

Reconnecting flows across the Budj Bim landscape

Glenelg Hopkins Catchment Management Authority

Project: Budj Bim Waterways Project

Project Sponsor: State Government Victoria under the Rivers 2040 program

Budj Bim landscape, ancient and valuable

When Budj Bim (also known as Mount Eccles) erupted around 30,000 years ago it changed the landscape forever. The resulting Tyrendarra Lava Flow created a series of stony rises, rivers and wetlands between Budj Bim and the sea. This diverse landscape in the south west corner of Victoria encompasses Lake Condah, Darlots Creek and the Fitzroy River and Estuary.

Among the lava flows, local Gunditjmara people developed a large and ingenious aquaculture system designed to grow and harvest eels. The engineered channels, weirs and wetlands provided a year round supply of food. Dated at about 6,600 years old, it is one of the oldest known examples of freshwater aquaculture in the world, pre-dating the Pyramids in Egypt. This landscape is currently being considered for inclusion in Australia's World Heritage Tentative List—a list of places the Australian Government may decide to nominate for inclusion in the World Heritage List in the coming years.

European arrival

European settlement of the area from 1830 and subsequent displacement of Aboriginal people caused a period of disconnect between traditional owners and this landscape. Gunditjmara people were excluded from practicing their cultural traditions and using and managing the resources that the Budj Bim landscape provided.

Settlement also resulted in the fragmentation of native vegetation through clearing, the introduction of livestock and planting of willows, gorse and buckthorn. Dams, drains and channels interrupted the flow of water across the landscape, severely reducing connectivity. Species such as Australasian bittern, growling grass frog, Yarra pygmy perch and Glenelg spiny crayfish, once abundant in this area, are now threatened due to habitat loss.



Top: Lake Condah, when it flooded in 2011
(Glenelg Hopkins CMA)

Bottom: The southern extent of the diverse Budj Bim landscape and Fitzroy River estuary complex
(Glenelg Hopkins CMA)

Reconnecting to country

Many Gunditjmara people have maintained their connection with the Budj Bim landscape and in 1987, the Lake Condah mission lands were returned to the Gunditjmara traditional owners.

Following the restoration of Lake Condah in 2010, the local community which now includes both traditional owners and other landholders, are focusing on protecting and restoring other waterways and associated wetlands across the Budj Bim National Heritage Landscape.

Target setting

The Victorian State Government has provided Glenelg Hopkins CMA with funding under the Rivers 2040 program to assist the local community in achieving the following outcomes:

1. supporting Aboriginal connection to waterways through the integration of traditional knowledge into waterway management
2. well-connected riverbank vegetation
3. restoring flow regimes and hydrological connectivity.

Currently in the target setting phase, the project is investigating how to align environmental and cultural objectives, such as the possibility of reinstating hydrology through wetlands which will enable cultural 'fish traps' to be reinstated for traditional practices and tourism. Traditional owners, local landholders, agencies and scientific community form the reference group undertaking the planning and implementation of works

Taking action

Gunditjmara people including the Budj Bim Rangers will assist with on-ground works whilst training and knowledge exchange will build capacity of land managers, agencies and the Gunditjmara community. Works will consist of pest plant control, removal of fish barriers, improvement of waterway connectivity, removal of drains, control of stock access to waterways and revegetation.

Recovery and growth to achieve 2040 targets

After an intensive implementation period of on-ground works, the project allows for a period of recovery and growth. Target outcomes will be measured against base line information gathered in the initial phase of the project.

Sources: Case Study 4—Lake Condah, Budj Bim National Heritage Landscape, Heritage Council Victoria; Budj Bim National Heritage Landscape Brochure, Australian Government

This project is a partnership between:

- Glenelg Hopkins Catchment Management Authority
Phone: 03 5571 2526
Website: www.ghcma.vic.gov.au

and

- Gunditj Mirring Traditional Owners Aboriginal Corporation
Phone: 03 5527 1427
Website: www.gunditjmirring.com

For more information on the Budj Bim National Heritage Landscape: Australian Government National Heritage Places, visit www.environment.gov.au/heritage/places/national/budj-bim



The fish channel system at Lake Condah is well visible when the landscape is dry (Glenelg Hopkins CMA)

Ngarrindjeri 'wise use' for protecting wetlands in crisis wins 2015 Australian Riverprize

Steve Hemming^{a,b}, Daryle Rigney^{a,b}, Lachlan Sutherland^c and Samantha Muller^b

a) Ngarrindjeri Regional Authority

b) Flinders University

c) Department of Environment, Water and Natural Resources, South Australia

Integrating Indigenous world views and knowledge into wetland management is critical to effective disaster risk aversion as Indigenous approaches ensure 'wise-use' of wetlands and prioritise environmental health.

Ngarrindjeri and Indigenous nations world-wide share an understanding that lands, waters and all living things are interconnected, refusing the Western distinction between humans and nature. For Ngarrindjeri this philosophy of interconnectivity is expressed in the concept of Ruwe/Ruwar (body, spirit, lands, waters and all living things). European colonisation of Ngarrindjeri Ruwe/Ruwar devastated the Nation and made it more vulnerable to environmental disaster. Ngarrindjeri resilience, gained through living with the degradation of their Country, and thousands of years of experience, is becoming respected for its value to improved management of their Country, including the Coorong, and Lakes Alexandrina and Albert Ramsar wetland.

Ngarrindjeri country, at the mouth of the Murray River in South Australia, is at the centre of extensive environmental management programs addressing ecological degradation caused by drought and over-allocation of water. Negotiation of a new relationship between the State government of South Australia and the Ngarrindjeri Nation utilising agreements such as the 2009 Kungun Ngarrindjeri Yunnan Agreement (KNYA—Listen to Ngarrindjeri speaking) has prepared the way for a new partnership between Indigenous people and the State in natural resource management. This partnership enabled Ngarrindjeri to work with the State to develop innovative solutions for wetland disaster risk reduction during the millennium drought.



Ngarrindjeri Caring for Country rangers planting at Terringie wetland, Raukkan (DEWNR)

At the peak of the Millennium Drought, Ngarrindjeri country experienced record low water levels, and significant exposure of acid sulfate soil that threatened the region's ecosystem. The KNY Agreements enabled Ngarrindjeri to negotiate with the State during the development of 'emergency response' proposals to build regulators in the Goolwa Channel to address the threat of acidification. Being opposed to interventions that further divided their Country, Ngarrindjeri negotiation ensured the responses were temporary, regulator design minimised damage to Ngarrindjeri cultural heritage, and that a panel of experts independent of government and Ngarrindjeri would advise on when the structures could be removed. Ngarrindjeri leadership produced an innovative and temporary 'emergency' solution that met both Ngarrindjeri and State needs to mitigate environmental impacts.

The Ngarrindjeri Nation and the South Australian Department of Environment, Water and Natural Resources (DEWNR) are continuing to work closely to integrate Ngarrindjeri cultural values into the management of the region. Ngarrindjeri won the 2015 Australian Riverprize in recognition for their innovations and commitment to disaster risk aversion and recovery.

For more information, contact Rick Hartman, Ngarrindjeri Regional Authority at Rick.hartman@ngarrindjeri.org.au, 08 8532 9000 or visit www.ngarrindjeri.org.au



Top: Currency Creek aerial photo 2009 looking towards the Murray Mouth with Goolwa Channel and Hindmarsh Island (Kumarangk) in background (DEWNR)

Bottom, from left: Construction of the Clayton Bay temporary flow regulator in 2009 with Hindmarsh Island (Kumarangk) in background (DEWNR). Goolwa Channel 2009 with Hindmarsh Island (Kumarangk) to right and township of Clayton in centre (DEWNR).

The Commonwealth Environmental Water Holder launches two new “first of their kind” partnerships

Commonwealth Environmental Water Office

Commonwealth environmental water to be delivered by the Ngarrindjeri Regional Authority and the Renmark Irrigation Trust

This year, the Commonwealth Environmental Water Holder embarked on partnerships with Ngarrindjeri Regional Authority and Renmark Irrigation Trust to deliver Commonwealth environmental water in a way that enhances our ability to meet local environmental and cultural needs in South Australia.

The three year partnership with the Ngarrindjeri Regional Authority establishes a way to deliver environmental water which ensures environmental assets in the lower River Murray region are being cared for in accordance to the cultural protocols of the Ngarrindjeri nation. This partnership forms the start of a concerted effort by the Commonwealth to work with Indigenous people across the Basin and provides a process for the planning and delivery of environmental water in a way that supports cultural practices.

Working on-the-ground with the Ngarrindjeri means that local knowledge and cultural values are shaping the delivery of water to achieve the best outcomes for wetlands. There are many opportunities where environmental and cultural water needs intersect; for example supporting growth of native reeds used in basket weaving. The Ngarrindjeri also have a number of culturally significant species that will benefit from environmental watering, such as pelicans, turtles and river red gums.

It is anticipated that activities from this partnership will also build the capacity of the Ngarrindjeri, by creating opportunities to work on country and foster skills in ecology and water management.



David Papps with Peter Duggin and Humphrey Howie of Renmark Irrigation Trust (Commonwealth Environmental Water Office)

The Partnership was launched at Sugar Shack Wetlands, near Swan Reach with a Smoking Ceremony and addresses from Commonwealth Environmental Water Holder, David Papps, the South Australian Minister for Water and the River Murray, the Hon. Ian Hunter MLC, and then Chairperson of the Ngarrindjeri Regional Authority, Eunice Aston.

In another first, the Commonwealth Environmental Water Holder has formed a partnership with an irrigation water provider, Renmark Irrigation Trust.

The five year partnership enables the delivery of Commonwealth environmental water to wetland and floodplain sites in the Renmark area using the Trust's extensive irrigation infrastructure during the irrigation off-season.

Environmental watering in the Renmark area can rehabilitate areas affected by salt from rising water tables and improve the health of vegetation, including restoring areas of black box and river red gums.

This offers economic benefits as well as environmental, including making use of infrastructure when it would otherwise lay dormant and using environmental water to flush pipes. It can also foster recreational and tourism benefits by providing healthy and vibrant public places for walking, cycling and visiting.

The Partnership is a unique opportunity to use existing irrigation infrastructure to maximise the delivery of environmental water for the benefit of the environment and local community.

For further information, visit www.rit.org.au/ and www.ngarrindjeri.org.au/ or contact Local Engagement Officer, Michelle Campbell on 08 8595 2120 or at michelle.campbell@environment.gov.au



Eunice Aston, Steve Hemming and Commonwealth Environmental Water Holder David Papps at the launch of the partnership agreement with Ngarrindjeri Regional Authority (Commonwealth Environmental Water Office)