ANNUAL REPORT

2021 - 2022

BMRG

Ecosystem Resilience

Contents

Message from BMRG Chair And CEO

On behalf of the BMRG Board, management, and staff we are pleased to present the 2021 – 2022 annual report for the Burnett Mary Regional Group.

The past year has been one of challenge and change but also of new opportunities. Covid-19 continued to impact resources for our staff and our partners meaning the reliance on strong collaboration has been effective in delivering outstanding results for our region.

The region has had to withstand four significant flood events:

1. Flood, November – 3 December 2021
2. Ex tropical cyclone Seth, 29 December – 10 January 2022
3. Flood, 22 February – 5 April 2022
4. Flood, 6 May – 20 May 2022

Our hearts go out to all communities and environments affected by these very serious weather events. A range of assistance was activated through State and Commonwealth Disaster Recovery Funding, and we are still assessing damage to our region to enable prioritised funding applications. We will continue to work closely with the Queensland and Commonwealth Governments to improve the recovery and resilience of our region in future.

Throughout these extraordinary circumstances we have delivered $9.6 million worth of projects for our region. This would not have been possible without the dedication of our staff, consortium partners, Landcare groups, universities, and industry partners. We wholeheartedly thank you all for your wonderful efforts in making 2021 – 2022 an outstanding success.

There are many highlights we reflect on over the year. BMRG hosted numerous events including the UNESCO Reactive Monitoring Mission to the Great Barrier Reef, to assess the state of conservation and a long-term sustainability plan for the protection of the Great Barrier Reef (Report yet to be released).

In July 2022 UNESCO and the Advisory Bodies to the World Heritage Committee issued new guidance for assessing impacts from projects that could potentially affect the planet's most precious Heritage sites.

Again, we thank our partners and stakeholders and look forward to continuing to work with you as we deliver positive impact and resilient ecosystems to our region.

Tony Ricciardi
Chairman

Sheila Charlesworth
Chief Executive Officer & Company Secretary

Financial Summary

Total Funds Available

$12,322,552

2021/22

Total Funds Expended

$9,627,248

2021/22

Total Funds committed on continual work

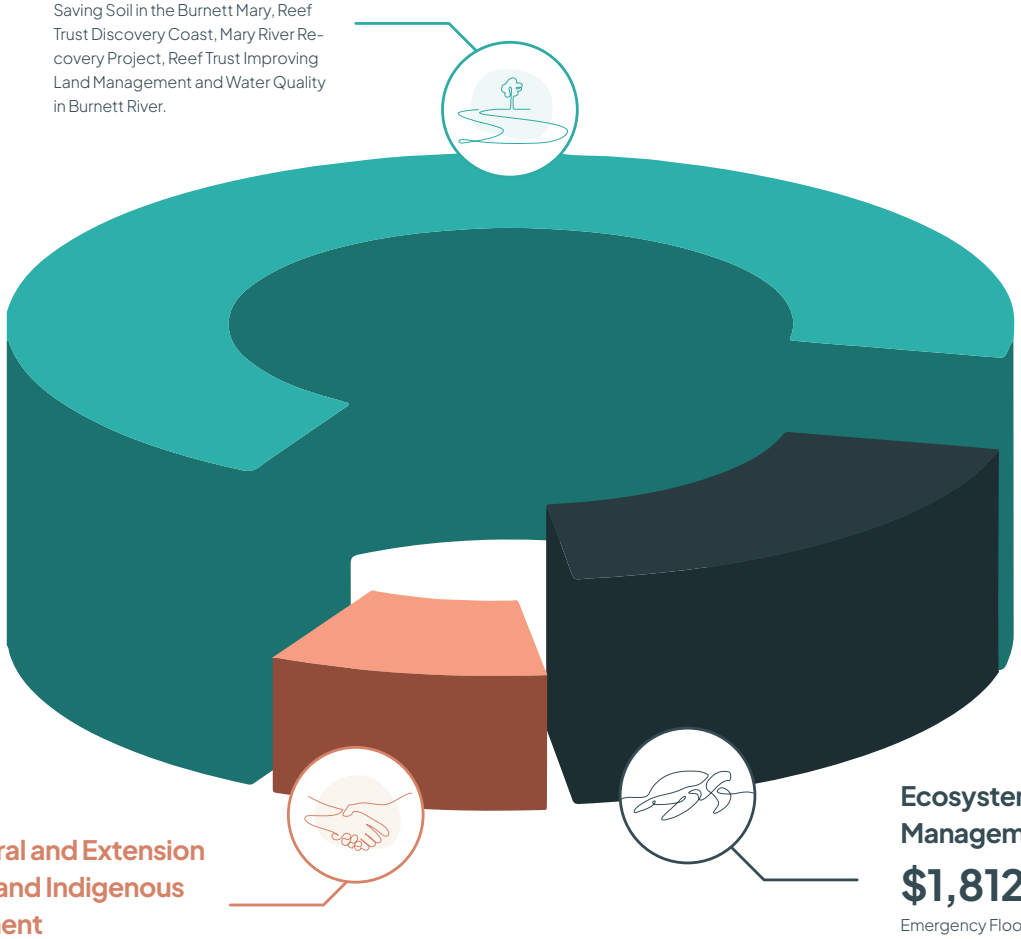
$2,695,304

2021/22

Water Quality

$6,899,846

Saving Soil in the Burnett Mary, Reef Trust Discovery Coast, Mary River Recovery Project, Reef Trust Improving Land Management and Water Quality in Burnett River.



Agricultural and Extension Services and Indigenous Engagement

$914,558

Ecosystem Management

$1,812,844

Emergency Flood Recovery, Post Fire Monitoring on K'Gari, Nest to Ocean, Natural Capital, Bushfire Recovery (Bulburin NP), Nest to Ocean (2), Shorebirds, Mindaroo – Fire and Flood, Community Sustainability Action, Black Summer Bushfires.

Note: Expended funding for 'core services' under the Australian Government's Regional Land Partnerships (RLP) program and expended funding for 'Regional Coordination and Evaluation' under the Queensland Government's Natural Resources Investment Program (NRIP) has been apportioned across the four program areas represented in this table.

Black Summer Bushfire Remediation and Resilience

Photo: *Camp Gregory site on the Gregory River*

Australian Government

Funded by: Australian Government's Black Summer Bushfire Recovery Grant
Partners: Camp Gregory Veterans Retreat, Alluvium Consulting, Engineering Plus, Gidarjil Development Corporation, Woodgate Rural Fire Brigade.

Background

The bushfires of late 2019 and early 2020 were among the most devastating natural disasters in recent Australian history, resulting in loss of life, property, and ecosystems.

Many communities, particularly in regional and rural areas, are not adequately prepared for bushfires. In a time of weather and climate extremes, it is vital for communities in at-risk areas to build connectivity and resilience in advance of bushfire events.

Under the Black Summer Bushfires project, BMRG will help prepare communities in bushfire danger zones by preventing, and minimising adverse bushfire effects on these communities.

This project aims to help rebuild community connectivity for those impacted by bushfires and increase the resilience and capacity of these communities through:

- building an aquatic evacuation centre
- providing local agricultural communities with fire regimes and guidelines for fire management in hazard reduction, asset protection, primary production, and conservation
- expanding on available fire detection technologies
- increasing the involvement of Traditional Owners in cultural burning and fire monitoring.

Project Update

To date the project scope and BMRG and Camp Gregory Veterans Retreat Consortium have been created. The two partners will be working closely together to deliver this project.

Future Work

Several milestones are mapped, including:

- Installation of evacuation infrastructure
- Traditional Owner run cool burn workshops
- Drone surveillance training
- Support to Traditional Owners and landowners in fire safety.

Photo: *Some seed pods spring open in extreme heat, beginning the first stage of rejuvenation after a bushfire*

Bulburin National Park Bushfire Recovery

Photo: *Gidarjil rangers completing the weed control efforts at Bulburin National Park*

Australian Government

Funded by: The Australian Government's Bushfire Recovery for Wildlife and Habitat Community Grants Program.
Partners: Gidarjil Development Corporation, Queensland Parks and Wildlife Service, University of Sunshine Coast, University of Queensland and Bush to Bay Weed Control

Background

Bulburin National Park is the largest remnant rainforest in central Queensland. The park is one of the most biodiverse protected national parks in Queensland and is home to significant numbers of vulnerable and endangered flora and fauna species, including the Bulburin nut, Bulburin Medicosma, ringed thin-tailed gecko and silver-headed antechinus.

Approximately 7,500 hectares of the park was burnt in the 2019 Black Summer fires, leaving threatened species vulnerable to further decline. Invasive flora and fauna threaten the vulnerable and endangered native species of Bulburin. Weeds such as Lantana, Cats Claw Creeper and Giant Rats Tail grass threaten to smother recovering native vegetation, while wild pigs are highly destructive, trampling and damaging the area.

The Bulburin project builds on existing partnerships to control invasive species, capture data to measure the success of threat abatement activities and support future regional conservation and biosecurity planning.

Project Update

- Baseline studies of weeds and feral pigs have been conducted.
- 22.5 hectares of weeds have been controlled.
- 37 days of feral pig control have been conducted.

Future Work

Weed control will continue, alongside feral pig removal and ongoing monitoring of invasive species distribution and density by Queensland Parks and Wildlife Service and Partnerships.

Photo: *A drift of pigs entering the trap located at Bulburin National Park*

Photo: *The trap placed at Bulburin National Park in the Palm forests*

Burnett Mary Region Environmental Account

Photo: *eDNA samples being collected from mid stream*

Partners: Accounting for Nature, the Minderoo Foundation, Alluvium Consulting, and the Mary River Catchment Coordinating Committee.

Background

There is growing recognition of the importance of natural capital – biodiversity (flora and fauna), soils, waterways and marine areas in the context of our global financial system. The need to value and account for this natural capital as an asset class is vital if it is to be capitalised on. Through this innovative world-first project, the condition of the natural capital of the region will be accurately measured and valued.

Burnett Mary Region Environmental Account will:

- develop accurate, scalable and repeatable best practice measures and methods for credible natural capital accounting and valuation in Australia and internationally
- provide a world-leading standard for environmental accounting, impact assessment and valuation outputs
- demonstrate that investing in nature can deliver a financial return, while also improving the resilience and health of the environment
- increase land health and resilience, connection to country and reconciliation, economic productivity and profitability and stronger community wellbeing and resilience.

The Accounting for Nature framework and Pollination natural capital impact assessment and valuation model will be applied across the Burnett Mary region, accounting for natural assets including native fauna, soil, freshwater, marine ecosystems and native vegetation. The project will also examine landscape resilience to floods and bushfires, potential credits for carbon and biodiversity, and applications for Traditional Owner ecological knowledge.

Project Update

On ground work to inform the design of an environmental account of the Burnett Mary region has been undertaken:

- Water quality has been tested and ecological DNA samples have been extracted from over 130 sites along the Burnett and Mary River catchments.
- Riparian extent assessment has been completed along the waterways of the major catchments in the region.
- Ecological flow has been assessed using criteria provided by the Department of Environment and Science.

Future Work

The environmental account mapping of all natural assets of the region will be finalised, and ecological condition scores will be created for each sub-catchment.

The next step will be to track the ecological condition trends across the region of the areas that have been studied.

Photo: *Field collection techniques assessing water quality*

Improving Land Management and Water Quality in the Burnett Catchment

Photo: *One of the project sites*

Funded by: The Australian Government's Reef Trust
Partners: Central Queensland University's Coastal Marine Ecosystems Research Centre (CMERC), Gidarjil Development Corporation, Goondicum Pastoral Company and C & K Transport and Earthmoving

Background

BMRG is leading practical, on-the-ground action to improve land management and the water quality flowing from the Burnett River Catchment to the Great Barrier Reef as part of coastal habitat restoration and threatened species protection in the Burnett Mary region.

Approximately 20% of the Reef 2050 Water Quality Improvement Plan sediment reduction target for the Burnett Catchment will be achieved through this project over three years.

More than 16,000 tonnes of fine sediment in the Burnett River Catchment area is adversely impacting water quality, coastal habitats, and the universal value of the Great Barrier Reef.

High volumes of sediment flow are caused by poor land and riparian management, feral animals, and infestations of weeds destabilising streambanks.

The project scoped identifying and prioritising erosion sites that contribute the highest volume of fine sediment, restoring damaged sites, promoting sustainable cropping, and grazing land management, weed management, native revegetation, and feral animal control.

Specific project actions include training and education workshops, large-scale restoration of riparian areas to reduce streambank erosion, Traditional Owners revegetating, fencing, removing weeds and feral animals, water quality monitoring, the installation of telemetry equipment to record soil moisture and temperature, and improved landholder management of cattle.

Project Update

- Priority sites for restoration were identified through Light Detection and Ranging (LiDAR) drone surveys and stakeholder consultation.
- The fauna present at each site was assessed using fauna surveys.
- On-ground, water quality monitoring sensors have been installed and used by Central Queensland University to monitor water quality ongoing.
- Earthworks have been completed at several sites, including the installation of erosion matting and rock chutes.
- Some sites have been fenced to prevent cattle access to stabilised streambank.

Future Work

- Revegetation from seeds taken from the sites prior to the earthworks and grown in the Gidarjil Development Corporation native nursery.
- Further earthworks.
- Control of feral pigs.
- Continued water quality sampling.

Carbon + Biodiversity Pilot & Enhancing Remnant Vegetation Pilot

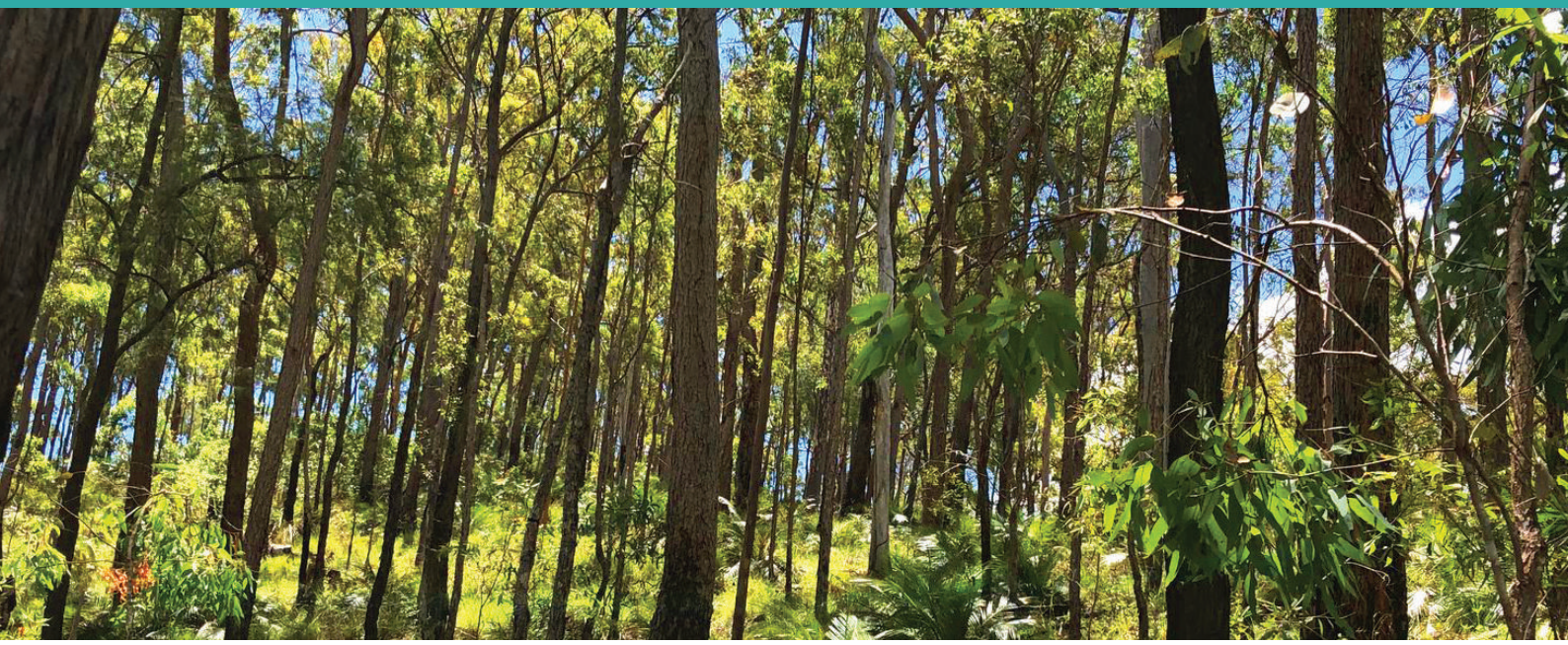


Photo: *Identifying pristine landscapes whilst conducting flora surveys*

Australian Government

Funded by: The Australian Government's Department of Climate Change, Energy, the Environment and Water
Partners: Australian National University

Background

Two pilot programs were introduced in 2021 as part of the Australian Government's Agriculture Stewardship Package, developed in partnership with the Australian National University (ANU).

The Carbon + Biodiversity Pilot is a trial for farmers to provide biodiversity and carbon abatement services. By establishing biodiverse environmental plantings, the pilot aims to create a credible market mechanism that improves biodiversity and climate outcomes and new income opportunities for farmers.

The Enhancing Remnant Vegetation Pilot encourages and rewards participants for installing fencing, managing weeds and pest animals, and carrying out plantings on their land.

Historically, vegetation has been cleared on farmland transforming the landscape from wooded areas to grassland. This destruction or degradation of remnant vegetation on farmland reduces biodiversity and abundance in flora and fauna species.

The pilots provide landholders with incentives to protect and enhance remnant vegetation on their land. Both pilot projects aim to put a value on remnant ecosystems and highlight the benefits associated with preserving them.

Project Update

- BMRG recently carried out vegetation surveys across 20 properties as part of the Enhancing Remnant Vegetation Pilot.
- Staff from BMRG worked closely with applicants to revise and amend management plans to best suit their potential project.

Future Work

Successful ERV applicants will now sign a contractual agreement then actively start working towards their management plan. In both Carbon + Biodiversity & Enhancing Remnant Vegetation Pilots, BMRG will play an active role in supporting delivery and monitoring of these projects.

Photo: *A stained creek meandering through a patch of remnant vegetation*

Emergency Flood Recovery for Wildlife and Habitat

Photo: *Assessments will determine the impact of flooding in critical habitats*

Australian Government

Funded by: Australian Government's Department of Climate Change, Energy, the Environment and Water
Partners: Mary River Catchment Coordinating Committee, Griffith University, Butchulla Aboriginal Corporation, Butchulla Native Title Aboriginal Corporation, Kabi Kabi People Aboriginal Corporation, Jinibara People Aboriginal Corporation, Gidarjil Development Corporation and Elders Group, local landcare groups, Jennifer Firn (QUT / NESP) K'gari plant/fire/myrtlerust specialist

Background

The Mary River from Conondale to Tiaro includes critical habitats for threatened species, remnant riparian habitat and Cultural heritage. This project aims to undertake both threatened species sampling at priority sites along the Mary River, and rapid assessments of select flood-impacted sites in the Mary, Burnett, Burrum, Kolan, Baffle and K'gari areas.

Methods include drone photogrammetry (LiDAR), exotic weed assessments, vegetation extent and condition, threatened species sampling and critical habitat assessments. Developing a 10 year resilience plan for the Burnett Mary region, encompassing threatened species and matters of environmental significance is also part of the project scope.

Project Update

A consortium has been developed, with agreements on the project involvement established. Project timelines have been developed, and contracts have been set up, ready to commence the next stage of work including:

- The removal of the three illegal causeways
- Revegetation of habitat
- Implementation of monitoring regimes
- Weed removal
- Surveys into fauna and flora
- Sampling of water quality
- Shoreline restoration along the Kolan.

Future Work

Several field trips will be organised towards the end of 2022, attended by representatives of Consortium partners.

Baseline measures will be conducted and impact assessments along the Mary, Burnett, Kolan, Burrum and Baffle Rivers and on K'gari, undertaken. This will include species sampling, weed and vegetation sampling and DNA sampling.

The 10-year Resilience Plan will be developed for threatened species and critical habitats throughout the Burnett Mary region, developed from the learnings of Consortium members on this project.

Grazing Resilience and Sustainable Solutions (GRASS)

Photo: *Assessing the land condition across a property*

Funded by: Queensland Government's Reef Water Quality Program
Partners: Department of Agriculture and Fisheries (DAF), Fitzroy Basin Association, NQ Dry Topics

Background

The GRASS program supports graziers in the Reef catchments of the Burdekin, Fitzroy and Burnett Mary regions, delivering one-on-one support to manage and improve land conditions and address to minimise sediment delivery from the paddock to the Reef.

Through the GRASS program, landholders identify less productive areas of their property (via Land Condition Assessments, or LCATs), develop an Action Plan for Land Management (APLM) to improve paddock conditions, and gain an understanding of the requirements under the new Queensland Government Reef Protection Regulations and the associated minimum standards for grazing.

BMRG, together with our partner DAF, is responsible for completing APLMs for the region. The GRASS team also engages with landowners and their preferred contractors to complete projects to improve land condition and pasture cover to enhance production, provide economic benefits and environmental outcomes.

Project Update

This financial year, thirteen APLMs have been completed and a further eight incentive projects have been undertaken with landholders to reduce sediment runoff and delivery to the Reef.

Landholders across the last three years of the program have benefitted from ongoing support to deliver their projects and implement practice change.

Future Work

The second instalment of GRASS is expected to commence in the new calendar year, extending the program until 2026. Allowing BMRG and partners to provide on ground management assistance reducing sediment deposition into the Great Barrier Reef.

Photo: *Assessing a dried draining line for upstream erosion*

Photo: *Project Sign off on a BMRG incentive project through the GRASS program*

Integrated Habitat Restoration for the Discovery Coast

Photo: *Rodd's Peninsula within the Discovery Coast area*

Funded by: The Australian Government's Reef Trust
Partners: Central Queensland University, Gidarjil Development Corporation, LESS Industries, Alluvium Consulting

Background

The Discovery Coast area supports marine turtle nesting, a strong network of gazette fish habitat areas for recreational and commercial fishing, local coastal catchments that drain directly into the GBR, and the Port Curtis Coral Coast Traditional Use Marine Resource Agreement Area.

Improving water quality, tidal connectivity, and ecosystem resilience is the aim of this project.

The Rodd's Harbour Fish Habitat Area had three unlawfully installed earthen causeways restricting tidal flow, impacting aquatic bio passage, fresh-marine continuum, and valuable wetland and saltmarsh areas. Site surveys also concluded a heavy feral pig and weed presence, damaging the natural ecosystem, and competing with native species for dominance.

A large erosion site located in the tidal area of the Kolan River was also identified as a major contributor of fine sediments entering the Great Barrier Reef World Heritage Area.

Earthworks to remove the Rodd's' Harbour causeways were conducted in June 2021 with great success. Excess soil was removed from the causeways and spread evenly to return the area to its natural state. Site inspections following earthworks indicate a good tidal flow to areas that were previously disconnected from the tidal cycles.

Kolan River riverbank remediation and stabilisation earthworks and subsequent revegetation was completed early 2022 to stabilise the bank, preventing further erosion and enabling natural revegetation and further binding sediment and preventing it from entering the marine environment.

Data was extracted on the mangroves, fauna, invasive species, sediment carbon content and particle size, and water quality to determine changes in ecosystem health before and during the earthworks.

Project Update

Together with the Discovery Coast Consortium, several activities have been completed – collectively preventing more than 7,000 tonnes of fine sediment entering the Great Barrier Reef each year including:

- The removal of the three illegal causeways
- Revegetation of habitat
- Implementation of monitoring regimes
- Weed removal
- Surveys into fauna and flora
- Sampling of water quality
- Shoreline restoration along the Kolan.

Future Work

The Discovery Coast Consortium will continue to monitor and survey the Rodd's Peninsular Fish Habitat Area until June 2023.

The information and experience that has come and will continue out of this project will form a good project legacy as the Discovery Coast Consortium moves on to other projects that aim to improve water quality, ecosystem health, and endangered species protection.

Post Fire Monitoring of Wetland Threatened Species and Threatened Ecological Communities

Photo: *Griffith University sampling fish and crustaceans at Wyuna Creek*

Australian Government

Funded by: Australian Government
Partners: Mary River Catchment Coordinating Committee (MRCCC), Queensland Parks and Wildlife Service (QPWS), Department of Environment and Science (DES), Griffith University, Butchulla Aboriginal Corporation, Department of Agriculture, Water, and the Environment (Heritage Branch)

Background

K'gari (Fraser Island) is the largest sand island in the world and was inscribed on the World Heritage List in 1992 as an outstanding example of ongoing biological, hydrological and geomorphological processes. The island features complex dune systems and rare dune lakes, rainforests, patterned ferns, wallum swamp, saltmarsh and intertidal and subtidal areas, and intersects with the Great Sandy Strait (GSS) Ramsar wetland, habitats which support endangered species.

The bushfires of 2019–20 significantly impacted parts of the island encompassing wetland habitats. Very little was known about how the fires impacted the island's wetlands and their dependent species of fauna and flora.

It is important to establish a baseline for monitoring and assessing impacts of future fire events in this unique environment. The first step is assessing the impacts of recent bushfires on the Outstanding Universal Value of K'gari and ecological character of a range of wetlands including the globally unique patterned ferns.

To achieve this, comprehensive data is collected to determine the impact of fire on various ecological features, with a view to establishing a baseline for monitoring and assessing impacts of future fire events.

The project objective is to establish a baseline understanding of aquatic ecosystems, species and threats, direct and indirect impacts of the fires on species, ecosystems and their processes, identify sites, indicators, and procedures for long-term monitoring of the impacts of fire and associated climate change, and develop a protocol to assess short-term post-fire impacts and monitor long-term recovery of threatened wetlands and species, on K'gari and the Great Sandy Strait Ramsar site.

The project outcomes will help prioritise potential future management interventions and improve the resilience of this area.

Project Update

Baseline sampling has been completed across over 100 sites on K'gari in water quality, fauna, flora and wetlands, and the existing values and threats to the wetlands on K'gari and GSS have been workshopped.

Future Work

The baseline datasets will be analysed to identify the direct and indirect impacts from fire on the freshwater wetland ecosystems. A standardised field survey protocol will be developed to support ongoing monitoring and assessment, and community awareness of the threatened species will be increased.

Out and About

NAIDOC Week Family Fun Day

BMRG team on the ground at KGari

BMRG, Evolution Mining, Gidarjil Development Corporation at the Qld Resources Indigenous Awards. Congratulations to Gidarjil for receiving runner-up award

2022 Community Prioritisation Workshops

BMRG presenting to the YMCA 60 & Better community group

BMRG water quality management workshop with Butchulla Aboriginal Corporation

1770 Cultural Connections Immersion Festival

Consortium partners connect at BMRG's newly purchased Elliott Heads property

Showcasing the rehabilitated Kolan River site

Handover ceremony of K'gari land back to the Butchulla people

Water quality sampling

RCS Grazing Clinic participants in the field

Stakeholders tour Mary River Recovery sites

Setting up monitoring cameras

The Inaugural First Nations Owned and Led Native Botanical and Ecotourism Industry Workshop

Microplastics beach clean-up

Burnett Mary Marine Waterways Clean Up

Photo: *On ground work in marine debris clean-up interventions*

Funded by: Queensland Government's Department of Environment and Science
Partners: Gidarjil Development Corporation, Gympie and District Landcare, Butchulla Aboriginal Corporation, Kabi Kabi Aboriginal Corporation, Department of Environment and Science

Background

The Burnett Mary region experienced severe damage due to heavy rainfall and flooding, commencing with ex-tropical Cyclone Seth. Damage included properties and infrastructure, livestock and feeding equipment, and valuable topsoil.

Before paddocks and properties can resume crop growth and grazing implementation after such events, flood debris needs to be cleared.

Areas most impacted by flooding have seen high levels of debris on land. This debris has restricted property owners' operations, posed a risk to local habitats, wildlife and livestock, and decreased the aesthetic value of impacted areas.

All partners in this project contribute to the ongoing clean-up of selected waterways and sites across the Burnett Mary region to remove litter and marine debris. Removed debris will be identified and measured as part of this work, and the areas where the clean-up works took place will be mapped, contributing to necessary data for future clean-up efforts.

The Marine Debris clean-up project includes the most impacted areas across the Burnett Mary region, particularly the Bundaberg, Fraser Coast and Gympie regions.

Project Update

The first round of the marine debris clean-up project work has now been completed. Project partners have undertaken comprehensive clean-up efforts across the region.

Several tons of rubbish have been collected.

Future Work

Round two of the Marine Debris Clean-Up project has now commenced, with partners Gidarjil Development Corporation, Butchulla Aboriginal Corporation and Kabi Kabi Aboriginal Corporation set to undertake on-ground work across the Bundaberg, Fraser Coast and Gympie regions. This round of work will conclude in March 2023.

Photo: *A sample of the rubbish collected by Gidarjil Development Corporation in Round 1*

Mary River Recovery

Photo: *Mary River Recovery stakeholders at the tour of completed sites.*

Funded by: The Great Barrier Reef Foundation and the Australian Government's Reef Trust
Partners: Burnett Mary Regional Group leads the Mary River Recovery Consortium (MRRC), a formal delivery group partnership between Burnett Mary Regional Group, Mary River Catchment Co-ordinating Committee (MRCCC), and Alluvium Consulting

Background

Australia's Great Barrier Reef ecosystem is under threat due, in part, to poor water quality runoff. The Mary River is one of the top five contributors of fine sediment into the Great Barrier Reef, and 70% of the fine sediment from the Mary River that enters the Great Sandy Strait comes from streambank erosion.

The main aim of The Mary River Recovery Program is to stabilise and revegetate badly eroding sections of the Mary River by working directly with cooperative landholders over a four-year period.

Each year, 26,000 tonnes of sediment enter the Great Barrier Reef lagoon from just eight Mary River erosion sites. Streambank retreat and increased amounts of sediment impact the endangered Mary River cod and white-throated snapping turtle through the loss of nesting and feeding grounds, while the collapse of streambanks block the river systems, preventing fish movement and smothering food sources.

Large-scale restoration of eroding riverine areas including streambank stabilisation and revegetation will restabilise banks and slow the flow of water over the bank. Community engagement through education helps improve land and streambank management practices in the Mary River catchment.

Over four years, ending June 2024, weak points along the Mary Riverbanks will be stabilised. Sites were determined according to where sediment saving was most cost-effective for the project, while in-kind contributions are negotiated with landholders, including riverbank fencing and environmental weed control.

Project Update

Thanks to detailed engineering design, major earthworks, pile fields, revegetation, monitoring and evaluation, several sites have now been fully rehabilitated.

An aerial survey was completed to assess how rehabilitated sites withstood extreme weather, such as the recent Cyclone Seth and the subsequent flooding that followed.

Damage to unrehabilitated sites has been recorded for comparison. It was found that the rehabilitated sites had minimal damage, demonstrating that the works have been successful in stabilising the streambanks.

Future Work

Design plans for the remaining sites are currently in development.

New sites have also been selected to continue the streambank stabilisation and rehabilitation work.

Meanwhile, continuous monitoring of completed sites and the water quality at each will continue until the project's completion in June 2024.

Nest to Ocean Turtle Protection

Photo: *BMRG's large fiberglass loggerhead turtle is used to promote the program at community events.*

Australian Government

Funded by: Jointly funded by the Australian and Queensland Governments
Partners: Silent Night Pest Management, Gidarjil Development Corporation, Invasive Plant and Animal Services, Bush to Bay Weed Control, Queensland Parks and Wildlife Service, Department of Environment and Science

Background

The Burnett Mary region coastline is internationally renowned for its marine turtle nesting sites. These sites support significant breeding populations of loggerhead, flatback and green sea turtles. These iconic species experience a range of serious threats to their survival. One of the main dangers is the predation of eggs and hatchlings by invasive species, which have reduced marine turtle numbers.

The European red fox, introduced to the region, is a primary threat to the marine turtle nests and hatchlings on Queensland beaches. Foxes will dig up the eggs turtles have laid under the sand or catch the hatchings as they head down the beach toward the ocean.

Reducing the number of red foxes is key to the turtle population's survival on Queensland beaches. Turtle beaches are monitored for fox activity and confirmed fox sightings prompt on-ground action to reduce their numbers. BMRG has partnered with pest control officers and rangers who humanely and efficiently trap and dispose of foxes in areas selected for their proximity to turtle nesting beaches.

The current iteration of the Nest to Ocean project, which requires three separate rounds of fox control work between 2021 and 2023, specifically targets invasive red fox sites along the Burnett River and in the Moore Park and Wreck Rock Conservation Park areas. Volunteers based in areas where the fox control work is being undertaken monitor the turtles, their nests and their hatchlings throughout the nesting season, and provide data on turtle numbers and behaviours in project areas.

Project Update

Round 7 of the Nest to Ocean Program is currently half-way through its duration and of the three rounds of work required for Round 7, two have now been completed.

These rounds have involved fox control activities at Wreck Rock, Deepwater National Park, Moore Park Beach and along the coastal stretch of the Burnett River. Both rounds have engaged local communities about the program to educate the public on the control work being done to protect the turtles.

Future Work

Round 7 of the Nest to Ocean program will conclude in March of 2023, with the implementation of a final round of activities. These activities will involve further fox control work at Wreck Rock, Moore Park Beach and the Burnett River, further engagement with the community and local schools, and the receipt of the 2022–23 turtle season monitoring data.

Natural Resource Investment Program (NRIP)

Photo: *Workshop for managing pastures in variable climate in Gayndah, Supported by BMRG through the NRIP Program*

Funded by: Queensland Government
Partners: Mary River Catchment Coordinating Committee (MRCCC), Burnett Catchment Care Association (BCCA), Noosa & District Landcare, Gympie & District Landcare

Background

Human activities such as land clearing, sand and gravel extraction, removal of riparian vegetation and grazing pressures significantly impact our natural resources.

NRIP aims to rectify this through the sustainable management of these resources including land, water, vegetation and reef water quality, focusing on areas that will produce on-ground outcomes that can be measured by consistent state-wide methods.

Human activities have accelerated the rates of channel erosion and sediment and nutrient delivery. Catchment runoff, with the resulting pollutant loads and poor water quality, is considered to have the greatest overall impact on coastal and marine assets in the Burnett Mary region.

To counterbalance the issue, a focus is placed on revegetation and improving land management. Works include bank reprofiling and structural protection, active revegetation, weed management and fencing for stock exclusion along the entire length of where the works take place.

This project aims to improve grazing land management over 700 hectares in the region through:

- 20 hectares of improved riparian vegetation condition
- 600 metres of priority Mary River sites rehabilitated
- Improved function and condition of 200 hectares of wetlands in the Lower Mary (Susan) River.

Project Update

A range of projects to improve soil health and stability, enhance high value native vegetation and reduce the amount of sediment flowing into the region's waterways have been completed.

Future Work

With the arrival of a new financial year, NRIP 2.0 will come to fruition to continue enhancing streambank and wetland recovery for Reef water quality, support the Paddock to Reef Program and conduct regional coordination and evaluation for the NRIP program in the Burnett Mary region. Monitoring methodology will continue to deliver measurable natural resource outcomes on completed projects.

Photo: *BMRG staff with the Regional Liaison Officers from the Department of Resources.*

Paddock to Reef Integrated Monitoring, Modelling and Reporting Program

Photo: *The April 2022 Burnett Mary Regional Integrated Science Forum*

Australian Government

Queensland Government

Funded by: Jointly funded by the Australian and Queensland Governments.

Background

The Great Barrier Reef continues to face increasing threats from a range of pressures impacting its ecological significance and chance of survival.

Paddock to Reef was established to support The Reef 2050 Water Quality Improvement Plan 2017–2022 (Reef 2050 WQIP), evaluating management practice adoption and effectiveness, catchment condition, pollutant runoff and marine condition.

The project aims to measure and report on water quality factors that impact Reef health and adopts an innovative approach to collecting and integrating data on agricultural management practices, catchment loads and the health of the Great Barrier Reef.

The long-term (2050) outcome for the Reef 2050 WQIP is that 'Good water quality sustains the outstanding universal value of the Great Barrier Reef, builds resilience, improves ecosystem health and benefits communities'.

The Paddock to Reef program was established in 2009 to support the Reef 2050 WQIP via a robust monitoring and evaluation program. BMRG is one of 20 collaborative partners, including other Natural Resource Management organisations, government, industry, private landowners, and research organisations, committed to the Paddock to Reef program.

The broader scope for the Paddock to Reef program is to monitor, interpret and report on water quality status and trends, report on the progress towards the Reef 2050 WQIP targets, support adaptive management for actions within the Reef 2050 WQIP, provide knowledge and insights to partners, and provide the primary mechanism for evaluating the water quality theme of the Reef 2050 Plan.

Project Update

BMRG has:

- Facilitated the 2022 Burnett Mary Regional Integrated Science Forum in Gympie
- Collected pesticide application rate data on sugarcane farms by delivery agents
- Released an information sheet on sugarcane pesticide application rate data collection
- Completed the final report for Paddock to Reef as the project draws to a close under the Natural Resources Investment Program.

Future Work

Sugarcane pesticide application data collected by the Paddock to Reef program is supplied to the program water quality monitors and program modelers, ensuring accuracy of modelled data and water quality sample analyses.

Regional Agriculture Landcare Facilitator (RALF)

Photo: *BMRG visit to the Gympie Landcare nursery as part of a RALF workshop*

Funded by: The Australian Government's National Landcare Program

Background

Regional Agriculture Landcare Facilitators (RALFs) support farmers, industry, and community groups (including Landcare groups) to adopt new and innovative sustainable agriculture practices.

More than 65 RALFs are scattered across various Australian locations, working to build the future of our country's sustainable agriculture. RALFs are on-the-ground in communities to assist stakeholders and liaise with land carers to learn about sustainable agriculture.

The RALF works closely with Landcare, catchment and producer groups, and the various agricultural industries to deliver these services. Establishing and building partnerships with these key groups is central to the RALF role.

The RALF in the Burnett Mary region helps to improve the sustainability, productivity, and profitability of agriculture. This is achieved through engagement and education, facilitating partnerships, funding opportunities, project delivery, departmental reporting, and updates, and 'Communities of Practice' — participating to better understand complex issues, improve networks, and help develop solutions for national priorities.

By 2023, the RALF will have contributed to the Regional Land Partnership program's key agricultural outcomes of increasing awareness and adoption of sustainable land management practices and increasing the capacity of agriculture systems to adapt to significant changes in climate and market demands for information on provenance and sustainable production.

Project Update

The BMRG RALF has delivered a range of services to support farmers, agriculture industries and community groups to adopt innovative sustainable agricultural practices.

This has been achieved through meetings with local agribusiness leaders, landholders, and landcare groups, engaging with Indigenous Groups at various events and attending community events promoting Landcare and sustainable agriculture.

Future Work

The RALF will continue to visit Landcare groups, attend meetings and events, and assist in the planning and facilitation of future Landcare and sustainable agriculture group-run workshops.

Photo: *BMRG RALF participation at field days.*

Resilient and Productive Farmers Across the Burnett Mary Region

Photo: *RCS Grazing Clinics at Murgon during 2021-22*

Funded by: The Australian Government's National Landcare Program

Background

Resilient and Productive Farmers Across the Burnett Mary Region is an extension, communication and engagement-based project until June 2023, working closely with Landcare, catchment and producer groups to support graziers and farmers implementing good long-term land management practices.

Land managers must be able to access a wide range of information, receive support, connect and share knowledge to ensure all stakeholders in the region are working towards a strong, healthy and resilient agricultural system at all levels.

Graziers in the Central and South Burnett catchment areas can access free support and information from the project extension officer in areas such as property management planning, understanding soil properties and assessing health and erosion risks, assessing pasture and land condition, property mapping, matching the number of animals to the pasture supply, incorporating a pasture resting or spelling system, managing drought and extreme event planning.

Central to this project is the delivery of workshops, ensuring presenters and topics stimulate conversations while also providing information and support to land managers. These efforts are geared towards building on-farm resilience and will focus on healthy soil, pasture management and on-farm activities that encourage native vegetation and biodiversity, as well as considering climate variability.

Project Update

To date:

- 13 events have been organised and attended by over 300 land managers.
- Properties have been soil tested with management plans developed.
- More than 10 land managers have received one-on-one technical assistance.

Future Work

This project is now in its final year of work with events and activities with landholders scheduled to continue alongside an end of project review. Ongoing support of the Australian Government means the National Landcare Program will continue with new projects being developed to replace current actions.

Photo: *South-East Burnett Landcare Group (SEBLG) at Murgon.*

Shorebirds Roost Trial

Photo: *A bar-tailed godwit, a critically endangered shorebird (credit to Barnes)*

Funded by: Gladstone Ports Corporation (GPC)
Partners: Gladstone Port Corporation, Gidarjil Development Corporation, Birdlife Bundaberg

Background

Australian coastal and freshwater waterways host about 2 million migratory shorebirds annually. Bundaberg serves as a major feeding/roosting ground for shorebirds, receiving 42 species of migratory shorebirds along our shoreline from September – April.

Throughout the East Asian Australasian Flyway (EAAF) shorebird nesting and roosting sites are being significantly impacted by coastal development affecting their ability to reproduce, feed, and migrate.

The Shorebirds Artificial Floating Roosts Trial aims to expand on the existing habitat within the Bundaberg region by installing roosting sites in Barubbra Island Lagoon.

This project trials the use of long-line oyster bags as a low-cost, low-impact, semi-permanent alternative to previous methods as well as supporting Birdlife Bundaberg to undertake bird monitoring.

This project will be twofold allowing the provision of additional habitat on known feeding grounds and easier monitoring, as more birds will roost in a known area.

Project Update

Monitoring of the shorebirds has commenced with equipment purchased and surveys conducted at site of installation. Construction of the roosts has now commenced on-site.

Future Work

Upon the completion of the roost construction, shorebird numbers in the area will be expected to grow, and monitoring will continue indefinitely.

Photo: *Shorebird monitoring field day with Birdlife.*

Photo: *Monitoring the shorebirds at the mudflats.*

Strait Expectations – Restoring the Great Sandy Ramsar Wetland

Photo: *Revegetation in Six Mile Creek catchment (Mary River) (Attribute as co-investment with SEQ Water, Landholder & NDLG)*

Funded by: Australian Government's National Landcare Program
Partners: Butchulla Aboriginal Corporation, Noosa & District Landcare, Lower Mary River Land & Catchment Care Group, Hinterland Bush Links, Mary River Catchment Care Committee

Background

Great Sandy Strait is a double ended sand passage estuary between the mainland and the World Heritage listed K'gari (Fraser Island). Of three such passages in Queensland, it is the least modified and is the largest area of tidal swamps within the Southeast Queensland bioregion. A major part of the Strait consists of intertidal sand and mud flats, seagrass beds, mangrove forests, salt flats and saltmarshes, wetlands and coastal wallum swamps. As such, the Strait is an exceptionally important feeding ground for migratory shorebirds and important for a wide range of other shorebirds, waterfowl and seabirds, marine fish, crustaceans, oysters, dugongs, sea turtles and dolphins.

Sedimentation mobilisation from the Mary River in the Ramsar wetland is contributing to the loss of benthic marine habitats in the Great Sandy Strait. Invasive weeds cause loss and degradation of native ecosystems and animal habitat through competition with native vegetation, while pest animals, namely feral pigs, are causing predation, habitat degradation, competition and disease transmission. Finally, human activity and grazing stock are disturbing, degrading and adding to pollutants in riparian and aquatic habitats.

To address the issues, Strait Expectations will reduce sedimentation mobilisation to the downstream wetlands through bank stabilisation, feral pest control, species surveys and flow dispersion works at sites on the Mary River. Bank restoration works will also enhance nesting habitats for the endangered Mary River turtle and Mary River cod. Community and stakeholder engagement is another component of this program which includes conferences, site demonstrations, training, workshops events and capacity building for Traditional Owners.

BMRG and partners are delivering on-ground works, including revegetation, erosion control, weed removal and feral pig control, along the Mary River.

Workshops to build capacity of Traditional Owners in species surveys, water quality monitoring, weed identification and removal, and pest control techniques and knowledge are an important component of this project. As chair of the Ramsar Management Advisory Group (RMAG), BMRG will bring together engaged stakeholders in the Great Sandy Strait Region to plan strategic conservation actions to restore and enhance the Great Sandy Ramsar.

Project Update

Strait Expectations has already achieved erosion management of 600m of Mary River, riparian and aquatic area remediation, weed removal, revegetation of habitats, pest control, collecting and synthesizing baseline data, community and stakeholder engagement and establishing agreements with stakeholders .

Future Work

Strait Expectations now moves into its final year, with longer term on-ground works continuing. This includes follow up weed control for weeds of national significance (WONS) along the Mary River and native habitat revegetation to benefit Matters of National Environmental Significance (MNES), as well as coordinating the Ramsar Management Advisory Group (RMAG) meetings and establishing new agreements with stakeholders and Traditional Owners.

Protecting Saltmarsh and Marine Turtle Monitoring

Photo: *Nesting turtles are recorded for monitoring efforts*

Funded by: Australian Government's National Landcare Program
Partners: Turtlecare Volunteers Qld, Lady Musgrave Island Study, Lower Mary River Land & Catchment Care Group, Gidarjil Land and Sea Rangers, Bargara Beaches Turtle Monitoring Volunteers, Oaks Beach Turtle Monitoring Volunteers

Background

Six of the world's seven species of marine turtles occur in Australian waters and are protected under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).Three are endangered—loggerhead, olive ridley, leatherback turtles— while another three are vulnerable—green flatback and hawksbill turtles.

Turtle nesting numbers have observed a decline since European settlement. In more recent decades, the decline has continued with contemporary threats including habitat degradation, fisheries bycatch, nest predation and marine debris.

Long-term monitoring of the trajectory of marine turtle species and hatchling success rates will be maintained through volunteer groups at Sandy Cape, Wreck Rock, Lady Musgrave Island, Moore Park Beach and Agnes Water beach.

Volunteers tag, identify and record turtles and assess and record the success of nesting activities, while on-ground actions such as the installation of wildlife-friendly fencing will protect 200 hectares of the saltmarsh sites from the threats of introduced and exotic pest species. Marine debris removal and surveys will also be carried out across the saltmarsh and marine turtle rookery sites.

Through education, public awareness, and community involvement to actively mitigate threatening processes to marine turtles this program will also record the success of turtle nesting activities, and determination of emergency interventions and emergence success rates.

Project Update

Successful ongoing monitoring programs with numerous community volunteer groups each nesting and hatchling season (November to March) have been maintained.

Community education and engagement programs have been delivered to increase volunteer participation to build knowledge and recourses within the community, and this program has enhanced and augmented existing Traditional Owner and local community engagement and participation in turtle nest protection and predator control.

Future Work

As this program moves into its final year of continued marine turtle monitoring regimes, saltmarsh protection will have a strong focus on property management.

To protect STCS fringing private property, access to wetlands from cattle will be controlled with fencing, installation of an offsite watering point and weed control. Continued public education on the impacts of marine debris will raise understanding of the impacts of plastic debris on Australian marine wildlife.

BMRG Board of Directors

Photo: *Brent McLellan, Dale Holliss, Jeanette Harrold, Tony Ricciardi*

The BMRG Board of Directors thanks our members, Federal, State and Local Government, Traditional Owners, Landcare Groups, industry partners and the Burnett Mary community for your ongoing support.

Burnett Mary Region

BMRG
Ecosystem Resilience

BARGARA
160 HUGHES ROAD BARGARA QLD 4670
T: 07 4181 2999

WONDAI
32 BRAMSTON STREET WONDAI QLD 4606
T: 07 4169 0720

www.bmrg.org.au

Australian Government

Queensland Government