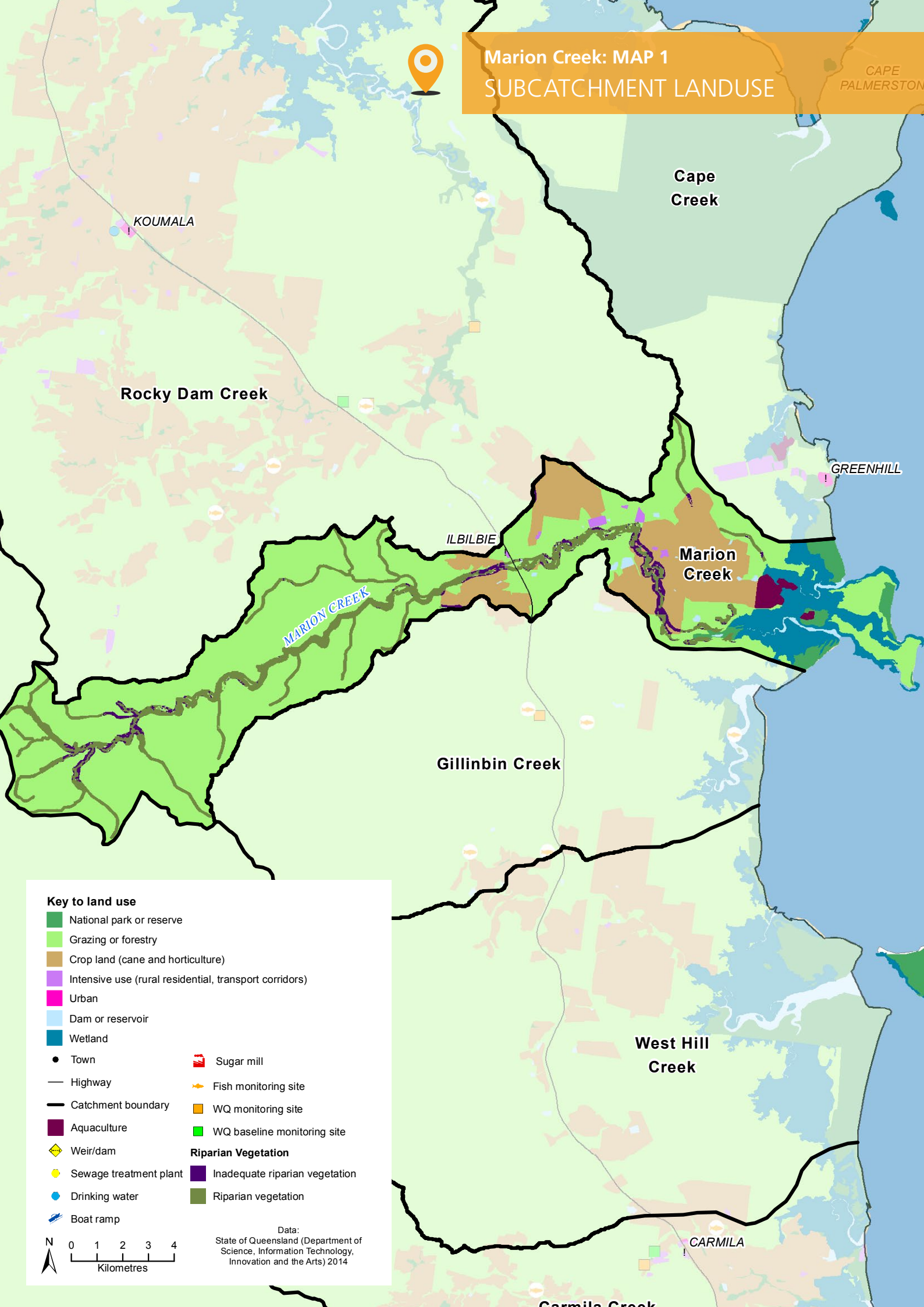
WATER QUALITY IMPROVEMENT PLAN 2014 - 2021

CATCHMENT MANAGEMENT AREA REPORT

29 Marion Creek


Marion Creek: MAP 1
SUBCATCHMENT LANDUSE
CAPE PALMERSTON
Cape Creek
KOUMALA
Rocky Dam Creek
GREENHILL
ILBILBIE
Marion Creek
MARION CREEK
Gillinbin Creek
West Hill Creek
CARMILA
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
N
0 1 2 3 4
Kilometres
Data:
State of Queensland (Department of Science, Information Technology, Innovation and the Arts) 2014

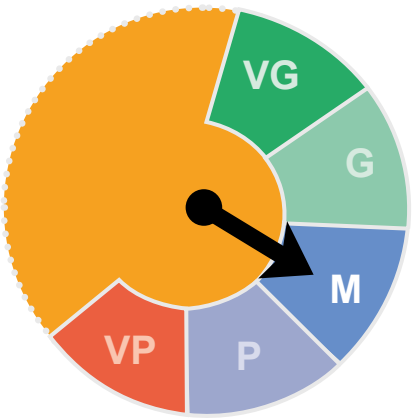
CATCHMENT MANAGEMENT AREA REPORT

29 Marion Creek

Marion Creek Ecosystem Health Rating

Very Good | Good | Moderate | Poor | Very Poor

FRESHWATER
Ecosystem Health



M

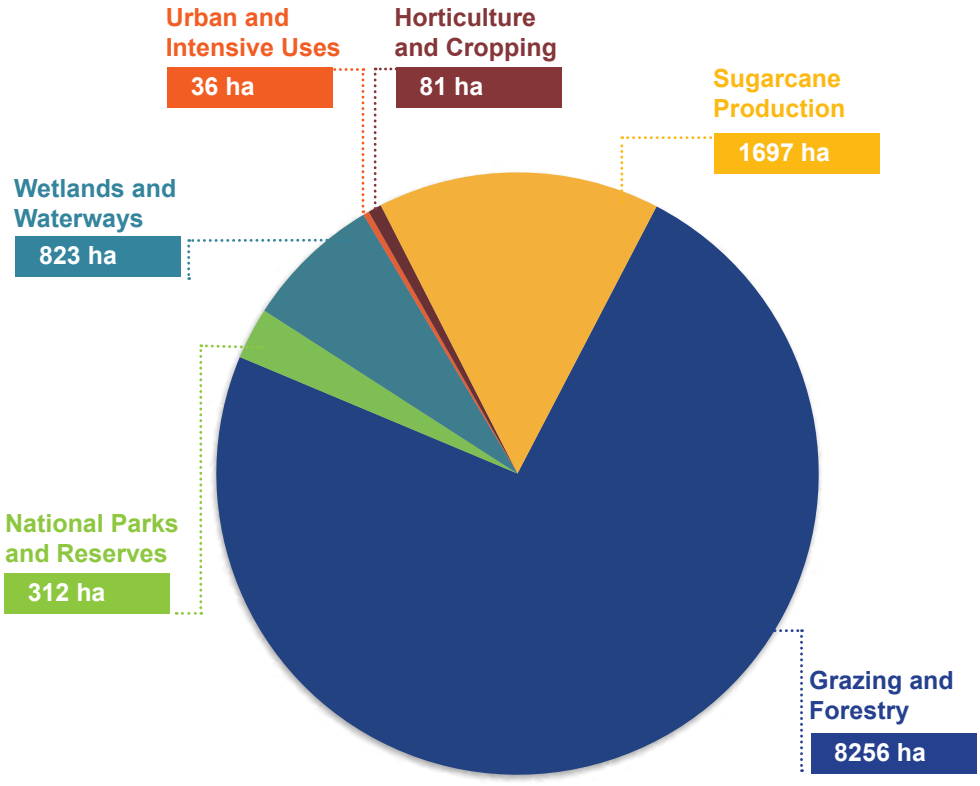
The Marion Creek **freshwater ecosystem** received an overall score of **Moderate.**

Marion Creek flows east from the High Ecological Value highlands of the Clarke Range to enter the Coral Sea in a wide estuary near Yarrawonga Point. Marion Creek catchment is largely dominated by agricultural production with 79% of the area supporting grazing and 13% under cane production.

Grazing management practices that reduce particulate phosphorus loads will continue to be addressed for better event water quality. Management practices that reduce atrazine, hexazinone and diuron loads are also priority for the Marion Creek catchment area.

All system repair actions that support an improvement in fish communities are the highest priority. Future management efforts need to focus on active management and restoration of instream habitat and riparian vegetation. Efforts also need to ensure coastal wetlands and the estuarine areas are managed to improve the estuarine ecological health ratings. This will require efforts where grazing land management activities occur adjacent to remnant wetlands and on coastal headland areas.

Total Area by Landuse



Total hectares Marion Creek

11204 ha

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

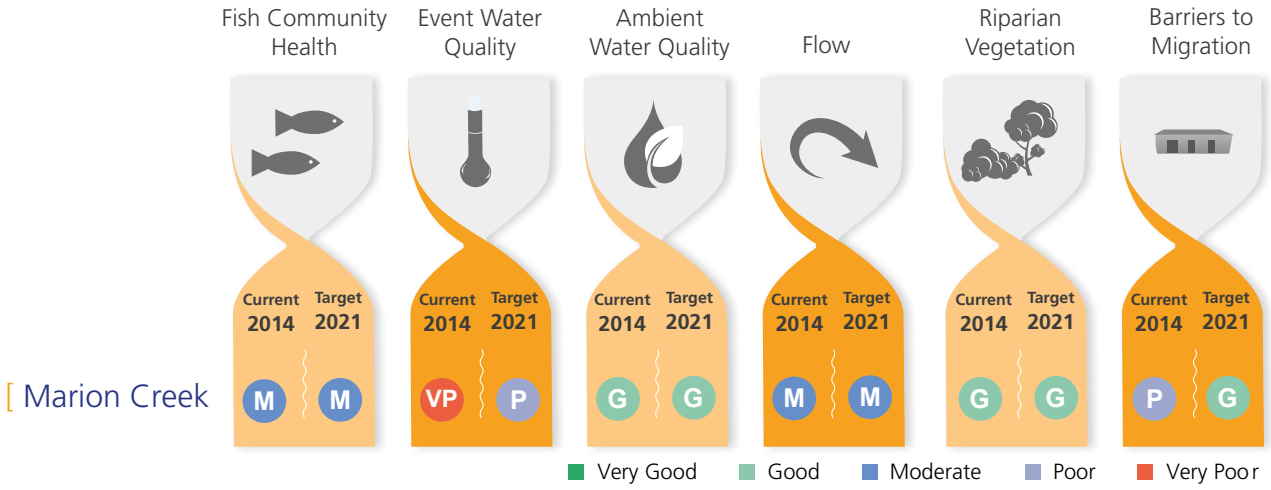


Table 1: OVERVIEW

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
MARION CREEK SUB CATCHMENT					
Dissolved Inorganic Nitrogen µg/L	413	366	300	HIGH	CIU
Particulate Nitrogen µg/L	501	327	327	V HIGH	CIUG
Filterable Reactive Phosphorus µg/L	40	35	30	HIGH	CIU
Particulate Phosphorus µg/L	231	151	70	V HIGH	CIUG
Total Suspended Sediment mg/L	118	77	77	V HIGH	CIUG
Ametryn µg/L	<LOD	<LOD	<LOD	LOW	CIU
Atrazine µg/L	0.19	0.18	0.18	MEDIUM	CIU
Diuron µg/L	0.61	0.55	0.20	MEDIUM	CIU
Hexazinone µg/L	0.22	0.21	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
		Marion Creek			
Barriers **(number)**		4	2	H	$100,000
Riparian Vegetation Management **(hectares)**		1061 ha	16 ha	H	$198,000
Bank and bed stabilisation **(kilometres)**		n/a	0	L	$0
In-stream Habitat Works **(number)**		n/a	0	L	$0
				Total Cost = $298,000	

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	
MARION CREEK SUB CATCHMENT										
Cane & Horticulture	Soil	7%	12%	52%	29%	5%	5%	55%	35%	41
	Nutrient	24%	20%	51%	5%	10%	5%	80%	5%	190
	Herbicide	5%	19%	71%	5%	5%	15%	75%	5%	25
Grazing	Soil	30%	32%	34%	5%	10%	10%	75%	5%	728

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