WATER QUALITY IMPROVEMENT PLAN 2014 - 2021

CATCHMENT MANAGEMENT AREA REPORT

6 Proserpine River Main Channel

Whitsunday Coast
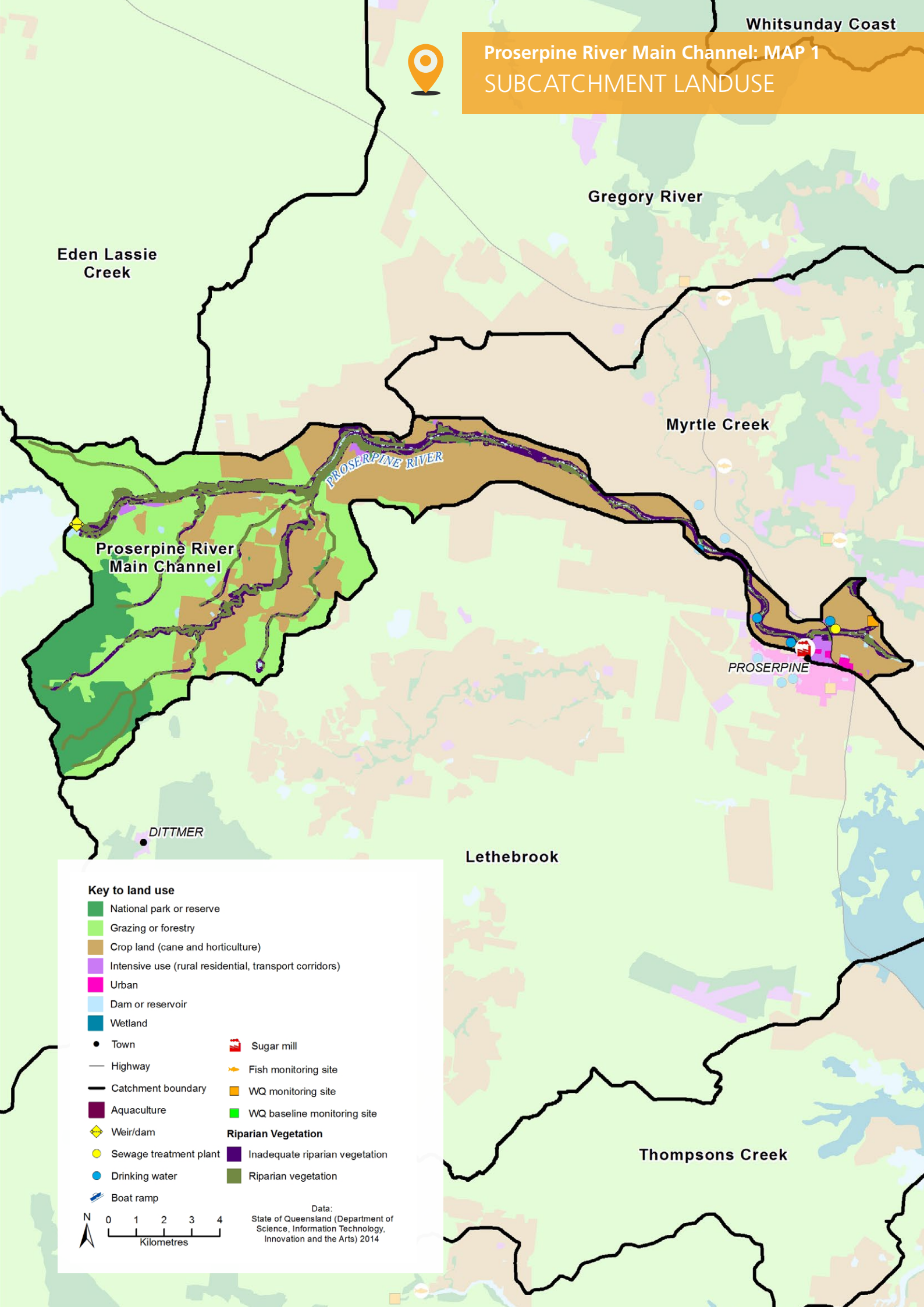
Gregory River

Eden Lassie Creek

Myrtle Creek

PROSERPINE RIVER

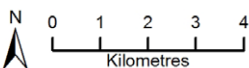Proserpine River Main Channel

PROSERPINE

DITTMER

Lethebrook

Thompsons Creek

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
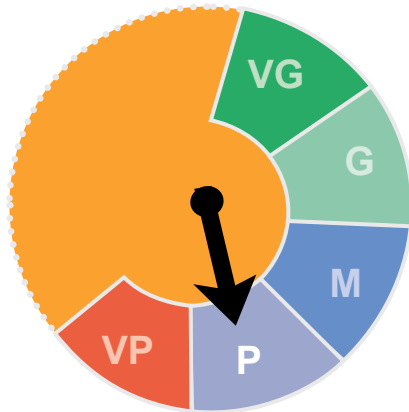
6 Proserpine River Main Channel

Proserpine River Main Channel Ecosystem Health Rating

■ Very Good   ■ Good   ■ Moderate   ■ Poor   ■ Very Poor
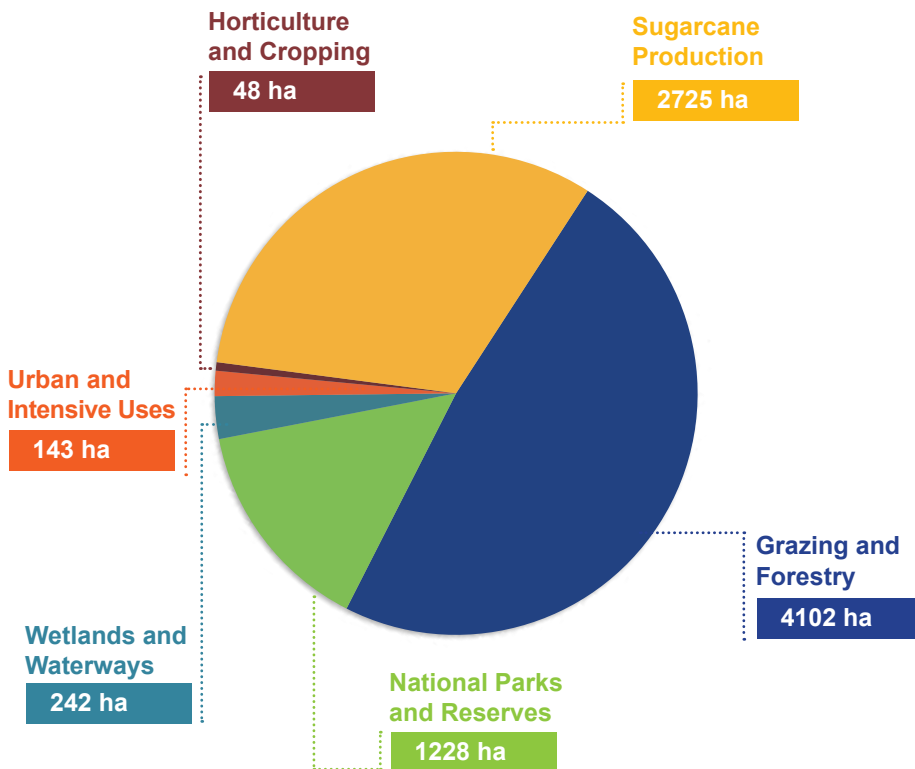
VG
G
M
P
VP

FRESHWATER
Ecosystem Health

P

The Proserpine River Main Channel **freshwater ecosystem** received an overall score of **Poor.**

The Proserpine River Main Channel catchment drains an area dominated by grazing, with extensive irrigated cane production on the lowland coastal plain. Urban and industrial impacts from the town of Proserpine place additional pressure on water quality and ecosystem health. Downstream ecological health has also been compromised by channel modification between Proserpine and the estuary. Flow patterns are highly altered by the management of Peter Faust Dam that occupies the headwaters of the Upper Proserpine River catchment area.

Grazing and sugar cane management practices that reduce dissolved inorganic nitrogen loads are the highest priority for ongoing improvment of water quality. Management practices that reduce other nutrients and residual herbicides, particularly diuron, are also a priority.

Total Area by Landuse

Horticulture and Cropping
48 ha

Sugarcane Production
2725 ha

Urban and Intensive Uses
143 ha

Wetlands and Waterways
242 ha

National Parks and Reserves
1228 ha

Grazing and Forestry
4102 ha

Total hectares Proserpine River Main Channel
8488 ha

All system repair actions that improve fish habitat and passage are critical to improve the poor ecological health rating for the Proserpine River Main Channel catchment. Improving riparian vegetation condition and connectivity and bed and bank stability will enhance habitat potential and protect production land. A significant commitment to manage flows in this regulated system is required to enable fish communities to gain the maximum benefits from the improvement in water quality.

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

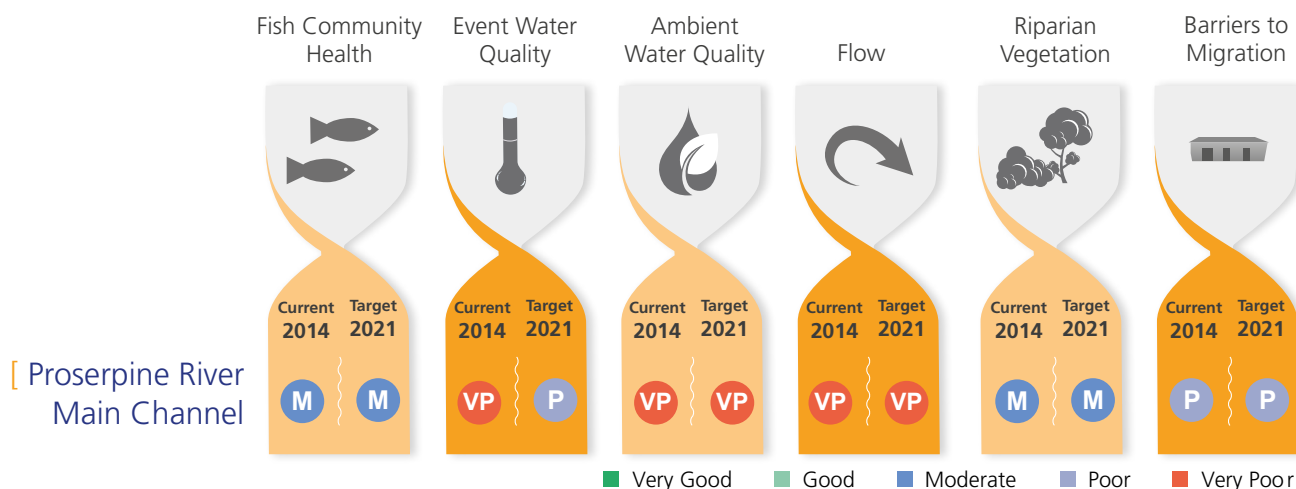|	Fish Community Health	Event Water Quality	Ambient Water Quality	Flow	Riparian Vegetation	Barriers to Migration
	Current 2014 / Target 2021	Current 2014 / Target 2021	Current 2014 / Target 2021	Current 2014 / Target 2021	Current 2014 / Target 2021	Current 2014 / Target 2021
[Proserpine River Main Channel	M / M	VP / P	VP / VP	VP / VP	M / M	P / P

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

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
PROSERPINE RIVER MAIN CHANNEL SUBCATCHMENT					
Dissolved Inorganic Nitrogen µg/L	1991	300	300	V HIGH	CIU
Particulate Nitrogen µg/L	302	302	302	LOW	CIUG
Filterable Reactive Phosphorus µg/L	43	43	30	HIGH	CIU
Particulate Phosphorus µg/L	60	60	60	LOW	CIUG
Total Suspended Sediment mg/L	146	146	146	LOW	CIUG
Ametryn µg/L	<LOD	<LOD	<LOD	LOW	CIU
Atrazine µg/L	0.27	0.26	0.26	MEDIUM	CIU
Diuron µg/L	1.07	0.96	0.30	MEDIUM	CIU
Hexazinone µg/L	0.20	0.19	0.19	MEDIUM	CIU
Tebuthiuron µg/L	0.48	0.41	0.02	MEDIUM	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
Proserpine River Main Channel				
Barriers (number)	8	0	L	$0
Riparian Vegetation Management (hectares)	867 ha	0	L	$0
Bank and bed stabilisation (kilometres)	n/a	0	L	$0
In-stream Habitat Works (number)	n/a	0	L	$0
			Total Cost =	**$0**

Table 4 — Agriculture ABCD Adoption Targets

Land Use		2014 Adoption %				2021 Adoption %				Total Cost $ '000s
		D	C	B	A	D	C	B	A	
PROSERPINE RIVER MAIN CHANNEL SUB CATCHMENT										
Cane & Horticulture	Soil	4%	11%%	41%	44%	5%	10%	40%	45%	2
	Nutrient	4%	6%	51%	38%	5%	5%	45%	45%	5
	Herbicide	12%	18%	65%	5%	10%	15%	70%	5%	49
Grazing	Soil	19%	1%	73%	8%	15%	5%	65%	15%	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	
PROSERPINE RIVER MAIN CHANNEL SUBCATCHMENT										
Diffuse Source Water Quality - DEVELOPMENT PLANNING AND CONSTRUCTION PHASE		20%	80%	0%	0%	0%	50%	40%	10%	102
Diffuse Source Water Quality - POST-CONSTRUCTION/ OPERATIONAL PHASE		15%	85%	0%	0%	0%	50%	40%	10%	102

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