involved in caring for it. Wetlands that are on our Country are our supermarkets and our learning centres.

As first people of Australia, Aboriginal people have inherent rights that were never traded or given away. These inherent rights are recognised in a wide range of International, Federal, State and Territory Government instruments that afford Aboriginal people ownership and custodial interests in Country and recognises including their unique responsibility to care for their communities, cultural landscapes, biodiversity and places of particular cultural significance.

Ongoing access to Country and its resources is essential so Aboriginal people can continue cultural practices, maintain links with the land and care for Country. Aboriginal communities can retain and obtain valuable knowledge and skills through being proactively involved in environmental management and conservation. People can benefit from Aboriginal people’s knowledge, relationships and cultural and environmental practices and protocols that are alive and vibrant in the Aboriginal communities.

The unique position of Aboriginal people in our culture and history must be acknowledged and recognised, there needs to be a strong committed to the genuine recognition of the truth of Australia’s history, the disadvantage that Aboriginal people continue to face today must be addressed by engaging Aboriginal communities in economic, environmental and conservation projects.

A key component of this process is to ensure that Aboriginal communities and individuals have access to economic, social, environmental and conservation opportunities. If genuine access to relevant information is given to Aboriginal community and adequate explanation of the likely impacts (positive or negative) of change upon Aboriginal people is explained, then the likelihood of successful and ongoing engagement with Aboriginal communities is greatly increased.

Meaningful engagement with Aboriginal people requires innovation and particularly patience. Organising and facilitating meetings for key proponents and Indigenous people and communities don’t come without some distinct challenges, but through maintaining a very strong focus and articulating policies and processes that are beneficial for all parties has been a foundation of success. Ensuring positive feedback and engaging in a transparent, accountable and culturally appropriate manner is fundamental to laying the platform for strong partnerships with Indigenous people and their communities.

Semi-automated delineation of reticulate channel networks in low-gradient floodplain wetlands using LiDAR-derived DEMs

William Farebrother and Timothy J. Ralph

Department of Environmental Sciences, Macquarie University, NSW 2109, Australia. Email will.farebrother@mq.edu.au; tim.ralph@mq.edu.au

The study of catchment drainage networks and river channel delineation using Digital Elevation Models (DEM) has been the focus of many studies, both domestically and internationally. However, little attention has been given to the mapping of complex reticulate channel networks that characterise many low-gradient floodplain wetlands in the drylands of Australia, and elsewhere around the world. This ongoing pilot study has identified and mapped the drainage network present in the Macquarie Marshes, New South Wales, to better understand the channel hierarchy, patterns of flow dispersal, channel morphology and connectivity within this system. Several different tools
commonly used to derive drainage networks using DEMs in Geographical Information System (GIS) software packages, such as ArcGIS, GRASS GIS and SAGA GIS, were applied to a high-resolution DEM of the Macquarie Marshes derived from Light Detection and Ranging (LiDAR) data obtained by the NSW Office of Environment and Heritage. The outputs were compared to determine which method offered the most accurate channel network and provided the most efficient technique for further morphometric and pattern analyses. It was found that methods that did not require DEM-filling prior to flow direction and accumulation modelling and that took multiple flow directions into account offered the most accurate channel networks in this system and were more computationally efficient.

Sensitivity and resilience of wetlands in drylands

C. Max Finlayson¹,²

¹Institute for Land, Water and Society, Charles Sturt University, Albury, NSW 2640, Australia. Email
m.finlayson@csu.edu.au

The concepts of sensitivity and resilience of ecosystems have been much discussed and at times without a common understanding or agreement about what was meant. I see this as largely a definitional issue and not one that should delay our discussions on changes in wetlands in drylands. With this in mind I turn to what some issues in these highly variable wetlands and look at change within a contemporary timescale and how some of the species respond, and how they may respond under further pressures from changes in our land and water management and climate. This in effect introduces a wide range of drivers that have and continue to impact on the ecological processes that shape the character of these wetlands. The questions then become ones of how vulnerable are these wetlands to such pressures, and how well can we interpret such change? In other words, how much do we know about them? We tend to have more information on some of the vertebrate populations that inhabit them, for at least some of their life cycles, but possibly not enough information about how those that are most prevalent in the dry periods shape the conditions of the ecosystems. Hence, how do we contend with the dryness when looking at these wetlands? This extends further to how do the plants that characterise the wet phase survive the dry, or otherwise establish when it is wet, and does the loss of dry phase vegetation have an effect? Seedbank analyses can tell us something about this. Then we have the swing between saline to fresh conditions, and the microphytes that may well be the forgotten but critical part of the system. Also, the organisms that thrive in the sediments, under some conditions. We can argue whether the systems are sensitive and also about where the resilience comes from, all while keeping in mind that these are highly variable in space and (short) time and by size. Can we therefore conceptualise that in general models or do we need to be more specific, or treat them more individualistically?

A Wayilwan perspective on enhanced management of wetlands in drylands

Danielle Flakelar

NSW National Parks and Wildlife Service and NSW Office of Environment and Heritage, Dubbo, NSW 2830. Email danielle.flakelar@environment.nsw.gov.au

How does sharing degrees of power with landless descendants, also known as Aboriginal Traditional Owners, better serve the wetlands in drylands? Wayilwan people, using the ‘Empowerment model’, are taking their place at the environment water planning and management table to voice their