

Understanding progress and ratings

from Goulburn Broken CMA Annual Report 2019-20 Appendix 1

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NRM decisions to create or respond to change are usually made in context of a complex and dynamic system of people and nature with countless relationships. The operating environment is highly integrated and changing and there are significant uncertainties in measuring natural resources and evaluating progress. Well-constructed scorecards with summary narratives are distilled evaluations that help many stakeholders make better shared choices, while promoting transparency and accountability.

Shared mental models of progress and a desired future

Resilience model

Problem: While in everyday life individuals use their own ways of viewing the state of a complex world and possible future states, sharing views (based on solid evidence) can be extremely challenging.

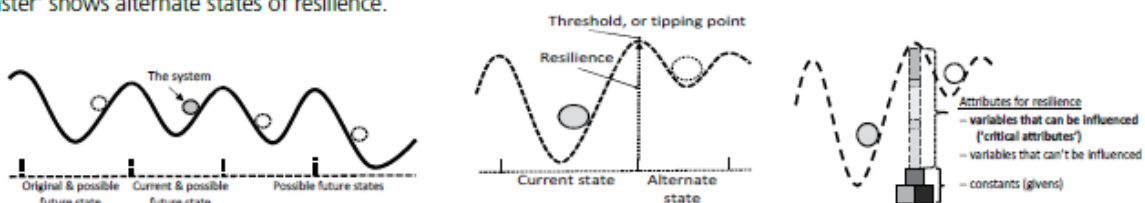
Solution: The Goulburn Broken CMA uses a resilience model to describe the current state, identify desired long-term future states, and determine required actions.

Many of the most important elements underpinning a resilience model, such as stakeholder relationships, consideration of system tipping points, and integration across NRM themes, have been emphasised by Goulburn Broken Catchment communities since salinity management plans were founded on joint action in the late 1980s (Northage 2014). Although it was not explicitly stated and there was no roadmap to follow, resilience was pursued by these pioneers of holistic catchment management. A culture of interagency and community-government collaboration was fostered through strong and insightful leadership at all levels within Victorian government and across regional and local communities.

Technology advances have transformed how people communicate and relate. As the number of interactions escalate, relationships can be diluted. The Goulburn Broken CMA continues to integrate the efforts of stakeholders to holistically manage the Catchment and has formalised use of the resilience model: it is central to the Regional Catchment Strategy 2013-2019 and its current renewal. The approach emerged from the Goulburn Broken CMA's sustainability and ecosystem services thinking.

Resilience is **'the ability of the Catchment's people and environment to absorb a shock or setback and to flourish in spite of it, maybe even because of it'** (R.M. Williams Outback, Apr/May 2017). **It does not mean 'ploughing through and doing what you have always done'** (Corocher in Outback Apr/May 2017).

The resilience model can be easily shared: people can relate the model to phases and other aspects of their personal lives, such as alternate states for emotions, finances, relationships, and physical health. A 'resilience roller-coaster' shows alternate states of resilience.



The resilience model lends itself neatly to a small number of high-level choices for managing systems in the face of unforeseen and shifting circumstances: restore, persist, accept change and adapt while preparing to transform, or drive transformation.

In NRM, **system examples** include biodiversity (page 53), community (page 31), and social-ecological (page 7). High-level choices for these interconnected systems have been described as visions and long-term goals, such as 'increase the population viability of 20 flagship species' and '65 per cent reduction in total phosphorus exported from the catchment'.

Resilience, tipping points, risks and opportunities

Problem: While visions and long-term goals have been described for NRM systems for 30 years or more, it has been challenging to build the bridge (a simply understood model) between high-level intent and required short and long-term actions: the links between cause and effect are often obscure.

Solution: A **risk mitigation model** that considers the risk of the system being in an undesirable state in the long term (more than 10 years) focuses on problems, opportunities and evidence that are material (high consequence), helping to eliminate 'noise'. The risk mitigation model is also familiar, making the step between risk and action (and progress) easy to communicate.

Determining the **risk of the system being in an undesirable state** in the long term requires consideration of **thresholds (tipping points)**, likelihood and consequences, uncertainties with data and what desirable futures are, and risk and opportunities given both current investment (from government and other sources, including in-kind) and no investment.

Some attributes that define a system's resilience are constants that cannot be changed, such as location downstream or upstream of a significant tributary. Other attributes vary, with some that cannot be readily influenced, such as rainfall or market conditions, and others that can be influenced, such as native vegetation extent and wetland inundation.

A critical attribute for long-term resilience is:

- critical to how the system functions
- at a level and trajectory that places the delivery of highly valued services at risk in the long term (because the system is at long-term risk of tipping into an undesirable state)
- influenced by actions that can be easily defined
- 'concrete' enough to readily convey an image or concept that is readily shared and not prone to misinterpretation
- measurable over the medium term (about 5 years), or at least enables a sense of progress to be conveyed.

Evaluation, planning levels and decision-making cycles

Catchment management decisions have vastly different timeframes, from daily operational decisions by extension officers to once-in-six-year strategic decisions by the Goulburn Broken CMA Board. The Goulburn Broken CMA arranges data to inform three critical and connected levels of evaluation for strategic planning and implementation, as shown in the table below. While different NRM funders have different ways of operating and different and

changing data requirements, the Goulburn Broken CMA orders information according to the equation: $Outputs \times Assumptions = Outcomes$, to document progress in implementing actions and to update understanding of progress in achieving desired long-term states of system resilience, including contributions by various partners to outcomes (including overall condition).

Evidence for three levels of evaluation (and decision-making)

Evaluation level	Typical key evaluation questions used to focus evaluation	Examples of evidence to inform evaluation
1 Annual performance	How did we go this year against what we said we would do?	Outputs (onground works and capacity building actions or tasks) achieved and funds spent against targets set.
2 Long-term strategy implementation progress	How have we gone against what we said we would do when we wrote the (various) strategies? How effective were the implemented measures?	Outputs and assumptions of their impact (especially on critical attributes) listed in strategies.
3 Catchment condition	What state is the system we are influencing in? What is the risk that the system will not be in the desired state in the long term? Was the original strategy appropriate? Have circumstances (such as new knowledge or different weather patterns) changed sufficiently to warrant a revised strategy? Does the investment mix need to be modified?	System state; risk trends; tipping points; indicators of resilience such as critical attribute contribution levels; responses such as restoration, prevention, maintenance, driving transformation, acceptance of change and adaptation.

Rating progress and performance

Details on each of the investment areas within sections of this annual report justify ratings provided. Further details are on the Goulburn Broken CMA's website www.gbcma.vic.gov.au and in relevant RCS sub-strategies.

Rating annual performance

Annual performance is rated by measuring outputs achieved against annual targets. Targets are determined by funds available and are derived from the relevant long-term strategy. It is usually not known what funds are available beyond one year. There is usually a high degree of certainty in rating annual performance within a single investment area when funding is known, outputs and other indicators are well documented, and accounting mechanisms are sound.

Annual targets and achievements in this report do not include outputs delivered beyond Goulburn Broken CMA's direct control, especially by landholders who voluntarily undertake works. Data on these external outputs is also critical to inform long-term decisions and is increasingly captured. A complete list of detailed outputs is in Appendix 4 on page 142 and detailed outputs are listed in sections devoted to each investment area throughout this report.

Rating long-term progress

Long-term progress ratings are needed for three separate areas of focus for Goulburn Broken CMA decision-making.

1 Long-term strategy implementation stage.

Strategies vary in formality, comprehensiveness, and funds to implement them. Implementation stage considers aspects such as degree of integration with other NRM themes, involvement of stakeholders, and quantities of outputs achieved compared to desired levels. See the graph that indicates the relative maturity or stages of implementation

within investment areas on page 35.

2 Catchment condition. The Goulburn Broken CMA chooses **investment areas** to frame ratings of catchment condition because they align well with how the CMA and many funders 'think' (compartmentalise NRM) and invest. From 2016-17, ratings of critical attributes' contribution level and the associated long-term risk to the desired state of resilience are explicitly listed as indicators of catchment condition (see long-term scorecards throughout this report). Other high-level indicators of condition, such as viability of threatened species and gross value of agricultural production, are also factored into ratings.

The **benchmark system state is the desired state**: this varies from many NRM assessments that use 'natural' or 'pre-European settlement' as the benchmark. To get a sense of long-term progress over a timeframe meaningful for NRM, critical attributes' contribution to system function are rated for 1990 as well as the current year.

No explicit quantitative weightings have been applied when 'rolling-up' critical attributes to arrive at the overall catchment condition for an investment area. Assessment by individual social-ecological system areas (see page 7) and subsequent rolling-up has so far only been done for the Agricultural Floodplains (see Sustainable Irrigation Program). Structuring and communicating long-term progress are works-in-progress that try to retain the integrity of Goulburn Broken CMA's evaluation efforts over two decades while aligning with emerging national and state approaches.

3 Organisational business condition. The Goulburn Broken CMA is an important contributor to catchment condition, and several indicators are similarly rolled-up to rate condition in terms of human resources and governance (and annual performance; see pages 78 and 85).