fitzroy partnership for river health

Being the change that is needed

Water stewardship initiatives changing Fitzroy Basin's water future

Edition 2 2022

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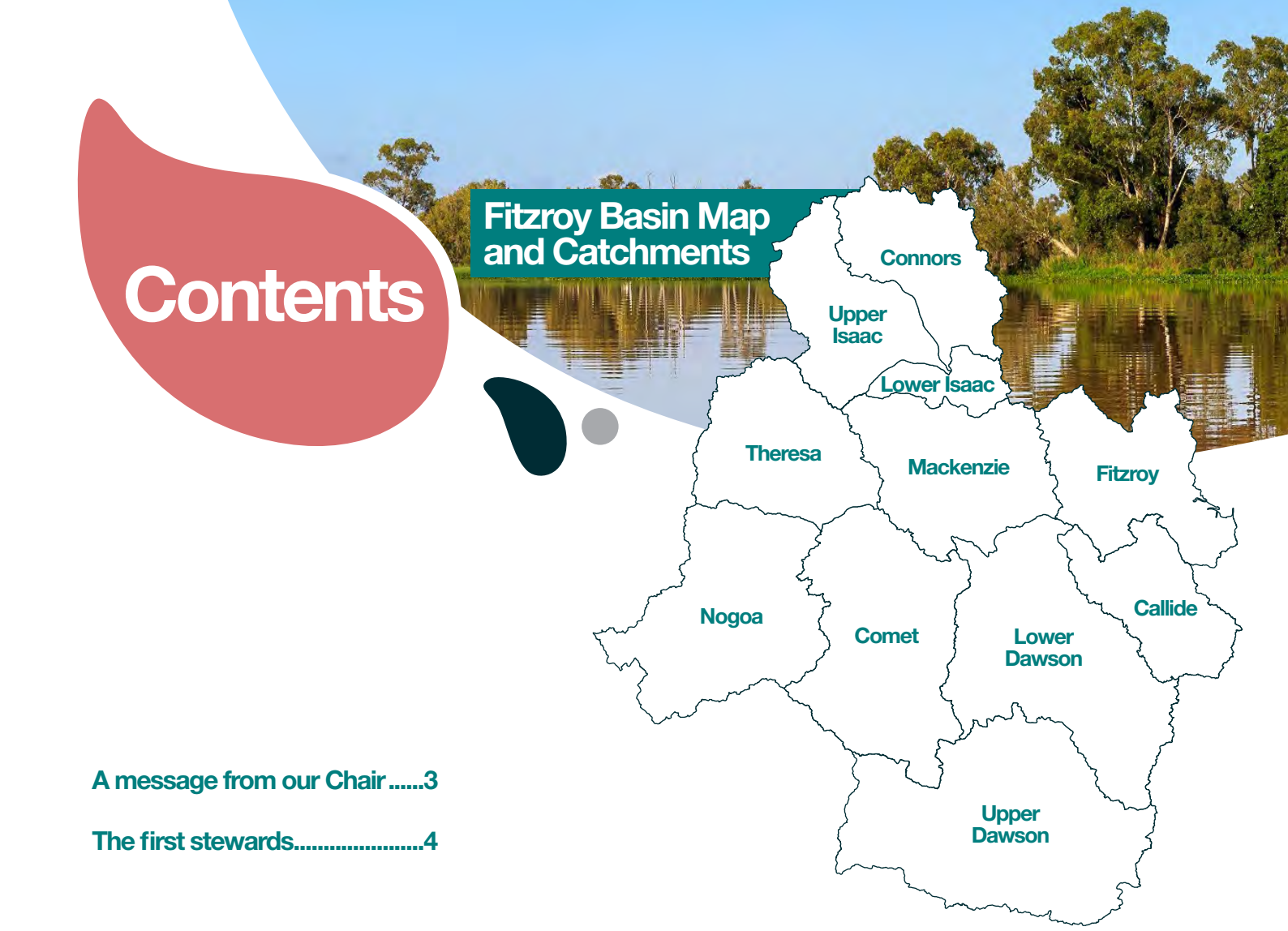


A message from our Chair

Fitzroy Partnership for River Health provides a significant platform for sharing water stewardship initiatives in the Fitzroy Basin. In addition to our annual Fitzroy Basin Report Cards reporting on the health of the Fitzroy Basin waterways, the collaboration and facilitation provided via this unique collective cannot be understated.

While our attention turns to managing the COVID pandemic in each of our organisations and industries, the community should be heartened by the efforts continuing across resources, agriculture, NRM, research and community to continually improve environmental performance and increase water stewardship for a better water future for the Fitzroy Basin.

An inaugural survey of the Fitzroy Basin community to seek feedback about waterway management and priorities for the region was undertaken in late 2021, supported by a small sample of respondents. We look forward to promoting the results of that survey during 2022, but the overall sense of concern for the environment and the management of our waterways was a constant theme.

This report allows the Partnership to showcase the diverse work being undertaken to create a better water future. From landmark projects such as Rookwood Weir working to mitigate and offset potential impacts; resource companies engaging, enabling and empowering Traditional Owners to support care for country; the implementation of traps in urban settings to stop sediment and pollution entering our waterways to agricultural enterprises using knowledge and peer mentoring to create more sustainable operations, there is much being done. We will continue to act as an agent of change and to promote to our partners and to the community the good work that IS being done in water management. It is through the promotion of positive action and management change that transformation happens in our organisations, our industries and our communities.

We commend the organisations and individuals featured in this second edition of our Stewardship Report for their contribution to being the change that is needed in the Fitzroy Basin. Their efforts contribute to the protection, maintenance and restoration of the ecological health of the region's waterways and adjacent estuarine and marine environment.

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, 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, and to ensure their values and priorities are considered as industry, government, environment and community moves forward together.

Agricultural Stewardship

Recognised as some of the nation's most productive country, the Fitzroy Basin is home to multi-generational farming, horticultural and grazing producers as well as innovative new 'kids on the block' looking at different ways to manage their land and turn a profit. As the world changes, government, NRM, consultants and agricultural producers are working harder to manage our environmental assets while building on their capacity for a better future for the region.

Improving grazing practices to reduce run-off to the Reef

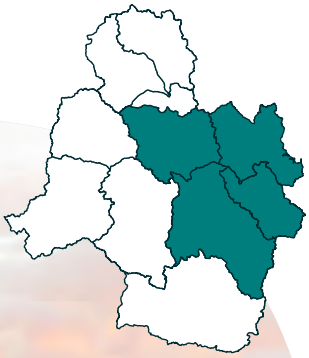
The Queensland Government, in partnership with Resource Consulting Services (RCS) and CHRRUP Limited, has been using different approaches to help Fitzroy and Belyando graziers make best use of their pasture to improve land condition and water quality.

Knowing that 'you need grass to grow grass', CHRRUP's innovative approach uses graziers as trainers who draw upon their pasture management experience. They have developed forage budgets for 30 landholders managing around 125,000 hectares. Forage budgets help graziers understand how much grass is available, how much should be left after grazing and how this can be achieved through managing stock numbers in paddocks.

Landholders have valued the knowledge being shared by fellow land managers who use forage budgets on their own land and understand the benefits. The aim is to match the stocking rate to the land's carrying capacity and leave the land in a state that will respond when rain falls. This helps keep the rain in the soil and the soil in the paddock, minimising run-off to local waterways that flow to the Reef.

The Grassroots project centres on RCS's extensive agricultural and educational experience. It is supporting 34 landholders in the Fitzroy and neighbouring catchments to implement farm practices based on regenerative agriculture principles and improve their business practices. Graziers are assigned an RCS advisor to support and implement a range of activities including tailored property infrastructure to keep rainwater in the paddock, improved pasture use, and matching stocking rate to carrying capacity across more than 149,000 hectares.

Grassroots has established district grazier groups, building communities of likeminded producers to share information and experiences. This has resulted in improved financial and land condition outcomes for graziers and water quality benefits for the rivers and Reef.



Rookwood Weir
No barrier to fish movements

When it becomes operational, Rookwood Weir will bolster Central Queensland's water security. It will enable Lower Fitzroy landowners to transition to higher value agricultural land use and facilitate new industrial business opportunities.

The landmark $367 million project is currently being built on the Fitzroy River, 66 kilometres south-west of Rockhampton. It is equally funded by the Queensland and Australian governments.

During construction of the weir, every effort is being made to mitigate or offset potential impacts on the natural environment. These are detailed in the project's Environmental Management Plan (EMP). Actions include plans to establish an environmental offset area adjacent to the Mackenzie River, with a mix of vegetation to provide a range of fauna habitat, including sand banks for turtle nesting. Importantly, the offset area will also act as a large sediment trap, which will improve water quality in the Fitzroy River. A turtle passage ramp will be built into the weir, enabling the endangered Fitzroy River and white-throated snapping turtles to move upstream and downstream of the weir.

A key environmental feature of Rookwood Weir will be its unique fish lock situated on the right bank that will allow fish to maintain access to their natural habitat. When complete, the fish lock will stand 26 metres (equivalent to a seven-story building) above river level and comprise seven chambers. These chambers will ensure the fish lock remains operational during low river flow events in the dry months and high river flow events in the wet season. The fish lock will also minimise the injury and mortality rate for small and large species. Building the fish lock will require 14,000 m^3 of reinforced concrete - the equivalent of six Olympic swimming pools.

Up to 34 species of fish have been identified in the Fitzroy River community, including sleepy cod, eastern rainbow, golden perch, and bony bream.

The fish lock operates in much the same way as a boat lock. An outlet valve creates flow, which naturally attracts fish to enter a chamber. When the chamber is full, the outlet valve is closed, and another outlet is opened to an adjacent chamber. Fish then enter the chamber with the same process repeated until fish exit the chamber on the other side of the weir.

Rookwood Weir Environmental Manager Susan Korecki said the fish lock will be one of the largest in Queensland and the first built in the state for more than a decade.

"The Rookwood Weir fish lock will be one of the most advanced in Queensland as we have been able to apply the learning from other fish locks across the state," she said.

"These were passed onto our design team, which then worked with fish experts to settle on the current design.

"What makes this fish lock unique is its size. This allows it to accommodate the seven chambers that will ensure the safe passage of small to large fish during a variety of river flow events throughout the year.

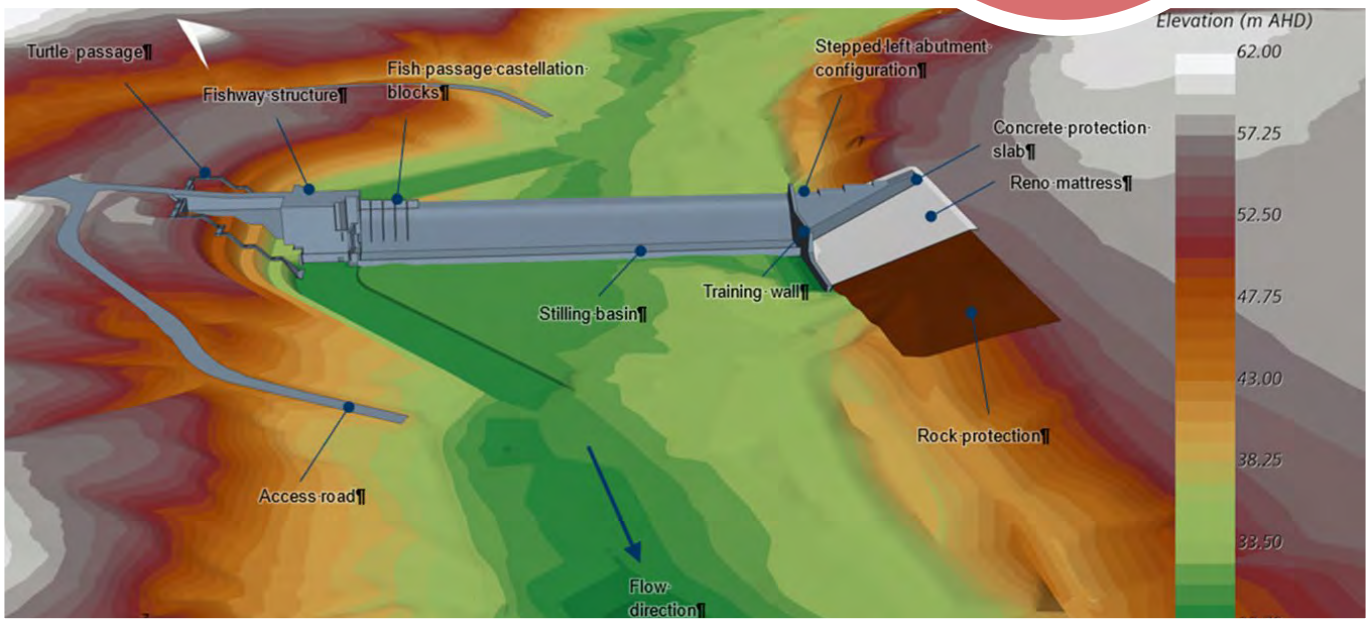
"It is also important to note that the fish lock has been constructed in a way to minimise the risk of injury or death to fish as they enter and exit," Ms Korecki said.

To further improve fish safety, a significant design change was made to the weir spillway on the left bank in 2021. The original design posed a risk for fish when the weir is spilling by plunging over the spill way and potentially landing on concrete. To address this issue, a series of concrete steps were designed to sit on top of the spill way to prevent such as occurrence (see picture below). Construction on the redesigned spillway will be completed early 2023.

Work on the fish lock started in late 2021 and is scheduled for completion by the end of 2022. In-river activities are forecast to resume by May 2022 following an inundation event in November and December 2021.

When the weir is operational, Sunwater will continue to monitor its effectiveness to ensure it functions as designed.

For more information www.sunwater.com.au/projects/rookwood-weir-project.



R&D the key to a sustainable cotton industry

The Australian cotton industry has been managing on-farm sustainability for decades, underpinned by investments in research and development, the industry's Best Management Practices program (myBMP), grower adoption of improved practices and innovation, and active participation in global sustainability programs. Today, Australian cotton growers produce more cotton on less land, with more efficient water use and with less impact on the environment than ever before.

Through Cotton Australia and the Cotton Research and Development Corporation (CRDC), the industry has committed to undertaking:

- Sustainability reporting every five years against agreed targets (set over five-yearly intervals from 2019 to 2029 to align with the Australian Cotton Industry 2029 Vision).
- Stakeholder engagement on industry sustainability and opportunities for improvement, including via a formal stakeholder forum.
- Independent assessments of sustainability and environmental performance every 10 years.

Sustainability in the industry is underpinned by strong R&D. For example a recent CRDC project with Australian Nuclear Science and Technology Organisation and University of NSW investigated the nitrogen cycle in rivers draining through cotton growing regions. The catchments included the Nogoa River a tributary of the Fitzroy River flowing towards the Great Barrier Reef near Rockhampton and the Namoi and Murrumbidgee rivers, part of the Murray-Darling Basin. The work included multiple river water sampling at selected sites over approximately 18 months in each catchment. Dry conditions were prevalent (2017-2020) with minor flooding only captured on one occasion in each catchment (2020-2021). The study found water quality was generally good, with some issues arising during periods of intense low flow as well as highlighting potential for fertiliser to be contaminating water during high flow events.

Water at the Lake Maraboon is good quality irrigation water with low conductivity and low sodium adsorption ratios (SAR), with dryer conditions reflected in some quality changes. Water quality downstream of Fairbairn Dam decreased sharply, particularly between the dam and the town of Emerald. The average EC increase for surface water between Lake Maraboon and Emerald town was of 26% in a 19.6 km stretch of river, while the EC increase between Emerald and Bridge Flats Road was 18% for a 23.8 km stretch of river. Additional evaporation at Emerald weir together with inputs derived from agriculture/industry bordering the river and the urban setting could account for this increase. EC results in the Comet River were consistently well above WQO except for the three occasions sampled with flow. Sulfate concentrations at Bridge Flats Road were always well below maximum WQO values. However, sulfate concentrations in the Mackenzie River were up to 5 times above the WQO (<10 mg/L) for the Mackenzie River while sulfate concentrations in the Comet River were up to 20 times above the WQO (<5 mg/L) during times of no flow.

Nitrate isotopes were used to indicate likely nitrogen source. In a very generic sense, the nitrogen source as viewed by nitrate isotopes behave quite differently in the three studied catchments (sewage, grazing, fertilisers). In the case of the Nogoa, low flows during the project period restricted sampling to one high flow event, sampled in late January 2020. This event was sampled at the beginning of the flood receding phase with samples representing lower flow levels until last sample. The similarity in the concentration evolution of nitrate and phosphate during the high-flow event reinforces the nutrient's common origin, that is fertilisers. Given the study was limited to one event restricted to Theresa Creek, the relative importance of other processes operating at the full Nogoa catchment scale is not known. As supported by other regional studies, regardless of the source, the bulk of the nutrients transport takes place predominantly at high flow.

Historical analysis found that at Bridge Flats there has been a marked change in the baseline EC observed from approximately 2010/11. The electrical conductivity measured at Bridge Flats and that observed in the Mackenzie River, just downstream of the Comet River confluence, cannot be reconciled without additional elevated EC inputs between those two sites. Nutrients do not show a large variation in this stretch of river, neither the nitrate isotope values.

Groundwater studies have also occurred with open results available (www.sciencedirect.com/science/article/pii/S0048969721076841).

The Brownlie's journey
A lesson for others

Andrew and Tali Brownlie of Andalia Pastoral are quintessential next generation producers who have developed a taste for leveraging relationships and resources to minimise risk and maximise return.

Their success didn't happen overnight, and their story is not dissimilar to other dynamic producers who've travelled a similar journey to arrive at the same destination.

In fact, the Brownlies are an example of curious but interdependent operators who have accepted advice and guidance from FBA and other organisations, implemented what they learnt, made some mistakes along the way, and have come out on top.

Part of FBA's philosophy is to initially work in small increments, walking shoulder to shoulder with the land manager until they achieve a level of confidence that empowers them to investigate other initiatives and fund their own investments.

Andrew and Tali took part in the Resource Consulting Services Grazing for Profit course, closely followed by a KLR Marketing workshop and then a Low Stress Stock handling program. Armed with new tools, formulas, planning skills and networks, the Brownlie's looked at opportunities differently and assessed them with fresh eyes.

FBA's work with the Brownlies has been a team contribution with Senior Extension Officer, Katie McCosker; Extension Leader, Andrew Lewis; Land Management Officer, Casey Spencer; Land Management Officer, Kate Jackson; Community Participation Officer, Bethlea Bell and Strategic Projects Leader, Craig Davenport. Starting out with face to face, on ground advisory services, FBA Land Management Officers assessed the property's potential and helped Andrew and Tali build on goals and a vision for a diversified business model with multiple income streams to offset seasonal peaks and troughs of single stream production sources.

To help the Brownlie's reach their goal, FBA contacted four like-minded local producers creating a small peer to-peer mentoring group. Together the group exchanged challenges, goals, timelines and wins all while gaining support and advice from FBA's technical experts.

From here, consultants with resources and expertise on larger projects were engaged to help the peer group to work on integrated solutions for improvements as well as contributing to shared positive environmental outcomes.

Through this joint journey the Brownlies made the financial discovery that it's more cost efficient for them to sell their breeders and focus on trading dry cattle. They also moved into selling "boxed beef" and with another member of their group partnered in "boxed sheep" enterprise selling to butchers, wholesalers and community with a reputation as delivering premium cuts at farm gate prices on grass fed label the venture is exceeding expectations.

Further diversifying their business, they have moved into bee keeping and have recently taken on a major project with FBA to supply bulk native trees tube stock to supply major revegetation projects.

Since the Brownlies have become a case study in continual learning, leveraging knowledge and networks and diversifying income, they have had requests from other land managers and producer groups to share their model.

FBA considers its work with the Brownlies to be successful because it has helped them transition from an independent producer reliant on one income source to a self-reliant and innovative enterprise. Now independently recognised as experts, the Brownlies command a fee for sharing their journey with others who have been inspired to achieve the same levels of innovation and financial freedom to deliver upon their environmental responsibilities.

Mining Stewardship

The management of water resources is a high priority world-wide and the sector continues to improve practices to ensure ongoing water security and sustainability. In the Fitzroy Basin there are a number of operators leading the way.

Water Resources Situational Analysis

To better understand shared water challenges and opportunities for collective action, BHP commissioned a Water Resources Situational Analysis (WRSA) prepared by Alluvium Consulting and the University of Queensland's Sustainable Minerals. The WRSA will be made publicly available in mid-2022 and will be a tool for all to use in planning and prioritising action throughout the catchment.

Fifteen shared challenges were identified across the following categories:

- Integrated water resource planning and management;
- Participation and access of first nations to land and sea country;
- Water security for economic and social well-being;
- Data confidence and knowledge; and
- Water and catchment quality.

The WRSA reports on consequences and causes of these shared challenges and identifies existing and future opportunities for collective action.

Queensland Indigenous Land Conservation Project

Queensland Indigenous Land Conservation Project (QILCP) led by Greening Australia and BHP/BMA, with project partners the Woorabinda Aboriginal Shire Council and the Barada Barna Aboriginal Corporation aim to improve and maintain the whole catchment connected to the Great Barrier Reef by engaging, enabling, and empowering Traditional Owners and Indigenous Communities to care for Country.

The QILCP has celebrated several achievement since April 2019 including:

- The establishment of two project reference groups, one in the Woorabinda community and the other with the Barada Barna Aboriginal Corporation.
- Undertaking a Healthy Country planning process with Woorabinda Project Reference Group to create a management plan for the Woorabinda Rangers Program.
- Funding from the Queensland Government for five ranger positions in Woorabinda.
- The appointment of Milton Lawton as Woorabinda Ranger Coordinator.
- Works undertaken with Woorabinda community to fix eroding gullies on pastoral properties as part of the Fitzroy Water Quality Project.
- Completion of a Healthy Country planning process with Barada Barna Project Reference Group to create a management plan for culturally and ecologically significant wetlands.
- Ecological survey of over 60 hectares to inform management actions on Barada Barna country.
- Organised for Central Queensland University to deliver accredited training in conservation and ecosystem management and weed management for Barada Barna Cultural Heritage Team and Woorabinda Rangers.
- Formed Dipperu Steering Committee to explore and promote opportunities for Barada Barna to undertake management activities within Dipperu Scientific National Park.

A number of feasibility studies are also ongoing to explore opportunities in environmental credits, and in seed collecting and nursery enterprises.

Finding the balance in water management

Kestrel Coal Resources (Kestrel) appreciates that clean water is a valuable and finite resource, particularly within the Fitzroy River Basin, where there are times of extreme under and over supply – the reality of droughts and flooding rains. These extremes can even occur within the same year, as in 2021 where the year commenced on the back of a number of below average wet seasons, but ended with a major flooding event in December.

Managing water across the mine site through these extremes aims to find a balance between water usage, water storage and water release, depending on the conditions at the time.

As an underground mine, Kestrel is also particularly aware of the surrounding groundwater system – as a resource for our neighbours, the interaction with surface waterways and Groundwater Dependent Ecosystems, and from deeper aquifers, as an operational and potential safety issue via management of water ingress into the mine.

Kestrel Mine's Water Management fundamentals include:

Reducing Raw Water Usage

Reverse Osmosis – Kestrel operates 2 x RO plants on site, with capacity for taking a combined feed of 125,000 L/hr of mine water, and producing up to 92,200 L/hr of clean water. There is still some optimisation works required to get the RO plants operating to full capacity, but they have the capability to significantly reduce both the need to import raw water, and reduce mine water storage requirements.

Re-use for operational requirements – Kestrel seeks to minimise importation of raw water by re-using as much mine water as possible through the operations, and subsequently reducing the amount of mine water storage that is required. A major water recycling program was implemented across Kestrel in 2017, that established recycling options from all existing water storages, and reduced raw water demand by 65%. Since that time incremental improvements continue to be identified and implemented.

Minimising Mine Water Storage

Dry Stacking Tailings – Kestrel has removed the need for a standard Tailings Dam by implementing additional filtration in the coal processing system, allowing for the dewatered tailings to be 'dry stacked' along with coarse rejects. Dry stacking of coal washery waste significantly reduces the amount of water that becomes locked-up in tailings dams, allows that water to be re-used through the mining operations, and subsequently allows for earlier rehabilitation of the dry tailings at the end of the facility life.

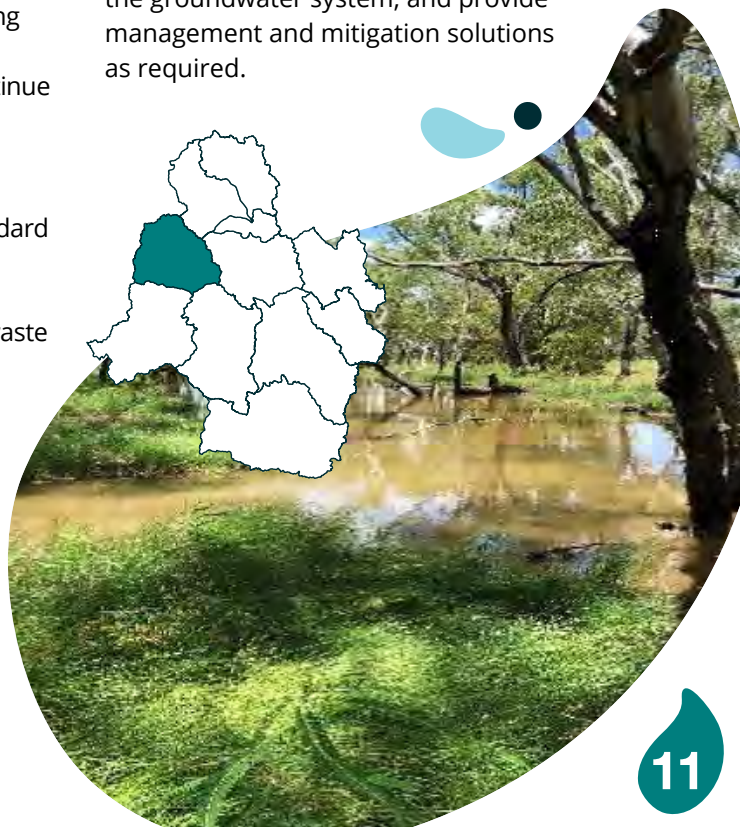
Evaporation fans – Kestrel has a number of evaporation fans that are relocatable depending on where the water management priority is identified. Evaporation fans cannot produce significant, short term water reductions, however over time they can achieve a measurable reduction of water levels within storages.

Water Release

Monitoring and release controls – In extreme flooding events, Kestrel aims to release water stored onsite in order to maintain a safe water balance, but always in strict compliance with the site's Environmental Authority conditions that are regulated by the Department of Environment and Science (DES). The volume of flows are recorded by flow meters and weirs, and daily water monitoring of release water, upstream and downstream water qualities are undertaken to ensure any water release remains in compliance with both flow and quality requirements. Reports are also provided to DES and via the Fitzroy Partnership, which is publicly reported and eventually incorporated into the Fitzroy Partnership annual river health report cards.

Groundwater

Groundwater Model – Understanding the groundwater systems is imperative to understand potential water inflows into the underground workings, but also contributes to better understanding of the surface waterways and associated vegetation ecosystems. In 2021 Kestrel collaborated with some neighbouring landowners to update the current site groundwater model and develop a regional area groundwater model. The model also benefitted in accuracy by being able to utilise a range of groundwater database information. The groundwater model will allow the mine to better understand any impact on the groundwater system, and provide management and mitigation solutions as required.



Research and NRM Partnership

Sights set on seagrass strategies

Fitzroy Basin Association (FBA) is working with CQUniversity to reduce threats to seagrass communities. The Fitzroy region has the largest seaward draining basin in Queensland, with 1,000 km of coastline that is home to extensive seagrass meadows and part of the Great Barrier Reef Heritage area.

Seagrass meadows underpin the survival of fish and shellfish the community eats and transform the greenhouse gas, carbon dioxide, into oxygen. They also filter seawater, capture sediment, stop erosion and provide food for threatened dugong and marine turtle species.

Human activity like coastal urban development, storm-water runoff and nutrient pollution can contribute to seagrass degradation and loss.

Director of CQUniversity's Coastal Marine Ecosystems Research Centre (CMERC), Associate Professor Emma Jackson is a leading authority on seagrass. She is researching ways coastal development activity can support rather than compromise seagrass that is essential to fish habitats.

By participating with CMERC, FBA has been educating industry and the community about ways to decrease threats to local seagrass. Getting people to understand seagrass value is critical to motivating people to reduce marine pollution.

Sustainable recreational use of marine areas throughout the Fitzroy region relies on healthy seagrass, so FBA engages the fishing community in volunteer events and support programs too. Without seagrass, juvenile fish are vulnerable to predators and breeding grounds are compromised, which reduces fish diversity and numbers.

FBA coordinates regular volunteer, club, and community group clean-ups of marine debris along Fitzroy region's beaches. Engaging the community to help collect rubbish reduces the threat to seagrass and spreads the message about the importance of seagrass to our food supply chain.

A 2020 study (Jänes et al.) showed a hectare of seagrass supports 55,000 more fish a year than a seabed without vegetation. This fish commercial value is worth up to $21,200 per hectare per year, so it makes good financial sense to reduce threats to seagrass communities.

Seagrass restoration through community participation is also effective at improving cover. One plant can grow to an entire meadow in less than a year. In 2021, FBA and CQUniversity recruited over 100 volunteers and recreational fishers to collect seagrass fruit and plant seeds to bolster areas experiencing meadow loss on the Curtis and Capricorn Coasts.

FBA is also investing in research to find better ways to propagate seagrass. It is partially funding Australia's only island-based seagrass nursery on North Keppel Island (Ko-no-mie) to support CQUniversity research efforts that will contribute to the knowledge and benefit the island's seagrass community.

FBA and CQUniversity's on-ground efforts in seed collection and restoration combined with sustained community education are improving the region's awareness and stewardship of local seagrass.

This project is supported by Fitzroy Basin Association and CQUniversity through funding from the Australian Government's National Landcare Program.

FBA is one of Queensland's leading natural resource management (NRM) organisations. Visit fba.org.au to learn more.

Government Stewardship

Not so baffling

Rockhampton Regional Council winning at sustainability

Rockhampton Regional Council aren't taking any rubbish when it comes to polluting local waterways, and in fact have been recognised as a national leader in sustainability.

In 2021, Rockhampton Regional Council were crowned winners of two Australian Sustainable Communities – Tidy Towns Awards winning Environmental Sustainability – Natural Environment and Environmental Sustainability – Water categories.

Water and Environmental Sustainability Councillor Donna Kirkland said it was wonderful to have Council's commitment to the environment recognised.

"Being named overall winners in the state, and then being nominated as national finalists, is a testament to many of the great initiatives happening across Rockhampton Regional Council," Councillor Kirkland said.

"The overall nomination captured the diversity of the work that we are doing to improve on and contribute to the environmental sustainability of our Region.

"Whether it is Fitzroy River Water reducing energy usage and improving recycled water solutions, or the great work happening in resource recovery and waste management, to sustainability initiatives such as our Natural Resource Management and Living Sustainably programs just to name a few.

"Ultimately it's the environment and our whole community that win from having these initiatives in place."

Rockhampton Regional Council is one of 19 local councils along the Queensland coast working to support a healthy and resilient Reef through local government and community actions via the Great Barrier Reef Marine Park Authority's (GBRMPA) Reef Guardian Councils Program.

The Rockhampton Region has a direct connection to the Great Barrier Reef via the Fitzroy River.

What people do in their homes and yards, on their streets and across the landscape affects the health of our local waterways and the Reef. As part of Reef Guardian commitments, Council has been implementing a range of initiatives to address the key risks to the Reef associated with climate change, coastal development, land-based run-off and direct use of the Marine Park.

One such initiative was the installation of a Baffle Box (also known as a gross pollutant trap) adjacent to the Fitzroy River. The Baffle Box is designed to trap pollutants such as organic debris, rubbish and sediment that might wash off our streets and down our drains. The demonstration site is designed to raise community awareness about the importance of protecting our waterways and includes a transparent lid and interpretive signage to help residents physically see and understand the connection between our streets, drains and waterways.

The Baffle Box is one of a number of collaborative initiatives helping to better understand 'what's down our drains?' and prevent the various land-based sources of marine pollutants.

For information on Rockhampton Regional Council's Sustainability Strategy visit www.rockhamptonregion.qld.gov.au/Environmental Sustainability

Read more on the work Fitzroy Partnership for River Health is undertaking in litter reduction awareness and reporting on page 16

Plastic reduction in action

Queensland Government

Plastic pollution is a growing problem and when it ends up in the wrong place, it can negatively impact the health of our communities, our environment and wildlife. More and more the community is seeing the impacts of plastic pollution, locally and across the world, and everyone has a role to play in tackling plastic waste.

The Queensland Government is tackling plastic waste through the Plastic Pollution Reduction Plan that sets the course for Queensland to be part of the solution and a leader in driving necessary changes.

The plan identifies and prioritises actions, at every step in the supply chain, to help reduce plastic waste and reduce the amount of plastic in and entering the environment. Some key achievements to date for Queensland include:

- the ban on the supply of single-use, lightweight plastic shopping bags (1 July 2018), which has helped reduce the amount of plastic bag litter in the environment by 70%.
- more than five billion containers have been recycled across the state since the Containers for Change scheme began three years ago, with Queenslanders claiming over $500 million in refunds.
- the ban on the supply of single-use plastic straws, stirrers, plates, enclosed bowls, cutlery and expanded polystyrene takeaway food containers and cups on 1 September 2021.

Individuals have an important role to play in reducing the impacts of plastic pollution and being more sustainable. Here are just a few simple ways individuals can make a difference (and there are plenty more). Where possible:

- remember to take your reusable shopping bags when you go shopping
- take reusable cups to get your coffee
- recycle eligible drink containers through the Containers for Change program or in your yellow-top recycling bin where this service is provided
- separate soft 'scrunchable' plastic waste at home and take it to a participating retailer (e.g. supermarkets) for soft plastic recycling
- pick up littered items.

More information on how to reduce consumption of avoidable and single-use plastics can be found on the Queensland Government's www.qld.gov.au/environment/pollution/management/waste/recovery/reduction/plastic-pollution

Reef 2050: Protecting the Reef

Everyone has a part to play to keep the Great Barrier Reef healthy and resilient. The Australian and Queensland governments are investing more than $3 billion over 10 years (from 2014-15 to 2023-25) to implement the Reef 2050 Long-Term Sustainability Plan (Reef 2050 Plan). Following the first five-yearly review of the plan, an updated version has been released to ensure it continues to address the right priorities and actions to support the health and resilience of the Reef including a greater focus on taking action on climate change.

To find out more about the updated Reef 2050 Plan and ways you can get involved to help protect the Reef, visit www.awe.gov.au/parks-heritage/great-barrier-reef/long-term-sustainability-plan

Australian Government

Queensland Government

Fitzroy Partnership for River Health is an important stakeholder in the ongoing work to measure the health of waterways that lead to the Great Barrier Reef, and promote ongoing management change and water stewardship activities with partners. The work of Fitzroy Partnership for River Health particularly aligns with integrated water quality monitoring and report card programs in the Fitzroy Basin priority catchment.

Part of the solution towards a better water future

Information the key to supporting Litter reduction

Fitzroy Partnership is proud to work with Drain Buddies and Australian Marine Debris Initiative (AMDI) to report on litter collection and debris capture in drains and on coastlines as part of our ongoing work on water quality and community engagement in the Fitzroy.

Led by Fitzroy Basin Association, Drain buddies commenced in June 2019 and has prevented tonnes of litter from entering drains and polluting local rivers in Rockhampton, Yeppoon and Gladstone in that time. Drain buddies are heavy-duty mesh baskets installed at litter hotspots to trap litter and organic debris. The program was extended throughout the Fitzroy Basin to Biloela, Emerald and Blackwater in 2021, with information to be made regularly available about litter collected and local hotspots.

The Australian Marine Debris Initiative (AMDI) which is a database of ReefClean events led by Tangaroa Blue, will also allow Fitzroy Partnership for River Health to report on litter locally. Volunteers collect litter along transects for a designated length of time and the litter results are recorded. Total litter from Tangaroa Blue events on the Capricorn Coast will be measured and assessed, and this data will be used to report on litter 'performance' via a new litter index each year.

These two separate initiatives will complement reporting on the ecosystem health Index of the Fitzroy Basin and help facilitate a better water future. At a local level, Fitzroy Partnership will continue to engage with the community to create greater awareness of litter and litter loads to support community action.

Improved water quality monitoring

Fitzroy Partnership provides unique opportunities for partners to engage in collaborative stewardship activities. In turn, this improves management outcomes and supports water security into the future.

It has never been more important to ensure there is a scientifically rigorous monitoring program that is designed specifically for the Fitzroy region.

The Partnership is excited to have progressed with a basin-wide monitoring program that "fills 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. The first sampling data has been collected by contracted agencies during 2021-22 and will be incorporated into the 2023 Fitzroy Basin Report Card. Working together and sharing resources ensures Fitzroy Partnership can provide a more complete picture of river health in the Fitzroy Basin.

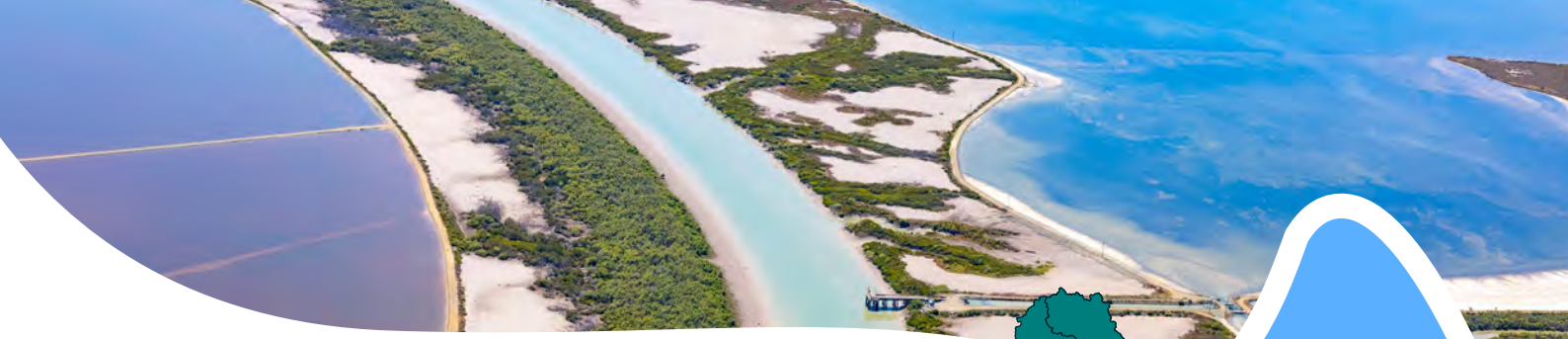
Measuring the effectiveness of urban water stewardship initiatives

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.

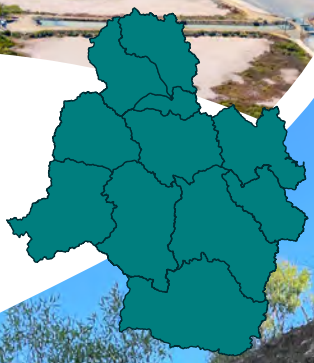
Supporting research to build water quality and ecosystem health knowledge

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 four 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; and the presence of microplastics in freshwater aquatic plants.

In 2022, the Scholarship has been increased to $3,000 per annum and the scope widened to also incorporate research into human dimensions or the understanding and use of waterways.



MyWater
Citizen Science in Action



Waterway health is a complex issue, given the significant number of geological, physical-chemical and ecological elements contributing to waterway health in 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 with the various tools required, 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 for 2022 and beyond is to increase community engagement and citizen science in action efforts with MyWater so that we continue to build greater community awareness about water quality, and about the importance of assessing and reporting on waterway health on a catchment level year after year.

Just as our partners take great strides in making management changes for a better water future, Fitzroy Partnership will continue to encourage individuals to do what they can do make a difference at an individual level to improve water quality.

Visit MyWater at www.riverhealth.org.au/report_card/community

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 don't use plastic straws, 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.

Join us in a journey to create a better regional future

The Central Queensland Sustainability Strategy 2030 (CQSS2030) is a natural management plan that guides, informs, and collates stewardship action in the Fitzroy region.

Developed with and for central Queensland communities, the online plan outlines effective and desired actions that everyone can take to shape a better regional future. The plan also features information on the region's natural assets, their essential services, and amazing stories of on-ground action.

Discover CQSS2030 now!

Read more stewardship stories!

Every action, no matter how big or small, makes a difference!

Be inspired by other CQ businesses, groups, organisations and individuals' on-ground action stories on the CQSS2030 website.

Central Queensland's Natural Assets

Air | Soil | Land | Freshwater | Groundwater | Coastal | Drivers

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

BHP

BMA
BHP Mitsubishi Alliance

Queensland Government

Australian Government

Peabody

AngloAmerican

GLENCORE

fba

Santos

Australia Pacific LNG
Operated by origin

Jellinbah Resources

Coronado
STEEL STARTS HERE

Rockhampton Regional Council

Ensham Resources

Cotton Australia

CQUniversity Australia

Queensland resources Council

CQG Consulting

sunwater

New Hope Group

Kestrel Coal Resources

stanmore

Central Highlands Regional Council

Get in touch to find out more

riverhealth.org.au/water-stewardship

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