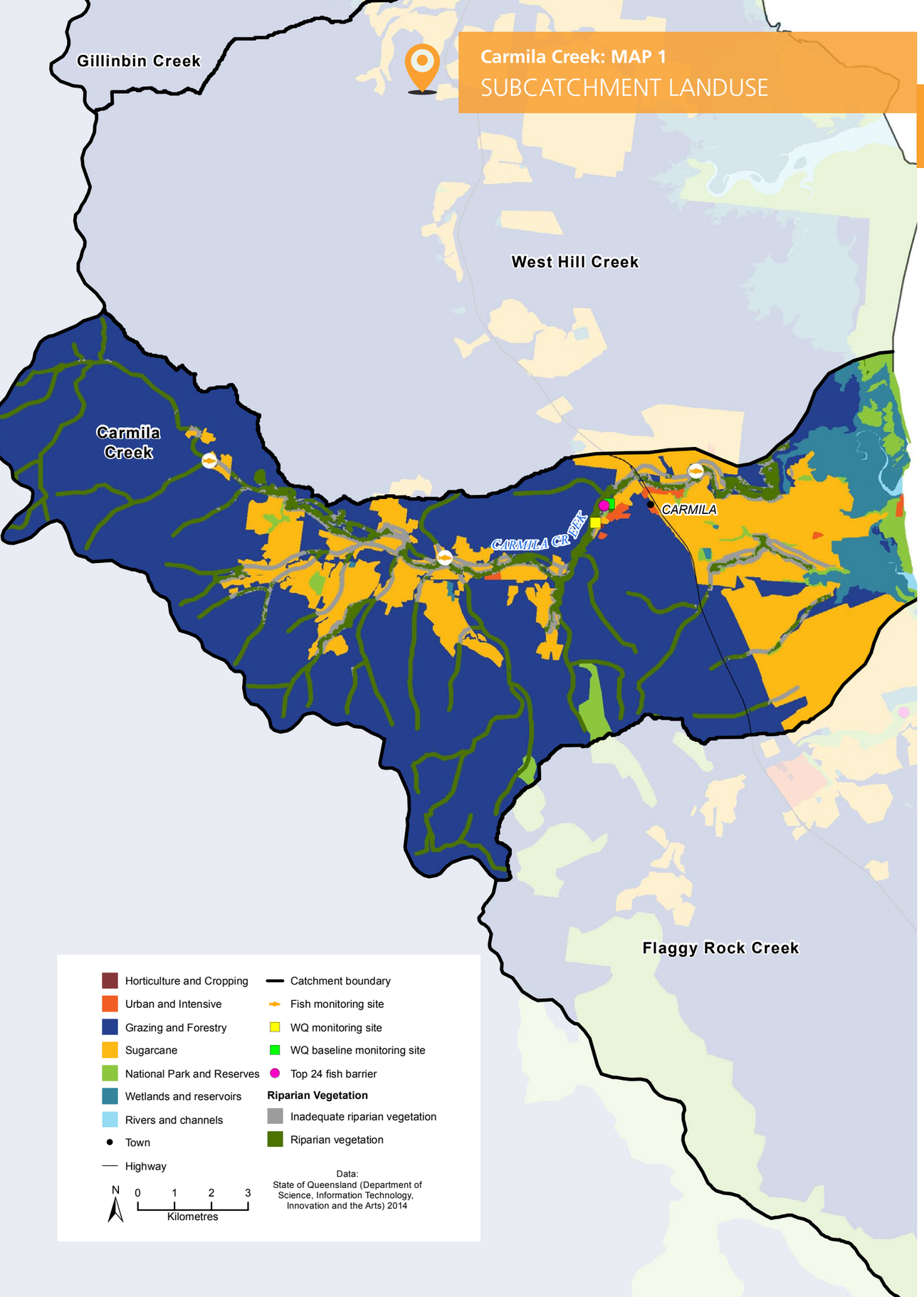
WATER QUALITY IMPROVEMENT PLAN 2014 - 2021

CATCHMENT MANAGEMENT AREA REPORT

32 Carmila Creek



Carmila Creek: MAP 1
SUBCATCHMENT LANDUSE

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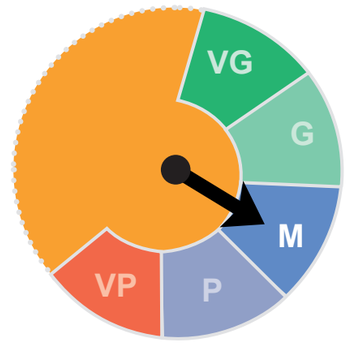
Carmila Creek Ecosystem Health Rating

Very Good | Good | Moderate | Poor | Very Poor

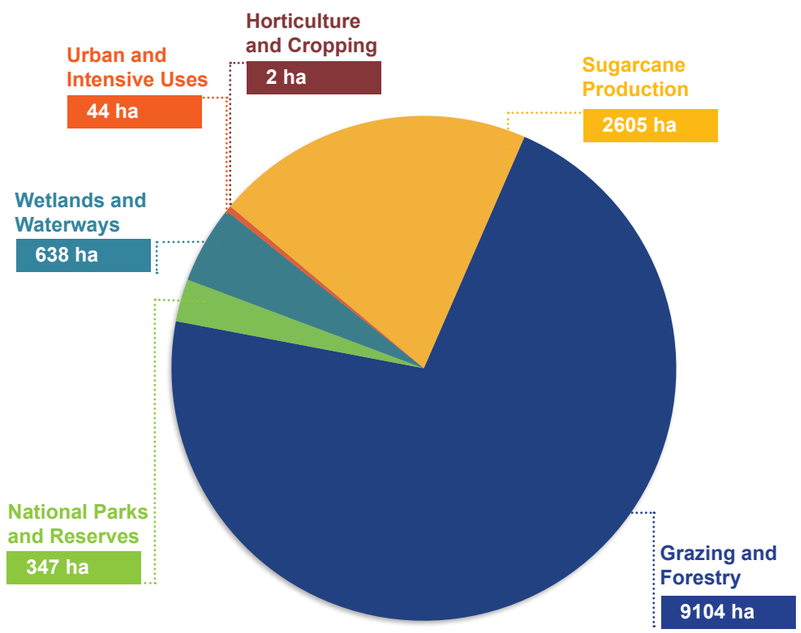


FRESHWATER
Ecosystem Health

M

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

Total Area by Landuse



Total hectares Carmila Creek
12740 ha

The Carmila Creek catchment drains from a low elevation in the foothills of the Clarke Range joining the High Ecological Value waters of Great Barrier Reef lagoon to the east. The creek mouth is anchored by shelly beachrock that also helps protect the offshore Flat Islands and extensive tidal flats. Carmila Creek catchment area supports an extensive grazing industry that accounts for 75% of the local landuse. The floodplains adjoining the coastal wetlands and the creek margins are dominated by cane production occupying 19% of the catchment.

Grazing management practices that reduce dissolved inorganic nitrogen loads are the highest priority for improving event water quality in the Carmila Creek catchment area. Management practices that reduce other nutrients and residual herbicides are a moderate priority.

Improving the condition of the estuary is a high priority for this catchment. A significant increase in investment towards active management and restoration of instream habitat and riparian vegetation is required to enable fish communities to gain the maximum benefits from the improvement in freshwater quality.

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

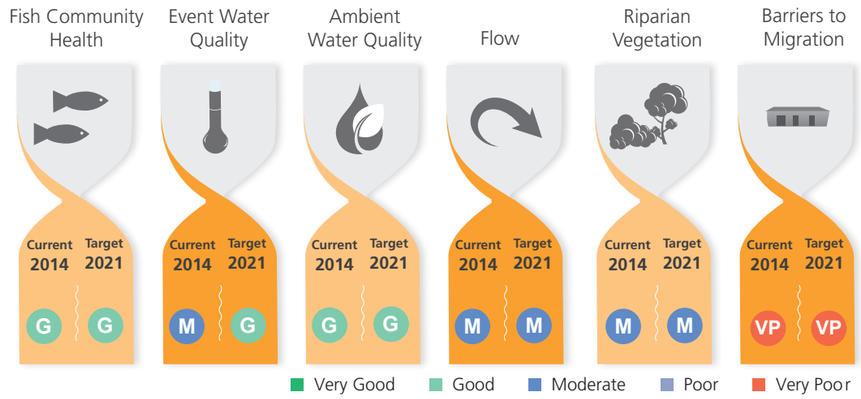


Table 1: OVERVIEW

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
CARMILA CREEK SUBCATCHMENT					
Dissolved Inorganic Nitrogen µg/L	518	465	300	HIGH	CIU
Particulate Nitrogen µg/L	243	243	243	LOW	CIUG
Filterable Reactive Phosphorus µg/L	30	27	27	HIGH	CIU
Particulate Phosphorus µg/L	50	50	50	LOW	CIUG
Total Suspended Sediment mg/L	37	37	37	LOW	CIUG
Ametryn µg/L	<LOD	<LOD	<LOD	LOW	CIU
Atrazine µg/L	0.05	0.04	0.04	HIGH	CIU
Diuron µg/L	0.53	0.46	0.20	HIGH	CIU
Hexazinone µg/L	0.27	0.23	0.20	HIGH	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
	Carmila Creek			
Barriers (number)	22	0	L	$0
Riparian Vegetation Management (hectares)	1176 ha	17 ha	H	$220,000
Bank and bed stabilisation (kilometres)	n/a	7	H	$790,000
In-stream Habitat Works (number)	n/a	2	H	$39,000
			Total Cost = $1,049,000	

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.

Table 4: OVERVIEW

The table below displays 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	
CARMILA CREEK SUBCATCHMENT										
Cane & Horticulture	Soil	18%	20%	44%	19%	15%	20%	40%	25%	0
	Nutrient	20%	21%	37%	22%	10%	20%	45%	25%	112
	Herbicide	10%	40%	46%	5%	5%	30%	60%	5%	146
Grazing	Soil	25%	26%	44%	5%	25%	25%	45%	5%	27

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