2010 Biennial Conference Speakers and Presentations

Monday 13th September

LEB Retrospective – vignettes

- Professor Geoffrey Lawrence - Head, School of Social Science, University of Queensland
- Mr Alun Hoggett - Production Manager, Desert Channels Digital, Longreach QLD
- Ms Sharon Oldfield - Member, LEB Community Advisory Committee, Cowarie Station, SA
- Mr Angus Emmott - Chair, LEB Community Advisory Committee, Noonbah Station, QLD
- Dr Kate Andrews - Chair, Natural Resource Management Board NT

Keynote address

Professor Ian Lowe - Professor of Science, Technology and Society and former Head of the School of Science, Griffith University

'How can the Lake Eyre Basin survive the 21st Century?'

The Lake Eyre Basin is being affected by several long-term trends. Climate change has direct impacts on availability and use of water. The need for low-carbon energy supply technologies will drive new energy developments. Social and economic trends will continue to alter land use patterns. Water will be recognised as an ecological resource rather than simply a factor of economic production. The need for integrated approaches will continue to challenge current 'horse-and-buggy' governance systems. Rather than relying on expert predictions of the Basin's future, we should be developing our preferred future and strategies to achieve it.

Tuesday 14th September

Community Theme

Dr Mark Stafford Smith - Science Director, CSIRO Climate Adaptation Flagship, CSIRO Sustainable Ecosystems, Canberra

'Choosing a future in the desert'

Like the rest of inland Australia, the Lake Eyre Basin is subject to the drivers of the so-called 'desert syndrome' – variability, sparse population, remoteness, social uncertainty and others. To build resilience the community must come to terms with these factors, that substantially determine how the region functions in an ecological, social and economic way. The forces of social and environmental change now affecting Australia will interact with these drivers, as a greater proportion of people end up living in our cities, our climate and water supplies

generally become more variable, and centralisation of services drive more social uncertainty. In the absence of thoughtful action, these changes will marginalise outback Australia ever further, driving significant social change over the coming decades as more activities become fly-in-fly-out and governance becomes more remote from the region. However, all of these factors can be addressed, and the Lake Eyre Basin community is in a good position to so do. Key anchors for the future include (i) a focus on livelihoods based on natural and cultural (as well as mineral) resources that are location-specific – that is, they cannot be undertaken elsewhere; (ii) changes to governance structures and institutions that enable local needs to continue to be prioritised efficiently; and (iii) an on-going effort to create social links into more populated regions so that outback concerns are understood and opportunities capitalised upon. My talk will explore the desert drivers, how they may be addressed and what implications this could have for the Basin community.

Environment Theme

Professor Richard Kingsford - Professor of Environmental Science, and Director, Australian Wetlands and Rivers Centre School of Biological, Earth and Environmental Sciences, University of New South Wales

'The Lake Eyre Basin environment – chasing the holy grail of sustainability'

People and environments are intertwined and interdependent. Recognising this, there is an increasing focus on understanding the socio-ecological dimensions of the world's ecosystems. Natural resource decisions have fundamentally changed landscapes across the country. IN particular, development of land and water resources inevitably results in significant ecological consequences. Unlike many other parts of the world and Australia, the Lake Eyre Basin ecosystems are reasonably intact but burgeoning global human populations and food security will inevitably place pressure on our inland landscapes. There are five major threatening processes affecting biodiversity around the world: habitat loss and degradation, over-harvesting, pollution, invasive species and climate change. It is worth examining the current state of biodiversity across the Lake Eyre Basin and the potential long-term threats to the biodiversity from the five major threatening processes. We could significantly increase habitat loss and degradation through land and water development, effected by changed future policies. My talk will speculate on different future scenarios that could eventuate, including a sustainable future where all biodiversity has self sustaining populations minimally degraded by human interactions. Key institutional frameworks and processes and the people engaged in the management of the Lake Eyre Basin will be fundamental to this sustainable future.

Professor Amanda Lynch - Professor Amanda Lynch, School of Geography and Environmental Science, Faculty of Arts, Monash University, VIC

'Climate surprises in the Lake Eyre Basin'

Lake Eyre and much of its catchment is located in the driest part of Australia, and spans the southern extreme of the southern monsoon to the northern extreme of the mid-latitude westerlies. As result, the flooding of the lake and its feeder system can result from a range of different situations. Further, high rainfall in the catchment has a close association with the phase of the El Niño-Southern Oscillation, with increased rainfall during La Niña or cold phases. All of these systems are likely to react differently to changes in the large scale climate, and to interact with each other. This represents a complex challenge to understand practices of science and decision making that will provide insights for those seeking to be resilient in the face of change. This talk will consider expectations for future climate and possible surprises in the region, and the role that cooperative and integrative approaches to governance might play.

Industry Theme

Dr Gavin Mudd (mining and petroleum) - Dr Gavin Mudd, Lecturer, Department of Civil Engineering, Monash University, VIC

'The Lake Eyre Basin and Mining: Current Environmental Status and Future Sustainability Issues'

The Lake Eyre Basin covers a large portion of central Australia from western Queensland to north-eastern South Australia. The region hosts some of Australia's largest mines and is highly prospective for new mining projects, as well as potential for major coal and energy-related projects. In early 2009 there were significant incidents at mines in western Queensland which led to major environmental impacts on the headwaters of some LEB rivers. This presentation will cover existing operations, their environmental status, and proposed and possible future projects; leading to a synthesized view of the opportunities and threats this presents for the LEB.

Mr Joc Schmiechen (tourism) - Member, LEB Community Advisory Committee, Senior Consultant, Rural Solutions SA, Adelaide

'Lake Eyre Basin Tourism – Now and into the Future'

Tourism is one of the major land use activities in the Basin alongside more traditional industries, such as pastoralism, mining and conservation. It is one of the major growth areas. The iconic outback destinations like the Simpson Desert, Birdsville, Strzelecki and Oodnadatta tracks, desert rivers such as the Cooper, Diamantina and Warburton, along with Lake Eyre are increasingly in the sights of a constant flow of ever more expensive four wheel drive rigs and off road trailers. Along with the well established tourism precincts of Central Australia, the Flinders Ranges and SW Queensland, up to two million visitors annually flow into and through the Basin especially in peak rain and flood events such as in 2009. Tourism is the least structured and managed land use in the Basin and although it can bring many benefits, it also has considerable impacts that need to be understood and taken into broader land and water conservation strategies. The natural, historical and cultural heritage of the Basin is a major resource and involves stakeholders from well outside of the Basin who have passionate interest in how it is developed along with the locals. Future trends show no reduction in interest and desire to access many of the jewels of the Basin, presenting significant management challenges that need to be addressed in a spirit of cross jurisdictional cooperation.

Technology Theme

Dr Peter Scarth (remote sensing) - Principal Scientist, Joint Remote Sensing Research Program, Department of Environment and Resource Management, Brisbane;Visiting Fellow, Centre for Remote Sensing and Spatial Information Science, School of Geography, Planning and Architecture, University of Queensland

As a remote, unregulated, dryland river system which is subject to high climatic variability, the Lake Eyre Basin requires innovative solutions to map and monitor condition over time. Graziers, regional bodies, industry and governments require condition data at appropriate spatial and temporal scales for sustainable economic and environmental management, to monitor changes in land condition, and fulfil reporting obligations. However, the interaction between climate and management in these environments complicates the interpretation of condition and trend, problems that cannot be solved through simple aggregation of site data since monitoring information is required at management-relevant scales. These issues of

inadequate spatial coverage and temporal variability can be overcome by the use of time-series remote sensing products which provide quantitative data to consistently identify temporal changes in environmental processes at multiple spatial scales.

This presentation will briefly review the remote sensing process and will outline the current and planned operational satellite sensor systems. Recent advances in broad scale remote sensing, including the use of moderate and coarse spatial resolution satellites to map and monitor water bodies and hydrology, ground and vegetation cover and phenology, burnt areas, weed invasion and vegetation structure will be showcased. Potential future operational applications based on planned Earth Observation missions including soil moisture, roughness and salinity will be documented. We will conclude by discussing the research gaps, data and infrastructure requirements and operational systems required to deliver this information in a timely and useful manner.

Professor Margaret Alston (communications) - Head of Department and Professor of Social Work; Director, Gender, Leadership and Social Sustainability (GLASS) Research Unit, Monash University VIC

'Blue-sky dreaming: Lake Eyre Basin leads the way in remote area communications'

This paper presents a new slant on remote areas – one that turns disadvantage into advantage and one that presents the Lake Eyre Basin as a leader in remote area technology. For too long, people in remote areas have struggled with their invisibility in the national imagination despite their understanding of the significant beauty and majesty of their landscapes and communities. This paper draws out the challenges facing remote communities and the possibilities telecommunications provide to address these challenges. It then outlines the opportunities for remote communities to take the lead in developing leading edge communications systems that overcome isolation and improve quality of life. The Lake Eyre Basin has the option of becoming an international leader in remote area telecommunications. The paper concludes with an outline of the policy implications and the need for advocacy to implement this blue-sky dreaming.