

# Environmental Watering

## How RMCG can help

RMCG is a diverse company that prides itself on providing high quality consulting services to a range of clients, including environmental managers. We work across many aspects of natural resource management, including environmental watering.

Here are just some of the ways we can assist in your environmental watering projects.

### Planning

Planning for the delivery of environmental water to a site requires a broad set of skills including collation and interpretation of technical data and investigations, consultation with relevant internal staff and stakeholders as well as documenting critical information for future reference.



*Blackwater in a floodplain wetland  
(Photo: Pam Beattie 2008)*

We can assist during the planning phase with:

- Organising and facilitating **workshops** – to identify watering sites, values and ecological objectives.
- Gathering and **interpreting technical inputs** – to inform the hydrological requirements and water regime. For example: bathymetry, hydraulic modelling, spells analyses, ecological investigations and literature.
- **Drafting plans and watering proposals** that are a logical and easy to use resource for environmental water managers.

Examples:

#### Pre-feasibility Assessment for Environmental Works and Measures (2012)

RMCG conducted a pre-feasibility assessment of 43 potential works and measures projects identified by the North Central CMA, community members and agency staff in a series of workshops. Priority projects were highlighted for further consideration.

#### Lake Murphy Environmental Water Management Plan (2014)

RMCG drafted the Environmental Water Management Plan for Lake Murphy, southwest of Kerang in Victoria. This involved workshoping ecological objectives for the wetland with North Central CMA staff and using SWET model and bathymetry results to inform development of the hydrological regime.

#### Seasonal Watering Proposals (2012-2015)

Using the Victorian Environmental Water Holder guidelines, we developed Seasonal Watering Proposals for Gunbower Forest, Gunbower Creek and Pyramid Creek. This included participating in stakeholder consultation.

### Risks

There are risks associated with the construction and operation of infrastructure to deliver environmental water, including ecological, social, cultural and economic risks. It is important that a thorough risk assessment be conducted in line with AS/NZS ISO 31000:2009 Risk Management Principles and Guidelines to identify the broad suite of risks, the mitigation options required and the residual risks.

We can assist with risk identification and management, including:

- Reviewing literature and technical reports to **collate risks and mitigation options**.
- Organising and facilitating **workshops** – to identify/confirm risks, mitigation and responsible parties.
- **Identifying priority risks** and communicating these in a variety of documents including **requirements for monitoring** residual risks.



*River Red Gum encroachment into a wetland  
(Photo: Pam Beattie 2008)*

Examples:

#### Sustainable Diversion Limit Business Cases – Risk Assessments (2014)

RMCG developed and completed a risk register for nine works and measures business cases across the Mallee and North Central regions of Victoria. This included construction and operational risks, and identified which organisations were responsible for mitigation.

## Ecological Risk Assessment Workshop (2009)

A workshop was facilitated to identify the ecological risks associated with a proposed environmental water delivery project in Gunbower Forest. Participants included the North Central CMA, Murray Darling Basin Authority, Victorian Department of Sustainability and Environment, Parks Victoria, CSIRO, and various ecological experts and consultants.

## Risk and approvals assessment (2013)

RMCG evaluated the potential construction risks that may be an issue for obtaining statutory approvals prior to construction of environmental water delivery infrastructure in Gunbower Forest.

## Scoping Study – Economic Opportunities for Carp Harvesting (2012)

Potential options were identified for use of carp harvested from existing and proposed fishways on the Victorian mid-Murray floodplain. This was an investigation into productive opportunities from what is often an unavoidable and high priority risk from environmental water management.

## Justifications

In developing an environmental watering project, numerous decisions are made regarding what values are being targeted, options for delivery, infrastructure to be included and how the infrastructure is operated. The reason for a given decision needs to be clearly articulated and documented to give confidence to investors, stakeholders and the broader community that decisions are well justified, as well as to retain the intellectual property of the organisation in the event of staff changeover.

### We can assist with decision-making and justifications by:

- **Identifying and assessing options** using robust criteria, to provide recommendations for your consideration.
- Providing thorough **documentation** on the range of options considered and the rationale behind each decision.
- **Capturing evidence** for past decisions where appropriate and required e.g. scientific literature.

## Examples:

### Ecological Watering Guide for the Flooding Enhancement of Gunbower Forest project (2014)

This is an important live document for the North Central CMA, which outlines why and how environmental water is delivered in Gunbower Forest. The Guide collates a substantial amount of evidence to justify the hydrological requirements and the need for environmental water delivery under various climate and environmental water availability scenarios. It enables observations and lessons learnt by field staff to be captured over time to enable adaptive management of the site.

### Sustainable Diversion Limit Business Cases – Key Decision Papers (2014)

Supporting documents were developed for the proposed Gunbower National Park Environmental Works Project and the Guttrum and Benwell Forests Environmental Works Project to capture the options assessed and the rationale behind each key decision. This included water delivery options and other infrastructure options.



*Environmental water in Green Swamp, Gunbower Forest (Photo: Pam Beattie 2008)*

## Monitoring and evaluation

Monitoring is critical to adaptive management of environmental watering. It is important to have comprehensive and robust monitoring programs that are also practical and appropriate given resources available. Monitoring and evaluating outputs, outcomes and potential risks, both during and after

### Contact us

We have a team of skilled and professional staff ready to help in many aspects of environmental watering and broader natural resource management. Further details on our broader skills and staff can be viewed at [www.rmcbg.com.au](http://www.rmcbg.com.au)

For further information, please contact Pam Beattie or Jencie McRobert in our Bendigo office on (03) 5441 4821.

## Feedback from past clients

“Your skills, knowledge and professionalism helped ensure the investigative work was thorough and that the project got finished. Your thoughts and questions into key decisions were critical to the success of the project” (Client feedback, 2014).

“Overall we think the document is good. It is really clear and we like the structure...” (Stakeholder feedback, 2014).

environmental watering, is valuable for environmental water managers and interested stakeholders such as investors and community members.

### We can assist with monitoring and evaluation by:

- Identifying practical, effective and appropriate **monitoring methods**.
- Drafting monitoring and evaluation **plans**.
- Collating and interpreting data (e.g. ecological monitoring) to **evaluate progress** towards objectives and targets, as well as the **impact of potential risks**.

## Examples:

### Environmental Flows Monitoring Report (2008)

RMCG summarised the details and outcomes of the Gunbower Forest environmental watering event in Autumn 2008. This included reporting progress against hydrological objectives and ecological objectives for wetlands, vegetation, fish, frogs, macroinvertebrates, birds, groundwater and soils.

### Monitoring and Evaluation Plans (2014)

A Monitoring and Evaluation Plan was developed for the proposed Guttrum and Benwell Forests Environmental Works Project and the Gunbower National Park Environmental Works Project. This identified methods for monitoring progress against the ecological objectives and targets.