



WATER QUALITY IMPROVEMENT PLAN 2014 - 2021

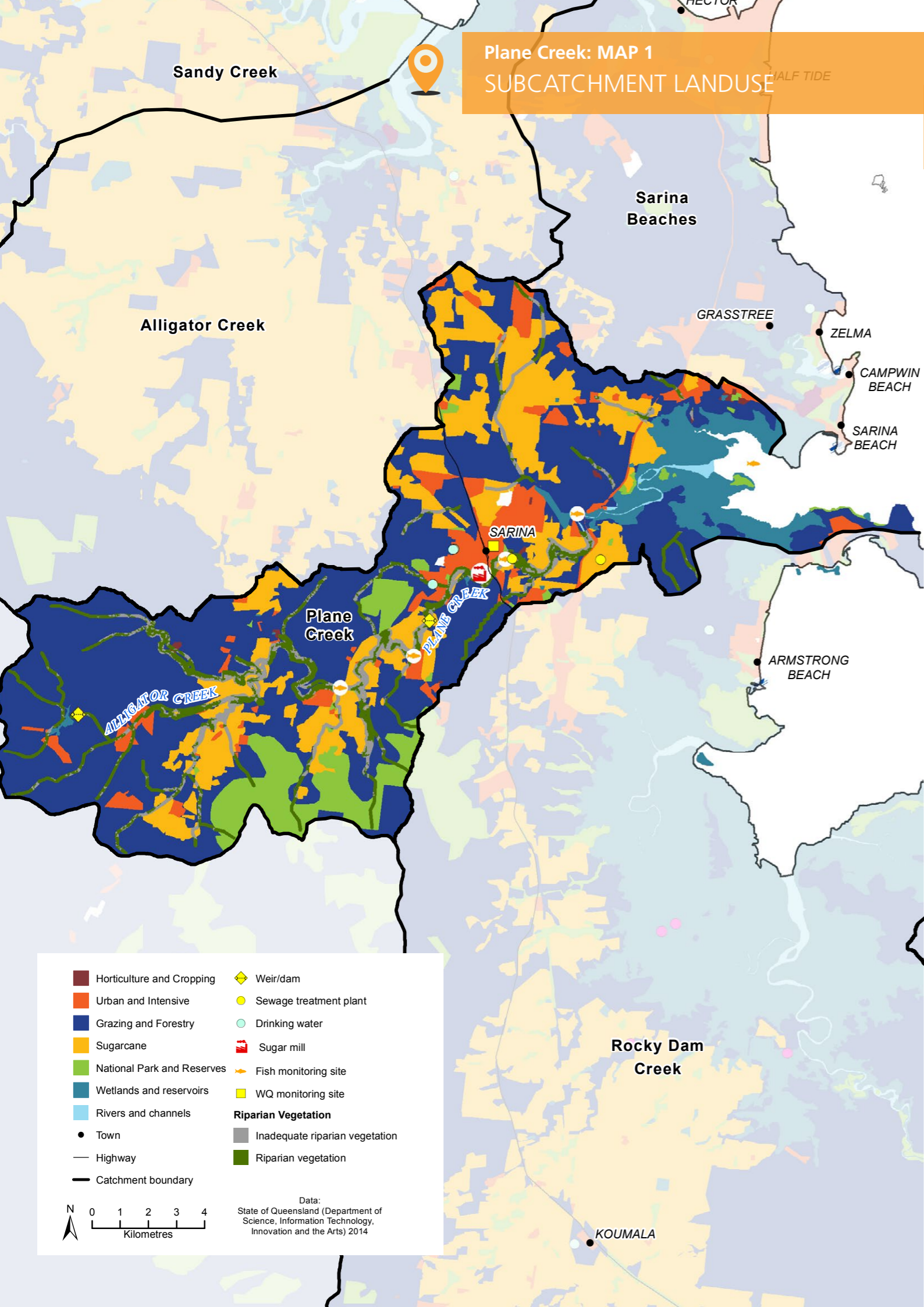
CATCHMENT MANAGEMENT AREA REPORT

26 Plane Creek



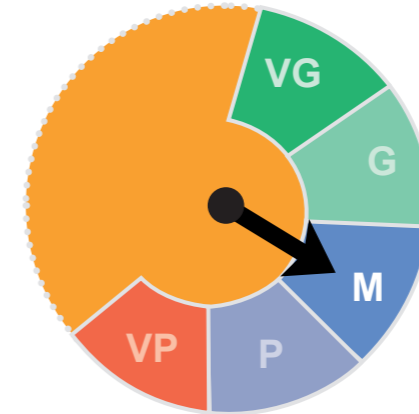
CATCHMENT MANAGEMENT AREA REPORT

26 Plane Creek



Plane Creek Ecosystem Health Rating

Very Good Good Moderate Poor Very Poor



FRESHWATER Ecosystem Health

M

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

The Plane Creek catchment area is a small coastal catchment situated around the town of Sarina. The major water course of the catchment is Plane Creek which flows east from the Connors Range towards Sarina, draining the coastal floodplain before entering the Great Barrier Reef lagoon at Sarina Inlet. Middle Creek Dam is situated at the headwaters in the upper catchment. The catchment is dominated by intensive cropping and grazing with 65% of land under cane production and 21% under grazing. In addition to agricultural impacts Plane Creek has also experienced a high degree of flow modification and point source pollution. Riparian vegetation has been extensively cleared in the lower reaches, while the upper reaches have maintained moderate quality riparian zones.

To ensure ongoing improvement in water quality the reduction in filterable reactive phosphorus is the highest priority in the Plane Creek catchment. With marine risk exposure from pesticide and nutrient loads rated as high for the estuarine near shore environment, management practices that reduce other 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 improving the poor ecological health rating for Plane Creek. Riparian vegetation restoration and connectivity is also a high priority to support fish communities and stabilise stream bed and banks for improved water quality. Prioritisation and investment in mangrove and saltmarsh rehabilitation are also crucial to protect these coastal systems for fisheries' productivity.

Total Area by Landuse

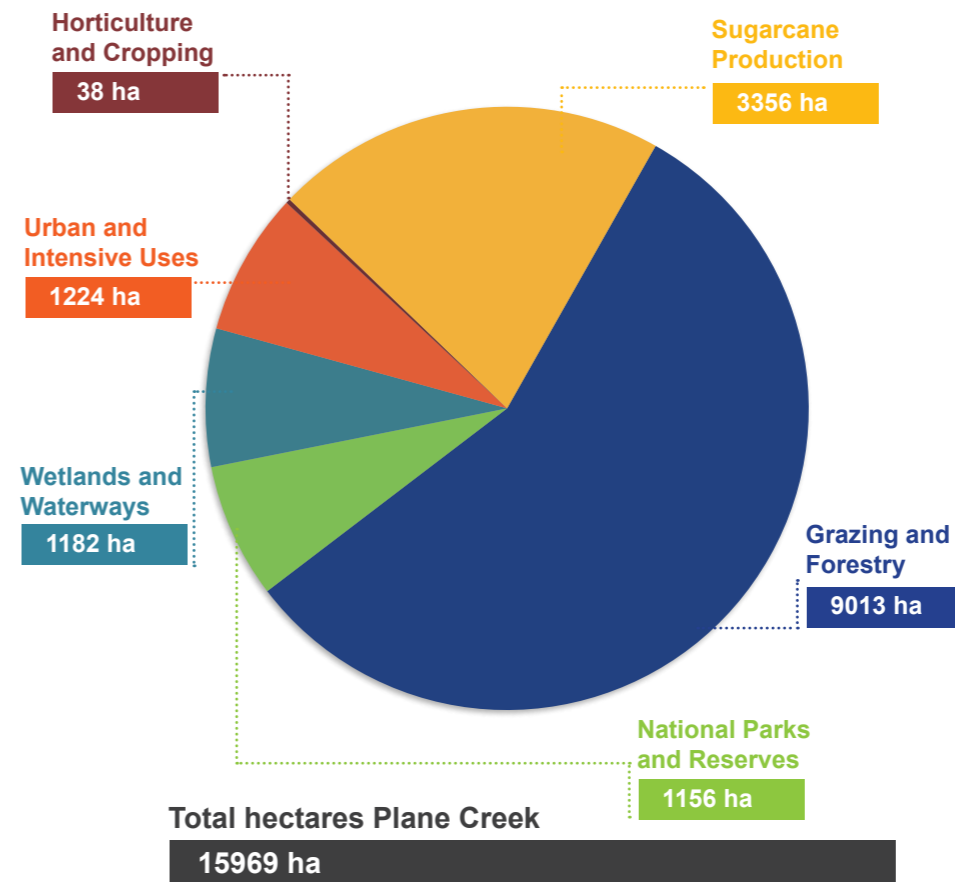


Table 1 Subcatchment Freshwater Ecosystem Health Indicator Score: Current Condition 2014 and Target 2021

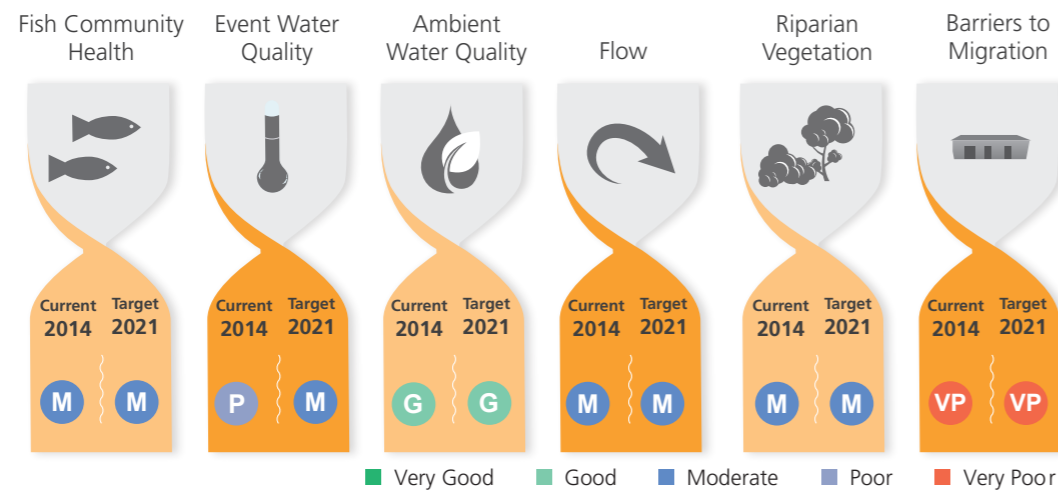


Table 1: OVERVIEW

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 |
|-------------------------------------|-------------------|-------------|----------------|--------|------------------|
| PLANE CREEK SUBCATCHMENT | | | | | |
| Dissolved Inorganic Nitrogen µg/L | 435 | 391 | 300 | HIGH | CIU |
| Particulate Nitrogen µg/L | 158 | 158 | 158 | LOW | CIUG |
| Filterable Reactive Phosphorus µg/L | 66 | 59 | 30 | HIGH | CIU |
| Particulate Phosphorus µg/L | 54 | 54 | 54 | LOW | CIUG |
| Total Suspended Sediment mg/L | 188 | 188 | 188 | LOW | CIUG |
| Ametryn µg/L | <LOD | <LOD | <LOD | LOW | CIU |
| Atrazine µg/L | 0.19 | 0.17 | 0.17 | MEDIUM | CIU |
| Diuron µg/L | 0.56 | 0.51 | 0.30 | MEDIUM | CIU |
| Hexazinone µg/L | 0.15 | 0.14 | 0.14 | MEDIUM | CIU |
| Tebuthiuron µg/L | <LOD | <LOD | <LOD | LOW | G |

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.

C Cane IU Intensive Uses G Grazing

Table 3 Action Targets: Ecosystem Health Management

L = Low, M = Moderate, H = High

| | Condition 2014 | Planned Activities to 2021 | Effort | \$ Cost |
|---|----------------|----------------------------|--------|-------------------------|
| Plane Creek | | | | |
| Barriers (number) | 21 | 0 | L | \$0 |
| Riparian Vegetation Management (hectares) | 925 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 = \$0 |

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 % | | | | 2021 Adoption % | | | | Total Cost \$ '000s | |
|---------------------------|-----------------|-----|-----|-----|-----------------|-----|-----|-----|---------------------|-----|
| | D | C | B | A | D | C | B | A | | |
| PLANE CREEK SUB CATCHMENT | | | | | | | | | | |
| Cane & Horticulture | Soil | 13% | 13% | 46% | 27% | 10% | 15% | 40% | 35% | 0 |
| | Nutrient | 20% | 23% | 52% | 5% | 10% | 20% | 65% | 5% | 169 |
| | Herbicide | 18% | 20% | 57% | 5% | 15% | 20% | 60% | 5% | 38 |
| Grazing | Soil | 24% | 9% | 62% | 5% | 20% | 10% | 65% | 5% | 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 | | |
| PLANE CREEK SUBCATCHMENT | | | | | | | | | | |
| Diffuse Source Water Quality - DEVELOPMENT PLANNING AND CONSTRUCTION PHASE | 20% | 80% | 0% | 0% | 0% | 50% | 40% | 10% | 872 | |
| Diffuse Source Water Quality - POST-CONSTRUCTION/ OPERATIONAL PHASE | 20% | 80% | 0% | 0% | 0% | 50% | 40% | 10% | 872 | |

D Dated practices C Conventional practices B Best practices A Aspirational