



Burnett Mary REGIONAL GROUP

Practical Solutions for Natural Resource Management

ANNUAL REPORT 2018/2019



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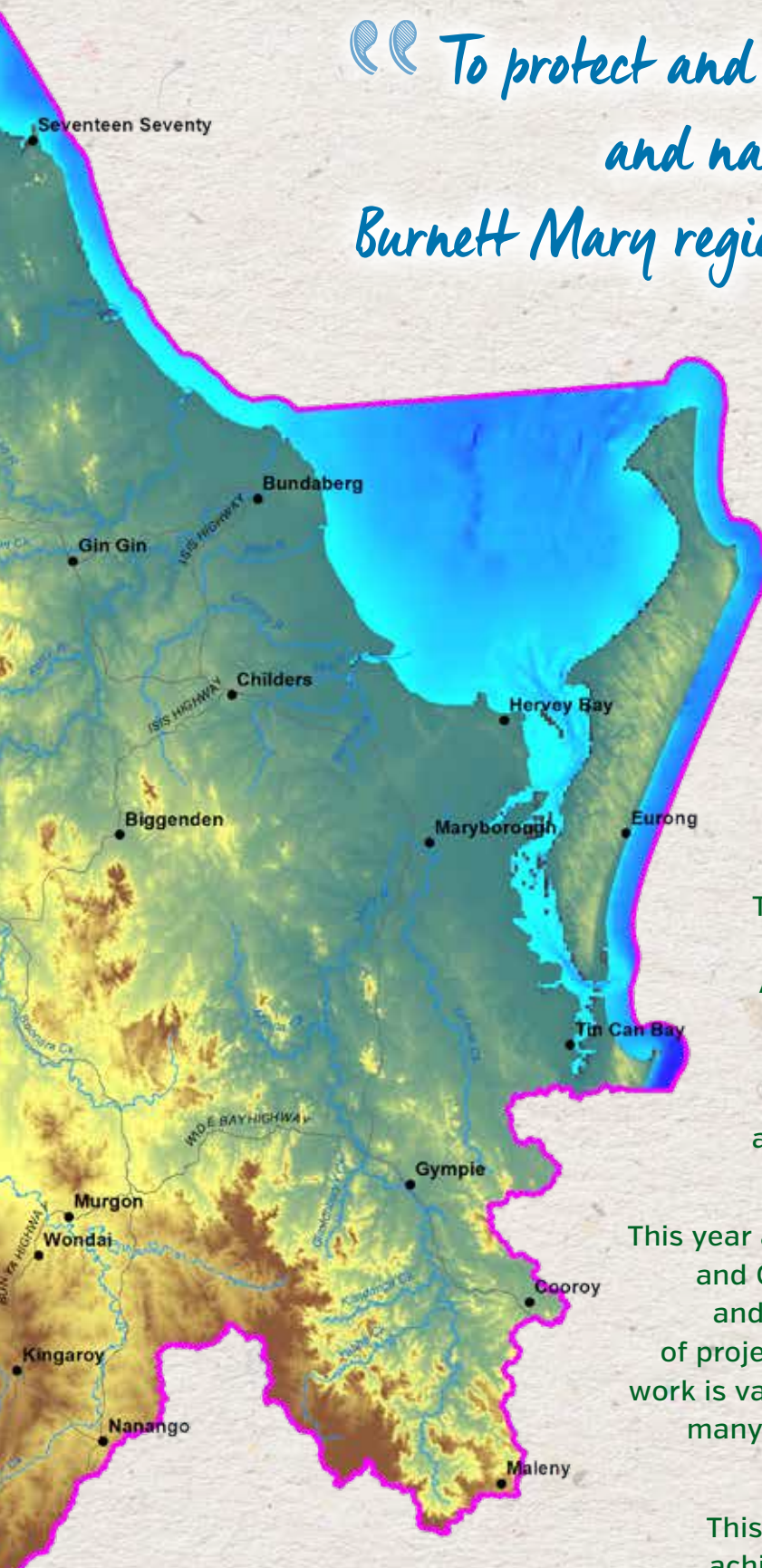


Front Cover:
Pelican Bank & Moon Pt. (Kgari)
PHOTO FRASER COAST TOURISM AND EVENTS

Back Cover:
*Red-tailed Black Cockatoo, BMRG's Simon Hunt Conducting
Drone Surveys, Grand Old Fig - Bunya Mountains and Tin
Can Bay coastline.*
PHOTOS BEN GALEA, BMRG

Our Vision

To protect and enhance the agricultural and natural environment of the Burnett Mary region for future generations



WELCOME

Welcome to the Burnett Mary Regional Group's (BMRG's) 2018/2019 Annual Report.

Covering approximately 56,000km² of land and 11,000km² of sea, the Burnett Mary region is internationally renowned for its ecological diversity, extensive primary production and rich cultural heritage.

These attributes were showcased on the world stage this year at the inaugural Australian Biosphere Conference held in Maryborough. Over 250 Australian and international delegates were impressed by our region's natural and agricultural assets and the collaborative effort being made to protect them.

This year also heralded a new phase of Australian and Queensland Government NRM programs and BMRG is proud to be delivering a range of projects under these programs. The scope of work is vast and as always, we are grateful to our many partners for their ongoing commitment and collaboration.

This collaboration is evident throughout the achievements highlighted in this report and BMRG looks forward to working with the Burnett Mary community to build on these achievements in the coming years.

Message from CEO and Chair

On behalf of the Board of Directors, executive management and staff, we are pleased to present the Burnett Mary Regional Group Annual Report for 2018/2019.

Over the past 12 months our region has experienced one of its lowest rainfalls and Queensland reported its fifth warmest year on record. We have continued to work extensively with our landowners to build stronger and more resilient enterprises to combat climate change adversities while minimising environmental impacts.

In a broader context, it is clear that the landscapes for NRM Groups is changing. We need to continue to be proactive in diversifying our funding streams to capitalise on new opportunities that will help shape our future and deliver sustainable outcomes for our region. This includes working with environmental market investor Greencollar, the Queensland Government's Land Restoration Fund and other environmental market organisations.

An exciting new collaboration this year has been the formation of the Outback to Reef Alliance between BMRG, Desert Channels Queensland (DCQ) and Fitzroy Basin Association (FBA). The Outback to Reef Alliance builds on the close alliance that already exists between the three organisations. The main aim of the alliance is to gain greater efficiencies and strengthen the capacity and funding opportunities across the three organisations.

The development of the operational arrangements for Outback to Reef will not be rushed as the respective boards want to ensure that their communities, partners and staff are well engaged in the formation process.

The Chairs of the Outback to Reef Alliance partnering organisations emphasise that the

decision to form the Outback to Reef Alliance is about building on what already exists in the collective region and not replacing it.

On other fronts, BMRG has been very busy managing a range of projects funded under the Australian Government's 5-year Regional Land Partnership and the Queensland Government's 4-year Natural Resource Investment Program. Through these programs, we are delivering on-ground improvements to our landscapes, farming enterprises, waterways and the many communities in our region.

Project details are included throughout this report and we encourage your participation in current and future programs.

Finally, we would like to thank our members, Landcare groups, research partners, Federal, State and Local Governments, Traditional Owners, the community, and BMRG Board and Staff for their dedication in delivering the successful outcomes this year.

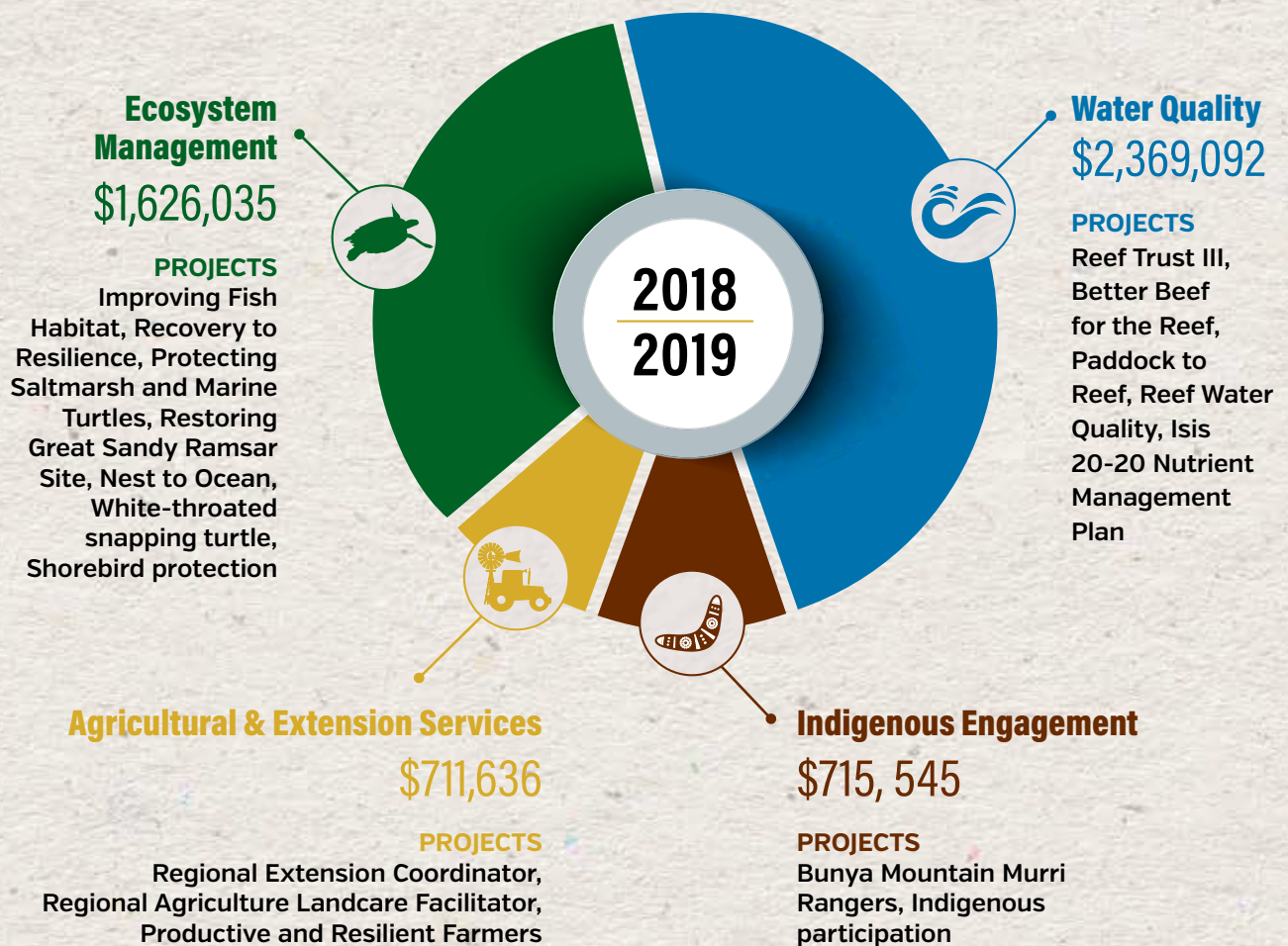
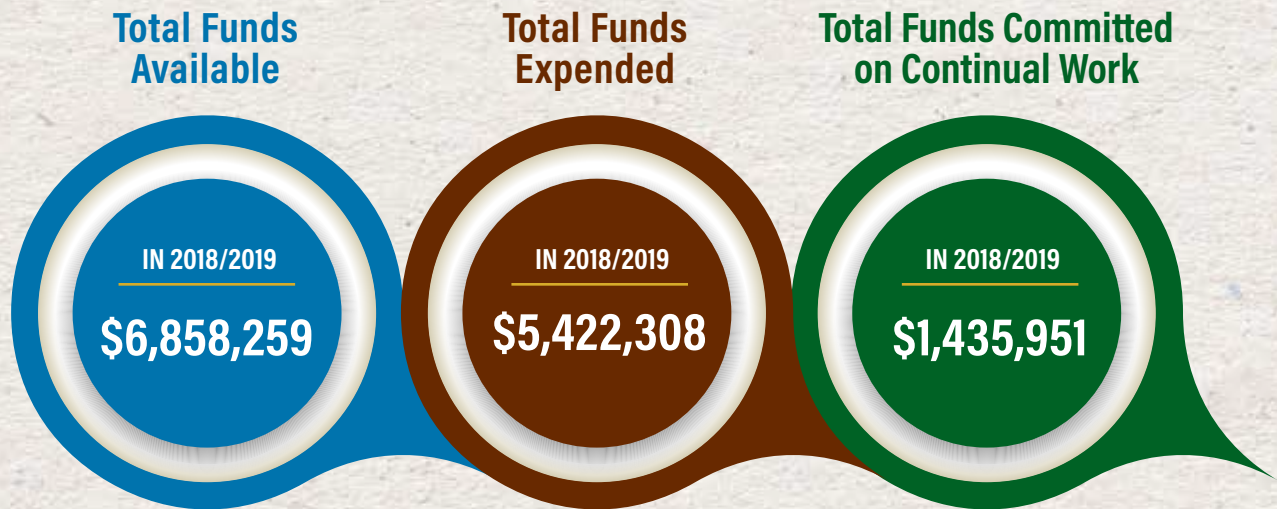
We look forward to our continued collaboration in the coming years.

Sheila Charlesworth Chief Executive Officer
Tony Ricciardi Chair



Financials at a Glance

To view BMRG's 2018-19 full audited financial statements, please visit www.bmrg.org.au



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.



Photo: Regional Extension Officers Participating in a Soil Conservation Workshop

Enhanced Extension & Coordination in the Great Barrier Reef

The Enhanced Extension Coordination program is funded by the Queensland Government's Reef Water Quality Program and hosted in the Burnett Mary by BMRG. The program aims to improve the knowledge and skills base of extension providers within the region and provide opportunities for coordination across the cane, grazing, horticulture and grains industries. The Regional Extension Coordinator position is complemented by flexible and peer to peer funds targeting locally identified skills and knowledge gaps across the Burnett Mary.

In 2018/2019, our Regional Extension Coordinator, Wendy Thorsborne, focused on identifying gaps in extension services in the Burnett Mary, providing opportunities for training and cross industry collaboration between extension practitioners and building a framework for local decision making.

The Burnett Mary Regional Extension Reference Committee (BMRERC) was established with representation from each of the cane, grazing, horticulture and grains industries and economic development in the region. Key roles of the BMRERC are to provide strategic input to the Regional Extension Services Strategy and allocate flexible and peer to peer funding.

Quarterly Cross Industry Networking forums organised by the Regional Extension Coordinator were attended by more than 60 extension practitioners from a range of industries and sectors in the region. The forums, held in Gayndah, provided the perfect opportunity for extension practitioners



Photo: Soil Conservation Technical Training Course



Photo: CANEGROWERS Isis Manager Angela Williams Addresses Participants at a Cross-industry Networking Forum,

to network, share learnings and explore opportunities for collaboration.

Projects resourced by flexible and peer to peer funding in 2018/2019 included a soil conservation technical training course for extension staff and a collaborative leadership development program for cane and cropping land managers in the Monto and Childers districts.

This year, 13 projects including grazing management workshops, development of an economic analysis for defined practice changes in the southern cane region and piloting of an extension community of practice in the Burnett Mary were recommended for flexible and peer to peer funding.

The focus of the project in 2019/20 will be the provision of support to the projects receiving flexible and peer to peer funding, refinement of the Burnett Mary Extension Services Strategy and improving the knowledge and capacity of extension practitioners in the Burnett Mary.

Gully Erosion - Options for Prevention and Rehabilitation

Not many land managers enjoy the prospect of losing valuable soil through gully erosion.

Unfortunately, many of the Burnett Mary region's soils have naturally occurring high sodium levels [sodic soils] which makes them particularly vulnerable to gully erosion. The highest sodium levels are often found in the sub-soil clay which may only be 10-30cm from the soil surface. The surface soil may be low in sodium and of a good quality so that the soil is stable, healthy and supporting great plant growth despite the fragile sodic soil underneath.

In this type of soil structure, any loss of the protective surface soil layer and exposure of the sodic sub-soil can result in small scale erosion. This small scale erosion can rapidly accelerate into full-scale gully erosion after a significant rain event. The fine nature of clays associated with sodic soils can also result in these sediments being carried long distances and ultimately into the marine environment.

In recognition of the challenges that gully erosion presents both on and off farm, BMRG has used funding from the Australian Government's Reef Trust III program to produce a comprehensive guide to assist land managers in dealing with this debilitating NRM issue.

The guide, titled, "*Gully Erosion - Options for Prevention and Rehabilitation - Experiences from the Burnett and Mary River Catchments*", draws on the collective experience of soil conservation officers John Day and Bob Shepherd. The guide contains practical tips,

low cost options, local case studies and clear photographs that simply explain the various types of gully erosion and management options.

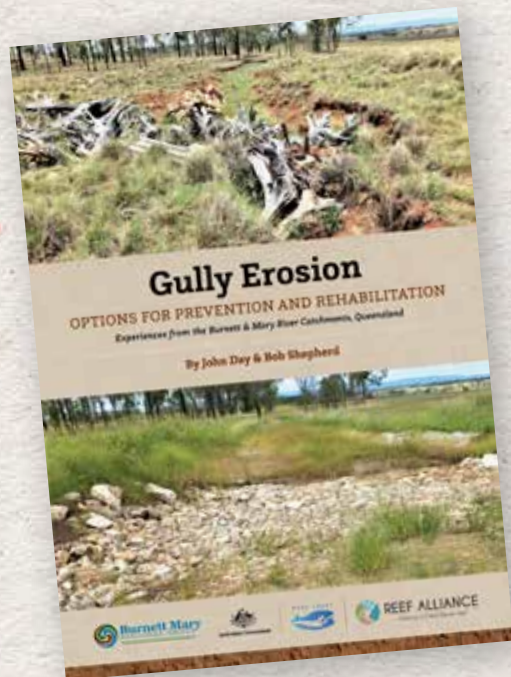


Photo: Free Gully Erosion Guide

Copies of this invaluable resource may be obtained free-of-charge from our Bundaberg and Wondai offices or downloaded from our website, www.bmrg.org.au.

Photo: Typical Example of Gully Erosion in the Burnett Mary Region



Photo: Sodic soil



Photo: Regional Extension Officers Participating in a Soil Conservation Workshop

Resilient and Productive Farmers across the Burnett Mary Region

With funding from the Australian Government's Regional Land Partnerships program, BMRG this year began a four-year project aimed at enhancing the resilience and productivity of farmers throughout the Burnett Mary region. The project will provide information and tools through workshops, field days and events addressing topics such as soil health, pasture condition and management, on-farm biodiversity, property mapping and climate adaptation.

With a focus on working with graziers in the Inland Burnett, the project has already seen the provision of one-on-one support and farm visits which included the development of several property management plans. Working closely with the graziers, these land management plans have a whole of business approach and are aimed at documenting current management strategies as well as planning for future situations and events including extreme weather.

This project recognises the importance of ensuring long term profitability in good land management practices, including regenerative agriculture, and the importance of good support networks for our farmers. This year, BMRG teamed up with several local producer and Landcare groups to deliver a range of workshops based on maintaining soil health, building soil carbon, practising regenerative agriculture, resting pastures, matching stocking rates to carrying capacity and using tools such as grazing charts to manage livestock.



Photo: Dick Richardson Stepping Workshop Participants through Aspects of Holistic Grazing



Photo: Participants at a Natural Sequence Farming Workshop Hosted by Kingaroy Landcare Group

“A sustainable agriculture is one which depletes neither the people nor the land.”

WENDELL BERRY



Photo: Isis Canegrowers at a Reef Trust III Field Day

Reef Trust III Program

The Australian Government's Reef Trust program aims to improve water quality, restore ecosystem health and enhance species protection in Great Barrier Reef catchments while improving the productivity and profitability of agricultural businesses. Phase III of this program focuses on investing in water quality, through reducing nutrient runoff from intensive agriculture and reducing sediment runoff from grazing practices in the catchments, while providing on-ground extension support to landholders.

Within the Burnett Mary region, BMRG collaborates with regional delivery partners including the Burnett Catchment Care Association (BCCA), Mary River Catchment Coordinating Committee (MRCCC), Bundaberg Sugar Services Ltd and Canegrowers Isis to deliver the Reef Trust Phase III projects.

During the 2018/2019 period, 44 projects were completed to enhance the performance of agricultural businesses and improve water quality outcomes in both the grazing and sugarcane industries.

GRAZING

Extension support and on-ground projects were completed by 24 graziers. The environmental outcomes covered riparian management, improved practices for groundcover and gully erosion remediation facilitated through a combination of one-on-one extension and incentive funding.

A series of field days and workshops was also held to address the topics of gully erosion and grazing land management and Business EDGE.



Photo: Canegrowers' local weather forecasting project provides growers with accurate localised weather updates

CANE

Twenty cane farmers completed on ground projects, supported with incentive funding to improve practices across approximately 3,600ha. These projects covered a range of cane practices including irrigation and nutrient management.

Nutrient management plans were developed for 19 cane businesses. The plans included soil type mapping, soil sampling and testing and interpretation of results and development of a nutrient management plan. Field days, workshops and shed meetings were held to discuss soybean agronomy, irrigation scheduling and the Six Easy Steps nutrient management initiative.

Three Cane Innovation projects were completed this year with two being presented at the Australian Society for Sugar Cane Technology (ASSCT) Conference: 'Local Weather Forecasting project' and 'Development of dual liquid application equipment for pesticide application and the split application of liquid'.

BMRG thanks all of its Reef Trust III partners for their ongoing support and diligence and congratulates all individual graziers and canegrowers for their participation and successes in this important program.

Photo: BMRG's Regional Agriculture Landcare Facilitators, Dominique Glasgow and Ryan Trott



Regional Agriculture Landcare Facilitator

BMRG's Regional Agriculture Landcare Facilitator (RALF) project is funded by the Australian Government's Regional Land Partnerships (RLP) program, to support sustainable agricultural practices in the Burnett Mary region.

Our two RALFs – Dominique Glasgow, based in Wondai and Ryan Trott, based in Bundaberg - deliver this project through a range of extension services. Coming from local rural backgrounds themselves, Dominique and Ryan enjoy working directly with producers and community groups to achieve sustainable agriculture outcomes across a range of industries.

A highlight for our RALFs this year has been supporting a range of networking and educational events for Landcare, producer and catchment groups in the region. These events covered a range of topics including property mapping, natural sequence farming, grazing land management, beef cattle genetics and gully erosion management.

The RALFs also continued to support all our regional Landcare and community groups through the provision of technical information and identification of potential funding opportunities.

In March, the RALFs attended the Annual RALF Conference in Canberra where they met and networked with RALFs from the other 56 NRM regions throughout Australia.

Ryan and Dominique are excited about the opportunities in the upcoming year and look forward to working with all the wonderful NRM and community groups operating throughout the Burnett Mary region.



Photo 1: **Stuart Andrews Demonstrating Natural Sequence Farming Methods on Steve and Robyn Bliss's Farm at Maidenwell**

Photo 2: **Kingaroy Landcare Group Members and farm Hosts Steve (far left) and Robyn Bliss (far right) with Tarwyn Park Training's Stuart and Megan Andrews**

Photo 3: **Mundubbera landholders at a Central Burnett Landcare event**

Grazing Best Management Practice

Grazing Best Management Practice (BMP) was a program that enabled graziers to self-assess their practices and benchmark against current industry-developed standards. This program covered five modules: Soil Health; Grazing Land Management; Animal Health and Welfare; Animal Production and People & Business. The program also offered voluntary accreditation for graziers. Through the implementation of customised action plans, program participants were able to identify and implement changes in their businesses across the five modules and annually reassess to track progress.

Grazing BMP in the Burnett Mary region has always been about collaboration. This year, BMRG continued to work closely with the Department of Agriculture and Fisheries (DAF) to deliver workshops and one-on-one extension. We also connected graziers with other projects such as Better Beef for the Reef and Reef Trust III to build on their ability and further enhance their businesses and land management skills.

2018/19 saw the wrap up of Grazing BMP across Queensland with the decision that the Grazing BMP Alliance would cease to operate.



Photo: Bill Schulke, from Private Forestry Service Queensland.

During its last year, the Grazing BMP program engaged 65 graziers through two reassessment workshops and three new assessment workshops. There were an additional six training extension events that supported 73 graziers with BMP information. Topics included property mapping, farm economics, farm safety, record keeping and pasture budgeting.

The BMRG team thanks every landholder who participated in Grazing BMP over the past five years. Your dedication and commitment to achieving best management practices made the program highly successful and thoroughly enjoyable for all involved.

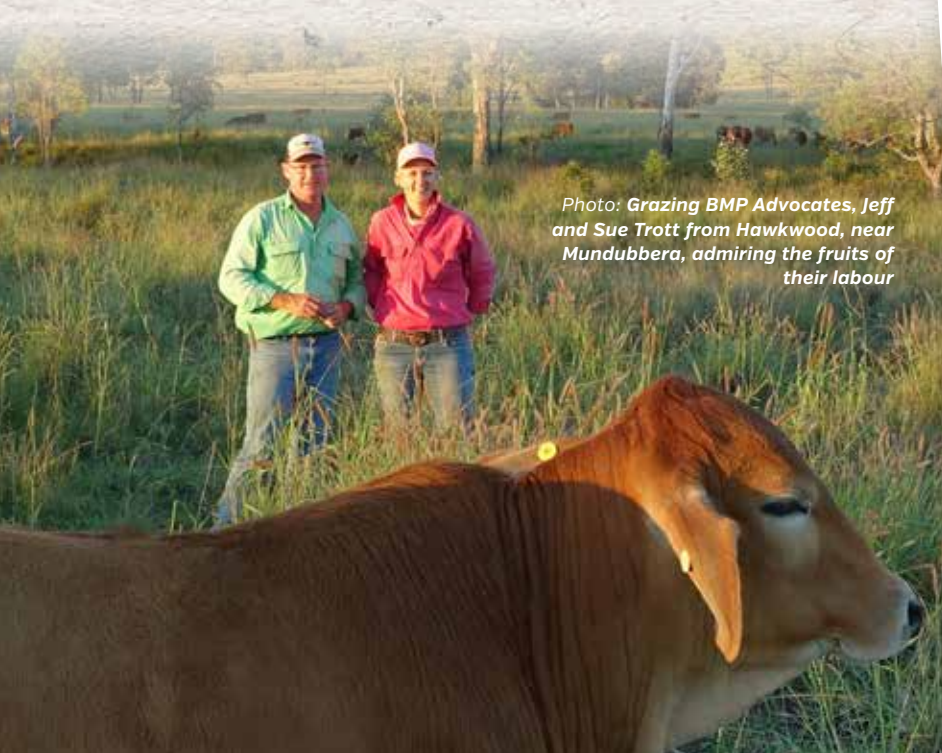


Photo: Grazing BMP Advocates, Jeff and Sue Trott from Hawkwood, near Mundubbera, admiring the fruits of their labour



Photo 1: Estimating pasture biomass at the Stocktake workshop in Goomeri

Photo 2: Participants studying soil cores at a Grazing BMP workshop in Biggenden



Photo: BMRG's Simon Hunt and Kev Bowden and DNRME's Tom Espinosa Fly a 'Mission'

Drone Technology and Application

Over the last year, BMRG has invested significantly in unmanned aerial vehicle (or drone) technology. Project staff have been trained in flying and mission planning and BMRG now employs three CASA-licensed pilots.

Our current fleet consists of the agile 'Phantom 4' and the heavy duty 'M600'. The M600 has a high-resolution camera and multispectral sensor which helps us to identify features or changes invisible to the human eye. The team has been investigating the application of the multispectral sensor to mapping the extent of saltmarsh and mangrove health in wetlands.

The Phantom 4 is quick and easy to transport and get in the air and can be operated by most of the staff at BMRG. This drone is our

mainstay for capturing exciting, birds-eye-view footage used for project monitoring and evaluation.

The team has also used the drone to record the efforts of landholders involved in the Better Beef for the Reef project, with stunning results. When flying a "mission", multiple photographs taken from the drone can be "stitched" together to create sequential maps. These maps clearly show variation in landscape and enable us to measure features such as the required length of exclusion fencing or volume of earthworks.

New applications of drone technology are being developed every day and BMRG is proud to be on the front-foot in using this technology to assist with the ongoing management of our precious natural resources.

Photo 1:
'Before' Aerial View of Erosion Remediation Site



Photo 2:
'After' Aerial View of Erosion Remediation Site



Photo: During - Earthworks and Revegetation Works undertaken by BMRG

The Burnett Fights Back

The record flood and tornado events that struck the Bundaberg Region in January 2013 had a massive impact on people who were already vulnerable from the 2010/11 flood events. The natural disaster was brutal and left emotional and physical scarring still carried by our region's communities and landscapes.

All levels of government were quick to respond to the disaster with a range of funding and remediation assistance. In June 2013, with funding from the Queensland Government, BMRG began a major flood recovery project aimed at restoring riparian zones of the Burnett and Kolan Rivers that were destroyed by the flood. An estimated 47 million tonnes of sediment were displaced over 304km of degraded riverbanks and remediation works included earthworks, revegetation, stock exclusion fencing and weed control to encourage natural regeneration and improve land management.

Five years on in April this year, BMRG coordinated a tour of project sites to see first-hand the progress of flood recovery works.

Technical experts who were involved in various components of the project were on-hand as tour guides to provide their perspectives. Joel Hodge, Peter Wilson, John Fourro and Brad Crosbie were all appreciative of the opportunity to see the fruits of their labour and impressed at how well the river's natural processes are continuing to assist with its recovery.

In addition to this project, the Queensland Reconstruction Authority (QRA), local governments and state agencies have successfully completed the Burnett Catchment Flood Resilience Strategy to provide a consistent and coordinated approach to manage flood risk across the four Local Government areas within the Burnett Catchment. The strategy aims to 'change the game' in how to reduce flood risk and strengthen the resilience of individuals, communities, the economy and the environment.

We all hope that we don't see another event like Ex-Tropical Cyclone Oswald for some time to come, but if we do, our community and natural systems will now be better prepared!

Photo 1:
Before - Major Riverbank Damage caused by 2013 Flood Event

Photo 2:
After - Five years on with 2 years of maintenance and no grazing on riverbank





Out and About...



Photo Above: Dominique, Ann and Cathy with RCS's Andrew Zerner.

Photo Top Centre: Simon, Ryan, Dominique, Emma and Kev Celebrate their certification as Professional Drone Consultants, with Trainer John Coulombe.



Keith Pitt MP and Ben Galea talking STEM with St Joseph's Yr 6 students



Cooloola Weed Warriors Unite!



Ben with Tinana State School students

Photo 1: Keith Pitt MP and Sheila Announcing Australian Government and BMRG Community Funding Programs.



Photo 2: Ryan and Simon at the Gympie Landcare Festival.

Photo 3: Ryan, Tess, Board Director Beth with Bundaberg Regional Council's Sally Obst.



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Photo: Laura, Dean, Ben and Sheila with Butchulla Aboriginal Corporation's Christine Royan and Gayle Minniecon.



Minister for Environment and the Great Barrier Reef, Leeanne Enoch Opens the Australian Biosphere Conference.

Photo 7: Butchulla Songman Aaron Henderson accompanying the Butchulla dancers at the Australian Biosphere Conference.

Photo 8: Ann leading a soil health workshop at Biggenden



Photo 4: Bunya Mountain Murri Rangers Hedley, Danny and Allysa at the Australian Biosphere Conference.

Photo 5: Ryan, Cathy, Dominique and Emma Share a Moment at the ABARES Conference.

Photo 6: Dean and Tony.



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Burnett & Mary River Restoration Plan

Together, the Burnett and Mary Catchments represent two of the highest contributors of fine sediment of the 35 catchments that drain to the Great Barrier Reef. Most of this sediment comes from streambank erosion and grazing areas. The catchments also contribute significant anthropogenic loads of dissolved inorganic nitrogen, most of which comes from sugarcane, grazing and sewage treatment plants.

Additionally, major flooding in the Mary River and Burnett River catchments in 2011 and 2013, caused substantial erosion of the bed, banks and floodplain of both rivers resulting in significant sediment loss and damage to agricultural land and public infrastructure.

Under the Reef 2050 Water Quality Improvement Plan, water quality targets have been set for each catchment that drains to the Great Barrier Reef. The Burnett and Mary catchments have been attributed a 70% and 50% reduction target for dissolved inorganic nitrogen levels, and a 20% reduction target for fine sediments, and particulate phosphorous and nitrogen. The challenge now rests with the region to meet these targets and ultimately ensure that the quality of water entering the Great Barrier Reef from our major catchments is of a greatly improved standard.



Photo: Alluvium Consulting's Misko Ivezich and BMRG's Nick Maclean Prepare to Fly Over the Burnett River

This year, under the Queensland Government's Natural Resource Investment Program, BMRG commissioned Alluvium Consulting to undertake a condition assessment and develop a restoration plan for the Mary River and the Burnett River downstream of Paradise Dam.

The plan is a 'first of its kind' for the Burnett River since the 2011 /2013 flood events and its findings will help to identify key priorities for on-ground actions, including for example: improved farming practices; increased ground cover; management of grazing pressure and restoration of riparian vegetation. Within the Mary Catchment, the plan builds on previous investment in water quality outcomes such as Natural Disaster Relief and Recovery Arrangements and other complimentary projects undertaken by the Mary River Catchment Coordinating Committee with funding from Reef Trust and SEQ Water.

The plan will also inform future investment in streambank rehabilitation and catchment resilience, by identifying and prioritising those sections of the river reaches that require greater focus.

Photo: The impacts of 2013 floods are still evident along the Burnett River.

Photo: Project Partners Inspecting Works at 'Carters' Site

“Strait Expectations” – Restoring The Great Sandy Strait Ramsar Wetland

BMRG's 'Strait Expectations' project, funded by the Australian Government's Regional Land Partnerships Program, aims to protect and enhance the immense natural values of the Great Sandy Strait Ramsar Wetland site. The project is focused on threat abatement and restorative activities within the Great Sandy Strait's catchment, to enhance critical habitats and improve the quality of water entering this pristine marine environment and ultimately the Great Barrier Reef.

Through a strong collaborative partnership with several key organisations, including the Mary River Catchment Coordinating Committee, Noosa and District Landcare Group, The Lower Mary River Land and Catchment Care Group, Butchulla Aboriginal Corporation South East Queensland Water and Alluvium Consulting, BMRG has achieved highly cost-effective avoided sediment loss results, long-lasting feral pig control outcomes, effective control of Weeds of National Significance, and carefully considered restoration of endangered vegetation communities as part of this project. It's a great reminder of how connected the upper catchments are to the marine

environment, and the level of dedication from our project partners in restoring this unique natural system and the incredible biodiversity values that depend on a healthy and functional landscape.

The streambank rehabilitation project at the Carter's site in the Kenilworth reach of the Mary River was of an enormous scale and subsequently required enormous effort to address the massive erosion issue being experienced at this location. The Carter family was extremely happy with the results, and the professionalism displayed by all project partners

The Kenilworth Streambank Rehabilitation Demonstration Day offered the opportunity for stakeholders to learn more about the issue of erosion in the Mary, the approach to finding a solution, and to see the incredible results up close. BMRG will continue to address these highly eroded areas of the Mary River, to continue the legacy of erosion mitigation supporting the Great Sandy Strait and Great Barrier Reef, and to continue progress towards the objectives of the streambank assessment jointly developed and implemented by our dedicated network of Mary River project partners and stakeholders.



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Photo 1: Mary River Pile Field Site (Before) Photo 2: Mary River Pile Field (After)
Photo 3: Streambank Rehabilitation Works Underway at 'Carters' Site, Mary River, Kenilworth

Nest to Ocean

Loggerhead, Green and Flatback turtles come in to nest on sandy beaches in the Burnett Mary region between November and early January each year. Large numbers of endangered Loggerhead turtles nest at Mon Repos and surrounding beaches near Bundaberg. Turtles also nest on beaches at K'gari (Fraser Island), Point Vernon and Hervey Bay, Moore Park, Wreck Rock and offshore islands such as Lady Musgrave Island. Turtles are seasoned travellers of the deep when they arrive to lay eggs in the Wide Bay. They spend decades journeying across the Pacific only to return to the beach where they once hatched.

The Nest To Ocean project has been operating for three years and it aims to prevent predators such as foxes from eating turtle eggs and hatchlings before they can get into the water. Tom Garrett from Southern Queensland Landscapes has continued his work with BMRG and its partners to use sniffer dogs in detecting fox dens.

Gidarjil Development Corporation's Land and Sea Rangers have continued to contribute to the program through tireless patrols of beaches during fox detection activities. The rangers have also conducted school visits and engaged with the community through fox-awareness and turtle information events. BMRG acknowledges the Traditional Owners of the land and sea as integral to protecting the marine biodiversity of our region.

Photo 1: Tom Garrett and BMRG's Matthew Thomsom Tracking Foxes

Photo 2: Tom Garrett and Rocky the Den Detector Dog Get to Work



Photo: Gidarjil Sea Ranger Kelvin Rowe with an emerging nest of loggerhead hatchlings



Saltmarsh and Marine Turtle monitoring

With thanks to funding from the Australian Government's Regional Land Partnerships, BMRG is continuing to conserve the outstanding values of our region's iconic habitats and species.

During 2018/19, several dedicated volunteer groups continued to monitor and report on the types and number of turtles nesting on beaches along the Burnett Mary coastline. This labour of love is challenging at the best of times and any assistance is greatly appreciated. This year, BMRG was proud to be able to continue funding Marine Turtle Monitoring Projects to cover ongoing costs for items such as volunteer transport and administration.

The saltmarsh component of this project seeks to engage members of the local community to protect and enhance estuarine and coastal ecosystems in the Burnett Mary region. As part of this program, the BMRG team has been in consultation with Georgie and David Keyes at their property 'Mundoolan' near Turkey Beach. This is one of the northern-most sites within the Burnett-Mary catchment system.

Protecting tropical and subtropical coastal saltmarsh is of utmost importance because it acts as a settling point for riverine discharges and water is filtered of its sediment and nutrients before it goes out into the Great Barrier Reef. This site still has high coverage with remnant vegetation consisting of ironbarks, blue and box gum trees, tea tree swamps, river she-oaks and mangroves. It is also habitat to animals such as the Water Mouse (*Xeromys myoides*) which is listed as Vulnerable. The project is designed to preserve and enhance the mangroves and saltmarshes through installation

of cattle-exclusion fences to keep stock out of the saltmarshes and mangroves.

Drought is severely impacting the Burnett Mary region and Mundoolan has certainly not been an exception. The Keyes have all but de-stocked their 1000-hectare property, with only 18 of their own cattle and 30 other cattle being agisted on the land. Despite these dire circumstances, David Keyes remains optimistic, saying that "each day is one day closer to when the rain comes."

“There is a deep interconnectedness of all life on earth, from the tiniest organisms, to the largest ecosystems, and absolutely between each person.”

BRYANT MCGILL



Photo 1: The Endangered Water Mouse is at Home in Mud Nests at the Base of Mangrove Roots

Photo 2: The European Red Fox is a Key Predator of Marine Turtle Eggs and Hatchlings



Photo: The DNRME Aquatic Ecology Team Sampling for Lungfish

Australian Lungfish SPAWNING HABITAT PROJECT

The Australian lungfish is a ‘vulnerable’ freshwater fish that naturally occurs only in the Burnett and Mary River catchments. Major threats faced by this species include loss of spawning habitat and barriers to movement from man-made structures. Australian lungfish spawn on dense macrophyte beds [aquatic plants] from August to December.

From here, eggs face predation from fish, turtles and shrimp and inundation from natural and artificial water level fluctuations. These threats can result in very low numbers of juvenile lungfish being produced. BMRG has been working with the Department of Natural Resources, Mines and Energy (DNRME) and SunWater to trial the replanting of aquatic plants in the Burnett River. Significant beds of aquatic plants were lost during the 2010 and 2013 floods due to scouring.

A species of aquatic plant, ribbon weed, was transplanted from a SunWater storage into the Burnett River downstream of Ned Churchward Weir. Trial plots of transplanted ribbon weed were established by DNRME and SunWater staff.



Photo: DNRME's Sharon Marshall Taking Samples From The Burnett River

The plots were monitored this year by on-site field sampling and the BMRG drone. The trials were a success because the plants persisted and became food for hungry lungfish and turtles.

The BMRG drone was also used to identify and locate other aquatic plant areas that may provide potential lungfish spawning habitat throughout the lower Burnett River. This aided in site selection for sampling of lungfish eggs as part of DNRME's confirmation monitoring program for the Burnett Water Plan. Important aquatic plant habitat was located and subsequently sampled to reveal that lungfish have successfully spawned in the Burnett River in 2019. This spawning may be one of the first major spawning opportunities in the Burnett River since the 2010 flood – great news for this iconic species!



Photo 1: Ribbon Weed Provides Ideal Spawning Habitat for Lungfish

Photo 2: Lungfish Eggs Sampled from the Burnett River

Photo: *White-throated Snapping Turtles Detected on a Night Camera*

White-Throated Snapping Turtle

NESTING PROJECT

The White-throated snapping turtle is a 'critically endangered' freshwater turtle that only occurs in central and southeastern Queensland. Major threats faced by this species include nest predation, nest inundation and a lack of juveniles in the population. Female turtles emerge from the river at night to nest on sandy/loamy riverbanks in winter. Nesting activity is thought to be more frequent after rainfall. From here, eggs face predation from foxes, pigs and goannas and inundation from water level rises within water storages. These threats have historically resulted in very low levels of hatchlings emerging from nests later in the year.

This year, BMRG collaborated with the Department of Natural Resources, Mines and Energy (DNRME) to identify, monitor and assess nesting of the White-throated snapping turtle in the lower Burnett River. Wildlife cameras were installed at key locations within the Ben Anderson Barrage and Ned Churchward Weir to investigate nesting triggers, nesting activity and predators.

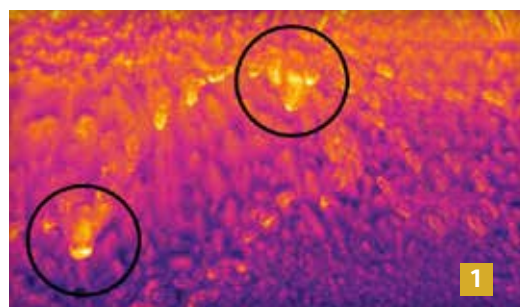
Results confirmed nesting primarily occurs after substantial rainfall from May to August, with predators being most active immediately after rainfall and nesting.

Nest identification is a specialised skill requiring significant human resources; a drone with thermal imaging capabilities was trialed to determine if nests could be identified remotely. Identified nest locations will be surveyed by DNRME staff to determine their height above standing water levels, and therefore assess the impacts of natural and artificial water level fluctuations on nest inundation. Current operational rules for the Ben Anderson Barrage, enacted by the Burnett Basin Water Plan, aim to reduce inundation by tailoring water levels to minimise risk of inundation.

Initial results are promising, with data suggesting that the water level rules are offering significant reductions in nest inundation.

Photo 1: *White-throated Snapping Turtle Nests Detected by Thermal Imagery*

Photo 2: *Fox Detected on a Night Camera*





INDIGENOUS ENGAGEMENT

BMRG is proud and fortunate to be working with some of the strongest indigenous organisations and Traditional Owner groups within Australia – Gidarjil Development Corporation, Butchulla Aboriginal Corporation and Bunya Peoples' Aboriginal Corporation. BMRG continues to collaborate with these groups and assist with building their organisational capacity and capability to ensure that our region's indigenous peoples are at the forefront of natural resource management and caring for Country.

Bunya Mountains Murri Ranger Team

This year, BMRG's fresh and youthful Murri Ranger team has continued to make a real impact on their Bunya Mountains country and beyond.

The team has renewed its focus on education and engagement with schools, hosting a series of indigenous 'Stepping up' leadership programs and conducting student tours through the mountains. In collaboration with the Walcott Correctional Centre, the rangers are facilitating a series of educational sessions with indigenous youth to demonstrate the cultural lore associated with the Bunya Mountains gatherings. The team is also assisting the Barambah Environmental Education Centre with rolling out a Certificate 3 educational module in indigenous land conservation.

The extensive upkeep and maintenance program has been continued by the team this year and included the removal of foliage around isolated picnic areas and new coats of paint to make the facilities more amenable. Construction of new wider tracks to enable ATV access to more isolated areas of the park is also nearing completion and incorporates a new yarning circle for use in educational tours and cultural activities.



Photo: Cultural Burning Remains a Key Component in Caring For Country

The spread of the invasive Madeira vine continues to present a biosecurity risk in Russell Park and the team is undertaking targeted chemical control program against this and other invasive species, with the key aim of maintaining the ecological integrity of the grassland balds. Management of the grasslands, including application of traditional cool burning practices with less fire scaring and biomass build up, continues to be a major component of the ranger team's work program.

The application of drone technology has been of great assistance to the rangers in this work by providing useful real-time imagery that supports the monitoring of cultural burning, landscape health and fire mapping.

Butchulla Aboriginal Corporation (BAC)

An absolute highlight of the 2018/19 calendar for the Burnett Mary region was the visit by His Royal Highness Prince Harry and Meghan Markle to K'gari (Fraser Island) – traditional land of the Butchulla Peoples - to unveil a plaque dedicating the island's Pile Valley forest to the Queen's Commonwealth Canopy program.

BMRG was privileged and honoured to receive an invitation from our friends at BAC to attend the unveiling ceremony. We thank and congratulate our hosts for being part of a beautiful, solemn and heart-warming occasion that put K'gari and the Butchulla people once again on the world stage.

In other partnerships, BMRG is working with BAC ranger teams to control feral pigs in significant wetlands throughout the Great Sandy Straits, as part of the BMRG 'Strait Expectations' project. BMRG's very own Bunya Mountain Murri Rangers, led by Allysa Brown and Hedley Bell, have worked with the BAC ranger teams to establish a robust and reliable pig trapping regime. With this new capacity, the BAC rangers now have an opportunity to work throughout mainland Butchulla country and assist other organisations such as Fraser Coast Regional Council and MSF Sugar in implementing feral pig control.



Photo: Butchulla Land and Sea Rangers Put the Finishing Touches to Their Magnificent Sand Art at the Australian Biosphere Conference.

BMRG also offers a huge and sincere thanks to Gidarjil Development Corporation, Butchulla Aboriginal Corporation and Kabi Kabi Traditional Owner representatives for their outstanding contributions to the inaugural Australian Biosphere Conference. From the spectacular welcome ritual, including a smoking ceremony, sand art demonstration and song & dance extravaganza, through to a first-ever closing dance between Butchulla and Kabi Kabi dancers, conference delegates were treated to a once-in-a-lifetime event. The conference foyer at the Broлга Theatre was brought alive by a grand display of traditional artwork, artefacts and jewellery all handcrafted by old and young indigenous artisans alike. Thank you to you all for making the conference a truly world-class event.

Photo: Prince Harry Meets Butchulla Dancers During His Visit to K'gari



Bunya Peoples' Aboriginal Corporation

BMRG is proud of the ongoing support and coordination between the Bunya People's Aboriginal Corporation (BPAC) and the Bunya Mountains Murri Ranger (BMMR) team this year.

The two organisations continued to undertake a range of joint land management projects on the mountains including traditional burning, weed control, track building and revegetation.

A major achievement has been the upgrade of Fishers Lookout. This project was a collaborative effort with Western Downs Regional Council and funded by the Queensland Government Works for Queensland program.

This year, BPAC and BMMR aligned their program workplans and undertook a business development workshop to consider new opportunities and aspirational targets outlined in the Bony Bu'ru Strategic Plan. The objectives of this plan are to articulate the caring for Country values and aspirations that Traditional Custodians and other Aboriginal peoples have for Booburrgan Ngmmunge (Bunya Mountains) and to seek financial and other support from partners to assist in delivering this plan.



Photo: Bunya Mountain Murri Rangers Refurbishing Walking Tracks at Fishers Lookout



Photo: A Drone Image from Fishers Lookout in the Bunya Mountains.

With enthusiastic interest being shown in traditional land management practices, BPAC continued to develop a range of education material through the Barambah Environmental Education Centre in partnership with Education Queensland.

BMRG looks forward to even greater collaborative partnerships between BPAC and BMMR in the coming years.

Gidarjil Development Corporation

This year, BMRG and the Gidarjil team continued their close, collaborative approach to a range of projects.

Gidarjil played a key role in the inaugural Australian Biosphere Conference. Together with the Butchulla Aboriginal Corporation, Gidarjil provided a series of beautiful banners featuring original indigenous artwork. The banners provided a stunning backdrop in the conference foyer and welcoming area.

This year, BMRG continued to support Gidarjil in completing Stage 2 of the Booral Booral danga thaggo (Burnett River Nature Trail) project. This project is being undertaken by Participants in Gidarjil's 'Skilling Queenslanders for Work' program. When completed, it will provide a beautiful boardwalk experience for residents and tourists, including interpretive, educational signage through sensitive wetland areas in the Port of Bundaberg area.

Gidarjil's Land and Sea Ranger teams continue to be instrumental in controlling feral animals along the Discovery and Woongarra Coastlines, with a focus on reduction of marine and freshwater turtle predation by foxes. Fox and pig control expert, Tom Garrett has been engaged by BMRG to run the project and has been very appreciative of the dedication and determination of the rangers in learning how to detect and trap these wily and devastating predators.

BMRG and Gidarjil have also worked together in successfully securing funding from the Great Barrier Reef Foundation and the Land Restoration Fund for a range of innovative projects including land restoration and carbon farming. We were also delighted to be invited to be part of Gidarjil's NAIDOC Week Celebrations this year – a wonderful celebration of our region's rich and diverse indigenous culture.

BMRG greatly values our close working relationship with the Gidarjil team and looks forward to sharing their continued successes.



Photo: Gidarjil's Brent McLellan and Kerry Blackman Discussing the draft re-zoning Plan for the Great Sandy Marine Park with Stephen Bennett MP and BMRG's Dean Collins

Photo: St Joseph's students birdwatching at Baldwin Swamp



Our Future is in Good Hands!

The most enthusiastic learners and changemakers in our community are often some of our youngest.

Delegates attending the opening session of the inaugural 2019 Australian Biosphere Conference earlier this year were inspired by some outstanding presentations by students from our local Reef Guardian Schools. More than 100 impeccably behaved students impressed delegates with their appreciation of ecological challenges and were then treated to a personal audience with ABC's 'Gardening Australia' host Costa Georgiadis.

Our region's Reef Guardian schools aren't exactly new to the spotlight however, with their grassroots efforts winning them recognition in the broader community and even in the office of a local member of parliament! The "Cleaner Greener Schools Competition" is an initiative of Stephen Bennett MP, Member for Burnett, and celebrates the sustainable choices of students both in school and at home. Congratulations to all our local schools who proudly lead by example; reducing, reusing and recycling materials, having 'nude-food' lunches, making bees-wax wraps, planting endemic plants for habitat and getting out and about to discover our precious local ecosystems.

Tinana State School's '2019 Sustainability and STEAM Symposium' saw over 700 students from 10 local schools come together for a range of fascinating student-led and partner-facilitated workshops. BMRG team members Ben Galea and Tess Bowe-Fernley captivated students and teachers alike with a live demonstration of drones and their applications in NRM. They also managed to organise a group aerial photo!

As part of the Queensland Government's Climate Week initiative, Goora Gan Steiner School organised a tree planting afternoon in the dunes at Agnes Water. Students, teachers and parents planted an area of Pandanus trees (a showy endemic species which has experienced a 50% decline along Queensland's South East coastline) in front of their school. Ben led the tree planting and presented an interactive lesson on the beach about the evolution and conservation of our precious marine species.

BMRG is proud to be supporting our region's schools and looks forward to working on more great projects with our future NRM leaders.

Photo 1: Goora Gan Steiner School Students plant Pandanus trees at Agnes Water

Photo 2: Tinana State School STEAM Symposium Students "Spelling it Out"





Photo: *The Brolga Theatre Foyer Was the Centrepiece for the Australian Biosphere Conference*

Great Sandy Biosphere on World Stage

The inaugural Australian Biosphere Conference, hosted by the Great Sandy Biosphere Management Group in Maryborough in March, has been hailed as an outstanding success.

Attended by more than 250 delegates from throughout Australia and overseas, the conference was a first-of-its kind opportunity to celebrate what it means to part of a vibrant and connected Biosphere Reserve community. Delegates enjoyed an inspirational program, including combined displays and performances by Traditional Owner groups, updates from Australian and international biosphere reserve representatives, keynote presentations by ABC celebrity Costa Georgiadis and an interactive panel session with industry leaders and innovators. The final day of the conference offered several exciting tours that showcased the richness and diversity of the Great Sandy Biosphere and the communities within it.

The Great Sandy Biosphere is one of 686 Biosphere Reserves in over 122 countries throughout the world that have been designated

by UNESCO's Man and Biosphere Programme.

The programme recognises areas that represent world-renowned terrestrial or coastal ecosystems and demonstrate innovative approaches to living and working in harmony with these ecosystems.

UNESCO's Meriem Bouamrane travelled from Paris to be the Master of Ceremonies for the conference and was overwhelmed by the quality and enthusiasm of the presentations and displays. *"I loved every aspect of the conference"*, says Meriem *"especially how it brought together people from all sectors of the community to celebrate what it means to live, work and play in such a rich and diverse part of the world"*.

The Great Sandy Biosphere Reserve is indeed a very special place, taking in over 40% of the world's perched lakes, more marine fish diversity than the Great Barrier Reef and the world's tallest and most complete rainforests growing on sand. The reserve also incorporates World Heritage Listed K'Gari (Fraser Island) and the Great Sandy Strait Ramsar Wetlands.



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Photo 1: *Conway Burns Leads the Butchulla Dancers in Welcoming Delegates at the Australian Biosphere Conference*

Photo 2: *Justin Bellanger (CEO, South Coast NRM), Meriem Bouamrane (UNESCO), Paul Mulchin and Prof. Peter Bridgewater (Uni. of Canb)*

Photo 3: *Keynote Speaker Costa Georgiadis Hams it up with Reef Guardian students from Bargara State School*

Board of Directors

“ We would like to thank our members,
Landcare groups, research partners, Federal,
State and Local Government, Traditional Owners,
the community and BMRG Board and staff for their
dedication in delivering the successful outcomes this year.
We look forward to our continued collaboration
in the coming years. ”

*Photo Left to Right: BMRG Board of Directors Vanessa Elwell-Gavins, Professor Phil Brown,
Tony Ricciardi (Chair), Mike Moller, Elizabeth Shanks*





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