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Aboriginal and Torres Strait Islander readers are advised this publication may contain names and images of deceased persons.

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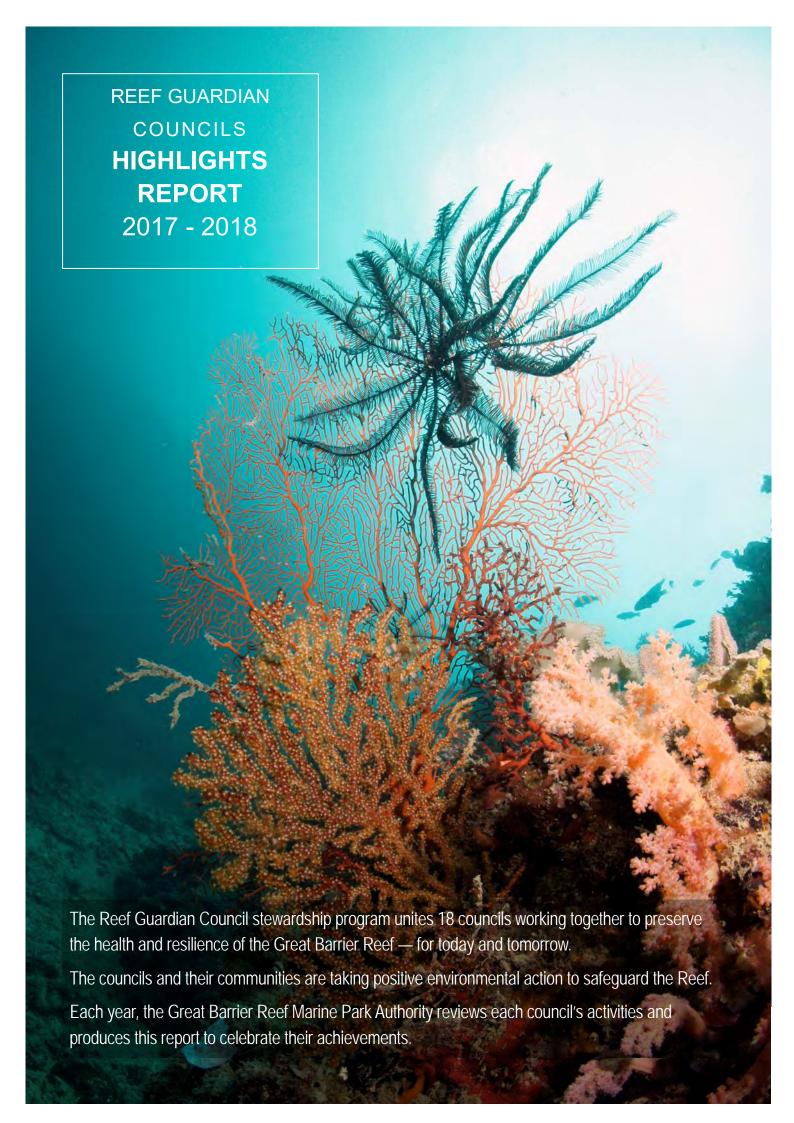
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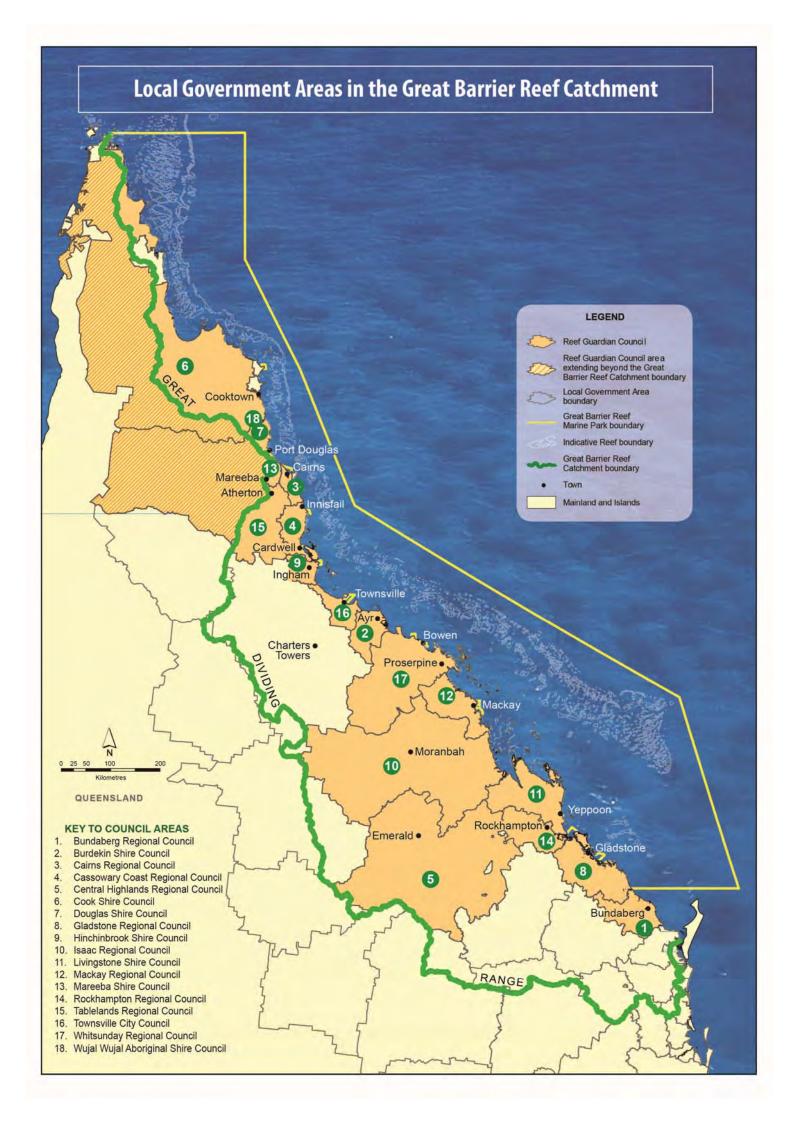
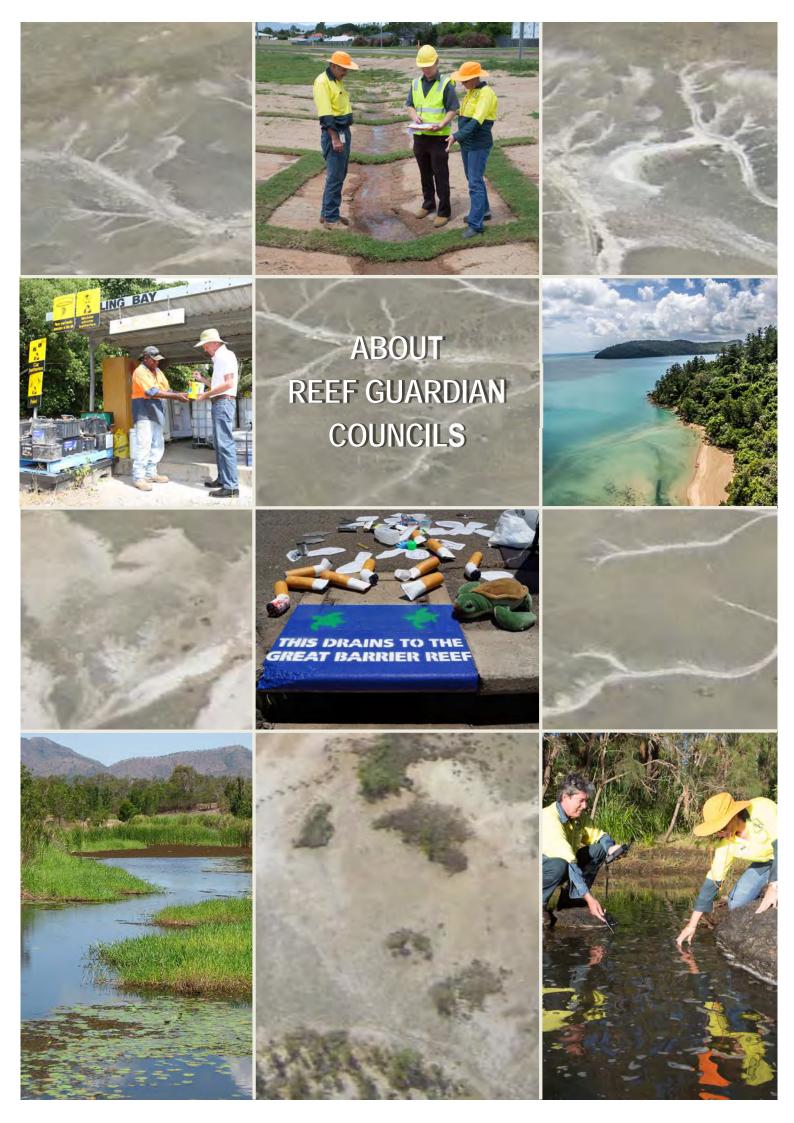


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ABOUT REEF GUARDIAN COUNCILS

The Great Barrier Reef Marine Park Authority's Reef Guardian stewardship program began in 2003, working with schools to encourage youth to take action to help protect the Reef. In 2007, the initiative was expanded to include local government councils within the Great Barrier Reef catchment.

There are now 18 participating councils, representing a 300,000-square-kilometre area and a population of more than one million people, between Cape York in the north and Bundaberg in the south.

The Reef Guardian Program

The program vision is a network of leaders who are proud of, and recognised for, their stewardship efforts – working together today for a healthier Reef tomorrow.

The Reef Guardian program seeks to build a culture of Reef stewardship in which people:

- respect and CARE for the Reef and associated communities
- LEARN about and improve skills
- ACT to minimise their impact on the Reef and its catchment
- SHARE knowledge and collaborate to encourage others to be 'part of the solution'.

Empowering people to be part of the solution is a key strategy in the Authority's Reef Blueprint for Resilience. The Reef Guardian program aims to empower people and foster Reef stewardship through activities which:

- provide resources and experiences to build KNOWLEDGE
- recognise and foster LEADERSHIP (build capacity of those who really care and act to influence others)
- encourage and support ACTION
- build and facilitate PARTNERSHIPS.

Councils are partners

The Reef Guardian Councils sub-program has evolved as a collaborative partnership between mayors, council officers and the Great Barrier Reef Marine Park Authority. Given that Reef Guardian Councils cover 60% percent of the Great Barrier Reef catchment, they are in a position of influence. The Authority not only recognises the efforts of councils to enhance the resilience of the Reef, it encourages and supports councils' activities that influence community stewardship.

Contributing to the Reef 2050 Long-Term Sustainability Plan

The Australian and Queensland governments released the *Reef 2050 Long-Term Sustainability Plan* in 2015. The plan outlines how governments, industry and communities should work in partnership to ensure the Great Barrier Reef remains a global icon into the future. Following a mid-term review, a revised plan was released in 2018. It includes new actions for immediate attention between now and 2020. It acknowledges that addressing climate change and accelerating action on water quality and other pressures is critical in providing the best possible future for the Reef. Local governments are principal partners in the delivery of the Plan *(Reef 2050 Plan, p. 73)*. Each year Reef Guardian Councils undertake action to contribute to this plan to protect the health of the Reef. These actions vary in scope, from long-term strategies to immediate solutions, such as installing new pipes in causeways to improve waterway connectivity.

Highlight reports

This document is a compilation of council reports on their key achievements in 2017–18. It demonstrates how the community-based approach of Reef Guardians can make a real difference to the health and resilience of the Great Barrier Reef.



Bargara Esplanade - Turtle Park

All images supplied by Bundaberg Regional Council

Sustainable Bundaberg 2030

With global carbon emissions on the rise, the Bundaberg Regional Council will strive to reduce its annual corporate carbon emissions by 38 per cent by 2030-31. The council will implement the Sustainable Bundaberg Strategy 2030 supporting use of renewable energy and sustainable transport. The strategy proposes multiple options including a key project to transition existing street lights to smart LED. In addition, the Bundaberg Low Glow Turtle Initiative includes deploying urban glow sensors to measure light pollution and provide baseline data, offering a community engagement tool and, most importantly reducing glow to support the survival rates of marine turtles.



Elliott Heads

Live link to Reef HQ Aquarium

As part of International Year of the Reef (IYOR) 2018, Bundaberg Regional Libraries hosted an event to encourage residents to adopt environmental actions in their homes. The library connected with Reef HQ via video link, giving participants a diver's view of a coral reef ecosystem. Participants were able to see the amazing diversity and intricacy of a coral reef ecosystem up close, inspiring everyone to do their bit for the Reef. After the broadcast, IYOR calico pledge bags and stickers were distributed for people to contemplate how they would look after and love the Reef in their own way.



Pledging to protect the Reef

A-class protection

The council has commenced operation of its first state-of-the-art membrane bioreactor wastewater treatment plant at <u>Rubyanna</u>. The plant is capable of treating wastewater to a Class A Quality effluent, which is released into the Burnett River and ultimately into the Coral Sea. The plant has significantly reduced the nutrient load released into the Burnett River due to the implementation of this new high end membrane technology. This is one of the council's many initiatives to control and protect the environment — the council is committed to preserving the state's greatest environmental asset, the Great Barrier Reef.



Rubyanna wastewater treatment plant

On the waterways cleaning crew

The council has embarked on a clean-up of local waterways. Todate, many items including furniture, fridges, televisions, thousands of plastic bottles, irrigation piping and car tyres have been collected and disposed of. It is a large undertaking with many boat trips and trailer loads. While some items are a result of previous floods, much of the rubbish has washed in from the surrounding areas or been illegally dumped. A detailed database of rubbish is being collated to assist in targeting areas with a high input of rubbish.



Rubbish collected from our local waterways

Plant swap program

The council's land protection team has been busy providing free native plants through the Plant Swap Program. Residents in urban areas can swap a weed for a voucher to receive a native plant. Broad-leaved peppers, Easter cassia, yellow bells and Brazilian cherry are on the radar with the goal of taming these potential garden escapees. The program also aims to raise awareness of weeds and the associated environmental impacts, including declared weeds and water weeds.



Council spreading the word against weeds



Weed harvester on Kalamia Lagoon

All images supplied by Burdekin Shire Council

It's Your Reef Fest

In June 2018, the Burdekin Shire Council celebrated International Year of the Reef with the 'It's Your Reef Festival' at Alva Beach. Hundreds of residents attended to learn about the values of the Reef and what they can do to help its resilience and protection. Labelled as a plastic free event, there were free water bottles and a cold water refill station supplied by the Great Barrier Reef Marine Park Authority and the council. There were stalls from local stakeholders to provide reef education for all ages. Residents were encouraged to make a pledge to adopt one reef protection activity during July and post it on the council community pledge wall.



NQ Dry Tropics' Duey the Dugong and community pledges

Theatre goes single use plastic free

As a response to the Burdekin community's growing concern about plastic pollution within local water ways and oceans, the Burdekin Theatre became a *Straw No More* participant. The theatre has also gone a step further and eliminated single use plastic, opting for reusable plates, saucers and cups where possible, and using bamboo and paper materials as plastic alternatives. This movement came as a result of the community source reduction workshop held in April 2018 in conjunction with Tangaroa Blue.



In the 2017-18 financial year, the council conducted an energy efficiency audit on both the Jones Street depot and the Young Street chambers. From the audit, the council committed to reducing the environmental impact of its major assets and therefore reducing its impact on climate change. Changes made as a result of the audit include staff training on energy efficiency and awareness, retro fits of LED lighting, installation of white reflective paint on several buildings including the council chambers, and the installation of a 30kw solar system at the Jones Street depot.

Hands-on approach to educational talks

The council's environmental health officers have constructed a model of the Burdekin Shire to be used during educational talks with schools and kindergartens. The model was developed with the aim of educating youth on how land practices and poor waste management travel from the town into the Burdekin River and consequently to the Reef. Using a hands-on and visual approach, officers are able to spark more meaningful conversation with students and better demonstrate the water cycle and its effects on the Great Barrier Reef.

Macro-algae trial at Home Hill water treatment plant

Burdekin Shire Council has a long-standing Environmentally Relevant Activity which does not require council to treat wastewater for nitrogen and phosphorus, two nutrients which adversely affect the Great Barrier Reef. In response to the deterioration of the Reef's health, the council has proactively partnered with James Cook University and MBD to seek funding for the first full-scale trials of a macro-algal treatment process in municipal wastewater applications in Home Hill. The project aims to aid the removal of nitrogen and phosphate from waste water before it is released to the Reef.



Burdekin Theatre



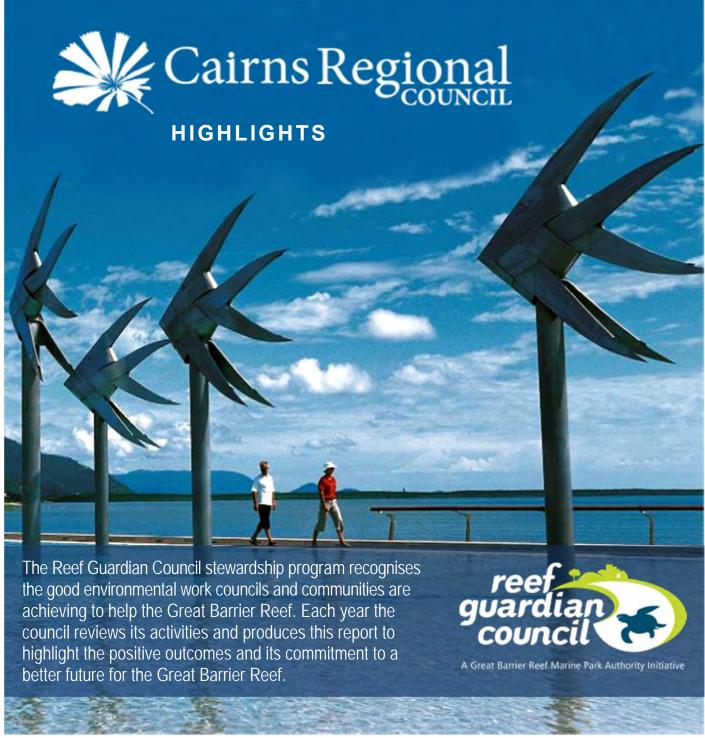
Solar panels



Environmental Health Officers demonstrating use of Burdekin model



Home Hill waste water treatment plant



Cairns Esplanade Swimming Lagoon

All images supplied by Cairns Regional Council

Plastic free Cairns

Plastic is the most common type of <u>marine debris</u> found on the beaches of the Great Barrier Reef, reflecting worldwide trends where plastic comprises between 50 to 90 per cent of all recorded debris.

Two home-grown campaigns, *Straw No More* and *The Last Straw on the Great Barrier Reef*, prompted the Cairns Regional Council to commit to reducing single-use plastics in its operations, facilities and events. In response, Cairns Markets have banned single-use plastics, Cairns Ecofiesta has introduced dishwashing to eliminate single-use eating utensils, plastic-free clauses have been added to council venue hire conditions and local packaging suppliers have been consulted to help meet the increased demand for plastic-free eating and drinking utensils.

Find out more at www.cairns.qld.qov.au/plasticfree.

Low emissions Cairns

<u>Climate change</u> is the greatest threat to coral reefs worldwide and the Great Barrier Reef is already experiencing the consequences of climate change. To play its part in reducing global emissions, Cairns Regional Council aims to cut its 2008 greenhouse gas emissions by 50 per cent by 2020. This ambitious target is on-track, with emissions cut by 49 percent to date thanks to installation of one megawatt of solar power, landfill gas flaring, wastewater treatment plant optimisation and a raft of energy and fuel efficiency measures.

Find out more at www.cairns.qld.qov.au/sustainability.



Solar installations

Litter and illegal dumping action plan

Cairns' network of urban waterways flow directly into the Reef lagoon. Any litter that enters these waterways is likely to become marine debris following heavy rains. The council's <u>Litter and Illegal Dumping Action Plan</u> aims to prevent litter and illegally dumped waste from reaching the Great Barrier Reef lagoon by integrating:

- infrastructure that increases access to responsible waste disposal options
- education that increases the uptake of responsible waste disposal options
- enforcement that discourages irresponsible disposal options.

Actions to date include provision of recycling bins throughout the Cairns CBD, cigarette butt bins in smoking hotspots, increased resourcing for litter collection and prevention in urban waterways and an extensive illegal dumping campaign.



Cairns Litter and Illegal Dumping Action Plan

Cairns urban waterways

Declining marine water quality from <u>land-based run-off</u> is one of the most significant threats to the long-term health and resilience of the Great Barrier Reef. Cairns Regional Council and partners James Cook University, Wet Tropics Healthy Waterways Partnership and Itron Australasia are <u>installing water quality sensors in Saltwater Creek</u>, one of Cairns' main urban catchments. The sensors will provide real-time data on the creek's sediment, nutrient and pollutant levels so that targeted improvements can be made to reduce the impact of urban run-off on the Reef. The project is funded through the Australian Government's Smart Cities and Suburbs program.

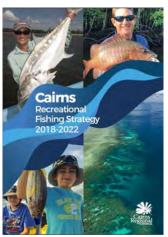


Saltwater Creek Catchment map

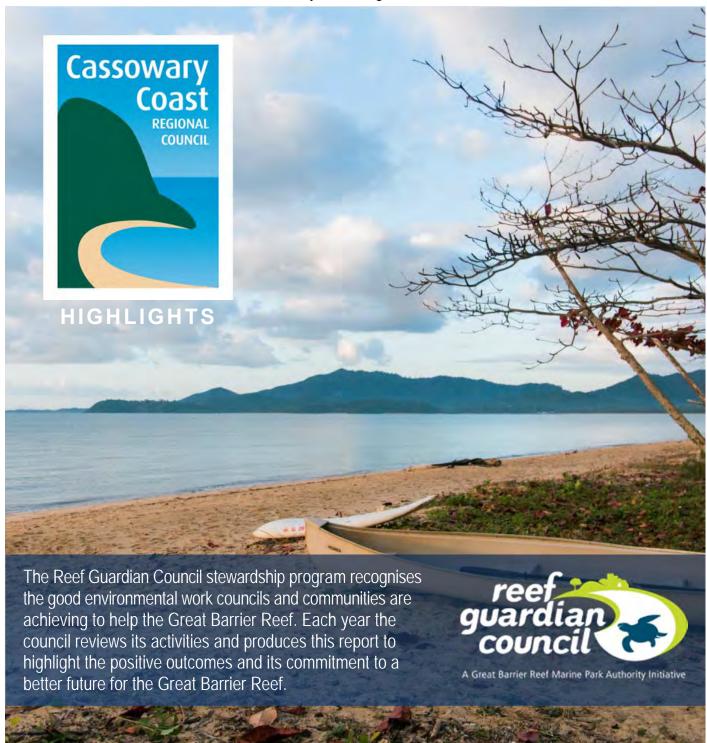
Recreational Fishing Strategy

The Queensland Government's introduction of a commercial Net Free Zone in Cairns in November 2015 has provided the impetus for Cairns Regional Council to work with recreational fishing representatives and other key stakeholders to develop the Cairns Recreational Fishing Strategy 2018-2022. The Strategy reflects the community priorities for a greater emphasis on valuing and preserving our unique natural assets and resources. The strategy aims to secure collaboration across five key strategic themes: ecology and natural environment; fisheries development; enhancing marine infrastructure and access; marketing and promotion; and business and event development.

To view the strategy visit www.cairns.qld.gov.au.



Cairns Recreational Fishing Strategy



Kurrimine Beach

All images supplied by Cassowary Coast Council

Tree giveaway

Cassowary Coast Regional Council gave away 1344 trees to 684 local residents who attended the very popular tree giveaway day in April. The event aims to raise awareness and appreciation of our local native trees and their place within the ecosystem. People receive two trees and information on the species, including where they naturally occur, and which birds, butterflies and other species the plants attract. These giveaways have been running for many years and the nurseries are seeing more and more people enjoying the benefits of planting local native species.



Suzie Smith and Harry Thompson - Tree giveaway April 2018

Wrapped garbage collection vehicle

The council partnered with its refuse collection contractor, Cleanaway, to give a new look to one of the refuse collection vehicles. Aiming to promote key waste management messages, such as recycling and anti-littering, the sides of the vehicle were covered in a wrap highlighting our close relationship with the Reef. The trucks travel through most of the council area each week and provide an ideal way to attract attention and convey these important messages, along with brightening garbage collection service days. With positive feedback to date, more designs and messages are forecast for other vehicles.



Garbage collection truck in its new 'skin'

Landfill capping at Tully

A project was initiated to construct a cap on the redundant section of the Tully landfill to mitigate the risk of contaminant release into the environment during high rainfall events. Works included reshaping approximately 2.6 hectares of the landfill structure, installing leachate collection systems (in the form of a leachate trench and sumps), and constructing an over-cap of clay. Drainage infrastructure was also constructed to reduce velocity and energy of water flow and direct water to existing sedimentation basins.



Aerial view of Tully landfill site

Fish friendly sea walls

Council completed stage one of the Green Seawall Project to address long term shoreline erosion threatening public and private infrastructure at Flying Fish Point. The design incorporates fish friendly features, such as rock throws, nooks and holes for improved fish habitat values. It will also soon have 'fish hotels' installed at the base to provide additional habitat. The top of wall has been planted with local native vines to improve amenity and provide additional habitat. The project is in partnership with James Cook University's TropWATER to monitor its effectiveness and habit enhancement.



'Fish hotels' to be installed at the base of the sea wall





View over the Endeavour River

All images supplied by Cook Shire Council

Council employees are Reef Guardians

The Cook Shire Council reaffirmed their commitment to being a Reef Guardian Council by resolving to form a Reef Guardian working group. Employees with a passion for the environment volunteered to join the group to help reduce Cook Shire's negative impacts on the Reef and the surrounding environment. The group is responsible for spearheading environmental projects and improving policies and procedures. For example, the council's procurement policy has been amended to specify the use of sustainable products.



Cook Shire Council Reef Guardian working group, Cr Larissa Hale and Natalie Maltby-Lemon in action

Parks and gardens steam weeder

To reduce the amount of herbicides that are possibly washed down the local street drains and into the ocean, the council has purchased a steam weeding unit. The unit is usable year-round in any weather conditions and doubles up as a pressure cleaner. The unit has proven very effective on graffiti using steam to lift paint and permanent marker instead of toxic chemical solvents. Steam also removes mould from pathways and in doing so, kills the spores, delaying the return of the mould.



Steam weeding unit removing weeds and grass from the gutters

Earth Hour movie night

Council held a free glow in the dark movie night in support of Earth Hour. The aim of the event was to educate people about the impacts of climate change on the Reef and planet, and to show that helping the Reef can be fun. Upon arrival, everyone got a glow in the dark face painting. A short clip titled 'What is climate change' was then played, courtesy of the Great Barrier Reef Marine Park Authority, showing the small changes kids can make to reduce carbon emissions. The kids then enjoyed a movie with all their faces glowing in the dark.



Council's Michael Fallon putting glow in the dark face paint on Loic Gougeon

Cooktown Discovery Festival

The annual Cooktown Discovery Festival is one of the region's premier events, attracting locals and visitors alike. Part of the festival is the street parade where local businesses and community groups decorate a float. To recognise the International Year of the Reef, Cook Shire Council created a reef themed float to remind the community of the importance of *Working together today for a healthy Reef tomorrow.* All decorations were made from natural or recycled material. Staff handed out cloth bags branded with *#lovetheReef* and information about the Reef.



Council's Discovery Festival International Year of the Reef themed float

Helping our community help the Reef

The Cook Shire Council encourages and supports business and community initiatives that help mitigate risks to the Reef. Examples include:

 The proposed development of a wind farm at Lakeland. An Australian-based company plans to construct up to 30 wind turbines to expand the supply of renewable energy available for the expanding primary industry sector in the area.



• Providing free waste disposal and promotion of clean-up activities coordinated by the community natural resource management group, South Cape York Catchments, that help care for the local environment.



Yule Point, south of Port Douglas

All images supplied by Douglas Shire Council

'Love where you live'

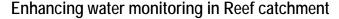
As part of a campaign to increase recycling and reduce littering, Douglas Shire Council's five waste and recycling trucks have had a makeover. The trucks now display the message 'Love Where You Live, Keep Douglas Clean & Green'. To support this, each truck features an image of some of the spectacular wildlife found in the Douglas Shire – a tree kangaroo, cassowary, rifle bird, tree frog and Boyd's forest dragon. Local seven-year-old Mossman resident and unofficial recycling ambassador, Max Dowling, unveiled the trucks as part of a series of educational videos posted on the council's website and Facebook page in November 2017.



Boyd's forest dragon waste truck

Smokers urged to refrain from littering

More than 2200 cigarette butts were found during a targeted litter audit on the main street of Port Douglas in January 2018. Cigarette filters are made of plastic and cause environmental damage, particularly when swallowed by wildlife such as fish, birds and turtles. The Douglas Shire Council audit was part of an ongoing source reduction campaign in partnership with Tangaroa Blue and Plastic Free Douglas. Residents are encouraged to donate their old mint tins to be upcycled and rebranded as personal portable ashtrays, giving smokers a practical solution to reduce cigarette butt littering.



Douglas Shire Council's water monitoring program has been extended to capture additional monitoring locations in Dickson Inlet and the Mossman River. Phosphorus and dissolved inorganic nitrogen are among the parameters regularly measured to indicate water quality. This data helps report on progress being made in protecting the Great Barrier Reef. Douglas Shire Council is a member of the Wet Tropics Healthy Waterways Partnership and is committed to playing its part in maintaining, and where required improving, the water quality of the Daintree and Mossman River catchments.

Feral pigs trapped by technology

Feral pigs within the rural lowland areas of Douglas Shire can cause extensive environmental damage by encouraging soil erosion and deteriorating water quality. New feral pig trapping technology was trialled in areas with mobile reception in the Daintree River catchment in early 2018. The existing trap design was enhanced by utilising motion sensors and cameras, enabling the operator to remotely activate or release traps. The trial has been extremely successful, with one trap capturing a record 17 pigs. The technology also reduces time spent checking traps and greatly reduces the risk of capturing native animals.

Advocating for 'Coral not Coal'

Douglas Shire Council advocates for a transition to clean, renewable energy and is against any proposed coal mines in the Galilee Basin, which have the potential to accelerate climate change and threaten the Great Barrier Reef. As a founding member of the Climate Council's Cities Power Partnership, the council is committed to operating sustainably and adopted a Climate Change (Council Operations) General Policy in December 2017. It also publicly supported a peaceful 'Stop Adani, Coral not Coal' protest in Port Douglas in October 2017 and continues to advocate for climate change mitigation and adaptation action.



Only rain down the drain



Mossman River



Feral pig trap



Great Barrier Reef at Snapper Island



Tannum Sands

All images supplied by Gladstone Regional Council

Grants to contain pests

For river and wetland ecosystems to function well, it is important to keep them free of pest species. Gladstone region landholders can access grants of up to \$500 to manage invasive species on their properties, such as giant rats tail grass, groundsel bush, rubber vine and other species listed within the Gladstone Regional Council's Pest Management Plan (2016-2019). To be eligible, landholders must have a containment pest species on their property and a property pest management plan outlining what actions they plan to undertake over a three year period.



Informing community about grants to help manage invasive species on their land

Volunteers and council protecting Wild Cattle Creek

The council successfully moved 10,000 m³ of sand to mitigate shoreline erosion at Wild Cattle Creek, Tannum Sands in September 2017. Council trainees then watered the sand for a month to improve the soil chemistry before planting on the newly formed dunes. Volunteers from Conservation Volunteers Australia and Gladstone Engineering Alliance conservation trainees helped the council revegetate the area by propagating, growing and planting over 1000 beach vines and grasses. The fore dune vegetation will play an important role in protecting the site from further erosion by trapping wind-blown sand and stabilizing dunes.

Waste into organic energy

Turing waste into organic energy is at the heart of the Tondoon Botanic Gardens horticultural operations. Composting at the gardens improves operational efficiency – where an employee would once have driven a truckload of waste to the landfill station, the waste is now composted on-site. Organic waste such as grass clippings, leaves, biodegradable waste from Ecofest, harvested aquatic weeds, coffee grinds from the Gardens Café and dead cane toads from the Toad Busters program were layered into a bio bin and composted at the gardens during 2017. The compost is used in the gardens to enhance soil fertility and plant health.

Children become ambassadors for recycling

The council's waste services team took its recycling education program to schools across our region. When it comes to improving the effectiveness of the Gladstone region's waste recycling efforts, the council believes that children are the future. The team educated school children from kindergarten to year six about the basics of recycling at home. The program featured the presence of long time council recycling mascot Reece Cycle who is always a hit with the children.

Rotarians and council planting Pandanus

Rotarians teamed up with the council to help the local environment when they attended the Central Queensland Rotary conference at Agnes Water. To help stabilise the dunes, the council organised an activity to replant Pandanus which was left devastated due to infestations of leafhopper in the Agnes Water and Seventeen Seventy area. Pandanus seeds collected during a workshop in Agnes Water in 2017 were grown at Tondoon Botanic gardens before being planted back at Agnes Water.



Planting following the sandpush, September 2017 - six months after planting



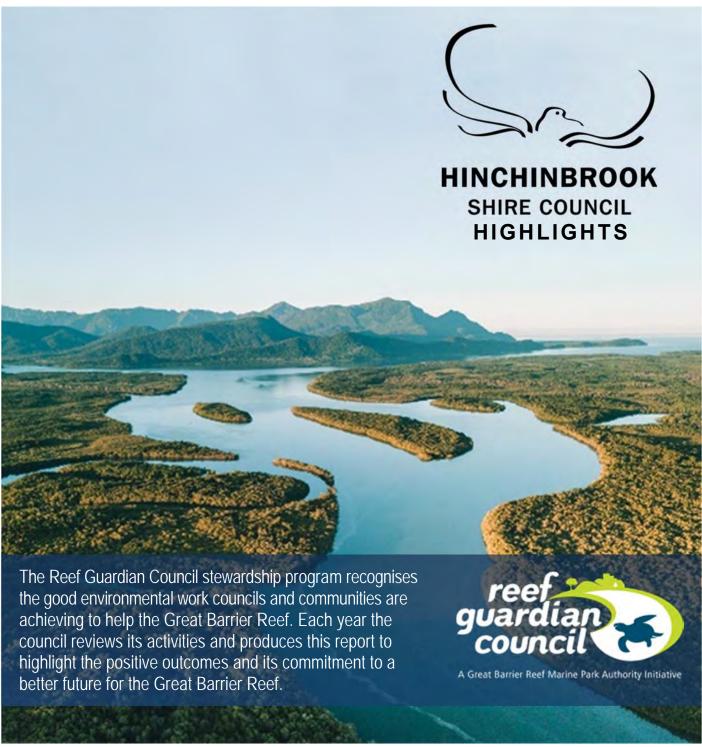
Bio bin at Tondoon Botanic Gardens



Reece Cycle entertaining a class of children



Volunteers planting Pandanus near Agnes Water



Hinchinbrook Channel (Photograph: Katie Purling, @ My Colourful World)

All images supplied by Hinchinbrook Shire Council

Foreshore clean-up at Lucinda

Exotic species were removed from the foreshore between Lions Park and Ferrero Street at Lucinda. This is in line with the Hinchinbrook Shire Council's Lucinda Foreshore Management Plan to encourage native grasses, shrubs and trees to grow and hopefully outcompete the non-native plants. Weed species removed include prickly pear, Mickey Mouse plant, mother-in laws tongue, Guinea grass, wild passionfruit and juvenile coconut palms. Truckloads of weeds, dead palm fronds, old coconuts and dead trees were removed to a separate location to be burnt to lessen the chance of self-propagation.



All weeds and vines removed allowing for natural revegetation of native species

Stopping feral pigs damaging wetlands

Feral pigs are causing significant damage to Hinchinbrook Shire's rivers, streams and coastal wetlands. This damage results in high sediment loads to the Great Barrier Reef. The Hinchinbrook Community Feral Pig Management Program assists the long-term management of pigs to reduce their impact on these ecosystems. This program has been successful in many areas, however continued financial and in-kind support is needed from all stakeholders to ensure its ongoing success.



Before and after images of feral pig management in a wetland system

Palm Creek management program

This project was set up following the 2009 floods to manage aquatic weeds such as hymenachne, salvinia and water hyacinth. These weeds have traditionally plagued this area reducing biodiversity and inhibiting the effective function of the river system. The management program includes revegetation of degraded sections along the system which creates a buffer between farmlands and sensitive aquatic ecosystems. Salvinia weevils have been released to help control a large salvinia infestation.



Salvinia weevils have a big job to do in Palm Creek

Tidy Turtle

This year the council encouraged the local community to #LovetheReef by creating Tidy Turtle, an interactive educational piece. The giant turtle sculpture, with accompanying banners, explained what people can do to help mitigate the impacts of plastic in our oceans. Visitors to the display were invited to pledge their love to the Reef by writing a commitment of what they will do to make a difference in their future. The Tidy Turtle display was stationed in the Hinchinbrook Shire Library throughout the year for continued education for all patrons.



#LovetheReef with Tidy Turtle

TYTO events reduce single use plastics

The use of biodegradable cups, plates and utensils has been implemented for all functions at the TYTO Conference and Events Centre. Bamboo and other biodegradable products are now used in place of plastic which pose far less risk to the environment. The introduction of bamboo products has been very well received by customers.



Bamboo plates and cutlery used at an event



Anzac Memorial Walk – Emu Park

All images supplied by Livingstone Shire Council

Council carbon strategy

Based on the findings of a carbon audit undertaken across the Livingstone Shire Council's operations, an organisational Carbon Strategy is being developed. The strategy will provide direction to council for reducing its carbon footprint and subsequently provide leadership to its community. The strategy will focus on key areas: landfill gas capture and flaring; retrofitting street lights and building lights with LED or solar; improving the efficiency of council's fleet and plant; and installing solar panels and battery suites on existing and new buildings and facilities.



Solar Panels on council's new Foreshore Lagoon building

Yeppoon 'Hub'

In early 2018, 'The Hub' was opened in Yeppoon. The facility is an interactive multi-agency coordination centre for complex emergency and disaster events, recovery and resilience building in the community. It has become the centre for acquiring and deploying support resources, management of collection and dissemination of information and developing intelligence and strategic plans for local capabilities. 'The Hub' is a resource for advice, engagement and education on a range of topics including disaster management, natural resource management, sustainability, climate change, the Great Barrier Reef, open spaces, sport and recreation.

Capricorn Coast fox control project

The council has partnered with Fitzroy Basin Association, Capricorn Catchments and the Queensland Government to control the European red fox. Foxes are increasingly residing in dens within coastal reserves along the Capricorn Coast and posing a great threat to domestic and native birds, marine turtle eggs, reptiles and mammals of coastal habitats. An operator with a trained sniffer dog fumigated 36 fox dens in reserves along the coast during 2017-18. This has reduced predation on nesting shore birds and turtles, wildlife of adjacent bushland and foreshore areas, and domestic animals in residential areas.

Improving Fig Tree Creek catchment

Livingstone Shire Council has partnered with Capricornia Catchments, Capricorn Coast Landcare and the Sunshine Coast Council to protect the previously neglected and degrading Fig Tree Creek catchment. The project will include engagement of traditional owners and adjoining landholders, development of a working group and an Environmental Management Plan, incentive based projects, and school and community restoration activities. The aim is to foster a holistic approach to managing the pressures in the Fig Tree Creek catchment and to restore the natural system of this valued community asset in the urban environment.

Habitat stepping stones

The council continues to participate in the award-winning Habitat Stepping Stones program, administered by Macquarie University. The program encourages residents to create habitat stepping stones for local wildlife and enhance the urban landscape. The program asks residents to add three or more habitat elements to their backyards from a compiled list of suitable plants, which will ultimately become part of the program's supportive network. The council provides residents who sign up to the program with free plants from its community nursery as well as a fauna box.



'The Hub' in Yeppoon's CBD



Placing carbon monoxide in a fox den



New plantings along Fig Tree Creek



Mallotus discolour.- A habitat stepping stone



Lamberts Beach, Mackay

All images supplied by Mackay Regional Council

Porters Road fishway

Construction of the Porters Road fishway was completed in 2017-18. Prior to the construction of the fishway, Porters Road on the O'Connell River was prioritised as the 35th most significant barrier in the Mackay Whitsunday region. This ranking was quite high considering a total of 3,974 barriers to fish passage have been identified in the area. Fishways allow connectivity for various fish species that need to move upstream for spawning, migration or recruitment purposes. Commercially and recreationally important fish species such as barramundi, mangrove jack and sea mullet are examples of fish that utilise fishways.



A rock ramp fishway helps fish to move upstream at Porters Rd on the O'Connel River

Gooseponds aeration project

A series of fountains and aeration devices were installed in the most upstream pool of the Gooseponds, as a trial to mitigate against future low-oxygen induced fish kills. Three fountains displace water above the waterline increasing oxygenation of the water, while also providing an amenity for those driving or walking past. After a rainfall event, a fish kill occurred in two downstream ponds resulting in the death of 125 fish. However, no fish kill occurred in the pond with the devices. Council plans to install similar devices in the downstream ponds as funding becomes available.

Shellgrit Creek Environmental Reserve

A new environmental reserve at Shellgrit Creek was launched in April 2018. The reserve contains a diverse range of regional ecosystems and is home to many species of flora and fauna. Visitors can now experience a low-impact nature trail, learn about the area though interpretive signage and view migratory shorebirds at the high-tide roost site from October to April each year. Weed mapping has been completed and a program to control the major priority weeds is underway. This is a great place to learn about our region's flora and fauna and is already proving popular with bird watchers, walkers and photographers.

Steam weeder

The council is trialling a steam weeding unit to reduce herbicide use. Steam weeding is the latest in safe, chemical free weed control and is ideal for urban areas, parks, playgrounds, schools and natural areas. There are many benefits of using steam to control weeds, including instant results, reduced chemical use and no run-off or pollution into waterways. The unit also reduces exposure to chemicals for the operator and the community. Results have been positive so far, with even the most persistent weeds succumbing after three treatments or less. Plans are underway to purchase more units.

Viewing platforms

Two new viewing platforms have been created at Blacks Beach, one at the end of Pitt Street and the other in front of the Shores Resort. A new set of stairs has also been built at the Pitt Street beach access. These projects have helped improve accessibility at Blacks Beach and provide focal points for appreciating our natural environment and coastal vegetation. Interpretive signage provides information on marine turtles and other significant species found in our region. The platforms and beach access incorporate recycled products in their construction, including decking made from recycled plastic.



Gooseponds - fountains improve oxygen levels and help prevent fish kills



Shorebirds can be seen from the viewing area at Shellgrit Creek Environmental Reserve



The new trailer-mounted steam weeding unit is easy to transport, even in bushland environments



The viewing platform features recycled products and is the perfect spot to appreciate the coastal environment



Atherton Tableland (© Tourism Tropical North Queensland)

All images supplied by Mareeba Shire Council

Chic marine debris artwork message

A section of a mural by Kuranda artist Zane Saunders, depicting concerns for pollution of land and sea, has been reproduced into a souvenir scarf. The mural on the outside of the Kuranda Visitor Information Centre was made possible by the Authority's Marine Debris Grant. It tells the message that even though we live high up in the mountains, any rubbish thrown in creeks and rivers, not picked up or placed in the appropriate place, will end up in the sea and affect the Reef and marine life. The scarves and the message "Bulmba Maminga – Love and care for the country" are proving very popular.



Kuranda Visitor Centre Volunteers showing off the "Bulmba Maminga" scarves

Bicentennial Lakes water quality trial

Sediment and nutrient accumulation in Mareeba's Bicentennial Lakes has resulted in poor water quality, nuisance weed growth and a loss of amenity in the parkland. The council endeavoured to reduce the retention time of the water in the lake system by

reinstating use of the original weir system to allow the lakes system to act more naturally in the wet season. The council has also adopted a Bicentennial Lakes Masterplan that aims to unify community efforts to revitalise the parkland and allow visitors to connect with the natural environment.



Mareeba landfill surface water quality management

The council implemented the principles of soil and water conservation to construct a system of water harvest areas and overflow polishing ponds at its Mareeba landfill. The system aims to minimise suspended solids in surface water on, and leaving, the site. These works have resulted in a dramatic reduction of suspended solids in the waters discharged from the site from over 1000mg/L to less than 50mg/L. Whilst an engineered system, the sytem functionally and aesthetically integrates the landfill into the environment.



Mareeba landfill surface water management system (landfill in background)

Barron River catchment aquatic weeds get invaded

In partnership with Barron River Catchment Care and the Muluridgi Aboriginal Tribal Corporation, the council officers have been locating, removing and treating aquatic weeds, including hymenachne, water lettuce and a new weed, limnobium. Residents who live on Chinaman Creek, Atherton Creek, Granite Creek and the Barron River are concerned that these plants form dense barriers across the rivers and creeks. This can change the water flow, erode banks, congest swimming and fishing holes, as and cause problems by blocking up foot valves on their river pumps.



Invasive aquatic weed, water lettuce

Renewable energy

Mareeba Shire is leading the way in renewable energy with an application for a second solar farm approved for Mareeba. The 75 megawatt solar farm will include approximately 200,000 solar panels. It is expected to provide enough clean energy to power 21,000 homes and save 100,000 tonnes of annual greenhouse gas emissions over the 25-year life of the facility. This follows approval of infrastructure to support the Lakeland Windfarm and a waste-to-energy plant at Springmount. These significant developments reflect investor confidence in the council's positive approach to renewable energy projects.



Wind Farm near Ravenshoe on the Atherton Tableland



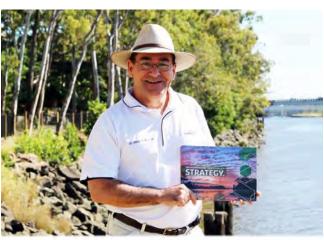
Mount Archer Walk

All images supplied by Rockhampton Regional Council

The future is not somewhere we are going, it's something we're creating

Rockhampton Regional Council has developed an Environmental Sustainability Strategy that provides a vision, shared objectives and pathways to advance sustainability across our region. The strategy delivers on our vision for a sustainable future through four interconnected pathways which guide our approach to protect our natural environment, empower our community to live more sustainably, enhance the liveability of our region, and ensure we use our resources more wisely. The pathways identified in the strategy are supported by a range of strategic actions that the council will lead during the period 2018-22.

Find out more here.



Councillor Wickerson, spokesperson for Rockhampton Regional Council's Environment and Sustainability Portfolio, shares the council's newly adopted Environmental Sustainability Strategy

Partnerships to protect our waterways

The council has been developing ways to effectively combat aquatic pest plants such as water hyacinth, salvinia and water lettuce. Thanks to a collaborative partnership between the council and the Fitzroy Basin Association, the council's biocontrol program has been expanded and made available to local landholders. Biocontrol weevils help to control the growth of pest plants that damage native ecosystems, reduce fish habitat, affect water flow and block access to water for stock and wildlife. The expansion gives the council the opportunity to share techniques and samples with private landowners facing this issue and to develop targeted approaches for their particular waterways.

Fitzroy River Water achieves 100 per cent reuse of biosolids

Biosolids are a major by-product of the sewage treatment process. By implementing new operational arrangements and obtaining regulatory approvals, Fitzroy River Water is now making biosolids produced at its sewage treatment plants available to end users, which avoids disposal of this beneficial resource to landfill. The approach has achieved 100 per cent reuse of biosolids on an annual basis, with most of the material used to amend soil on agricultural land south of Gavial Creek in the Port Curtis part of our region.

A restoration strategy for key urban waterways

The Riparian Corridor Management Study assessed the geomorphology, aquatic ecology and terrestrial vegetation of the area to develop a holistic restoration strategy. The study found that the Frenchmans Creek and Thozets Creek catchments have seen major changes that can impact on flow regime, sediment supply and riparian vegetation condition. The study recommended a number of interventions, including revegetation, structural works and stormwater management measures to restore the creeks. These recommendations have been prioritised to allow the council to phase the implementation of these works.

Partnering for river health

The council continues to participate in the Fitzroy Partnership for River Health — a collective of government, agriculture, resources, industry, research and community interests across the Fitzroy Basin in Central Queensland. Through funding, resources and data-sharing arrangements, the partnership works together to provide a more complete picture on river health. As part of the partnership, Council continues to support the popular annual *Tilapia Terminator and Wetland Care Day*, assisting with local community education activities, water quality monitoring, fish assessment and a waterbug blitz.



Councillor Wickerson, FBA's Shannon Van Nunen and Councillor Smith inspect the water hyacinth biocontrol tanks at the council's depot



Fitzroy River Water's biosolids storage area at the South Rockhampton Sewage Treatment Plant



A combination of desktop assessments and field investigations were used to inform the Riparian Corridor Management Study and develop a series of management options for Frenchmans and Thozets Creek



Worms and corn were at the ready to catch Tilapia, one of the world's worst invasive pest species, at the Yeppon Yeppon Lagoon



Birdseye view of Townsville (Photograph: Megan MacKinnon)

All images supplied by Townsville City Council

Innovative floating wetlands

The Townsville City Council has installed an innovative floating wetland trial in Fairfield Waters to counteract the effect of algal blooms and reduce nutrient input into the Reef lagoons. Algal blooms are dense populations of free-floating algae that impair the waterbody's ecological function, choke beneficial micro-organisms and deplete oxygen levels. The floating wetland is a buoyant raft, made from recycled plastic, which supports plants to filter nutrients and pollutants from the water. It is a sustainable, cost-effective way to treat stormwater runoff flowing to our waterways and the Reef. It biologically filters the water, reduces evaporation and improves aeration of the water.

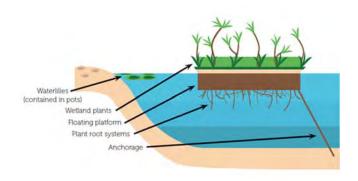


Diagram of floating wetland system

Adapting to coastal change

The council has partnered with the Queensland Government to plan for coastal change in Townsville. Changes brought by storm tide, sea level rise and coastal erosion can have a big impact on our city and the day-to-day lives and wellbeing of our community. Through the Adapting to Coastal Change in Townsville project, the council is developing a long-term strategy for the city to sustainably manage these changes. This project builds on the Coastal Hazard Adaptation Strategy for Townsville, Pilot Project from 2012.



Drone image of Bohle River Wetlands after a significant rain event

Water sensitive Townsville

Townsville participated in a national Cooperative Research Centre for Water Sensitive Cities research project to develop a vision and strategic framework to accelerate Townsville's transition towards a water sensitive city. Leaders from across water, planning and urban development came together to improve understanding and collaboration across the various disciplines and industries involved in the management of Townsville's water. Using innovative methods and tools, the group benchmarked our current state and defined steps to map a pathway to a Water Sensitive Townsville over time. More information: https://watersensitive-townsville/



Mapping Townsville's water story

Reduce, reuse, recycle

Townsville's state-of-the-art Materials Recovery Facility is paving its way to success. Thousands of empty glass containers have been used as local construction materials instead of going to landfill or transported long distances for processing. The glass is crushed and effectively turned into fine sand to be used in pavers, asphalt and masonry blocks or as backfill and bedding for pipes. The council recently used about 40 tonnes or 240,000 stubbies worth of the material for road construction at a major landfill site.



Imploded glass from Townsville's Materials Recovery Facility ready for re-use

Exploring passive watering solutions

The council participated in a study across Queensland to optimise the design of passive watering solutions, including tree pits and wicking beds. Detailed soil moisture modelling in six climatic zones informed the design of these solutions and easy-to-apply water catchment sizing guides. This enables construction of tree pits or wicking beds that will have optimal soil moisture to sustain the vegetation in an average rainfall year, while also helping manage stormwater and enhance liveability. In-situ trials of these solutions will be undertaken in Townsville. More information: <a href="http://e2designlab.com.au/projects/green-infrastructure-healthy-landscapes/i-123-healthy-trees-delivering-stormwater-outcomes-to-maille-infrastructure-healthy-landscapes/i-123-healthy-trees-delivering-stormwater-outcomes-



Passively watered turf wicking bed



Aerial view of Whitehaven Beach

All images supplied by Whitsunday Regional Council

Delivery of 400kW solar array at Bowen Water Treatment Plant

The Whitsunday Regional Council has implemented a \$1.1 million solar and generator upgrade at the Bowen Water treatment Plant. The project will reduce operational costs by more than \$250,000 per year. The project involved the installation of a 400kW solar array to produce an estimated 664 MWh of power, which will offset the carbon footprint of 165 cars a year. The council won a Queensland Water Awards for this valuable project.

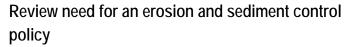


Bowen Water Treatment Plant - solar array

Climate Change Adaptions Strategy and Policy

The council continued its Climate Change Strategy, completing the following projects in 2017-18:

- Memorandum of Understanding with Kingborough Council
- Community consultation on the history of extreme weather events in the Whitsundays
- Coastal hazard assessments
- Community survey of coastal values in the Whitsundays
- Coastal groundwater asset review (Bowen)
- Coincidental storm tide modelling and erosion assessment
- Analysis of historical notable weather reports.



The council reviewed erosion and sediment control policies and procedures relating to public and private development. The council drafted a new Erosion and Sediment Control Policy and Program which were presented for public consultation. The intention of this policy and program is to reduce sediment loss from private building sites and council construction projects and avoid it potentially entering the Reef lagoon. The final policy and program were presented to Council in September 2018.

Introduction of kerbside recycling

The Whitsunday Regional Council expanded its existing recycling program to include kerbside recycling. The introduction of kerbside recycling will mean less rubbish entering landfills, more waste being made available for new recycled products and ultimately less negative impacts on the environment.

Town of Whitsunday drainage and storm surge study

Flood and drainage modelling for the Town of Whitsunday was undertaken to explore how sea level rise may affect the risk exposure for the town. This information will inform planning for future flooding in urban areas so that coastal infrastructure can become more resilient to storms, resulting in less damage and waste entering the Great Barrier Reef.



Partners: Kingborough Mayor Steve Wass with Whitsunday Mayor Andrew Willcox



Installation of sediment control in a roadside location



Kerbside recycling animation



Storm surge from tropical cyclone Ului



Gillies Range (Photograph Philip Warring © TEQ)

All images supplied by Tablelands Regional Council

Navua sedge control

Navua sedge, a widespread weed in many areas of the Barron and Johnstone catchments, occurs as dense infestations or scattered plants in pastures and along roadsides and water courses in the wetter areas of the Tablelands. The Department of Agriculture and Fisheries continue to investigate improved control methods and biological control options.



TRC Land Protection Officer discuss Navua sedge biological control agents with scientists

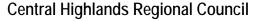
Tablelands Regional Council Community Revegetation Nursery plantings, Johnstone River catchment

The Tablelands Regional Council Community Revegetation Nursery supplies an average of 20,000 plants a year for local projects in our region. This contributes directly to soil stabilisation and reducing silt outflow to the Great Barrier Reef.



TRC Revegetation Nursery staff work on plantings, Johnstone River catchment, March 2018



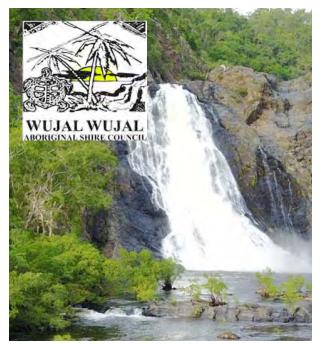


- Revitalising the <u>Sapphire Gemfields Wetland Reserve</u> and <u>Nogoa River</u> will enhance recreational use and opportunities for nature-based tourism. These sites help the community learn about the importance of wetlands, rivers and water quality that drain to the Great Barrier Reef and influence its health.
- The <u>installation of a solar power system</u> at the council's Emerald office will pay for itself in four years with the savings in electricity cost. The council is encouraging businesses and residents to investigate whether they too can save money and play their part in protecting the environment. Investors also see opportunity Emerald was identified as a solar hot spot and received an <u>influx of solar farm applications</u> in 2017.
- Encouraging community to 'choose to reuse' by bringing the multiaward winning sustainability and community campaign <u>Garage Sale</u> <u>Trail</u> to our region in October 2017.



Isaac Regional Council

- Carmila has joined Queensland Electric Super Highway with a series of fast-charging electric vehicle stations being rolled out at locations along the coast to encourage the uptake of electric vehicles in Queensland. Electric vehicles can provide a cheaper and environmentally-friendly transport option, particularly when charged from renewable energy.
- The Isaac region is set to be home to one of the largest wind farms
 in Australia as part of its strategy to develop a balanced and
 realistic energy mix through the growth of renewable energy. The
 council has also approved 10 solar farm projects with a further
 application under consideration.
- The St Lawrence Wetlands Weekend, held in June each year, promoted local food producers and celebrated the nationally significant wetlands and their importance to the ecology of our region, adjacent inshore environment and reefs.



Wujal Wujal Aboriginal Shire Council

 Wujal Wujal Aboriginal Shire Council took out a 2018 National Award for Excellence in Local Government for an <u>innovative</u> <u>approach to overcoming loss of telecommunications in severe</u> <u>weather</u>. Maintaining communication is important in not only ensuring the safety of the community during natural disaster events, but enabling timely responses to mitigate the environmental impacts of such events.

Living and working on the doorstep of the Great Barrier Reef brings with it great benefits and important responsibilities for councils.

