



WATER QUALITY IMPROVEMENT PLAN 2014 - 2021

CATCHMENT MANAGEMENT AREA REPORT

22 Bakers Creek

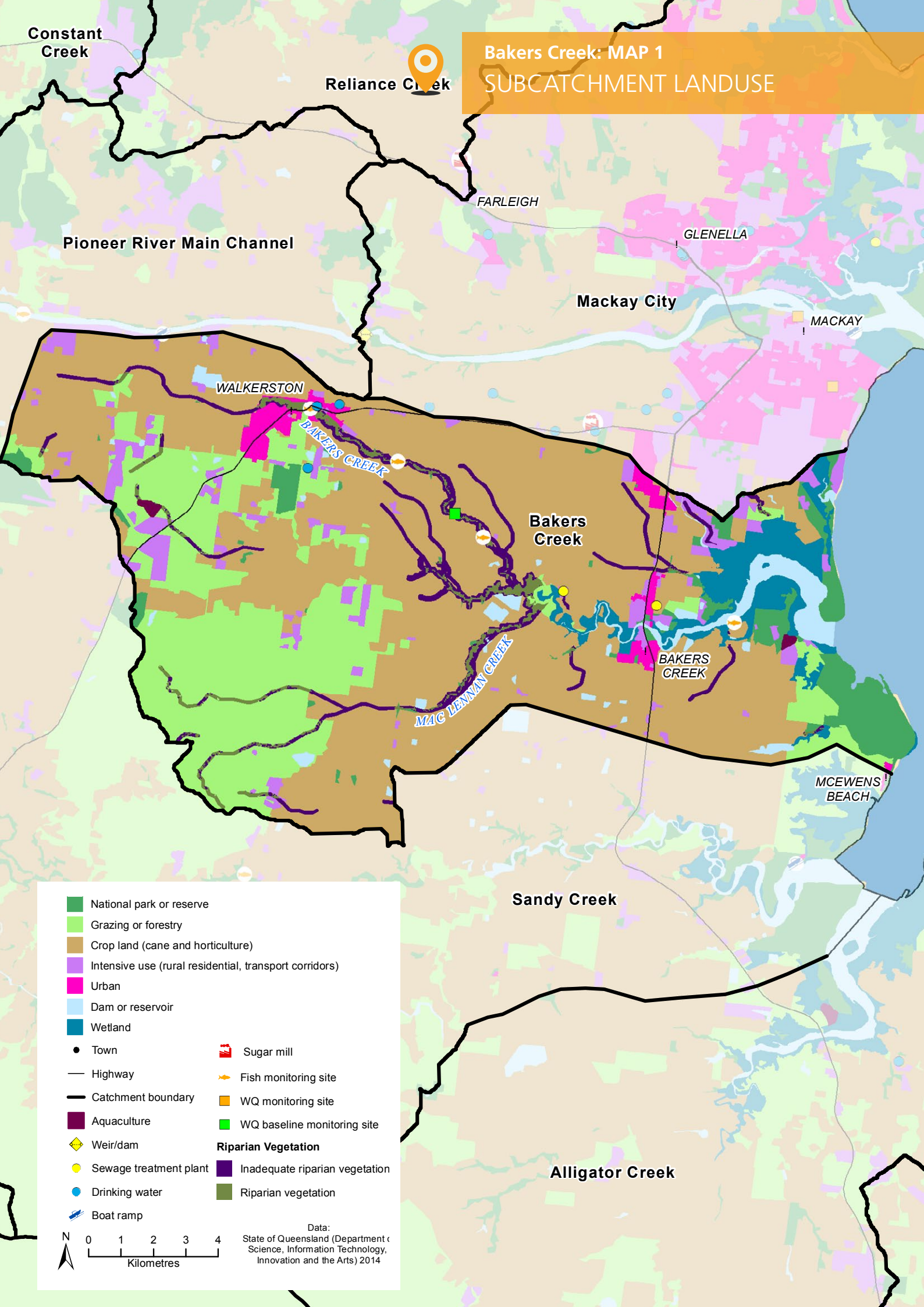


Constant Creek

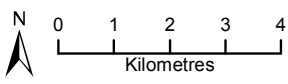
Reliance Creek

Bakers Creek: MAP 1

SUBCATCHMENT LANDUSE



- National park or reserve
- Grazing or forestry
- Crop land (cane and horticulture)
- Intensive use (rural residential, transport corridors)
- Urban
- Dam or reservoir
- Wetland
- Town
- Sugar mill
- Highway
- Catchment boundary
- Aquaculture
- Weir/dam
- Sewage treatment plant
- Drinking water
- Boat ramp
- 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

CATCHMENT MANAGEMENT AREA REPORT

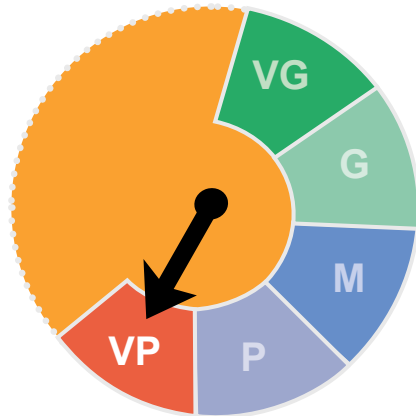
22 Bakers Creek



Bakers Creek

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

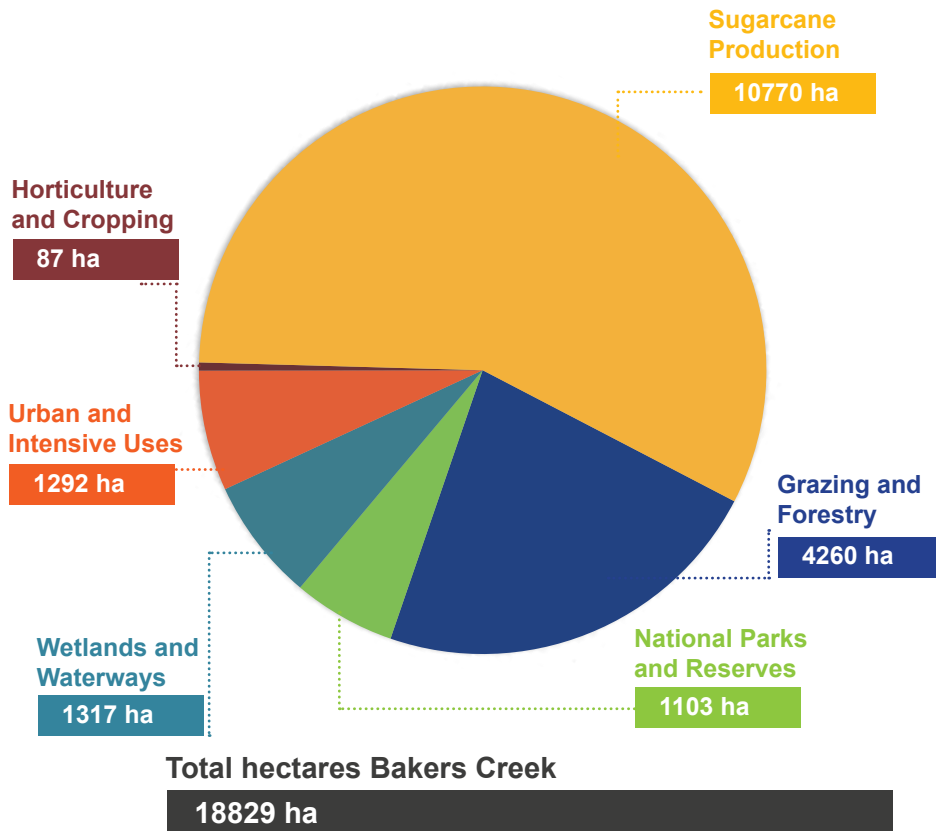
FRESHWATER Ecosystem Health



VP

The Bakers Creek **freshwater ecosystem** received an overall score of **Very Poor**.

Total Area by Landuse



The Bakers Creek catchment area drains the coastal floodplain surrounding the township of Walkerston. Bakers Creek flows eastward, entering the sea at Sandringham Bay. The catchment landscape is an expansive flat floodplain traversed by irrigation and drainage channels that have modified natural flow to provide water to farms. While the riparian vegetation in the upper catchment has been extensively cleared, the lower reaches have maintained moderate riparian condition and extent.

To ensure ongoing improvement of water quality the reduction in particulate and filterable reactive phosphorus remain the highest priority in the Bakers Creek catchment area. With marine risk exposure from pesticide and nutrient loads rated as high in the near shore environments to the estuary, management practices that reduce other nutrients and residual herbicides, particularly diuron, are also a high priority.

All system repair actions that improve fish habitat and species diversity and abundance are critical to improve the poor ecological health rating for the Bakers Creek catchment area. Riparian vegetation restoration and connectivity is also a high priority to support fish communities and stabilise the stream bed and banks for improved water quality. Prioritisation and investment in mangrove and saltmarsh rehabilitation are also crucial to halt degradation and initiate recovery of these coastal systems for fisheries productivity.

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

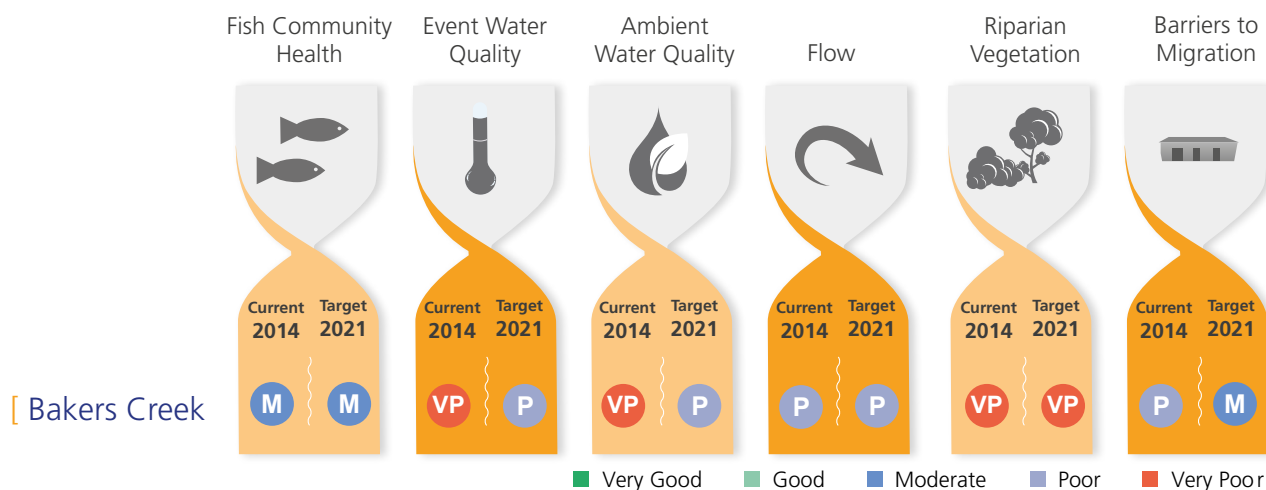


Table 1: OVERVIEW

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
BAKERS CREEK SUBCATCHMENT					
Dissolved Inorganic Nitrogen µg/L	583	460	300	HIGH	CIU
Particulate Nitrogen µg/L	272	215	215	HIGH	CIUG
Filterable Reactive Phosphorus µg/L	207	163	30	HIGH	CIU
Particulate Phosphorus µg/L	124	98	70	HIGH	CIUG
Total Suspended Sediment mg/L	45	36	36	HIGH	CIUG
Ametryn µg/L	0.08	0.07	0.02	MEDIUM	CIU
Atrazine µg/L	0.79	0.75	0.70	LOW	CIU
Diuron µg/L	1.01	0.80	0.30	LOW	CIU
Hexazinone µg/L	0.53	0.45	0.20	MEDIUM	CIU
Tebuthiuron µg/L	<LOD	<LOD	<LOD	LOW	G

C Cane I U 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
Bakers Creek					
Barriers (number)		25	2	L	\$105,000
Riparian Vegetation Management (hectares)		294 ha	0 ha	L	\$0
Bank and bed stabilisation (kilometres)		n/a	0	L	\$0
In-stream Habitat Works (number)		n/a	0	L	\$0
Total Cost = \$105,000					

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	
BAKERS CREEK SUBCATCHMENT										
Cane & Horticulture	Soil	5%	9%	56%	30%	5%	5%	55%	35%	117
	Nutrient	20%	32%	41%	8%	5%	20%	65%	10%	1114
	Herbicide	3%	6%	73%	17%	5%	5%	70%	20%	0
Grazing	Soil	25%	34%	36%	5%	20%	25%	50%	5%	164

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	
BAKERS CREEK SUBCATCHMENT										
Diffuse Source Water Quality - DEVELOPMENT PLANNING AND CONSTRUCTION PHASE		20%	80%	0%	0%	0%	50%	40%	10%	921
Diffuse Source Water Quality - POST-CONSTRUCTION/ OPERATIONAL PHASE		10%	85%	5%	0%	0%	50%	40%	10%	828

D Dated practices **C** Conventional practices **B** Best practices **A** Aspirational