



WATER QUALITY IMPROVEMENT PLAN 2014 - 2021

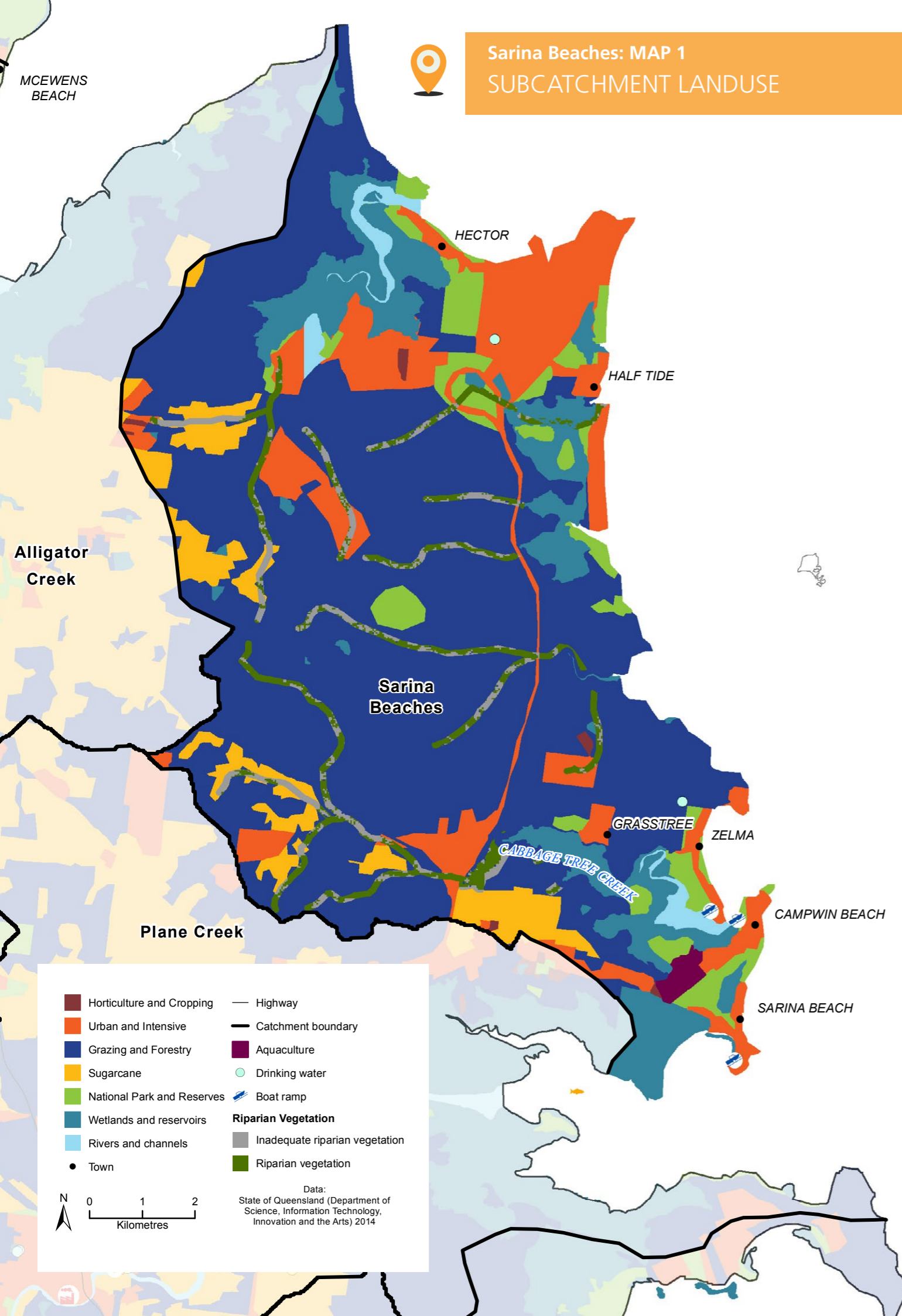
CATCHMENT MANAGEMENT AREA REPORT

25 Sarina Beaches



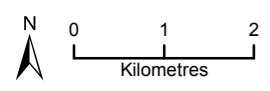


Sarina Beaches: MAP 1
SUBCATCHMENT LANDUSE



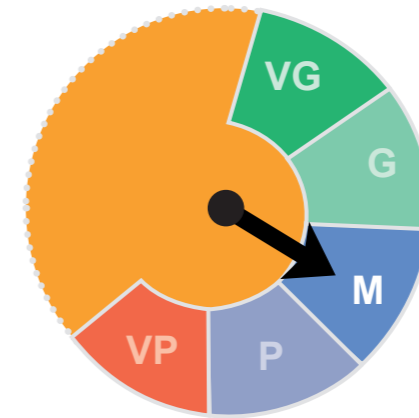
| | |
|----------------------------|--------------------------------|
| Horticulture and Cropping | Highway |
| Urban and Intensive | Catchment boundary |
| Grazing and Forestry | Aquaculture |
| Sugarcane | Drinking water |
| National Park and Reserves | Boat ramp |
| Wetlands and reservoirs | Riparian Vegetation |
| Rivers and channels | Inadequate riparian vegetation |
| Town | Riparian vegetation |

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



Sarina Beaches Ecosystem Health Rating

Very Good Good Moderate Poor Very Poor



FRESHWATER Ecosystem Health

M

The Sarina Beaches **freshwater ecosystem** received an overall score of **Moderate**.

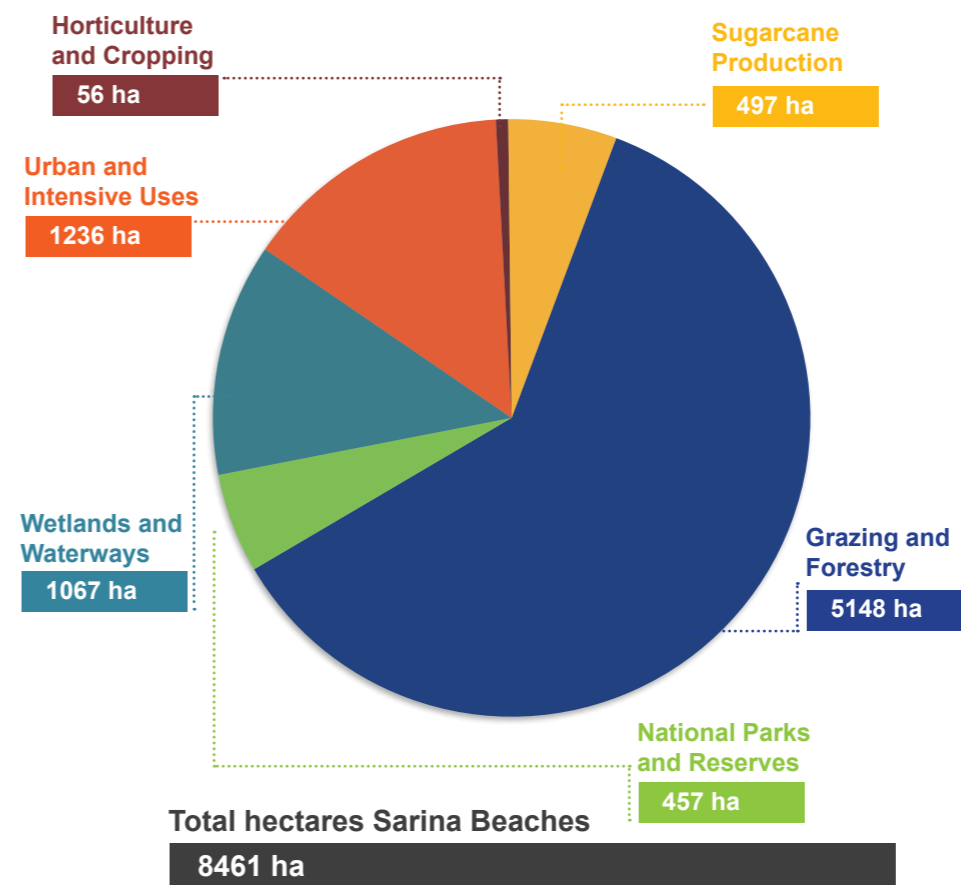
The Sarina Beaches catchment area includes the urban areas of Hay Point, Campwin Beach and Grasstree Beach. Together these settlements comprise around 10% of the catchment area. Sarina Beaches also supports grazing production on more than 64% of the catchment area, cane on 6% and peri-urban development across 10%. Important remnant wetlands fringe the waters of Louisa Creek buffering, to some extent, the potential effects of shipping and port activities at Hay Point.

Between 2007 and 2013 there has been changes in the urban footprint of the catchment altering some land use. Industrial and port development around Hay Point is changing the pressures on the catchment's ecosystem services and management strategies.

Management practices that reduce particulate phosphorus used in grazing will continue to be priority. Management practices that reduce other nutrients and residual herbicides are a moderate priority.

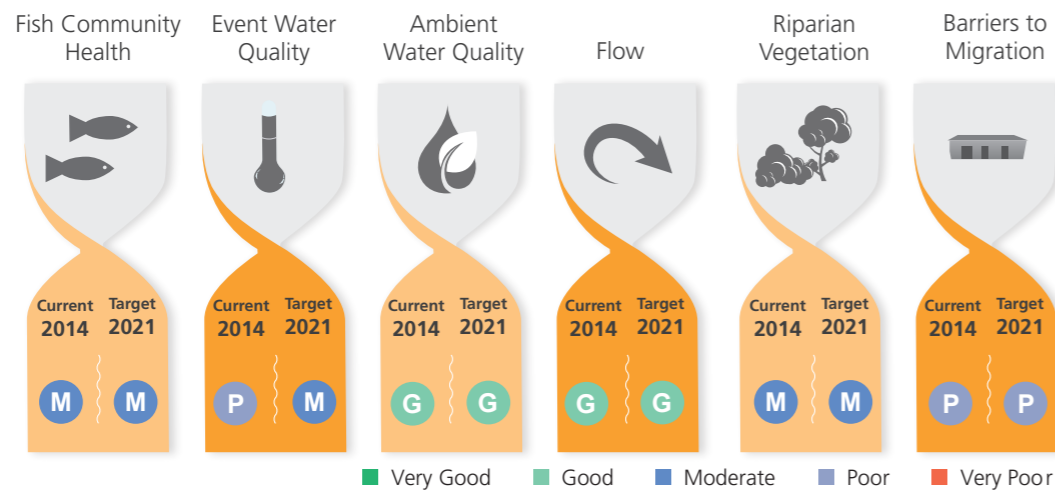
With considerable changes in port and industrial activities in the Sarina Beaches catchment area system repair actions that support and protect current ecosystem services and assets are a priority.

Total Area by Landuse



Total hectares Sarina Beaches
8461 ha

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



[Sarina Beaches

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 |
|-------------------------------------|-------------------|-------------|----------------|--------|------------------|
| SARINA BEACHES SUB CATCHMENT | | | | | |
| Dissolved Inorganic Nitrogen µg/L | 375 | 343 | 300 | HIGH | CIU |
| Particulate Nitrogen µg/L | 411 | 294 | 294 | V HIGH | CIUG |
| Filterable Reactive Phosphorus µg/L | 95 | 87 | 30 | MEDIUM | CIU |
| Particulate Phosphorus µg/L | 98 | 70 | 70 | V HIGH | CIUG |
| Total Suspended Sediment mg/L | 86 | 62 | 62 | V HIGH | CIUG |
| Ametryn µg/L | <LOD | <LOD | <LOD | LOW | CIU |
| Atrazine µg/L | 0.05 | 0.04 | 0.04 | HIGH | CIU |
| Diuron µg/L | 0.53 | 0.46 | 0.30 | HIGH | CIU |
| Hexazinone µg/L | 0.27 | 0.23 | 0.20 | HIGH | 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 |
|---|----------------|----------------------------|--------|-------------------------|
| Sarina Beaches | | | | |
| Barriers (number) | 3 | 0 | L | \$0 |
| Riparian Vegetation Management (hectares) | 245 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 | |
| SARINA BEACHES SUBCATCHMENT | | | | | | | | | | |
| Cane & Horticulture | Soil | 18% | 31% | 46% | 5% | 5% | 20% | 70% | 5% | 34 |
| | Nutrient | 20% | 20% | 30% | 31% | 10% | 10% | 45% | 35% | 39 |
| | Herbicide | 20% | 31% | 44% | 5% | 15% | 25% | 55% | 5% | 21 |
| Grazing | Soil | 25% | 31% | 39% | 5% | 10% | 20% | 65% | 5% | 360 |

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 | |
| SARINA BEACHES SUBCATCHMENT | | | | | | | | | | |
| Diffuse Source Water Quality - DEVELOPMENT PLANNING AND CONSTRUCTION PHASE | | 20% | 80% | 0% | 0% | 0% | 50% | 40% | 10% | 881 |
| Diffuse Source Water Quality - POST-CONSTRUCTION/ OPERATIONAL PHASE | | 20% | 80% | 0% | 0% | 0% | 50% | 40% | 10% | 881 |

D Dated practices C Conventional practices B Best practices A Aspirational