

Victorian Environmental Flows Monitoring and Assessment Program – Stage 6

Managing environmental water in Victoria to
maximise environmental outcomes



‘Environmental water’ is water that is specifically managed to protect and restore a healthy environment within rivers, the floodplain, wetlands and estuaries.

Managing water

Water is a scarce resource and it is important to use environmental water entitlements as effectively as possible. Many agencies work together to develop and implement environmental watering programs in Victoria. These include the Department of Environment, Land, Water and Planning (DELWP), the Victorian Environmental Water Holder (VEWH), Catchment Management Authorities (CMAs), land managers and water authorities, the Commonwealth Environmental Water Office (CEWO) and the Murray-Darling Basin Authority (MDBA). Delivery of environmental water is targeted to priority areas with significant environmental values.

Demonstrating outcomes from environmental water - VEFMAP

The Victorian Environmental Flows Monitoring and Assessment Program (VEFMAP) was established by the Victorian Government in 2005 to monitor and assess ecosystem responses to environmental watering in priority rivers across Victoria. The results from this program help inform decisions for environmental watering by Victoria’s CMAs and the VEWH. Over the past 12 years, the information collected through VEFMAP has provided valuable data and informed significant changes to the program. VEFMAP is now in its sixth stage of delivery and includes a strong focus on “intervention” or “flow event” type questions.

Stage 6 objectives

The overarching objectives of VEFMAP Stage 6 are to:

- enable DELWP and its water delivery partners to clearly demonstrate ecological outcomes of environmental water management to the community and water industry stakeholders.
- identify ecosystem outcomes from environmental water to help meet Victoria’s obligations under the Murray-Darling Basin Plan.
- fill knowledge gaps to improve planning, delivery and evaluation of environmental water management in rivers and wetlands across Victoria.



Figure 1: Murray Cod benefit from environmental water (Photo: ARI)

Key Evaluation Questions

Priority Key Evaluation Questions (KEQs) have been developed for fish and vegetation. The five priority KEQs for fish focus on migration, survival and recruitment in response to environmental flows. These are regionally specific to southern and northern areas of the state, due largely to the different flow-related life-cycles of the target fish species.

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The KEQs for vegetation focus on learning how environmental flows influence instream and fringing riparian vegetation. These KEQs will also evaluate how additional drivers, such as grazing, weeds, and soil type affect vegetation responses to flows.

Importantly, these questions directly relate to the planning and delivery of existing environmental flows.

Stage 6 development

VEFMAP Stage 6 was developed following comprehensive engagement across stakeholders including DELWP, the Arthur Rylah Institute (ARI), CMAs, the VEWH, University of Melbourne, the VEFMAP Independent Review Panel and consultants. Core pillars of VEFMAP Stage 6 include:

- a robust scientific approach.
- strong communication with stakeholders to ensure the program meets their needs.
- sharing of results in a timely manner, in a variety of formats which inform management of environmental flows.

The approach includes:

- development of a series of **regional and system-specific objectives**.
- the use of best-available knowledge, and a **specific conceptual model approach**, to develop testable regional flow-ecology hypotheses.
- selection of **key indicators** to evaluate the responses of fish and vegetation, focussing on the flow parameters (hydrology and hydraulics) and ecological processes (e.g. spawning, recruitment, movement) that govern fish and vegetation communities.
- development of **regionally appropriate methods**, such as flow-event based monitoring, to measure fish and vegetation responses to support the hypotheses.
- **continued analysis and evaluation** of existing data (from VEFMAP and complementary programs) to confirm flow-biota relationships to inform more effective delivery of environmental flows and future monitoring programs.

A focus on communication

Strong engagement with stakeholders is a priority during VEFMAP Stage 6 to:

- regularly communicate plans, progress and results.
- enable collaboration and inclusion of local advice on the timing and location of monitoring.
- support changes in environmental water management plans.
- provide opportunities for input and feedback on the program.

Progress will also be shared more widely through field days, workshops and conferences, social media and written material (flyers, reports, scientific journal articles, magazine articles).



Figure 2: Surveys have detected the threatened Small Scurf pea (Photo: ARI)

This project is part of the Victorian Government's \$222 million investment over the next four years in improved catchment and waterway health. This investment is a key component of *Water for Victoria* – the government's plan for management of our water resources now and into the future.

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