Report on Managing Water Quality and Salinity – Victoria

The Victorian 2014- 15 annual report on the implementation of the water quality and salinity management plan (Schedule 12, Item 14)

Reporting context

The water quality and salinity management plan provides a Basin-wide framework of water quality objectives and targets for Basin water resources. The water quality and salinity management plan is set out in Chapter 9 of the Basin Plan and includes a list of the key causes of water quality degradation, water quality objectives for Basin water resources and water quality targets for long-term planning.

The purpose of this report is to monitor the extent to which the water quality and salinity management plan has been implemented. This report is a requirement of Chapter 13 of the Basin Plan and relates to Item 14 of Schedule 12.

Indicators for measuring success

Implementation of the water quality and salinity management plan is evaluated using the following five indicators:

- Governments regard to water quality and salinity targets when managing water flows (**14.1**)
- Governments having regard to water quality targets when making decisions about using environmental water (**14.2**)
- Recorded salinity at reporting sites is consistent with salinity targets (**14.3**)
- Adequacy of the flushing of salt from the River Murray System to the Southern Ocean (salt export) (**14.4**)
- Measures governments take to achieve end-of-valley salinity targets (**14.5**)

MDBA reports on all five indicators.

14.1: Managing water flows with regard to water quality targets (s9.14)

14.1.1. What procedures and tools were in place to enable water quality targets (dissolved oxygen, recreational water quality and salinity) to be met?

Response

Under s41(2) of the Water Industry Act 1994 (Vic), the Minister for Water issues a Statement of Obligations (SOO), which specifies the obligations of water authorities in relation to the performance of their functions and exercise of their powers. The most current SOO was issued by the Victorian Minister for Water on 16 September 2012. It applies to the water authorities operating in the state's share of the Murray-Darling Basin:

http://www.depi.vic.gov.au/__data/assets/pdf_file/0016/177010/Statement-of-Obligations-All-water-corporations-_September-2012_.pdf

Part 5 of the SOO requires Victorian water authorities to ensure that the risks associated with the functions they perform and the services they provide are identified, assessed, prioritised and managed. This includes the development of a specific emergency management plan for risks to water quality and discrete requirements for reporting on any blue green algae blooms impacting on water supply or delivery services.

14.1.2. Statement that procedures and tools were used to meet water quality targets

Response

Goulburn-Murray Water (GMW) and Grampians Wimmera Mallee Water (GWMWater) are the Victorian water authorities responsible for storage operations and bulk water supply within the northern Victoria and Wimmera-Mallee (surface water) water resource plan areas respectively. Note both GMW and GWMWater generally use the term blue-green algae (BGA) in operations instead of cyanobacteria.

Statement from GMW

GMW had regard to the dissolved oxygen targets of section 9.14(5)(a) by:

- Maintaining the minimum flow provisions of the bulk entitlements for the Ovens, Broken, Goulburn, Campaspe and Loddon bulk entitlements;

- Contributing to the real-time and spot monitoring of dissolved oxygen concentrations at locations along the Victorian tributaries to the River Murray (e.g. Rice's Weir, Goulburn Weir);

- Including dissolved oxygen concentration data in daily data used for operational planning;

- Distributing regular external reports on dissolved oxygen concentrations at strategic locations and issuing extra reports as data trended towards target levels;

- Participating in operations advisory groups for environmental watering events including the Barmah-Millewa Forest, Gunbower Forest and Hattah Lakes; and

- Maintaining the availability of the 30 gigalitre reserve in the Goulburn system for mitigation of poor water quality.

GMW had regard to the recreational water quality targets of section 9.14(5)(b) by:

- Operating as the delegated Regional Coordinator for BGA management across northern Victorian water systems;

- Participating in the Murray Regional Algal Coordinating Committee;

- Maintaining regional BGA management plans for northern Victorian water systems;

- Maintaining local BGA management for GMW-operated water storages and irrigation areas;

- Contributing to the monitoring of BGA concentrations at key locations in Victorian tributaries to the River Murray;

- Distributing regular external reports on BGA concentrations at key locations and issuing extra reports (including media releases for public information) as data trended towards target levels; and

- Maintaining the availability of the 30 gigalitre reserve in the Goulburn system for mitigation of poor water quality.

GMW had regard to the salinity targets of section 9.14(5)(c) by:

- Maintaining the minimum flow provisions of the bulk entitlements for the Ovens, Broken, Goulburn, Campaspe and Loddon bulk entitlements;

- Contributing to the monitoring of salinity concentrations (real-time and spot measurement) at locations along the Victorian tributaries to the River Murray (e.g. Rice's Weir, Goulburn Weir);

- Including salinity concentration data in daily data used for operational planning; and

- Participating in operations advisory groups for environmental watering events including the Barmah-Millewa Forest, Gunbower Forest and Hattah Lakes.

<u>Statement from GWMWater</u>

GWMWater had regard to dissolved oxygen targets of section 9.14(5)(a) by:

- Releasing Victorian Environmental Water Holder authorised water to the Wimmera River and its tributaries in accordance with requests received from the Wimmera Catchment Management Authority;
- Contributing to the monitoring of dissolved oxygen levels at various waterway locations;
- Recognising that it owns and operates a number of deep storages that may produce cold water and low dissolved oxygen impacts on downstream waterways; and
- Ensuring that water quality remains a key objective and is properly considered within relevant storage management rules so that water is fit for purpose for urban, industrial, stock and domestic and environmental use.

GWMWater had regard to the recreational water quality targets of section 9.14(5)(b) by:

- Developing and continuously updating a range of procedures and policies that are used to detect, identify and deal with BGA within its water storages, including headworks storages;
- Undertaking regular water sampling to monitor for and detect BGA outbreaks;
- Operating as the delegated regional coordinator for BGA management; and
- Distributing regular internal and external reports about BGA outbreaks, including media releases and signage.

14.1.3. Case study

Response

NA

14.2: Making decisions about using environmental water with regard to water quality targets (s9.14)

14.2.1. What procedures and tools were in place to enable water quality targets to be met?

Response

Environmental water management plans and icon site operating plans

Catchment Management Authorities (CMAs) across Victoria, in collaboration with communities and agencies, have developed over 48 long-term Environmental Water

Management Plans (EWMP) and 4 Icon Site Operating Plans to guide environmental watering activities at rivers, wetlands and floodplains across the state. These plans outline the values, objectives, watering requirements of the sites and operating strategies. They also summarise key risks that may impact on the ability to achieve objectives (including risks to water quality).

Watering proposals

Risks related to watering, including those related to water quality, are identified and assessed in site-based seasonal watering proposals developed annually by CMAs and documented in the *VEWH Seasonal Watering Plan 2014-15*. These proposals draw on the risks outlined in EWMPs and operating plans and identify specific actions to mitigate these risks.

Example: The Gunbower Forest seasonal watering proposal 2014-15 (developed by North Central CMA) identified water quality risks (blackwater and low dissolved oxygen) that may impact on the achievement of environmental outcomes from the planned floodplain watering (i.e. fish kills). The proposal identified a number of mitigating strategies, including analysing data from continuous water quality monitoring stations in Gunbower Creek and the River Murray to guide real-time operational decisions, such as reducing outfall volumes to improve the dilution of the poor quality water.

Victorian environmental watering program shared risk management framework

A shared/overarching risk management framework is continuing to be developed in Victoria. This will incorporate all partners in the environmental watering program. The framework aims to further develop and improve understanding of current risk management approaches used by different organisations, in addition to improving the management of inter-agency risk.

Example: In 2014-15 a joint risk workshop was held in western Victoria, bringing together waterway managers, storage managers and environmental water holders. The workshop focused on identifying and analysing shared risks and determining potential mitigating actions, including determining each agencies responsibilities in the management of these shared risks. This collaborative approach to risk management highlighted the importance of early and regular communication and cooperation between organisations in managing risk to ensure successful delivery of the Victorian environmental watering program.

Modelling and technical assessment

Modelling and technical assessments are undertaken at higher risk sites to inform the most appropriate environmental delivery regimes and identify potential mitigating strategies. This has included salinity modelling and technical assessments.

Example: refer to Psyche Bend Lagoon example under ‘Monitoring’.

Monitoring

Targeted monitoring is undertaken during the planning and delivery of watering actions that pose potential risks (such as salinity or blackwater). This monitoring complements water quality information collected by MDBA River Management for the River Murray. During events, data and outcomes from this monitoring are presented at Operational Advisory

Group (OAG) meetings, which include environmental water managers, river operators, storage managers, water holders, and land managers, to inform operational management decisions, and the implementation of risk mitigation strategies.

Example: Environmental watering at Psyche Bend Lagoon, a River Murray floodplain wetland in the Mallee region, aims to improve the ecological health of the system which has been adversely impacted by salinity due to historical management practices. Mallee CMA have undertaken a range of modelling and technical investigations to inform appropriate water management regimes for the wetland, incorporating filling and discharge of water from the wetland to reduce salt accumulation. These investigations have assisted in the development of operating strategies to guide the discharge of highly saline water from the site, without impacting on downstream users (such as establishing threshold salinity levels for discharging flows and identifying river operating conditions under which the discharge may occur). Management triggers, risk mitigation measures and a comprehensive monitoring program were established to inform the discharge and to ensure the water returning to the River Murray was adequately diluting and mixing. The operational management of the discharge was coordinated through the Psyche Bend Discharge Operational Group. The detailed technical work, monitoring and regular consultation with stakeholders all played a key role in ensuring the success of the watering, continuing to build confidence in the management of the wetland. The watering has led to a reduction in salinity levels in the wetland and improvement to the health of surrounding vegetation.

14.2.2. Statement that procedures and tools were used to meet water quality targets

Response

The use of procedures and tools is highlighted in the section 14.2.1.

14.3: Salinity at reporting sites consistent with salinity targets in s9.14(5)

14.3.1. Proportion of days where measured salinity met the target EC at reporting sites

Response

NA

14.4: Adequacy of flushing and salt export (s9.09)

14.4.1. Estimated Salt Export (Tonnes) from the River Murray System to the Southern Ocean

Response

NA

14.4.2. Adequacy of salt flushing

Response

NA

14.5: Implementation of measures to achieve end-of-valley salinity targets

MDBA reports on this indicator on behalf of Basin governments, drawing on the end-of-valley targets contained in the States' Basin Salinity Management Strategy annual implementation reports.

14.5.1. Types of measures implemented

Response

NA

14.5.2. Summary of objectives, activities and achievements with regard to each measure implemented

Response

NA