Welcome to the seventh edition of the Reef Rescue newsletter.

The Reef Rescue Impact Statement was launched in Canberra in October 2011 by the Reef Alliance, marking a three year milestone for the five year program.

Parliamentary Secretary for Agriculture, Fisheries and Forestry, Dr Mike Kelly received the Impact Statement and 15 farmers attended the launch to represent their industries and regions. They used the opportunity to showcase their achievements and discuss some of the impacts of Reef Rescue funding directly with Australian Government MPs and Senators.

Reef Rescue was a proactive step by agricultural industries to partner natural resource management groups to further improve farm management practices. The aim is to achieve better water quality leaving farms flowing to the Great Barrier Reef lagoon, as well as strengthening the sustainability of our industries.

The large numbers of farmers engaging in the initiative are doing so because the model works. And it works particularly well for two reasons.

Firstly, the investment by the Australian Government has been critical in sharing the cost of practice change with farmers. It is this cost burden that is often a barrier to changing practices, particularly in a time of competing economic and environmental challenges.

Secondly, the partnership approach means that the funding package remains relevant to the farming business and that the initiative is run efficiently.

These key elements of an effective working partnership with backing from the Australian Government have delivered the high uptake and swift changes to farm practices that are detailed in the Impact Statement.

Some of the other highlights include:

- 1,200 farmers have improved their fertiliser and pesticide applications and soil management techniques. That’s 92% of our target of 1300 farmers.
- More than 500,000 hectares of farmland are under improved management.
- More than 430 graziers have received grants to improve water quality.
- Graziers are on their way to improving ground cover and reducing sediment entering our rivers over 2.7 million hectares of grazing land. That’s 71% of our target of 3.8 million hectares.

The Queensland Farmers’ Federation is proud to be a part of Reef Rescue and we are proud of the work we have done together with our industry members and partners, regional partners and the Australian Government and most of all the work and commitment from farmers.

This approach has developed ownership not only with the partners but with the farming community and this will set the foundation for ongoing achievements into the future. At a time when our natural assets and sustainable food and fibre production is so fundamentally critical to everyone’s future this program provides a guiding light.

With two years of the Reef Rescue initiative to go our work is not done. The high level of uptake so far provides us an opportunity to work with those farmers and who perhaps need more convincing. We will be refining our approach, building on existing alliances and successes and drilling into the issues that have challenged progress in some areas.

This newsletter is a joint initiative of Queensland Farmers’ Federation and Queensland Regional NRM Groups Collective. We look forward to your feedback and hope you enjoy the stories.

Dan Galligan
CEO | Queensland Farmers’ Federation
Erosion caused by gullies and breakaways is a major contributor to sediment loads entering waterways and research being conducted by the Australian Rivers Institute within the Normanby catchment may identify this process as the main driver of sediment in the region.

To help combat the formation of new gullies and breakaways, Cape York Sustainable Futures will use the latest round of Reef Rescue funds to maintain the many unsealed tracks on properties which are contributing to the problem.

Darryl Hill of ‘Soil Save’ pointed out during a recent grader workshop that most new erosion is not due to uncontrolled stocking, but access tracks and fence lines on pastoral properties.

"Having properly formed roads and turn out drains is very important in reducing the erosive potential of runoff," Darryl said.

"Poorly formed and drained roads quickly turn into breakaways, and then gullies when not addressed, leading to greater maintenance and repair costs than what is spent to construct them properly in the first place."

Some funding will also be used to build and improve fire breaks, many of which double as access tracks on properties. Fire breaks also play an important role in reducing sediment in runoff as large, late season fires can denude the landscape of groundcover, leaving thousands of hectares bare during the monsoon period.

As well as investing Reef Rescue funding in track and fire break maintenance, Cape York Sustainable Futures is conducting a number of field trials to test different treatments to halt further gully progression. Methods being tested include log jams, revegetation, battering off gullies and soil liming. LiDAR data will be used in some areas to monitor the rate of erosion, demonstrating the effectiveness of the control measures being put in place.

Tibby Dixon owns and manages a lychee farm close to Campwin and Sarina Beaches, around 30 km South-East of Mackay. The estuary section of Plane Creek is located nearby the 50 ha property, which has around 20ha under lychee production. The property was originally a cane farm when Tibby moved there 32 years ago, then in 1979 Tibby planted the first 265 lychee trees on 9m x 9m spacings. In 2011, Tibby completely changed the planting design and, they now use 8m x 2m spacings and have around 6500 trees. This means smaller trees, but they are easier and safer to harvest.

In late 2010 Tibby received funding through the Australian Government’s Caring for our Country Reef Rescue initiative to purchase a zero turn side throwing mulch mower which picks up any picks up any excess mulch and directs it under the lychee trees. Tibby explains, “the main reason for doing this was to maintain a good ground cover on the inter-row to reduce the risk of any soil erosion and, the subsequent weed control under the trees will reduce the reliance on herbicides.”

“The mulching under the trees will also improve soil health and structure by increasing organic matter and improve water retention, which will decrease the need for irrigation applications.” Tibby said. “It will allow us to mow in all weather conditions without causing impact to our inter-rows which reduces the potential of erosion and sediment runoff.”

When growing lychees, there are several stages in the production process which need to be achieved before being able to successfully harvest a commercial crop. During the establishment stage, weed control is very important and, because of the risk of chemicals impacting on the young trees; sugar cane mulch is used and works very well over the first few years. During the production stage, Tibby uses leaf and soil analysis to determine nutrient requirements and also uses fertigation to match what the crop needs at a specific time such as before flowering or after fruit set.

Reef Rescue has assisted Tibby to implement beneficial production techniques on his farm.

“I was always very keen to look at upgrading equipment to help improve my practices but the cost was a barrier. If I could only access 20% funding or without the support of Growcom, I would not have been able to implement the improved practices yet.”

Down the track Tibby is keen to further enhance his production by looking at improving his drainage system to maximize the benefit of his existing storm water structures.

Outcomes

- Reduced risk of sediment losses from maintaining a good inter-row ground cover.
- Reduced risk of chemical losses by reducing herbicide applications.
- Improved soil health improving infiltration and water retention.
Most farmers would like to get more out of their land without compromising its health. Mulgowie Farming Company is on its way to doing that. It’s increased the number of vegetable rows from four to six, getting more yield, saving on diesel and ground preparation costs and improving the condition of the soil.

Mulgowie Farming Company is Australian owned and operated and has been growing sweet corn, fresh beans and other vegetables for almost 30 years. It was started by the Emerick family in the Lockyer Valley, Queensland. Now it has 400 staff working 5,000 hectares in Queensland and Victoria. Mulgowie sells direct to supermarkets, agents and markets.

The Company has introduced minimum tillage and controlled traffic, to some of its farms. Its fleet of tractors are set up to run down very precise three metre wheel tracks, thus Mulgowie is using less fertiliser in the new production system.

Andrew says one of the downsides of using controlled traffic on vegetable paddocks is the difficulty of manoeuvring large machinery around small rows. It takes the Company a third longer to plant an area; however savings are still achieved.

Training staff to get their head around such precise straightness has also been challenging for the Company. Up to 30 people had to be taught to use GPS and get used to this different way of operating.

In the long term Mulgowie wants to avoid digging up the ground at all. “We want to get to the point where we do not have to hoe ground,” Andrew said. “We currently hoe beans but try not to hoe corn.” Is it really achievable on such a large scale? Andrew thinks so. The unpredictable tropical weather throws a spanner in their goals. The Company would also like to keep reducing their fertiliser use, by a third more at least over the next two to three years.

Fertiliser is also being sprayed more accurately since it’s not being put in wheel tracks, thus Mulgowie is using less fertiliser in the new production system.

Mulgowie received money from the Australian Government’s Caring for Our Country Reef Rescue initiative. The Mulgowie project to convert to controlled traffic and minimum tillage was one of 23 horticulture projects facilitated by natural resource management group NQ Dry Tropics. With their help Mulgowie secured $40,000 to pay for modifications to machinery and planters to implement controlled traffic and minimum tillage.

They also received $40,000 for a recycling pit which improves the quality of water leaving the farm because it reuses water. Fruit and vegetable representative body Growcom did a risk assessment on their Bowen farm to find out what the Company can do to improve water quality.

Farm manager Andrew Sippel says using minimum tillage has made a big difference to the quality of the soil. “We can get on the ground a lot earlier in the wet season and the ground is getting softer. We also don’t have to worry about driving over crop beds.” Andrew says. He’s also found that the soil holds more moisture because it’s not as compacted.

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The Lawries have gradually transformed their 3474ha Moora Plains property west of Rockhampton in central Queensland by splitting it up into 40 paddocks for an intensive rotational grazing system – with the purpose of improving overall land condition and ultimately improve the property’s productivity.

They recently completed a project funded by Fitzroy Basin Association Inc. (FBA), through the Australian Government’s Caring for our Country Reef Rescue initiative.

They got help with fencing and watering points on 2106ha of Moora Plains to enable them to manage 14.5km of creeks and riverbank – a sensitive area prone to erosion from cattle.

The new fencing will also enable more sustainable management of 519ha of vegetation along the waterways.

High density grazing for a short period followed by extensive resting of the river and creek bank areas facilitates the growth of vegetation which stabilises creek banks, improves water quality and promotes biodiversity.

The Lawries allow cattle to graze riparian areas for short periods during the dry season (April to August) within the rotational grazing system.

The family used the incentive grant to help them achieve their goals, and are also keen regenerative grazing advocates - they hosted a field day on their property in 2011 to help share their experience.

Landholder investment: $146, 470
Reef Rescue funding: $58,157
Michael Silvester doesn’t see himself as a ‘greenie’. “I just love seeing grass grow. If you don’t have grass, you don’t have money,” the Capella district cattleman says.

Michael and his wife Kellie bought “Forest Hills”, Central Queensland, in mid-2009. The property runs from Lancewood/Ironbark ridges on its northern boundary to large expanses of softwood brigalow scrub soils. The Silvesters use “Forest Hills” to fatten bought-in cattle and regulate stocking rates as seasonal conditions and available grass cover allows.

Much of its history, the 8620 acre (3490 hectare) property was fenced into just three large paddocks. Low control over grazing had resulted in loss of groundcover and bare patches in some areas.

When Michael and Kellie bought “Forest Hills”, the country was very dry but they could see potential to use fencing and pasture renovation work to increase groundcover and lift productivity.

The creek was a clear priority. “I used to drive along the creek and think this needs to be locked up and rested. There have been issues with erosion from cattle walking up and down the banks. You do lose some area by locking it up, but the way I look at it, you wouldn’t have any grass left anyway if you just left it the way it was.”

Continuous grazing pressure in a paddock on the property’s northern boundary had caused hard bare patches to form on the higher country. Michael believed the soil was still in good condition and was confident that with new fencing to enable the higher area to be strategically rested, it would be possible to improve the buffel pasture again.

The obvious barrier to completing the work was time and cost.

Six months after buying “Forest Hills”, Michael and Kellie learned about development funding for grazing land improvement work administered locally through Central Highlands Regional Resources Use Planning (CHRRUP) and coordinated by the Fitzroy Basin Association through funding from the Australian Government’s Caring for our Country Reef Rescue initiative.

Michael was initially sceptical about the idea of applying for Government funding. “I was concerned they were going to tie us up, that we would be told we had to lock country up and wouldn’t have any say or control over how it was run. In the end it was totally the opposite.”

The Silvesters entered into a Voluntary Land Management Agreement with CHRRUP, which began with an initial assessment of land condition on “Forest Hills” to provide a benchmark against which future progress could be measured. The agreement involved setting goals to achieve a certain percentage of groundcover within the four-year project period.

The Silvesters received funding subsidies covering 50% of the cost of building the fences required to complete the projects.

The first of the three projects involved fencing a 1400 acre (570 hectare) paddock along a land type change into two smaller paddocks. The Silvesters also undertook work to stick rake Brigalow suckers and introduce legume seeds. The paddock has been locked up since December last year and after a wetter than usual summer it has undergone an amazing transformation.

“You wouldn’t recognise this paddock if you saw it a few months ago,” Michael said standing in green buffel grass up to his knees.

Despite their initial concerns about losing control of their land, the Silvesters now say that applying for Reef Rescue funding was one of the best moves they have ever made. They credit the assistance with fast-tracking their development program by at least five years and allowing them to strategically rest country and increase their carrying capacity on Forest Hills.

The Silvester family from Forest Hills near Capella has successfully restored land condition and pasture with help from Australian Government Reef Rescue funding.
Mill mud can help elevate levels of nutrients in streams and waterways

Mackay Sugar’s John Markley plays a pivotal role in mill mud applicator development.

Mud has long been used by cane farmers as a source of nutrients that can be cheaply added back on to paddocks. A by product of the milling process, mill mud is particularly high in nitrogen, phosphorus and calcium and is produced at a rate of roughly 10% of the sugar cane milled.

However, mill mud can contribute significantly to elevated levels of nutrients in streams and waterways, if applied at high rates and runoff occurs. These increased levels of nutrients can have adverse effects on fresh water and marine environments including coral and sea grass communities.

In the past, mill mud has been spread on the field in a very ad hoc manner at a nominal rate of 150 tonnes of wet mud per hectare (t/ha) with large variability in application rates of between 0 – 300t/ha.

As each grower is allocated a set tonnage of mud by the mill according to the cane they produce, poor application can result in only small coverage and may require significantly more fertiliser to be purchased and applied.

Mackay Sugar has considered this an inefficient application method resulting in increased cost for growers and reduced water quality benefits for the Mackay region. With funding from the Australian Government’s Caring for our Country Reef Rescue initiative, Mackay Sugar has designed and commissioned new spreaders to aid in the precision application of mill mud.

The new spreaders apply mud directly onto the middle of the rows rather than a blanket spreading as was done in the past.

Mill Mud is also able to be applied to three rows at a time reducing compaction on the inter-rows and reducing fuel and time costs.

“Mud is now applied at a reduced rate of 50t/ha effectively tripling the land one manager can service with his allocation of mud” said Mackay Sugar’s productivity Coordinator John Markley.

Distributing the mud over the field in this manner also reduces the chance of runoff; which has been problematic in the past, by:

1) Placing the mud in the centre of the row which is elevated;
2) Ensuring no mud is distributed onto the wheel tracks where the ground is more likely to have been compacted and is therefore more prone to water runoff; and
3) Incorporating mud into the soil soon after application when planting occurs.

The development of the spreaders allows growers to apply mud to more hectares and as a result may see a reduction in their fertiliser costs as mill mud is provided back to the growers at a cost significantly lower than traditional fertilisers.

Mackay Sugar originally commissioned three prototypes and after some initial design problems commissioned four more newly modified applicators. Reef Rescue has just now provided Mackay Sugar further funding to build seven more applicators and modify the three original prototypes, taking the total to 14 applicators for the Mackay region. “We hope to have these ready by early May” said John. With the fourth year of Reef Rescue beginning in July 2011, eligible activities have been expanded to include the construction of mill mud pads. Growers will now be eligible to receive up to 50% of the cost of the mud pad up to a maximum of $10 000. With this incentive and 14 new applicators this will no doubt result in more efficient use of Mill mud, ensuring increased efficiency for growers and an improvement in water quality entering the steam and waterways.

Extensive damage to banana crops during Cyclone Yasi earlier this year

Reef Rescue momentum continues DESPITE DIFFICULT SEASON IN THE NORTH

The Great Barrier Reef, like many farmers in North Queensland is still recovering from a prolonged wet season and a Category 5 cyclone hitting the region in February. These events remind us how important it is to ensure that other land-based impacts on the reef are minimised to give the reef the best chance of recovery.

Farmers in the Wet Tropics are working to reduce runoff from their land with the help of the Australian Government’s Caring for our Country Reef Rescue funding package. Despite weather setbacks this year, the interest in funding was higher than ever.

Terrain received 313 applications in this fourth year of funding, and is about to deliver grants to 179 projects. As part of the package, water quality incentive grants were offered to a wider variety of horticultural crops this year, including fruit tree crops, pineapples, melons and pumpkins.

Terrain was concerned that application numbers would be affected by the economic loss resulting from Cyclone Yasi. As one cane farmer once lamented, “it’s hard to be green when you are in the red”. Many farmers who experienced extensive damage to their crops and property would not have been able to afford the 50% contribution required for a Reef Rescue grant. The Australian Government generously agreed to a lesser contribution from those landholders whose properties were in the path of destructive winds or had experienced a 40% or more loss in production due to the weather this year.

This incentive has ensured the momentum of Reef Rescue will continue to reduce agricultural runoff in the region at a critical time for reef recovery.
Improving water quality THROUGH WETLANDS

As part of the Australian Government’s Caring for our Country Reef Rescue initiative the Burnett Mary Regional Group identified opportunities to improve water quality outcomes on specific properties via the introduction of wetland systems and the use of wetland remediation actions.

Cathy Mylrea the Reef Rescue Coordinator for the Burnett Mary Regional Group said that the Reef Rescue Wetlands program "offered landholders an opportunity to build on and improve their current land management practices through reducing the runoff of sediment, pesticides, herbicides and nutrients from their property.”

The wetlands subprogram focuses on constructed wetlands employing Best Management Practices in farm production systems. The primary purpose of these is to treat and polish water runoff from agricultural land (predominantly cane and horticulture) and improve water quality through uptake of nutrients and sediment capture. The key aspect is to merge on-ground water quality treatment works with methods used in urban stormwater pollution and treatment design and construction. Projects are supported with concept treatment designs, pollutant reduction modelling, detailed engineered designs and monitoring and evaluation of before and after water quality levels.

In its initial year, Reef Rescue Wetlands supported works on four properties within identified Reef Rescue priority areas. Annual load reduction in sediments and nutrients was modelled for each site using a model for urban stormwater improvement conceptualization (MUSIC), and landholders were provided with a detailed technical design to ensure maximum water quality outcomes from these projects. Bruce Peterson’s cane farm in the Gregory River Catchment was one of the four properties that received support through Reef Rescue Wetlands.

The project on Mr Peterson’s property aimed to improve drainage and erosion control by directing irrigation and rainfall runoff into existing irrigation storage dams through the establishment of swales. Improved drainage on-farm and decreasing the movement of sediment has a positive impact on the management of water on the farm. MUSIC modelling indicates that the projected annual load reduction of suspended solids is 18%, phosphorus 9% and Nitrogen 4%.

By altering existing drainage lines into a swale, the velocity of runoff is slowed and the amount of sediment and associated pollutants deposited is increased. At the upstream end of the swale a rock rip rap was installed to provide scour protection and initial sediment trapping from surface flow directed from an existing farm dam. The design of the swale also included rock filled gabions strategically placed along the length of the swale to reduce flow velocities and improve drainage, whilst also minimising water logging and stagnant water accumulation.

For more information about Reef Rescue or the projects profiled in this newsletter, contact Queensland Farmers Federation on 07 3857 3747 or Queensland Regional NRM Groups Collective on 07 4699 5002.