



Proceedings of the 6th Lake Eyre Basin Conference

**Basin Voice: Shared understanding and action
for a sustainable LEB future**
Linking science and management

PORT AUGUSTA, SOUTH AUSTRALIA

17-19 SEPTEMBER 2013

***Lake Eyre Basin – Australia’s unique, natural, desert river system:
Healthy environments, sustainable industries, vibrant communities, adaptive cultures***

Day 2 – Wednesday 18 September, 2013

Session 2: Communities of the Basin

Session Chair – Mr Dave Dolman, Lake Eyre Basin Community Advisory Committee

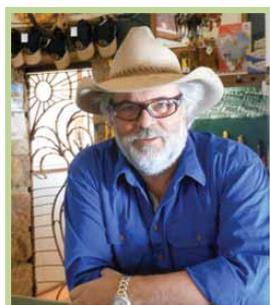


Keynote Presentation – Lake Eyre Basin Oodnadatta Stories

Mr Ned Loades - Principal, Oodnadatta Aboriginal School

Biography

Ned has been school Principal at Oodnadatta Aboriginal School since 2006. He is currently the Chairperson of the Oodnadatta Progress Association, and has lived in the Lake Eyre Basin for 8 years. He was previously employed as a coordinator and a teacher on the Anangu Pitjantjatjara Yankunytjatjara Lands for 6 years, and has worked throughout central Australia for most of his career. Ned holds a Bachelor of Arts, a Bachelor Education, a Graduate Diploma of Education (Hearing Impairment), Masters of Education (Hearing Impairment) and a Masters of Educational Leadership. He has a strong personal interest in matters affecting the Lake Eyre Basin, and is interested in the interaction of communities and the environment, and the ways in which the environment helps to shape community values and interactions, especially into the future.



Keynote Presentation – From challenge to opportunity in a land forgotten....or is it a land not yet discovered?

Mr Phil Turner - Publican, Marree Hotel

Presentation Summary

The beauty that lies beneath...sounds like a movie title but, to the ill-informed, it describes a region well placed as one of the wonders of the natural world. It's just that no one outside of those directly involved with its management fully appreciate its benefits, let alone understand it or even know about it. Whilst ignorant of the academic insights to this phenomenal resource, I see the region as primarily 'undiscovered' in general public awareness terms – similar to actors who may take decades before 'fame' besets them – the Basin has, in fact, just started to strut the stage.

Are we at a turning point? Is the Basin positioned at the threshold of a new opportunity? Are there lessons to be gained as to why the Great Barrier Reef has escalated to 'fame' status on a global scale while the Basin, equally as significant but for different reasons, appears to be struggling with mainstream Australia to even get a mention?

While governments see 'economic savings', amid rising utility costs, by encouraging communities to move to more populated centres, it puts pressure on small towns around the Basin, like Marree, who battle astronomical costs for essential services, adding to an absurd cost of living, let alone the lowering of living standards of those who are toughing it out. But you can't move the Basin. The Basin MUST have a viable, well-equipped rural population with services and facilities positioned to support those who manage the environment and utilise the Basin as a resource. The merging of converging disciplines under the quintessential principles of what

constitutes REPUTATION will go a long way to stem the tide of apathy, and silence the cynics and pundits who view the region as a desolate wasteland.

There is a new wave of intellect moving to the region – those that see the potential. This is my story as to why we left a lucrative corporate career, and why my wife and I bought the Marree Hotel.

Biography

Phil Turner first travelled Australia in 1971 – loaded up the ‘Kombi’ and headed off with a mate – on an unforgettable adventure that never really ended. Forty-five years later, after a working career in the corporate sectors of media, advertising, marketing, tourism and business ‘change’ and business development – mostly in Canberra – he and his beautiful wife, Maz, said farewell to their six children and all the grandchildren and bought an ‘outback pub’.

The pub was the attraction and the Marree Hotel ticked all the right boxes. The bonus was the town. Marree is a welcoming place filled with history and characters that have lived here their whole lives. It’s tough in the outback – the town knows it and has shown Phil the way to work together to build a better place for future generations.

Phil Turner was born in Hobart. His specialty is the ‘communication and facilitation of change’. He is the past Chair of the Marketing Institute of Australia (ACT), past President of the Tourism Council of Australia (ACT Regions) and a former Fellow of the Australian Institute of Company Directors. He has been awarded for his work in advertising and public relations for projects with Indigenous Australia, Defence and Tourism.

He not only advised the corporate sector on ‘change’ opportunities but is now part of ‘change’ himself – embracing a new life and a world of opportunity in the region of the Lake Eyre Basin.



Small, but significant: It is the small sites that most need care

Dr Luise Hercus - Australian National University, and Mr Don Rowlands - Wangkangurru man

Presentation Summary

The proposed brief power-point presentation will look at the fate of a number of little-known sites and how they have been badly impacted or are endangered in various different ways – by roadworks and development, by sheer vandalism, by trail-bikes, by neglect, by stock and by natural causes. They include:



- A rain-stone site on the Birdsville Track
- The emu site near the Woodmurra Creek
- An engraving and mythological site in far western Queensland
- A mythological site on the Neales
- A stone arrangement near the Macumba
- An ancient tree near the Macumba
- Old Appamurna

We ask the question – what can be done to protect such sites? They are a long way from where Aboriginal communities now live.

Biography – Luise Hercus

Luise has studied linguistics and has worked on Aboriginal languages for 51 years mainly in far western NSW and in South Australia, doing lots of recording in collaboration with Aboriginal elders, writing grammars, dictionaries, visiting sites and editing texts.

Biography – Don Rowlands

Don Rowlands is a well-known local identity, leader and respected elder of the Wangkangurru people, he lives in Birdsville with his family. He was born in Munga-Thirri where he learnt the beliefs, traditions and cultures of Wangkangurru from his elders. He also learnt how to track, hunt and find bush tucker. His grandmother taught him how to understand the dreamtime and how these narratives spiritually bonded the Wangkangurru people to the Munga-Thirri.

Don is a strong proponent of “the ways of the old people”, with a sincere belief that all Australians can benefit enormously from developing an understanding of their country by appreciating the culture and beliefs that sustained the Indigenous people of Australia for thousands of years. He believes that one practical way to do this is by sharing the knowledge of survival and the benefits of coexisting with the land. Don hopes that by promoting attention to the positive aspects of respecting and nurturing the ancient cultures of his people, a deeper understanding can be developed between all Australians.

Don’s mandate as a leader and elder is to preserve and protect the interests of his people by adopting careful management of the sacred lands and spiritual sites. This is central to the cultural tradition of passing onto the younger generation their Dreamtime heritage.



Adapting to Change: The Arabana Climate Change Adaption Strategy

Dr Melissa Nursey-Bray - University of Adelaide, and Mr Aaron Stuart - Arabana Board of Directors



Presentation Summary

Climate change is a pressing issue the world over, and the Kati Thanda-Lake Eyre region is no exception. Climate science predicts the region will get warmer, hotter, and drier with consequences for both the places and people in the area. This paper presents the results of a multi method, cross cultural and inter-disciplinary research collaboration investigating climate change adaptation options between University of Adelaide researchers and the Arabana people. Specifically, our project aimed to assess the resilience and vulnerability of the Arabana people and then develop adaptation options. Results suggest that Arabana people have a history of adaptation and are relatively resilient to change, yet Arabana country is highly vulnerable. The Arabana climate change adaptation strategy is built around trying to make connections between these two elements. Adaptation options in the strategy include establishment of cultural centres in every place and city where Arabana

people live, setting up economic businesses in tourism and pastoralism, moving back to country, establishing cultural camps, revitalisation programs and the establishment of ranger, land management and monitoring and research programs.

Biography

Mr Aaron Stuart is an Arabana man, and Chair of the Arabana Board of Directors. He has worked with other Arabana, industry, researchers and government over a number of years, leading to the native title determination of Arabana country, and the renaming of Lake Eyre to Kati Thanda-Lake Eyre. In 2012 he was awarded the Perkins Award for Excellence in Service (individual), most particularly for his work in prevention of suicide and development of male healing camps out on country. He produced a book and then a film called *Yudum* which deals with youth suicide. Aaron is also a Graduate of the South Australian Governor's Leadership Program.

Melissa Nursey-Bray is a Senior Lecturer in the Discipline of Geography, Environment and Population for the University of Adelaide. Melissa has many years work experience in the area of Indigenous natural resource management, climate change adaptation and community engagement. She has over 45 publications and has won a national teaching award for her work in teaching critical thinking and environmental sustainability.

Session 2 Speakers Panel – Questions and Discussion

As pastoralists we're on the dividing line of two people. How do we identify sites of significance while not knowing any Traditional Owners who speak for our part of the world?

I understand your concerns. If we can all appreciate and understand what we want to protect it's a start. When people move on it's hard to find out who to talk to. If we protect it in the first instance it's a good start, one day someone will turn up.

Given the cultural significance of the LEB and the boom and bust type environment, what do the arid people have to share with the rest of country on how to tackle the emerging challenges?

As an Aboriginal person and academic we need to think carefully about what is coming out of universities. We need to respect country and the people, especially Aboriginal people. For example, the use of water in mining is enormous and the apparent lack of respect this shows for the country and the people. Need to move from exploitation to respect and partnership.

We are working to the same ends, but it would be good to collaborate as a whole and work together.

To maintain our sites we need the water, to feed our systems and maintain our serpent. This needs to be collaboration.



Figure 1: Conference audience during panel question and discussion session. Photo by Matt Turner

Question to Ned, what are your experiences in Aboriginal culture and education of tourists in the LEB?

Tourists have a general lack of knowledge and understanding of the LEB and the Great Artesian Basin (GAB) - the cities have a disconnect with the LEB. Getting the knowledge out to the communities in the cities, and building the understanding of the good work we are doing is important. Very impressed by the work that has been done however this is not being shown in mainstream media. If we develop good communities in the Basin, it allows the message to be shared especially through tourism.

At the school we have visitors come through and share information. Water is very important to our community. We need more info about what is happening to the Basin as a whole. The environment is an issue, especially the change that is occurring. We need more people to inform us on the changes occurring.

Nearly 2 million visitor's path through the LEB, very few see Lake Eyre. With your experiences with visitors, what is their main perception on what is happening, their concerns and how it fits in to what's going on.

We get a lot of visitors coming through, a lot of uninformed visitors to Lake Eyre. Most just take a photo and move on. Need to better inform tourists.

My experience is they're going for the remoteness and the experience, not a lot of recognition of the Basin or what we're talking about here. Need further education to showcase the opportunities.

A lot of visitors in Birdsville are also uninformed, we have people attend our cultural presentations and discuss what was said today. Travellers take away good information and are more informed. I'm here today to share this information with the LEB community to better understand and work together.

Raelene, a Dieri woman, lives in Marree ... I have a lot of knowledge of the country and the dreaming of Kati Thanda, also a lot of history of our ancestor and Finnis Springs. Luise has also recorded information for our people. I wanted it to be known that this is my country too. There are a lot of history, records and photos from early history in colonisation. Good to work together in partnership to protect the environment.

Lake Eyre Yacht Club ... the yacht club educates people on the history of the area. There is a gap of Aboriginal knowledge for tourists within the LEB. There are fears by the tourists about Aboriginal people due to their initial interactions. The people visit to be alone and see the country. People want to come and visit the lake and wet their feet. I have been contacted by many people to help them visit the lake in their dying years. I respect Aboriginal culture and support the preservation of Aboriginal culture. There is a need for better Aboriginal interactions with tourists and address instances where tourists are quizzed on why they are visiting the lake and told that they shouldn't because it is not their country.

Greg Warren ... I've lived on Finnis Springs Station. What I learned about my country is the first law of the land. The new approach is not protecting sites, to do this you need to speak to the people with the knowledge. I have knowledge, and no one has spoken to me. In NSW people have been visiting country, and left crying because of the damage that has been done. There needs to be more involvement of Aboriginal people and traditional knowledge in land management. Being born in Australia we are all under the first law, we need to get together and come as one voice. We are trying to achieve the one thing, time for us all to chip in.

Session 3: Regional NRM and Adaptive Management Challenges

Session Chair – Dr Sue Jackson, Lake Eyre Basin Scientific Advisory Panel



Keynote Presentation – Learning to manage: Regional natural resources management in the Lake Eyre Basin

Kate Andrews - Territory Natural Resources Management

Presentation Summary

Regional natural resource management in the Lake Eyre Basin - What is the situation now and how did we get here? How well is it working, particularly in achieving adaptive management? What could we do better?

Relatively straight forward questions, yet let's think of the challenges: actually doing adaptive management, both on country and in our people stuff (governance); juggling multiple scales and boundaries, and knowing which is appropriate when; and being visionary and pragmatic, creating our future with limited resources.

To be successful natural resource management requires enduring but adaptive frameworks, a learning listening culture, and capacity (individual and organisational). Adaptive management can contribute to all three of these elements. But are we learning to manage? And is it enough?

Biography

Based in Darwin, Kate is Chair of Territory Natural Resource Management, one of the 56 Regional NRM bodies across Australia. TNRM covers the entire Northern Territory. Kate also wears a number of national hats including membership of the Australian Landcare Council, the Advisory Committee for CSIRO's Sustainable Agriculture Flagship, and the National Working Group of NRM Chairs.

In the late 90s Kate worked for 5 years with people across the Lake Eyre Basin designing a community-based organisation - incorporating and establishing the organisation from scratch. It was Australia's only cross-border community designed and run NRM organisation. She was the first Chief Executive of the Lake Eyre Basin Coordinating Group.

Since that time Kate, among other things, worked with Land & Water Australia as their first Knowledge and Adoption Manager developing their inaugural strategy for research into practice, and as a consultant with a range of organisations. Kate is also undertaking a PhD at the Australian National University exploring the history of cropping in northern Australia.



Understanding feral goat management in the western catchment of New South Wales

Ms Katrina Gepp - Western Catchment Management Authority

Presentation Summary

Management of Total Grazing Pressure (TGP) to control ground cover is one of the key strategies for production and environmental sustainability in the Western Catchment of New South Wales. Projects funded through the Western Catchment Management Authority (CMA) since 2005 have highlighted that without management of stock numbers (domestic and unmanaged herbivores) to available feed, objectives of Natural Resource Management (NRM) projects and management strategies can be rendered ineffective.

Western CMA manages sections of the southern rangelands with part of the region in the Lake Eyre Basin. This region is a mix of mulga and downs country, is semi-arid to arid and land is predominately perpetual leasehold being managed under the Western Lands Act 1901. The region in the Lake Eyre Basin is a mix of industry including grazing, mining, tourism and conservation. The challenge is large populations of herbivores that freely roam through traditional plain wire fences, making it difficult to manage ground cover.

Ground cover is anything that helps minimise erosion, improves water infiltration and collects seed and soil for pasture development. It can include vegetation, dead plant material such as pasture residue or leaf fall, rock and pebbles, lichens, moss and other biological soil crusts.

Vegetation groundcover is the key driver to landscape function and biodiversity. It protects soil surfaces from wind and water erosion, promotes the infiltration of rainfall and runoff, provides habitat and forage for fauna and is a significant factor in soil carbon capture.

Total Grazing Pressure is 'the combined grazing pressure that all domestic and wild stock exerts on the vegetation, soil and water resources of rangeland landscapes' (Fisher et al: 2004). This includes demands from all herbivores – cattle, horses, sheep, native and feral animals, and insects – such as grasshoppers or locusts. If managed properly, landscape resilience is maintained, plants are able to regenerate, seed banks are maintained, and healthy grass cover competes with suckering wood plants and other undesirable species.

Concerned at the apparent upward trend in goat numbers, the Western CMA recently commissioned five expert reviews on the best available knowledge on feral goats in Western NSW in 2010. The reports identified the opportunities of the goat industry, the increase in population, where the densities of population are and the impact unmanaged feral goats have on domestic animal production enterprises. The findings support the general feeling that goat numbers are increasing in the region and indicate effective and economical management options.

Findings highlighted in the reports include:

- Both goats and kangaroos are highly mobile and are a major part of total grazing pressure;
- Goat populations have increased since 1970 and significantly since 1999;
- Goat populations have doubled in the last decade;
- Goats are not the problem – it's the management of goats that cause the problems;
- Unmanaged feral goats provide a short-term gain but will damage the condition of your property and the environment long term.

The data and evidence suggests TGP is a three step program:

1. TGP perimeter fencing – hinge joint or “Westonfence” type electrical systems;
2. Control inside perimeter with traps, closing of water and internal fencing and;
3. Implement a grazing plan.

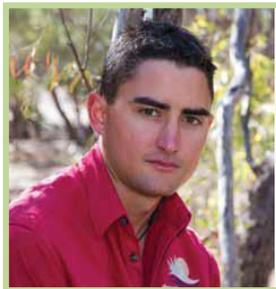
Western CMA has jointly funded over 284 projects with an investment in excess of \$9 m throughout the catchment. At least 10 of those projects have been in the Lake Eyre Basin and include projects such as fencing to land types, TGP fencing, control of waters and strategic grazing courses. Their focus has been on changing from set stocking rates to strategic grazing, understanding the relationships between plants and animals and seeing the subsequent improvements to ground cover, production, land conditions and enable them to recover more quickly after a dry period – improved resilience. Ongoing monitoring supports this improvement.

Biography

Katrina Gepp works with the Western Catchment Management Authority as a Senior Lands Services Officer based in Broken Hill. She is locally born into the pastoral environment and whilst has spent most of her life working on the land, her experiences include environmental management and regulation across a broad spectrum of industries such as mining and agriculture – for both production and conservation.

To support her management and natural resource management role, Katrina has a Bachelor of Ecological Agriculture, a Graduate Certificate in Public Sector Management, a Diploma in International Business and a Diploma in Rural Business Administration as well as a host of other qualifications.

Her passion is the region of Broken Hill and supporting landholders work through the obstacles and challenges they face on a daily basis - striving for peak production and sustainability in adverse conditions.



PIGS MIGHT FLY – A multistage control program aimed at reducing feral pig (*Sus scrofa*) populations on Queensland’s inland river systems and sensitive wetlands such as Coongie Lakes and Lake Eyre

Mr Leigh Deutscher - Desert Channels Queensland

Presentation Summary

Desert Channels Queensland’s “Pigs Might Fly 2011-2012” program, funded by the Australian Government’s Caring for our Country initiative (www.nrm.gov.au) is aimed at controlling feral pig populations (*Sus scrofa*) along Queensland’s inland river systems and sensitive wetlands such as Coongie Lakes and Lake Eyre itself.

The project, undertaken in collaboration with the South Australian Arid Lands Board, built on control works that have been undertaken and incorporated coordinated aerial culls to ensure maximum impact on pig populations. Planning, landholder engagement, identification of critical areas and sites for monitoring built on the collaborative approach DCQ and SAAL have established with landholders within these areas.

Due to the extensive area to be covered, isolated populations of pigs, terrain and vegetation within the control area aerial shooting was determined as the most cost effective and humane control technique.

Multiple control campaigns were carried out across the Cooper and Diamantina catchments during the period November 2011 to March 2013. Initial control activities were undertaken throughout the year however it was quickly determined that control activities were most cost effective when animals were restricted to isolated water sources and vegetation, particularly lignum, was at its least dense.

During the control period extensive information was collated relating to animals culled which include information on population dynamics and animal health. Samples from some animals were also tested for zoonotic diseases which are potentially transmissible to both humans and livestock.

Information gathered has been used to establish monitoring sites to measure population recovery and has been used also in the development of ongoing feral animal control in landscape management plans.

The control techniques were highly effective with over 23 000 feral pigs culled. The paper to be presented identifies learnings and efficiencies appropriate to future controls and discusses the establishment of monitoring sites in these remote locations. It also discusses the methodology used in the development of landholder centred landscape management plans which offer the best practical technique for ongoing control.

Biography

Originally from Melbourne, Leigh completed a Bachelor of Science in Ecology and Sustainability followed by Honours in Applied Biology at Victoria University. Moving to Longreach in 2011 he has been working with the Desert Channels Group as the NRM Facilitator for the past two years. Leigh has been involved in projects such as the protection of mound springs from the impacts of feral pigs (*Sus scrofa*), surface water monitoring, and invasive cacti control. His primary focus however, has been on the role out of multistage control programs to reduce the impacts of feral pigs in Queensland's Barcoo, Cooper, Diamantina and Georgina catchments.



Evaluation Strategic Mapping for Woody Weed Infestations and their control using unmanned aerial vehicles (UAVs) for weed control in the Lake Eyre Basin

Mr Simon Wiggins - Desert Channels Queensland

(Presentation given via teleconference)

Presentation Summary

Desert Channels Queensland and PBE Pty Ltd have been evaluating the cost effectiveness and success of weed control techniques at a range of sites with varying soil types in Western Queensland. This has included the use of unmanned aerial vehicles (UAV) for chemical application.

Initial results from spray and granular chemical application using the Yamaha RMAX, a UAV have been recorded on the two properties with specific trial sites. The two sites were chosen due to their relative geographic closeness, location on the headwaters of major watercourses, heavy infestations of a range of weed species at various growth stages, known history of weed control and variability in soil type and slope. The UAV, a visual line of sight aircraft, was selected due to payload, endurance and manoeuvrability considerations and the ability to disperse both spray and granular chemicals.

The initial focus of the UAV was on control of prickly acacia (*Acacia nilotica*), which at both sites has formed dense stands of mature trees with colonization occurring in paddocks and along adjacent watercourses. This evaluation was not developed as a chemical evaluation trial but has focused on evaluating control methodologies using the UAV and the relative cost/benefits, given its use as a novel form of control.

This paper identifies learning's, successes and constraints of the UAV control methodology and highlights the potential role for further application at both the localized and landscape scale.

Biography

Simon Wiggins has a double degree in Natural Resource Management (Hons) and Engineering (Masters) and has worked for industry, Non-Government organisations and Government for the last 17 years with a

specialisation in Hydrology and Hydro-geology. Combined with extensive work in Africa and Asia, Simon has worked in the Lake Eyre Basin on Water Resource, Land Management and Vegetation Management policy development and implementation.

Simon is a member of the International Association of Hydro-geologists and a commercial pilot and for both fixed wing and remotely piloted aircraft and has lived within the Lake Eyre Basin for 15 years. With Desert Channels Queensland, Simon's role has been to deliver existing projects and implement new initiatives. One of these new initiatives is the strategic mapping of prickly acacia, and is being combined with a specialisation in the aerial application of chemicals using unmanned aircraft to highly sensitive and challenging sites.



Priority threat management of invasive species in the Lake Eyre Basin

Dr Jennifer Firm - CSIRO Ecosystem Sciences

Presentation Summary

Invasive species present a significant threat to the unique and threatened native biodiversity of the Lake Eyre Basin, as identified in the Lake Eyre Basin Rivers Assessment Plan. According to the EPBC Act 1999, 35 species of plants and animals are considered endangered in the LEB, and a major threat to these often endemic species are exotic invasive species. More than 260 invasive species have been identified across the LEB (e.g. camels, cane toads, prickly acacia, redclaw), but to date no systematic decision analysis has been undertaken to prioritise which invasive species management strategies are likely to achieve the greatest benefits for native biodiversity per unit cost. With insufficient resources to manage all invasive species over the extensive range of the LEB, prioritisation is essential. Investing in invasive species management actions without knowledge of which are the most ecologically cost-effective is unlikely to result in the best outcomes possible for biodiversity. Prioritising the threat management of invasive species by their ecological cost-effectiveness involves assessing the benefit of applying each management strategy to the assets we wish to protect, as well as the costs and feasibility of these management strategies across the basin.

In this project, we apply a threat management prioritization strategy (recently developed by Carwardine et al 2011, 2012) to identify the most ecologically cost-effective invasive species management actions, i.e. those that are likely to maximize biodiversity benefits per unit cost over the next 50 years. The main aim of this project is to provide a key layer of information to help guide future investment in management activities for invasive species in the LEB. Our approach involved eliciting the knowledge of experts to assess a range of invasive species management strategies in terms of cost, feasibility and biodiversity benefit, which is the estimated improvement in persistence probabilities of threatened native biodiversity.

Biography

Dr Jennifer Firm is a plant ecologist who specialises in using ecological theory to solve practical problems. Dr Firm's research to date has focused on the drivers of plant species diversity in communities to understand invasion of exotic species, quantifying the complex role between biodiversity and ecosystem function in forests and grasslands, and developing ecological models to help land managers make more informed decisions. She uses a diverse set of methods to conduct my research including empirical and observational studies, and mathematical and statistical modelling.

Session 3 Speakers Panel – Questions and Discussion

Regarding the list of plant species, does the program list the outcomes of no action on buffel grass?

Yes, the potential dominance and response if no action is taken are included in the reports. In the assessment of buffel grass we concentrated in conservation areas and not areas already dominated by buffel.

We talk about the LEB process and the groups that used to feed into the Community Advisory Committee. How do we get more community involvement when funding is low?

There are things we need to do. It was good to see the regional bodies showcase their outcomes and the work they do. They're very good at engaging on the regional scale although not funded to. We need to look at what we're doing and how to appropriately fund it. It will be really hard to continue what we are already doing in the future in an environment of changing government priorities. It is unclear if this will be possible to continue in the LEB as it does not have the same clout as the MDB.

Did the estimates of the cost of treating weeds in 'Priority threat management of invasive plant species in the Lake Eyre Basin' study consider the savings the UAV (unmanned aerial vehicle) approach allows for?

We were not aware of that and it could be looked at in the future.

We've got \$700 000 to spend each year for the next 5 years on trialling the UAVs. We're looking at 50 properties, targeting prickly acacia hot spots. Prickly acacia is a very invasive weed that costs a lot to manage, \$700 000 can only go so far so we are being very strategic and targeting the dense hot spots. It is at a stage where it needs collaboration with landholders and government to get it done.

It is common to hear that LEB and central Australia are intact landscapes. It appears that the political nature of weed listing was present in the room at the workshop. Were there discussions on the other weeds that we consider are important?

The identification of key species was left to the stakeholders at the workshop to nominate. If we had more from the Northern Territory in attendance there may have been a different species list. There were discussions across this issue in the morning session, however, it was important to look at what were the priority weeds across the whole LEB.

With weeds there is a political aspect. If you talk to weeds departments they focus on the weeds they're allowed to work on.

Don't prickly acacia seeds sit in the sand and will germinate following the next rain?

We advertise the funding each year. The farmer will focus on the easiest problem to tackle. We are using long term weed chemicals that remain in the soil to kill root stock. The seeds can wait for over 12 years in the black soil. It takes 12 days for a prickly acacia seed to go through a cow's gut, with a 60% survival rate. The acacia is probably the second worst weed following cactus in the LEB. The population over 2009, 2010 and 2011 has exploded.

What are the opportunities to get corporate funding assistance?

In the mid-1990s we had good collaboration with companies, in-kind and financial support. Things stalled when the regional body framework was implemented. People changed focus to gaining funding and the regional collaboration fell away. This is changing as funding is not reliable. Regional bodies are moving to fee for service, co-funding and donations for works. People are seeking funding, however, it is highly competitive in the philanthropic and commercial space. There is an ongoing reliance on government to supply core functions.

Large amount of funding is going to wild dogs in Queensland, if only there were graphic photos of prickly acacia attacking sheep, perhaps we would have further investment.

The lack of horrific imagery does make things difficult to attract funding to a non-sexy problem.

There is a problem with showing an impact from weeds. There is a reduction in government spending directly on weeds research. They have immense impacts on the environment and agriculture. How do we get that message across?



Figure 2: Mr Don Rowlands asking a question during a panel discussion session. Photo by Matt Turner

Are pig carcasses removed once shot to prevent water pollution?

The guidelines we have in place require us to scare pigs away from water ways prior to shooting. Animals are herded away from water courses and onto the clay pans or flats by helicopters before being shot.

There is extensive regulation associated with employing aerial shooting. It is a difficult task and it is important to follow the procedures in practice. Also, the farmers wouldn't allow us on the property if animals were being left to pollute water sources.

I asked this because we have seen a shot pig in a mound spring and the problems that created, so I was concerned with thousands being shot.

There is a difference in the ability to gain funding to kill things compared to protecting a cute thing. We should be prepared for international review on pest management practices in Australia.

With funding we often forget the threat to livestock in pest management, there is not enough weight on pest management as a vector for problems.

There is a lack of funding for biosecurity in northern Australia. The funding is not currently there to address these risks and address our vulnerability in that area. There are multiple benefits that could be gained from that.

If you extrapolate the problems caused through the live beef export to the entire livestock industry the implications are huge.

The biosecurity budget has been cut at the federal level. We should be standing up for that, even the great work the Indigenous rangers are doing to manage biosecurity, the amount of funding is a pittance. The stop-start structure of federal funding causes difficulties for the continuation of programs and environmental benefits. Often there is more work required to manage the funding agreement than the actual service delivery.

Should pastoralists contribute a percentage of their profits to the management of weeds? The bullockies are in fact feral animals too.

Focus Session 1- Thresholds of Potential Concern (TPC)

Utilising the Strategic Adaptive Management (SAM) process, workshop participants trialled a first step in identifying Thresholds of Potential Concern (TPC). TPCs are essentially early warning signs for land managers that a threat may be having a negative impact on the LEB – see Appendix 2 for further details. The session provided an opportunity for participants to discuss their level of concern for priority issues/threats across the LEB which included: weeds/pests; altered hydrological regimes due to excessive water extraction (can be from irrigation; CSG or other examples); total grazing pressure – stock, introduced and native herbivores; and tourism. The session was based on scenarios/issues that conference participants were familiar with and, therefore, comfortable with making a contribution. Conference attendees were split into small groups which were facilitated by members of the Conference Organising Committee and volunteers.

For this session the main focus was on:-

- What is changing?
- How do you know this?
- How can this change be measured?

The session provided a snapshot of the specific issues and associated level of concern from a section of the LEB community. It also provided important feedback on the effectiveness of the workshop and recommendations for future applications. The workshop methodology and full participant responses are provided in Appendix 2.



Figure 3: View from the Pichi Richi train on route to the conference dinner at Pichi Richi Park
Photo by Matt Turner

After Dinner Speaker



Mr Rex Ellis - Lifelong outback safari operator

Biography

Rex Ellis began his outback safari operations in 1965, following his early career as a jackeroo and overseer on South Australian and Western Australian stations. Rex is a keen ornithologist and naturalist, and in his 45 years as an outback guide he has specialised in nature orientated safaris travelling by camel, four-wheel drive vehicle, and boats on Australia's inland river systems.

As Australia's longest operating safari guide and an early pioneer in the industry, there are many firsts to Rex's credit. These include the first commercial crossings of the Simpson Desert by vehicles and camels, and, during the inland floods of 1974, leading a boat expedition down the Diamantina River and making the only full crossing of Kati Thanda-Lake Eyre by boat (North to South). Rex owned the Birdsville Pub for six years, and has also run safari operations in the Nullarbor, Great Victoria Desert, Great Australian Bight, the Gibson and Great Sandy Deserts and the Kimberley Region. He has written eight books, and lives on the River Murray between Morgan and Waikerie.



Figure 4: Conference attendees exiting the Pichi Richi train for the conference dinner at Pichi Richi Park.
Photo by Matt Turner