

Being the change that is needed

Water stewardship initiatives changing the Fitzroy Basin's water future



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A message from our Chair

Fitzroy Partnership for River Health has worked on behalf of the community for more than a decade assessing and reporting on waterway health in the Fitzroy Basin. The Partnership's inception came about as a result of community concern over water quality in 2012 and the resulting collective has ensured that best-practice science is used to provide an assessment of ecosystem health year after year.

Further to this, the long-term aim of the Partnership has always been for this assessment and reporting to be utilised not only by the community but by partners and industries to ensure that best practice water management is implemented.

In 2021, Fitzroy Partnership for River Health published our first Stewardship Report entitled 'Being the change that is needed' and subsequently published a second in 2022. In 2023, we again highlight the work of our partners, creating a valuable and growing resource for the community of the work underway to create water management change in the Fitzroy Basin.

So what is stewardship? The Australian and Queensland Government's Reef 2050 Long-Term Sustainability Plan (Reef 2050 Plan) is the overarching framework for protecting and managing the Great Barrier Reef to 2050. The Reef 2050 Plan references stewardship as: *"stewardship refers to the actions taken by individuals, groups or networks, to protect, care for or responsibly use the environment in pursuit of environmental and/or social outcomes"*.

While it can be said that practice change towards better environmental outcomes often comes due to government regulation, we applaud the work of our partners in creating water management change which often lies outside the scope of regulation. We commend them for their stewardship and leadership actions in the region. Read about: the cotton industry's commitment to water efficiency in line with the UN's sustainability goals; Anglo American's work supporting biodiversity outcomes via eDNA research; AIMS, Woppaburra Traditional Owners and BHP coming together to undertake coral spawning research; the expansion of the Queensland Government's container refund scheme – Containers for Change - for better environmental outcomes; and more, in the 2023 edition of our Stewardship Report.

The efforts of our partners and others are having tangible results. While they have one eye on organisational and economic outcomes, they are also contributing to the protection, maintenance and restoration of the ecological health of the region's waterways, the estuary and the inshore marine environment of the World Heritage listed and protected Great Barrier Reef.

Katy Steele, Chair

The first stewards

With utmost respect we acknowledge that First Nations people have cared for this continent for over 65,000 years and pay our respects to them, their cultures and Elders past, present and emerging. We acknowledge the Barada Barna, Widi, Jangga, Barada Kabalbara Yetimarala, Gaangalu Nation People, Koinjmal, Darumbal, Woppaburra, First Nations Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People, Wulli Wulli Nation People, Wadja, Iman/Jiman, Western Kangoulu, Kanolu, Bidjara, Karingbal and Wangan and Jagalingou (Clermont-Belyando) Area People as the First Nations peoples of the waters, and lands, within our reporting region.

We look forward to continuing to engage with these first stewards and their contacts and representatives to understand their care for country, their connection to waterways and to ensure their values and priorities are considered as industry, government, environment and community moves forward together.





Where change is happening for a better water future

Agricultural Stewardship

The Fitzroy Basin is home to some of the most productive farming and grazing land in the nation. As the world changes, government, natural resource management organisations, consultants and agricultural producers are working harder to manage our environmental assets while building on their capacity for a better future for the region.

Water Stewardship and Sustainable Cotton Production in the Fitzroy Basin

Since becoming the first Australian agricultural industry to independently assess its environmental impacts in 1991, the Australian cotton industry has been quietly improving its sustainability.

Managing sustainability, like growing cotton, is a complex process. The Australian cotton industry has a sustainability framework called PLANET. PEOPLE. PADDOCK. which coordinates a whole-of-industry approach to managing the environmental, social and economic factors most important to its stakeholders.

One of the environmental topics managed by the industry is water use. The industry's water goal matches the United Nations Sustainable Development Goal: to significantly increase water use efficiency over time, within sustainable river and ground water system withdrawal limits.

Here, Emerald cotton grower Graham Volck describes how he manages water quality and water efficiency on his farm.

The 4 key cotton farming parameters influencing farm water quality are shown in Figure 1.



Irrigation efficiency

All irrigation water leaving fields is captured in water storages and re-used. Rain events of 25mm or less are similarly captured. This attribute of farm design recognises the value of water and significantly reduces the opportunity for environmental harm. Maintaining good water quality in farm storages reduces the risk of environmental impacts if water leaves the farm in large rain events, and is important for the wellbeing of the wildlife that farm storages support. Regular water quality testing and preventing off-farm water quality impacts are part of the industry's myBMP Best Management Practice.

Capacitance moisture probes placed in fields to a depth of 80 cm, measure daily crop water use. This allows for timely crop irrigations optimising water use and minimising run-off.

Nationally, cotton growers used 52% less water to grow a bale of cotton in 2021 compared to 1997 (Figure 2).

ML/bale Sustainable Water Index (irrigated)



Fertiliser use

Given the expense of fertilisers, considerable effort is taken with application methods and timing to ensure fertiliser remains where it is placed and is readily available to the crop.

Soil nutrient testing is regularly undertaken prior to and during the growing season to match target yields to applied fertiliser quantities as part of myBMP.

Water quality testing of farm storages examine levels of nitrates, phosphates as well as EC and Total Dissolved Salts. Tests to date on my farm have shown levels posing no environmental threat to the quality of natural freshwater bodies.

Pesticide use

The adoption of genetically modified cotton and Integrated Pest Management has resulted in a 95% reduction in insecticide volume per hectare between 1994 and 2019 (Figure 3). In the same period a move to rely less on tilling the soil to control weeds increased herbicide volume by 20 per cent. Volume is not a good indicator of environmental impact however, as different pesticides have different toxicities. When measured by Environmental Toxic Load for selected indicator species, the five-year average environmental hazard of insecticides and herbicides has reduced by 91% and 66% respectively from 2004 to 2022. The opportunity for off farm contamination of waterways has consequentially been significantly reduced.



Figure 3

Sediment control and capture

Insecticide and herbicide use grams

In the course of capturing and recycling irrigation water, sediment, moved off field during irrigation, is also captured. This sediment is retrieved with machinery and distributed back on field. Farm layout and design can minimise sediment movement, as has the adoption of long season cotton production providing prolonged groundcover during the wet season.

Lower Fitzroy Streambank Stabilisation Project snapshot

Watching his property slowly be claimed by the river was the upsetting reality for Bill Kirkwood, property owner at Yaamba, north of Rockhampton. With 180m of land lost, and 515,000 tonnes of sediment washed down the river, it was no small victory for Bill, Fitzroy Basin Association (FBA) and the Reef getting this loss under control.

By stabilising the riverbank on this property, Bill has created a better local ecosystem for stock and native animals; plus has left the land in better condition for the new property owners Grant and Rebecca Cassidy. The future of the Reef is looking dramatically less murky with an estimated 23,000 tonnes of fine sediment saved from entering the Fitzroy River every year. When sediment enters the Reef it creates turbidity which leads to reduced light for seagrasses and coral which can reduce their growth and affect their reproduction and early development along with creating other implications.

Daniel Boshoff, FBA's NRM Manager worked closely on this project and noted that, "everyone has a role to play in protecting the Reef. Land managers who reduce sediment run-off to improve waterway and reef health are helping to create long term benefits for everyone in the Fitzroy region."

Project Aim

Stabilise 900m of the Fitzroy River which is estimated to have lost 515,000 tonnes of sediment between 2008 and 2020. Since 1952, the bank has retreated 180m.

Works Summary

- Aerial survey 2020
- Site works and engineering design
- 110,000m³ soil excavation, overburden used to create a raised paddock for stock safety in future floods. 28,000m3 of topsoil stripped, stockpiled and spread back
- 1,352 log piles
- 3,500 tonnes of rock for chutes and 300 tonnes for rock beaching
- 10,000 native plantings sourced from local council nurseries (sedges, grasses, rushes and trees)
- 1.3km stock exclusion fencing
- Civil works completed October 2021 and fast establishing cover crop sowed before 2021 wet season



"This project is a big win for the Reef and the property owner. It has increased the land's productivity and sustainability while also improving the landscape's function. The multifaceted project is a great example of what can be achieved with great regional knowledge and focused collective effort. We look forward to what's next."

Daniel Boshoff FBA's NRM Manager

Outcomes

- 900m of riverbank stabilised by bank battering and diverting overland flow to rock chutes
- 43,000 tonnes* of sediments (including 23,000 tonnes fine sediment) saved from entering the Fitzroy River
- Nesting habitat protected for critically endangered Whitethroated Snapping Turtle and Fitzroy River Turtle
- At least 25 locals upskilled
- 94 jobs created in the region, excluding (7) FBA staff
- Collaboration between local suppliers and contractors
- High flood event cattle retreat with water and feed
- Improved resilience for the local ecosystem
- Over \$200,000 of specialised machinery secured in the region
- Improved pest management
- * Source: modelling from endorsed project site reports

The Fitzroy Water Quality Program is funded by the partnership between the Australian Government's Reef Trust and the Great Barrier Reef Foundation with support from Fitzroy Basin Association, Greening Australia, Verterra and Catchment Solutions

CQ Graziers Create Healthy Wetlands

Nankin Wetlands are located just outside of Rockhampton. They are part of the Fitzroy Delta and listed as a Nationally Important Wetland in Australia. The Nankin wetlands are unique as they are located on a grazing property called Broadmeadows, owned by Robert and Michele Lang. The property covers 984 hectares and is largely marine plain with grass sedge wetland country.

CQ's Natural Resource Management organisation, Fitzroy Basin Association (FBA) has worked closely with Robert and Michele to improve the property to allow for sustainable grazing alongside functioning wetlands.

Robert Lang is passionate about having the two co-exist successfully. "We have so many native animals and birds out here, local birdwatchers can name about 118 species of birds on these wetlands," said Robert.

Water-spreading banks were constructed in 2017 and 2018 and additional banks were constructed in 2021 to reduce water run-off, erosion and scalding by slowing water flow across the property and improving ground cover. By slowing the water run-off, the banks are also stopping the movement of sediment and allowing better water infiltration in the salt-affected areas.

Satellite imagery of the property was captured in May 2021 before the construction of the three new earth-spreading banks and again in May 2022 when the banks had been in place for 11 months.

An initial look at the data suggests the banks are working as intended. It can be seen in the before image that areas below the banks installed in 2017 and 2018 have responded very well to rainfall over the past year—the dark green areas above the banks are evidence of strong ground cover growth. The dark areas above the new banks show standing water which will soak through the

fba

"We are happy to see that the erosion and salt-affected areas on the property are now under control. Being so close to the Fitzroy Delta and the Fitzroy River we want to do our part to stop the sediment run-off and protect these natural assets."

Robert Lang Broadmeadows Property Owner

soil flushing salt from the profile promoting new growth as the ground dries. It is expected that in future years the areas above the new banks will also show denser ground cover in response to rainfall as the soil quality improves.

With these measures in place along with best practice sustainable agriculture methods, the Nankin Wetlands have shown great improvements towards restoration.



Satellite images of Broadmeadows taken in May 2021 (left) before the construction of new water spreading banks in May 2022 (right) 11 months after the completion of three new water spreading banks.

Mining Stewardship

Resource companies world-wide are prioritising sustainable practices for better business and communities. In the Fitzroy Basin there are a number of operators leading the way.

Water management systems and initiatives at Glencore Coal's Clermont Mine

In 2021, after years of persistent dry conditions and minimal rainfall, many mining operations and landowners in the Fitzroy Basin were facing the reality of a water shortage.

Glencore Coal's Clermont Mine, situated within the Wolfang Creek catchment and forming part of the Nogoa River catchment, was one of several operations adversely impacted by drought.

All of Glencore's operations have comprehensive water management strategies in place to manage droughts and floods. The strategies ensure that Glencore:

- Operates in accordance with their environmental authorities
- Minimises impacts on local waterways and groundwater systems
- Uses water efficiently
- Protects mining operations from flooding
- Plans for and provides sufficient water infrastructure to support mining.

In the case of Clermont Mine, prolonged dry conditions posed a threat to the site's water supply. Clermont Mine has a single open cut pit and one main water storage dam. The site has no external water supply.

In 2021 the site initiated their Water Reduction Task Force, bringing together team members from a cross-section of the mining operation.

The Task Force commenced monitoring and tracking daily water usage to evaluate the risk of a mine shutdown due to limited water.

The team also implemented several initiatives to ensure water on site was preserved and appropriately managed.

A key component of the strategy was limiting water usage to two key areas - washing coal and maintaining water carts used to minimise dust generated by haul trucks. Water usage across all other areas was drastically reduced.

A dust suppressant was also used to improve the collection of airborne dust and reduce evaporation on haul roads.

In addition to water reduction efforts, Clermont Mine commenced a groundwater exploration project.

Although Clermont is licensed to extract water from the Basalt Aquifer, this option has never been exercised because of the importance of the water source to the local farming community.

The team concentrated instead on the Tertiary Gravel Aquifer, which was previously unused because of its depth and difficulty in locating the source.

The exploration work was successful, securing an additional 30 litres per second of water for the mine.

By implementing appropriate water management systems and initiatives, our Clermont Mine was able to overcome the challenges of drought.

Scientists, Traditional **Custodians and BHP come** together on 'floating lab' for Great Barrier Reef coral spawning

With Australian reefs facing ever growing pressures from a range of environmental and human-induced impacts, research to support innovative reef resilience, adaption and restoration is needed now more than ever.

In November 2022, marine scientists gathered with Traditional Custodians on Woppaburra sea Country for an ambitious field event during the annual mass coral spawning on the Great Barrier Reef. The expedition, led by the Australian Institute of Marine Science (AIMS), advanced understanding of how to help fasttrack reef recovery and trained participants in coral aquaculture techniques to help them manage sea country in the future. Over 40 people were involved in the event at North Keppel Island (also known as Konomie by the Woppaburra people) near Yeppoon.

The science team were based on a bespoke floating laboratory - a car barge turned into a science facility. The vessel holds research aquaria systems to support investigations on coral spawning and coral seeding. Land based activities were held at the Konomie Environmental Education Centre.

Dr Carly Randall, AIMS ecologist and lead of the Woppaburra Coral Project said the expedition was an exciting step for both science and the empowerment of the local Traditional Custodians, who are building skills and capacity to help look after sea Country.

"We have been thrilled to work with the Woppaburra TUMRA Committee and Woppaburra Traditional Custodians in this research. Coral seeding is a promising approach to help accelerate reef recovery both here on the Great Barrier Reef and around the world. The techniques we are researching and refining may

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For more information, check out:

Woppaburra TUMRA **Committee Website**

Woppaburra TUMRA Facebook page

BHP

BHP Mitsubishi Alliance

AIMS aquaculture assistant and Woppaburra woman Ms Jamiga Cummins returned to sea Country to be involved

in the event as part of her aquaculture training, which she began last year as part of the Woppaburra Coral Project. "This field trip was my first time on sea Country during coral spawning, assisting with the science and building knowledge with the Woppaburra people. I'm proud to help connect my family with Country, the marine life, the coral spawning and the science through what I have learned so far," said Ms Cummins.

Anne Dekker, Vice President Environment BHP, who also participated, said: "This partnership seeks to build meaningful relationships with the Traditional Owners where our collaboration with the Woppaburra Traditional Custodians contributes to better management of coastal ecosystems, weaving Indigenous ecological knowledge with western marine science."

The on-sea Country spawning event is part of the Woppaburra Coral Project, a component within the Australian Coral Reef Resilience Initiative (ACRRI), a research partnership between AIMS and BHP. This event was one of the largest science and knowledge-sharing field exercises hosted by AIMS in its 50year history.

Photo Credit: Jo Hurford

eDNA trial supports biodiversity assessment in the Fitzroy

Anglo American is working with the Fitzroy Basin Association (FBA) to improve the health of the Fitzroy Basin's waterways through trialling a new technology for biodiversity assessments called eDNA sampling.

eDNA works by detecting microscopic amounts of DNA which animals leave behind in the water, like skin or faeces. Using this data, scientists can examine the types of animals which interact with the rivers and creeks without actually seeing them.

Anglo American water specialist, Tim Kendrick, said the eDNA technology has advantages over some traditional methods of undertaking biodiversity studies.

"eDNA is a safer, less intrusive and cost-effective approach to qualitatively determining the biodiversity in our local and regional waterways because we don't need to capture of sight the animals that inhabit an area – we can simply look at the DNA material that the different animals leave behind," Tim said.

"By targeting sampling programs on waterways it allows us to assess a broader area for a wider variety of species as these act as natural 'funnels' for DNA material so we can detect the presence of rare or hard-to-find species. eDNA has a number of advantages over traditional qualitative survey methods which allows us to focus the efforts of our biodiversity specialists."

> Through the trial, Anglo American and FBA were able to identify 92 different kinds of animals using eDNA, including fish, birds, mammals, reptiles, and amphibians across the Fitzroy Basin. The survey identified the presence of several

threatened species, such as the Greater Glider, Koala, White-throated Snapping Turtle, Fitzroy River Turtle, and Silver Perch, as well as confirming the presence of eight introduced species including the Goldfish, European Fox, and Cane Toad.

The results of the eDNA trial show that this innovative assessment tool offers great potential to detect species that are difficult and time-consuming to find, such as rare, cryptic species in remote areas. It is an exciting tool which could also increase the ability to identify and respond to outbreaks of pest species.

Overall, eDNA is a promising new technology for studying animals and their habitats. It allows scientists to learn more about the animals living in the Fitzroy Basin and make better decisions about how to protect them.

Resource Stewardship

Caring about our impact -Dukes Plain Offset Area

Origin purchased Dukes Plain in 2013 to help meet the environmental conditions and offset requirements for the approval of the Australia Pacific LNG project.

The offset area is located near Theodore in central Queensland and covers approximately 4,500 (ha). It is situated within an ecological corridor of significance as identified by the Queensland Government and provides an important biodiversity linkage between the Isla Gorge and Precipice National Parks.

In 2017 the Shankeen Nature Refuge was extended over the entire offset area, delivering even greater protection for its biological diversity and cultural value.

The offset area encompasses 14 regional ecosystems within nine broad vegetation groups, with almost two-thirds of the area containing ecosystems such as woodlands and open forest, vine thickets, and areas of pasture grasses which are valuable habitat for flora and fauna. Fauna such as the Yakka skink (*Egernia rugosa*), Dunmall's snake (*Furina dunmalli*), Corben's long-eared bat (*Nyctophilus corbeni*), and the Pale imperial hairstreak butterfly (*Jalmenus eubulus*) are supported within this habitat.

Dukes Plain also supports commercial activities as part of an integrated land management approach and for the last 40 years has been a certified organic cattle grazing property. Through a carefully managed focus on organics and cell grazing, the current long-term lessee is assisting in the management of fuel load on the property, minimising the risk of bushfire and helping to improve the condition of the habitat.

Remote sensing of the property using LiDAR monitoring has shown significant increases in vegetation height across parts of the offset area. This confirms that the brigalow and semievergreen vine thicket threatened ecological communities are improving through the implementation of ongoing offset management practices.

Origin is proud of the success of the Dukes Plain offset area and will continue to safeguard the property's health and ecological values it supports into the future.

Government Stewardship

Sustained by the mighty Nogoa

Sustained by the mighty Nogoa River system and often dominated by droughts and flooding rains, the Central Highlands region is an integral part of the Fitzroy Basin.

For Central Highlands Regional Council, water management is one of its key strategic priorities.

In early 2023, much-needed work at the Dingo and Duaringa water treatment plants began with the design phase. Construction began in May with an estimated completion by end 2023.

Both plants will have an ultrafiltration unit installed, refurbished clarifiers, new chemical storage and dosing facilities as well as new amenities and offices. Duaringa will gain two additional treated water storages, and the elevated tower will be removed in Dingo, and a new pump station installed.

The approximate amount of these updates is just over \$5 million.

"These upgrades are very important to the livelihood of our residents in Dingo and Duaringa. Duaringa will have larger, more reliable storage and Dingo residents will notice better water pressure," General Manager Infrastructure & Utilities Jason Hoolihan explained.

"With consistent servicing and maintenance which council is committed to, these new upgrades will last up to 15 years," Mr Hoolihan said.

"The second phase of this project will be to complete upgrades on the raw water side of the system," he continued. Work on water infrastructure in the region supports the annual celebration of the Central Highland's mighty river system, Nogoa November.

"Without our beautiful river system, we wouldn't be the thriving region we are today," said Mayor Kerry Hayes.

The Nogoa River rises on the Carnarvon Range southwest of Springsure and flows generally north-easterly towards Emerald. Connecting to the Comet River, and the Mackenzie River, the Nogoa descends 361 metres and spans over 569 kilometres.

The construction of dams and weirs along the river system has created irrigation allocation for communities, industry, and agriculture and yet maintains sufficient water for our natural environment, making it one of the best-managed catchments in the nation.

Investing in the Fitzroy for better Reef water quality

The Fitzroy Basin is the second largest basin in Australia and a priority region for managing the quality of water flowing to the Great Barrier Reef.

The Queensland Government's \$270.1 million Queensland Reef Water Quality Program funds a range of projects working with industry, agricultural producers and communities across the six Reef regions, including the Fitzroy region.

Each year, \$1.25 million is invested to support the five regional report card partnerships in the Great Barrier Reef catchment, including \$140,000 for the Fitzroy Partnership for River Health.

The Queensland Government's Reef Assist program is providing funding towards on-ground restoration projects with employment and training outcomes for participants.

The Woorabinda Healing Country and Gully Remediation Program is a \$1.39 million Reef Assist 2.0 project being led by Greening Australia. The two-year project focuses on reducing sediment run-off by stabilising eroding gullies and streambanks across Woorabinda Aboriginal Shire Council land and Woorabinda Pastoral Company land. It is providing valuable opportunities for First Nations people to develop skills and work on Country.

The Woorabinda project is one of 11 projects funded across the entire Great Barrier Reef catchment under the second phase of the Queensland Government's \$33.5 million Reef Assist program.

The Queensland Government is committed to working with local communities and organisations like the Fitzroy Partnership for River Health to support their stewardship and on-ground activities to improve the health of their local waterways and the Great Barrier Reef.

Expanding the container refund scheme

From 1 November 2023, glass wine and pure spirit bottles will be eligible for a 10-cent refund when returned to a container refund point in Queensland.

Over 6,600 Queenslanders recently provided feedback on expanding the container refund scheme during the consultation process.

There was overwhelming support for expanding the scheme, which currently includes most aluminium, glass, plastic, steel and liquid paperboard drink containers. More than 99 per cent of Queenslanders were in favour of more containers being included.

Before 1 November 2023, glass wine and spirit bottles will not be accepted at refund points and should still be placed in your yellow lid bin or taken to your local transfer station, where these services are available.

At container return points, you can direct the 10-cent refund payment to a registered community group. Some groups even run their own container donation points to retain the refund payment. Not only will you be giving back to your community, you are also helping to keep waterways clean and free of litter and reducing landfill.

FPRH – Part of the solution towards a better water future

Supporting litter reduction

The partnership's commitment to improved water stewardship outcomes in the region is both at a partner and community level. One element that supports this community aim is the local 'Drain Buddies' project.

Drain Buddies are at-source litter traps embedded at various locations across Central Queensland to determine 'what's down our drains'? There is already significant evidence that oceans are overwhelmed with plastic litter. The Fitzroy Partnership for River Health project gathers more data locally to support community action to address what is becoming an increasingly significant global problem.

Drain Buddies are heavy-duty baskets placed in litter hotspots, usually in stormwater systems. Stormwater systems include drains and infrastructure that are designed to drain excess ground and rainwater away from commercial and residential properties. This includes water from sidewalks, paved streets, parking lots, and roofs.

Stormwater systems play a substantial role in transferring litter to discharge points such as creeks, rivers, and beaches. Higher litter source areas relate to the more highly populated and heavier foot trafficked areas such as residential and commercial areas. The Drain Buddies capture around 2.5 tonnes of litter every year from stormwater systems, destined to end up in waterways and eventually the ocean. Up to 100kg of litter is collected every month from the Drain Buddies in Rockhampton alone. We have found cigarette butts are major contributors to litter in CQ, tens of thousands are collected every year from Drain Buddies.

Through responsible waste disposal we can keep litter out of drains and out of our waterways. Drain Buddies has not only provided data on litter carried in stormwater in CQ, but a tangible connection between our waste practices at home and the litter in our waterways.

The Fitzroy Partnership plans to use the data from Drain Buddies to develop an indicator for litter in the Fitzroy Basin Report Card. This will help track and communicate the impact plastic pollution has on river health and the ocean in our region.

Improved water quality monitoring

Fitzroy Partnership provides unique opportunities for our Partners to engage in collaborative stewardship activities. In turn, this improves management outcomes and supports our water security into the future. It has never been more important to ensure we have a scientifically rigorous monitoring program that is designed specifically for our region. The Partnership is excited to have progressed with a Fitzroy Basin-wide monitoring program that "fills some of the gaps" in our existing data. The Partnership has designed and implemented a program that includes consistent monitoring, includes fish and water bug data, across varying flow regimes in carefully chosen, representative sites. Data from the new program was used to populate the 2023 Report Card for the first time in April 2023. Working together and sharing resources ensures Fitzroy Partnership can provide a more complete picture of river health in the Fitzroy Basin.

Measuring the effectiveness of urban water stewardship initiatives

Water generated from populated urban areas, including stormwater runoff and wastewater discharge can impact our local waterways, and ultimately the Great Barrier Reef. Fitzroy Partnership for River Health continues its discussions with Rockhampton Regional Council towards implementation of an Urban Water Stewardship framework locally.

Supporting research to build water quality and ecosystem health knowledge

Fitzroy Partnership continues to offer the HeART of the Basin Scholarship which is open to research students at CQUniversity studying Honours, Masters by Research or PhD to progress their learnings in a research topic relating to improving waterway health in the Fitzroy Basin. Since its inception in 2016 five students have advanced waterway health knowledge in a range of different research areas. These include: the development of a toolbox for fish health assessment in aquatic ecosystems associated with coal and gas industries in the Fitzroy Basin; research on off-stream watering points as a method of riparian restoration; the quantification of microplastics in public tap water; the presence of microplastics in freshwater aquatic plants; and the contribution of groundwater to surface waters and riparian vegetation in a subtropical river catchment.

The Scholarship provides \$3,000 per annum to support research expenses and the scope for eligibility has been widened to incorporate research into human dimensions or the understanding and use of waterways.

MyWater – Citizen Science in Action

Waterway health is a complex issue, with a significant number of geological, physical-chemical and ecological elements contributing to the health of our creeks, rivers, estuaries and oceans. To support greater understanding of the importance of

healthy waterways in the Fitzroy Basin, and the various factors that contribute and impact water health, Fitzroy Partnership for River Health has its own citizen science program, MyWater.

There is a growing movement towards citizen science – public participation in scientific research to increase knowledge of the environment - and Fitzroy Partnership for River Health is working to harness that movement and enthusiasm locally. Through MyWater, schools, community groups and individuals can sample and test their local waterways and upload their results to MyWater showing a grade for each of the parameters measured.

As citizen scientists spend time sampling and testing local waterways, our aim is that local community members gain a greater understanding of the importance of water quality, and the range of contributors to good water quality for human consumption and for industry, agricultural and urban use.

MyWater has been well supported since its inception in 2012, with samples from across the Fitzroy Basin contributing to a community waterway health dataset. The aim is to increase community engagement with MyWater

to build greater awareness about water quality and the importance of assessing and reporting on waterway health year after year.

Will you be a Fitzroy Basin Water Warrior and help change our water future?

Follow these tips and be a water warrior!

Join a community group or event that samples or improves the health of your local creek or river.

Take shorter showers. Put a timer on for 4 minutes.

Make recycling a habit at home and at work.

Join the Containers for Change program, recycle your glass and plastic containers and make some savings while you're at it!

Say no to single-use plastic. Always carry a refillable water bottle and remember your enviro-bags when you shop.

Don't litter - bin your cigarette butts and even better, pick up litter in your yard, street and community.

Reduce fertiliser and pesticide use. Think about rain before you spray for weeds or fertilise your garden.

Plant trees or shrubs on hills or slopes near creeks and waterways to reduce run-off.

Pick up after your pet. Pet poo is just raw sewage.

Sweep your driveway, don't hose and take debris to the dump as garden waste.

Wash your car on the lawn, not the driveway, or take your car to a water-wise commercial car wash.

Toilet flush – use your half and full flush options!

Individuals can make a difference to water quality, so please help us to spread these messages far and wide:

- Learn and understand
- Conserve water
- Do not litter
- Say NO to single use plastic
- Recycle, recycle, recycle
- Take community action.

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We recognise our partners for being the change that is needed for Fitzroy Basin's water future

Get in touch to find out more

- fiverhealth.org.au/water-stewardship
- 🔀 admin@riverhealth.org.au
- FitzroyPartnership4RiverhHealth
- **in** Fitzroy Partnership for River Health
- Level 1, 80 East Street, Rockhampton Qld 4700

