



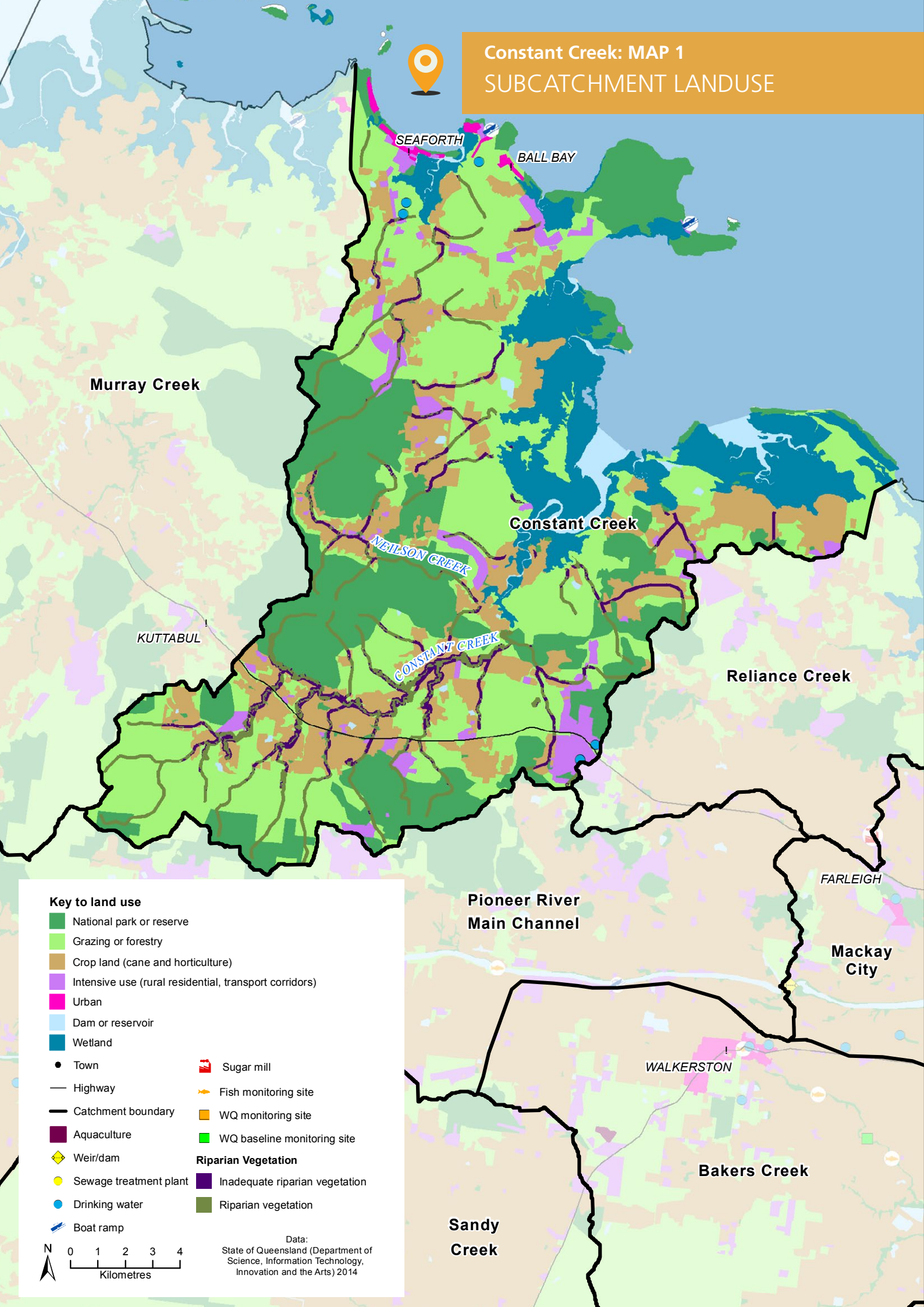
WATER QUALITY IMPROVEMENT PLAN 2014 - 2021

CATCHMENT MANAGEMENT AREA REPORT

16 Constant Creek

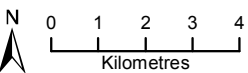


Constant Creek: MAP 1 SUBCATCHMENT LANDUSE



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

CATCHMENT MANAGEMENT AREA REPORT

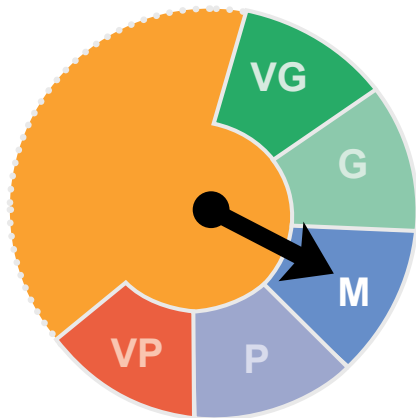
16 Constant Creek



Constant Creek Ecosystem Health Rating

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

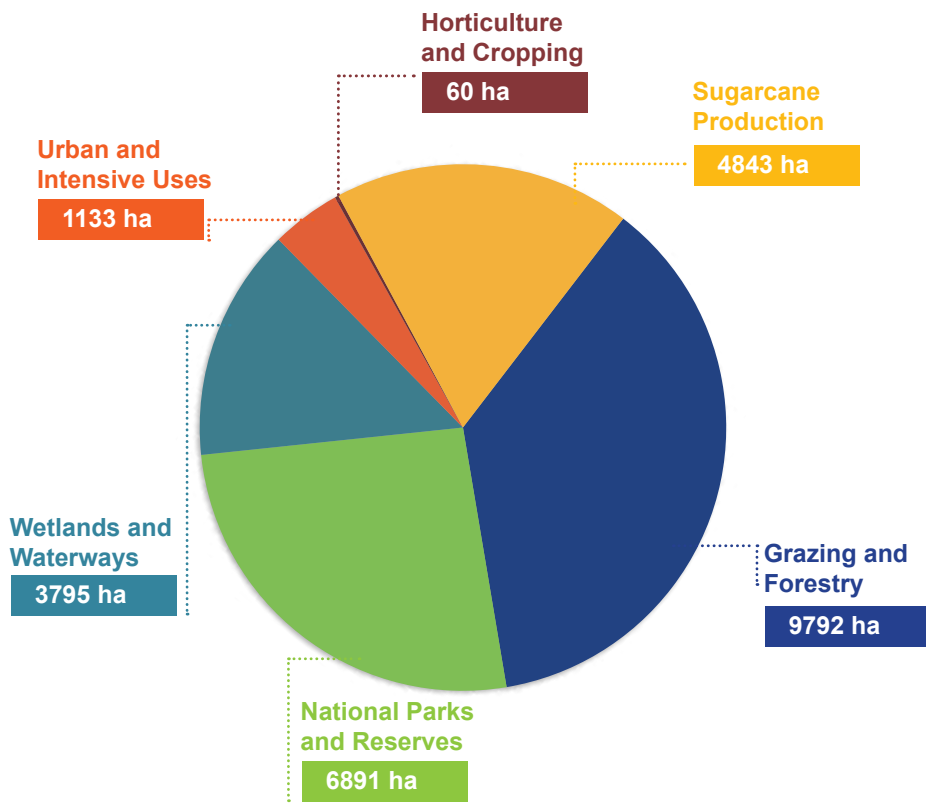
FRESHWATER Ecosystem Health



M

The Constant Creek **freshwater ecosystem** received an overall score of **Moderate**.

Total Area by Landuse



Total hectares Constant Creek

26514 ha

The Constant Creek catchment area drains into the Sand Bay nationally important wetland and Sand Bay Declared Fish Habitat and Dugong Protection Area. The estuary and receiving marine waters support mangroves, intertidal flats and seagrass beds. The catchment supports diverse land use; 30% grazing, 19% cane, 38% wetland and National Park. Over time, clearing for agricultural production in the catchment has impacted water quality as well as riparian habitat, affecting fish community abundance and diversity.

Grazing and cane management practices that reduce nitrogen and phosphorus loads are the highest priority for continued improvement of water quality. As marine risk exposure from pesticide and nutrient loads has been rated as high in the near shore environments, management practices that reduce other nutrients and residual herbicides are also a priority.

All system repair actions that improve fish habitat and species diversity and abundance are critical to improve the ecological health rating for Constant Creek. Riparian vegetation restoration and connectivity is also a high priority to support fish communities and stabilise 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 and reduce marine risk exposure.

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

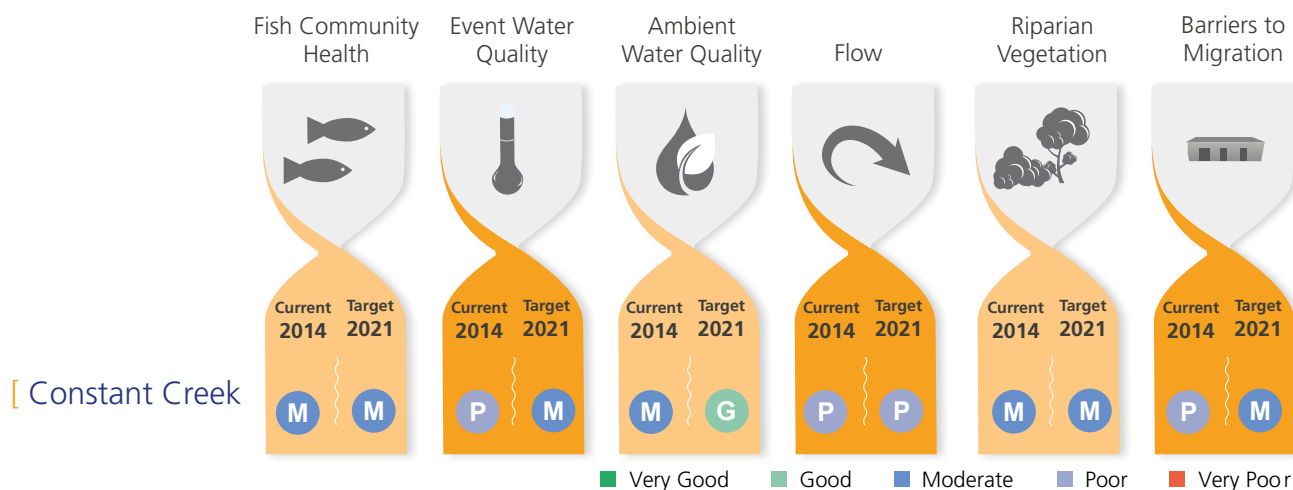


Table 1: OVERVIEW

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
CONSTANT CREEK SUBCATCHMENT					
Dissolved Inorganic Nitrogen µg/L	508	469	300	MEDIUM	CIU
Particulate Nitrogen µg/L	243	243	243	LOW	CIUG
Filterable Reactive Phosphorus µg/L	53	49	30	MEDIUM	CIU
Particulate Phosphorus µg/L	58	58	58	LOW	CIUG
Total Suspended Sediment mg/L	56	56	56	LOW	CIUG
Ametryn µg/L	0.05	0.05	0.05	LOW	CIU
Atrazine µg/L	0.23	0.23	0.23	LOW	CIU
Diuron µg/L	0.70	0.64	0.30	MEDIUM	CIU
Hexazinone µg/L	0.27	0.25	0.20	MEDIUM	CIU
Tebuthiuron µg/L	<LOD	<LOD	<LOD	LOW	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
Constant Creek					
Barriers (number)		12	2	M	\$140,000
Riparian Vegetation Management (hectares)		1171 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 = \$140,000					

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	
CONSTANT CREEK SUBCATCHMENT										
Cane & Horticulture	Soil	2%	2%	91%	5%	5%	5%	85%	5%	0
	Nutrient	12%	21%	62%	5%	5%	20%	70%	5%	150
	Herbicide	3%	6%	78%	13%	5%	5%	75%	15%	0
Grazing	Soil	25%	2%	68%	5%	25%	5%	65%	5%	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	
CONSTANT CREEK SUBCATCHMENT										
Diffuse Source Water Quality - DEVELOPMENT PLANNING AND CONSTRUCTION PHASE		20%	80%	0%	0%	0%	50%	40%	10%	807
Diffuse Source Water Quality - POST-CONSTRUCTION/ OPERATIONAL PHASE		15%	85%	0%	0%	0%	50%	40%	10%	807

D Dated practices C Conventional practices B Best practices A Aspirational