



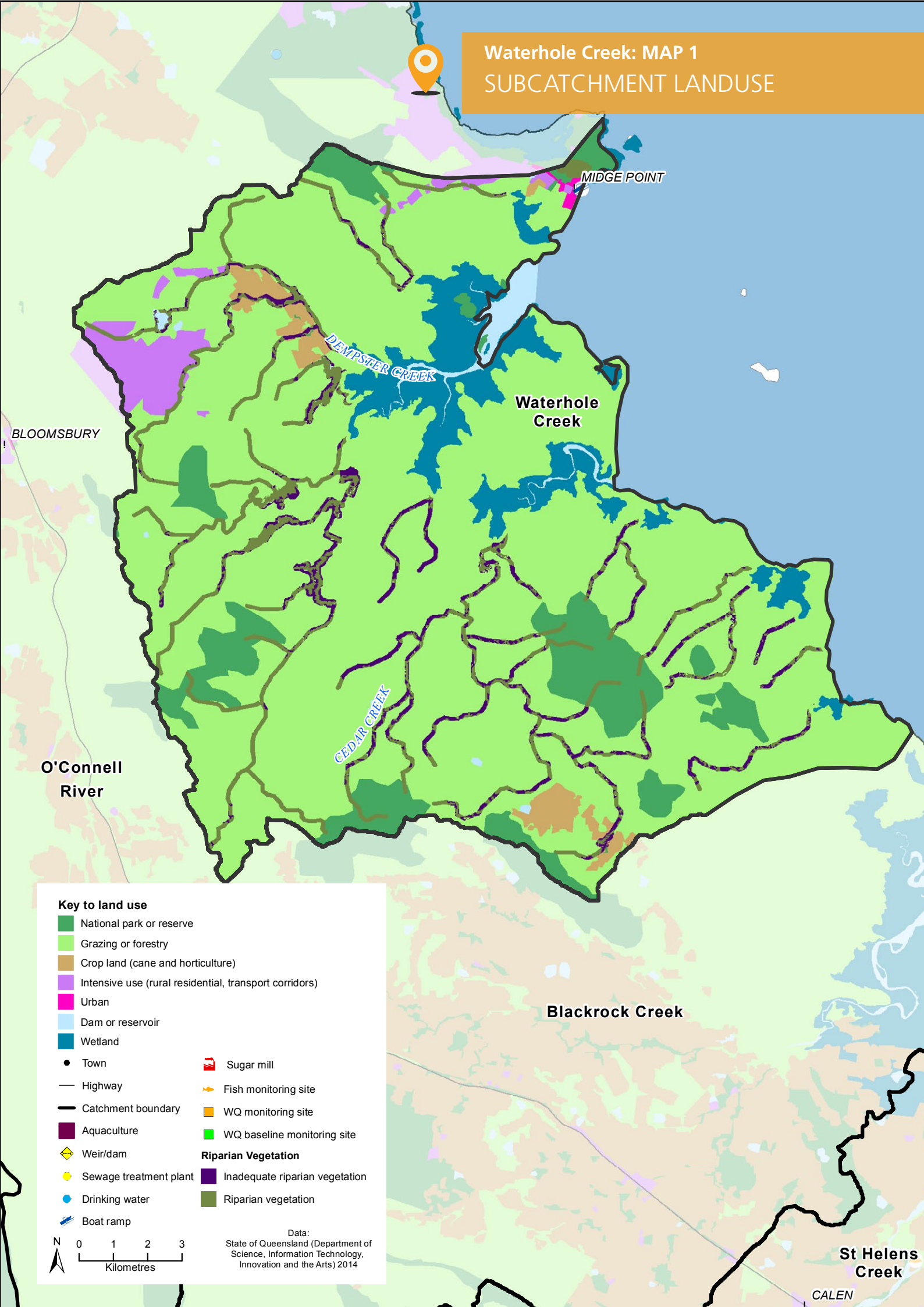
WATER QUALITY IMPROVEMENT PLAN 2014 - 2021

CATCHMENT MANAGEMENT AREA REPORT

12 Waterhole Creek

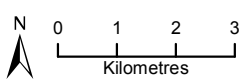


Waterhole Creek: MAP 1 SUBCATCHMENT LANDUSE



Key to land use

- National park or reserve
 - Grazing or forestry
 - Crop land (cane and horticulture)
 - Intensive use (rural residential, transport corridors)
 - Urban
 - Dam or reservoir
 - Wetland
 - Town
 - Highway
 - Catchment boundary
 - Aquaculture
 - Weir/dam
 - Sewage treatment plant
 - Drinking water
 - Boat ramp
 - Sugar mill
 - Fish monitoring site
 - WQ monitoring site
 - WQ baseline monitoring site
- Riparian Vegetation**
- Inadequate riparian vegetation
 - Riparian vegetation



Data:
State of Queensland (Department of
Science, Information Technology,
Innovation and the Arts) 2014

St Helens
Creek

CALEN

CATCHMENT MANAGEMENT AREA REPORT

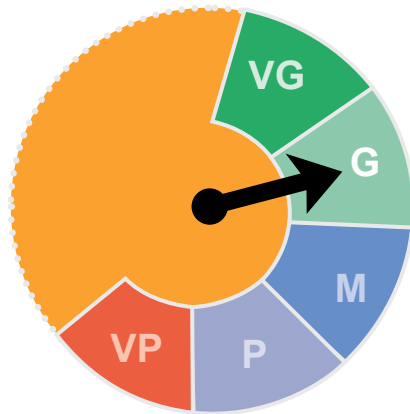
12 Waterhole Creek



Waterhole Creek Ecosystem Health Rating

■ Very Good
 ■ Good
 ■ Moderate
 ■ Poor
 ■ Very Poor

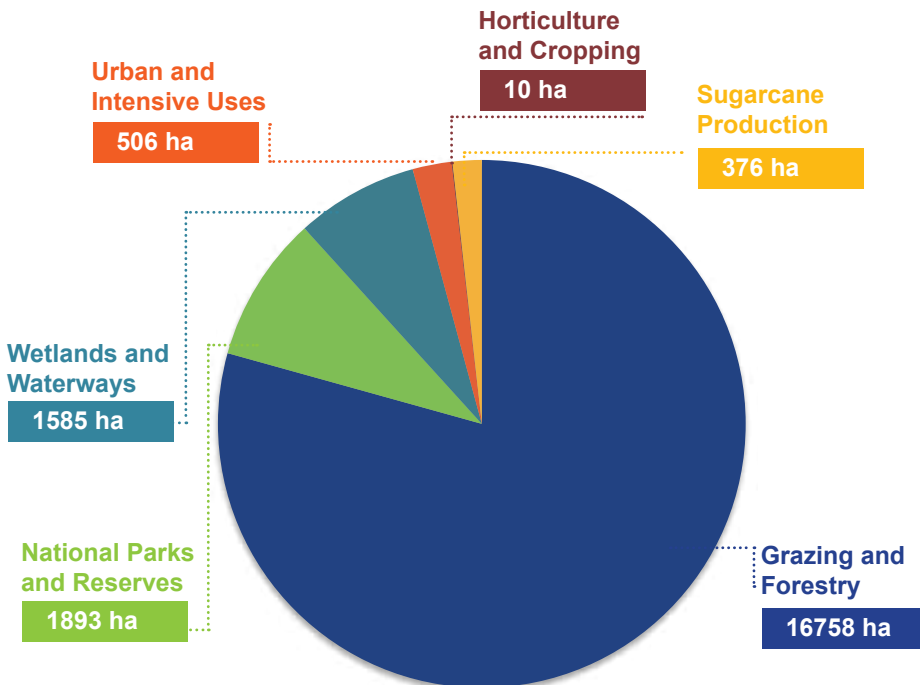
[FRESHWATER Ecosystem Health



G

The Waterhole Creek freshwater ecosystem received an overall score of **Good**.

[Total Area by Landuse



Total hectares Waterhole Creek

21128 ha

The Waterhole Creek catchment area extends across the coastal lowlands located between the townships of Midge Point to the north and St Helens to the south. Much of this coastal plain has been extensively cleared to support cattle production which extends over almost 80% of the catchment area. Riparian vegetation, mangroves and saltmarshes have been particularly impacted by past land management practices.

In 2007, the ecological condition of Waterhole Creek estuary was ranked as one of the highest in the region, with the freshwater system rated as being in good condition. Between 2007 and 2013, there have been considerable efforts to improve agricultural management by many of the catchments graziers.

Grazing management practices that reduce phosphorus loads are the highest priority for continued improvement of event water quality. Management practices that reduce other nutrients and residual herbicides are a moderate priority. System repair actions to restore riparian vegetation, saltmarshes and mangroves are of the highest priority to improve ecosystem health and protect and enhance the important estuarine areas of Waterhole Creek catchment area.

Table 1 [Subcatchment Freshwater Ecosystem Health Indicator Score: Current Condition 2014 and Target 2021

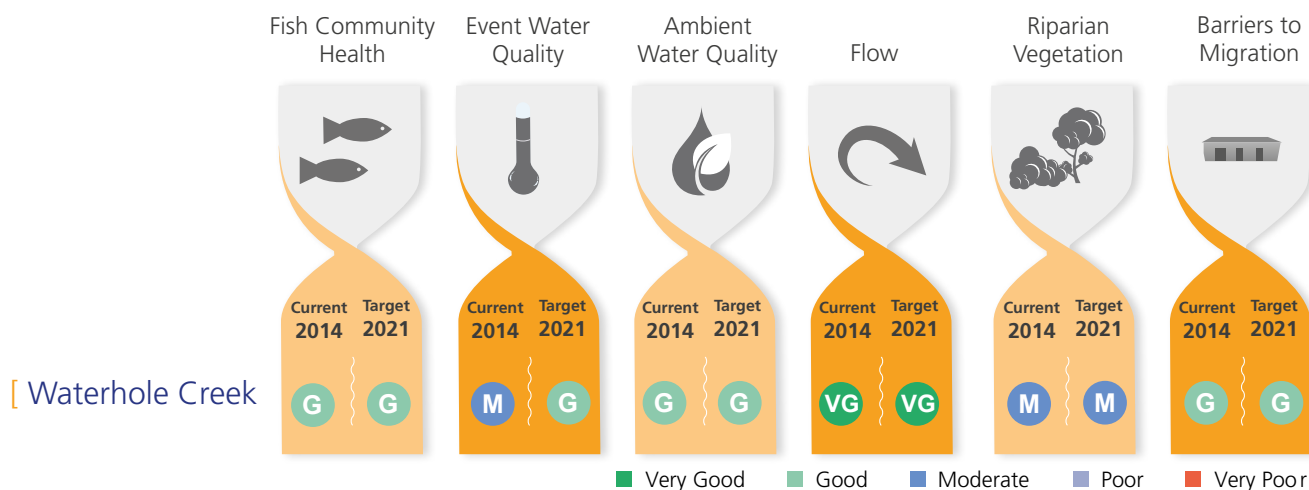


Table 1: OVERVIEW

This index presents the indicators chosen to assess the condition of freshwater ecosystem health. The index uses a combination of monitored data and expert opinion to provide a score for the current condition of fish community health, event water quality, ambient water quality, flow, riparian vegetation, and barriers to migration for each of the region's 33 catchment management areas. The table also presents the target for each indicator to be reached by 2021.

Table 2 [Event Freshwater Quality: Current Condition, Targets and Objectives

Key Pollutant	Current Condition	Target 2021	Objective 2050	Action	Pollutant Source
O'CONNELL RIVER SUBCATCHMENT					
Dissolved Inorganic Nitrogen µg/L	326	300	300	HIGH	CIU
Particulate Nitrogen µg/L	361	311	311	V HIGH	CIUG
Filterable Reactive Phosphorus µg/L	40	37	30	HIGH	CIU
Particulate Phosphorus µg/L	124	107	70	V HIGH	CIUG
Total Suspended Sediment mg/L	154	133	133	V HIGH	CIUG
Ametryn µg/L	<LOD	<LOD	<LOD	LOW	CIU
Atrazine µg/L	0.04	0.04	0.04	LOW	CIU
Diuron µg/L	0.16	0.16	0.16	LOW	CIU
Hexazinone µg/L	0.02	0.02	0.02	LOW	CIU
Tebuthiuron µg/L	0.18	0.10	0.02	V HIGH	G

C Cane IU Intensive Uses G Grazing

Table 2: OVERVIEW

This table presents the current condition (2014) event freshwater quality values for nutrients, sediment, and herbicides. It also presents water quality targets for 2021 and 2050 water quality objectives that have been calculated based on an achievable level of adoption of improved management practices and the level of effort that will be required ("Action"). For each of the pollutants listed, the table also identifies the main pollutant source.

Table 3 Action Targets: Ecosystem Health Management

L = Low, M = Moderate, H = High





		Condition 2014	Planned Activities to 2021	Effort	\$ Cost
Waterhole Creek					
Barriers (number)		2	0	L	\$0
Riparian Vegetation Management (hectares)		1158 ha	17 ha	H	\$217,000
Bank and bed stabilisation (kilometres)		n/a	8	H	\$768,000
In-stream Habitat Works (number)		n/a	2	H	\$40,000
Total Cost = \$1,025,000					

Table 3: OVERVIEW

This table presents the on-ground management actions determined to be required to improve ecosystem health, including the removal of barriers to fish migration, establishment of riparian vegetation, bank stabilisation, and in-stream habitat works. The table displays the current condition for each component, as well as the planned activities to be completed by 2021, the level of effort required and associated costs.

Tables 4 and 5: OVERVIEW

The tables below display the current level of management practices for Sugarcane/ Horticulture, Grazing, and Urban within D, C, B and A Management Framework classifications at 2014. The table also presents the level of voluntary adoption of management practices required to meet 2021 objectives and their associated costs.

Table 4 Agriculture ABCD Adoption Targets

Land Use		2014 Adoption %				2021 Adoption %				Total Cost \$ '000s
		D	C	B	A	D	C	B	A	
WATERHOLE CREEK										
Cane & Horticulture	Soil	35%	45%	15%	5%	30%	45%	20%	5%	5
	Nutrient	40%	45%	10%	5%	20%	30%	45%	5%	52
	Herbicide	40%	45%	10%	5%	35%	35%	25%	5%	22
Grazing	Soil	24%	35%	36%	5%	20%	35%	35%	10%	0

D Dated practice C Common practice B Best practice A Cutting-edge practice

Table 5 Urban Practice ABCD Adoption Targets

Land Use		2014 Adoption %				2021 Adoption %				Total Cost \$ '000s
		D	C	B	A	D	C	B	A	
WATERHOLE CREEK SUBCATCHMENT										
Diffuse Source Water Quality - DEVELOPMENT PLANNING AND CONSTRUCTION PHASE		20%	80%	0%	0%	0%	50%	40%	10%	360
Diffuse Source Water Quality - POST-CONSTRUCTION/ OPERATIONAL PHASE		15%	85%	0%	0%	0%	50%	40%	10%	360

D Dated practices C Conventional practices B Best practices A Aspirational