

# Reef Rescue Water Quality R&D - Inception Workshop

## Overview of Workshop Outcomes and Discussion

16 and 17 June 2011

This document provides an overview of the discussion and feedback captured at the workshop held on 16 and 17 June 2011, related to project presentations, program overviews and communication and delivery of the programs. The presentations from the workshop are available for download on the Reef and Rainforest Research Centre website, [www.rrrc.org.au](http://www.rrrc.org.au). An overview of the projects is also available via this link. The outcomes of the workshop will be used to inform the development of a Research Linkage report, and a draft communications strategy. Both of these reports will be provided to workshop participants for information / comment by 29 June 2011, and will be finalised for submission to the Reef Rescue team by 29 July 2011.

### Introduction

Billy Quinn provided an overview of the Reef Rescue initiative broadly and the background to the Reef Rescue R&D Program.

Sheriden Morris provided an overview of the role of the Reef and Rainforest Research Centre as the Service Provider for science coordination and integration for the Reef Rescue R&D Program.

### 1. Program Linkage Framework – Col Creighton

Col Creighton presented the context of the Reef Rescue R&D Program, and the existing draft program framework.

#### *Comments*

Jon Brodie advised that it is evident that the big questions around reef resilience and ecological end points for the GBR are still not being addressed through existing research programs. These questions about how much effort is required to achieve the targets are important and necessary to lead into another round of Reef Rescue investment or similar ('Phase 2').

### 2. Program Overview

An overview of each project was presented by each of the Project Leaders. The presentations are available for download at: [www.rrrc.org.au](http://www.rrrc.org.au). A brief overview of the projects is also available via this link. Only comments from workshop participants and the following discussion are captured below.

## **Grazing Practices**

### ***RRR024 – D class land, Trevor Hall DEEDI***

Chris Chinn - Collaborate with P2R surveys for the grazing practice assessment. Kevin McCoska will undertake surveys with land holders on practices and acquire information on land condition – opportunity for collaboration. Others also commencing survey work in the region, eg. Geoff Cootes.

Mick Quirk – What is the spatial scale? The focus is on small patches which are at a scale where invention may be viable.

Kevin – Is pasture cropping a viable option for rehab of D class land? The land types in this region are not well suited to pasture cropping; focus is on mechanical treatments.

### ***RRRD027 – Getting ground cover right, Terry Beutel DEEDI***

Col Creighton – How is seasonal variability addressed? Compared to long term datasets as a point of reference.

Jon Brodie – Is there a linkage to Christian Witte’s team undertaking the remote sensing work on gully mapping? Dan Tindall is involved in both project teams.

Will Higham – Are there opportunities to benchmark land condition to assess change in condition over time? The Ground Cover Index can be used to track change in particular places through time, as with the rapid assessment. The mapping of ABCD condition will allow assessment of longer term change. There is a lag of approximately 1 year in the imagery. This project will develop the tools for undertaking those assessments, starting with the long term datasets (hindcasting).

### ***RRRD032 – Enhancing ground cover through management practices to reduce sediment loads, Scott Wilkinson***

Link to Terry’s project – Terry’s team develop the tools, this project is partly about application and extension of those tools including assessment of management scenarios.

Establish project reference group.

Mick Quirk – What practice information will be used for the scenarios? The assessment will be done with inferred practices but information on actual practices will be run in the scenarios where possible.

### ***RRRD009 – Runoff generation rates from pasture legumes, Craig Thornton***

Shared study site with P2R catchment monitoring location (Brigalow).

Kevin Gale – Does the project include assessment of loss of nitrogen to groundwater? Modelling work for drainage shows that drainage under current pasture systems is similar to that from natural Brigalow vegetation. Deeper groundwater interaction (not perched) is characteristic of the area which is considered to be a much lower risk. The nitrogen loss in legumes is sub surface so groundwater interaction may be of interest.

Will Higham – Is there a nitrogen treatment applied to the pasture? No fertiliser supplements are applied.

Col Creighton – Will need to weigh up the outcomes of nitrogen leachate versus the benefit of legumes as a ground cover. The pasture choices need to be mapped out to demonstrate the maximised opportunities. The loads coming from natural vegetation is considerably higher than that being measured from buffel grass.

Trevor Hall - What sort of grazing management will be imposed? Working on set stocking rates over set periods of time with wet season spelling. Establishing monoculture butterfly pea initially with the expectation that the distribution with buffel grass will be developed over a 12 month period.

***RRRD049 - Minimising off-farm movement of nitrogen in the NQ banana industry, John Reghenzani***

Kevin Gale – Application method by fertigation? Comparison is with BMP.

Jon Brodie – Focus on N, will the project look at P, if only to show there is no impact? John R in previous work could not measure dissolved P (but that may be different in other soil types).

Col Creighton - Slow release issue? Need to think between agricultural practices.

***RRRD054 Banana modelling capability, Tony Webster (John Reghenzani)***

Close linkages to Project 49.

Jon Brodie – Scope of parameters? Planning to do nitrogen and sediment (not P) – modelling soluble parameters considerably more complex.

Mark Silburn – There are some models that do incorporate P but the input data is limited.

***RRRD055 – Dairy practices, Beverley Henry***

Jeff Daniells – Application rate of 30 to 40 kg/year – is that annual? Clarification is required. Use different types of fertiliser at different times of the year.

Peter Thorburn – What does the gaseous nitrogen assessment include? Initially just N<sub>2</sub>O but seeking to obtain funding to include N<sub>15</sub> tracer at southern site. Volatilisation may be significant and aiming to measure that if resources allow.

Jon Brodie – Link to the Herbert Project funded by DEEDI and DERM measuring runoff from different land uses - currently identifying study sites including a dairy site. Interested in linking with the Ravenshoe site – link with Paul Nelson (part of both initiatives).

Note that the Gympie site has low slope and therefore limited runoff.

***RRRD056 – Evaluating and improving A-class practice in cane, Peter Thorburn***

Col Creighton - Typical A class practices? Examples include application of mill mud directly on the stool instead of across whole paddock, precision management of nutrients.

Matt Kealley – Need to recognise that the communication of the outcomes of the project and in particular, the relationship between the cane industry and WWF / Project Catalyst.

Mark Silburn – Will comparison with other (classes of) practices be possible? Depends on the individual site and how amenable to side by side comparison. There is scope to include those variations but focus is on outcomes of A class practices.

Jon Brodie – Will the project assess P? The project currently assesses N and sediment, currently assessing budget to determine whether aspects of P could be tested – will also depend on the practices at the selected sites.

John Reghenzani – Project Catalyst sites allow for comparison between different levels of practices in terms of WQ and economic benefits.

Col Creighton – Much of Project Catalyst is about precision agriculture – within paddock variations. Constrained to the flexibility of practice within a region and paddock size.

***RRRD004 – Drip and furrow irrigation from sugar and bananas in Wet Tropics, David Midmore (Surya Battarai)***

Matt Kealley – There is considerable work undertaken through Rural Water Use Efficiency program that is relevant to this project. There is a specific linkage to work in the Burdekin with Toni Anderson – follow up direct linkages in Bundaberg and Emerald as well.

Jeff Daniells – Drip irrigation is an efficient practice but knowledge of the most efficient applications is a very important link. The outcomes must be communicated very clearly to avoid mis-management.

Check link to Pesticide projects as this includes pot trials re: pesticide movement.

***RRRD020 – Mineralisation of N in sugar following legume fallows, Bernard Schroeder***

Col Creighton – As an example, a Project Catalyst farmer using legumes in second year wasn't using fertiliser, how demonstrate this in a 2 year program? The sites have been in place for several years and are at various stages in the crop cycle so the assessments can be made across 3 stages.

***RRRC037 – Pesticide dynamics in GBR catchment and lagoon in sugarcane, Jon Brodie***

Fred Bennett – Any consideration of pesticide in mulch? Trash is involved in sugar experiments, likely to have different efficacy to soil. Banana project looking at what is running off generally as a first step.

Will Higham – There is a paradox between regulated products and half lives, the second aspect is looking at new products – why not testing half lives in them as well rather than productivity? Commenced trials of half lives of a wider range of pesticides with preliminary trials (Shaw) of 6-8 products. Discussion with WWF commenced re: linking to Project Catalyst to trial alternative chemicals as a comparison.

Kevin Gale – Important end users are also APVMA and assessors in SEWPaC. Is there a risk in legal action of recommending one product over another based on environmental impact, where there is an assumption that all registered chemicals are 'safe'? Suggest that advice is sought on that aspect.

Steve Attard - Looking at breakdown products of these herbicides? For some products this is possible, but depends on whether they can be measured, eg. Atrazine - most likely, diuron – probably, others – not sure. Lab methods need to be established to measure the products.

***RRRD038 – Biological methods for monitoring pesticides, Ben Kefford (Simon Mitrovic)***

Col Creighton – If we go from here to net primary productivity and then fisheries productivity – is there any link of this aspect being investigated? Investigates community composition and diversity but not

productivity. If herbicides are having a major impact on plankton or diatom communities then this will affect the index and identify food web effects that may be of concern.

Jon Brodie – At the same time in the same places that you are getting herbicide runoff, also getting nutrient runoff – strange balances to understand the effect of the nutrient regime. Would need to apply various herbicides directly to the diatoms to determine the response and then add a nutrient impact to assess combined reaction – should be considered as part of the project.

Numbers of species being considered? Likely to be 10 to 40 – not sure level of assessment (genus or species?).

Mark Silburn – Will the combined effects of different herbicides be tested in addition to the single dosing? The scope of the project is only likely to be single dosage.

Michelle Devlin – Why limited to benthic diatoms and not extended to water column phytoplankton? Not trialled on other communities, but in theory it is easier to test initially.

Kevin Gale – Pursue pesticide dynamics and monitoring linkages to NERP.

***RRRD039 – Integrated assessment of BMP cost effectiveness and decision tool, Stuart Whitten***

Mick Quirk – Is there a linkage to project being undertaken by Nadine Marshall re: social aspects? Integrate the work into a “tool kit” to identify what needs to be done to improve uptake.

Col Creighton – Strong link to NRM groups. Need ideas to be driven to NRM groups. May be some difficult with collapsed project (2 yr duration).

***RRRD010 - Factors affecting adoption of land management practices that have water quality benefits in the GBR catchments. Evaluation scenarios for Cane Farming (Delwar Akbar, CQU)***

Col Creighton – Need to link to Canegrowers and other key institutions with the preliminary findings before the information is released to a wider audience.

***RRRD011 – Capturing historic paddock relevant catchment data to quality management impacts on water quality, David Freebairn***

Need to make a decision about what sites to go into further detail.

Stuart Whitten – Any thought of whether a meta analysis could be undertaken to assess if a range of variables are heading in similar directions? Not at this stage.

Will Higham – The challenge is that many experiments have been conducted but many for different purposes, so the application of the data is limited. It is unlikely to be sufficiently uniform to undertake statistical analysis.

Terry Beutel – Could run Veg Machine across the sites with ground cover.

Mick Quirk – Many of the datasets from grazing sites are used in GRASP, so knowledge of how the data has already been used is useful to capture.

Jon Brodie – Scale? Single management unit, ie. Paddock. Could consider small sub catchment scale.

Scott Wilkinson – Strongly support the intent to undertake interview with data custodians, especially with regard to purpose of collecting the data. Would be beneficial to link to relevant reports from the database.

***RRRD030 – Pollutant load estimation techniques: accounting for uncertainty in monitoring and modelled data, Petra Kuhnert***

Col Creighton – As the saying goes, all models are wrong and some are useful! How relevant are the findings to other areas? Aiming to provide a framework with the Burdekin as a case study – there are 3 different structures of the model to be developed.

***RRRD016 Developing integrated assessment metrics for reporting of water quality in the GBR, Vittorio Brando (Michelle Devlin)***

Eva Abal – Support the concept of an index for communication reasons. Suggest that the reporting framework needs to identify links to monitoring, modelling and management. Important to devise framework in broader context. In addition, the purpose of the index needs to be very clear and accommodate different layers of reporting.

Col Creighton – The type of index is important for the audience and needs to communicate a message to give clear management orientation.

Scott Wilkinson – The relativity of the index is important, and definition of a baseline threshold is required.

Eva Abal – Project should lead into identification of gaps and need for additional indicators, system understanding and monitoring approaches.

### **3. Program integration**

The leaders of related programs were invited to give an overview of their program as relevant to the Reef Rescue R&D Program. The presentations and any background material are available for download at: [www.rrrc.org.au/](http://www.rrrc.org.au/). Only comments from workshop participants and the following discussion are captured below.

### ***Reef Plan - Paddock to Reef Program, Chris Chinn DPC***

Matt Kealley – The main thing about the data and information sharing is release of the information– when will the Baseline Report Card be released? Likely to be released ‘soon’, aiming for second report card by the end of this year.

Col Creighton – Sustainable fisheries – asking what we are aiming for? Always seeking optimisation of environmental, social and economic values. Wary of the application of baselines.

Jon Brodie – What is the end point of the GBR? What is the target for the GBR, eg. Coral cover? Need to keep this in mind that there is not a defined end point for the outcome of years of investment.

### ***Reef Protection Program, Gay Crowley DERM***

3 regulated catchments – Wet Tropics, Burdekin, Mackay Whitsunday; 2 industries – grazing and cane.

The science program is focused to meet the needs of the Reef Regulations.

Mick Quirk – Duration of the research projects? Final reports by February 2014.

Jean Erbacher – Projects are already underway and some are completed. A number of project briefs have been developed, and priorities are being developed for the Program next week.

Kevin Gale – Is the program intending to refine the risk assessment already done for the initial priority areas? Not intending to repeat the work done on loads to date, but would like to link in additional work eg. Economics, where relevant. There are continuing discussions between DERM and DEEDI about how to use government program outcomes.

### ***NERP, Jane Waterhouse (on behalf of SEWPaC, RRRC)***

Draft MYRP and ARP developed, being considered by the Steering Committee for consideration by the Department and ultimately the Minister.

An overview of recommended projects has been provided by Dave Johnson from the NERP team and is provided at *Attachment 2*.

### ***eReefs and the GBR Foundation research portfolio, Eva Abal GBR Foundation***

Phase 1 outcomes – Receiving water quality model – transport and biogeochemical models – proof of concept only in Phase 1. Re-scoping Phase 1 due to reduced budget from investors. Phase 2: Automation, integration and extension. Phase 3: Transition to final operation.

Deliverables have been aligned to ensure that they meet the requirements of the related programs.

Note: The research portfolio is available on the GBR Foundation website. The research portfolio has already been defined which operationalizes the research vision, currently very general.

## ***Northern Beef R&D, Mick Quirk***

MLA supports discrete R&D relevant to Reef Rescue:

- Virginia Park - CSIRO, DEEDI – recovery of hillslopes after change in practice has occurred.
- Wambiana – DEEDI – optimal stocking rate management
- Pasture recovery (DEED) – Clermont and Wambiana

In addition, there are a number of integrating initiatives:

- Northern Grazing Systems (several organisations) – more than 2 years – reviewing past R&D and assessing at regional basis (including Burdekin and Fitzroy) where specific modelling is being done. Property case studies. Includes social component investigating changing attitudes, and GRASP modelling.
- Managing pasture rundown (DEEDI)

## **Outcomes from group discussions on Linkages**

Workshop participants broke into groups (sub programs) and were asked to consider project and program linkages from the perspective of direct project linkages (eg. Locations), shared data needs, stakeholders and end users, and mechanisms for coordination and collaboration. A summary of the group feedback is provided below.

### *Grazing*

- How should project scale interactions be focused? Policy (represented by P2R modelling) and producer deliverables.
- Common language – what are the tools using in common, eg. GRASP, VegMachine – how, where, what for? May help to structure project interactions.
- Delivery to producers – how to do that is challenging – different models for different areas, and project level may be too small – is it reported as a cluster? Using existing channels, eg. Update to Burdekin Best Practice Guidelines, VegMachine extension information.
- Process between projects?
- Not every project has to deliver all the outcomes – needs to sit amongst the existing programs.
- Modes of communication still need to be discussed and agreed – what is the most effective way of communicating and getting the information out.

### *Horticulture and Dairy*

- The plot configuration between Project 4 (Midmore) and Project 49 (Reghenzani) is not suitable to link directly, but another related project run by John Armour is likely to be able to link.
- Complimentary networks need to be identified.
- Need to link to Jon Brodie and linkages to pesticide work.
- Rachel from DEEDI, seeking BMP for horticulture for feedback into policy. Project teams to make ongoing connection with DEEDI.
- Difficult for new comers / outsiders to fully appreciate all that is going on, what information is available and where to get it.

### *Sugar*

- Identified opportunity for Fred Bennett to connect with Peter Thorburn re: A class sites and potential to collaborate in the Burnett Mary region.
- Similar data needs:
  - Data from field trials: Data for modelling, context of farming systems, enough information to explain anomalies.
  - Like to confirm whether overall covering high priority management practices systems (A-D) to establish confirmed WQ benefit and costs / productivity benefit. Link to P2R, socio economics etc.
- Stakeholders and end users: Still need to address how to communicate the outcomes of the research, and engaging with the end users to ensure that transfer of information is undertaken through engagement with the users.
- Need to discuss how to apply on-ground and research advice –identify industry groups, and implications for growers eg. Which herbicides, what rates, which methods.
- Most of value for modelling is by collecting a field scale dataset. There is an absence of discussion about resourcing to ensure that maximum value will be achieved in ensuring the data is suitable for use in model applications.

### *Pesticides*

- Roughly clump work into 3 areas – management practices – sugar and other industries, behaviour and transport.
- Biggest link is to the P2R Program – sharing sites and methodologies but seeking more specific research outcomes than P2R.
- Intending to undertake a workshop to identify which sites will be used in collaboration with other programs.
- Link to Reef Protection Program – off farm movement work.
- Definitely require to link to CQU work on pesticides (David Midmore).
- Banana project requires some internal meetings – to clarify scope and linkages. Also tebuthiuron work in the Fitzroy.
- Behaviour and transport work in the Fitzroy – link to P2R and catchment monitoring.
- Andrew Negri pesticide persistence in NERP.
- Steve Lewis project in lower Burdekin.
- Bigger picture – need to see all of these feeding into modelling and load explanation. An explicit process is required. Assessment of risk – how important are pesticides? Do they need to be regulated? What is a suitable target?
- Evidence base for requiring compliance with the Regulations is weak in some parts.

### *Socio economic*

- Economic and financial context – needs to be defined.
- Any practices must be profitable and sustainable.
- Barriers to adoption – will vary on a range of factors – need to understand that better than we do now. Most social studies have not gone into enough detail.
- More social interaction required between projects.
- Clear messages of what we are really looking for, and what works and what doesn't?? Are the socio economic linkages there that lead to changing behaviour. How do we combine knowledge and experience from all of the activities here.

### *Monitoring techniques*

- The paddock scale work in the Burdekin (eg. Wilkinson grazing project) can be used as priors in the model.
- Seeking input data from the outcomes of groundcover work (Beutel), any projects with catchment scale model outputs.
- Share similar stakeholders – P2R, DERM, GBR lagoon WQ monitoring.
- Linking mechanisms and coordination primarily through workshops, and make sure that stakeholders are collaborators on the projects.

#### 4. Knowledge Gaps

The workshop participants were facilitated by Col Creighton and Johanna Johnson to consider the broad knowledge gaps to support the future direction of Reef Rescue Program. Knowledge gaps identified by workshop participants are summarised below.

- Temporal aspect that needs to be captured – gap in timing between data collection and access across programs. Needs to be an element of maintenance – on the work that comes out and must be continued – in addition to the new work.
- What are the targets and regional actions we need to take to meet GBR guidelines?
- Relative risks between N, P and sediment
- Groundwater – transport and residence times
- Estuaries and their role
- Paddock scale frameworks – consistency
- Interaction between marginal improvement in material delivery and overall benefit – economic and environmental. What is the cost per change? Benefits for the healthy reef?
- The effect of catchment hardening on water runoff and increased volumes.
- Multiple assets and benefits of interest – including local assets – that need to be considered in the conceptual thinking.
- There is land use change happening now – particularly with mining.
- Cumulative impact of multiple stressors in terms of land use (mining and urban coast) and climate – how to address those at multiple scales.
- Emphasise the question of whether we are making the right investment? Too many assumptions, and need to understand the benefits – and when we will see the benefits.
- Urban and coastal development.
- Policy design and scale – bottom up incentive design – trialling solutions at multiple scales.
- GBR futures and scenarios with changes – land use, climate, economic, social.
- Geomorphic template and understanding of natural loads versus changes from modifications – improvements in estimating anthropogenic load.
- Infrastructure that supports mining - development along coast in terms of ports, and increase in shipping.
- What are the premises for continuation of another program, what is the format going to be? Is it going to be based on targets? Or is about what is acceptable in terms of status of the Reef?
- Partnership Committee has commenced discussion of Reef Plan 3, second half of 2012 is critical for influencing policy. Independent Science Panel is developing revised consensus statement, led by Roger Shaw.
- Need to demonstrate what we have achieved through Reef Rescue to consider that there might be a Reef Rescue 2.
- Stronger statistical analysis of reporting against targets.
- Suite of R&D required to inform optimisation of monitoring design.
- Critical to come up with some estimate of effectiveness before going to next round. Developing an M&E framework. Understanding of the whole catchment - communication mechanism that allows that integration. There is a need for a decision support tool that incorporates the range of issues.

What is the confidence in reporting the outcomes? There are multiple approaches that allow incorporation of social, economic and environmental aspects.

- Need to take carbon into account – opportunity going into next round of funding – carbon trading will be driving cultural change and land use change.

## 5. Knowledge Exchange and Delivery

Each of the end user groups were invited to convey their primary needs for delivery of the outcomes of the Reef Rescue R&D Program, and the preferred approaches to engagement. The responses are summarised in the table below.

Representative	Key points
John Reghazani, Terrain NRM	Receive information that can inform implementation of Reef Rescue on ground. Speedy transfer of information, and direct communication with Project teams.
Claire Anderson, DPC	Synthesis of combined outcomes of the program. Timing is critical. Late 2012, early 2013. Synthesis of preliminary results. Talk about extending information through extension officers – coordinated approach across the Program for communication of on ground outcomes. Annual workshop for extension officers. Extension delivered through industry and government. Extension model varies regionally, so different approaches for each region. Adam West from DEEDI best point of contact.
Claire Rodgers, FBA	Field staff in contact with 400-500 land holders every year. The regional groups are an extremely useful extension avenue. FBA build relationships with researchers directly. Engaged directly through involvement in the project team. Technical staff looking across entire program to utilise information to inform investment.
Hugh Yorkston, GBRMPA	Good land management by itself is a win-win for the Reef. Needs to start looking at natural and assimilative capacity in the Reef. Focus on stewardship. Synthesised products, across biophysical and socio economic. Promote the best management practices.
Piers Harper, FBA	Need to provide access to information that is being done now, and past research. Contact with landholders on large scale – also providing an avenue for getting feedback from the landholders to the researchers. Two way interaction.
Kevin Gale, Reef Rescue	Lobby politicians, don't read big reports. Need presentations and short products. Level of detail comparable to the Scientific Consensus Statement. Engage directly.
Matt Kealley, Canegrowers	Explanation of the data and what that tells us, and recommendations of the research for a landholder to change practices. Sustainability, water quality benefits and profitability. How take the outcomes from the R&D and think how that can be realistically translated into practice? Assistance is available from BSES, Productivity Board etc to assist in extension – and how that information is best delivered.

Representative	Key points
	Printed magazine every 2 weeks – Canegrowers magazine.
Chris Chinn, Paddock to Reef	Synthesis products are the most desirable - being able to tease out fundamental messages is critical. What is the confidence in the result? How do we report uncertainty (draw on climate change approaches??) Data sharing and exchange – modelling teams are users of the data. Culture of exchange, and then a data management system.
John Bennett, DERM	Immediate needs for Reef Protection Program – best return on investment in grazing and cane. Key linkages between catchment to reef integration. Conceptual models of current understanding. Socio economic aspects – paddock to reef picture? Build on interaction that exist between individual projects. Science synthesis. Project ‘buddies’ – people that can link between key projects.
Ian Dight, NQDT	Many projects are directly related to the delivery of the on ground programs right now. Direct communication with NQDT is very important. Regional bodies are identified as direct contributors to the programs. Also undertaking research that is relevant to the Program. Facilitate the 2 way flow of information between NRM groups and researchers in a more formal way. Want to see field officers and extension officers gaining the knowledge from the projects as we go. Diversity of end users requiring a large range of approaches.

### **Discussion:**

- Are there opportunities for sharing information on the best approaches across Regions?
- Ethics constraints associated with data in the socio economic projects (Whitten).
- What are the mechanisms for the 2 way formal communication?
- Communication between the Reef R&D, between Reef Programs, influencing land holders, participatory research.
- Information will not be communicated until it is clearly demonstrated and supported by adequate evidence. Be careful in how transfer research onto the ground.
- There are points along the way where there will be sufficient information to influence change, but most interactions will be about engagement.
- Reinforcing messages and framing the research outcomes.
- Clusters of research across the programs could be established so that information is communicated on an issues basis.
- Peer review of science is critical to maintain credibility of the program.
- Direct interaction is the best way to relay the outcomes of the research, and participation in panels and committees and the important role of those mechanisms needs to be recognised.
- The program is highly focused on practices – is there an opportunity to provide a ‘one stop shop’ for this kind of information. How can this be centralised?

*Opportunities for events / workshops*

- CESE Conference in September 2010 provides a good model for a collaborative interaction to report the outcomes of the various programs. Currently proposing to hold a meeting in November.
- Reef Rescue could sponsor an event up to \$10,000.
- Needs to be discussed by Reef Rescue regarding optimal timing for other events.
- It would be most beneficial to facilitate interaction between Reef Rescue and P2R before the progress reporting, in addition to a larger workshop to inform the final report.
- Seeking a more open forum and invite extension people as part of the target audience.

#### *Extension*

- To work directly with the researchers is the best way to keep the informal extension continuing.
- As soon as processes become formalised then there are always avenues for delay.
- Landholders will go to people they trust for advice – for sugar is BSES and Production Boards, so the information needs to get to those groups.
- Part of the communication is about interaction between researchers and others – and that needs to be documented.
- Communication with the landholders should go through the industry representatives first.
- Each regional body have established mechanisms for delivery of this information – the NRM groups are a key point of contact to start with.
- Under Reef Rescue each industry has an industry working groups – cross regional and some regionally based. Could provide a good conduit for communication of outcomes.
- Need to recognise the crop cycle – June to December are busy (early morning, late afternoon). January and March are good opportunities.

#### **Ideas for delivery:**

- Progress reporting every 6 months, then potentially research highlights in between. Email with some specific questions.
- National Program for Sustainable Irrigation – requires project summaries and contact, including regular updates. Information hub on the website is also an effective way to communicate between products.
- Support MTSRF model of research highlights and communication updates.
- Propose to put forward a series of questions that managers want answered from the program – which require input from several projects at different stages throughout the program.
- The progress reports every 6 months will provide an opportunity for regular updates.
- Direct contact.
- Participate in workshops.
- Identify contacts within each organisation.
- eNewsletter – circulated every 2-3 months, all stakeholders.
- Continuation of circulation of research highlights at milestone reporting times.
- 2 aspects – update on what is happening now, versus the synthesis of information that is interpreted. Outcomes need to be set in context of overall package of information.

## **6. MERI and Risk Management Plans**

Jane Waterhouse provided an overview of the next steps associated with finalising the MERI and Risk Management Plans.

- Feedback will be provided directly to project leaders for aspects to be completed by 25 June.
- A completed example that meets the requirements of the MERI team will be provided, in addition to the templates for the progress reports for reference.

- RRRC will provide details of common activities to be included in the Communication Plans.
- The finalised plans are required to be submitted to the Reef Rescue team by 17 July 2011.

## **7. Wrap up**

- Revisited workshop outputs.
- Reiterated the importance of the timing of the progress reporting.
- Kevin Gale noted that we are in a very fortunate position in this program – with dedicated coordination, integration and synthesis provider, the RRRC. It would be a wasted opportunity if the linkages both with the program and outside was not successful. This initiative addresses one of the concerns around coordination that was raised in the Consensus Statement.

## Attachment 1 - List of Attendees

Representative	Organisation
<b>Coordination Team</b>	
Johanna Johnson	C2O Consulting, Facilitator
Jane Waterhouse	C2O Consulting (representing RRRC), Program Management
Sheriden Morris	RRRC, Program Management
Suzanne Long	RRRC, Program Communications
Col Creighton	Program Management
<b>Reef Rescue Team</b>	
Kevin Gale	SEWPaC
Billy Quinn	SEWPaC
<b>Project leaders</b>	
Stuart Whitten	CSIRO
Megan Star	CSIRO
Delwar Akbar	CQU
David Freebairn	RPS Australia East
Trevor Hall	DEEDI
Terry Beutel	DEEDI
Scott Wilkinson	CSIRO
Craig Thornton	DERM
Peter Thorburn	CSIRO
Steve Attard	CSIRO
Surya Bhattarai (rep David Midmore)	CQU
Bernard Schroeder	BSES
John Reghenzani	Terrain NRM
Jeff Daniells	DEEDI
John Armour	DERM
Beverley Henry	QUT
Jon Brodie	ACTFR
Steve Lewis	ACTFR
Mark Silburn	DERM
Simon Mitrovic (rep Ben Kefford)	UTS
Petra Kuhnert	CSIRO
Erin Peterson	CSIRO
Michelle Devlin	JCU
<b>Program linkages / research users</b>	
Jean Erbacher / Gay Crowley	DERM, Reef Protection Package
John Bennett	DERM
Chris Chinn	DPC, Reef Plan P2R Program
Claire Andersen	DPC, Reef Plan R&D Strategy
Chris Carroll	DERM, Reef Plan P2R - catchment
Sheriden Morris	NERP Tropical Ecosystems
Eva Abal	GBR Foundation
Hugh Yorkston	GBRMPA

<b>Representative</b>	<b>Organisation</b>
Rachael Djamaludin	DEEDI, Sustainable Agriculture
Katrina McArthur	DEEDI, Sustainable Agriculture
John Reghazani	Terrain NRM
Ian Dight	NQ Dry Tropics
Will Higham	Reef Catchments
Claire Rodgers	Fitzroy Basin Association
Piers Harper	Fitzroy Basin Association
Fred Bennett	Burnett Mary NRM
<b>Industry</b>	
Matt Kealley	Canegrowers
N/A	BSES
Bianca Cairns – Unable to attend	SRDC
Mick Quirk	MLA

## Attachment 2: NERP Tropical Ecosystems Hub – Proposed projects relevant to Reef Rescue

Project Number	Project Title	End user identified by hub
1.1	Monitoring status and trends of coral reefs of the GBR	GBRMPA, AMPTO
1.2	Marine wildlife (turtles, dugongs, dolphins) management in the GBRWHA	GBRMPA, SEWPaC, DERM, DEEDI, Giringun
1.4	Do no-take marine reserves contribute to biodiversity and fishery sustainability? Assessing the effects of management zoning on inshore reef of the GBR Marine Park	GBRMPA, SunFish, DEEDI
1.6	Social and economic long-term monitoring program (SELTMP)	GBRMPA, QSIA, AMPTO, FRDC, DEEDI, Tourism Qld, DERM (QPWS)
4.1	Tracking coastal turbidity over time and demonstrating the effects of river discharge events on regional turbidity in the GBR	SEWPaC, Reef Rescue, GBRMPA, DERM, DPC, DEEDI, Terrain NRM, Burdekin Dry Tropics NRM, Mackay Whitsunday NRM, Fitzroy Basin NRM, Burnett Mary NRM, Meat and Livestock Australia, WWF
4.2	The chronic effects of pesticides and their persistence in tropical waters	Reef Rescue, GBRMPA, DERM, DPC, Regional NRM groups, APVMA, Canegrowers, SEWPaC, WWF
4.3	Understanding diversity of the GBR: spatial and temporal dynamics and environmental drivers	GBRMPA, DERM, DEEDI, SEWPaC, AMPTO
4.4	Characterising the cumulative impacts of global, regional and local stressors on the present and past biodiversity of the GBR	DERM, GBRMPA, Qld Canegrowers, Reef Rescue, AMPTO
4.5	Experimental and field investigations of combined water quality and climate effects on coral and other reef organisms	SEWPaC/Reef Rescue, GBRMPA, DERM, DPC, DEEDI, Canegrowers, Meat and Livestock Australia, WWF

<b>Project Number</b>	<b>Project Title</b>	<b>End user identified by hub</b>
7.4	Conservation planning for a changing coastal zone	DERM, Premier & Cabinet; GBRMPA, AMPTO, Traditional Owners; Reef Rescue; Local Government and Planning; DEEDI; Terrain NRM; Local Government; NQDT; Reef Catchments NRM; FBA; BMRG; WWF; QSIA; Canegrowers
7.5	Socio-economic systems and reef resilience	GBRMPA, DERM, Tourism tropical North Queensland, DEEDI, DPC, QSIA, Sunfish, AMPTO, Alliance for Sustainable Tourism
GBR e-Atlas	GBR e-Atlas	GBRMPA, DEEDI, WTMA, JCU, Reef Plan Secretariat and QLD Department of the Premier and Cabinet; Reef Rescue; DERM, Terrain NRM, GBR coast NRM groups, AIMS e-Reefs, CSIRO e-Reefs
<b>Projects still to be brokered</b>		
B1	Ecological risk assessment of pesticides, nutrients and sediments on water quality and ecosystem health	The end users of findings from this project include the Department of Sustainability, Environment, Water, Population and Communities - SEWPaC (particularly the Reef Rescue initiative), GBRMPA, Queensland Government (particularly the Department of Environment and Resource Management), Reef Plan (Australian and Queensland Governments together), NRM bodies (Terrain, NQDT, Reef Catchments, FBA, BMRG) local government, industry including fishing, mining and agriculture, and NGO groups, among others. Moreover, the project is a partnership between CSIRO JCU, AIMS and DERM, providing direct linkages to State and Federal Government, and GBR NRM bodies.
B2	Vulnerability of seagrass habitats in the GBR to changing environments	DEEDI, GBRMPA, DERM, Reef Rescue Team, Reef Plan Secretariat
<b>Reserve projects</b>		
R7	Setting coastal, estuarine and wetland species in their functional habitat mosaics	
R6	Ecosystem consequences of flood events: water column processes in riverine plumes of the GBR	GBRMPA, DERM, DEEDI, SEWPaC/Reef Rescue, Canegrowers, DPC, Regional NRM bodies, CSIRO e-Reefs modelling