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MURRAY–DARLING BASIN AUTHORITY

MURRAY LOWER DARLING RIVERS IndigenousNations

Basin environmental watering priorities June 2017

Aboriginal environmental outcomes in Gunbower Forest

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.

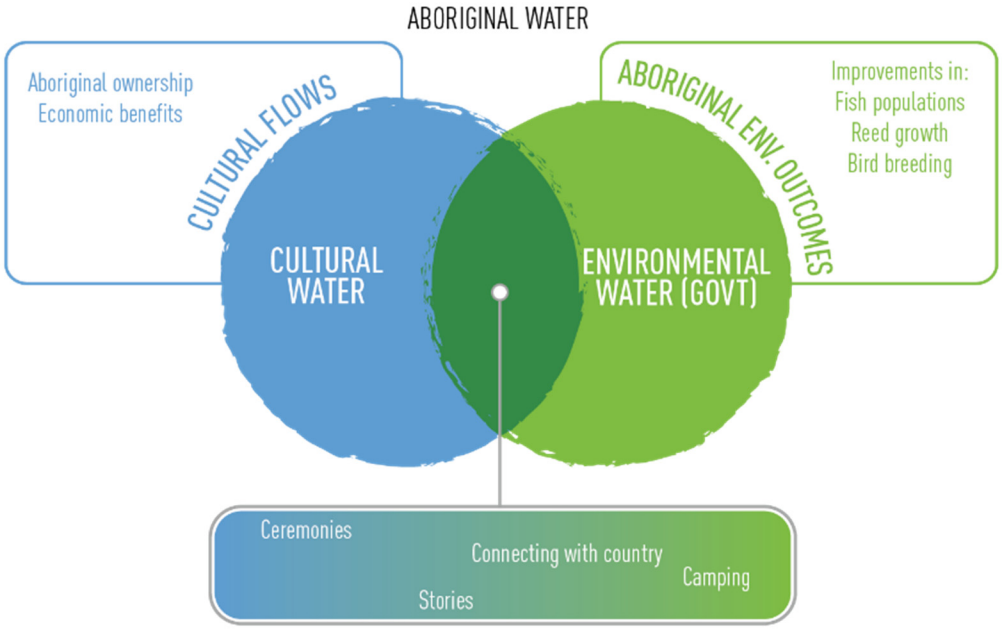

Figure 1: The relationship between outcomes for Aboriginal people from cultural water and environmental water

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.

Gunbower Forest 2014–15 environmental watering

This case study was written with Uncle Neville Whyman and Sharnie Hamilton of the Barapa Barapa Nation, with input from the Barapa Water for Country Project Steering Committee. Uncle Neville Whyman and Sharnie Hamilton are the MLDRIN Barapa Barapa delegates. We would like to acknowledge that parts of Gunbower Forest are also significant to the Yorta Yorta Nation, however as this case study is focused on the Barapa Barapa portion of Gunbower Forest it only represents their perspectives on environmental watering.

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Significance of the site

Gunbower Forest is an internationally recognised Ramsar wetland along the River Murray that stretches from Torrumbarry to Koondrook. Gunbower Forest is the heartland of Barapa Barapa Country. Oral history and archaeological evidence, like earthen mounds, artefact scatters, scar trees and middens, point to ongoing occupation of the area over many thousands of years. The Barapa Barapa people continue to use Gunbower Forest to this day.

Being able to connect to Country is essential to the Barapa Barapa people's wellbeing and culture. This connection is fostered through cultural activities like camping, community gatherings, ceremonies, recreational activities like swimming and fishing, and research and monitoring of natural and cultural values. Delivering environmental water provides conditions which can support these activities and facilitate cultural knowledge being passed between generations. Maintaining diverse and healthy populations of native plants and animals is considered a cultural responsibility and is very important to Traditional Owners.

River regulation and water extraction from the River Murray and Gunbower Creek have reduced the frequency, duration and size of floods in Gunbower Forest. The change in the timing and volume of water the forest receives has affected the extent and condition of instream and floodplain habitat, and the health of animal communities including native fish populations, turtles, yabbies and shrimps, and native birds like brolgas and spoonbills.

Participating in managing water for the environment

The Barapa Water for Country project is a partnership project between the North Central Catchment Management Authority (NCCMA) and Barapa Barapa Traditional Owners that started in 2014. The project's focus is for Barapa Cultural Team members to identify, map and record the cultural values of the Lower Gunbower Forest to improve the management of environmental water. The TLM Indigenous Partnerships

program provides the project with funding for monitoring activities. Further information on the Barapa Water for Country project can be found on the NCCMA website (http://www.nccma.vic.gov.au/our-partners#node-95).

The Barapa Barapa people would like to see water used to maintain the plants and animals to which their ancestors had cultural affiliations and responsibilities. Barapa Water for Country Project participants were involved in monitoring the outcomes of the 2014 environmental watering event in Gunbower Forest and initiated a project to investigate the impacts of carp on culturally significant native vegetation. They are currently developing objectives to inform future watering events.

Aboriginal environmental outcomes — 2014 water delivery

Between May and December 2014, 110 gigalitres of water was delivered to Gunbower Forest, inundating more than 3,750 hectares of the forest. Some of this water was water diverted through the forest on its way to meet downstream demands. Environmental water (35 gigalitres) delivered in addition to this water accounted for any water used within the forest. This watering aligned with outcomes sought by the Basin Plan and two 2014–15 Basin annual environmental watering priorities:

Improve riparian, littoral and aquatic vegetation and native fish populations by increasing ecosystem connectivity through coordinating water delivery in the River Murray system;

Improve survival, recruitment, and condition of native fish populations by providing winter flows to tributaries and creeks of the River Murray and through the barrages to the Coorong.

The 2014 watering event supported spiritual wellbeing and connection to County for the Barapa Barapa people. This is an example of where outcomes from environmental watering can provide some complementary cultural benefits like connecting with Country, as shown in Figure 1.

Wavy marshwort in the Reedy Lagoon inlet floodrunner in October 2014 (K Stanislawski North Central Catchment Management Authority)

Understorey and wetland plants are important as habitat and food sources for animals, as medicine plants and for cultural events for women, or women's business. Throughout the forest, in areas dominated by river red gum and black box, there was a clear difference in the condition of understorey vegetation between areas that received water and those that did not. The watering triggered growth of native vegetation in the wetland and forest understorey of culturally important plants like old man weed, cumbungi, nardoo, flax lily and river mint. Harvesting old man weed is an important ongoing cultural activity for the Barapa Barapa community.

Flows along the river are particularly important for women's business, for example to help to maintain the health of birthing trees. The watering event improved the health of trees like river red gums at significant women's sites. Increased tree health also supported tool making activities like the harvesting of bark to make Coolamons.

In the long-term the Barapa Barapa community would like to see the forest inundated more frequently and for water to get out further onto the floodplain to maintain a diverse understory and flush away leaf litter. Many culturally significant native plants for food, fibre and medicine are on the floodplain above the level of water delivered during the 2014 event.

Large populations of waterbirds used to inhabit Gunbower Forest. The Barapa Barapa people would like to see waterbird numbers at levels similar to the past. During the watering two small colonies of little pied cormorants established in Little Gunbower Creek and Little Reedy Lagoon. Other birds recorded in the forest included waterfowl, whistling kites, white-bellied sea-eagles, Australasian shovelers, azure kingfishers, black swans, and several types of native duck.

Even though the watering event was relatively large only a small number of colonial waterbirds bred. This could be due to the timing of the event, which led to cold water temperatures that may not have supplied enough food for the adult birds to prepare for breeding. As the water temperature warmed in spring, flows were deliberately dropped to try to trigger native fish to leave the forest.

Vegetation inside a fully fenced carp cage in Little Reedy Lagoon (K Bennetts, Fire Flood & Flora, Jan 2015)

Restoring fish populations so that native species return to Gunbower Forest is important to the Barapa Barapa community. The water delivery to Gunbower Creek was targeted to maintain habitat and food resources for native fish, particularly Murray Cod. Threatened native fish in Gunbower Forest include silver perch, freshwater catfish, Murray cod, trout cod, unspecked hardyhead and Murray–Darling rainbowfish. Some native fish are locally extinct in the Gunbower system, including southern pygmy perch, common galaxias, southern purple-spotted gudgeon and olive perchlet.

The watering also increased numbers of frogs and certain types of bugs in the forest, which are a food source for platypus and other important animals, including Barapa Barapa totems.

Ongoing concerns

Several natural resource management issues outside the scope of environmental water delivery are also important to the Barapa Barapa community. For example, complementary actions like weed and feral animal control, and reducing the impacts of visitor access on the forest.

During the 2014 watering event a Barapa Water for Country project looked at the impact of carp on culturally significant native plants. Cages were placed in inundated areas to exclude carp, and had both open and closed tops to compare waterbird and carp impacts. Participants were involved in setting up the cages and monitoring the response of native vegetation. The study found that inside the cages there was better growth of native wetland vegetation (see photo opposite). This is one example of how feral animal control could complement the Aboriginal environmental outcomes gained from environmental watering.

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