



WATER QUALITY IMPROVEMENT PLAN 2014 - 2021

CATCHMENT MANAGEMENT AREA REPORT

24 Alligator Creek



Bakers Creek

MOEWENS BEACH

Alligator Creek: MAP 1

SUBCATCHMENT LANDUSE

Sandy Creek

Sarina Beaches

BELL CREEK

ALLIGATOR CREEK

Alligator Creek

SARINA

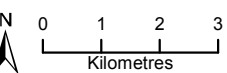
Plane Creek

Rocky Dam 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
- 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

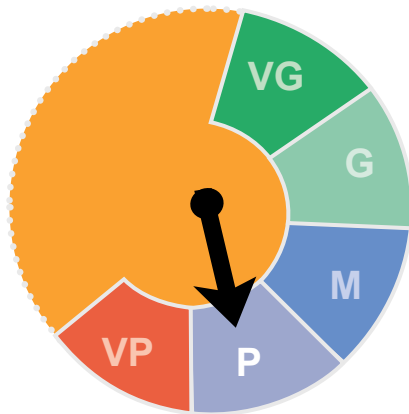
# 24 Alligator Creek



## Alligator Creek

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

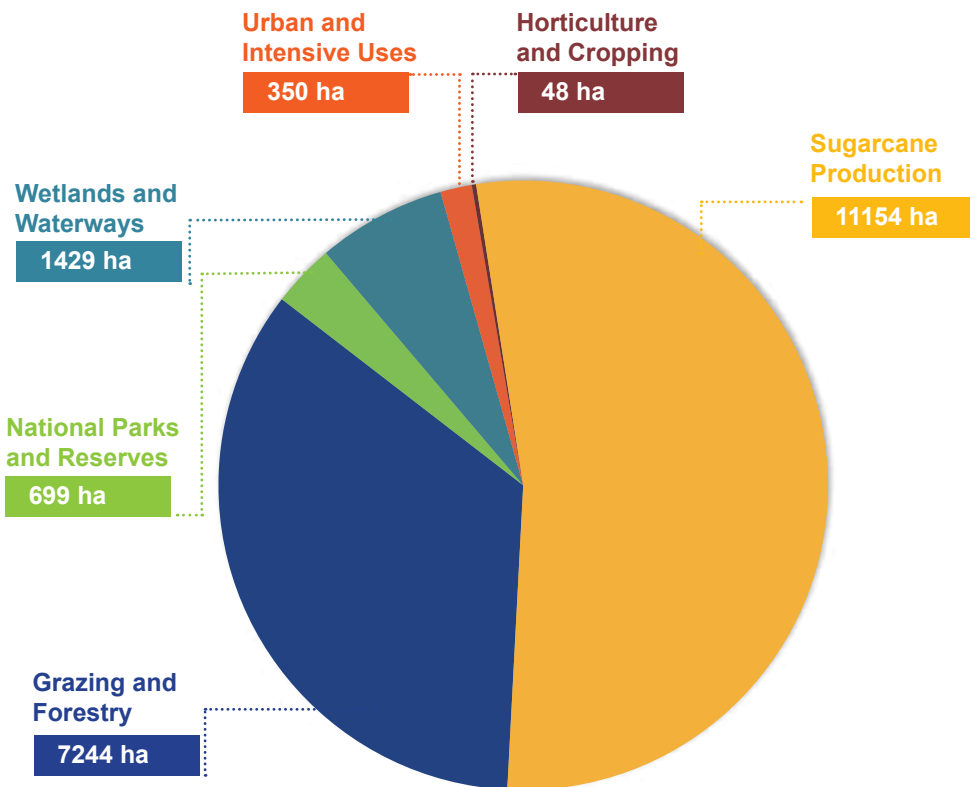
### FRESHWATER Ecosystem Health



P

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

### Total Area by Landuse



**Total hectares Alligator Creek**

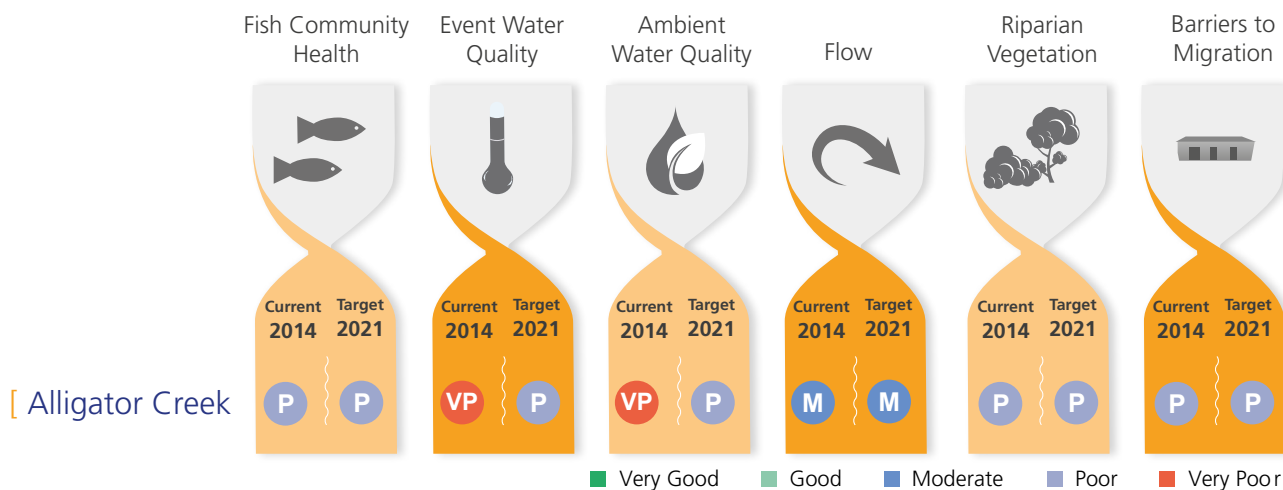
**20924 ha**

Alligator Creek flows east from the Clarke Range towards Sarina, before entering the Great Barrier Reef lagoon at Sandringham Bay. Cane production dominates more than 50% of the catchment with a further 40% of the land use supporting grazing. The Alligator Creek catchment area has experienced a high degree of modification with significant impacts on riparian vegetation, particularly on the coastal plain. The estuary has retained a buffer of riparian and wetland vegetation, however grazing extends to the headland.

To ensure ongoing improvement of water quality reductions in dissolved inorganic nitrogen and phosphorus levels remain the highest priority in the Alligator Creek catchment area. With marine risk exposure from pesticide and nutrient loads rated as high in the near shore environments to the estuary, management practices that reduce nutrients and residual herbicides, particularly diuron, are also a high priority.

All system repair actions that improve fish habitat and species diversity and abundance are critical to improve the ecological health rating of Alligator Creek. Riparian vegetation restoration and connectivity is also a high priority to support fish communities and to stabilise the stream bed and banks for improved water 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
ALLIGATOR CREEK SUBCATCHMENT					
Dissolved Inorganic Nitrogen µg/L	513	414	300	HIGH	CIU
Particulate Nitrogen µg/L	547	420	340	HIGH	CIUG
Filterable Reactive Phosphorus µg/L	123	99	30	HIGH	CIU
Particulate Phosphorus µg/L	195	150	70	HIGH	CIUG
Total Suspended Sediment mg/L	71	54	54	V HIGH	CIUG
Ametryn µg/L	0.08	0.07	0.02	MEDIUM	CIU
Atrazine µg/L	0.80	0.74	0.70	MEDIUM	CIU
Diuron µg/L	1.75	1.23	0.30	MEDIUM	CIU
Hexazinone µg/L	0.54	0.50	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
<b>Alligator Creek</b>					
Barriers (number)		13	0	L	\$0
Riparian Vegetation Management (hectares)		658 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
<b>Total Cost = \$0</b>					

**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		
<b>ALLIGATOR CREEK SUBCATCHMENT</b>										
Cane & Horticulture	Soil	11%	20%	37%	32%	5%	10%	45%	40%	488
	Nutrient	19%	30%	35%	16%	5%	20%	55%	20%	1041
	Herbicide	12%	24%	53%	11%	5%	15%	65%	15%	691
Grazing	Soil	25%	21%	49%	5%	10%	15%	70%	5%	409

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