

## W9 Billabongs: Traditional Owner-led restoration of urban billabongs.

### Objective(s)

Led by Traditional Owners (TOs; Wurundjeri Woi-wurrung), in collaboration with University of Melbourne researchers and waterway manager Melbourne Water, this project aims to demonstrate the importance and efficacy of TO-led wetland management and restoration of Melbourne's degraded riverine wetlands (billabongs) along the lower Birrarung (Yarra River).

### Why this research is important

Rivers and wetlands have long been critical to human societies and hold significant cultural and ecological value. Despite their critical role in sustaining healthy societies and ecosystems, rivers and wetlands are some of the most degraded ecosystems globally. More than half of the world's wetlands have been lost due to draining and conversion for agriculture or urban development over the past two centuries, and wetland loss is a major contributor to the current global 'extinction crisis'.

First Nations peoples' knowledge of wetland ecosystems stems from managing and identifying with their land and waterscapes for millennia. In recent decades, the value of including First Nations people and their knowledge in research and management of wetland ecosystems has increasingly been recognized. Despite this recognition, the inclusion of Indigenous knowledge and Traditional Owners in the scientific investigation and management of freshwater environments in Australia remains limited, particularly in urban contexts.

#### Contribution Key Research Areas

- Liveability, community engagement, and social research.  
*Understanding aboriginal cultural values of waterways and establishing a framework to better integrate these values in waterway management decision making.*

### Approach

Three complementary research approaches underpin this project, and will facilitate the development of guidelines for the future management and care of culturally and ecologically significant wetlands that is grounded in Indigenous knowledge and supported by empirical data:

1. Determine the historical changes in fires, floods and vegetation of billabongs of the lower Birrarung (Yarra River) through sediment core

analyses of charcoal, sediments, and pollen (for e.g. of analyses at Bolin Bolin see above).

2. Determine billabong vegetation, faunal and water quality responses to cultural burns and wetting and drying through TO-led monitoring and assessment programs (including field-based surveys, eDNA analyses and water quality monitoring).
3. Traditional Owner-led development of restoration and sustainable management guidelines for culturally and ecologically significant urban wetlands.

### Key Outputs

- Wurundjeri-led billabong management guidelines.
- A framework for Melbourne Water and other water and land managers to adopt effective and Traditional Owner-led wetland management.
- Journal publications that describe the flora and fauna responses to billabong watering events

### Expected benefits

- Better understanding to inform effective land (fire) and water (environmental watering) management of urban billabongs.
- Development of new knowledge to further our understanding of past and present socio-ecological dynamics of billabongs.

### For more information

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*On Country knowledge sharing day at Bolin Bolin in 2024.*