Aboriginal environmental outcomes in the Macquarie Marshes

Independent, culturally authoritative and strategic input from Aboriginal people can improve environmental watering decisions. Aboriginal environmental outcomes describe the benefits that can be derived from environmental watering for Aboriginal people. Managing environmental water in ways that provide complementary outcomes encompassing Aboriginal people’s objectives for healthier rivers and wetlands will improve wellbeing and cultural resilience. It also recognises that Aboriginal peoples’ knowledge of Country can contribute to better water management.

Aboriginal environmental outcomes are not cultural flows or cultural water, nor a substitute for them. Cultural flows are water entitlements Aboriginal Nations own and which have potential economic returns. Aboriginal environmental outcomes arise from healthier rivers and wetlands, and include tangible physical benefits such as improved fish populations and increased bird breeding. Environmental water can provide some complementary cultural benefits, such as connecting with Country by enabling certain ceremonies to take place and fulfilling some cultural responsibilities but it is not able to provide all of the outcomes that cultural flows could provide. Figure 1 below shows the relationships between these two concepts.

Figure 1: The relationship between outcomes for Aboriginal people from cultural water and environmental water
The 2016–17 water year

The Murray Lower Darling Rivers Indigenous Nations (MLDRIN) and the Northern Basin Aboriginal Nations (NBAN) are working with the MDBA on ways to integrate Aboriginal people’s perspectives into long-term and annual environmental water planning. Initially, a series of case studies is being prepared, describing where Aboriginal environmental outcomes have occurred locally from past environmental watering events. Over time this will be expanded to the Basin scale, drawing on knowledge gained through projects like Use and Occupancy Mapping and the Aboriginal Waterways Assessment. The objective is for MLDRIN and NBAN to be able to provide long-term strategic advice on Aboriginal environmental outcomes at the Basin scale.

Macquarie Marshes 2015–16 environmental watering

The following case study was written with Uncle Neville Merritt, Raymond Thompson and Danielle Carney Flakelar of the Wayilwan Nation. Uncle Neville Merritt and Raymond Thompson are the NBAN Wayilwan delegates. We would like to acknowledge that the Macquarie Marshes are also a significant site for a number of other Aboriginal Nations, including the Gomeroi/Kamilaroi, Ngemba, Ngiyampaa and Wiradjuri Nations. This case study does not necessarily represent their perspectives on environmental watering in this area.

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Significance of the site

The Macquarie Marshes are one of the largest remaining semi-permanent wetland systems in inland Australia and support some of the country’s largest waterbird breeding events. They provide essential habitat for hundreds of species of plants and animals and are an important refuge for wildlife during dry times.

Fifty years of water regulation and extraction have reduced the size of the Macquarie Marshes by about half, and their condition declined significantly during the millennium drought. As a result, populations of native fish species like yellow belly (golden perch) and silver perch have declined. There has also been a significant decline in waterbird types, numbers and breeding success.

The Wayilwan Creation story of the Macquarie Marshes and the Macquarie, Bogan, Castlereagh and Barwon–Darling rivers highlights the importance of connectivity of the river system. In this story a giant tree on the Barwon–Darling River was formed by a range of plants including river red gum, coolibah and black box. It looked over the red plains where the Wayilwan people and animals lived.

Whenever they left the safety of the three main peaks known as Mt Foster, Mt Harris and Little Mount, which had natural waterholes and waterways, they were attacked by a giant wedge-tailed eagle that lived in the tree. His name was Mulliyan. The people and animals decided that to protect themselves while out hunting and gathering they would need to get rid of Mulliyan and the giant tree. After many attempts to climb the tree by men and the sand goanna eventually the water rat got to the top and put a fire stick into the eagle’s nest, making it catch fire. As the tree burned down it crashed to the south, where it created the imprint of the Macquarie Marshes and the Macquarie, Bogan and Castlereagh rivers.

This Creation story, and others like it, determine many of the environmental indicators for river connectivity and plant and animal health that the Wayilwan community want to see improve with environmental
watering. When the animals and plants from the Creation story disappear due to a lack of water it indicates that the Country is sick.

Caring for and managing Country is central to the identity of Wayilwan and other Aboriginal people. The knowledge of these obligations and responsibilities was passed on from the creator to their ancestors according to customary lore. Connecting people to Country today can occur through a range of activities including family camps, camps for conducting cultural practices, walking through the Macquarie Marshes and fishing. Activities like these also help people build their knowledge and skills, and teach future generations about Country, their connections, and the cultural purpose of caring for and managing land and water.

For Wayilwan people today managing Country is relatively new because Aboriginal people were removed from Country and relocated to towns, cities or lands far from their ancestral lands. This has meant that they have had to reconnect to Country, or adapt and change their expectations about land and water practices due to the way land and water usage changed for town water supply, agriculture and mining.

Participating in managing water for the environment
In the 1980s Wayilwan people's water management interests were represented by Josephine Carney until her death in 1993. Since 2007 Wayilwan people have become involved in environmental water management in the Macquarie Marshes. This has included field trips to the Macquarie Valley floodplain area focussed on building knowledge and capacity around the current water management regimes of the Macquarie Valley, the impacts of infrastructure, water diversions and land clearing, and to show how infrastructure like fishways work.

While the focus of water management is largely on the Macquarie River and marshes, the Wayilwan people's environmental water priorities stretch outside of the banks of the Macquarie River. Many of the plants and animals from the Creation story of the marshes live on the floodplain. The Wayilwan community would like to see holistic management of the floodplain and greater connectivity in the whole system, in addition to the work being undertaken in the marshes. The Wayilwan people advocate for environmental water to be shared and distributed throughout the floodplain along all waterways to sustain a robust and resilient refugia for both native aquatic and terrestrial plants and animals.

When Wayilwan people have been invited to collaborate on delivering water for the environment their focus has been on using this water for cultural purposes. In May 2012, the Macquarie Marshes Environmental Flow Reference Group received a request from Danielle Flakelar on behalf of the Wayilwan people for an environmental flow along the Ginghett Creek to reach an area of the Macquarie Marshes Nature Reserve where a women's camp would be held for four days in September 2012. The watering event was timed to promote reed growth, and the camp was held six weeks later. The flow release provided water to sedge and reed beds which allowed the women access
to harvest the sedge for cultural practices such as basket weaving and for the telling of creation stories. This also gave the older women the opportunity to teach the younger women how to weave baskets using the reeds. This is an example of where environmental outcomes like reed growth can provide some complementary cultural benefits like the telling of creation stories, as shown in Figure 1. All of these activities are important to rebuild and pass on knowledge that was lost due to dispossession. Healthy marshes also leave a legacy for future generations through having a healthy and biodiverse landscape.

Little Bora Channel in the Macquarie Marshes (Kyra Evanochko, November 2015)

Aboriginal environmental outcomes — 2015 water delivery
Between August and October 2015 around 55 GL of environmental water was delivered to the northern and southern Macquarie Marshes to maintain the resilience and avoid the loss of permanent and semi-permanent wetlands in core refuge areas.

This watering aligned with the 2015–16 Basin annual environmental watering priority to: Maintain semi-permanent wetland vegetation in core refuge areas in the Macquarie Marshes. This priority focused on maintaining semi-permanent wetland vegetation as the forecast conditions for the water year were dry, leading to low environmental water allocations in the Macquarie catchment. The water delivery targeted reed beds and inner floodplain river red gums in the northern marshes, and provided refuge habitat for waterbirds, fish and frogs.

The enduring health of native vegetation in the marshes is one of main concerns for the Wayilwan community, particularly plants that have cultural values and plants associated with the Creation story. Every native plant has a cultural purpose, for example for use as food, medicine, or for cultural practices like basket weaving. Many native trees also have cultural heritage value like canoe and scar trees, or can help protect the cultural heritage of certain sites. Trees that were inundated by the 2015 environmental flow in the northern marshes river red gum woodlands showed improved condition. Monitoring after the flow also showed that floodplain vegetation was considered to be in good condition.

Maintaining healthy waterbird populations is important to the Wayilwan community as they are connected to Wayilwan cultural identity through kinship lore. Over 40 species of waterbirds used the habitat that the 2015 watering event provided. They included black swans, glossy ibis, straw-necked ibis, black-winged stilts, sharp-tailed sandpiper, Latham’s snipe and several duck species. Australian painted snipe and Australasian bitterns, both nationally threatened birds, were also observed.

The wetlands that were inundated provided important habitat for non-burrowing marsh frog species to breed and tadpoles to develop, as well as food sources. The timing and duration of the watering event allowed eastern sign-bearing frogs and spotted marsh frogs to breed, as they are active in colder temperatures. The second environmental flow pulse in October
maintained water levels at several sites, giving frogs time to transform from tadpoles. While the duration of the watering event was not long enough to allow spring active frog species like the barking marsh frog and broad-palmed rocket frog to breed, they may have benefited from the creation of foraging habitat over spring.

Ongoing concerns
In addition to land clearing reducing the size of the Macquarie Marshes, the change in size and timing of flows is diminishing water quality and altering the area’s structure, with vegetation becoming more similar across the marshes. Current water use focuses on the main channel of the river. The old waterways have also been changed by human intervention such as building weirs and channels or through high levels of silt caused by land clearing. These interventions have changed the original flow pathways of the old Macquarie River.

Without regular water and occasional flooding the type of vegetation in particular areas changes and the natural and cultural values of the site are diminished. This structural change detrimentally impacts cultural sites and artefacts, camps and native plants that provided the social and cultural context of the site. For example, areas with more saline water were designated as birthing places. Today these waterholes have become acidic as the water is held for too long and becomes stagnant. When the water quality in these areas changes because of the changed flow regime these sites can no longer be used for cultural purposes. Earth mounds are also affected. When water can no longer reach them the structure of the surrounding vegetation can change, resulting in erosion of the mounds. This affects the Wayilwan people’s ability to share the cultural knowledge about special plants, animals and practices that have been relevant for thousands of years.

Several natural resource management issues that are outside the scope of environmental water delivery are also important to the Wayilwan community. For example, complementary actions like weed and feral animal control would benefit native plants and animals and bring about better Aboriginal environmental outcomes. The Wayilwan community also want people to be able to access places of cultural significance for social, cultural and economic purposes and practices.