the option of full (through a maximum) cost recovery and in this situation landholders proposed to contribute an average of 8 cents for every dollar that was available for their projects.

Given the discrepancy in estimates from these few examples, to report a regional estimate with some level of confidence a ratio would need to be developed for the Corangamite region. This would need to use a combination of data to cover the differences in cocontributions from various programs and could use expert opinion, surveys and/or other data at hand such as co-contributions made in Tender and grant projects. In gathering or estimating this information it would be useful to know what type of activities this investment is going towards and where; which of these align with regional priorities and/or local priorities as set in the NRM planning portal. One option to capture this investment information is to use the NRM planning portal and technology such as a Smartphone or Tablet App for landholders to input their activities and investment.

NRM planning portal

A key component of progressing RCS action 10 (complete Landscape Zone Action Plans) was to work with two Landcare Networks as a pilot project to complete and/or replace the Landscape Zone Actions Plans. An initial review and discussions with Landcare Networks through the first phase of the Corangamite Waterway Strategy development identified the Woady Yaloak Catchment Network and Surf Coast Inland Plains Network (SCIPN) as the candidates for the pilot. The two Landscape Zones represented by these networks (Woady Yaloak and Thompsoons) are geographically diverse from each other and provided a sound basis to test the identification of priorities. For example, the Thompson Landscape Zone has a number of diverse high value state and national assets that could be included versus the Woady Yaloak with less representation of such assets. Likewise, these regions have differing farm profiles (i.e. the Woady Yaloak has predominantly large production based
properties, whereas SCIPN has a greater percentage of smaller holdings with a higher proportion of off farm income). Both these networks were also active in their own NRM planning which provided an opportunity to maximise local ownership. These groups were active partners with the project team throughout the pilot, including through the project planning phase.

A full review of the plans for the respective pilot landscape zones occurred, gaps were identified and updated with new evidence-based asset information, studies, and plans. Through this pilot project, the Landscape Zone Actions Plans have been developed into the online spatial tool, the ‘NRM Planning Portal’. The portal is now a tool that can arrange spatial information that can be filtered to particular geographic areas or biophysical themes to assist in the development of plans and strategies. The portal may be used to support the development of strategic priorities and actions for the region’s next RCS.

Regional waterways priorities have been included in the portal through the Corangamite Waterway Strategy (CWS). It was found during the development of the CWS that Landscape Zones were very useful to both engage communities in its development, present priorities and actions, and enable users of the CWS to implement actions at the local scale. Using Landscape Zones as a planning unit for the RCS and allowing for priorities to be mapped into this portal (or similar) should be strongly considered.

Recommendations

3.13 Incorporate the investment of partners, including develop a ratio of landholder investment in NRM in the region.

3.14 Capitalise on opportunities to capture additional external (landholder, community or other segments) investment in regional NRM (e.g. crowd sourcing, Barwon Water investment into Rivers 2040 trial site).

3.15 Review progress with the Investment Recruitment Strategy.

3.16 Continue to support inclusion of Landcare local priorities into the NRM Planning Portal, and begin to work with local government, state agencies and Traditional Owners to incorporate their priority assets into the NRM planning portal.

3.17 Use Landscape Zones as the planning unit for RCS renewal.

3.18 Review the NRM planning portal to determine its effectiveness and appropriateness to use for RCS renewal, including as a planning tool for investment and for knowledge capturing and sharing.

3.19 Prepare for the next round of the National Landcare Programme – including development of an RCS review summary document to assist in regional promotion (Recommendation 3.28).

4.2.3 Foundation 3: Integration and Coordination (Partnerships)

**KEQ: To what extent has growth in and effectiveness of partnerships occurred?**

Key achievements

Partnerships in the Corangamite region can be considered as healthy and productive.

The Corangamite Land Health Program is a partnership with representatives from industry peak bodies, advisory and services sectors, other government and educational institutions and community (primarily through Landcare) and brings unique regional expertise to work with landholders to manage their land sustainably, and protect land and water resources in the catchment from the threats of soil degradation.

Partnerships with Agricultural groups, including West Vic Dairy, Southern Farming Systems and the Otway Agroforestry Network has enabled access to over 2,000 of these groups’ members and significantly expanded the private landholder audience. Broadening of the Landcare program to include viticulture, horticulture and niche small farm producers has also contributed to this expansion.

The Corangamite EstuaryWatch partnership has allowed waterway managers at Corangamite CMA to use EstuaryWatch data to inform artificial estuary entrance openings, algal bloom management, acid sulphate soil
impacts on estuarine condition, works on waterways and flood events. This successful citizen science program supports community members to actively participate in the monitoring of estuary health. Partners include the Great Ocean Road Coast Committee, Barwon Coast Committee, The Gordon, West Gippsland CMA, Melbourne Water, Glenelg Hopkins CMA and Federation University.

Collaborative research partnerships with Deakin University, CSIRO, Federation University, RMIT and the Southern Slopes Climate Change Adaptation Research Group (SCARP) have led to a significant increase in regionally specific climate change knowledge.

A new partnerships between Surfing Victoria and the Corangamite CMA is enabling both partners to meet common goals for increasing local participation in surfing and natural resource management. This partnership hopes to build stronger connections and relationships between the surfing and coastal conservation communities.

Condition, connectivity, resilience and knowledge of threatened species are being improved within the Victorian Volcanic Plain through a partnership with DELWP, Glenelg Hopkins CMA, Australian Government, Greening Australia, Australasian Native Orchid Society, the Royal Botanic Gardens, Melbourne, Parks Victoria, Zoos Victoria and Mt Rothwell Conservation Centre. Some of these species include the federally listed Natural Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains, Eastern Barred Bandicoot, Corangamite Water Skink and Spiny Rice-flower.

Further information
Activities that have contributed to the RCS objectives and actions, and the outcome of achieving greater protection, enhancement and restoration of valuable natural resources, can be seen in the integration and coordination (partnerships) results table, Appendix 6.

In addition details of activities, projects and programs are reported in CCMA Annual Reports and the Victorian CMAs Achievements Reports for the 13/14, 14/15 and 15/16 financial years.

Snapshot

Expected outcome: There has been an increase in the number of partnerships

Figure 3.8. New and maintained partnerships in the Corangamite region for the 3-year reporting period.

Although there has been a significant increase in the number of partnerships reported from the beginning of the RCS (13/14) through to 14/15 and 15/16, there has been a slight decrease in the number of overall partnerships in 2015/2016 (Figure 3.8). It can be said that broadly there has been an increase in the number of partnerships (new and maintained) but this has not continued to increase each year. This is likely to be the result of data inaccuracy as these figures rely on staff input of data and bias as to whether partnerships are recorded or not. Recording all partnerships in a consistent and accurate manner over the next 3 years will enable a more accurate comparison for the final RCS review. An example here is the record of one
‘maintained’ partnership with a ‘mixed’ group in 15/16, however there are no records of this partnership previously.

Of the new partnerships that have been developed, there were three with agencies and four with community groups over 2014/15, as well as three with community groups in 15/16. New partners have included City of Ballarat, the Metropolitan Waste and Resource Recovery Group, the Helen McPherson Smith Fund, Sunshine Fund, Grains Research Development Council, Southern Farming Systems, Regional Universities Network, Federation University, Deakin University and Greenfleet.

Other partnerships in the region include continuation of Tender projects (CoastalTender, PlainsTender, Saltmarsh protection), linear reserve management within the VVP (with nine partner agencies including federal, state and local government agencies, VicRoads, VicTrack and CFA brigades), a seed production area project in partnership with several government agencies, Greening Australia, Friends of and Field Naturalists groups, the Geelong Botanic Gardens and Green Army.

**Expected outcome:** Partnerships are supported, healthy and productive

In July 2016, Intuitive Solutions conducted a survey to measure the health of partnerships in the Corangamite CMA region. This was to better understand the success of engagement and work (to date) with high priority partners as set out in the Corangamite CMA’s Community Engagement & Partnership Strategy. Intuitive Solutions’ summary is presented here (Intuitive Solutions, 2016).

Sixty key partner organisations of the Corangamite CMA were invited to provide feedback on the health of the partnership. A total of 42 partners took up the opportunity including:

- n=11 NRM Government partners;
- n=18 NRM NGO partners; and
- n=13 other partners (including local government, researchers etc.).

Overall it can be reported, based on these survey results that partnerships are healthy (Figure 3.9). The survey results (Figure 3.8) showed that:

- Overall satisfaction with the partnership across all partners is positive with a rating of 7.5 out of 10.
- The rating is supported by almost two in three partners (65%) who rated at an 8 or above but dampened by a small group of partners (14%) who rated below a 5.

![Graphs showing survey results](image.png)

**Figure 3.9.** Survey results for the three headline metrics (overall, engagement, trust) in the partnerships survey (Intuitive Solutions, 2016).
Some 35 of the 42 partners who responded have agreed for their individual responses to be provided back to Corangamite CMA. This is a particularly encouraging response and suggests an openness from partners to see the partnership strengthened. The detail provided in the feedback provides some clear opportunities for individual relationships and processes to be strengthened.

Gaps, new information and issues

Partnerships survey

The analysis of the partnerships survey data clearly points to a small number of NRM NGO partners providing a more critical assessment of the partnership. Their ratings are consistently lower than other partners and are impacting on the overall ratings. Whether their response is an outcome of poor experiences and/or higher expectations is not clear, however interventions to respond to the more critical feedback from some NRM NGOs are warranted. With regard to these results, the following feedback was also received:

- A call out from some partners for Corangamite CMA to be more active in their advocacy and support of their partners.
- An increased capability to customise the engagement – this is an acknowledgement that partners see themselves as having very different and specific needs and requirements.

While more sophisticated multi-variate analysis is challenging (given the small sample), the initial investigation has highlighted the importance of three core pivots to a strong partnership:

1. that there is a real sense of collaboration in the partnership;
2. that Corangamite CMA delivers on its promises; and
3. the frequency of other direct contact (meetings, calls, workshops etc.).

The analysis suggests that while nurturing all aspects of the partnership is sensible, careful attention on these three dimensions is vital. This survey provides a valuable baseline for future measurement points.

Actions, program logic and MERI

As discussed above, there may be some inaccuracies in the data that has been recorded for the number of partnerships. Consistent and accurate recording of partnership numbers should be improved for the final RCS review and beyond.

RCS Action 5 “Establish and maintain a regional alliance of partners to guide natural resource management directions, including reviewing, delivering and reporting on the RCS” has not been progressed. A regional partners alliance has not been set up, however regional operating agreements with Parks Victoria and DELWP are currently being drafted. These outline each agencies responsibilities in NRM and may forgo the need to develop a regional partners alliance. However, when considering the results and recommendations for maximising the RCS impact (Section 5, to increase partner involvement in RCS implementation and reporting), the alliance might still be something to consider.

Outcome 6.1 ‘Partnerships have led to improved integration of catchment management’ has not been measured as a part of this mid-term review. Evidence, data sources and methods need to be set up to enable this to be measured for the final RCS review. There are two Actions (12: local government planning provisions; 13: increase functional connectivity), identified under these partnerships objectives that could relate to this outcome, but are about on-ground management rather than partnerships. These Actions have not been assessed for the mid-term review due to time and data constraints but should be assessed for the final RCS review.

A new project - The ‘Connected Landscapes - Adapting Corangamite's Natural Assets to Climate Change Project’ will promote biodiverse connectivity at a landscape scale across the northern Corangamite CMA region that have been identified through the NRM planning portal. The project will make priority waterways and landscapes more resilient to climate change through connecting large fragments of remnant vegetation and linking recognised ‘Flagship Areas’. It will use the Corangamite NRM Plan for Climate Change and assist to determine the effectiveness of the NRM planning portal as a planning tool. This project addresses Action 13 and should be reported for the final RCS review. In future such an action should be changed to ensure its
future focus incorporates climate change adaptation and is as a key driver for restoring functional connectivity in the landscape.

An unanticipated outcome directly relating to improving integration is the realignment of the CCMA’s operating structure. The new integrated delivery model has a geographic rather than thematic structure for operational activities and has led to integration of waterways and native vegetation projects within each Landscape Zone. This model should be consolidated to continue the integration of projects across NRM themes.

Recommendations

3.20 Improve consistency and accuracy of data records to report on changes to the number of partnerships.

3.21 Use partnerships survey findings and individual reports to implement interventions to respond to the concerns identified by NRM NGOs.

3.22 Re-run partnerships health survey to evaluate and compare partnership health for the final RCS review.

3.23 Set up methodology to evaluate whether partnerships have led to improved integration of catchment management.

3.24 Promote RCS delivery to regional partner organisations through appropriate forums and the regional operating agreements (e.g. Parks Victoria, regional DELWP) and, in accordance with Recommendation 4.1, re-consider the need for an NRM regional alliance.

3.25 Partner with local government to capture RCS objectives and goals in their planning, management and regulatory processes.

3.26 Promote the Our Catchment Our Communities projects as regional case studies of effective integrated catchment management.

3.27 Consolidate the CCMA integrated delivery model for improved project integration across NRM themes.

3.28 Develop in addition to the review document a community based summary to promote the RCS review, its achievements and remaining actions.

3.3 Outcomes for natural resource categories

The RCS stipulates it will have succeeded if it can achieve:

“Landscape change - greater protection, enhancement and restoration of valuable natural resources contributing to a healthy and sustainably productive catchment”.

To determine whether this has been achieved, the following KEQ was set in the RCS MERI Plan: To what extent has the RCS contributed to changes in natural resource condition and extent?

This section presents the outcomes achieved against this KEQ for:

- soils and agricultural land
- rivers, estuaries, floodplains and wetlands
- native vegetation and threatened flora and fauna
- coasts and marine
- aquifers

Through answering this KEQ for each NRM theme, the following VCMC guidance questions are addressed:

- How is implementation going?
- How are we progressing with delivery of the 6 year programs?
- Is any corrective action required? If so, then what?
3.3.1 Soils and agricultural land

Key achievements

The RCS has instigated the current Corangamite CMA land health program and increased the focus on soils and agricultural production within the region.

Creating a regional sustainable agriculture program that is relevant and up to date by using local expertise and partnering with industry peak bodies, advisory and services sectors, other government and educational institutions and community, through the Land health program steering committee.

Participation, knowledge and skills of the farming community has increased significantly with feedback showing an average 17% increase in knowledge per attendance, coupled with 92% of attendees indicating they have made management practice change.

The area of land that can be considered to be under sustainable farming practices is now over 43,000 hectares.

Peer reviewed regional soil data is now available through the award winning Corangamite CMA Soil Health Knowledge Base.

Further information

Activities that have contributed to the RCS objectives and actions, and the outcome of achieving greater protection, enhancement and restoration of valuable natural resources, can be seen in the soils and agricultural land results table, Appendix 7.

In addition details of activities, projects and programs are reported in CCMA Annual Reports and the Victorian CMAs Achievements Reports for the 13/14, 14/15 and 15/16 financial years.

All actions discussed below are carried out in partnership with relevant landholders, agencies and community groups. This is reported in section 3.2.1 participation and knowledge sharing and 3.2.3 integration and coordination (partnerships).

Snapshot

Expected outcome: Participation in events (to improve soil condition and reduce impact on natural resources) has increased

A Land Health Program Steering Committee was established to provide strategic guidance and advice over the life of the program. The committee is a panel of regional experts encompassing industry peak bodies, advisory and services sectors, other government and educational institutions and community (through Landcare).

Innovative practices through trials are being implemented. The number of landholders implementing management practice change have increased during the life of the program to 145, and there are 309 trial sites across the region. All of the on-farm trials and demonstration sites are established in liaison with the local Landcare network or group and set up directly with farmers considered to be leaders in their local area to make use of their ability to influence others to adopt best practice. The sites are set up, run and monitored by Southern Farming Systems research and extension officers who are then also available to provide information and advice on the sites progress. Trials include:

- Lime trials (for soil acidity): apply lime as a soil enhancer
- Soil Biology: improved knowledge and understanding of soil biological enhancement practices and undertake actions to improve land management
- Pasture Cropping (groundcover): utilise permanent perennial pasture as part of crop rotation
- Rotational & pasture: undertaken cover cropping inter-cropping practices as part of pasture and crop management.
Eighty per cent of the trials are for soil biology and soil acidity, with the remaining 20% for cropping (groundcover) and rotational & pasture (Figure 3.10). Land on which improved management practices have been implemented continues to be split proportionately between the enterprises of grains, grazing and dairy, although the mixed category is the most dominant.

The area of land that has changed to sustainable farming practices has continued to increase to over 43,000 hectares. This area is calculated from survey feedback sheets at Land Health Program events where landholders report on their “intention to adopt a new practice” and their farm size (for the scale of this change). These results will ground-truthed during 2017 through longitudinal surveys of participants.

Extension activities are assisting to create this intention for management practice change to improve soil condition in particular. Soil acidity extension participants have indicated they will change management practices and soil biology events have now started to show similar interest in adopting practice change.

Success of the program is thought to come from the use of local knowledge and adapting knowledge obtained through local trials. This has allowed activities to more closely relate to the soil types, practices and farming systems for farmers on their properties.

Participation in events has increased in each year of the review period and improved significantly from the baseline (average across 3 previous years) of 162 participants (Figure 3.10). A total of 2,164 unique individuals have participated in 80 different extension and capacity building programs during first 3 years of RCS implementation (Figure 3.10). Feedback from these events has shown an average 17% increase in knowledge per attendance, coupled with 92% of attendees indicating management practice change. The increase in knowledge is calculated by participants scoring themselves on a 1-5 scale for their knowledge on a topic before
and after the event. The total increase is then calculated in increments of 20% and averaged for all participants. The results have exceeded expectations with the delivery of more events with high numbers of participants and farming entities adopting sustainable practice change.

**Gaps, new information and issues**

The Land Health Program has completed Local Soil Action Plans with the assistance of local soil scientists, NRM specialists and Landcare for each of the regions landscape zones.

The Centre for e-Research Design and Innovation at Federation University Ballarat collate and peer review regional soil data and publish it via the award winning Corangamite CMA Soil Health Knowledge Base.

A literature review and gap analysis of soils health in the Corangamite region occurred (Dahlhaus, 2015) and pointed out the need for region wide studies on soil health issues that are relevant to modern agriculture (nutrients, soil acidification, soil organic matter, subsoil constraints and soil biology). The literature review also found that soil health monitoring to understand soil health trends, the value of investment and a prognosis for the future of productive agriculture in the region was the most important knowledge gap. A soil health monitoring network has since been set up and this work should continue.

The Australian Government released the *Agricultural Competitiveness White Paper* with an estimated $4b of investment, which offers increased opportunities for funding. Priority 4 “Farming Smarter” has a focus on collaborative RD&E is the most likely and relevant funding opportunity to progress land health initiatives. Priority 3 “Strengthening our approach to drought and risk management” would also be relevant and links into climate change adaptation.

**Agricultural land strategy**

The Land Health Steering committee have recognised that the Corangamite Soil Health Strategy is outdated (2006-2012), but the recent (2013-14) South West Agricultural Soils Plan (SWASP) could be utilised as a guiding document. The SWASP indicates soil health limitations and uses a program logic approach to focus on practices that can improve soil condition for agricultural production.

Action 26 in the RCS, to develop an agricultural land strategy to integrate protection of soil health, natural resources and productivity has so far not progressed. The development of such a strategy has been discussed by the Land Health Steering Committee, who have provided the following information:

- development would require much greater effort and resourcing than the past Corangamite Soil health Strategy or Salinity Action Plan (funding opportunities would need to be sought)
- modern agriculture data for the region would need to be incorporated
- the Corangamite soil health literature review (Dahlhaus, 2015) has found many deficiencies that would need to be addressed in the strategy
- strategy would be best formed as a living document if completed
- focus on NRM aspects of agriculture only.

To proceed with this Action, the timing, budget and scope should be determined in consultation with the Land Health Steering Committee. Funding would then need to be sought.

**Recommendations**

3.29 Determine the scope, timing and budget for an Agricultural Land Strategy (to integrate protection of soil health, natural resources and productivity on agricultural land with a focus on improved productivity and environmental outcomes) in consultation with the Land Health Steering Committee and seek funding opportunities for its development.

3.30 Continue long-term regional soil health monitoring to understand soil health trends and the value of investment.
4.3.2 Waterways (rivers, estuaries, floodplains and wetlands)

Key achievements

Rivers, estuaries and wetlands

A new strategy (Corangamite Waterway Strategy) has been finalised that sets regional priorities and guides investment into high value rivers, estuaries and now includes wetlands. On-ground works in the region are directed by this framework and its accompanying works program.

A significant reconfiguration of the approach for the implementation of waterways works program has ensured actions are targeted to high value and cost-effective projects, leading to a significant increase in the amount of riparian zone, river frontage and wetlands that are protected and/or enhanced.

The protection and enhancement of priority rivers and wetlands has increased significantly, year by year, during the first 3 years of RCS implementation.

Rivers with known locations of four EPBC listed native fish species are priorities under the Corangamite Waterway Strategy. Localised projects to investigate populations of some of these species have occurred and a prioritised list of barriers and their locations is now available to assist with restoration of aquatic habitats and upstream fish passage for migratory species.

A range of environmental water outcomes have been achieved across the Corangamite region in the past three years, including outcomes for regulated and unregulated rivers. In the Moorabool River, there has been some significant advancements to scientific knowledge (Flows Study Update, Environmental Water Management Plan) and community participation in environmental water, which has improved the outcomes achieved through environmental water delivery and planning.

The Corangamite CMA has been working towards implementing a drying regime at Reedy Lake for many years, which was taken careful planning with stakeholder groups and scientific investigations. During Summer 2016 a low-water-level partial drying regime occurred at Reedy Lake to protect the ecology of the wetland system.

The CWS incorporates the updated management plan for the Western District Lakes Ramsar Site and a separate Plan for the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site is underway.

Floodplains, Expected outcome: actions to reduce (minimise) flood risk are being undertaken.

An online flood portal is under development and is due to be released in 2017. This portal will make flood data in the Corangamite region publicly available and will improve information sharing between agencies, the CCMA and the community. Most importantly it will assist the community to more readily access flood information and build awareness of known flood risks in the community.

Development of the regional floodplain management strategy is well underway and once complete will be the major tool to prioritise actions for floodplain management within the region. Key actions relate to minimising risks and damages to people, property and the protecting the environment will be included.

State and Federal funding sought through the National Disaster and Resilience Grants Scheme (NDRGS) has secured approximately $522k for strategic flood studies in the past three years. This has enabled more accurate information to be available when assessing planning referrals, flood advice requests, building regulation report and consents and works on waterways (approximately 3000 in the last three years).

Efficiency gains in the form of an MOU signed with the Greater Geelong City Council in 2016/2017 has resulted an increased response to riverine related flood enquiries/planning applications and strategic projects.

Further information

Activities that have contributed to the RCS objectives and actions, and the outcome of achieving greater protection, enhancement and restoration of valuable natural resources, can be seen in the waterways results table, Appendix 8.
In addition details of activities, projects and programs are reported in CCMA Annual Reports and the Victorian CMAs Achievements Reports for the 13/14, 14/15 and 15/16 financial years.

All actions discussed below are carried out in partnership with relevant landholders, agencies and community groups. This is reported in section 3.2.1 participation and knowledge sharing and 3.2.3 integration and coordination (partnerships).

Snapshot

Expected outcome: Delivery and resourcing of waterways programs has improved

Figure 3.11. Location of waterways (rivers, estuaries and wetlands) on-ground projects for the 3-year RCS reporting period (13/14, 14/15, 15/16).
CWS on-ground actions completed or underway | Waterway projects within priority areas | Available proposal value recommended for investment | Available total proposal benefit recommended

Delivery of on-ground CWS actions and projects within RCS priority areas for 13/14, 14/15 and 15/16

Cost-benefit of 15/16 waterways investment

**Figure 3.12. Priorities, investment and value for money.**

Implementation of the CWS is progressing with 10.6% of on-ground actions having commenced or been completed during the reporting period (Figure 3.12). This is relative to 6.2% of the required funding having been received. The CWS is considered as an investment prospectus for the region - it is not anticipated that 100% of the CWS will be completed within its 8-year timeframe, given the estimated total value of implementation for on-ground activities is just over $42 million. Although the CWS was not in operation for 13/14 and 14/15, data has been extracted for these years and compared to CWS and RCS priorities for the purpose of demonstrating action for the full 3-year RCS review period. Future analysis and data collection will occur through the newly completed CWS MERI Plan.

Just over half of the waterway projects have occurred within CWS and RCS priority areas during the review period (57.6%, Figure 3.11, 3.12) There could be some improvement in the number of projects that occur within or along CWS priority waterways, however it should be noted that there may be some data inaccuracy in this figure. It does not specifically include tributaries where works have been completed which have a positive influence on a downstream priority waterway. Rollout of the CWS MERI Plan must address this issue and should enable more confidence in data for the final RCS review.

In addition the improved cost-benefit analysis approach to waterways works program ensures that any projects occurring outside of priority reaches or wetlands are still demonstrating good value for money. For the 15/16 financial year the cost-benefit analysis has enabled 97% of the benefits that were available from the pool of proposals to be purchased for 83% of the total proposal value (Figure 3.12). Whilst 15/16 is the first financial year that this type of data is available for waterways, it is anticipated that comparisons can be drawn to future years as a part of the final RCS review.

The extent of hectares of riparian vegetation and kilometres of waterway frontage under contracted management has increased significantly over the first 3 years of RCS implementation (Figure 3.13).
increase in available funding for 15/16 (by approximately 200%), the hectares of riparian zone and kilometres of waterway under contracted management have both increased by significantly more than the 200% funding increase. This is due to a change to the rollout of the waterways works program to include a full cost-benefit analysis of all projects. Projects can now be selected based on a combination of ‘preference’ (i.e. higher quality and strategically more important sites) and anticipated gain (the expected change from conducting the contracted management activities). The 15/16 financial year was the first year where this new process was applied. The actions carried out within these sites include activities such as pest animal control, weed removal, revegetation and fencing to prevent stock access.

*Expected changes to condition of waterways (15/16 only)*

![Figure 3.14. Expected gains to condition of waterways for 15/16 sites.](image)

Expected improvements to the condition of waterways can be expressed in terms of kilometres of waterway frontage and measured as a ‘gain score’ (Figure 3.14). Overall bank condition is expected to improve along 94.65kms of waterways and instream temperature value will improve along 80.28kms of waterways (Figure 3). A significant proportion of waterway frontage (94%, or 89kms) could be expected to improve to a moderate or high degree for bank condition. This is based on comparing the current to the future (post management intervention) landuse on the bank. For example a site with current stock access that, after management intervention (i.e. fence and revegetation), would no longer have stock access, is anticipated to result in a large improvement to the condition of the bank and the overall waterway. These gains demonstrate significant improvement in aspects of waterway condition for all successful project sites.

A large proportion of sites scored a 0-1 for instream temperature value (ITV), which suggests there is little or no gain. However, these sites are those that could already be in good condition and therefore do not need to improve a great deal. Conversely, at a significant number of these sites, the shading currently provided is via exotic vegetation and although the instream temperature parameter may not be significantly impacted, other benefits will be derived through the project. ITV is measured on expected changes to canopy cover after management intervention, compared to the ecological vegetation class (EVC) benchmark. Sites that are in poor condition and would remain in poor condition even after management intervention (i.e. no improvement) would not score well against this criteria. The method does not currently discriminate between whether shading is provided by indigenous, native or exotic vegetation.

Water quality is another parameter that is intended to be included into the ‘metric’ in the future to assess the value of proposals. Detailed water quality data from the Environment Protection Authorities ‘Rivermap’ is being investigated as a probable source of this data.

Assumptions relating to data and the logic as well as relevant information on how data was interpreted can be seen in the results table, Appendix 8.
Protection of high value sites (15/16 only)

The following data is based on assessments of sites from the 15/16 waterways works program. It is intended to provide a baseline with which future rounds of the waterways works program can be compared. Further conclusions can then be drawn at the final RCS review.

**Figure 3.15. Remnant vegetation quality for 15/16 project sites.**

Score based on habitat hectares assessments, all sites needed a minimum of 25% remnant vegetation to qualify for an assessment (all zero scores did not qualify for an assessment).

**Conservation value of 15/16 waterways sites.** Bioregional Conservation Status (BCS): 0= Does not meet minimum vegetation standard for assessment; 1= least concern; 2= depleted; 3= rare; 4= vulnerable; 5= endangered.

**Threatened species protected at sites under contracted management 15/16 only (ha).** Rare or Threatened Species (ROTS): 0= No ROTS likely to be present at site; 1= riparian ROTS (FFG Act); 2= riparian ROTS (EPBC Act); 3= N/A; 4= aquatic ROTS; 5= riparian and aquatic ROTS.

**Figure 3.16. Conservation value of 15/16 project sites.**

The quality of native vegetation is assessed using habitat hectares methodology (DSE, 2004, see also Appendix 8). To qualify for an assessment, sites needed to have a minimum of 25% indigenous vegetation, those that did not qualify were automatically scored ‘0’. The condition for 15/16 waterways project sites is variable (Figure 3.15), with the average habitat hectares score across all sites being 13.09. This score is low due to more than

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70% of project sites (or 164 hectares, 60% of the total area) not containing enough indigenous vegetation to qualify for a habitat hectares assessment (and hence are given a score of 0). Of these sites, approximately 124 hectares were still part of a successful project under the 15/16 waterways works program. These sites will focus on revegetation to improve the quality of native vegetation in accordance with EVC standards (and hence the greatest gains are likely at these sites).

Of the sites that were assessed using habitat hectares (i.e. sites that did not score a 0) the condition was also variable some had either low or high vegetation quality and a majority had moderate vegetation quality (Figure 3.15). The average score for these habitat hectares assessed sites was 47.47. The lower to moderate quality sites could be expected to improve, whilst the higher quality sites would require little management intervention (and cost) for long-term protection of this vegetation.

Of the assessed sites, it can be seen that a large majority of interest in the waterways program falls at sites where there is little remnant vegetation remaining, and less interest from landholders at sites where good quality native vegetation exists. Although this information has not been collected in previous rounds of the waterways works program, the experience of catchment officers involved suggests that a far greater number of sites with remnant vegetation cover were assessed during the most recent round.

The conservation value of sites is shown in Figure 3.16 and was consistent with the variable vegetation quality results. A large proportion of sites either contained endangered EVCs (40%) or did not meet the minimum standard, or were of least concern assessment for BCS (43%). It’s likely that these sites would also be less likely to provide habitat that could support rare or threatened species (ROTS) and this is reflective of the high number of hectares that score a 0 for the ROTS assessment (no ROTS likely to be present). There was however over 190 hectares that do (or are likely to) contain threatened riparian or aquatic species. There were also a larger number of sites that support ROTS of national significance (80ha under the EPBC Act 1999) and 63ha with species of state importance (listed under the FFG Act 1988).

### Gaps, new information and issues

#### Implementation

Overall population trends for native fish species need to be established. Additional intermediate outcome and action required: adequate fish surveys are conducted at key sites to establish likely broader population trends. This should include both CWS priority and non-priority reaches.

New data is now available (as a part of the 15/16 waterways works program) for patch size and connectivity of all assessed sites. This data should be considered as a part of progressing action 29. (Identify a network of drought refuge areas in riverine and estuarine environments and undertake actions to ensure their protection).

The Victorian Auditor-General's Office (VAGO) completed an audit of the management of Ramsar wetlands across Victoria (VAGO, 2016). The audit found that there is limited evidence that all Ramsar sites are being effectively managed and protected from decline. There is also evidence of potential change in the ecological character of some sites, while changes at other sites cannot be fully determined due to limitations such as a lack of data. There were a number of recommendations made by the audit and these should be followed up within the Corangamite region and their impact considered in the RCS renewal.

#### MERI and program logic

Overall the links between actions and objectives could be stronger (for example the RCS does not set a specific objective that the environmental water action can contribute towards), additionally the objectives within the RCS could align more closely to the goals and targets in the new CWS, to take in the triple bottom line focus of the CWS. The program logic should be reviewed to better align with the CWS for the RCS renewal.

The Management Outcome Targets (MOTs) set in the Corangamite Waterway Strategy were originally intended to be used to show changes to waterway condition for RCS reporting. Data was not available on these specific targets for this review, and given that these are set specifically to show changes to the level of threat for each individual waterway they may not be at an appropriate scale for RCS reporting. This should be reviewed in consideration of the new data from the 15/16 waterways works program evaluation that has been
used in this mid-term review and as a part of implementing the CWS MERI Plan. The RCS, waterways work program, CWS implementation and MERI plan and all relevant monitoring data needs to be aligned so that reporting can be efficient and consistent between the RCS and CWS.

RiverMAP is a new tool developed by the Environment Protection Authority to assess waterway health based on macroinvertebrates as they provide a good indication of water quality due to their sensitivity to environmental change. The RiverMAP model uses macroinvertebrate samples which have been collected at about 2,500 locations across Victoria over the past thirty years, coupled with analysis of surrounding land use and vegetation cover to model water quality across a broader range of waterways. Using this data to assess condition of rivers in the Corangamite region would be extremely useful for condition reporting. Use of such data needs to be investigated for both the final RCS review and importantly for reporting against the CWS, but in the near future it is hoped that the modelled data can be used to for part of the waterways incentive metric for proposal evaluation.

Rivers 2040 is a strategic river management framework for planning, communicating and implementing long-term waterway work programs at a waterway or catchment scale. One of ten statewide trial sites has been set up along the Moorabool River, the trial will involve the identification of long-term targets and system trajectories that consider a river’s unique context and history and offers tools for investment proposals, stakeholder communication, monitoring and reporting. The Rivers 2040 framework will be supported by a transparent and robust MER process that involves long-term evaluation. If successful, the Rivers 2040 framework trial should be expanded for future long-term management, monitoring and reporting of other priority waterways as listed in the Water for Victoria Water Plan (Great Ocean Road estuaries, Barwon River and the Western District Lakes).

Objectives and actions

Aquatic and riparian threatened species are not specifically covered under the waterways theme in the RCS. They are considered under the broader objective 16 (resilience for climate change), however objective 17 (native fish) could be expanded to include other rare or threatened aquatic and riparian species. Data is now being collected on these species at project sites and this would also align with the goals and resource condition targets set within the CWS (both native fish and other waterway dependant threatened species have goals). To improve the integrated approach the RCS would also benefit from having threatened riparian and aquatic species included in the threatened species category of the RCS (rather than having it separately in the waterways category).

Further investigation needs to occur for objective 16 (maintain the resilience of indigenous aquatic and riparian flora and fauna to variable climatic conditions) to embed specific climate change actions into the waterways section of the RCS. This should be informed by the Corangamite NRM Plan for Climate Change.

Floodplain management

It has been identified that he RCS could better capture the role and extent of work undertaken in the region for floodplain management. This is not currently the case in the description section of the RCS (pp 13-16) and the objective and/or actions for the next RCS should be revised to reflect this. For example the objective (and outcome 14.1) should be reworded to better align with the Water Act 1989 Statement of Obligations document (19 October 2006, section 28, “Floodplain Management”) and the functions outlined in the Water Act (pursuant to Sections 201 to 212). The objective could be summarised to “manage floodplains to minimize the risk and damage to people and property and the environment. The objective needs to emphasise that the focus of best practice floodplain management is on minimising the damages from flooding, protecting the community and critical infrastructure as well as protecting the natural function of floodplains. How we then do this can be identified by a list of actions or principles that need to be added to the table within the RCS. Ecological function and environmental values are covered under other RCS objectives and in the goals and targets of the CWS. To assist with a clear distinction for future monitoring and reporting for floodplains under the RCS it would be recommended to remove reference to ecological function from the floodplain management objective.

There is a need to develop principles through the application of best practice floodplain management (via a state wide development guidelines document) which aims to reduce flood damage, improve wellbeing of
landowners and reduce adverse impacts on the natural environment. The intention would be that CCMA implement best practice floodplain management.

**Estuary management**

Whilst priority estuaries are recognised and mapped under the waterways theme of the RCS (and management occurs through the CWS), there is a lack of detail about estuaries and their management within their own right. Estuaries are particularly dynamic systems and require a unique management approach and could therefore warrant more information, relevant objectives and actions within the RCS. A discussion needs to take place as to how estuaries are represented in the RCS and to what level of detail this should include (given that estuaries are covered within the CWS).

**Wetland management**

There are significant knowledge gaps on the condition of wetlands in the Corangamite region. Whilst 75% of the wetland area occurs on public land, this only accounts for 25% of the number of wetlands. Of the 1,500+ wetlands in the region, over 1,125 (75%) occur on private land. Understanding the distribution and condition of these wetlands will help to direct future investment into wetland management. A regional approach would be required to implement this, and hence investigating distribution and condition of wetlands is an action of a suitable scale for the RCS and should be considered.

**Environmental water**

A range of new information is available and has been informing environmental water delivery in the Barwon and Moorabool Rivers. The development of a *Moorabool River Environmental Water Management Plan* has allowed the authority to incorporate updated science into annual and long term environmental water delivery planning, this has assisted in achieving ecological outcomes during dry conditions experienced in 2014 and 2015. New information includes an updated FLOWS study to inform watering actions, and an investigation into water dependant vegetation and habitat pools to help refine watering priorities.

Monitoring of water, plants, birds, fish and habitat as a part of the implementation of a drying regime at Reedy Lake, has been taking place from January 2016. This will allow for new environmental knowledge on this system to assist with future decision making.

**Recommendations**

3.31 Target promotion of waterway grants to priority waterways and upstream areas.

3.32 Strengthen the program logic for the waterways section of the RCS to improve alignment and cross-referencing between the Corangamite Waterway Strategy and RCS; including language consistency and expected outcomes and data to be used for MERI and reporting.

3.33 Investigate the use of the Environment Protection Authority ‘RiverMAP’ data for water quality metric for condition change assessments (RCS and CWS).

3.34 Incorporate new information on Climate Change to better inform the waterways works program – connectivity data, adaption pathways.

3.35 Consider incorporating patch size and connectivity data from waterways works program to further progress Action 29 (identify and manage drought refuges...) and future climate change actions.

3.36 Examine opportunities to conduct fish surveys to establish population trends and develop a process to incorporate new sites into management decisions.

3.37 Consider the impact of VAGO recommendations on management of Ramsar wetlands for RCS renewal.

3.38 Revise floodplain objectives and actions to better align with the Water Act Statement of Obligations.

3.39 Expand objective 17 (native fish) to include all rare or threatened riparian and aquatic species and include within the threatened species theme of the RCS.

3.40 Include a greater focus on estuaries and their management for the RCS renewal.
3.41 Include an action to facilitate projects that can improve our understanding of the distribution and condition of wetlands.

3.42 Improve data accuracy for reporting of future activities against priority waterways (through the CWS MERI Plan implementation); and provide for the ability to map on ground works onsite.

3.43 Continue the Rivers 2040 trial and if successful expand to other priority waterways as listed in the Water for Victoria Water Plan (Great Ocean Road estuaries, Moorabool and Barwon Rivers and the Western District Lakes).

3.44 Increase the use of the NRM Planning Portal in waterway planning, engagement and project delivery.

3.45 Review the Water for Victoria Plan and incorporate priority activities/actions as they relate to Corangamite CMA, e.g. input to the Central Region Sustainable Water Strategy and Ballarat Integrated Water Management review and capturing shared benefits of water management.

### 3.3.3 Native vegetation & threatened flora and fauna

**Key achievements**

An average of 5,000 hectares of high value inland native vegetation was protected and/or enhanced through contracted management in each year of the reporting period. For example, in 15/16 the PlainsTender Program awarded a further 20 contracts to land managers under a new round 6, totalling 1,155 ha of native vegetation and wetland that will be under active management.

Protection and enhancement of high value native vegetation is contributing to the protection of threatened species such as the Corangamite water skink and the brolga.

Investment in inland native vegetation projects has been targeted to high value and cost-effective projects. Almost 80% of all inland and coastal projects have occurred within RCS priority areas, and, on average, 87% of the benefits that were available from a pool of project proposals were purchased for just 40% of the total proposal value.

*Further information*

Activities that have contributed to the RCS objectives and actions, and the outcome of achieving greater protection, enhancement and restoration of valuable natural resources, can be seen in the native vegetation and threatened flora and fauna results table, Appendix 9.

In addition details of activities, projects and programs are reported in CCMA Annual Reports and the Victorian CMAs Achievements Reports for the 13/14, 14/15 and 15/16 financial years.

All actions discussed below are carried out in partnership with relevant landholders, agencies and community groups. This is reported in section 3.2.1 participation and knowledge sharing and 3.2.3 integration and coordination (partnerships).
Expected outcome: Delivery and resourcing of biodiversity programs has improved.

Figure 3.17. Location of native vegetation (including threatened flora and fauna) on-ground projects for the 3-year RCS reporting period (13/14, 14/15, 15/16).

Priorities and investment

Delivery of projects within RCS priority areas for 13/14, 14/15 and 15/16.

Cost-benefit of investment (average for all sites under contracted management during 13/14, 14/15, 15/16).

Figure 3.18. Priorities, investment and value for money.
A significant proportion of projects have been delivered within RCS priority areas, 79.5% (figures 3.17 and 3.18, using the RCS high value natural resource layer). When breaking this down by inland and coastal projects, 78.9% of inland native vegetation projects and 87.9% of coastal native vegetation projects have occurred within RCS priority areas.

The average from the cost-benefit analysis has shown that 87% of the benefits that were available from all proposals provided during the review period, were purchased for just 40% of the total proposal value (Figure 3.18). This demonstrates extremely good value for money for native vegetation projects.

After an initial increase the total number of hectares under contracted management decreased in 15/16 (Figure 3.19). This was due to the completion of PlainsTender4 contracts in June 2015, whilst the contracts are complete the protection of these sites is expected to continue, and in some cases further enhancement works will take place. In future it may be worth including an overall cumulative total for vegetation under protection, or use the native vegetation environmental account which factors in overall stocks and losses of vegetation within the region.

**Expected outcome:** A positive response can be measured against the Corangamite native vegetation environmental account.

Note this is not measured in this review. Protection of high value sites and conservation status is used to indicate likely gains to native vegetation during the reporting period. Data is based on assessments of sites from PlainsTender6, Conservation and Carbon Capture Project (Biofund) and Corangamite Conservation Tender (VEPP). It excludes coastal native vegetation sites, these are reported in Section 3.3.4 coasts and marine.

Whilst data could not be collated to display the remnant vegetation quality for project sites in time for this review, it can be assumed that these would be mainly of higher quality. The quality of sites is inherent in the cost-benefit analysis for selecting successful project sites (sites of poor quality are unlikely to be successful as the cost is often prohibitive). In addition, only a small number of sites require the management action of revegetation, suggesting that the sites are in good enough condition to allow for natural regeneration.

To look at the type of inland native vegetation are protected through contracted management, the amount of hectares under each Ecological Vegetation Classes (EVCs) have been recorded (Figure 3.20). The most common EVCs are graphed and include plains grassland (2318 ha), plains grassy wetland (377 ha), heavier soils plains grassland (330 ha) and herb-rich foothill forest (308ha).
Bioregional Conservation Status (BCS) has been recorded as a measure of conservation value for these EVCs and sites under protection (Figure 3.20). This shows that for inland native vegetation that a vast majority of funded sites (87%) are of the highest conservation value (endangered), whilst less than 5% of sites were of lower conservation value (least concern). This is likely to be due to a vast majority of inland sites being within the Victorian Volcanic Plain bioregion, an endangered ecological community. Over 4,400 hectares are under contracted management to be protected, enhanced or improved.

Ten most common inland native vegetation EVCs under contracted management

Bioregional Conservation Status (BCS) of inland native vegetation sites under contracted management. Endangered 87%, vulnerable 7.5%, rare 0%, depleted 0.44%, least concern 4.95%.

Figure 3.20. Common Ecological Vegetation Classes and Bioregional Conservation Status of sites under contracted management.

Expected outcome: Key populations (of threatened species) are known; Appropriate resources have been allocated to effectively conserve threatened species.

Threatened fauna species and sites under contracted management

Threatened flora species and sites under contracted management

Figure 3.21. Threatened fauna and flora species at sites under contracted management.

Overall there are 52 threatened fauna across 247 sites and 20 threatened flora species found at 80 different sites that are under contracted management (Figure 3.21). The number of coastal sites with threatened fauna
(229 or 92.7%) significantly outweighs the inland sites (18), and likewise for threatened flora (coastal = 95% of sites), speaking to the importance of coastal habitats for threatened and migratory species. It is important to note that some state-wide data is included in the coastal analysis (through the saltmarsh protection project).

The number of species and the number of sites in which these species are found is greater for those species listed at the state level under the Flora and Fauna Guarantee Act 1988 (FFG Act) and DELWP Advisory List/Conservation Status than sites containing nationally listed species under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Those listed under the EPBC Act include Corangamite Water Skink (two sites through PlainsTender), Orange-bellied Parrot (many sites to protect habitat through the saltmarsh protection project), Growling grass frog and Green and Golden Bell Frog (three sites through CoastalTender). Flora species include two orchid species listed as vulnerable that have been found at two separate sites.

Those listed under the FFG Act include the Rufous bristlebird (20 sites under CoastalTender), White-bellied sea eagle, Grey Goshawk, Intermediate Egret (multiple sites under state-wide saltmarsh protection project), and the Brolga (several sites under saltmarsh protection and six under PlainsTender). Flora species include orchids, scurfpeas and Eucalypts.

There are also a large number of sites for threatened fauna that fall under the EPBC Act categories for migratory species and protection of marine species. These categories provide for protection and conservation marine species and for migratory species (under the Bonn Convention, and International migratory bird agreements; JAMBA and CAMBA). There are 20 different marine bird species and 105 sites containing these species that are under contracted management. This includes the Grey-tailed Tattler, Pacific Gull, Nankeen Night-Heron and Glossy Ibis.

Gaps, new information and issues

In terms of native vegetation and threatened species conservation, one of the more significant developments for decision support tools has been the further development of products under the broad banner of DELWP’s GIS products known as ‘Nature Print’. Most recently, this has included the development of the Strategic Management Prospects (SMP) dataset. The SMP identifies areas and actions with the highest potential return on investment for biodiversity conservation and in particular for threatened species conservation.

A new state Biodiversity Plan is has just been completed. ‘Protecting Victoria’s Environment — Biodiversity 2037’, is a long term plan that is being developed by DELWP and is for stopping the decline of Victoria’s biodiversity and improving the natural environment, so it is healthy, valued and actively cared for. This Plan should provide the framework and direction to determine the need for and scope to develop a regional biodiversity strategy. Upon review of the new State strategy, the need for, scope and content of a regional biodiversity strategy needs to be established.

Activities of partners in the conservation of native vegetation and threatened species have not been incorporated in this review and should be looked into for future implementation and RCS renewal.

Measuring vegetation quality and net gains

The expected outcome “a positive response can be measured against the Corangamite native vegetation environmental account” has not been measured for this mid-term review. Attempts should be made to re-run the native vegetation environmental account for the final review (see section 3.4, recommendation 3.56). If this is not possible, vegetation quality data should be collated so that it can be analysed for the final review in 2019. The 2011 Remnant Native Vegetation Investigation Discussion Paper (VEAC, 2011) provides detailed information on the overall condition of bioregions within Victoria, including median habitat hectares scores. Consider using these median scores as a basis for comparing the Corangamite region with these state-wide datasets.

Recommendations
3.46 Investigate use of the Strategic Management Prospects (SMP) dataset to further our ability to make cost-effective investment decisions (for biodiversity and in particular threatened species conservation).

3.47 Under the direction of Biodiversity 2037, assess the need for, and if required progress development of a regional biodiversity strategy or an alternative means of capturing regional priorities.

3.48 Collate native vegetation quality data for the final RCS review, and consider using the Remnant Native Vegetation Investigation Discussion Paper (median habitat hectares scores, VEAC, 2011) as a basis comparison. Links to recommendation 3.56 (section 3.4).

3.49 Continue to invest in high value coastal EVCs as a means of protecting habitat for a significant number of the regions threatened flora and fauna species.

3.3.4 Coasts and marine

Key achievements

Completion of the Central and Western Regional Coastal Plans (2015-2020), plans that apply the Victorian Coastal Strategy 2014 at a regional level.

Over 2,800 hectares of high value coastal habitat and coastal saltmarsh vegetation is protected and/or enhanced through contracted management. For example, in 15/16 CoastalTender Round 3 awarded contracts to 13 different land managers covering 1,156 ha over 28 sites.

Protection and enhancement of high value coastal and saltmarsh habitat is contributing to the protection of a large number of threatened species, including the Orange-bellied parrot, Growling grass frog, and Green, Rufous bristlebird, White-bellied sea eagle and the Intermediate Egret.

Investment in coastal projects has been targeted to high value and cost-effective projects. Almost 90% of all coastal projects have occurred within RCS priority areas, and, on average, 97% of the benefits that were available from a pool of project proposals were purchased for just 38% of the total proposal value.

Further information

Activities that have contributed to the RCS objectives and actions, and the outcome of achieving greater protection, enhancement and restoration of valuable natural resources, can be seen in the coasts and marine results table, Appendix 10.

In addition details of activities, projects and programs are reported in CCMA Annual Reports and the Victorian CMAs Achievements Reports for the 13/14, 14/15 and 15/16 financial years.

All actions discussed below are carried out in partnership with relevant landholders, agencies and community groups. This is reported in section 3.2.1 participation and knowledge sharing and 3.2.3 integration and coordination (partnerships).

Snapshot

Expected outcome: Delivery and resourcing of coastal and marine biodiversity programs has improved.

A significant proportion of projects have been delivered within RCS priority areas, 87.9% of coastal native vegetation projects have occurred within RCS priority areas (Figure 3.22). These are mapped in Figure 3.15 (section 3.3.3) with native vegetation projects. The average from the cost-benefit analysis has shown that 82% of the benefits that were available from all proposals provided during the review period were purchased for just 38% of the total proposal value (Figure 3.22). This demonstrates extremely good value for money for these coastal vegetation projects. As shown in Figure 3.23, the amount of hectares under contracted management has increased significantly over the reporting period. This is due to the awarding of more than 1,000ha of contracts through CoastalTender3 in 2015/16.
Available proposal value recommended for investment
Available proposal benefit recommended

Delivery of coastal projects within RCS priority areas for 13/14, 14/15 and 15/16

Cost-benefit of investment (average for all coastal sites under contracted management during 13/14, 14/15, 15/16).

Figure 3.22. Priorities, investment and value for money.

Figure 3.23. Hectares of coastal native vegetation under contracted management.

Expected outcome: (High value) coastal assets have been identified and management strategies have been adopted.

The following data is based on assessments of sites from CoastalTender2 and 3 and the Saltmarsh Protection Project.

Whilst data could not be collated to display the remnant vegetation quality for project sites, it can still be assumed that these would be mainly of higher quality. This is because the quality of sites is inherent in the cost-benefit analysis for selecting successful project sites (sites of poor quality are unlikely to be successful as the cost is often prohibitive). In addition, only a very small number of sites require the management action of revegetation, suggesting that the sites are in good enough condition to allow for natural regeneration. Vegetation quality data should be collated so that it can be analysed for the final review in 2019.

To look at the type of coastal vegetation protected through contracted management, the amount of hectares under each Ecological Vegetation Classes (EVCs) has been recorded. The most common EVCs are graphed in Figure 3.22 and include saltmarsh (1,078 ha), heathy woodland (310 ha), coastal alkaline scrub (242 ha), estuarine wetland (178 ha). It should be noted here that saltmarsh protection sites include state-wide data, as this is a state-wide project and the hectares of EVCs specific for the Corangamite region could not be extracted for this review.

Bioregional Conservation Status (BCS) has been recorded as a measure of conservation value for these EVCs and sites under protection (Figure 3.24). For coastal native vegetation almost 70% of the nearly 2,831 ha are of
very high conservation value (endangered or vulnerable) and less than 20% were of low conservation value (least concern). Again this shows a significant proportion of high value coastal vegetation (over 2,830 hectares) are under contracted management to be protected, enhanced or improved.

**Figure 3.24. Common Ecological Vegetation Classes and Bioregional Conservation Status of sites under contracted management.**

**Threatened flora and fauna**

Information on threatened marine fauna and threatened coastal flora and fauna protected through contracted management can be found in Section 3.3.3 (native vegetation and threatened flora and fauna). An important note here though is that almost 93% of the sites containing threatened species are coastal sites, highlighting the importance of coastal habitats for threatened and migratory species (noting that some state-wide data is included in the coastal analysis through the saltmarsh protection project).

**Gaps, new information and issues**

**New Marine and Coastal Act**

The new Marine and Coastal Act (when completed) may bring significant changes to the management of coasts, particularly for CMAs. A Marine and Coastal Act Consultation Paper was released by DELWP in August 2016 and proposed some reforms that would have significant impact on the role of CMAs in the management of marine and coastal areas, including having CMAs provide advice on coastal flooding and erosion. A submission was made by the Corangamite CMA in response to the Consultation Paper, with the major points being:

- The Corangamite CMA supports the proposal to boost the role of coastal CMAs. However, in order for this transition to be successful, the following needs to be considered:
  - Greater clarification on governance and institutional arrangements, as well as roles and responsibilities will be required of the specific marine and coast-related roles that CMAs and other organisations will fulfil.
  - To deliver the anticipated requirement for coastal and marine skills, expertise relative to coastal land and marine environments (including erosion, accretion and climate change impacts) and the connection to coastal and marine communities, significant additional resources will be required for the Coastal CMAs.
It is similarly important to consider the resourcing and funding needs of the proposed changes, also the implications for committed coastal management activities to ensure that financial allocations to CMAs are commensurate with the boosted roles and enable an appropriate level of staffing expertise and operational capacity to fulfil the responsibilities.

- Further clarification on the proposed Regional and Strategic Partnerships (RASPs), in particular their structure, function and their potential role in existing coastal decision making frameworks/processes is required.
- Greater consideration to the role Coastal CMAs play in community engagement and implementation programs for marine and coastal areas. Coastal CMAs have strong partnerships with Landcare and provide strategic support for Landcare. Similar support could be extended to a coastal and marine context, through Coastcare, which could be strategically supported by CMAs similar to Landcare.

Given the extent of change that may be required under the Marine and Coastal Act, this review proposes that RCS implementation should continue as it currently is, and no changes are recommended until the Marine and Coastal Act is complete and negotiations can occur on how the new responsibilities (should they occur) may transition to the CMAs. Matters that need to be addressed in order for the transition to occur are detailed in the CCMA submission regarding the Consultation Paper.

**Marine biodiversity**

This links to expected outcome: Delivery and resourcing of coastal and marine biodiversity programs has improved.

The RCS has, at this stage, had little focus on the management of marine areas. Despite many projects assisting to reduce the impact of the catchment on marine areas (e.g. waterways projects, coastal biodiversity projects can reduce runoff), this is still not a specific planning or decision making factor. In addition there is currently no monitoring to determine whether these projects are actually having a positive influence on the marine zone. This focus could be improved, however a watching brief should be maintained until the new Coastal and Marine Act is completed as this may bring some significant changes to how marine biodiversity is managed and incorporated into catchment management in the future.

**Expected outcome: The asset based-framework has been adopted for coastal NRM.**

Action 40: to complete and implement the Victorian coastal asset-based framework, and adapt it to coastal resources in the Corangamite Region has not been completed as the project has been discontinued by DELWP.

**Recommendations**

3.50 Continue with RCS implementation as it currently is until the new Marine and Coastal Act is completed, then adapt the RCS (at its renewal) accordingly.

3.51 Ensure that matters relating to the transition of responsibilities to coastal CMAs (that have been identified in the CCMA submission to the Marine and Coastal Act Consultation Paper) are addressed.

3.52 Examine options to incorporate coastal vegetation and coastal threatened species conservation actions of partners for future RCS implementation and reporting.
3.3.5 Aquifers

Key achievements

Groundwater information is now readily available and easily accessed in the Corangamite region due to Southern Rural Waters (SRW) online interactive portal ‘The Groundwater Hub of Southern Victoria’ (Figure 3.25).

A new Local Management Plan (LMP), the Otway Lower Aquifer LMP, is being developed for the lower aquifer, which covers an area west of the Gellibrand River and south of the Great Dividing Range and Gariwerd. This will combine the management of five current GMUs in the Corangamite region into one plan and streamline the management of this aquifer.

Southern Rural Water with Wannon Water and the Corangamite CMA are conducting a study on groundwater augmentation supply with the aim to increase summer flows to the Gellibrand River. This is in the early development stages.

Figure 3.25. Groundwater Hub of Southern Victoria. Visit

Further information

Activities that have contributed to the RCS objectives and actions, and the outcome of achieving greater protection, enhancement and restoration of valuable natural resources, can be seen in the aquifers results table, Appendix 11.
Snapshot

Expected outcome: Groundwater resources have been appropriately managed to protect their health.

Figure 3.26. Condition of aquifers based on salinity and yield of GMUs within the Corangamite region.

Based on the salinity and its yield of groundwater within GMUs the condition of aquifers can be considered as good across the region. There are none in poor condition, some GMUs in moderate condition and many in good or very good condition (Figure 3.26).

There are 323 current licences for groundwater extraction, with permissible consumptive volume (PCV) being fully allocated for the upper aquifers (this is until further hydrological work has been undertaken there are no further licences available). The lower aquifer PCV is not fully allocated, however this is being reviewed as a part of developing the Otway Lower Aquifer LMP (see below).

This data suggests that groundwater resources have been appropriately managed throughout the reporting period to protect their health.

Gaps, new information and issues

A local management plan (LMP) is planned for the Warrion GMA within the next 12-18 months.

Work on the remainder of the lower (Dilwyn) aquifer within the CCMA boundary (that extends from the eastern edge of the OLA LMP area) is also planned but no date set.

Barwon Water’s Barwon Downs borefield licence is also due for renewal by 2019. This is located in the Gerangamete GMA that will also form part of the remainder of the Otway Lower Aquifer LMP study.

A review of the Central Sustainable Water Strategy (SWS) is likely to begin within the final 3 years of RCS implementation.

The WSPA has recently been abolished for the Bungaree GMU, which paves the way for permanent trade and a Local Management Plan to be developed by SRW and incorporate the basalt aquifer as a whole.

Recommendations

3.53 Consider the new information that will be available from new groundwater Local Management Plan LMPs and the future review of the Central SWS.
### 3.4 RCS monitoring and evaluation

The RCS set four actions in relation to monitoring and evaluation. Table 3.1 describes progress and any new information, gaps or issues. Recommendations are then made.

**Table 3.1. RCS monitoring and evaluation.**

<table>
<thead>
<tr>
<th>RCS Action</th>
<th>Progress</th>
<th>Gaps, new information and issues</th>
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<tbody>
<tr>
<td>45. Continue to develop an agreed, broadscale and long-term reporting framework for natural resource management.</td>
<td>In response to the VAGO audit into the effectiveness of Catchment Management Authorities, DELWP is coordinating workshops with all CMAs to determine consistent indicators to report on catchment health. This project is focusing on CMA annual reporting, however its results would be useful for RCS reporting.</td>
<td>A more detailed approach and framework for the region, where long-term trends can be compared still needs to be investigated and developed. Using environmental accounts (Action 46.) may be one option to pursue.</td>
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<tr>
<td>46. Contribute to the development of a set of 'national environmental accounts' which report on changes in resource condition and extent, and demonstrate and quantify the relationship between the health of the environment and the health of the economy, and adopt once finalised.</td>
<td>Trial completed, CCMA region has environmental accounts for native vegetation and wetlands.</td>
<td>The MERI Plan aims to use Environmental Accounts to demonstrate change to condition to native vegetation and wetlands. It is planned to run these environmental accounts again for the final RCS review. However, state-wide modelling would need to be re-done and environmental accounts redone to achieve this. DELWP support will be required and this would need to be pursued. In addition, if this path is followed environmental accounts for other NRM themes need to be investigated.</td>
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<tr>
<td>47. Develop, deliver and monitor an implementation plan for the RCS which identifies accountable lead and support partners for each action.</td>
<td>Complete.</td>
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48. Develop and adopt a Monitoring, Evaluation and Reporting (MER) plan. This action is complete and implementation has informed this review. An audit has been conducted on the MERI Plan as a part of this review.

An audit of the plan was conducted as a part of the mid-term review. New information identified that could be incorporated into MERI activities included:

The University of Canberra’s Regional Wellbeing Survey examines the wellbeing of people in rural and regional Australia and how this is influenced by social, economic and environmental changes. The results provide insights to plan for supporting wellbeing, resilience and adaptive capacity and includes a chapter on natural capital and perceived environmental health. View the 2015 results [here](#).

Using EnSym (Environmental Systems Modelling Platform) tools and data to deliver a more detailed analysis of on-ground outcomes to quantify environmental benefits of conservation work as a result of expected management actions. Information that can be obtained includes reporting by EVCs, threatened species, predicting impacts of land management on water, sediment and chemical yields in a catchment.

State-wide frameworks and MERI approaches such as Rivers 2040 and the statewide catchment indicators trial. Rivers 2040 is a strategic river management framework for planning, communicating and implementing long-term waterway work programs at a waterway or catchment scale. Included in the trial for the Corangamite region is the Moorabool River. The catchment indicators trial is a result of the VAGO audit on the effectiveness of CMAs and aims to determine a way to report catchment health annually in CMA Annual Reports. Once complete this may be useful in answering to the RCS KEQ 1, regarding the health of NRM assets.

Re-run environmental accounts, see above (under Action 46.)

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<th>Recommendations</th>
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4 RCS performance and effectiveness

To address RCS performance and effectiveness a number of KEQ have been set in the RCS MERI Plan. As part of this mid-term review the following two KEQ have been addressed:

- KEQ 3 To what extent has the RCS been implemented as planned?
- KEQ 4 To what extent has the RCS directly contributed to the outcomes achieved?

This section also addresses the following VCMC guiding questions:

- How is the RCS performing?
- Is it effective in supporting delivery of its priority strategic actions?

4.1 Results

An online survey was sent out to 165 individuals from 62 different organisations and groups, covering the 16 different community segments in accordance with the Corangamite Community Engagement and Partnerships Strategy 2014. Forty-three individuals responded, a 26% response rate. The following results are based on the responses of the 43 individuals who took part in this survey.

In order to understand the performance and effectiveness of the RCS is it important to first understand which organisations in the region currently use the document and to what effect. As such, the online survey asked respondents to identify which section of the community in which their primary role sits. This information is presented in Figure 4.1.

![Figure 4.1. Primary role of respondents in regards to use of the Corangamite RCS (shaded categories received zero responses).](image)

It can be seen in Figure 4.1 that a large range of community segments participated in the survey. The majority of respondents (69%) were from non-government NRM groups, government NRM organisations and CCMA staff. This is understandable given they are likely to have some level of understanding of the RCS, its purpose and where it sits in terms of managing the regions natural resources.
Respondents were then asked to provide on a scale of 1 to 10 (1 being ‘not at all’ and 10 being ‘always’), the extent to which they or their organisation uses the RCS to inform actions. This data is presented in Figure 4.2 below.

**Figure 4.2. To what extent does your group / organisation use the Corangamite RCS to inform its actions?**

The vast majority of respondents (over 90%) use the RCS sometimes, often or always when developing actions through their respective organisations planning processes, whereas only 4 respondents (out of 42) indicated they use it rarely or not at all.

Taking this line of questioning further respondents were then provided with a number of aspects of the RCS (e.g., objectives, actions, maps and sub-strategies) and asked to detail on a scale of 1 to 5 (1 being ‘not at all’ and 5 being ‘always’), the level each aspects has or has not been used to inform their or their organisations actions. Responses rated as a 1 or 2 (red and yellow: the RCS is either not at all or rarely used) and are graphed as negative percentages to better illustrate trends for the extent of use in different components of the RCS. Responses are graphed in Figure 4.3.

**Figure 4.3. To what degree have you used the following aspects of the Corangamite RCS to inform your actions?**
The figure shows that respondents valued the RCSs sub-strategies for informing actions over its objectives, actions and maps, with 90% of respondents indicating they sometimes to always use sub-strategies to the RCS when developing or implementing actions in their respective organisations.

Similar response frequencies were recorded for the use of the objectives and actions for natural resource categories detailed in the RCS, with 75% and 72.5% respectively specifying their use between sometimes and always. The high-value maps were often used with 65% respondents indicating their use between sometimes and always.

The objectives and actions for the four foundations for change were the least used of the 6 aspects provided with response rates of 54% and 50% respectively indicating respondents sometimes to always use them. Conversely, this means that 46% and 50% respectively do not use the foundations for change to help guide their actions.

Respondents were then asked to detail on a scale of 1 to 5 (1 being ‘not at all’ and 5 being ‘always’), to what extent do they refer to the RCS to inform a number of actions or processes within their organisation that relate to managing natural resources in the region. Responses rated as a 1 or 2 (red and yellow, the RCS is either not at all or rarely used) and are graphed as negative percentages to better illustrate trends for the extent of use in different components of the RCS. Figure 4.4 provides a summary of their responses.

![Figure 4.4. To what extent do you refer to or use the RCS for the following?](image)

- Finding information about NRM and the Corangamite region
- Understanding regional priorities
- Funding applications
- Setting organisation/groups priorities
- Planning projects and/or on-ground works
- Assist in planning and/or decision making to avoid impacts on high value natural resources
- Assist integration and coordination of activities with others

Figure 4.4. To what extent do you refer to or use the RCS for the following?

The figure shows that the majority of respondents referred to the RCS on a regular basis to inform all the actions and processes listed, with all categories receiving greater than 60% response rate for being used sometimes to always. Respondents indicated they referred most to the RCS to understand regional priorities with 85% saying this occurs sometimes to always. Respondents referred to the RCS least for assistance in planning and/or decision making to avoid impacts on high value natural resources, with 38% saying this rarely or never occurs.

Online survey respondents and interview participants were asked to provide an example of where their organisation or group has used the RCS to inform management decisions or activities, and where they have
seen the RCS influence activities. If it hadn’t been used, explain what needs to change for this to occur. Their responses are summarised as follows:

- 15 respondents provided examples of how they or their organisation use the RCS to plan projects and/or on-ground works. Of those 15 examples, 7 were linked to RCS sub-strategies as the main source for planning works.
- 12 respondents provided examples of how the RCS had been used to understand and align regional priorities to local priorities with 5 respondents going on to explain how this information was used to inform funding applications.
- 2 respondents noted that there was an increase in the extent of community involvement (particularly the farming community) and that this should continue.
- 4 respondents pointed out the need to increase Aboriginal engagement and involvement in NRM.
- 5 respondents indicated they did not use the RCS to inform management decisions or activities. Reasons provided varied from the RCS being too high-level to some not knowing the document existed and where it is positioned in terms of guiding NRM in the region.
- 3 respondents pointed out that the RCS actions were either outdated, no longer required or not relevant. Although no specific information was provided on which actions were in question and the changes that would be needed.
- 1 respondent noted that the RCS had brought about a greater focus on soils and agricultural land in the region.

4.2 Recommendations

4.1 Improve the awareness and implementation of the RCS and in particular its foundations with partners.

4.2 Increase Aboriginal and Traditional Owner involvement.

5 Maximising the RCS impact

To address the impact of and improvements needed for the RCS and its implementation a number of KEQ have been set in the RCS MERI Plan. As a part of this mid-term review the following KEQ was addressed:

- KEQ 7 What could be done differently to improve implementation, and thereby maximise impact?

This section also addresses the following VCMC guiding questions:

- Is the RCS still saying the things we think it should?
- What new information has appeared?
- Is there new or additional information which needs to be considered (for the remaining life of this RCS, and to initiate our thinking for the 2019 RCS?
- What do we need to do to prepare for renewal in 2019?

5.1 Results

Online survey participants and CAG interviews provided the data for these results.

As an initial step in understanding the impact of the RCS, the online survey focused questions on respondents applications and use of the RCS, in particular, what they felt currently works well and should be retained, and what they feel needs to change to improve implementation.

Aspects of the RCS and its implementation that respondents felt were critical to retain to ensure they can continue to use it to inform actions in the future are summarised into the main themes as follows:
• The RCS should remain as a high level document with strong support and linkages to the sub-strategies. The sub-strategies and plans developed under the RCS are critical for prioritising actions.

• Identification of priority assets (both through the RCS and its sub-strategies) and a clear understanding of how these priorities link to funding programmes.

• Continued focus (listening to community and their priorities) on the 'Participation' outcome and 'Increase breadth and depth of participation' foundations for change, for community groups and individuals to continue to engage in the RCS through the CCMA’s delivery/action programs.

Aspects of the RCS and its implementation that respondents felt needed to change to increase the degree to which they can continue to use it to inform actions in the future are summarised into the main themes as follows:

• Ensuring greater links to the recently released statewide documents for water and biodiversity management (i.e., the Water Plan and Biodiversity 2037).

• Increasing involvement of traditional owner groups and organisations.

• Increased clarity of roles and responsibilities for implementation of the RCS.

• More detailed mapping capability, particularly for native vegetation, either through the document or an online resource that is easily updateable.

• Improved connection to national priorities and investor requirements.

Respondents were then presented with a series of challenges and opportunities and were asked to rank which of these they believed were the most important to address in the final 3 years of RCS implementation, as well as in the next 5 to 10 years. The results are presented in Figure 5.1 below.

Figure 5.1. Most important challenges and opportunities for addressing in the final 3 years of RCS implementation and over the next 5 to 10 years.

The figure shows that increasing the protection, enhancement and/or restoration of natural resources was ranked as the highest priority for respondents over the next 3 years, as well as the next 5 to 10 years.
A number of challenges and opportunities then scored well for both the 3 year and 5 to 10 year categories and included: increasing participation in NRM; identifying joint priorities for investment; climate change; achieving practice change on private land, and; integrating and coordinating management.

Of particular note in the figure is the change in priority given to climate change, with it being ranked fourth over 3 years, then jumping up considerably to being ranked second over 5 to 10 years. Population growth was another challenge seen as greater priority over the 5 to 10 year period.

Respondents were then asked to detail any other challenges and opportunities not listed in the previous questions that they felt should be prioritised over the next 3 and 5 to 10 years. Responses included:

- Ensuring traditional owner participation at all levels of NRM (applicable to the next 3 and 5 to 10 years).
- Long term monitoring, evaluation and improvement is critical to ensure investment is not undermined (applicable to the next 3 and 5 to 10 years).

### 5.1.1 Gaps and new information

In order to get an understanding of the information gaps, online survey participants, interview participants and CCMA staff were asked what new information is now available that may influence how we achieve the RCS actions (and address the challenges and opportunities) in the final 3 years of RCS implementation. The following new information needs to be considered.

#### Science and data

- satellite imagery
- precision agriculture
- climate science
- regional wellbeing survey – social health measure
- understanding of estuary processes, acid events, and links to management decisions
- knowledge of environmental water requirements for management decisions and water recovery
- soils and waterway data.

#### Legislation, policy, strategy

- Corangamite NRM Plan for Climate Change
- Regional Riparian Action Plan
- Water for Victoria Plan
  - Rivers 2040 framework
  - Sustainable Water Strategies (to be revised)
- New state-wide Biodiversity Plan, Biodiversity 2037
- New Marine and Coastal Act
- Changes to Aboriginal Heritage Act
- Right people for country program, Aboriginal water
- Victorian and Corangamite Floodplain Management Strategies
- Our Coast Inundation Report
- VAGO recommendations for the effectiveness of CMAs, including new programs and projects (e.g. Our Catchments Our Communities Program, catchment indicators reporting trial, and recent review of Ramsar obligations).

#### Other

- Need to understand and focus more on the coastal/inland connection – both catchment and socially. Peri-urban land use issues. Landowners in these situations quite often are driven by a desire to be
closer to nature. With careful engagement these people can become advocates, participants and contribute financially.

- Satellite imagery has come a long way and is now influencing decisions and everyday operations.
- Precision agriculture – digital information, innovation and solution based effort.
- Visitation and tourism in the region – Growth, development and income is expanding in the tourism sector. Increased international and national visitation is impacting on roads and natural resource assets.
- Adaptive management is happening within programs and this should be an approach for the remainder of this RCS and future ones.
- Use of technology and innovation for the next RCS
- Explore new community engagement processes (e.g Anglesea Futures, Scotsburn fire recovery event).

5.1.2 RCS renewal

In order to get a sense of the important issues for RCS renewal, online survey and semi-structured interview participants were asked to describe what they see as the most important issues or considerations that need to be monitored or investigated when preparing for renewal of the RCS in 2019. Responses have been summarised into the main themes as follows:

- Incorporating the latest climate science and management approach.
- Traditional Owner and Aboriginal community involvement and opportunities for capacity development.
- Consider the impact of population growth and urban sprawl.
- Improving MERI by understanding (and collating data) on catchment and natural resource condition, setting clearly defined measurable targets and using data to make evidence based decisions.
- Incorporating local values and priorities and continue the emphasis on community involvement, including in planning.
- Making the RCS adaptable to new information and technology.

Online survey participants were then asked what they felt consultation should look like for the renewal of the RCS, as well as their preferred format for the next version of the strategy. Responses are shown in Figure 5.2 and 5.3 respectively.

The clear preferred option for consultation are workshops of some form or another. This was closely followed by establishing a community advisory group/steering committee. Technical reports/discussion papers, submissions and online consultation were also seen a good options for consultation for RCS renewal.

The preferred format for the next RCS was an interactive online website/web portal, followed by an electronic document. Website and a hard paper copy scored relatively poorly and are the least preferred of the four options.
5.2 Recommendations

5.1 Establish a central MERI data repository and ensure RCS MERI Plan is resourced so it can use the most relevant and current data.

5.2 Continue the focus on natural resource protection, enhancement and restoration.

5.3 Continue the focus on community participation, and in identifying joint priorities and investment.

5.4 Allow for more detailed mapping capability (particularly for native vegetation), through an online resource that is interactive and easily to update (e.g. NRM Planning Portal) and new smartphone technology.
5.5 Continue to implement VAGO recommendations: around the effectiveness of CMAs, e.g. Our Catchments Our Communities Program; catchment indicators reporting, and recent review of Ramsar obligations.

5.6 Use the Corangamite NRM Plan for Climate Change to embed climate change into the next RCS.

5.7 Allow for greater involvement of other partners in RCS implementation and reporting.

5.8 Use the survey results on preferred consultation methods to plan engagement activities for the RCS renewal.

5.9 Examine use of a web portal format for next RCS.

5.10 Consider the scale of the next RCS and the role of the NRM Planning Portal.

5.11 Review key state strategies and policy documents (e.g. Biodiversity 2037, Water for Victoria Plan and Our Catchments and Our Communities strategy) and incorporate relevant activities/ actions as they relate to Corangamite CMA.

5.12 Review the effectiveness of the four year Our Catchment Our Communities funded projects in delivering the objectives of the RCS.
6 References


7 Appendices

Appendix 1. Online survey questions

SECTION 1 – participant details

1. To begin with, please tell us your primary role in regards to the Corangamite RCS:
   (community segments)
   - Land owner
   - NGO group – NRM
   - NGO group – non NRM
   - Traditional Owners and/or Aboriginal Community member
   - Government - NRM organisation
   - Government – non NRM
   - Water corporation
   - Local government
   - Peak Body
   - Agribusiness and commodity group (Commercial)
   - Research and education organisation
   - Secondary industries (e.g. private sector, mining and resources)
   - Community volunteer
   - CCMA Board
   - CCMA staff
   - Other groups

2. Are you of Aboriginal or Torres Strait Islander origin?
   - Yes, Aboriginal
   - Yes, Torres Strait Islander
   - Yes, both Aboriginal and Torres Strait Islander
   - No

SECTION 2 – Implementation and effectiveness of the RCS

3. To what extent does your group / organisation use the Corangamite RCS to inform its actions?
   (Rate from one to ten, where 1 is never, 4 is sometimes and 10 is always)

4. To what degree have you used the following aspects of the Corangamite RCS to inform your actions?
   (Rate each from one to five, where 1 is never, 5 is always)
   - Objectives for natural resource categories
   - Objectives for the four foundations for change
   - Actions for natural resource categories
   - Actions for the four foundations for change
   - High value maps for natural resources
   - Sub-strategies of the RCS (e.g. Corangamite Waterway Strategy)
   - Other (please specify)

5. To what extent do you refer to or use the RCS for the following:
   (Rate each from one to five, where 1 is never, 5 is always)
   - Finding information about the Corangamite region
   - Understanding regional priorities
Funding applications
Setting organisation/groups priorities
Planning projects and/or on-ground works
Assist in planning and/or decision making to avoid impacts on high value natural resources
Assist integration and coordination of activities with others
Other (please specify)

6. Please tell us about an example/s where your organisation or group has used the RCS to inform land or water management decisions or activities? If not, please tell us what needs to change for this to happen in the future.

SECTION 3 – Challenges, opportunities and improving RCS implementation

In this section we wish to gain some details on what you believe can be done to maximise the impact of the RCS for the final 3 years of implementation and for future RCS’s.

7. What changes could be made to the RCS and its implementation to increase the degree that you use it to inform your actions?

8. What aspects of the RCS and its implementation are critical in ensuring you can continue to use it to inform your actions in the future?

9. The RCS details a number of challenges and opportunities. Of these, which do you believe are the most important for addressing in the final 3 years of RCS implementation and over the next 5-10 years.

   Please rate your top three for each timeframe, in order of importance.

   Increasing the protection, enhancement and/or restoration of natural resources
   Increasing participation in NRM
   Identifying joint priorities for investment
   Integrating and coordinating management
   Sourcing investment
   Increasing and sharing knowledge
   Accounting for investment (quantifying achievements)
   Population growth
   Climate change
   Achieving practice change on private land
   Other (please specify)

10. Comments:

11. What new information is now available that may influence how we achieve the RCS actions (and address these challenges and opportunities) in the final 3 years of RCS implementation?

SECTION 4 – RCS renewal

12. Please describe what you see as the most important issues or considerations that need to be monitored or investigated when preparing for renewal of the RCS in 2019?

13. What do you see as the most useful format for the next RCS?

   Paper document
   Electronic document
   Website
14. What should consultation look like for the renewal of the RCS? Please select your preferred way/s of contributing.

   Community open house events
   Community information sessions
   Workshops
   Public meetings
   Submissions
   Technical reports/discussion papers
   Online consultation
   Surveys
   Electronic democracy (online forum)
   Community advisory group/steering committee
   Sectorial working groups
   Deliberative processes
   None - I’m unlikely to provide a contribution
   Other (please specify):

15. If you have any further comments about the Corangamite RCS or this survey, please make them here.

16. If you are happy for us to contact you for more information about your answers or examples in this survey please provide your email address here:
Appendix 2. Semi-structured interview questions

1. Describe the extent to which you believe the RCS has directly influenced priorities and NRM outcomes in the Corangamite region? Have any programs, projects, partnerships or activities (that you are aware of) happened because of the RCS (or would they have happened anyway)?

2. Are the RCS objectives still relevant, does anything need to be changed for this RCS, and/or considered in the next RCS?

3. Are the RCS strategic actions appropriate for achieving the RCS objectives?
   a. Will completing the actions enable us to demonstrate progress towards the objectives?
   b. Are there any gaps or actions that are no longer required? What needs to change/why should actions be discontinued?

4. What new information has appeared since the RCS was developed? What is important to incorporate for the remainder of this RCS, what should be considered for RCS renewal?

5. What do we need to do to prepare for RCS renewal in 2019? What should the next RCS and its consultation look like?
Appendix 3. Results table: Participation and knowledge sharing

<table>
<thead>
<tr>
<th>RCS Objective</th>
<th>EXPECTED RESULTS (Intermediate outcomes from RCS Program Logic)</th>
<th>RCS Action</th>
<th>ACTUAL RESULTS</th>
<th>Evidence</th>
<th>Assumptions, issues or notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>Objective 1 Participation in the protection, enhancement and restoration of natural resources by landholders, community, industry and agencies has increased.</td>
<td>Overall participation in NRM has increased.</td>
<td>1. Develop and adopt a Corangamite Community Engagement Strategy that addresses barriers and opportunities for increased participation leading to practice change in natural resource management.</td>
<td>The community and land use profiling study was completed and used to develop the Corangamite Community Engagement and Partnerships Strategy. This is complete and implementation is underway. The number of participants in NRM as well as the number of events (and their participants) has remained steady over the first three years of RCS implementation. Regional Landcare Facilitators working with new target audiences by: broadening the program to include viticulture, horticulture and niche small farm producers supporting farm business decision making through capacity building workshops including farm succession planning continuing to develop events based on participant feedback leading to new project participants incorporating the Indigenous Participation Program into Regional Facilitator Program events including the Rural Women’s Network Bellarine event, as well as the You Yangs Walk.</td>
<td>1 x community and land use profiling study 1 x Corangamite Community Engagement and Partnerships Strategy Overall participation in all engagement related activities (events, grants, tenders, volunteers) 13/14: 13,326 participants 14/15: 13,380 participants 15/16: 13,363 participants Overall participation in events: 13/14: 260 events; 8642 participants 14/15: 194 events; 8611 participants 15/16: 393 events; 8441 participants.</td>
</tr>
</tbody>
</table>
To analyse this data according to the depth of engagement, the engagement activities were recorded against the IAP2 spectrum. This showed that both the number of events and the participants at events was strongly biased towards ‘inform’ style of events. This can be attributed to the fact that many knowledge sharing events occur such as presentations and field days. The number of these types of events has remained steady throughout the reporting period. Over 20,000 people have attended this type of knowledge sharing event in the 3-year RCS period.

Examples of events and other activities that have contributed to this analysis include:

- Training events (e.g. staff cultural awareness, Closing the Gap, community capacity, CLEA)
- Presentations (e.g. estuaries unmasked seminars, Waterwatch)
- Field days (e.g. rabbit control, cultural awareness, weed control, Waterwatch schools program, sustainable agriculture farm walks, training sessions, bus tours)
- Workshops and meetings to collaborate on planning (e.g. Aire Estuary Management Plan)
- Workshops (e.g stubble management, pastures, climate change)
- Study tours
- Conferences (South West soils conference, National NRM Conference, Community Engagement Conference, Landcare and Great South West Dairy awards)
- Project and group strategic planning activities
- Project funding grants
- Lead role in organising and implementing the South West Soils Conference

The management of estuaries continues to be informed by 79 EstuaryWatch volunteers who conduct estuary mouth condition monitoring, physical and chemical monitoring and event based monitoring.

<table>
<thead>
<tr>
<th>Events</th>
<th>13/14</th>
<th>14/15</th>
<th>15/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inform</td>
<td>144</td>
<td>112</td>
<td>234</td>
</tr>
<tr>
<td>Consult</td>
<td>0</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Involve</td>
<td>112</td>
<td>82</td>
<td>143</td>
</tr>
<tr>
<td>Collaborate</td>
<td>17</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Empower</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
<td>199</td>
<td>399</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participants</th>
<th>13/14</th>
<th>14/15</th>
<th>15/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inform</td>
<td>7185</td>
<td>7729</td>
<td>6068</td>
</tr>
<tr>
<td>Consult</td>
<td>97</td>
<td>189</td>
<td>246</td>
</tr>
<tr>
<td>Involve</td>
<td>1364</td>
<td>762</td>
<td>2247</td>
</tr>
<tr>
<td>Collaborate</td>
<td>71</td>
<td>84</td>
<td>83</td>
</tr>
<tr>
<td>Empower</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>8716</td>
<td>8764</td>
<td>8644</td>
</tr>
</tbody>
</table>

All events, tenders and grants have been categorised under the IAP2 spectrum. The following types of events and activities were categorised using data from DELWP standard outputs. This data contains information on the type of event and in some cases the focus of the event. Events were classified based on the example tools provided within the IAP2 spectrum itself (e.g. workshops are suggested as an appropriate tool for the ‘involve’ component of the IAP2 spectrum, Appendix 4). The analysis does not allow for cross-referencing of event data to improve data accuracy in cases where events do not match to the suggested tools under the IAP2 spectrum. In future all events should be planned in consideration of, and recorded under IAP2 spectrum categories each time they are run.

The generic classification is as follows:
- Inform: conference, presentation, field day
- Consult: meetings and any events recorded under DELWP standard outputs event focus of ‘consult’
- Involve: training, workshops
- Collaborate: participants in tender and grant rounds and any events recorded under DELWP standard outputs event focus of ‘collaborate’

Note that ‘inform’ and ‘involve’ are not categories in the event focus section of DELWP standard output reporting. The category has not been assigned in this review due to the difficult nature of determining whether an activity or project resulted from CCMA interaction with the participant, or happened solely because the participant was empowered to do so. It could be argued that many successful tender and grant applicants fit the empower category. It also could be argued that unsuccessful tender and grant applicants who go on to complete the work anyway could fit the empower category (however we have no way to track if and when this is happening). An additional consideration for empower is regarding decision making. To be truly considered as empower the participants should have the final decision making power. In most situations this would not be the case, as most funding that is related to engagement activities is bound to particular targets, needs or commitments that cannot be altered. This category needs to be defined for future RCS reporting.

Analysis does not include total number of volunteers or group members (e.g. all Landcare members). It is not possible to tell how many of these members are active in any given year to assign them to a category. Data for volunteers/group members who attend an event or participate in a grant or tender is already included.
### RCS Objective

**EXPECTED RESULTS**

*(Intermediate outcomes from RCS Program Logic)*

<table>
<thead>
<tr>
<th>RCS Action</th>
<th>ACTUAL RESULTS</th>
<th>Evidence</th>
<th>Assumptions, issues or notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>19. Conduct targeted engagement, extension and education activities and support agencies, groups and individuals to share and improve NRM knowledge and skills which leads to an increase in effective on-ground actions</td>
<td>There has been an increased interest in participating in tenders and grants by more than double, with applications going from 74 to 150 to over 200 applicants. The number of successful applicants has increased from 13/14 but not between 14/15 and 15/16 due to the funding which has not increased over the RCS review period. Further detail on the amount of hectares and on-ground actions for these projects can be found in the waterways, native vegetation &amp; threatened species and coasts themes.</td>
<td>Applications for tender and grant projects: 13/14 14/15 15/16 15/16 14/15 13/14 74 153 203</td>
<td></td>
</tr>
<tr>
<td>1.2 All high priority community segments identified through the community engagement strategy are regularly participating in natural resource management.</td>
<td>To be reported at final review.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1.3 Growth has occurred in natural resource management group membership.</td>
<td>The Landcare Support Plan (2013) has been completed. The Corangamite Landcare Program continues to support natural resource management activity and capacity building through 22 Landcare networks with more than 152 community-based environmental volunteer groups, with over 4,200 members. There has been little change in the number of Landcare groups and the number of members over the past 3 years. There have been six new groups commenced since the RCS began, however some groups have folded, hence the overall total has increased by two groups. The six new groups are Northern Bellarine Coastcare Clifton Springs Foreshore Coastcare Group Barwon Heads Landcare Group Connewarre Landcare Group Lake Modewarre/Buckley Landcare Group Otway Coast Regenerative Farmers (Apollo Bay)</td>
<td>1 x Landcare Support Plan (2013) completed. 4200 Landcare members (estimate for each year) Total groups: 13/14: 152 (0 new groups) 14/15: 152 (2 new groups) 15/16: 154 (4 new groups)</td>
<td>The number of members of Landcare is currently an estimate. The actual number of members is difficult to determine due to fluidity and constant change of member numbers. Even if we could calculate more accurate totals, it is not possible to determine annually the number of members that have been active vs. those that are members and have not active. Consider revising outcome 1.3 to reflect more genuine participation of Landcare members (such as participation in on-ground and engagement or knowledge sharing activities) and/or align to Landcare Support Plan outcomes for partnerships, investment, membership, skills and knowledge (pp 22, <a href="https://www.landcarevic.org.au/assets/Uploads/GroupPage/d0cbd5d3-d9e2-49e7-97b6-cde65213607f/landcare_sponsor_plan_web.pdf">https://www.landcarevic.org.au/assets/Uploads/GroupPage/d0cbd5d3-d9e2-49e7-97b6-cde65213607f/landcare_sponsor_plan_web.pdf</a>). As discussed in section 4.2.3 (integration and coordination), concerns have been identified by NRM NGOs in the partnerships health survey. These concerns are currently being responded to, and this should continue.</td>
</tr>
<tr>
<td>3. Revise and renew the Regional NRM groups Support Plan.</td>
<td></td>
<td>3 x agricultural groups 2050 members in agricultural groups Numerous knowledge building activities (reported above in participation)</td>
<td></td>
</tr>
<tr>
<td>RCS Objective</td>
<td>EXPECTED RESULTS (Intermediate outcome from program logic)</td>
<td>RCS Action</td>
<td>ACTUAL RESULTS</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------------</td>
<td>------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Knowledge sharing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective 5</td>
<td>Natural resource management programs and projects respect and protect Aboriginal cultural values.</td>
<td>5.1 The number of registered cultural heritage sites has increased.</td>
<td>Not assessed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.3 Knowledge and skills have increased (indigenous knowledge exchange and cultural land values are promoted within the region).</td>
<td>Commencement of the Corangamite CMA Indigenous Participation Program. Overall 15 Aboriginal cultural awareness sessions have been run and with over 400 participants. Four Aboriginal people from the Corangamite region were sponsored to attend the Indigenous Fire workshop at Cape York. Here participants learnt first-hand from traditional owners and experienced fire practitioners to understand indigenous community fire programs. This included demonstrations of research and monitoring techniques and contemporary management solutions dealing with weeds, climate change and strengthening sustainable livelihoods.</td>
</tr>
<tr>
<td>Objective 9</td>
<td>The connection of Traditional owners to land is respected and planning and activities are informed by their skills and knowledge.</td>
<td>8.3 Knowledge and skills have increased (indigenous knowledge exchange and cultural land values are promoted within the region).</td>
<td>4 x Aboriginal people attended Indigenous Fire workshop Cape York</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Work with communities across the region to identify, build and support beneficial partnerships, including collaborating with Traditional Owners to further engage Indigenous people in natural resource management.</td>
<td>Aboriginal people now have improved skills through participating in a range of formal training and informal educational opportunities: 9 are set to complete a Certificate in Conservation and Land Management in 2016 15 attended a Traditional Fire workshop 8 Aboriginal people completed four wheel driving training 2 attended the National Seed Science Forum 3 local Aboriginal Organisation directors attended a tourism conference and personal tour of the Roelands Village.</td>
</tr>
<tr>
<td>Objective 8</td>
<td>Knowledge of the regions natural resources and how to protect, restore and enhance them has increased resulting in improved practices.</td>
<td>15. Bring together existing knowledge of the community about natural resource condition and management, and share this knowledge, to aid the development of investment priorities.</td>
<td>See 4.1 and 4.2 (Local Catchment Plans)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.1 Knowledge gaps have been identified and addressing them is underway. 8.2 Knowledge and information is readily available and accessible. 8.3 Knowledge and skills have increased (see also participation outcome 1.1).</td>
<td>In 2016 Corangamite “Watch” programs led the development of the EstuaryWatch Victoria and Waterwatch Victoria web portals. The project was delivered as part of a research partnership with the Centre for eResearch and Digital Innovation (CeRDI) at Federation University Australia. The purpose of this project is to increase community awareness and knowledge of waterway management and condition and increase reliable and relevant waterway condition data and information available to the community and waterway managers.</td>
</tr>
</tbody>
</table>

| | | 17. Continue to use, profile and add new information to knowledge databases such as the Corangamite CMA online knowledge base. 18. Encourage face-to-face sharing of knowledge, skills and experience by landholders and others. | All 10 CMAs have worked with the Australian Government to establish a state-wide approach for use by CMAs to respond to regional variations in cultural diversity, experience in working with Traditional Owners and | | |
| | | | 1 x Aboriginal Participation Guideline for Victorian CMAs View | | |
| | | | 2 x new portals on the CCMA knowledge base | | |
| | | | 2 x Aboriginal trainees appointed at CCMA | | |
| | | | 4 participants in cultural values training (14/15) | | |

**EXPECTED RESULTS:**
- Increase the number of registered cultural heritage sites.
- Increase knowledge and skills of Aboriginal people.

**ACTUAL RESULTS:**
- 37 x Aboriginal people have improved skills.
- 2 x Aboriginal trainees appointed at CCMA.
- 4 participants in cultural values training (14/15).
- Country Visits – Wadawurrung and Landowners - 4 Cultural values training (4 participants) 14/15.

**Evidence:**
- Not assessed.

**Assumptions, issues or notes:**
- It is not feasible to determine the number of cultural heritage sites within the region. Remove outcome.
- Actions 4 and 14 have become the Indigenous Participation Program. The RCS should be revised to align to the objectives of this Program: to strengthen existing relationships and establish new relationships between Aboriginal communities, Indigenous people and natural resource management groups and/or practitioners provide support to Aboriginal communities and Indigenous people to participate in environment and agriculture management include capacity building and training programs for Aboriginal communities and Indigenous people encourage inclusion of indigenous knowledge into NRM planning and delivery.

**Assumption that by attending these events and/or formal training that skills have increased:**
- No. of local catchment plans incorporating cultural land values (data not available for this review).
Aboriginal communities, and natural resource management priorities. The Guideline:
provides a framework for how CMAs can strengthen the effectiveness of their engagement and partnerships with Traditional Owners and Aboriginal communities;
recognises that each CMA region is different and that each will take its own approach in engaging with the diversity of Traditional Owners and Aboriginal communities within its region; and
provides Traditional Owners and Aboriginal communities with an entry point for engaging with CMAs.

The Eastern Maar Country Plan contains Aboriginal cultural knowledge, values and perspectives, ideas and priorities. The plan identifies a goal for NRM “Our Country is healthy and our natural resources are managed and used sustainably”.

Wadawurrung Fire and Country clip is an educational video.

1 x Meerreengeeye ngakeepoorryeeyt - Eastern Maar Country Plan developed View
Wadawurrung Fire and Country clip produced – 88 views. Visit

Community Learning for Environmental Action (CLEA) is a three year Victorian Landcare Council (VLC) project, funded by the Natural Resources Conservation League and the VLC. Its purpose is to find how best to support peer learning and mentoring between grassroots environment groups. Three Corangamite Landcare Networks who participated in this program, Surf Coast and Inland Plains Network, Upper Barwon Landcare Network and Leigh Catchment Group now have CLEA plans. The development of these plans assist the networks to protect their long-term future, decide what needs to be strengthened and make the case for investment in Landcare capacity.

3 x Landcare networks participating in CLEA program.

Events included:
PlainsTender landholder forum at Mt Rothwell
Victorian Volcanic Plains Research & Development Forum to 80 people
Five community engagement and skills events on the VVP with landholders delivered by DELWP Threatened Species teams and Greening Australia
Development of management guidelines, identification booklet and factsheets for VVP assets discussions with landholders about appropriate current recommended practices, building capacity with those directly responsible for high priority assets.
30 EstuaryWatch training sessions with a total of 267 participants
EstuaryWatch Estuaries Unmasked
night seminars to educate and raise community awareness
Training Waterwatch community monitors in aquatic macro-invertebrate surveys to increase skills and knowledge.

490 knowledge sharing events (see also, participation ‘inform’ events):
13/14: 144
14/15: 112
15/16: 234
122 training events

Plans and systems developed during this review period include the Corangamite Waterway Strategy (2014-2022), Corangamite Landcare Support Plan, NRM planning portal, Aire Estuary Management Plan, Community Learning for Environmental Action plans for 3 Landcare networks, Local Flood Guides for Aireys Inlet and Lara and EstuaryWatch Communication and Stakeholder Engagement Plan. Plans that have been revised or updated include Barwon and Mooroobool Seasonal Watering Proposals, management of Waterwatch and EstuaryWatch databases, management of the decision support tool ‘EEMSS’ (Estuary Entrance Management Support System).

No. of publications, plans, decision support systems (written, video)

<table>
<thead>
<tr>
<th>Objective 8</th>
<th>8.4 There is evidence of practice change in NRM agencies and the community.</th>
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</thead>
<tbody>
<tr>
<td>Not assessed</td>
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</table>
**Objective 10**  
Improved knowledge of the impacts of climate change and actions to protect natural resources.

<table>
<thead>
<tr>
<th>10.1 Priority landscapes for carbon plantings have been determined.</th>
<th>10.2 Strategies to build landscape integrity and guide adaptation and mitigation actions have been identified.</th>
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</thead>
<tbody>
<tr>
<td>New knowledge on carbon sequestration options for the region is now available via the Corangamite NRM Plan for Climate Change (see below). These options include natural regeneration, farm forestry, revegetation, blue carbon (see below), and soil carbon.</td>
<td>Regionally specific climate change information is now available online through the South West Climate Change Portal. The portal contains the latest climate change research and information that can be used by NRM and other planners, land managers and community groups to adapt to a changing climate. The portal is a collaboration between the local governments of south-west Victoria, the Corangamite and Glenelg-Hopkins CMAs and the Centre for eResearch and Digital Innovation. This includes the Regional Spatial Climate Change Vulnerability Assessment and Decision Framework (completed by CSIRO, Spatial Vision, Natural Decisions, Victorian CMAs).</td>
</tr>
<tr>
<td>The results listed are delivering on the DELWP Barwon Otway MER Plan. They contribute to answering Key Evaluation Questions to better understand the impact and effectiveness of our Bushfire Management Strategy and improve the models and tools we use in developing this strategy. The action is still relevant and will continue to be a focus for DELWP and its partner agencies. On behalf of DELWP, La Trobe University are currently in the process of developing monitoring questions and methodologies for bushfire management monitoring related to Ecosystem Resilience. This will ensure consistency and applicability of monitoring data collected statewide. Information provided by Forest Fire Management Victoria, DELWP.</td>
<td>South West Climate Change Portal <a href="#">here</a>.</td>
</tr>
</tbody>
</table>

**Corangamite Region Blue Carbon Stock Assessment**  
Establishment of long-term monitoring sites to determine rates of bushfire fuel re-accumulation in the Wye River – Jamieson Track fire area. DELWP/PV.

**Focal Areas**  
In 2014, the Corangamite CMA identified a lack of information on carbon sequestration options for the region. In 2016, the Corangamite NRM Plan for Climate Change (SCARP, CSIRO, Deakin University, Federation University, Regional Stakeholders) was developed. To help inform this plan, researchers from Deakin University and the University of Melbourne have conducted a study to understand the distribution and abundance of blue carbon within the catchment. Such information is critical for guiding the spatial prioritisation of conservation efforts. To address this knowledge gap, the Corangamite CMA commissioned researchers from Deakin University to conduct the region’s first blue carbon stock assessment, focussing on sedimentary organic carbon. The study identified significant blue carbon sediment stock in the region and areas where it should be prioritised for protection. Further investigation will occur through a PhD study with information being made available on the SW Climate Change portal.

**Regional Stakeholders**  

**Priority Landscapes for Carbon Sequestration Dataset**  
(1 x Corangamite NRM Plan for Climate Change (SCARP, CSIRO, Deakin University, Federation University, Regional Stakeholders))  

**Corangamite Region Blue Carbon Stock Assessment and Report**  
(1 x Corangamite NRM Plan for Climate Change (SCARP, CSIRO, Deakin University, Federation University, Regional Stakeholders))  

**Corangamite Blue Carbon PhD research Project**  
(underway)  

**Saltmarsh, mangroves and seagrass meadows or ‘blue carbon’ has been identified as some of the most effective carbon sinks on the planet. In 2024, the Corangamite CMA identified a lack of information on the distribution and abundance of blue carbon within the catchment. Such information is critical for guiding the spatial prioritisation of conservation efforts. To address this knowledge gap, the Corangamite CMA commissioned researchers from Deakin University to conduct the region’s first blue carbon stock assessment, focussing on sedimentary organic carbon. The study identified significant blue carbon sediment stock in the region and areas where it should be prioritised for protection. Further investigation will occur through a PhD study with information being made available on the SW Climate Change portal.**

**Focal Areas**  
In 2014, the Corangamite CMA identified a lack of information on carbon sequestration options for the region. In 2016, the Corangamite NRM Plan for Climate Change (SCARP, CSIRO, Deakin University, Federation University, Regional Stakeholders) was developed. To help inform this plan, researchers from Deakin University and the University of Melbourne have conducted a study to understand the distribution and abundance of blue carbon within the catchment. Such information is critical for guiding the spatial prioritisation of conservation efforts. To address this knowledge gap, the Corangamite CMA commissioned researchers from Deakin University to conduct the region’s first blue carbon stock assessment, focussing on sedimentary organic carbon. The study identified significant blue carbon sediment stock in the region and areas where it should be prioritised for protection. Further investigation will occur through a PhD study with information being made available on the SW Climate Change portal.
### Appendix 4. IAP2 spectrum

#### IAP2 PUBLIC PARTICIPATION SPECTRUM

<table>
<thead>
<tr>
<th>INFORM</th>
<th>CONSULT</th>
<th>INVOLVE</th>
<th>COLLABORATE</th>
<th>EMPOWER</th>
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<tbody>
<tr>
<td>Public Participation Goal:</td>
<td>Public Participation Goal:</td>
<td>Public Participation Goal:</td>
<td>Public Participation Goal:</td>
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<tr>
<td>To provide the public with balanced and objective information to assist them in understanding the problems, alternatives and/or solutions.</td>
<td>To obtain public feedback on analysis, alternatives and/or decisions.</td>
<td>To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.</td>
<td>To partner with the public in each aspect of the decision, including the development of alternatives and the identification of the preferred solution.</td>
<td>To place final decision-making in the hands of the public.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Promise to the Public:</th>
<th>Promise to the Public:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>We will keep you informed.</td>
<td>We will keep you informed, listen to and acknowledge concerns and provide feedback on how public input influenced the decision.</td>
<td>We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.</td>
<td>We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.</td>
<td>We will implement what you decide.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Example Tools:</th>
<th>Example Tools:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>• fact sheets</td>
<td>• public comment</td>
<td>• workshops</td>
<td>• citizen advisory committees</td>
<td>• citizen juries</td>
</tr>
<tr>
<td>• web sites</td>
<td>• focus groups</td>
<td>• deliberate polling</td>
<td>• consensus-building</td>
<td>• ballots</td>
</tr>
<tr>
<td>• open houses</td>
<td>• surveys</td>
<td>• participatory decision-making</td>
<td>• public meetings</td>
<td>• delegated decisions</td>
</tr>
</tbody>
</table>

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For more information regarding the IAP2 Public Participation Spectrum, refer to http://www.iap2.org.
## Appendix 5. Results table: Investment

<table>
<thead>
<tr>
<th>RCS Objective</th>
<th>EXPECTED RESULTS</th>
<th>RCS Action</th>
<th>ACTUAL RESULTS</th>
<th>Evidence</th>
<th>Assumptions, Issues or Notes</th>
</tr>
</thead>
</table>
| Objective 3   | The aggregate investment to protect, enhance and restore the region's natural resources has increased. | 3.1 The proportion of non-government funding has increased (as a % of the aggregate funding). | The investment from non-government sources has remained steady for the review period, and has increased slightly, by approximately $150K, from the previous 3-yr average. As a proportion of the aggregate funding this has also increased by 1.2%. Additional investment has been received by both the CMA and other NRM groups and programs with support from the CMA. | RCS 3-year average: $1,274,628.33  
% of aggregate funding: 10.04%  
Previous 3-year average: $1,121,243.33  
% of aggregate funding: 8.83% | Figures for 13/14, 14/15 and 15/16 are taken from CCMA Annual Reports and are for total revenue received by the Corangamite CMA. Additional investment has been received by other NRM groups and programs with support from the CMA. Previous 3-year average is the total State and Federal government revenue averaged for the 10/11, 11/12 and 12/13 financial years. Investment of partners, including that of landholders is excluded from these calculations. |
|               |                  | 3.2 The number of new investors has increased. | Additional funding has been received from a number of new non-NRM government sources, corporate, philanthropic and universities. A total of ten new investors contributed over this period. | 10 new investors. City of Ballarat, the Metropolitan Waste and Resource Recovery Group, the Helen Mcpherson Smith Fund, Sunshine Fund, Grains Research & Development Corporation, Southern Farming Systems, Regional Universities Network, Federation University, Deakin University Greenfleet. | |
|               |                  | 3.3 A net gain in government funding has been achieved. | The investment from Government sources has been variable, with an initial decrease from 13/14 to 14/15 and an increase of more than $3m to 15/16. When averaged across the 3-year reporting period Government investment has been approximately $240K less than the previous 3-year period. It is anticipated however that the level of Government funding will continue at the higher level received in 15/16. | 13/14  
State: $6,875,091.00  
Federal: $3,978,849.00  
Total: $10,853,940.00  
14/15:  
State: $6,425,479.00  
Federal: $3,363,572.00  
Total: $9,789,051.00  
15/16:  
State: $10,862,000.00  
Federal: $2,752,000.00  
Total: $13,614,000.00  
RCS period 3-year average: $11,418,997  
Previous 3-year average: $11,659,959 | |
| Objective 4   | Joint priorities for investment in the protection of natural resources are identified and pursued. | 4.1 Local Catchment Plans completed x 15 | The ‘NRM planning portal’ is a spatial tool that has been developed to house the Local Catchment Plans/Landscape Zone Action Plans. At this stage four landscape zones are complete and are helping to test how online mapping can be used to match local and regional priorities for catchment management in the Corangamite CMA region. | 1 x NRM planning portal in operation  
4/15 Local Catchment Plans (LCP) completed |Action 10. Landscape Zone Action Plans has become the NRM planning portal. Other partners information yet to be included in the NRM planning portal (e.g. Local government, Traditional Owners). |
<p>|               |                  | 4.2 Joint priority projects have been developed and funded or matched to an investor for future funding. | The project developed in the Woady Yaloak Landscape Zone to address upstream threats to the Western District Lakes. | 1 project developed in the Woady Yaloak Landscape Zone to address upstream threats to the Western District Lakes. | |
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<table>
<thead>
<tr>
<th>RCS Objective</th>
<th>EXPECTED RESULTS (Intermediate outcome from program logic)</th>
<th>RCS Action</th>
<th>ACTUAL RESULTS</th>
<th>Evidence</th>
<th>Assumptions, issues or notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 7</td>
<td>Investment is targeted to the protection of high value natural resources with feasible and cost effective solutions.</td>
<td>Tenders and grants implemented.</td>
<td>9. Develop tools, strategies, programs and projects aligned with a broad range of investor interests to attract investment that delivers feasible and cost effective outcomes. 11. Design and deliver a range of incentive programs.</td>
<td>Refer to cost-benefit analysis in results tables for waterways (Appendix 7), native vegetation (Appendix 8) and coasts (Appendix 9) and participation in tenders and grants, participation results table (Appendix 3).</td>
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</table>
## Appendix 6. Results table: Integration and coordination (partnerships)

<table>
<thead>
<tr>
<th>RCS Objective</th>
<th>EXPECTED RESULTS (Intermediate outcome from program logic)</th>
<th>RCS Action</th>
<th>ACTUAL RESULTS</th>
<th>Evidence</th>
<th>Assumptions, issues or notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 2</td>
<td>Natural resource management partnerships have grown and existing partnerships are adequately supported.</td>
<td>2.1 New partnerships have been established, existing partnerships have been maintained (growth in the number of partnerships).</td>
<td>These partnerships include where 2 or more groups or agencies are involved in NRM projects, formalised agreements (incl MOUs, statements of intent etc), state-wide NRM forums, project steering committees. There is a relatively even split between the partnerships that are with agencies or community groups, and a much lesser number of partnerships with mixed (agencies and community groups). Partnerships include: Estuary management MOUs, Land health program steering committee, Rural Women’s Network, the Victorian Gorse Taskforce and Victorian Serrated Tussock Working Party, RCS managers forums, CoastaTender, PlainsTender and Saltmarsh Protection Project, EstuaryWatch and Waterwatch, Landcare, VVP linear reserves, threatened species, seed production area projects, Agricultural groups and industry for soil health and sustainable agriculture, Waterway and riparian works and environmental water, Regionally specific climate change science through collaborative research.</td>
<td>No. of partnerships: 13/14/15/16</td>
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<td>4. Work with communities across the region to identify, build and support beneficial partnerships, including collaborating with Traditional Owners to further engage Indigenous people in natural resource management.</td>
<td></td>
<td>New (agencies) 0 3 0</td>
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<td></td>
<td>New (community groups) 0 4 3</td>
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<td></td>
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<td>New (mixed) 0 0 0</td>
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<td></td>
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<td>Maintained (agencies) 7 27 25</td>
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<td></td>
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<td></td>
<td>Maintained (community groups) 0 33 28</td>
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<td></td>
<td></td>
<td></td>
<td>Maintained (mixed) 0 0 1</td>
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<td></td>
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<td>5. Establish and maintain a regional alliance of partners to guide natural resource management directions, including reviewing, delivering and reporting on the RCS.</td>
<td>Not assessed – action not commenced.</td>
<td>Not assessed – action not commenced.</td>
<td>Action has not been completed and its need should be reviewed.</td>
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<tr>
<td></td>
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<td>6. Establish and support existing partnerships to achieve coordinated and integrated natural resource management.</td>
<td>Partnerships are reported as being effective. High priority partners are reporting they are satisfied.</td>
<td>1 x partnerships survey (Intuitive Solutions, 2016)</td>
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<td>2.2 All partnerships identified as critical are adequately supported.</td>
<td>2.3 50% of partnerships have achieved a minimum of a high level of effectiveness (they are healthy and productive).</td>
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<td>6.1 Partnerships have led to improved integration of catchment management.</td>
<td>The saltmarsh protection project is state-wide in collaboration with West Gippsland, Port Phillip and Westernport and Glenelg Hopkins CMA regions. PlainsTender, managing the VVP in collaboration with Glenelg Hopkins CMA. CMA managers forums include: RCS review, Catchment Indicators trial, Climate change planning, biodiversity, waterways x 2 (management and regional waterway strategy).</td>
<td>2 x cross-region/statewide Tenders 6 x CMA managers forums</td>
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<tr>
<td>RCS Objective</td>
<td>EXPECTED RESULTS (Intermediate outcome from program logic)</td>
<td>RCS Action</td>
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<td>Evidence</td>
<td>Assumptions, issues or notes</td>
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<tr>
<td>12. Ensure protection of natural resources and productive land are considered through local government planning provisions and regional growth area planning.</td>
<td>Not assessed for mid-term review.</td>
<td>Not assessed for mid-term review.</td>
<td>Not assessed for mid-term review.</td>
<td>Not assessed for mid-term review due to time and data constraints. Assess action for final RCS review. Links to recommendations in the participation section about gaining input of partners into RCS reporting.</td>
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<tr>
<td>13. Support activities that increase the conservation security and/or functional connectivity of high value natural resources, such as conservation covenants or the critical or opportunistic purchase of land.</td>
<td>Not assessed for mid-term review.</td>
<td>Not assessed for mid-term review.</td>
<td>Not assessed for mid-term review.</td>
<td>Not assessed for mid-term review due to time and data constraints. Assess action for final RCS review. A new project - The &quot;Connected Landscapes - Adapting Corangamite's Natural Assets to Climate Change Project&quot; will promote biodiverse connectivity at a landscape scale across the northern Corangamite CMA region, encompassing the Victorian Volcanic Plain and Ramsar Lakes and other significant wetlands, as well as the riparian corridors and catchments of the Woady Yaloak, Moorabool, Leigh and Barwon Rivers. The project will aim to build landscape resilience and work towards ensuring the landscape, and the natural assets within it, are adapted to climate change. This project addresses Action 13 and should be reported for the final RCS review. In future such an action should be changed to ensure its future focus incorporates climate change adaptation and is as a key driver for restoring functional connectivity in the landscape.</td>
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</table>
Appendix 7. Results table: Soils and agricultural land

<table>
<thead>
<tr>
<th>RCS Objective</th>
<th>EXPECTED RESULTS (Intermediate outcome from program logic)</th>
<th>RCS Action</th>
<th>ACTUAL RESULTS</th>
<th>Evidence</th>
<th>Assumptions, issues or notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 11</td>
<td>Maintain or enhance soil condition for continued environmental benefits and increased agricultural production.</td>
<td>11.1 The number of events focussing on managing soil condition has increased.</td>
<td>21. Work with landholders to maintain or enhance soil condition so it is capable of providing environmental benefits and supporting production.</td>
<td>Pasture Cropping Trials: Whilst the exact reason for changing management practices (research question/aim) is varied, the common goal of the project is to attain year round ground cover and utilise soil moisture. Examples of specifics are; Pure Lucerne vs inter row cereal (DM production over winter) Barley into Lucerne</td>
<td>309 demonstration/trial sites (total for 3yrs), 64 demonstration sites (average per year) 75 (NLP; Jan 2015 – June 2016) events Map of locations (No. locations not useful; can map if required by locality. Dave Windle putting this together currently).</td>
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Cover Cropping Trials
Whilst the exact reason for changing management practices (research question/aim) is varied, the common goal of the project is to attain year round ground cover and utilise soil moisture. Examples are:
- increase organic carbon levels, dewatering paddocks and keep the soil working 12 months of the year
- spring sown canola for summer feed and grain crop into old Lucerne stand
- illicit crop mixes used to keep the soil working 12 months of the year
- illicit species for sowing directly after harvest as a pasture phase for sowing the next autumn or the one after.
- spring sowing options for summer activity and dealing with soil issues.
- trialling spring sowing winter canola in paddocks that get really wet.
- illicit species for spring sown summer cover
- spring sown winter wheat into canola stubble
- maintaining groundcover after canola and before wheat crop
- lamb performance on spring canola (weighing stock).

Soil Biological trials
Biological treatments to increase the biological activity of the soil for the purpose of raising productive capacity are also widely varied including:
- poultry manure
- pig manure
- humates
- gypsum
- camperdown compost ameliorants
- other commercial ameliorants (TM, Biophos, etc.)
- dairy effluent or dairy compost

The Land Health Program Lime Trials have been developed to promote non-acidifying management practice change activities. The project has contributed to the outcomes by:
- Identification of barriers to adoption and strategies developed to overcome them.
- Field trials and monitoring increasing local technical understanding of soil acidity and lime responses.
- Producers and growers increasing their understanding of acidity
- The trials are conducted in a variety of enterprises; Grazing, Cropping and Dairy or a mixture of these.
<table>
<thead>
<tr>
<th>RCS Objective</th>
<th>RCS Action</th>
<th>ACTUAL RESULTS</th>
<th>Evidence</th>
<th>Assumptions, issues or notes</th>
</tr>
</thead>
</table>
| 11.2 The number of farming entities participating in innovative practices has increased. | The Land Health Program events can generally be categorised as;  
- meeting (inc. AGM meeting)  
- field day  
- workshop  
- seminar  
- farm walk  
- conference  
The outcomes of these events is initially raising awareness, building skills, knowledge and capacity to implement management practice change. Feedback mechanisms draw an intention to adopt practice which will be followed up in 2017 with longitudinal survey to ground truth management practice change. | 1,245 farming entities engaged in land health program activities;  
% by industry sector;  
44.4% Mixed  
24.5% Dairy  
18.5% Grazing  
12.5% Grains | The ability of the community groups to adhere to administration requirements and retain a high level of enthusiasm has been proven to be individualistic. The range of events and inherent topics delivered by multiple sub-projects has continued to provide significant access to landholders with unique participants attending community participation and engagement events. The program has reached over 100% of the targeted No. of new participants (attending project events for the first time). |
Additionally the Land Health Program has completed Local Soil Action Plans with the assistance of local soil scientists, NRM specialists and Landcare for each of the regions landscape zones. | 1 x South West Agricultural Soils Plan (SWASP)  
15 x Local Soil Action Plans  
1 x Soil health knowledge base | SWASP and Local Soil Action Plans are being used in place of revising the regional strategies. |
| 23. Develop and implement Corangamite Carbon Action (natural resource management) Plan to optimise biodiversity benefits with emerging carbon sequestration opportunities. | Action expanded into the Corangamite NRM Plan for Climate Change and associated carbon research, see section 3.2.1 (participation and knowledge sharing). | 1 x Corangamite NRM Plan for Climate Change | |
| Objective 12 Secure the region's productive agricultural land base so that future food, fibre and forestry demands can be met sustainably. | 12.1 High value natural resources have been considered in growth planning. | High value natural resources are incorporated in RGP’s. | Documentation of high value natural assets in 2 x Regional Growth Plans (G21, Great South Coast). That listing or mapping high value natural assets in RGP’s leads to protection. |

<p>| Objective 12 Secure the region's productive agricultural land base so that future food, fibre and forestry demands can be met sustainably. | 12.1 High value natural resources have been considered in growth planning. | High value natural resources are incorporated in RGP’s. | Documentation of high value natural assets in 2 x Regional Growth Plans (G21, Great South Coast). That listing or mapping high value natural assets in RGP’s leads to protection. |</p>
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<th>Assumptions, issues or notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 13</td>
<td>13.1</td>
<td>Participation of farming entities in extension and capacity building programs has increased.</td>
<td>Land Health Program events have had speakers from the specific projects presenting local trial results, national and international industry expertise alike presenting current issues and techniques. Examples are: South West Soils Conference (2015) Upper Barwon Landcare's Investigating responses to Lime application and biological products Farm Walk Surf Coast Inland Plains Network Pasture Cropping Ute Tour Woody Yaloak Catchment Group and Precision Agriculture Paddock Walk; Demonstration of grid soil sampling technology, static display of variable rate and Lime, Phosphorus &amp; Potassium Management presentations. Stony Rises Landcare Soil Acidity and Soil Biology Information Session DEDJTR and WestVic Dairy in collaboration with the Corangamite CMA “Effective use of compost and organic fertilisers on farm” field day Victorian No-Till Farmers Association Stripper Front Demonstrations The outcomes of these events is initially raising awareness, building skills, knowledge and capacity to implement management practice change. Feedback mechanisms draw “an intention to adopt practice” which will be followed up in 2017 with longitudinal survey to ground truth management practice change.</td>
<td>43,000ha changed to sustainable farming practices 2,164 individuals participated in extension and capacity building programs during first 3 years of RCS implementation (13/14: 271, 14/15: 534, 15/16:1359). 721 average per year compared to baseline of 162 (average across 3 previous years). 17% increase in knowledge per attendance</td>
</tr>
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<td></td>
<td>13.2</td>
<td>The number of regional group or communities engaged in land health activities has increased.</td>
<td>Regional groups and communities have been involved in the events as described above.</td>
<td>18 networks/groups engaged: Bellarine Landcare Group Central Otways Landcare Network Geelong Landcare Network Heytesbury District Landcare Network Yarrowee Leigh Catchment Group Moorabool Catchment Landcare Group Southern Otway Landcare Network Stony Rises Landcare Group Surf Coast and Inland Plains Network Upper Barwon Landcare Network Woody Yaloak Catchment Group Southern Farming Systems West Vic Dairy Federation University Agriculture Victoria Industry Representatives Vic No Till Farmers Association Glenelg Hopkins CMA</td>
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<td></td>
<td>26.</td>
<td>Develop a Corangamite agricultural land strategy to integrate protection of soil health, natural resources and productivity of agricultural land.</td>
<td>Land Health Steering Committee advice: Development would require much greater effort and resources than the past Corangamite Soil Health Strategy or Salinity Action Plan (funding opportunities would need to be sought); Modern agriculture data for the region would need to be incorporated; The Corangamite soil health research project has found many deficiencies that would need to be addressed in the strategy; Strategy would be best formed as a living document if completed; and Focus on NRM aspects of agriculture only.</td>
<td>Action not commenced: the development has been discussed by the Land Health Steering Committee.</td>
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</table>
## Appendix 8. Results table: Waterways

<table>
<thead>
<tr>
<th>RCS Objective</th>
<th>EXPECTED RESULTS (Intermediate outcome from program logic)</th>
<th>RCS Action</th>
<th>ACTUAL RESULTS</th>
<th>Evidence</th>
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<tbody>
<tr>
<td>Objective 7</td>
<td>Corangamite Waterway Strategy completed.</td>
<td>27. Develop and adopt the new Corangamite Waterway Strategy and implement it to deliver on-ground river health works at priority locations.</td>
<td>The Corangamite Waterway Strategy (2014-2022) was developed over 2013 and 2014. The CWS provides a framework and regional work program for the Corangamite CMA, in partnership with other agencies, industry and community groups to maintain or improve the condition of rivers, estuaries and wetlands so they can continue to support environmental, social, cultural and economic values. The CWS sets priorities and outlines a regional work program to guide investment through to 2022. The CWS now incorporates wetlands, thus replacing the 2006 Corangamite Wetland Strategy.</td>
<td>1 x Corangamite Waterway Strategy (CWS).</td>
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<td></td>
<td>Works are focused at CWS priority locations.</td>
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<td></td>
<td></td>
<td>The percentage of actions completed is calculated in proportion to the amount of actual funding received vs the investment indicated as being required to deliver the CWS. This gives an indication of how we are tracking against the CWS based on the available funding. Note that CWS is considered as an investment prospectus for the region - it is not anticipated that 100% of the CWS will be completed within its 8-year timeframe. Although the CWS was not in operation for 13/14 and 14/15, data has been extracted for these years for the purpose of demonstrating action for the full 3-year RCS review period.</td>
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<td></td>
<td>On-ground action is increasing and is contributing (via contracted management) to improved condition of waterways.</td>
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<td></td>
<td>Note: Waterway projects for 15/16 have funding committed, but activities will occur in 16/17. They are reported in this mid-term review as they relate to the RCS.</td>
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<td></td>
<td>The extent of hectares of riparian vegetation and kilometres of waterway frontage under contracted management has increased significantly over the first 3 years of RCS implementation. Despite an increase in available funding for 15/16 (by approximately 200%), the hectares of riparian zone and kilometres of waterway under contracted management have both increased by significantly more than the 200% funding increase.</td>
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<td>Note: Waterway projects for 15/16 have funding committed, but activities will occur in 16/17. They are reported in this mid-term review as they relate to the RCS.</td>
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<td></td>
<td>Overall bank condition will improve along 94.65 kms of waterways and instream temperature value will improve along 80.28 kms of waterways. A significant proportion of waterway frontage (94%, or 89 kms) could be expected to improve to a moderate or high degree for bank condition.</td>
<td></td>
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<td>Note: Waterway projects for 15/16 have funding committed, but activities will occur in 16/17. They are reported in this mid-term review as they relate to the RCS.</td>
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<td></td>
<td>A large proportion of sites scored a 1 for instream temperature value (ITV), which suggests there is to be little gain. However, these sites are those that could already be in good condition and therefore do not need to improve a great deal. Conversely, at a significant number of these sites, the shading currently provided is via exotic vegetation and although the instream temperature parameter may not be significantly impacted, other benefits will be derived through the project.</td>
<td></td>
<td></td>
<td></td>
<td>Note: Waterway projects for 15/16 have funding committed, but activities will occur in 16/17. They are reported in this mid-term review as they relate to the RCS.</td>
</tr>
<tr>
<td></td>
<td>Not assessed for mid-term review</td>
<td></td>
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<td></td>
<td>Note: Waterway projects for 15/16 have funding committed, but activities will occur in 16/17. They are reported in this mid-term review as they relate to the RCS.</td>
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<td></td>
<td>kms of waterways with improved water quality (not assessed).</td>
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<td>Note: Waterway projects for 15/16 have funding committed, but activities will occur in 16/17. They are reported in this mid-term review as they relate to the RCS.</td>
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</tbody>
</table>
### Expected Results

The extent of protection (contracted management) for areas of high conservation value has increased.

### Actual Results

**For the 15/16 financial year the cost-benefit analysis has enabled 97% of the benefits that were available from the pool of proposals to be purchased for 83% of the total proposal value. This represents cost-effective investment.**

**Analysis of data for waterways that are part of the 15/16 investment program has shown that there is a large amount of remnant riparian vegetation with varying degrees of quality under contracted management. In addition there are large amounts of native vegetation that contain communities or species of importance for their conservation value. These results provide baseline data in which to draw comparisons for the final RCS review.**

**Vegetation quality:**
- Qualified for habitat hectares assessment (minimum of 25% indigenous vegetation):
  - 27.6% of sites (16/58 sites)
  - 40% of the area (hectares)
- 48 = median habitat hectares score for all assessed sites
- 13.09 = average habitat hectares score for all sites (assessed or not; those not assessed are given a ‘score’ of 0).

**274 ha of remnant riparian vegetation are under contracted management (15/16 only).**

**252 ha of EVCs with a Bioregional Conservation Status of depleted, rare, vulnerable or endangered are under contracted management (15/16 only).**

**192 ha that contain rare or threatened species are under contracted management.**

### Evidence

- 93% proposed available benefits purchased
- 87% of proposal value recommended for investment (15/16)
- 274 ha of remnant riparian vegetation are under contracted management (15/16 only)
- 252 ha of EVCs with a Bioregional Conservation Status of depleted, rare, vulnerable or endangered are under contracted management (15/16 only)
- 192 ha that contain rare or threatened species are under contracted management.

### Assumptions, Issues, or Notes

- There is an assumption that remnant patches of vegetation provide a higher order of complexity and ecological function than a lack of vegetation or more recently revegetated sites.
- “Habitat hectares” is a method developed by DSE to objectively assess the quality of native vegetation at the site level. Habitat hectares is a generic rating of native vegetation condition, which attempts to assess the degree to which the current vegetation differs from a “benchmark” representing the average characteristics of a mature stand of the same vegetation type in a “natural” or “undisturbed” condition. Habitat hectares is comprised of two weighted groups of components – seven of which assess the condition at the site, and three which provide information on the landscape context (VEAC, 2011).
- There is an assumption that EVC’s which are more rare or threatened have a higher intrinsic value in terms of the benefit in securing their protection and are also often associated with rare or threatened flora and fauna habitat.
- There is an assumption that protection of these sites will have benefits for the rare or threatened species likely to make use of these areas for habitat.

### RCS Objective

**Objective 14**

Retain the ecological function of riverine and estuarine floodplains and protect community infrastructure and values.

14.1 Actions to reduce (minimise) flood risk are being undertaken.


The development of the Floodplain Management Strategy is well underway. A senior steering committee has been established and has met twice during this reporting period with a positive response.

A community engagement plan has been developed and is to be rolled out in the 16/17 financial year.

Two major projects that will inform the new strategy have been completed:
- An Assessment of Flood Risk across the region
- A Total Flood Warning System Assessment of major river reaches.

An online flood portal that will share flood data more widely is under development (due for completion in 2017).

Drafting of the strategy document is underway.

1 x Corangamite Floodplain Management Strategy (in development)

The objective (and outcome 14.1) should be reworded to better align with the floodplain management outcome of “manage floodplains to minimize the risk and damage to people and property and the environment”. The objective should focus on minimising damages to the community and critical infrastructure and remove reference to environmental values as environmental values are already covered under other RCS objectives and in the goals and targets of the CWS. (see earlier comments on page 7)

In addition, the RCS could better capture the aim and extent of work undertaken in the region for floodplain management. This is not currently captured in the description section of the RCS (pp 13-16) and the objective and/or actions for the next RCS should be revised.
<table>
<thead>
<tr>
<th>RCS Objective</th>
<th>EXPECTED RESULTS (Intermediate outcome from program logic)</th>
<th>RCS Action</th>
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<tr>
<td>The CCMA will be guided by the following overriding principles when responding to developments: to minimise risk to people and property to identify and prevent adverse impacts on the watercourse and floodplain. to ensure that development is designed appropriately for a flood prone area. to reduce the need to rely on emergency service. to ensure that development maintains or improves river health.</td>
<td></td>
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<td>2,790 planning referrals 13/14 = 907 14/15 = 938 15/16 = 945</td>
<td>This is a statutory function and a core role of the Corangamite CMA. This critical aspect of floodplain and waterway management should be considered in the next RCS (as discussed above). There is a need to develop principles through the application of best practice floodplain management (via a state wide development guidelines document) which aims to reduce flood damage, improve wellbeing of landowners and reduce adverse impacts on the natural environment. The intention would be that CCMA implement best practice floodplain management.</td>
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<td>The Authority continues to respond to a significant number of planning and building referrals as well as providing detailed flood advice responses to the general public as a part of the CCMA’s statutory obligations under the Planning and Environment Act 1987 (?) and the Water Act 1989. The number of these has remained stable over the RCS reporting period.</td>
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<td>298 works on waterways permits 13/14 = 71 14/15 = 117 15/16 = 110</td>
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<td>The Authority also continues to respond to Works on Waterway permit requests, as part of the CCMA’s statutory obligations under the Water Act 1989.</td>
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<td>Objective 15 Protect waterways within Special Water Supply catchments (SWSC).</td>
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<td>Objective 17 Sustain the viability of populations of rare and threatened native fish species for the long term and show evidence of recruitment and a range of age classes.</td>
<td>100% of waterways within special water supply catchments (SWSC) and waterways with listed threatened native fish species are priorities under the CWS.</td>
<td></td>
<td>100% of SWSC waterways incorporated in the CWS.</td>
<td>A process for incorporating new populations that are identified needs to be considered. This objective should be expanded to include other riparian and aquatic threatened species. This would align with goals and targets of the CWS and the RCS objectives for threatened species.</td>
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<tr>
<td>Actions for waterways within SWSC and with rare or threatened native fish are underway.</td>
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<td></td>
<td>36.16 kms of waterways within SWSC are under contracted management.</td>
<td>This objective and the evidence could be strengthened by combining with a water quality outcome. This would better answer the KEQ regarding condition of these waterways.</td>
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<td>Actions for waterways within SWSC have included fencing, weed removal and revegetation. Actions have occurred along priority reaches of Pennyroyal Creek, Boundary Creek, Gosling Creek, East and West Moorabool River and Lal Lal Creek.</td>
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<td>1 x fish barrier prioritisation project (Barwon and Moorabool basins)</td>
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<td>A prioritised list of barriers and their locations is now available to assist with restoration of aquatic habitats and upstream fish passage. The study found over 800 barriers within the Barwon and Moorabool catchments, but suggested that remediation of a small number of the highest priority barriers will significantly increase the habitat available to migratory fish. All barriers identified were scored to prioritise them according to their biological importance and the cost to remove. The top 25 barriers have been prioritised and costed.</td>
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<td>Four native fish species (Yarra pigmy perch, Australian grayling, Australian mufhish, dwarf galaxias) are threatened under the EPBC Act and known to occur in waterways within the Corangamite region. All of these known locations are priorities within the CWS and actions are set in order to reduce threats to these fish species.</td>
<td>100% of waterways with known populations are incorporated into the CWS.</td>
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<td>100% of SWSC are identified as priorities in the CWS and priority management actions are set in order to reduce threats.</td>
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<td>100% of SWSC waterways incorporated in the CWS.</td>
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<tr>
<td>RCS Objective</td>
<td>RCS Action</td>
<td>ACTUAL RESULTS</td>
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<td>Objective 16 Maintain the resilience of Indigenous aquatic and riparian flora and fauna to variable climatic conditions.</td>
<td>Manage the Barwon Environmental Entitlement 2011 and the Moorabool River Environmental Entitlement 2010 to achieve environmental water outcomes.</td>
<td>An investigation into the presence/absence of Yarra pigmy perch in Waurn Ponds Creek occurred. Moderate numbers of Yarra pigmy perch were found within Waurn Ponds Creek, one site was dominated by juvenile fish while another contained a breadth of size cohorts. Recommendations for long-term sustainability of populations were made. A study into fish populations in the Moorabool River (Raymond, 2015) found Yarra pigmy perch at Sutherland Creek, indicating the species has persisted through the millennium drought. Maintaining and protecting preferred habitats is important for the conservation of this species. Australian grayling was not recorded in the current surveys. Their absence is likely due to fish barriers and unsuitable water quality. Recommendations were made in the study to address these threats. Both species had been recorded in the Moorabool previously.</td>
<td>2 x fish population investigations (Yarra pigmy perch and Australian grayling)</td>
<td>Although these studies have provided good information for the sites involved, overall population trends for these species need to be established. Additional intermediate outcome and action required: adequate fish surveys are conducted at key sites to establish likely broader population trends. This should include both CWS priority and non-priority reaches.</td>
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<tr>
<td>Objective 18 Maintain the extent of wetlands (by type) and improve their quality relative to 2019 benchmark data.</td>
<td>Ramsar site plans are up to date.</td>
<td>Scientific investigations and updated planning processes have improved the environmental outcomes achieved through environmental water delivery in the Barwon and Moorabool Rivers.</td>
<td>CWS (AVIRA database) includes data on drought refuge areas.</td>
<td>Further action is needed to ensure these sites are protected. Patch size and connectivity scores are now being collected for all sites that are assessed under the CCMA waterways investment program. This data could be used as evidence in combination with existing areas identified. Revision of this objective and action inline with NRM Plan for Climate change should be considered for the renewal of the RCS.</td>
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<td>CWS incorporates the updated management plan for the Western District Lakes Ramsar Site. A separate Plan for the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site is underway (due for completion at the end of 2017).</td>
<td>Although covered in the goals of the CWS, the RCS does not set a specific objective that this action can contribute towards. Consider the validity of developing an objective, OR, changing the action to sit as a sub-action of Action 27 (CWS).</td>
</tr>
<tr>
<td>Ramsar site plans are up to date.</td>
<td>Ramsar site plans are up to date.</td>
<td>The CWS incorporates the updated management plan for the Western District Lakes Ramsar Site. A separate Plan for the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site is underway (due for completion at the end of 2017).</td>
<td>1 x Western District Lakes Ramsar site plan completed. 1 x project plan for development of the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site plan.</td>
<td>Further action is needed to ensure these sites are protected. Patch size and connectivity scores are now being collected for all sites that are assessed under the CCMA waterways investment program. This data could be used as evidence in combination with existing areas identified. Revision of this objective and action inline with NRM Plan for Climate change should be considered for the renewal of the RCS.</td>
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<td>1 x Western District Lakes Ramsar site plan completed. 1 x project plan for development of the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site plan.</td>
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<tr>
<td>Ramsar site plans are up to date.</td>
<td>Ramsar site plans are up to date.</td>
<td>The Victorian Auditor-General’s Office (VAGO) has completed an audit of the management of Ramsar wetlands across Victoria. The audit found that there is limited evidence that all Ramsar sites are being effectively managed and protected from decline. There is also evidence of potential change in the ecological character of some sites, while changes at other sites cannot be fully determined due to limitations such as a lack of data. There were a number of recommendations made by the audit and these should be followed up within the Corangamite region.</td>
<td>1 x VAGO Ramsar audit</td>
<td>Further action is needed to ensure these sites are protected. Patch size and connectivity scores are now being collected for all sites that are assessed under the CCMA waterways investment program. This data could be used as evidence in combination with existing areas identified. Revision of this objective and action inline with NRM Plan for Climate change should be considered for the renewal of the RCS.</td>
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<td>Management of Ramsar wetlands is helping to protect and enhance their ecological character</td>
<td>The CWS now prioritises and incorporates wetlands, thus replacing the 2006 Corangamite Wetland Strategy. All Ramsar and DIWA sites are priorities under the CWS, values and threats are identified and a works program is set.</td>
<td>65 wetlands are priorities for the Corangamite region in the CWS. This includes: 2 x Ramsar sites 24 x nationally important (DIWA) wetlands 2 x ecological communities that are endangered under EPBC Act 1999 (coastal saltmarsh and seasonal herbaceous wetlands).</td>
<td>As described in the CWS, there are significant knowledge gaps on the condition of wetlands in the Corangamite region. Whilst 75% of the wetland area occurs on public land, this only accounts for 25% of the number of wetlands. Of the 1,500+ wetlands in the region, over 1,125 (75%) occur on private land. Understanding the distribution and condition of these wetlands will help to direct future investment into wetland management. Some of the data reported for native vegetation and coasts includes wetlands, however wetlands data could not be extracted in time for this review.</td>
<td></td>
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<tr>
<td>See Action 27, under Objective 7 (above)</td>
<td>27. Develop, adopt and implement the new Corangamite Waterway Strategy.</td>
<td>Five wetland sites have been selected as part of PlainsTender 6, this equates to 171.42 ha of wetland area under contract. The EVCs include Plains Grassy Wetland, Brackish Herbland, Sweet Grass Wetland. Activities to be undertaken over the next four years include fencing, pest plant and animal control and strategic grazing. Ongoing support will be provided to contracted landholders throughout project implementation. See also action 27, under objective 7 (above)</td>
<td>171.42 ha of wetland area under contracted management.</td>
<td>Additional wetlands are under contracted management through PlainsTender projects. Data could not be extracted in time for this review and therefore some wetlands activities are reported in the inland native vegetation section. As described in the CWS, there are significant knowledge gaps on the condition of wetlands in the Corangamite region. Whilst 75% of the wetland area occurs on public land, this only accounts for 25% of the number of wetlands. Of the 1,500+ wetlands in the region, over 1,125 (75%) occur on private land. Understanding the distribution and condition of these wetlands will help to direct future investment into wetland management. Some of the data reported for native vegetation and coasts includes wetlands, however wetlands data could not be extracted in time for this review.</td>
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## Appendix 9. Results table: Native vegetation and threatened species

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<tbody>
<tr>
<td>Native vegetation</td>
<td>(Intermediate outcome from program logic)</td>
<td>19.3 Delivery and resourcing of biodiversity programs has improved.</td>
<td>32. Conduct activities to address the decline of quality and loss of extent of high value native vegetation across the region.</td>
<td>4,405 ha of actively managed sites — (PlainsTender, Conservation and Carbon Capture, Conservation Tender). 79.5% of projects within RCS priority areas</td>
<td>This data sets a baseline to compare against the next 3 years of implementation to see if an improvement has been achieved.</td>
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<tr>
<td>Objective 19</td>
<td>Halt the decline in quality (condition) and extent of high value native vegetation and enhance its connectivity.</td>
<td>33. Develop, adopt and implement a new Corangamite Biodiversity Strategy.</td>
<td>The cost-benefit analysis has enabled 87% of the benefits that were available from the pool of proposals to be purchased for only 40% of the total proposal value. This represents excellent value for money investment.</td>
<td>40% proposal value invested and 87% of environmental benefits purchased</td>
<td>Determined using data from EnSym for market-based instruments (MBI) program. Average for all Tenders run during the reporting period. Total proposal costs to implement each management agreement as provided by Tender applicants and environmental benefit index (showing the expected gains at a site) as calculated by EnSym. Includes both inland and coastal vegetation and is an average of proposal values and benefits purchased for CoastalTender2 and 3, PlainsTender6, Conservation and Carbon Capture, Conservation Tender, Saltmarsh protection project.</td>
</tr>
<tr>
<td>Objective 7</td>
<td>Investment is targeted to the protection of high value natural resources with feasible and cost effective solutions.</td>
<td>34. Implement the Corangamite native vegetation plan.</td>
<td>Not assessed for mid-term review</td>
<td>A change in the Corangamite native vegetation environmental account: changes to condition and extent by EVC based on 2006 benchmark.</td>
<td>This method requires a longer time period to demonstrate change. It is therefore not assessed for the mid-term review.</td>
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### Threatened species
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<tr>
<td>Objective 20</td>
<td>20.2 Appropriate resources have been allocated to effectively conserve threatened species.</td>
<td>Over 320 sites are under contracted management that include the protection of threatened flora and fauna.</td>
<td>Sites under contracted management that contain threatened fauna species: 229 sites within coastal EVCs (92.7%) 18 sites within inland EVCs (7.3%) Sites under contracted management that contain threatened flora species: 76 sites within coastal EVCs (95%) 4 sites within inland EVCs (5%)</td>
<td>Includes species that are known to occur at sites under contracted management that are listed under the EPBC Act 1999 (including marine species and migratory birds), the FFG Act 1988 and the DELWP Advisory List/Conservation Status. The 229 coastal sites includes a number of sites outside of the Corangamite region that are a part of the state-wide Saltmarsh Protection Project. Threatened flora and fauna specific to the Corangamite sites could not be extracted for this review.</td>
</tr>
<tr>
<td>Corangamite Biodiversity Strategy completed.</td>
<td>33. Develop, adopt and implement a new Corangamite Biodiversity Strategy.</td>
<td>N/A – yet to commence</td>
<td>Action is still planned, however will commence after the release of the State Biodiversity Strategy. This will ensure there is consistency with the new State direction.</td>
<td></td>
</tr>
<tr>
<td>20.1 Key populations (of threatened species) are known.</td>
<td>37. Continue to fill knowledge gaps in the identification, distribution, status and trends of threatened species.</td>
<td>N/A</td>
<td>No. new populations identified</td>
<td>Not assessed for this mid-term review.</td>
</tr>
</tbody>
</table>
### Appendix 10. Results table: Coasts and marine

| RCS Objective | EXPECTED RESULTS  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective 21</strong></td>
<td>Maintain the quality and extent of high value coastal assets.</td>
</tr>
</tbody>
</table>

38. Implement the Victorian Coastal Strategy (VCS) and Coastal Action Plans (CAPs).  

**VCS completed in 2014.**  
Key actions progressed include:  
- Completion of Regional Coastal Plans (RCPs) for regional implementation of the VCS (see details below)  
- Delivery of Victorian Coastal Council actions:  
  - delivery of the Victorian Coastal Awards for Excellence  
  - hosting the national coastal conference Coast to Coast  
  - contributing to coastal and marine planning.

**ACTUAL RESULTS**


**Evidence**

1 x Victorian Coastal Strategy (VCS) 2014  

**Assumptions, issues or notes**

CAPs are now known as Regional Coastal Plans (RCPs).

#### 21.1 Coastal assets have been identified

The WRCP and CRCP 2015–2020 were developed over 2014 and completed and gazetted in 2015. These Plans apply the VCS 2014 at a regional level. An implementation plan is currently being prepared for the WRCP and is due to be complete in 2017. Priorities of the WRCP include:

- managing regional population and tourism pressures;  
- better integration of coastal management, particularly along foreshore areas;  
- adapting to climate change and increased coastal hazards;  
- supporting communities caring for the coast.

The CRCP has been distributed widely and commitment has been sought by major stakeholders to its implementation. Priorities include:

- population growth – balancing access and valuing the natural environment;  
- adapting to climate change and increased coastal hazards;  
- integrating coastal planning and management;  
- sustainable and equitable funding mechanisms for coastal infrastructure and management;  
- oversee the implementation of the Recreational Boating Facilities Framework for the Central Coastal Region;  
- sustainable visitation and tourism infrastructure service level hierarchy;  
- protecting significant coastal and marine ecosystems and habitats;  
- promoting leadership, co-ordination and capacity building for the coast.

**Evidence**

1 x Western Regional Coastal Plan (WRCP) 2015–2020  
1 x Central Regional Coastal Plan (CRCP) 2015–2020

**Assumptions, issues or notes**

#### 21.2 Management strategies have been adopted for identified (coastal) assets

Use and/or development of coastal Crown land must be approved under the Coastal Management Act 1995. These Consents include works such as pest plant and animal eradication, maintenance of existing structures and fences, and emergency works.

**Evidence**

Coastal Management Act Consents approved:  
- 13/14: 181 approvals to the value of $73,854,695  
- 14/15: 228 ($69,018,165)  
- 15/16: 199 ($56,838,117)
<table>
<thead>
<tr>
<th>RCS Objective</th>
<th>EXPECTED RESULTS (Intermediate outcome from program logic)</th>
<th>RCS Action</th>
<th>ACTUAL RESULTS</th>
<th>Evidence</th>
<th>Assumptions, issues or notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.4 Delivery and resourcing of coastal and marine biodiversity programs has improved.</td>
<td>Improvements to the coastal management system are currently being made through development of a new Marine and Coastal Management Act (by DELWP). A consultation paper was developed during this RCS review period and released for comment during Spring 2016. The new Act aims to enable coastal and marine management to better meet long term challenges. It identifies seven drivers for change and a range of policy reforms, including a proposed enhancement to the role of the five Catchment Management Authorities (CMAs) along the coast (in terms of both skills and expertise) would see them providing expert advice on issues such as coastal erosion as well as coastal flooding and inundation.</td>
<td>39. Implement the Corangamite Marine and Coastal Biodiversity Strategy, review and update accordingly.</td>
<td>Consultation for a new Marine and Coastal Act <a href="http://haveyoursay.delwp.vic.gov.au/marine-coastal-act">http://haveyoursay.delwp.vic.gov.au/marine-coastal-act</a></td>
<td>This new Act (once complete) could instigate changes and for future RCSs and to the role of CMAs in coastal and marine management.</td>
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<td></td>
<td>A large amount of coastal vegetation, mostly of high conservation value is under contracted management through CoastalTender, Saltmarsh protection and coastal small grant projects and being protected or enhanced. A majority of this land is within RCS priority areas and the cost benefit has been very high (a large amount of benefit purchased for low cost).</td>
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<tr>
<td>Objective 22</td>
<td>Investment in coastal native vegetation projects has shown to be excellent value for money.</td>
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<td>2,831 ha under contracted management</td>
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<tr>
<td>Limit impacts to the marine environment from the catchment such that they are within the bounds of its resilient capacity.</td>
<td>2,831 ha under contracted management</td>
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<td>Planning considers the impacts to marine systems from the catchment.</td>
<td>87% of coastal project sites are within RCS priority areas.</td>
<td></td>
<td>80% of contracted sites are of very high conservation value.</td>
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<tr>
<td>41. Plan for and manage land-based impacts on marine resources.</td>
<td>80% of contracted sites are of very high conservation value.</td>
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<td>Inclusion of marine ecosystems and values in Regional Coastal Plans. The WRCP describes marine ecosystems and discusses social, cultural (including heritage) and economic values of marine areas. The CRCP has a priority to protect significant coastal and marine ecosystems and habitats.</td>
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<td>1 x Western Regional Coastal Plan (WRCP) 2015-2020</td>
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<td></td>
<td>1 x Central Regional Coastal Plan (CRCP) 2015-2020</td>
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</table>
## Appendix 11. Results table: Aquifers

<table>
<thead>
<tr>
<th>RCS Objective</th>
<th>EXPECTED RESULTS (Intermediate outcome from program logic)</th>
<th>RCS Action</th>
<th>ACTUAL RESULTS</th>
<th>Evidence</th>
<th>Assumptions, issues or notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 23</td>
<td>Protect the health of groundwater resources for the environment and current and future users.</td>
<td>42. Implement regulatory responsibilities and the Central and Western Region Sustainable Water Strategies.</td>
<td>Southern Rural Water (SRW) have developed an online interactive portal for groundwater information across all of SRW’s regions. Groundwater information is now well covered and easily accessed in the Corangamite region. <a href="http://gwhub.srw.com.au/south-west-region-overview">http://gwhub.srw.com.au/south-west-region-overview</a></td>
<td>1 x Online groundwater hub</td>
<td>Licence data taken from GMU boundaries that fully or partly within CCMA regional boundaries. This data may therefore include a small number of licences that are outside the CCMA boundary.</td>
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<td>Under current licences groundwater permissible consumptive volume (PCV) has been fully allocated for the upper aquifers. Until further hydrological work has been undertaken there are no further licences available. The lower aquifer PCV is not fully allocated, however this is being reviewed as a part of developing the Otway Lower Aquifer LMP (see below).</td>
<td>331 licences for groundwater extraction are managed in the Corangamite region across 9 Groundwater Management Units (GMU).</td>
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<td>In the development stage of a Local Management Plan (LMP) for the lower aquifer that covers an area west of the Gellibrand River and south of the Great Dividing Range and Gariewd and includes 5 of the current GMUs in the Corangamite region. This is to be known as the Otway Lower Aquifer LMP.</td>
<td>1 x Local Management Plan for the lower aquifer is underway.</td>
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<td>Installation of equipment to allow Automated Meter Reading (AMR) capabilities that gives real time data on water use by licence-holders has begun. The Warrion GMA installation is the first region to be completed in the state. This will improve data to enable more efficient licence management.</td>
<td>Automated Meter Reading (AMR) equipment installed for the Warrion GMA.</td>
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<td>Southern Rural Water with Wannon Water and the Corangamite CMA are conducting a study on groundwater augmentation supply with the aim to increase summer flows to the Gellibrand River. This is in the early development stages with consultation started in Dec 2016. See also waterways section.</td>
<td>1 x study of groundwater augmentation supply (commenced) See also waterways section</td>
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<td>The Groundwater Dependent Ecosystems Atlas aims to address the knowledge gap by creating the most complete inventory of the location and characteristics of groundwater dependent ecosystems in Australia. The Atlas categorises groundwater dependent ecosystems into two classes that are relevant to the CCMA region: Ecosystems that may rely on the surface expression of groundwater—this includes all the surface water ecosystems which may have a groundwater component, such as rivers, wetlands and springs. Marine and estuarine ecosystems can also be groundwater dependent, but these are not mapped in the Atlas. Ecosystems that may rely on the subsurface presence of groundwater – this includes all vegetation ecosystems. The Atlas also includes the national inflow dependent landscapes layer, which is derived from remotely sensed data. It expresses the likelihood that landscapes are accessing water in addition to rainfall. The additional water source may be soil water, surface water, or groundwater.</td>
<td>Atlas of GDE’s (2012) <a href="http://www.bom.gov.au/water/groundwater/gde/map.shtml">http://www.bom.gov.au/water/groundwater/gde/map.shtml</a></td>
<td></td>
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</tbody>
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