REEF CATCHMENTS

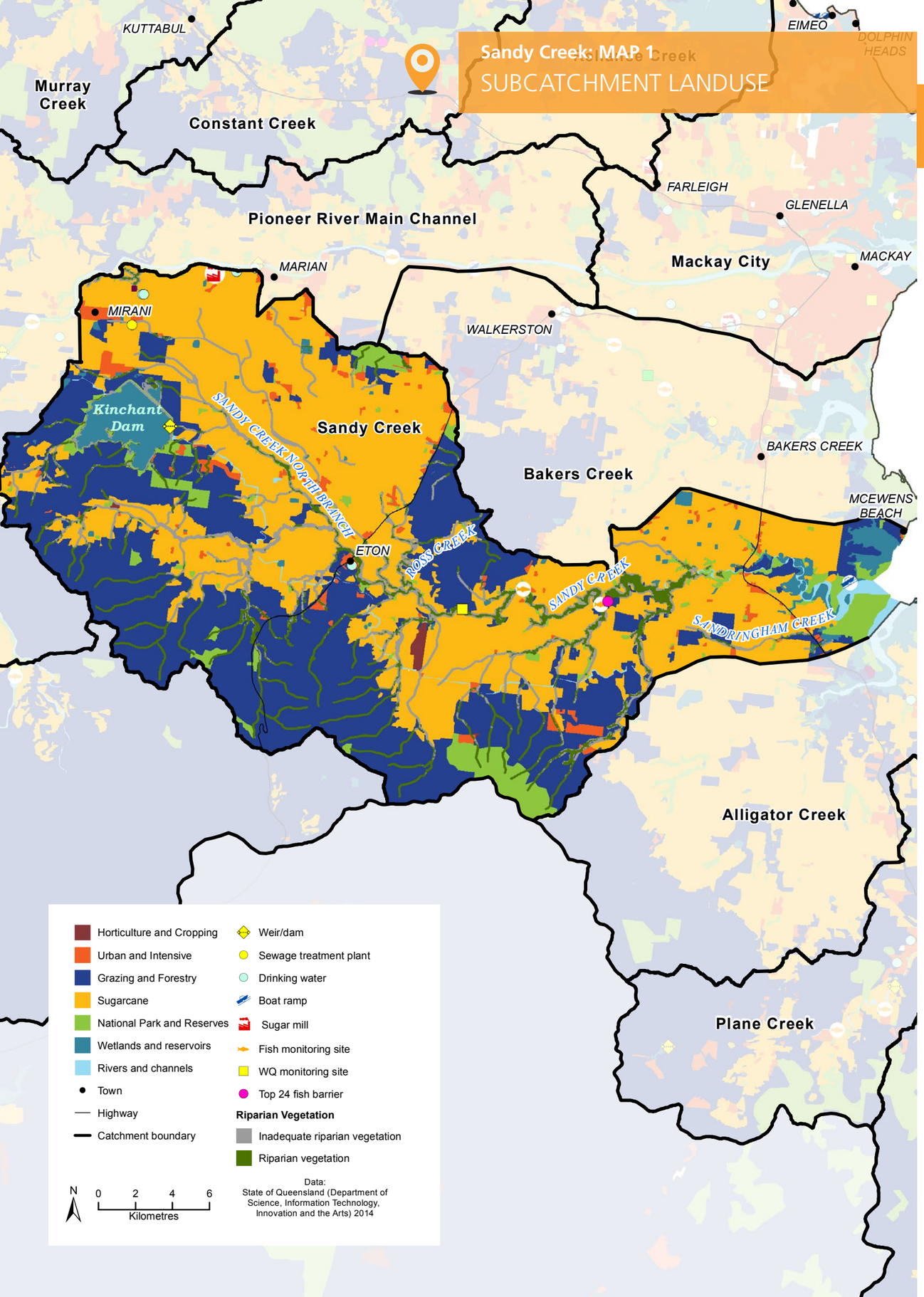
Healthy Waterways Alliance

Australian Government

WATER QUALITY IMPROVEMENT PLAN 2014 - 2021

CATCHMENT MANAGEMENT AREA REPORT

23 Sandy Creek



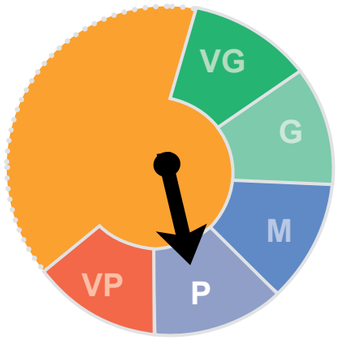
CATCHMENT MANAGEMENT AREA REPORT

23 Sandy Creek

Sandy Creek

Very Good | Good | Moderate | Poor | Very Poor

[FRESHWATER
Ecosystem Health



P

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

Sandy Creek catchment is a coastal drainage system, located on the southern Pioneer River floodplain. Sandy Creek originates south of the township of Mirani, flowing south-east before heading east, entering the sea at Sandringham Bay. The catchment is largely dominated by intensive agriculture with more than 50% of the landuse supporting cane production and 40% grazing activity. Teemburra Dam in the west of the catchment regulates flow and supplies irrigation to downstream areas.

Grazing and cane management practices that reduce phosphorus loads are the highest priority for continued improvement of water quality. As marine risk exposure from pesticide and nutrient loads is rated as high in the near shore environments of this catchment, it is a priority that management practices are implemented to reduce diuron and other nutrients and residual herbicides.

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

Total Area by Landuse

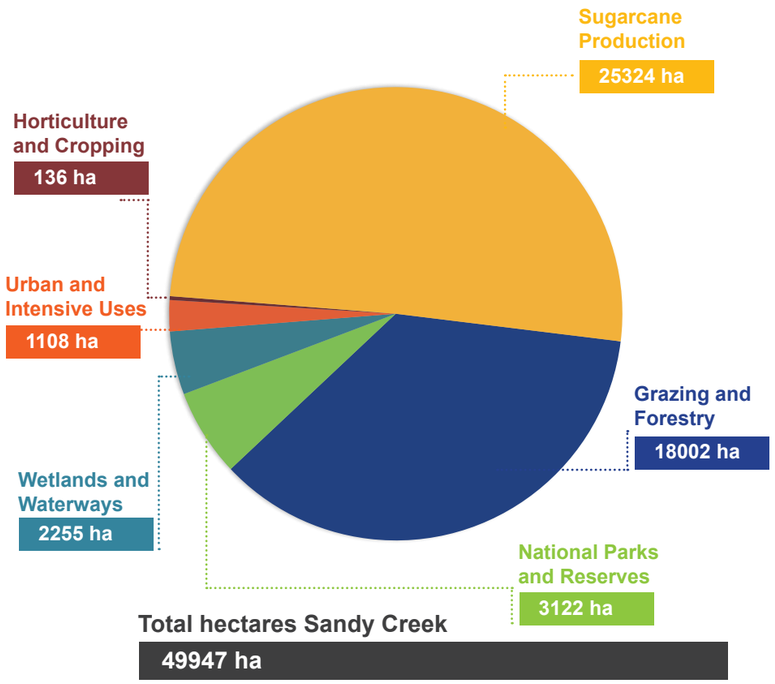


Table 1 [Subcatchment Freshwater Ecosystem Health Indicator Score: Current Condition 2014 and Target 2021

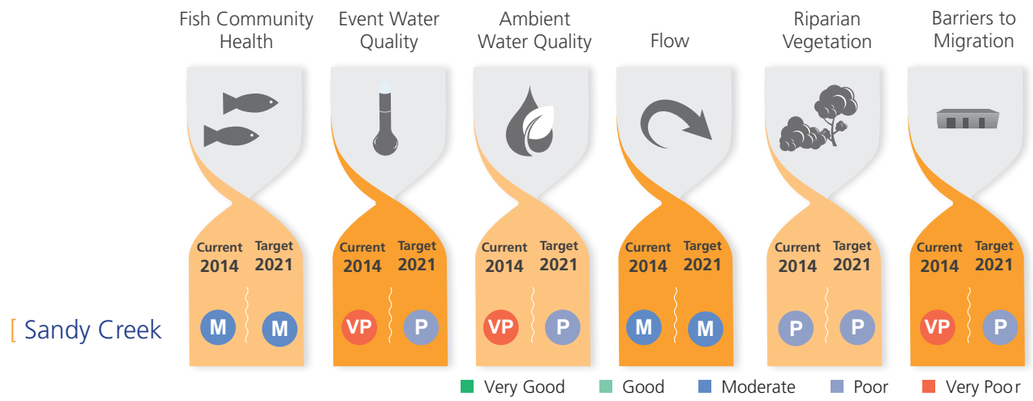


Table 1: OVERVIEW

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
SANDY CREEK SUBCATCHMENT					
Dissolved Inorganic Nitrogen µg/L	401	353	300	MEDIUM	CIU
Particulate Nitrogen µg/L	363	265	265	V HIGH	CIUG
Filterable Reactive Phosphorus µg/L	156	137	30	V HIGH	CIU
Particulate Phosphorus µg/L	138	101	70	V HIGH	CIUG
Total Suspended Sediment mg/L	61	45	45	V HIGH	CIUG
Ametryn µg/L	0.02	0.02	0.02	LOW	CIU
Atrazine µg/L	0.41	0.40	0.40	LOW	CIU
Diuron µg/L	0.86	0.75	0.30	LOW	CIU
Hexazinone µg/L	0.42	0.38	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
Sandy Creek				
Barriers (number)	64	2	L	$60,000
Riparian Vegetation Management (hectares)	2408 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 = $60,000	

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 % D	C	B	A	2021 Adoption % D	C	B	A	Total Cost $ '000s
SANDY CREEK SUBCATCHMENT										
Cane & Horticulture	Soil	9%	12%	46%	33%	5%	10%	45%	40%	394
	Nutrient	12%	25%	36%	27%	5%	15%	50%	30%	1643
	Herbicide	12%	14%	43%	31%	10%	10%	45%	35%	582
Grazing	Soil	25%	31%	39%	5%	10%	15%	70%	5%	1207

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

Table 5 [Urban Practice ABCD Adoption Targets

Land Use		2014 Adoption % D	C	B	A	2021 Adoption % D	C	B	A	Total Cost $ '000s
SANDY CREEK SUBCATCHMENT										
Diffuse Source Water Quality - DEVELOPMENT PLANNING AND CONSTRUCTION PHASE		20%	80%	0%	0%	0%	50%	40%	10%	789
Diffuse Source Water Quality - POST-CONSTRUCTION/ OPERATIONAL PHASE		15%	85%	0%	0%	0%	50%	40%	10%	789

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