



**CHAPTER 6**

**REASONABLE ASSURANCE STATEMENT**

## 6.1 BACKGROUND

The Burnett Mary Regional Group and Wide Bay Water Corporation have an agreement with the Commonwealth of Australia, represented by the Dept of Environment, Water, Heritage and the Arts, to prepare the Water Quality Improvement Plan (WQIP) for the Mary Catchment. This project was initiated to enhance water quality planning and management processes, to improve water quality in the Mary river and its tributaries that presently experience poor or deteriorating water quality, as well as maintaining those parts of the river where water quality is currently good. The outcome is to establish a sound basis for investment to improve the condition of the receiving waters.

The following activities were conducted to address the delivery of nutrients, herbicides/pesticides, and suspended sediments loads into the river network and to the end of catchment, and to improve to water quality of these receiving waters at a system scale:

- Preparation of the Mary WQIP;
- Development of a stakeholder consultation strategy in conjunction with the preparation of the WQIP;
- Alignment of the WQIP with the Regional Integrated Natural Resource Management Plan.

This Reasonable Assurance Statement (RAS) addressed issues that require attention to give a high degree of confidence that WQIP targets will be achieved as a consequence of WQIP implementation. The RAS addresses the uncertainty associated with:

- knowledge of the response of the system to pollutant loads;
- effectiveness of proposed interventions to achieve load reductions; and
- adoption of proposed interventions, in terms of timing and extent.

### 6.1.1 Statement

The ability to meet targets associated with this Water Quality Improvement Plan (WQIP) requires applying sustainable growth principles that are supported by science, and a responsive monitoring and evaluation strategy that can supply new knowledge about the effectiveness of management approaches. Furthermore, development and implementation of management interventions to achieve the targets have to be underpinned by an adaptive management philosophy.

Monitoring will be used to quantify the effectiveness of the management actions described in Chapter 5, as well as to support better estimates of pollutant loads obtained by models. The plan can be updated to broaden effective management actions or revisit actions that were not effective.

Water quality monitoring programs in the region include state agency deliverables (to support sustainable water extraction from rivers, and water quality objectives of estuary receiving waters), and various State Investment Projects and the BMRG (to support WQIP and reef target objectives). The objectives of the water quality sampling programs, and a map showing the location of sampling points, are reported by the Queensland Government ([http://www.regionalnrm.qld.gov.au/policies\\_plans\\_legislation/policies\\_strategies/gbr\\_water\\_quality/monitoring\\_report/index.html](http://www.regionalnrm.qld.gov.au/policies_plans_legislation/policies_strategies/gbr_water_quality/monitoring_report/index.html)).

Future monitoring and reporting programs need to be developed to effectively monitor the outcomes of this plan. This may be achieved by coordination of sampling schedules and data transfer among the existing monitoring programs.

### **6.1.2 Knowledge of the Response of the System to Pollutant Loads**

Substantial modelling and monitoring input has been used to develop this plan, with the result that planning of improvements to pollutant loads from significant point sources (e.g. sewage treatment plants), landscape patches (e.g. irrigated horticulture, headwater basalts), and management actions (e.g. Rivercare, Landcare) can be identified and prioritised. There are however some knowledge gaps that need to be addressed to fully understand contributions to marine receiving waters from the Mary River.

A receiving model for marine waters needs to be developed to evaluate the attenuation of sediment, nutrients, and herbicides/pesticides within and out of Hervey Bay. The circulation dynamics of this important estuary are somewhat unusual, and this knowledge gap has been identified as a priority management action. This would probably need the involvement of one or more major partners such as CSIRO.

Also further research is needed to clarify the role of low base flows in estuary ecosystems, and particularly their involvement in the production of bait fish and other invertebrates, upon which fish feed. These species are required to attract and retain larger predatory fish species to the lower reaches of the estuary, upon which recreational anglers and the local economies they support in part rely. The provision of brackish water habitat at the head of the estuary is needed to provide migration cues for motile biota, ultimately awaiting large environmental flows. Compensatory flow releases from the Mary Barrage and upstream dams may be required to maintain quasi-natural flow inputs to the estuary.

### **6.1.3 Effectiveness of Proposed Interventions to Achieve Load Reductions and Improve Water Quality**

Evaluation and reporting is critical for steering adaptive management, and enabling continuous improvements to land management to address end of catchment loads and concentrations. Monitoring needs to be done at various scales (spatial and temporal) across which improvements can be measured. Results need to be integrated, synthesised, and translated into applied knowledge to inform the end users (e.g. farmer, regional NRM group, government), enable strategic planning, and facilitate implementation across a the range of scales.

Baseline data for the Mary WQIP was developed with respect to concentrations of nutrients, suspended solids, herbicide and pesticides over a 1½ year period, with the intention of follow up monitoring when the landscape has been allowed to respond to improved land management. Some of the ambient data (nutrients, sediments, herbicides) have been presented in chapter 3 of this report, and the State of the Estuary study, which was used as a basis for aspirational targets. Events monitoring at sub-basin scale has also been successfully developed to support the Mary WQIP, and results can be used to obtain better estimates of pollutant loads and improve models.

The baseline investigation was designed as a nested hierarchy of sample points for ambient monitoring, to facilitate scale dependent assessments. Reach scale assessments (which monitor specific projects against a target reference condition) can be aggregated at sub-basin and basin scales (across the Mary Catchment), and if required also at the landuse scale (across the Burnett Mary region) to give a regional condition assessment. Event monitoring gives information about loads coming from the two key sub-basins in the Mary.

Effective data warehousing and information sharing are vital for the collaborative approach.

Reporting is required to allow diverse, and definitive evidence-based, findings from monitoring, investigations, test trialling, and modelling to support education outcomes.

The whole process is interactive and needs to be refined with time. However reporting and adaptive management of the plan will be consistent with BMRG's reporting program for Country to Coast – a healthy sustainable future.

#### **ANNUAL REVIEWS**

Annual performance reviews reporting implementation progress are proposed to be completed by BMRG with key stakeholders including State Government and Industry Groups invited to attend.

## **PHASE 2 IMPLEMENTATION**

After completion of the priority management actions and establishment of pollution targets, the plan will need to be updated in light of new findings.

The process will involve consultation, and a review with cost analysis of management actions. The next version of the Mary Catchment WQIP will be drafted and ready for implementation.

### **6.1.4 Adoption of Proposed Interventions, in terms of Timing and Extent.**

The first stage of consultation and review to finalise the Mary Catchment WQIP requires meetings with both science and stakeholder groups to evaluate the science that contributed to the report, review priority pollutants with respect to source, establish resource condition targets for end of catchment loads, and finalise aspirational targets.

The suggested approach for the second stage of consultation, to expose this draft Mary Water Quality Improvement Plan to a larger proportion of key stakeholders and the public, is to conduct a catchment crawl information day. This includes a catchment crawl down the catchment from the Obi Obi Creek headwaters, to River Heads as an information session. The draft plan will be formally presented to stakeholders, to seek input from stakeholders with respect to their involvement with the plan and delivery timelines.

After a review period has elapsed, further presentations will be given to stakeholder groups on request (following the catchment crawl), and submissions will be considered for a further workshop to finalise the plan.

Targeted stakeholder groups for the Catchment Crawl Information Day are suggested to be:

- Agforce
- Aquagen
- Barung Landcare
- Burnett Mary Regional Group for Natural Resource Management
- Fraser Coast Regional Council
- Fraser Coast Representatives of the Regional Seafood Association
- Fraser Coast Sunfish
- Fraser Island Defenders Organisation

- Growcom
- Gympie and District Beef Liaison Group
- Gympie Landcare
- Gympie Regional Council
- Lake Baroon Catchment Care Group
- Lower Mary Landcare
- Mary River Marina
- Maryborough Canegrowers
- Queensland Environmental Protection Agency
- Queensland Dairyfarmers Organisation
- Queensland Department of Natural Resources and Water
- Queensland Department of Primary Industries and Fisheries
- Queensland Water Infrastructure
- Subtropical Dairy
- Sunshine Coast Regional Council
- Sunwater
- The Mary River Catchment Coordinating Committee
- The BMRG Traditional Owner Working Group
- The Coastal Water Quality Alliance
- Tiaro Landcare
- Wildlife Preservation Society
- Wide Bay Burnett Conservation Council
- Wide Bay Water Corporation
- Wide Bay Burnett Regional Coordinating Group