

## 5. Investing in Soil Health

The SHS aims to guide investment in a range of actions that will enhance natural and built assets in the Corangamite region and protect them from a number of soil-based threats or threatening processes.

The Australian and Victorian governments have laid out national and state-wide principles as 'cornerstones' of more local programs such as the Corangamite Soil Health Strategy. To these cornerstones, the Corangamite Regional Catchment Strategy has joined its foundation principles, which form the boundaries for the Soil Health Strategy.

Investments in 'soil health' must demonstrate that high-value public assets will be protected and enhanced through targeted programs that address the major threats identified in the SHS that pose an actual or potential risk.

### 5.1 Investing in priority landscape zones

Targeted actions have been developed to address the 20 highest validated priorities for investment shown in *Table 5.1*.

By focusing investments towards these threats in the identified landscape zones, the Corangamite CMA will help to ensure that high-value assets are protected and enhanced. Further investment opportunities to address lower ranked Relative Risk Values are discussed in Section 5.2.

*Table 5.1* summarises the actions to be taken by a range of key asset managers to address the various threats in targeted landscape zones, and has been developed in part from consultation with these managers, technical and industry experts from whom advice has been sought and from the local knowledge and understanding of the steering committee. These actions are either preventative or treatment focused.

1. Objective: Reduce the impact of landslides on assets.	
<b>Desired Outcomes:</b> - No lives lost from landslides - Reduction in the impact on built infrastructure - Reduction in sediment loads entering waterways from landslides - Less damage to built infrastructure from landslides - Lower impacts on the natural environment from landslides	
Actions for landslide risk	Priority landscape zones
<b>1.1:</b> <i>Investment Partners:</i> Dairy farmers and industry. <i>Objective:</i> Mitigate landslide impacts.	Curdies, Otway Coast, Upper Barwon, Aire
<ul style="list-style-type: none"> <li><b>a.</b> Assisting landholders to revise the layout of farm assets such as dams, tracks, fences, drainage lines and buildings to avoid damage in highly susceptible areas.</li> <li><b>b.</b> Provide technical expertise to landholders/managers in localities where landslides impact or threaten assets.</li> <li><b>c.</b> Provide financial incentives to landholders to increase the adoption rate of appropriate landslide treatments.</li> </ul>	
<b>1.2:</b> <i>Investment Partners:</i> Broadacre graziers. <i>Objective:</i> Mitigate landslide impacts.	Gellibrand, Curdies, Otway Coast, Upper Barwon, Aire
<ul style="list-style-type: none"> <li><b>a.</b> Provide technical expertise to landholders/managers in localities where landslides impact or threaten assets.</li> <li><b>b.</b> Identify, validate and market a range of cost-effective landslide treatment options to graziers.</li> </ul>	

*Table 5.1: Actions to address the 20 highest validated priorities for investment by landscape zone (continued next page)*

Actions for landslide risk	Priority landscape zones
<p><b>1.3:</b> <i>Investment Partners:</i> Local councils. <i>Objective:</i> Prevent the impact of landslides through local planning schemes.</p> <ul style="list-style-type: none"> <li><b>a.</b> Ensure that the Colac Otway Shire, Corangamite Shire and Surf Coast Shire are using active Erosion Management Overlays and/or other tools and policies.</li> <li><b>b.</b> Ensure adherence of the Forest Code of Practices in plantation establishment and harvesting.</li> <li><b>c.</b> Assist in the investigation and validation of alternative treatment options to protect or repair landslide damage to public assets.</li> </ul>	Gellibrand, Curdies, Otway Coast, Upper Barwon, Aire
<p><b>1.4:</b> <i>Investment Partners:</i> VicRoads. <i>Objective:</i> To minimise the impact of landslides on VicRoads-managed roads.</p> <ul style="list-style-type: none"> <li><b>a.</b> Assist VicRoads to investigate landslide prevention and remediation treatment options to protect or repair public assets.</li> </ul>	Gellibrand, Curdies, Otway Coast, Upper Barwon, Aire
<p><b>1.5:</b> <i>Investment Partners:</i> State Government, local councils. <i>Objective:</i> To minimise the impact of landslides on public land.</p> <ul style="list-style-type: none"> <li><b>a.</b> Ensure assistance is available to public land managers to identify high-risk landslide locations.</li> <li><b>b.</b> Ensure technical expertise is available to inform public land managers of the available landslide treatment options and selection of the appropriate option.</li> </ul>	Gellibrand, Curdies, Otway Coast, Upper Barwon, Aire
<p><b>1.6:</b> <i>Investment Partners:</i> Water authorities. <i>Objective:</i> To minimise the impact of landslides on potable water supply areas.</p> <ul style="list-style-type: none"> <li><b>a.</b> Ensure water authorities are able to identify current and potential landslide risk areas within their private catchments.</li> <li><b>b.</b> Ensure water authorities have access to technical advice that enables the selection and implementation of appropriate landslide amelioration and prevention treatment options.</li> </ul>	Gellibrand, Curdies, Otway Coast, Upper Barwon, Aire
<p><b>2. Objective: Reduce the impacts of sheet and rill erosion.</b></p> <p><b>Desired Outcomes:</b> - Less sediment entering the waterways from sheet or rill erosion                      - Increased vegetative ground cover                      - Increased crop and pasture production per hectare</p>	
Actions for sheet/rill erosion risk	Priority landscape zones
<p><b>2.1:</b> <i>Investment Partners:</i> State Government and local councils. <i>Objective:</i> To reduce the impact of sheet and rill erosion on public land.</p> <ul style="list-style-type: none"> <li><b>a.</b> Create awareness of sheet and rill erosion processes, location, impacts and treatment options among public land managers at policy and field management levels.</li> <li><b>b.</b> Confirm public land manager assertions that current treatment options are either ineffective at any price or are not cost-effective. Develop more appropriate treatment options for managing sheet and rill erosion on public land as required.</li> <li><b>c.</b> Ensure public land managers have access to appropriate technical expertise to enable the selection and implementation of appropriate treatment options for sheet and rill erosion.</li> <li><b>d.</b> Create expanded funding opportunities and options that provide greater incentives for public land managers to increase the rate of adoption of sheet and rill erosion treatments.</li> <li><b>e.</b> Develop a tool that enables public land managers to prioritise treatment of active and potential sheet and rill erosion locations.</li> </ul>	Woody Yaloak, Moorabool, Leigh, Upper Barwon, Thompsons

Table 5.1: (Cont.)

Actions for sheet/rill erosion risk	Priority landscape zones
<p><b>2.2:</b> <i>Investment Partner:</i> Private landholders.  <i>Objective:</i> To manage sheet and rill erosion on private land, grazing and cropping, to protect public assets.</p> <hr/> <p><b>a.</b> Identify current active sheet and rill erosion areas on private land that impact on public assets and communicate these locations to the relevant private landholders.</p> <p><b>b.</b> Identify and communicate to private landholders the appropriate treatments for locations where active sheet and rill erosion sites have been identified.</p> <p><b>c.</b> Ensure private landholders are informed of incentives and financial support schemes for sheet and rill erosion control.</p>	Woody Yaloak, Moorabool, Leigh, Upper Barwon, Thompsons
<p><b>2.3:</b> <i>Investment partners:</i> Local councils.  <i>Objective:</i> To prevent the impact of sheet and rill erosion through planning processes.</p> <hr/> <p><b>a.</b> Ensure that active sheet and rill Erosion Management Overlays and/or other tools and policies are being used by the councils of: Colac Otway Shire, Ballarat City, Moorabool Shire, Surf Coast Shire and Golden Plains Shire.</p> <p><b>b.</b> Raise awareness and understanding of the importance of sheet and rill erosion with staff from councils, focusing on the management of risk to assets.</p> <p><b>c.</b> Ensure adherence to the Forest Code of Practices in plantation establishment and harvesting.</p> <p><b>d.</b> Ensure the councils have access to and are able to apply appropriate technical advice for assessment and treatment of sheet and rill erosion.</p>	Woody Yaloak, Moorabool, Leigh, Upper Barwon, Thompsons
<p><b>2.4:</b> <i>Investment partners:</i> VicRoads.  <i>Objective:</i> To reduce the off-site impact of sheet and rill erosion on VicRoads roads.</p> <hr/> <p><b>a.</b> Ensure VicRoads is equipped to investigate and evaluate a range of treatment options to prevent or repair the damage to public road assets in its charge and prevent adverse effects on adjoining or affected private and public land assets.</p> <p><b>b.</b> Ensure VicRoads is able to adhere to best management practices in road design, construction and drainage with respect to sheet and rill erosion.</p>	Woody Yaloak, Moorabool, Leigh, Upper Barwon, Thompsons
<p><b>2.5:</b> <i>Investment partners:</i> Water authorities.  <i>Objective:</i> To minimise the impact of sheet and rill erosion on potable water supply areas.</p> <hr/> <p><b>a.</b> Enable water authorities to identify and categorise active and potential sheet and rill erosion locations.</p> <p><b>b.</b> Ensure that Barwon Water and Central Highlands Water have access to and are able to apply appropriate technical advice for sheet and rill erosion treatments.</p>	Moorabool, Upper Barwon

Table 5.1: (Cont.)

### 3. Objective: Reduce the impacts of gully and tunnel erosion.

**Desired Outcomes:**

- Less sediment entering waterways from gully and tunnel erosion
- Less destruction to roads, houses and other infrastructure caused by erosion undermining foundations
- Less damage to cultural and heritage sites
- Less agricultural land lost from production

Actions to address gully-tunnel erosion risk	Priority landscape zones
<p><b>3.1:</b> <i>Investment partners:</i> State Government and local councils. <i>Objective:</i> Reduce the impact of gully and tunnel erosion on public land.</p> <hr/> <ul style="list-style-type: none"> <li><b>a.</b> Create awareness of gully and tunnel erosion processes, location, impacts and treatment options among public land managers at policy and field management levels.</li> <li><b>b.</b> Confirm public land manager assertions that current treatment options are either ineffective at any price or are not cost-effective. Develop more appropriate treatment options for managing gully and tunnel erosion on public land as required.</li> <li><b>c.</b> Ensure public land managers have access to appropriate technical expertise to enable the selection and implementation of appropriate treatment options for gully and tunnel erosion.</li> <li><b>d.</b> Create expanded funding opportunities and options that provide greater incentives for public land managers to increase the rate of adoption of gully and tunnel erosion treatments.</li> <li><b>e.</b> Develop a tool that enables public land managers to prioritise treatment of active and potential gully and tunnel erosion locations.</li> </ul>	Woody Yaloak, Moorabool, Leigh, Upper Barwon
<p><b>3.2:</b> <i>Investment partners:</i> Landholders. <i>Objective:</i> To manage gully and tunnel erosion on private and public land to protect public assets.</p> <hr/> <ul style="list-style-type: none"> <li><b>a.</b> Ensure that landholders/managers are informed of more appropriate cost-effective treatment options for managing gully and tunnel erosion.</li> <li><b>b.</b> Provide technical expertise to landholders/managers in localities where gully and tunnel erosion impact or threaten assets.</li> <li><b>c.</b> Provide financial incentives to landholders to increase the rate of adoption of appropriate landslide treatments.</li> </ul>	Woody Yaloak, Moorabool, Leigh, Upper Barwon
<p><b>3.3:</b> <i>Investment partners:</i> Local councils. <i>Objective:</i> To prevent the impact of gully and tunnel erosion through planning processes.</p> <hr/> <ul style="list-style-type: none"> <li><b>a.</b> Ensure that active gully and tunnel Erosion Management Overlays and/or other tools and policies are being used by the councils of: Colac Otway Shire, Ballarat City, Moorabool Shire and Golden Plains Shire.</li> <li><b>b.</b> Raise awareness and understanding of the importance of gully and tunnel erosion with staff from councils, focusing on the management of risk to assets.</li> <li><b>c.</b> Ensure adherence to the Forest Code of Practices in plantation establishment and harvesting.</li> <li><b>d.</b> Ensure the councils have access to and are able to apply appropriate technical advice, assessment and treatment of gully and tunnel erosion.</li> </ul>	Woody Yaloak, Moorabool, Leigh, Upper Barwon, Thompsons

Table 5.1: (Cont.)

Actions to address gully-tunnel erosion risk	Priority landscape zones
<p><b>3.4:</b> <i>Investment partners:</i> VicRoads. <i>Objective:</i> Minimise the impact of gully and tunnel erosion on VicRoads managed roads.</p> <hr/> <p><b>a.</b> Ensure VicRoads is equipped to investigate and evaluate a range of treatment options for gully and tunnel erosion to prevent or repair the damage to public road assets in its charge and prevent adverse effects on adjoining or affected private and public land assets.</p>	Woody Yaloak, Moorabool, Leigh, Upper Barwon, Thompsons
<p><b>3.5:</b> <i>Investment partners:</i> Water authorities. <i>Objective:</i> Minimise the impact of gully and tunnel erosion on potable water supply areas.</p> <hr/> <p><b>a.</b> Enable water authorities to identify and categorise active and potential gully and tunnel erosion locations.</p> <p><b>b.</b> Ensure that Barwon and Central Highlands Water have access to and are able to apply appropriate technical advice for gully and tunnel erosion treatments.</p>	Moorabool, Upper Barwon
<p><b>4. Objective: Reduce the impacts of acid sulphate soils.</b> <b>Desired Outcomes:</b> - No potential acid sulphate soils disturbed</p>	
Actions to address acid sulphate soil risk	Priority landscape zones
<p><b>4.1:</b> <i>Investment partners:</i> Landholders, State government, infrastructure managers. <i>Objective:</i> To prevent the disturbance of all acid sulphate soil (ASS) sites by all public and private asset managers.</p> <hr/> <p><b>a.</b> Create awareness of the location and importance of acid sulphate soils to public and private land managers, through education and a spatial database locating potential ASS sites.</p> <p><b>b.</b> Develop and communicate protocols for managing potential ASS.</p>	Bellarine, Thompsons
<p><b>4.2:</b> <i>Investment partners:</i> Local councils. <i>Objective:</i> To prevent the impact of acid sulphate soils through planning processes.</p> <hr/> <p><b>a.</b> Ensure that potential ASS sites are recognised by all councils in the Corangamite region and tools and policies are implemented to reduce the risk of disturbing these sites.</p> <p><b>b.</b> Raise awareness and understanding of the importance of acid sulphate soils with staff from councils, focusing on the management of risk to assets.</p> <p><b>c.</b> Ensure the councils have access to and are able to apply appropriate technical advice assessment and treatment of ASS sites.</p>	Bellarine, Thompsons
<p><b>4.3:</b> <i>Investment partners:</i> VicRoads. <i>Objective:</i> To prevent the disturbance of acid sulphate soils by VicRoads, during road construction.</p> <hr/> <p><b>a.</b> Ensure that VicRoads has an understanding of the importance of ASS, with staff able to use appropriate tools and databases to locate potential ASS sites and prevent the disturbance of them during road construction.</p>	Bellarine, Thompsons

Table 5.1: (Cont.)

5. Objective: Reduce the impacts of secondary salinity.	
Desired Outcomes: - Less infrastructure corroded by salinity - Less salt in waterways - Less agricultural land lost to discharge sites	
Actions to address secondary salinity risk	Priority landscape zones
<p><b>5.1:</b> <i>Investment partners:</i> Landholders, State government. <i>Objective:</i> In conjunction with the Salinity Action Plan (SAP), manage secondary salinity on private and public land to reduce impacts on public assets.</p> <p><b>a.</b> Create awareness of secondary salinity processes, location, impacts and treatment options among public land managers at policy and field-management levels.</p> <p><b>b.</b> Provide technical expertise to landholders/managers in localities where secondary salinity impacts on or threatens assets.</p> <p><b>c.</b> Create funding opportunities and options to provide greater incentive for public and private land managers to increase the rate of adoption of treatments for secondary salinity.</p>	Lismore, Stony Rises, Woody Yaloak, Murdeduke
<p><b>5.2:</b> <i>Investment partner:</i> VicRoads. <i>Objective:</i> In conjunction with the SAP, minimise the impacts of secondary salinity on roads managed by VicRoads.</p> <p><b>a.</b> Inform VicRoads of the location of secondary salinity in the landscape, for appropriate planning and construction of roads.</p> <p><b>b.</b> Ensure VicRoads' adherence to best management practises in road design, construction and drainage with respect to secondary salinity.</p>	Lismore, Stony Rises, Woody Yaloak, Murdeduke

Table 5.1: (Cont.)

## 5.2 Other investment opportunities

Relative Risk Values that fell below the highest 20 are not listed in Section 5.1. However, this omission does not imply nor mean that this strategy fails to recognise their significance or importance to the region, the community, individuals or groups.

Their omission simply reflects the fact that on the basis of the Relative Risk Value demonstrated from the analysis methods used in this strategy, these threats to assets fall outside the initial priorities for investment by the Victorian and Australian governments and the various public and private sector partners in those investments.

However, investments to support various actions against these lower-ranked threats will almost certainly fall within the criteria of a range of other investors.

There will most certainly be potential investors in programs that will assist private landowners and managers to change soil-based farm practises to improve agricultural production on private land. Best Management Practice to address threats to soil health in agriculture is outlined in *Appendix F*. These practises have been proven through research and demonstrated practically on farms to have either low impacts on soil health, maintain soil health or in some cases, to contribute positively towards improved soil health.

The Corangamite CMA would provide support to facilitate potential industry-based investors towards improving soil health on private land in the Corangamite region.