

## 7. Regional Research and Development and Ongoing Monitoring Activities

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.

There is limited knowledge about soil health in the Corangamite region. Therefore, research and development (R&D) and ongoing monitoring are essential for the success of the SHS. Many on-ground amelioration actions require R&D and monitoring actions to be completed first before they can be successfully and strategically implemented.

Four main components for R&D and monitoring have been identified as important for the success of the strategy (Fig. 7.1):

**1. Determine the trends of threats** – This determines the rate of change of the various threats in the region over time, providing data on the location of increasing or decreasing threats and the implications for assets. Once trends are known and understood, investment can be targeted to those locations where assets are coming under greatest threat.

**2. Identify and understand causal factors** – This identifies causal factors and will establish which of them can be influenced by various kinds of intervention and which of them cannot. A better understanding of causal factors will help define more appropriate options for intervention and treatment.

**3. Understand the consequences for threatened assets** – Understanding the consequences of events for threatened assets enables more informative assessments of risk, evaluation of options for intervention and treatment, and helps to improve prioritisation of investment.

**4. Assess the effectiveness of treatment techniques** – Understanding the effectiveness of treatments to address risk helps identify what treatment types are most cost-effective. The benefit-cost ratio of implementing various actions is highly important to investors. Further, benefit-cost ratios help all parties identify the effectiveness of treatments in protecting or enhancing the asset or the current resource condition.

R&D and ongoing monitoring actions are outlined in Table 7.1. They aim to address the four main components of R&D and monitoring for the strategy.

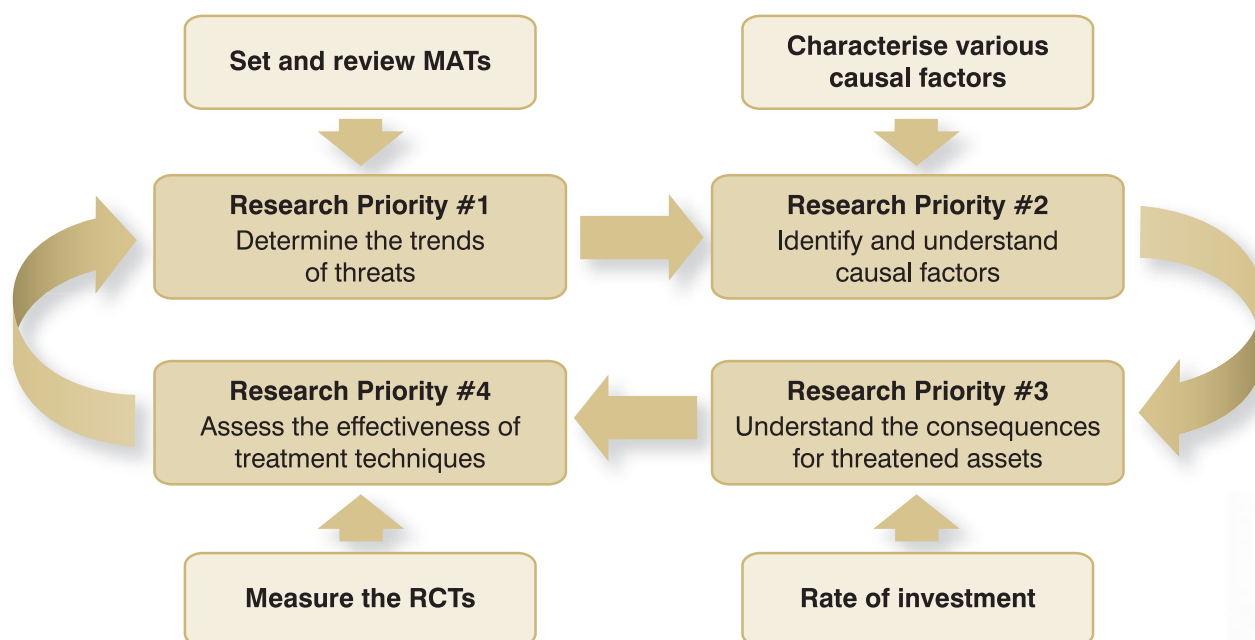


Figure 7.1: Key research components of the Soil Health Strategy

Research and development, and ongoing monitoring actions	Timeline
1. Map the location of landslides, sheet/rill erosion and gully/tunnel erosion sites in the Corangamite region.	2005-2006
2. Develop 1:25 000 susceptibility maps for landslides, sheet/rill erosion and gully/tunnel erosion in the Corangamite region.	2005-2007
3. Investigate and define the trend of landslide, sheet/rill and gully/tunnel incidents from 1950 to 2005 in specified targeted areas and develop RCTs from this data.	2006-2008
4. Investigate, characterise and quantify the impacts caused by all soil health threats on priority assets in the Corangamite region.	2006-2012
5. Map the locations of potential acid sulphate soils in the Corangamite region.	2006-2007
6. Investigate the relationship between climate change and erosion, landslide and acid sulphate soil risk throughout the Corangamite region.	2007-2009
7. Investigate the establishment and deployment of a data repository, as a mechanism to store and display soil-health information needed by the wider community.	2007-2009
8. Improve the susceptibility mapping for all other soil threats and threatening processes, i.e. wind erosion, soil structure decline, soil nutrient decline, soil acidification, organic carbon decline and soil biota decline.	2006-2009
9. Map all contaminated soil sites in the Corangamite region.	2009-2010
10. Improve the information and modelling needed to determine risk to assets for all threats identified in the SHS.	2009-2010
11. Assess novel research of treatment options for threats and soil-threatening processes, identify and characterise options suited for use in the Corangamite region.	2006-2009
12. Develop, adapt or adopt from other CMAs, suitable performance indicators for monitoring the changes to soil health in the region.	2007-2010
13. Develop, adapt or adopt from other CMAs, suitable soil-health assessment tools for use by agricultural and forestry industry groups, enabling them to monitor soil health properties and trends in respect to various management practices.	2009-2012
14. Investigate the impact of land-use change on soil health and the potential consequences caused by soil-threatening processes on high-value public assets.	2010-2012

*Table 7.1: Research and development actions for the Corangamite Soil Health Strategy*

