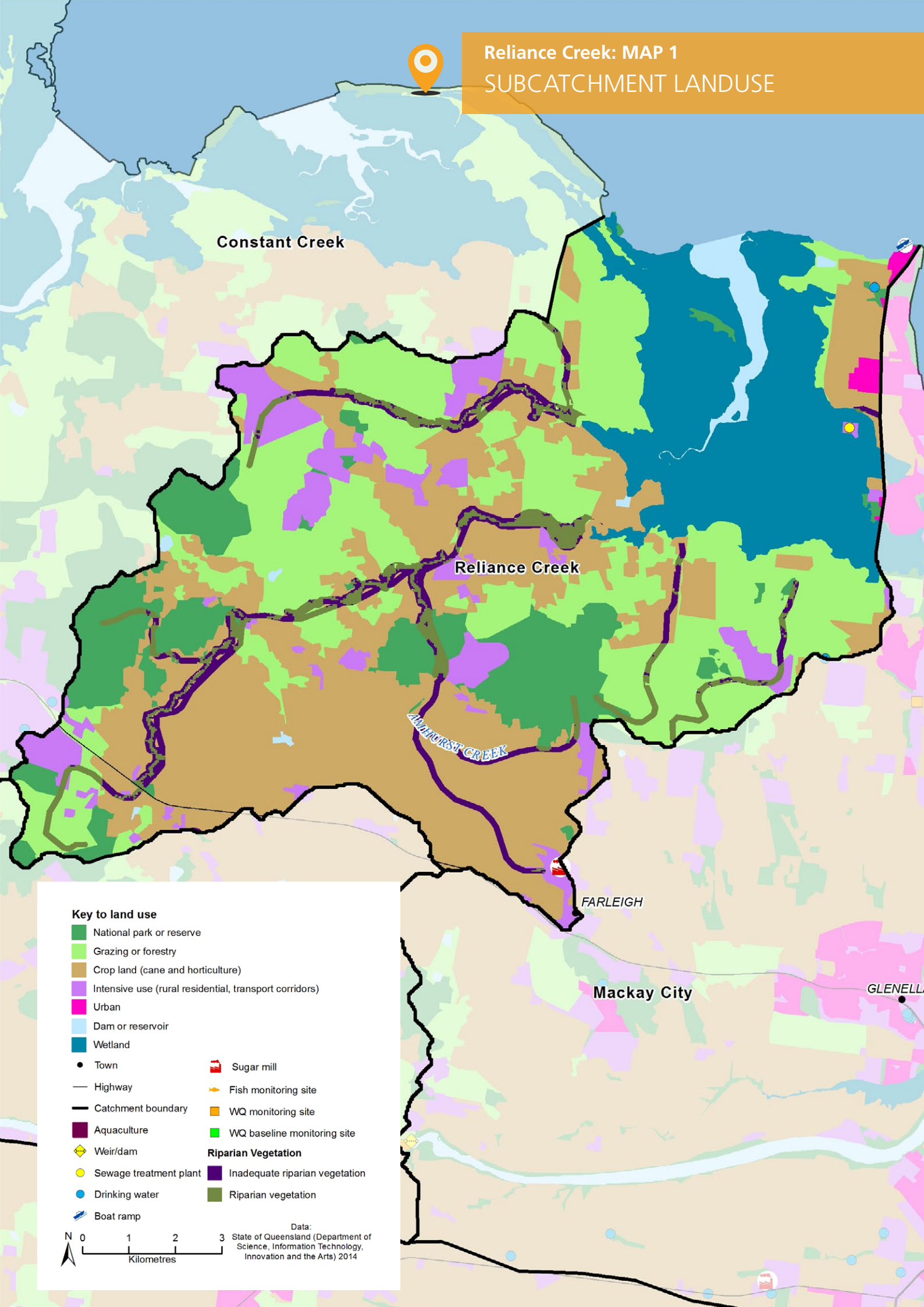




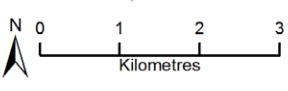
# Reliance Creek: MAP 1 SUBCATCHMENT LANDUSE



**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
- Inadequate riparian vegetation
- Riparian vegetation

**Riparian Vegetation**



Data: State of Queensland (Department of Science, Information Technology, Innovation and the Arts) 2014

CATCHMENT MANAGEMENT AREA REPORT

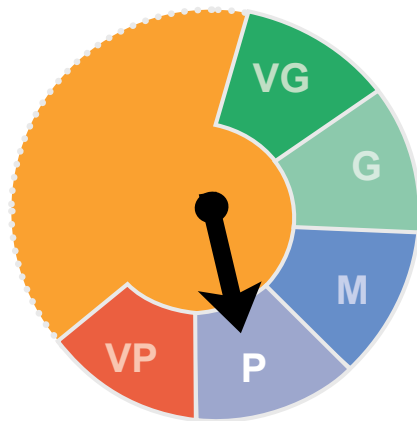
# 17 Reliance Creek



## Reliance Creek Ecosystem Health Rating

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

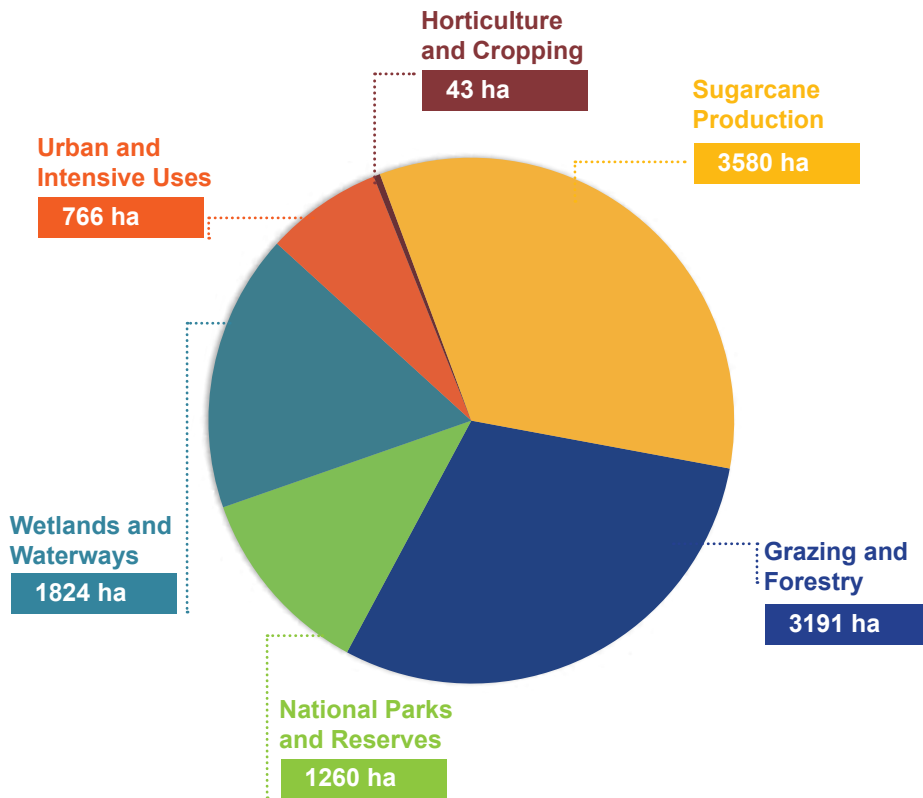
### FRESHWATER Ecosystem Health



P

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

### Total Area by Landuse



**Total hectares Reliance Creek**

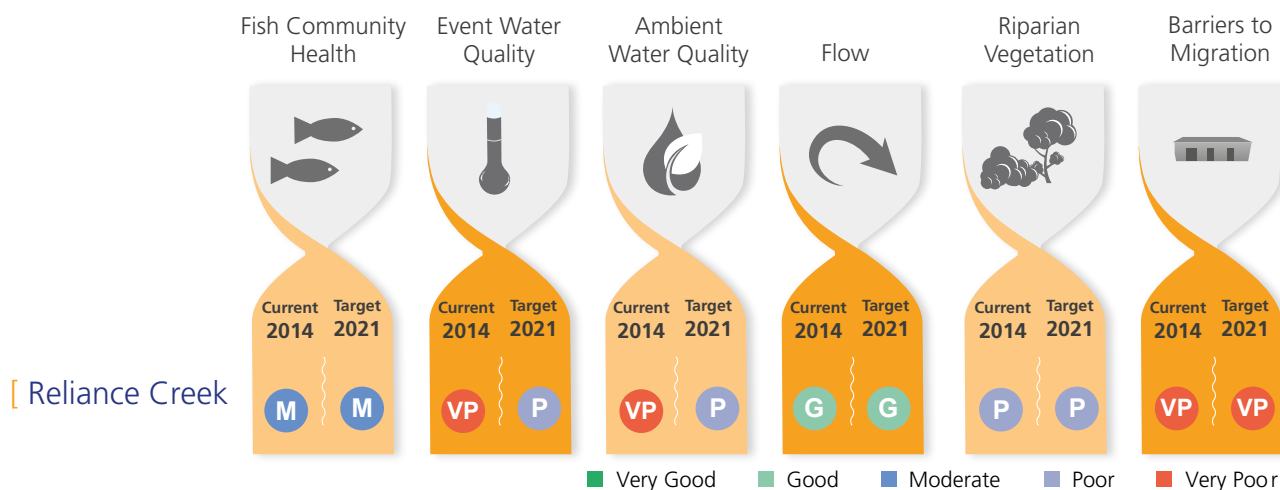
**10664 ha**

The Reliance Creek catchment area is just north of Mackay City sharing a catchment boundary at Shoal Point. Landuse is dominated by intensive cane production on 38% of the catchment and grazing on 32% across the catchment. Reliance Creek wetlands and estuary are protected by Reliance Creek National Park. Historically there have been issues with water quality, fish kills and mangrove die-back.

Grazing and cane management practices that reduce nitrogen and phosphorus loads are the highest priority for continued improvement of water quality. With marine risk exposure from pesticide and nutrient loads rated as high for the near shore environments, management practices that reduce nutrients and residual herbicides are also a priority.

All system repair actions that improve fish habitat and species diversity and abundance are critical to improve the poor ecological health rating for Reliance Creek. Riparian vegetation restoration and connectivity is a high priority to support fish communities and stabilise stream bed and banks for improved water quality. Prioritisation and investment in mangrove protection and enhancement are also important to manage coastal systems and reduce marine risk exposure.

**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 |
|-------------------------------------|-------------------|-------------|----------------|--------|------------------|
| RELiance CREEK SUBCATCHMENT         |                   |             |                |        |                  |
| Dissolved Inorganic Nitrogen µg/L   | 363               | 345         | 300            | LOW    | CIU              |
| Particulate Nitrogen µg/L           | 231               | 230         | 230            | LOW    | CIUG             |
| Filterable Reactive Phosphorus µg/L | 168               | 160         | 30             | LOW    | CIU              |
| Particulate Phosphorus µg/L         | 73                | 59          | 59             | HIGH   | CIUG             |
| Total Suspended Sediment mg/L       | 35                | 35          | 35             | LOW    | CIUG             |
| Ametryn µg/L                        | 0.07              | 0.05        | 0.02           | V HIGH | CIU              |
| Atrazine µg/L                       | 0.67              | 0.65        | 0.61           | MEDIUM | CIU              |
| Diuron µg/L                         | 1.52              | 1.01        | 0.30           | MEDIUM | CIU              |
| Hexazinone µg/L                     | 0.45              | 0.41        | 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>Reliance Creek</b>                     |   |                |                            |        |                         |
| Barriers (number)                         |  | 76             | 0                          | L      | \$0                     |
| Riparian Vegetation Management (hectares) |  | 347 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.

**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   |                     |
| RELiance Creek Subcatchment |           |                 |     |     |     |                 |     |     |     |                     |
| Cane & Horticulture         | Soil      | 18%             | 28% | 43% | 12% | 10%             | 20% | 55% | 15% | 152                 |
|                             | Nutrient  | 12%             | 15% | 62% | 12% | 10%             | 10% | 65% | 15% | 91                  |
|                             | Herbicide | 20%             | 19% | 56% | 5%  | 10%             | 10% | 75% | 5%  | 271                 |
| Grazing                     | Soil      | 25%             | 9%  | 61% | 5%  | 15%             | 10% | 70% | 5%  | 74                  |

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   |                     |
| RELiance Creek Subcatchment  |  |                 |     |     |    |                 |     |     |     |                     |
| Diffuse Source Water Quality - DEVELOPMENT PLANNING AND CONSTRUCTION PHASE |  | 15%             | 75% | 5%  | 0% | 0%              | 50% | 40% | 10% | 437                 |
| Diffuse Source Water Quality - POST-CONSTRUCTION/ OPERATIONAL PHASE        |  | 15%             | 80% | 10% | 0% | 0%              | 50% | 40% | 10% | 491                 |

D Dated practices C Conventional practices B Best practices A Aspirational