

Biodiversity Conservation Strategic Plan 2016-25

Final Draft v09



Foreword

The Gladstone region is so much more than the public perception of its port and industrial base. For example, it is little known that 55% of our region is covered by natural vegetation, marine turtles nest on our beaches and that Mt Larcom hosts an endangered species of plant that has been found nowhere else in the world.

Hence it is with pleasure that Gladstone Regional Council has developed its first *Biodiversity Conservation Strategic Plan 2016-2025* that aims to preserve and conserve our regional biodiversity values balanced with our economic development initiatives.

Whilst local government does not traditionally have legislative responsibilities for biodiversity we do have a local responsibility and voice to protect and conserve our regional biodiversity values for current and future generations. This strategic plan therefore has been developed to guide the role of Council in biodiversity conservation through strategies to preserve and protect; conserve and improve; build knowledge; educate and inform; partner with environment groups and advocate to higher levels of government. In providing this direction, Council is demonstrating a significant commitment to our region's biodiversity values.

The strategy has been informed through the development and circulation of a background paper, consultation with stakeholders and public submissions. The strategy will be implemented through our Conservation Team's business plan and will be funded through Council's budget.



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Gladstone Regional Council





Table of Contents

FOREWORD	I
TABLE OF CONTENTS	II
INTRODUCTION	1
BACKGROUND	2
VISION & MISSION	5
STRATEGIC THEMES	6
THEME 1: PRESERVE & PROTECT	7
THEME 2: CONSERVE & IMPROVE	10
THEME 3: KNOWLEDGE & RESEARCH	12
THEME 4: EDUCATE & INFORM	14
THEME 5: PARTNER & ADVOCATE	16
STRATEGY IMPLEMENTATION & REVIEW	18
USEFUL RESOURCES	19
REFERENCES	20
APPENDIX A STRATEGY ALIGNMENT	21
APPENDIX B BIODIVERSITY VALUES OF THE GLADSTONE REGION	26

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Introduction

This document presents the strategic direction for Gladstone Regional Council (GRC) in relation to conserving biodiversity within the boundaries of the Council's local government area over the next ten years.

Why a Biodiversity Strategy?

The Gladstone Region lies on the mid-north coast of Queensland, approximately 550 kilometres by road north of Brisbane and 100 kilometres south-east of Rockhampton. The region is known for its industry, agriculture and infrastructure, but also for its natural resources, including the Great Barrier Reef, rainforests, rivers, coastline, eucalypt forests and conservation reserves. The region also supports a strong Aboriginal cultural heritage.

In recent years, the Gladstone region has been the focus of large scale investment in port facilities and infrastructure, to support much of Queensland's export market for raw materials, particularly liquid natural gas (LNG) and coal. Further development of port facilities, industrial land uses, residential areas and agriculture have placed various pressures on Gladstone's natural resources. The future growth and success of the Gladstone region is inextricably linked to its people, history and environment. Hence a need to have a strategic focus on biodiversity conservation as a means of recognition of these factors.

The strategy has been informed through a review of other similar strategies, stakeholder consultation, public submissions and discussions with Council management.

Council's Role in Biodiversity Conservation

GRC has prepared this strategy for the future conservation, use and management of the region's natural resources, and particularly its biodiversity. Even though most environmental legislation is at a State or Commonwealth level local government can play a significant grass roots role in biodiversity conservation, for example:

- Balance development with environmental protection at a local level.
- Conserve its own lands.
- Manage access to beaches during turtle and shore bird nesting seasons.
- Co-ordinate and assist local environment groups to conserve and restore degraded habitats.
- Partner with regional environmental groups to achieve more widespread outcomes.
- Enact local laws to protect the environment.
- Undertake actions to conserve rare and threatened species. In GRC's case use the nursery at Tondoon Botanical Gardens to propagate plants.
- Build and centralise regional biodiversity knowledge.
- Identify knowledge gaps and promote research opportunities.
- Advocate to higher levels of government regarding matters of environmental protection, approval and environmental harm.

This Biodiversity Conservation Strategic Plan recognises the economic development objectives of the community and in no way aims to act as a barrier to sustainable industrial development in the region. However, sustainable development should be managed in such a way to prevent impacts on the biodiversity values of the Gladstone Region.

It should also be noted that GRC cannot undertake all the initiatives contained in this strategy, and nor should it be expected to, as a majority of initiatives are the domain of other levels of government. What GRC can do though is partner, co-ordinate, advocate and press for change and improvements where necessary. Partnering and advocating is therefore a key strategic theme of the strategy.





Background

What is Biodiversity?

Biodiversity is the variety of all life forms on earth—the different plants, animals and microorganisms; their genes; and the terrestrial, marine and freshwater ecosystems of which they are a part (Queensland Government, 2010).

Within an ecosystem the diverse range of plant and animal species have important functions that help maintain an ecological balance. At a fine scale biodiversity provides a variety of genetic resources while at a broader scale biodiversity provides a range of different habitats, which work together in preserving the existence of life on Earth (Queensland Government, 2010).

Healthy ecosystems contribute to clean air and water resources. Biodiverse forests protect against drought and erosion and regulate chemical composition of the soil and the atmosphere. Within a biologically diverse ecosystem, living organisms are interdependent. Animals depend on plants for food and shelter, and plants depend on the soil for growth. Insects, birds and bats are essential for pollination of plants. Fungi and bacteria decompose dead organic matter and return nutrients to the soil. Loss of biodiversity weakens the connections that exist among various species, leading to dysfunctional ecosystems.

The expansion of human settlement reduces habitat for plants and animals, causing a reduction in biodiversity. Fragmentation of habitat leads to a loss of connections between remnant patches. Other factors that may reduce biodiversity include the spread of invasive weed and pest animal species, changes in fire patterns and pollution.

As the size of remnant habitat patches gets smaller, so does the number of plant and animal species that they can support. In practice, the larger the reserve, the greater the biodiversity. This is why the conservation of large reserves is so important. However, smaller natural areas can also be important from a conservation perspective, as they can provide refuges for urban animals, provide habitat for threatened species and act as stepping stones, which allow species to migrate across the landscape.

Protected natural areas can also provide significant passive recreation, research and educational opportunities for the local and regional community. New urban areas can be significantly enhanced when natural areas are protected by having an improved aesthetic appeal and character.

Finally, there is also a human element to be considered, not only as a cause of environmental stress but represented as the diversity of cultures that includes the original inhabitants of Australia. These first Australians cared for country in ways that improved important resources while not impacting significantly on other species recognised as essential to the general heath of their country.

Land Use within the Gladstone Region

The major land use of the Gladstone region, at just under 800,000 hectares (or 74.5%), is rural, with conservation (i.e. National Parks), forestry, parks and reserves ('Parkland') occupying substantial areas. Areas to the north and northwest of Gladstone City at Yarwun and the southwestern part of Curtis Island are dedicated to major infrastructure and other industry occupies the areas surrounding Gladstone City and nearby port areas. Most of the residential development is clustered around Gladstone, Calliope, Tannum Sands and Agnes Water. Examples of some of the main land use zonings in the Gladstone region and their respective areas are listed in Table 1.1.





Table 1.1 Key land use in the Gladstone Regional Council area

Туре	Area (ha)	Proportion
Rural	779,951	74.5%
Conservation	80,546	7.7%
Forestry	54,729	5.2%
Parkland	33,159	3.2%
Gladstone State Development Area	27,200	2.6%
Residential	5,064	0.5%
Strategic Port Land	3,292	0.3%
Industry	2,270	0.2%
Community	1,655	0.2%
Major Infrastructure	1,324	0.1%
Urban Expansion	1,057	0.1%
Recreation	743	0.1%
Commercial	202	0.0%
Other	55,450	5.3%
Total	1,046,642	100.0%

Source: Queensland Government (2016), AEC

Threats to the Gladstone Region's Biodiversity

Key threats to the Gladstone region's biodiversity values include:

Clearing for agriculture, urban or other uses

Clearing of native vegetation reduces the area available for plant and animal species and the ecological processes that sustain local populations, resulting in decreasing populations sizes, greater risk of local extinctions, lower numbers of species in a given area (i.e. lower species diversity) and degraded ecosystems.

Population growth, urban & industrial development

Population growth, urban expansion and industrial development present a potentially significant threat to biodiversity, with increased demands on land, water and energy resources, increased land clearing, associated air and water pollution, invasive species, risk of introduced plant diseases, increased traffic, and more feral and domestic animals predating on native wildlife.

Habitat fragmentation & isolation

Loss of habitat values such as tree and shrub richness/canopy cover, large living trees, perennial grass cover, woody debris and litter, can create gaps in wildlife corridors and barriers to the dispersal of plants and animals, with the smaller remnant patches separated by larger gaps and sometime physical barriers, such as roads, buildings and cleared agricultural land. Smaller remnant patches support less species and are subject to higher levels of predation and degradation from a range of factors. Isolation of remnants by non-habitat areas reduces the ability for some species to move between habitats leading to local extinctions.

Weed invasion

Invasive weeds like Parthenium or Giant Rat's Tail grass can establish dense growth that excludes less competitive native species and provides low animal habitat values as well as leading to increased fire frequency and destruction. GRC (2016) has developed a Biosecurity Plan to manage weed and pest animals.

Other invasive exotic species

Feral species compete with native species for food and habitat. Feral cats, foxes and wild dogs are voracious predators that kill native wildlife. Feral pigs are very destructive in wetland environments and prey on native wildlife. Cane toads are toxic and prolific, which has led to the near extinction of many native species. More recently fire ants have posed a threat to biodiversity and whilst the eradication program around the Gladstone Port area has been successful, ongoing surveillance is essential. GRC (2016) has developed a Biosecurity Plan to manage weed and pest animals.





Changes to natural fire regimes

Fire frequency and intensity results in changes to vegetation composition and a loss of fire sensitive species and proliferation of fire dependent species. Invasive weeds are often favoured by fire.

Over-grazing

Overgrazing reduces the diversity of native plants in natural pastures, as well as contributing to erosion and sedimentation affecting watercourses.

Changes to water quality

Changes in water quality can have a detrimental effect on aquatic ecosystems. Urban runoff, pollution and invasive non-native fish and plants can impact on water quality.

Off-site effects of nearby land-uses

Pollution, erosion, sedimentation and weeds can have detrimental impacts upon downstream or downslope environments.

Protection of coastal foreshores

Pollution, denudation of dunes, degradation of mangroves and unrestricted human access can threaten plants and animals that inhabit and depend on the terrestrial/marine interface.

Climate change

Climate change is predicted to increase the frequency and duration of temperature extremes, droughts, storms, regional flooding and cause sea level rise. It is predicted that the average rainfall will decrease resulting in reduced water availability. The most vulnerable ecosystems include coral reefs (coral bleaching and ocean acidification), coastal ecosystems, rainforests, fragmented terrestrial ecosystems and areas vulnerable to fire or low freshwater availability. Some species that could become endangered or extinct include those living near the upper limit of their temperature range (for example, plants at their southern or northern limits and mangroves); those with restricted climatic niches; and those that cannot migrate to new habitats due to habitat fragmentation or lack of alternatives. These threatening processes lead to a reduction in species richness and diversity and a decline in habitat quality and condition.

Strategy Alignment

Since biodiversity is of global concern there is a hierarchy of jurisdictional agreements and strategies that the Council's strategy needs to recognise and where possible align to. These include international agreements, Commonwealth legislation and strategies, Queensland Government legislation, policy and strategies, regional (catchment) Natural Resource Management group strategies and other local strategies and policies. These are covered in Appendix A.





Vision & Mission

Vision

Gladstone Regional Council's biodiversity conservation vision is to:

Preserve and conserve our regional biodiversity values on behalf of the community

To **preserve** means to keep safe and protect the region's biodiversity from harm caused by external influences or events.

To **conserve** means to prevent damage, decay or loss of biodiversity through appropriate management and actions.

Regional biodiversity values are those ecosystems, plants and animals (some unique) found in the Gladstone region and by extension to Queensland and Australia.

Mission

The mission of the Council to achieve its vision is delivered through the following aims and objectives:

- 1. Preserve and protect the existing biodiversity values of the Gladstone region by identifying and mitigating threats to those values.
- 2. Conserve and improve regional biodiversity values by:
 - undertaking weed and pest animal control;
 - encouraging all levels of government to acquire land with high conservation values especially where critical to wildlife corridors, waterways and coastal areas;
 - encouraging biodiversity beneficial voluntary land management practices by rural landholders;
 - rehabilitating degraded areas;
 - o conserving rare and threatened species; and
 - o enforcing penalties for poor environmental behaviour.
- 3. Research, compile and disseminate knowledge and information on regional biodiversity values.
- 4. Educate and inform the community on regional biodiversity values, their importance and relevant behaviours to enhance preservation and conservation.
- 5. Partner with environment focussed groups to maximise knowledge and activity to preserve and conserve regional biodiversity values across the region.
- 6. Work with and advocate to other levels of government regarding the need to preserve and conserve regional biodiversity values.
- 7. Balance development with environmental protection at both local and regional levels.

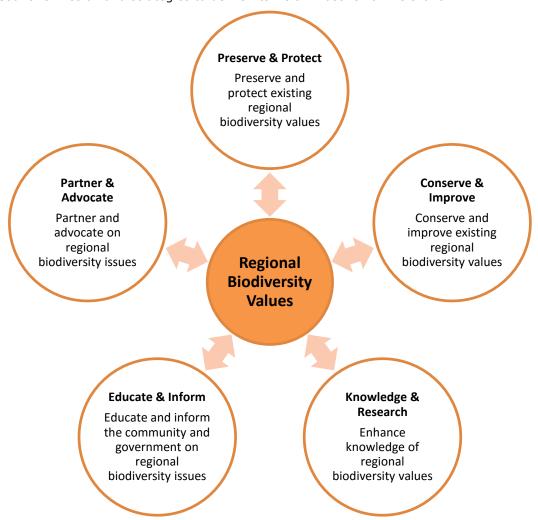




Strategic Themes

This *Biodiversity Conservation Strategic Plan*, the first for Council, aims to give direction to the Council in regards to how it can best preserve and conserve the Gladstone region's biodiversity values for the benefit of the community.

At the centre of the strategy there must be a single focus on regional biodiversity values. This is an important motivation since all elements of the strategy must strive to benefit the region's biodiversity if the Council's vision is to be achieved. Over time the region's biodiversity will be challenged by pressures such as climate change and development and Council's mission and strategies to deliver its vision must remain relevant.



Each strategic theme is considered in relation to:

- Importance: The significance of the strategic theme.
- Strategic Goals, Targets & Strategies: The strategies stakeholders need to pursue to achieve strategic goals including measures and targets that indicate achievement.
- Short-term Actions: Actions/projects that are already underway or planned by Council.
- Aspirational Actions: Actions/projects that stakeholders would like to pursue that will help to achieve the vision.

Useful resources for each theme are provided prior to the reference section.





Theme 1: Preserve & Protect

Preserve and protect existing regional biodiversity values

Importance

Both the Australian and Queensland biodiversity conservation strategies acknowledge a decline in biodiversity. It is therefore critical to halt that decline and preserve what remains. Whilst there is arguably appropriate State and Commonwealth legislation in place to protect biodiversity, councils can, within their regional boundaries, ensure that the community is educated on appropriate environmental behaviours, and there are co-ordinated activities and effective advocacy to preserve and protect their own unique regional biodiversity values.

Whilst Council generally only has jurisdiction over its own and private lands through its Planning Scheme and local laws, it can play a significant role in representing the views and values of the local community in advocating and pressing for change with the State and Commonwealth Governments.

Council, through the community, is well placed to recognise the cumulative impacts of development on biodiversity and therefore Council has a critical role in balancing development with environmental protection at both local and regional levels. Council is committed to doing so through the implementation of this strategy.

Strategic Goals, Targets & Strategies

Strategic Goal	Measure/Target	Strategy
1.1 Preserve the biodiversity value of Council owned/	Number of preservation projects on council owned/	1.1.1 Revegetation to original ecosystem state
managed conservation reserves and natural areas	managed conservation reserves and natural areas	1.1.2 Effective weed and pest management planning and implementation
		1.1.3 Effective fire management planning and implementation
		1.1.4 Wetland restoration
		1.1.5 Enhance public access to appropriate areas
1.2 Protect the biodiversity value of beach protection	Number of protection actions on beach protection zoned	1.2.1 Effective management of coastal access
zoned land	land Area restored/revegetated	1.2.2 Restoration/revegetation of shorelines
		1.2.3 Monitoring and appropriate management of shoreline erosion
1.3 Preserve the biodiversity value of state owned land	Refer Strategic Goal 5.1	Refer Strategic Goal 5.1





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1.4 No net loss of protected land use areas (conservation, forestry and parkland) from 2016 levels	 2016 protected land use: Conservation 80,546ha (7.7%) Forestry 54,729ha (5.2%) Parkland 30,711ha (3.2%) 	1.4.1 Advocate retention of protected areas (where not owned by Council) (also see Theme 5) 1.4.2 Where there is a need to divest of parkland consider planting native vegetation
1.5 Ensure appropriate biodiversity management regimes are in place for protected areas	Weed and pest animal management actions Develop a fire management plan for Council managed lands Council owned habitats assessed in good condition	1.5.1 Assist partner organisations with weed and pest animal control actions that reduce threats to biodiversity 1.5.2 Manage remnant and aquatic habitats under Council control in good condition
1.6 Minimise impacts of urban and industrial development and activity on biodiversity	Relevant parts of Planning Scheme reviewed Seasonal plant and/or animal activity protected Significant trees protected Better managed stormwater runoff Illegal activities identified and notified/prosecuted	1.6.1 Review Overlay Codes and Strategic Framework with the Gladstone Regional Planning Scheme 2015 to ensure they contain appropriate biodiversity safeguards 1.6.2 Protect significant trees 1.6.3 Appropriately manage stormwater runoff and encourage new developments to include water sensitive urban design 1.6.4 Identify, notify and control access to public lands where seasonal plant and/or animal activity may occur (e.g. turtle nesting) 1.6.5 Educate the community on appropriate environmental behaviour (also see Theme 4) 1.6.6 Police and report illegal environmental behaviour





Short-term Actions

- Develop a fire management plan for Council managed lands
- Install interpretive signage to educate dog owners about nesting turtles and shorebirds
- Significant tree and vegetation register and map layer on Council's GIS system
- Significant trees and vegetation informing the Planning Scheme
- Workshop to identify key threats to specific protected areas and appropriate management responses
- Signage and restricting beach access for nesting turtle and shorebird sites
- Degraded vegetation & habitat identification

Aspirational Actions

Preservation of Police/Auckland Creek as an example to establishing buffer areas of natural vegetation with public access and interpretive signage





Theme 2: Conserve & Improve

Conserve and improve existing regional biodiversity values

Importance

While some land areas may be protected from uses incompatible with biodiversity they require conserving and improving to ensure that they do not degrade from external or internal threats. This includes adjacent public and private areas, including those that comprise wildlife corridors, water courses and coastal areas that also provide regional ecosystems and habitat. It is especially the case where rare and threatened species exist (see Appendix B).

Where protected and other land is open to human access appropriate actions are required to manage access and impacts including infrastructure such as tracks, paths and facilities as well as signage and implementing seasonal restrictions.

Access to the Gladstone region's unique ecosystems is also important for the community's enjoyment, health and wellbeing as well as attracting visitors¹ and negating perceptions of Gladstone as solely industrial.

Strategic Goals, Targets & Strategies

Strategic Goal	Measure/Target	Strategy
2.1 Assist rural landowners that adjoin protected areas to adopt management practices that positively impact biodiversity values	Weed and pest animal campaigns Management practices adopted	2.1.1 Targeted actions to assist rural landholders to prevent the spread of invasive weed and pest animals impacting on biodiversity
		2.1.2 Encourage and support rural land owners to voluntarily adopt management practices that positively impact biodiversity and habitat values (see Theme 5)
2.2 Improve degraded habitat areas in riparian zones, waterways, wetlands and coastal areas to enhance biodiversity values	Areas identified Number of rehabilitation projects	2.2.1 In collaboration with NRM groups identify and describe degraded vegetation areas especially those that contain rare or endangered species 2.2.2 Work with local groups to rehabilitate degraded vegetation areas

 $^{^{1}}$ The 20-year plan for Queensland Tourism contains Theme 2: Preserve our nature and culture (Queensland Government, 2013).





2.3 Improve existing protected area access and management infrastructure	Identified infrastructure for improvement	2.3.1 For non-Council owned land identify improvements to access and management infrastructure and advocate for improvements (see Theme 5)
		2.3.2 For Council owned land identify improvements to access and management infrastructure
2.4 Minimise roadside clearing (as part of roadside maintenance works)	Guidelines/policy developed Zero non-compliance with guidelines/policy roadside clearing	2.4.1 Develop roadside clearing guidelines/policy 2.4.2 Monitor roadside clearing activities
2.5 Conserve rare and endangered species	Increase in population sizes	2.5.1 Utilise Tondoon Botanic Gardens nursey to propagate rare and endangered species (also see Theme 4)

Short-term Actions

- Work with Green Army and volunteer organisations to restore habitats
- Map weeds in Council managed natural areas
- Develop a register of native trees that are removed by Council to inform a re-planting schedule. Including a matrix using tree size to determine how many trees need to be replanted
- Upgrade the directional signage on Round Gladstone Trail to improve public access to Police Creek
- Investigate creation of hollows in suitable trees
- · Coastal dune revegetation projects
- Support community rehabilitation projects
- Control pedestrian access to beaches where relevant
- Undertake regular assessments of pedestrian beach access pathways
- Undertake assessments of vegetated stormwater waterways
- Roadside clearing guidelines/policy

Aspirational Actions

- · Local environmental offset policy
- Land acquisition levy
- Habitat creation projects
- Demonstration replanted native forest
- Protocols to prevent spread of weed and pest animal species
- Rural landholder biodiversity conservation action handbook
- Non-council owned land protected area infrastructure project identification
- Mt Larcom infrastructure improvements
- Council owned land infrastructure project identification
- Improve Curtis Is. Conservation Park
- Improve Boyne Is. Conservation Park
- Boyne Is. Tannum Sands linear parkway plan
- Seventeen Seventy to Agnes Water walking trail including access to Round Hill Creek
- Fish ladder at Awoonga Dam wall





Theme 3: Knowledge & Research

Enhance knowledge of regional biodiversity values

Importance

To appropriately protect and conserve existing biodiversity, significant knowledge and expertise is required. Council is well positioned and motivated to accumulate biodiversity knowledge on behalf of the region and make this knowledge and its expert staff available to the community. Gaps in the knowledge base combined with community needs supports the identification of areas for further research or information collection.

Council could also benefit from undertaking its own research/monitoring (potentially in partnership with research institutions) of the environmental outcomes, especially from imposed conditions, of approved development projects on the region's biodiversity values.

Strategic Goals, Targets & Strategies

Strategic Goal	Measure/Target	Strategy
3.1 Create a repository of regional biodiversity knowledge	Knowledge base compiled Annual updates	3.1.1 In partnership with other organisations compile knowledge-base on all available data, information, reports, mapping, etc. (including experts) regarding biodiversity values (see Theme 5) 3.1.2 Regularly inform the community of the knowledge-base resource
3.2 Employ and maintain suitably qualified staff	Conservation staff qualifications, knowledge and experience Council staff awareness of biodiversity issues	3.2.1 Ensure Council has appropriately qualified staff for biodiversity conservation including GIS skills 3.2.2 Ensure all Council staff are aware of biodiversity values, issues and management practices of the region 3.2.3 Ensure that biodiversity value considerations are included in all Council decision making and management activities
3.3 Identify knowledge gaps and develop future areas of research	Number of research projects per annum	3.3.1 Identify knowledge gaps on biodiversity in the region 3.3.2 Develop research prospectus (see Theme 5) 3.3.3 Promote research opportunities to national and international education institutions (see Theme 5)





3.4 Monitor environmental conditions on development approvals	Development compliance with environmental conditions from a Council perspective	3.4.1 Review existing project environmental conditions and where appropriate establish monitoring regimes
		3.4.2 Monitor Council imposed environmental conditions on developments approved by Council
		3.4.3 Review the need to monitor historical development approvals that have lapsed

Short-term Actions

- Compile biodiversity knowledge base
- Compile biodiversity expert database
- Workshop to identify areas for protection/rehabilitation
- Develop professional development program for Conservation staff including conferences, workshops and training to increase knowledge

Aspirational Actions

- Biodiversity research prospectus
- Remnant vegetation survey at 1:25,000 scale (council lands only?)
- Identify other potential areas where listed threatened species are likely to occur (surveys)
- Review Planning Scheme to ensure consistency with this strategy
- Review Planning Scheme to ensure it contains relevant biodiversity issues mapping





Theme 4: Educate & Inform

Educate and inform the community and government on regional biodiversity issues

Importance

Achieving GRC's vision for biodiversity conservation requires developing community awareness and knowledge of the region's biodiversity values and why they are important. The educational process needs multiple approaches depending on the stakeholder and should be supported through information and interpretation resources.

Tondoon Botanic Gardens (TBG) provides an accessible window into the region's biodiversity values and a focal point for community and visitor education.

Strategic Goals, Targets & Strategies

Strategic Goal	Measure/Target	Strategy
4.1 Provide access to and promote Council's biodiversity knowledge-base, expertise and services	Availability, breadth and currency of information	4.1.1 Maintain council webpage with links to knowledge-base, experts, community groups, council supported rehabilitation projects and council conservation services
4.2 Provide learning opportunities to the community	Information package Annual program of learning activities Number of active participants per annum	4.2.1 Collaborate with NRM groups to develop information packages and programs to inform residents about the plants and animals of the region, threats to biodiversity and conservation priorities 4.2.2 In association with NRM groups develop an annual program of learning activities and events 4.2.3 Promote learning activities and events to the community
4.3 Regular promotion and communication to residents and visitors	4-6 communications per annum	4.3.1 Develop annual communication program to all parts of the region 4.3.2 Deliver annual communication program
4.4 Onsite promotion of Council activity/biodiversity information	Signage formats Annual distribution of signs	4.4.1 Develop interpretive signage formats for different situations (permanent, seasonal, temporary) 4.4.2 Create and distribute signage as appropriate





Short-term Actions

- Interpretive signage at Canoe Point Botanic
 Reserve and other relevant locations
- Interpretive signage formats and annual distribution
- Present Strategic Plan and annual Action Plan to stakeholder/conservation groups
- Develop council staff training program on biodiversity and conservation to educate GRC staff about biodiversity and impacts of their works

Aspirational Actions

- Biodiversity conservation information resource (electronic) and priorities
- Identification resource (electronic) of the regional threatened species to assist community with conservation and identifying location and abundance of these priority biodiversity species





Theme 5: Partner & Advocate

Partner and advocate on regional biodiversity issues

Importance

Although biodiversity conservation is not a traditional service provided by Queensland councils, local government being the level of government closest to the community, is well suited to be a custodian of biodiversity values within its local government area. Local government, through its Planning Scheme and local laws, has the ability to control the environmental outcomes of development over which it has control. Furthermore, local government staff, whom are in the field and community, can observe biodiversity issues and report these to the necessary authority.

Local government is ideally placed to offer a co-ordination role among all the various levels of government and community groups with an interest in regional biodiversity values. Local government also represents its local community.

Strategic Goals, Targets & Strategies

Strategic Goal	Measure/Target	Strategy
5.1 Advocate biodiversity preservation and conservation issues to higher levels of government	Up to date register Issues raised and outcomes	5.1.1 Maintain and share a register of biodiversity responsible government organisations and contacts
		5.1.2 Advocate biodiversity issues to appropriate government organisations, for responsive/proactive management as required
		5.1.3 Advocate expansion of, or new, protected areas when opportunities arise
5.2 Advocate biodiversity issues to appropriate regional decision makers	Up to date register Issues raised and outcomes	5.2.1 Maintain and share a register of biodiversity responsible regional organisations and contacts
		5.2.2 Advocate biodiversity issues to appropriate regional organisations, for responsive/proactive management as required
5.3 Undertake close co- operation with NRM, catchment and local	Up to date register Number of joint activities	5.3.1 Maintain and share a register of NRM, catchment and local environment groups
environment groups		5.3.2 Maintain regular communications with NRM, catchment and local environment groups to exchange information, areas of need and activities





Short-term Actions

- Identify issues to be raised with state and commonwealth government organisations
- Explore joint project and funding opportunities with Natural Resource Management (NRM) groups and industry
- Explore joint activities with local environment groups

Aspirational Actions

 Advocate improvements to the Mt Larcom walking track, fire management, weed control and fragmentation





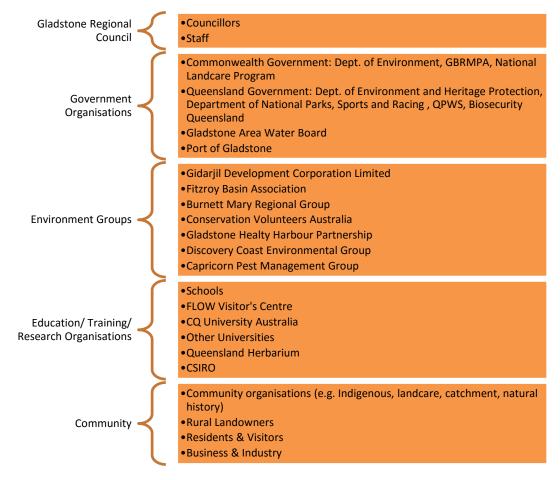
Strategy Implementation & Review

The implementation of the Strategic Plan and demonstrated progress towards strategic goals is important to demonstrate Council's commitment towards achieving the vision.

The Strategic Plan is accompanied by a rolling three-year Action Plan developed to deliver the strategies and to inform the GRC budget process.

Implementation Stakeholders

All stakeholders directly involved in biodiversity conservation are potential implementation partners. There are also those indirect stakeholders whose engagement and support are necessary to ensure strategic goals can be met. Stakeholders include, but are not limited to:



Strategy Reporting & Review

Achievements against the Strategic Plan should be reported by GRC annually.

The Strategic Plan should be subject to a minor review and adjustment every 2-3 years and a major review every 5 years to ensure it remains relevant to changing circumstances.

The supporting Action Plan will be reviewed annually.





Useful Resources

Theme 1: Preserve & Protect

- Queensland Herarium mapping regional ecosystems http://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems/
- Gladstone Regional Council Planning Scheme http://www.grcplanningscheme.com.au/
- Obtaining approval to clear native vegetation https://www.qld.gov.au/environment/land/vegetation/
- Queensland environmental offsets framework http://www.qld.gov.au/environment/pollution/management/offsets/
- How national parks are declared http://www.npsr.qld.gov.au/managing/principles/how_parks are declared.html
- Queensland Herbarium (2014) Regional Ecosystem Fire Guidelines https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/fire-management/
- Fire management in national parks http://www.npsr.gld.qov.au/managing/fire management.html
- The SEQ Fire and Biodiversity Consortium http://www.fireandbiodiversity.org.au/
- Gladstone Regional Council illegal Dumping and Litter Prevention Strategy http://www.gladstone.qld.gov.au/illegal-dumping-and-litter

Theme 2: Conserve & Improve

- Land Management Online for Nature Refuges http://landmanagementonline.org.au/home/ and https://www.ehp.qld.gov.au/ecosystems/nature-refuges/
- Biocondition for monitoring biodiversity condition https://www.qld.gov.au/environment/plants-animals/biodiversity/assessing/
- Meat and Livestock Australia Toolkit for managing biodiversity on grazed land http://www.mla.com.au/Research-and-development/Environment-sustainability/Biodiversity-vegetation#toolkit

Theme 3: Knowledge & Research

- State environmental approvals in the petroleum, geothermal and greenhouse gas storage sector are subject to compliance assessments https://www.ehp.qld.gov.au/management/non-mining/index.html
- The Department of Natural Resources and Mines can provide web-based Regulated Vegetation Maps for any Lot/Plan across Queensland http://www.qld.gov.au/environment/land/vegetation/map-request/

Theme 4: Educate & Inform

- Tondoon Botanic Gardens http://www.gladstone.qld.gov.au/tondoon-botanic
- Education for sustainable development http://en.unesco.org/themes/education-sustainable-development
- Commonwealth Department of the Environment biodiversity http://www.environment.gov.au/biodiversity
- Australia's Biodiversity Conservation Strategy 2010-2030 http://www.environment.gov.au/biodiversity/conservation/strategy

Theme 5: Partner & Advocate

- Gladstone Area Water Board http://www.gawb.qld.gov.au/
- Fitzroy Basin Association http://www.fba.org.au/
- Burnett Mary Regional Group http://www.bmrq.org.au/
- Queensland Department of Environment and Heritage Protection http://www.ehp.gld.gov.au/
- Queensland Department of National Parks, Sports and Racing http://www.nprsr.gld.gov.au/
- National Landcare Program http://www.nrm.gov.au/
- Commonwealth Department of the Environment http://www.environment.gov.au
- Great Barrier Reef Marine Authority, http://www.gbrmpa.gov.au





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Appendix A Strategy Alignment

International

Australia is a signatory to a number of international agreements pertaining to conservation of biodiversity. The Australian Government is responsible for the implementation of international treaties in Australia. In particular, a number of migratory bird species listed under international treaties (e.g. JAMBA, CAMBA, and ROKAMBA) are known to occur in the Gladstone region on a seasonal basis, although no wetlands of international significance (i.e. Ramsar Convention wetlands) occur within the region.

A selection of international conventions and agreements that are relevant to biodiversity in the Gladstone region are listed below.

Table A1 Relevant International Agreements relating to Biodiversity Conservation

Convention/Agreement	Application
Convention on Biological Diversity (the Biodiversity Convention, 1992)	Imposes a general obligation on Australia to conserve biodiversity in both terrestrial and marine ecosystems.
Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention, 1979)	Aims to conserve terrestrial, aquatic and avian migratory species throughout their range.
Japan-Australia Migratory Bird Agreement (JAMBA, 1981)	Aims to conserve migratory birds and their habitats.
China-Australia Migratory Bird Agreement (CAMBA, 1988)	Aims to conserve migratory birds and their habitats.
Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA, 2006)	Aims to conserve migratory birds and their habitats.
Convention Concerning the Protection of the World Cultural and Natural Heritage (the World Heritage Convention, 1972)	Concerns the identification, protection and preservation of cultural and natural heritage considered to be of outstanding universal value. The Great Barrier Reef is one of 12 Australian sites on the World Heritage List.
The United Nations Convention on the Law of the Sea (UNCLOS, 1982)	Provides a major framework regulating use of the world's oceans. It places important obligations on Australia to protect the marine environment.

Source: SLR (2016)

National

The Commonwealth Government administers the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), which applies to all matters of national environmental significance, whether on private land or Government (or Crown) land, all Commonwealth land within Australia and all Commonwealth activities. Pursuant to the Act, any action which "has, will have, or is likely to have a significant impact on a matter of national environmental significance" is defined as a "controlled action", and requires approval from the Minister for the Environment. The aims of the Act are:

- "to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance", and
- "to promote the conservation of biodiversity".

The Australian Government (Natural Resource Management Ministerial Council, 2010) released *Australia's Biodiversity Conservation Strategy 2010-2030* in 2010. The strategy states the importance to conserve biodiversity and build ecosystem resilience and aims to provide a guiding framework for biodiversity conservation for government, business and community sectors. The Strategy functions as a policy 'umbrella' over other more specific national frameworks. These include:

- National Framework for the Management and Monitoring of Australia's Native Vegetation (NRMMC, 1999)
- The Australian Weeds Strategy (NRMMC, 2007a).
- Australian Pest Animal Strategy (NRMMC, 2007b).





 Australia's Strategy for the National Reserve System 2009-2030 (National Reserve System Task Group, 2009).

Priorities for action are contained under the three headings: engaging all Australians; building ecosystem resilience in a changing climate; and getting measurable results. The strategy contains ten interim national targets for the first five years. As per the strategy review timetable, it is currently under its first five-year review.

Queensland

A number of Acts and regulations control the conservation of biodiversity in Queensland. A selection of the most relevant is provided in Table A2.

Table A2 Queensland legislation relevant to biodiversity

Act	Application
Nature Conservation Act 1992	Relates to the creation and management of protected areas (such as national parks) and the protection of native plant and animal species (protected wildlife).
Vegetation Management Act 1999	Provides for the preparation of maps to identify areas of high conservation value, areas vulnerable to land degradation and remnant vegetation and also provides for policies against which applications for clearing vegetation are assessed.
Forestry Act 1959	Manages and protects state forests and state owned forest resources.
Fisheries Act 1994	Regulates fishing, development in fisheries habitat areas, and damage to marine plants in Queensland. Also governs fish barriers and passage works.
Marine Parks Act 2004	Provides a framework for the creation of marine parks and the protection of marine species. The GBR Coast Marine Park complements (in adjacent State waters) the GBR Marine Park created under the Great Barrier Reef Marine Park Act 1975.
Sustainable Planning Act 2009	Aims to 'improve sustainable environmental outcomes through streamlined processes' and incorporates Statewide, Regional and local planning hierarchies.
Biosecurity Act 2014	Provides for management of all biosecurity matter including restricted and prohibited plants, animals, fish, insects and diseases.
Environmental Protection Act 1994	Aims to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.

Source: SLR (2016) & AEC

Queensland's biodiversity is defined in the *Nature Conservation Act 1992* as 'the natural diversity of wildlife (including plants and animals), together with the environmental conditions for their survival'. The Act also says this diversity exists at different scales:

- Regional diversity —the different kinds of landscape.
- Ecosystem diversity —the different communities of plants and animals.
- Species diversity —the number of different species in an area.
- Genetic diversity —diversity in the genetic make-up of individuals and populations.

The Queensland Government (2010) released a draft biodiversity strategy for Queensland in 2010 titled *Building Nature's Resilience*. It acknowledged the values of Queensland's biodiversity and that it is in significant decline. The goals of the strategy are to reverse the decline in biodiversity and increase the resilience of species, ecosystems and ecological processes. To achieve these goals, the plan concentrates on protecting priority threatened species, expanding protected areas, enhancing the protection of biodiversity on leasehold land and encouraging the community to participate.





Regional

Burnett Mary River Group Strategic Plan 2015-2020

The Burnett Mary River Group Natural Resource Management Group covers the Baffle and Kolan catchments of the Gladstone Region.

The Burnett Mary River Group Strategic Plan 2015-2020 (BMRG, 2015) has a vision to protect and enhance the agricultural and natural environment of the Burnett Mary region for future generations. The Strategic Plan is underpinned by five key areas:

- Governance BMRG is a robust and progressive organisation with best practice management and governance that meets the industry standard.
- Relationships to strengthen and build productive, collaborative relationships, including members, partners, industry, Traditional Owners and other community organisations.
- Delivery Implement appropriate actions that protect and enhance our regions natural resources.
- Workplace to have skilled staff working in a harmonious and safe workplace culture.
- Leadership To be the respected regional leader for NRM in the Burnett Mary region.

Central Queensland Sustainability Strategy 2030

Although only overlapping the northern part of the Gladstone Region, CQSS:2030 is a regional sustainability strategy assembled by the Fitzroy Basin Association (FBA, 2016) with input from stakeholders and members of the community. The primary delivery pathway is through engagement with the community, industries and businesses of central Queensland. Strategic themes included in the CQSS:2030 include:

- Plan our Future.
- Support our Growth.
- · Protect our Assets.

These align with the themes and content of this Biodiversity Conservation Strategic Plan; outlining strategies for aquatic, riparian, weltand, terrestrial, coastal, estuarine and marine ecosystems.

Local

Gladstone Regional Council Biosecurity Plan 2016-2019

Formerly known as the pest management plan, the *Gladstone Regional Council Biosecurity Plan 2016-2019* (GRC, 2016) provides a strategic approach to managing invasive plants and animal species throughout the region. The plan adopts a two-tier management program; a general strategic program and an invasive species strategic program.

The general strategic Program outlines a number of broad strategic actions that have been developed to meet the desired outcomes identified in the *Draft Queensland Weed and Pest Animal Strategy 2016-2020*. These are:

1. Awareness and Education

- 1.1 Availability of information. Make invasive species information accessible to all stakeholders.
- 1.2 Public awareness. Increase community, industry, agribusiness and government awareness of invasive species and their impacts.
- 1.3 Education and training. Enhance stakeholder knowledge of invasive species impacts and improve skills in management.

2. Monitoring and Assessment

2.1 Data collection and assessment. Develop processes to collect, utilize and make available data relevant to invasive species management.





- 2.2 Biology and impacts. Further the understanding of the biology, ecology and impacts of invasive species.
- 2.3 Community attitudes. Further the understanding of community attitudes to invasive species management.

3. Strategic Planning Framework and Management

- 3.1 Planning. Create and maintain a regional planning framework for invasive species management and identify priority sites for management.
- 3.2 Holistic management. Integrate invasive species management planning with other planning processes.
- 3.3 Resources. Efficiently and adequately resource invasive species management.
- 3.4 Strategic management and coordination. Plan, implement, monitor, evaluate and review integrated invasive species management.

4. Prevention and Early Intervention

- 4.1 Prevention of introduction. Prevent the introduction of new invasive species into GRC local government area.
- 4.2 Early detection and eradication. Prevent the local establishment of invasive species.
- 4.3 Containment. Minimise the spread of invasive species into new areas.

5. Effective Management Systems

- 5.1 Development of management practices. Develop new and improve existing management practices.
- 5.2 Adoption of management practices. Adopt and promote best management practice.
- 5.3 Population and impact management. Reduce invasive species populations and impacts.
- 5.4 Management incentives. Offer incentives for undertaking invasive species management.

6. Commitment Roles and Responsibilities

- 6.1 Long term commitment. Establish long term shared stakeholder commitment to address invasive species issues.
- 6.2 Roles and responsibilities. Establish roles and responsibilities for invasive species management that are accepted by landholders, community, industry and government.
- 6.3 Compliance and enforcement. Ensure compliance with the legislation is the minimum management outcome.

Gladstone Regional Community Plan

The Gladstone Regional Community Plan (GRC, 2011) is an alignment of all previous strategic planning exercises carried out in the region. It contains a vision for the future of the region and practical strategies and actions to achieve the vision.

The *Biodiversity Conservation Strategic Plan* directly links with the following topics in the community plan:

- **Environment Topic 1**: Protecting and Enhancing the Environment
 - Strategy 1.1: Protect and maintain environmental reserves and green spaces
 - Strategy 1.4: Better understand impacts on marine resources and protect crucial marine ecosystems
 - Strategy 1.5: Maintain and expand areas of natural vegetation





- Environment Topic 2: Environmental Education and Awareness
 - Strategy 2.1: Provide environmental education and awareness to support sustainable behaviours
- Environmental Topic 3: Environmental Monitoring
 - Strategy 3.1: Establish independent best practice emissions monitoring and reporting systems in place
 - Strategy 3.2: Provide monitoring information so it is readily available to the public in an easily understandable format and engage the community in actions to address issues.
- Environmental Topic 4: Achieving Sustainability
 - Strategy 4.4: Support the sustainable use of water resources and use best practice in managing, using and recycling water.
- Environmental Topic 5: Urban Development
 - Strategy 5.1: Develop and implement a planning scheme that includes sustainability principles and practices in urban development
- Environmental Topic 6: Disaster Planning, Training & Management
 - Strategy 6.1: Maintaining awareness and preparation for disasters
 - Strategy 6.2: Enhancing training, equipment and emergency management skills
- Community Topic 1: Community Engagement
 - Strategy 1.1: Implement appropriate engagement activities and interactions to genuinely engage all sectors in community planning processes and topical issues important to the region
- Community Topic 2: Effective Regional Governance
 - Strategy 2.2: Set parameters for environmentally and socially responsible development
- Community Topic 3: Collaboration & Partnerships
 - Strategy 3.1: Encourage collaborative arrangements between government, business and the community
- Community Topic 4: Regional & Local
 - Strategy 5.1: Engaging smaller communities in the region and ensuring that they are fully included in decision-making and development of the region as a whole.
 - Strategy 5.2: Planning for the whole Gladstone region while considering the specific needs of different areas and aspects of the community

Local planning and development control within the Gladstone region is conducted according to the *Gladstone Regional Council Planning Scheme* (GRC, 2015), which has been prepared in accordance with the *Sustainable Planning Act 2009* as a framework for managing development. The Planning Scheme sets out Council's intention for the future development in the region to 2031. The Planning Scheme seeks to advance state and regional policies through more detailed local responses, taking into account the local context. It is important to recognise that amending the Planning Scheme has statutory requirements and timeframes so any changes to the scheme brought about through the Biodiversity Conservation Strategy should be consolidated into a single amendment in consultation with the relevant section of GRC.





Appendix B Biodiversity Values of the Gladstone Region

Native Vegetation

Gladstone Regional Council's (GRC) coastline includes extensive ocean beaches, major mangrove systems, seagrass meadows and estuaries. The coral reefs and islands of the Capricorn group are just offshore. The hinterland includes grazing lands and woodlands and forests extending up to the Great Dividing Range. Vegetation types (Regional Ecosystems or REs) vary from mangroves, saltmarsh and dune vegetation, through open eucalypt woodlands and forests to vine scrubs and rainforests.

In 2013, 5,770 km 2 (55% of the total land area of the region) retained original vegetation cover compared to 5,921 km 2 in 1997 (a decrease of 147 km 2 or 2.5%). Whilst the percentage of remnant natural vegetation has decreased by 2.5% since 1997 to 2013, recent rates of decline are between 0.1% and 0.3% (see Figure A1).

Large areas of intact native vegetation are critical for maintaining local populations of plants and animals. The largest areas of remnant vegetation are within the national parks and state forests particularly in the range areas, Curtis Island, Bustard Head and Round Hill Head. Clearing has been predominantly on flatter and more fertile land in the rural parts of the Gladstone region and the urban and industrial areas around Gladstone City.

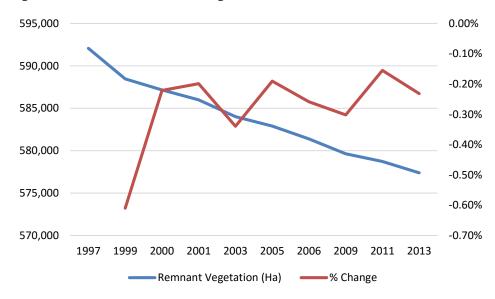


Figure B1 GRC Remnant Native Vegetation

Source: Queensland Government

Compared to Queensland's other 16 east coast council areas (excluding Cook and Brisbane), GRC ranks 10th for percentage of remnant native vegetation (see Figure A2) and 10th for the percentage of remnant natural vegetation reduction since 1997 (see Figure A3).

Within the Gladstone region, 123 different vegetation communities have been identified and mapped by the Queensland Herbarium.

Conversely, approximately $4,730 \, \text{km}^2$, representing 45% of the region, is classified as non-remnant 'cleared land'. Other lands have a mix of original vegetation and cleared land with varying biodiversity values.

Further information: http://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems/





Douglas Shire 91.4% **Townsville City Council** 77.2% Cassowary Coast Regional Council 69.1% Cairns Regional Council 67.0% Fraser Coast Regional Council 64.5% Livingstone Shire 61.9% Hinchinbrook Shire Council 61.8% Mackay Regional Council 60.7% **Redland City Council** 56.2% Gladstone Regional Council 55.2% **Bundaberg Regional Council** 46.7% Noosa Shire 46.2% **Gympie Regional Council** 42.0% Sunshine Coast Regional Council 41.1% **Gold Coast City Council** 40.4%

0.0%

Figure B2 Queensland East Coast Councils Remnant Vegetation Cover, 2013

Note: Excludes Brisbane City and Cook Shire.

Moreton Bay Regional Council

Rockhampton Regional Council

Source: Oueensland Government

Figure B3 Queensland East Coast Councils Remnant Vegetation Cover loss 1997 to 2013

20.0%

33.7%

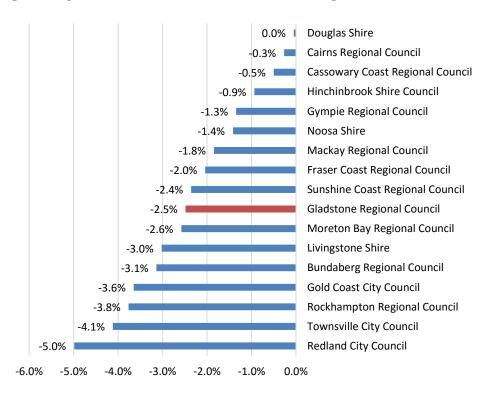
31.7%

40.0%

60.0%

80.0%

100.0%



Note: Excludes Brisbane City and Cook Shire.

Source: Queensland Government





Rivers & Creeks

Rivers and creeks within the Gladstone Region are important to species and water quality. They comprise the Baffle, Boyne, Calliope and Kolan catchments. The Boyne River flows through Lake Awoonga which when full covers an area around 8,400 hectares.

Table B1 Major River Catchments in the Gladstone Region

Catchment	Area sqkm	Elevation/Length	Tributaries (ordered by descending elevation)
Calliope River	2,241	182m/98km	Alma Creek (72m), Maxwelton Creek (58m), Harper Creek (45m), Alarm Creek (38m), Sandy Creek (37m), Oaky Creek (36m), Sheep Station Creek (32m), Larcom Creek (23m), Boundary Creek (20m), Gravel Creek (15m) and Double Creek (10m).
Baffle Creek	4,085	282m/124km	Gorge Creek (61m), Three Mile Creek (45m), Granite Creek (40m), Island Creek (24m), Scrubby Creek (24m), Reedy Creek (20m), Sandy Creek (14m), Grevillea Creek (13m), Sleepy Creek (9m), Euleilah Creek (3m) and Bottle Creek (1m).
Boyne River	2,496	371m/125km	Glassford Creek (118m), Deception Creek (116m), Station Creek (103m), Blackmans Creek (98m), Ridler Creek (83m), Ubobo Creek (72m), Degalgil Creek (63m), Oaky Creek (62m), Norton Creek (60m), Marble Creek (48m), Eastern Boyne River (41m), Diglum Creek (29m) and Iveragh Creek (25m).
Kolan River	2,904	515m/187km	Middle Creek (165m), Five Mile Creek (150m), Two Mile Creek (129m), House Creek (127m), Stony Creek (127m), Borilla Creek (109m), Nangandie Creek (103m), Kapunda Creek (82m), Walily Creek (75m), Branch Creek (74m), Telegraph Creek (68m), Tararan Creek (65m), Four Mile Creek (29m), Bullyard Creek (21m), Bucca Creek (19m), Gin Gin Creek (18m), Stony Creek (14m), Flagstone Creek (5m) and Yandaran Creek (1m).

Source: www.bonzle.com

Wetlands

Wetlands of the Gladstone region provide important habitat for a variety of species such as migratory water birds, vertebrate and invertebrate animals. The region has vast areas of estuarine, seagrass meadows, coral reefs, mangrove and saltmarsh wetlands in and around The Narrows, Curtis Island, Rodds Bay, Bustard Head and Round Hill Creek. Mapped coral reefs are also at Hummock Hill Island, Pancake Creek, Rodds Peninsula and Stringers Reef (Rules Beach).

Further information: http://wetlandinfo.ehp.qld.gov.au/wetlands/

The Great Barrier Reef

The Gladstone Regional Council boundaries extend seawards from the mainland to include all of the Capricorn and Bunker groups of reefs and islands.

The Great Barrier Reef Marine Park (GBRMP) (345,400 km2) is a Commonwealth marine park. Along with all the waters below mean low water mark, it includes some islands or parts of islands that are Commonwealth-owned.

Boundaries of the GBRMP generally follow the mainland coast and eastern side of Curtis Island. The extensive estuarine areas west of Curtis Island (The Narrows), Gladstone Harbour and Rodds Bay are not included within the GBRMP.

Nearly 99% of the Great Barrier Reef World Heritage Area is within the multiple-use GBRMP. The remaining section falls under Queensland Government jurisdiction – this amounts to 3,600 km2 and includes most islands, ports and other internal state waters.

Council's responsibilities do not extend to management of conservation issues within the GBRMP which is divided between the Queensland and Australian Governments, however, actions and planning should consider the role the supporting catchment plays in the long-term health of the GBR. The Great Barrier Reef Marine Park Authority (GBRMPA) and the Queensland Parks and Wildlife Service (QPWS) operate a joint Field Management Program for the marine and island national parks.

Further information: www.gbrmpa.gov.au





Protected Areas

State Parks

Gladstone is home to 47 National Parks and State Forests which, along with the smaller Conservation Parks and Regional Parks, act as important biodiversity conservation reserves for Gladstone's diverse plants and animals. National Parks and State Forests in Queensland are managed by the Queensland Parks and Wildlife Service (QPWS). Just over 80,000 hectares of land (8%) within Gladstone comprises National Park, with around 55,000 hectares (6%) comprising State Forest.

The largest conservation and forestry reserves within the Gladstone region are listed in Table B2. The largest reserve in the Gladstone region is Kroombit Tops National Park, which comprises over 43,000ha and extends over the boundary of the Gladstone Region Council area. Other important state parks include: Mount Larcom State Forest and Joseph Banks Regional Park.

Table B2 Largest National Parks and State Forests of the Gladstone Region

Reserve Name	Area (ha)
Kroombit Tops National Park	43,232
Bulburin National Park	32,593
Eurimbula National Park	23,245
Curtis Island State Forest	13,917
Don River State Forest	13,418
Curtis Island National Park and Regional Park	10,271
Castle Tower National Park	8,744
Kalpowar State Forest	8,473
Total	162,271

Source: DNPSR

Further information: http://www.nprsr.qld.gov.au/parks/list.php?region=65

Council Reserves

Gladstone Regional Council manages a portfolio of public land as open space. Table B3 lists the key parks and open space land use zones within Gladstone. Whilst many of these areas consist of sport fields and landscaped areas, some of these open space areas contain native vegetation that could provide biodiversity resources for native plants and animals.

Table B3 Open Space within Gladstone

Land Use Zone	Area (ha)
Parkland & Open Space	30,711
Open Space	2,407
Open Space & Recreation	743
Regional Reserve	290
Park Residential	41
Total	34,192

Source: GRC

Further information: Gladstone Regional Council

Plants & Animals

Information from the Queensland Government's Wildlife Online database indicates that the following native plants and animals have been recorded within the Gladstone region:

- 2,558 species of mosses, ferns and higher plants.
- 702 terrestrial vertebrate species (frogs, reptiles, birds and mammals).
- 34 freshwater fish.





Additionally, there are many introduced (or 'feral') species including 28 terrestrial vertebrates, three freshwater fish and 429 plants.

There are also a huge number of invertebrate animal species such as insects, crustaceans and worms. The vast mangrove, seagrass, estuarine and coastal ecosystems in the east of the local government area are highly biodiverse and inhabited by a large number of plants and animals.

Further information: https://www.qld.gov.au/environment/plants-animals/

Rare & Threatened Species

Of the region's plants and animals, 45 plants and 31 terrestrial vertebrates are listed as species of conservation significance, including 13 plant species which are only known from the region. Two frog species are also endemic to the Gladstone region.

Further information: https://environment.ehp.qld.gov.au/report-request/species-list/

Matters of National Environmental Significance (EPBC Act)

The matters of national environmental significance listed under the *Environmental Protection & Biodiversity Conservation Act* (EPBC Act) that are relevant to the Gladstone region are summarised in Table B4.

Notably, the listings for the World Heritage Property, National Heritage Place and Commonwealth Marine Area all refer to the Great Barrier Reef, which is managed by the State and Commonwealth Governments.

EPBC Act matters that are likely to be encountered in the Gladstone region include a range of threatened species (76 species recorded or predicted to occur), threatened ecological communities (seven communities recorded) and migratory species (81 species recorded or predicted to occur).

No wetlands of international significance (i.e. Ramsar wetlands) occur within the Gladstone region.

Table B4 EPBC Act Matters predicted to occur in Gladstone Region

Matter of NES	No. Recorded in Gladstone Region
World Heritage Properties	1
National Heritage Places	1
Wetlands of International Significance	None
Great Barrier Reef Marine Park	47
Commonwealth Marine Area	1
Threatened Ecological Communities	7
Threatened Species	76
Migratory Species	81

Source: DE

Further Information: http://www.environment.gov.au/epbc/protected-matters-search-

tool







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Melbourne	Level 13, 200 Queen Street Melbourne VIC 3000	PO Box 942 Spring Hill QLD 4004	T +61 3 8648 6586
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