



ALL SAP MEETING | 5 & 6 JUNE 2018

Water Quality Management Plans

Kelly Lynch | Water Quality Officer

PURPOSE

The Basin Plan requires each water resource plan to include a water quality management plan.

The aim of the water quality management plan is to provide a framework to protect, enhance and restore water quality that is fit for purpose for a range of outcomes.

Fulfil Aboriginal peoples spiritual, cultural, customary and economic values

Protect and improve ecological processes and healthy aquatic ecosystems

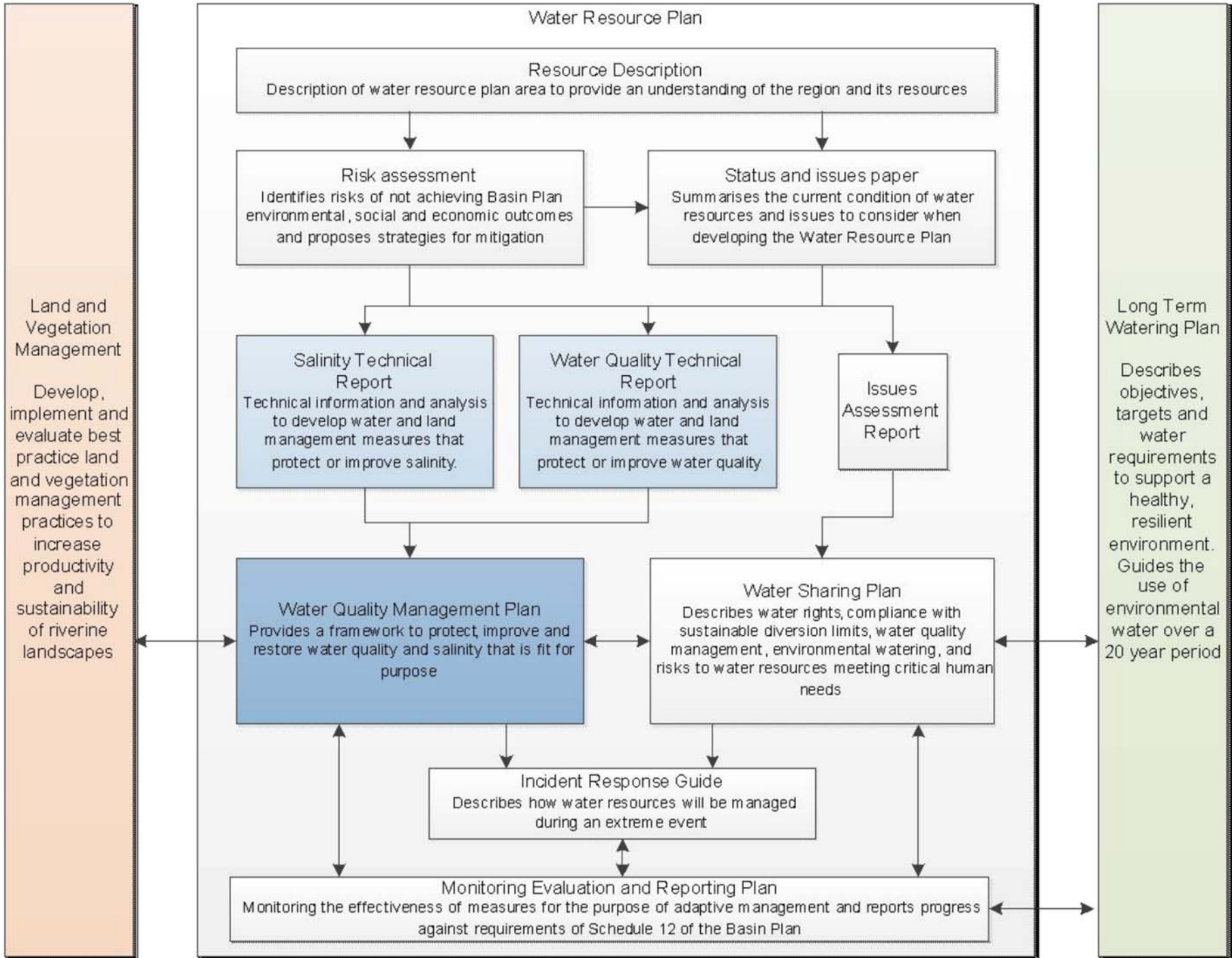
Provide essential and recreational amenities for rural communities

Assist agricultural enterprises to be productive and profitable

Basin Plan requirements

Chapter 10, Part 7

- Identify key causes of water quality degradation
- Assess risks arising from water quality degradation
- Establish water quality objectives and targets
- Identify measures that contribute to achieving water quality objectives
- Identify strategies to mitigate moderate to high risks

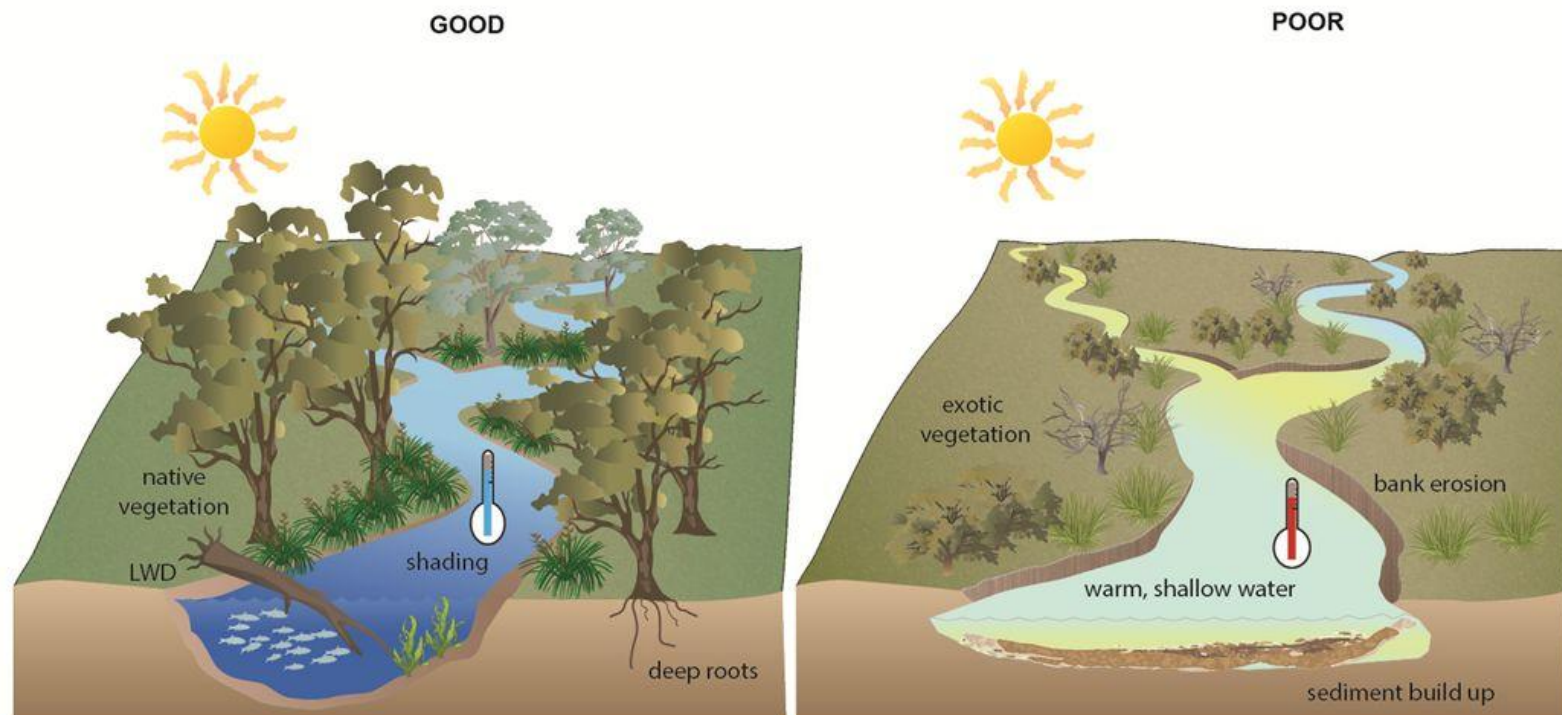


Key causes of water quality degradation

- elevated levels of suspended sediment
- elevated levels of salinity
- elevated levels of nutrients
- elevated levels of cyanobacteria cell counts or biovolume and toxins and odour compounds
- water temperature outside of natural ranges
- dissolved oxygen outside of natural ranges
- pH outside of natural ranges
- elevated levels of pesticides and other contaminants
- elevated pathogen counts

Impact of riparian vegetation removal on water quality

Riparian Vegetation Condition









Good vegetation will contract and deepen the channel
LWD - large woody debris provides habitat
Deep roots helps maintain the bank structure and reduces erosion

No vegetation and the channel will become wider and shallower
Absent LWD - loss of habitat
Loss of vegetation increases channel instability and erosion

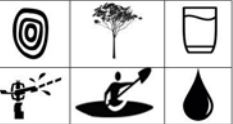
Water quality objectives

Basin Plan 10.52, 9.04-9.08

-  Maintain protection of Aboriginal water quality dependent values and uses
-  Maintain water quality to protect and restore water dependent ecosystems
-  Maintain the quality of raw water for treatment for human consumption
-  Maintain the quality of water for irrigation use
-  Maintain the quality of water for recreational use
-  Maintain good levels of water quality

Strategies to:

- address risks of water quality degradation (s10.31) and
- contribute to achieving water quality objectives (s10.33)

Objectives	Strategies	Water management actions and mechanisms	Management plan
<p>WQ1) Manage groundwater salinity by ensuring extraction does not result in a change in the beneficial use category</p> <p>Medium Risk</p> <p><i>Lower Gwydir Alluvium</i></p> <p><i>(Risk assessment code</i></p> 	<p>Limit seasonal drawdown in high risk areas</p>	<p>Manage extraction at water supply works to prevent decline in groundwater levels resulting in poor water quality to maintain reliant GDE vegetation.</p> <p>Set back distance rules to limit drawdown</p> <p>Set bore extraction limits on production bores in high risk areas to limit drawdown</p> <p>Temporarily restrict access under the WMA s.324 when there are water shortages</p> <p>Reserve all water above the long-term average annual extraction limit (LTAAEL) for the environment as PEW</p> <p>Available Water Determinations (AWD) adjust extractive use according to water availability.</p> <p>Sustainable Diversion Limits</p>	<p>A Gwydir Alluvium Water Sharing Plan</p> <p>(Mandatory and discretionary conditions)</p> <p>N Water Management Act s.324</p> <p>A Gwydir Alluvium Water Sharing Plan</p> <p>A Water Take Measurement and Metering Policy</p>
	<p>Limit consumptive water extractions in the WRP area to the predefined share of available water</p>		

Development of strategies to address risks to water quality

Basin Plan 10.31

- Developed using the same logic and method as objectives and strategies in the water sharing plans
- Input and refinement provided by
 - Office of Environment and Heritage
 - DPI Fisheries
 - DPI Agriculture
 - DPI Local Land Services
- Includes
 - **Accredited** water management measures
 - **Non-accredited** measures eg., land management

Water quality targets

Basin Plan 10.32

Surface water

- DoI Water will accept the current water quality targets as set out in the Basin Plan (Schedule 11)
- DoI Water proposes developing Regional water quality targets across the Basin Plan to ensure we have the most appropriate targets for management of water resources.

Groundwater

- Alternative targets for water dependent ecosystems
- Proposed groundwater quality monitoring to develop baseline.