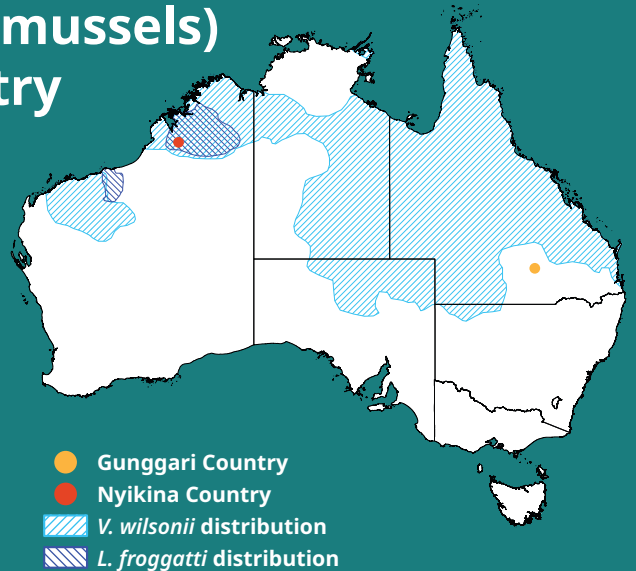


Wiliyanoo, Toollee (Freshwater mussels) on Nyikina and Gunggari Country

© Michelle Hobbs (Bidjara), Emily Poelina-Hunter (Nyikina) and Gunggari collaborators Vernessa Fien, Suzanne Saunders, Vicky-Lea Saunders, Whanita Faulkner, Sandra Erwin and Saraeva Mitchell

Common name: Freshwater mussels

Names: *Lortiella froggatti*, *Wiliyanoo* (Nyikina) and *Velesunio wilsonii*, *Toollee / Tooliny / Dhuliny* (Gunggari)*



Status



Description

Wiliyanoo and *Toollee* are freshwater bivalves (shellfish) that grow to around the size of the palm of your hand. *Wiliyanoo* are long with a flared (winged) shape at the posterior end. *Toollee* have a more rounded shape and are only slightly winged at the posterior end.

Both species are filter-feeders, using their delicate gills to filter food (algae and bacteria) from the water, cleaning mud and other debris out of the water in the process. When there are a lot of them, they can make a big difference to water quality. Their shells also provide a structural home for algae to grow on, attracting snails, shrimp and other small beings. This means they are very important for the wellbeing of waterways.

They have important connections to freshwater fish as the larvae are parasitic and must attach to a fish to grow into an adult form. They attach to fish gills, skin and fins, and look like a tiny white dot. While they are with the fish, they can travel big distances, depending on river connectivity at the time.



Wiliyanoo. Photo: Emily Poelina-Hunter.

Distribution

Wiliyanoo are found in the Kimberley, primarily, in the *Mardoowarra* (Fitzroy) and Lennard Rivers, and the De Grey River near Port Hedland in the Pilbara¹. *Wiliyanoo* are endemic to Western Australia, occurring in very isolated populations.

Toollee have a very wide distribution across northern Australia from the *Mardoowarra* across to Cape York in Queensland and south to the Mary River and the northern part of the Murray-Darling Basin¹.

Habitat

Wiliyanoo and *Toollee* are shallow burrowers in sandy parts of rivers, and clayey parts in billabongs. They also burrow amongst tree roots in riverbanks.

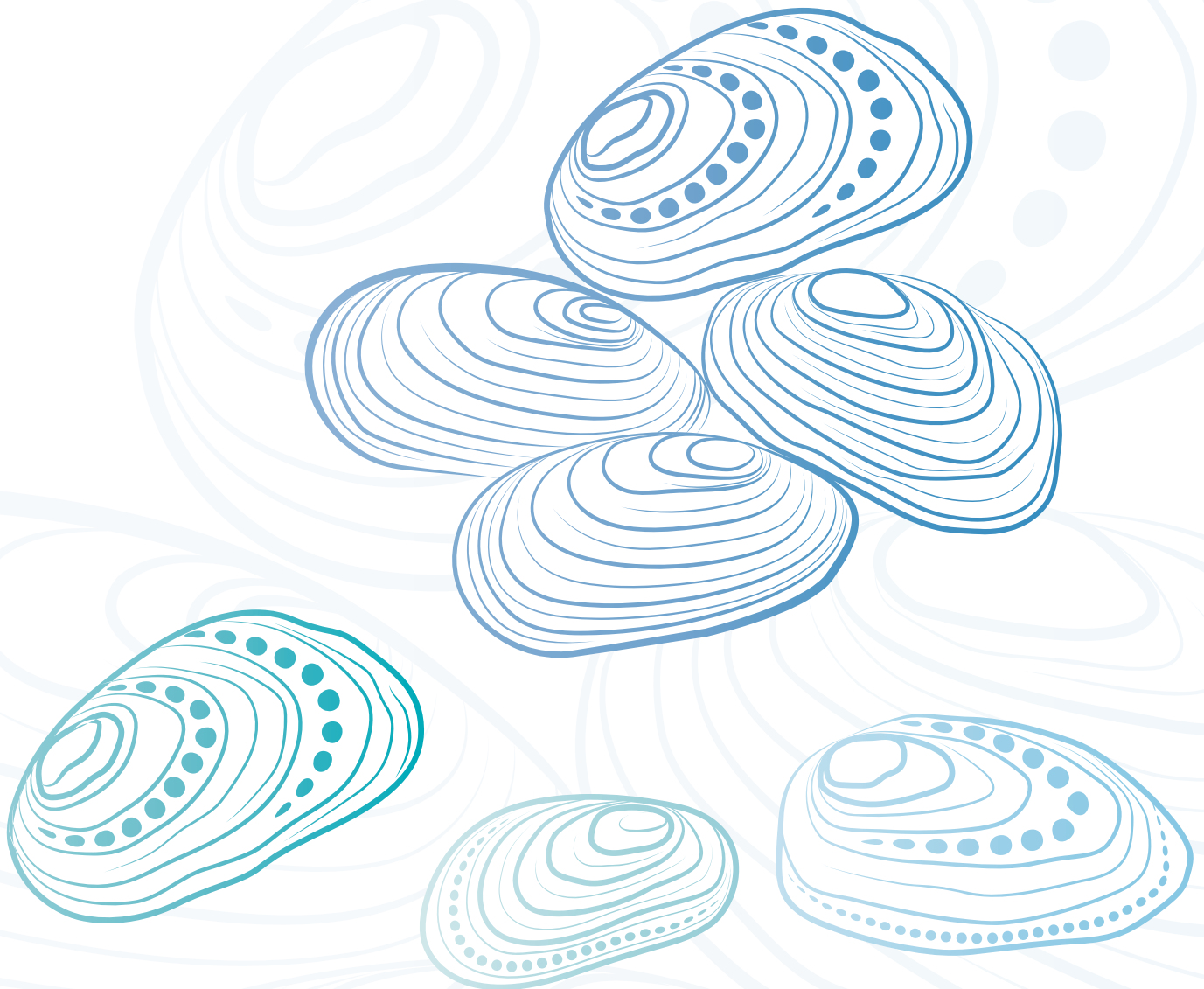
Ideal habitat for *Wiliyanoo* is in the constantly flowing, main channel of the river, but also includes billabongs that persist after the wet season, and permanent groundwater-fed pools. *Toollee* also live in billabongs, and burrow into the cool sediment when it's hot and to avoid predators. They are often found in sections of rivers with access to deeper pools and permanent water, where they can follow receding water lines and take refuge in pools during dry times.

* Acknowledging there will be other spellings and variations of language names.

Threats

Threats to *Wiliyanoo* and *Toollee* include:

- **Water extraction and in-stream structures** (such as bridges, weirs) leading to loss of river connectivity and changes in water flow regimes
- **Agricultural practices and mining** leading to land clearance, pollution and habitat degradation
- **Inappropriate fire and weed encroachment** reducing water quality and cover of riparian vegetation
- **Introduced animals**, including cattle and feral pigs, that degrade riverbanks, trample mussels and reduce water quality
- **Climate change**, including extreme or frequent flood events (that can scour mussel habitat or wash them downstream) and heat waves (higher water temperatures, lower oxygen levels and more evaporation)
- **Invasive fish (Carp for *Toollee*)** leading to increased predation of young mussels and reduced suitability as a host fish for breeding.



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Cultural Connections

Mussels need fish to carry their larvae, and cod and yellow belly eat young mussels. This relationship means they are connected to one another. We as people are also connected to mussels, in that some of us eat them, some of us care for them as kin, and mussels are good for the river, and we rely on rivers for clean water, fishing and our cultural identity.

Mussels are important to many places that are culturally significant for multiple Aboriginal Nations that have extensive histories of ceremony and gathering. For example, Mount Moffatt, where **Toollee** live in the waterholes, is significant to Bidjara, Gunggari, Karingbal and other Nations.

Mussel shells were used for knives, ceremonial regalia, jewellery, and in artwork, and are still used today. Shells were also traded, in a similar manner to marine shellfish species including pearl shells and baler shells. Rock art at Mount Moffatt features shells made into jewellery.

Mussels were a reliable and treasured food that was easily gathered as a family, especially during hard times. There are countless sacred shell middens across Australia, accumulated over thousands of years.



Weaving with **Toollee**, Womalilla Creek, Queensland.
Photo: Michelle Hobbs.

Cultural Values

Country

Mussels are considered by many communities as health indicators of river wellbeing, being like the kidneys of rivers as water filters. They are also important food for **kirriwi** (Nyikina name for the Water rat) and fish. Mussels are used in ceremony and in gatherings and, for many, are part of family memories of fishing in the river as children. For some they are kin or totems.

Knowledge

Aboriginal ways of knowing, being and doing are place-based and intergenerational. Cultural knowledge transfer is a central part of community and family spending time on the water together. Methods of finding mussels is a skill passed down from generation to generation.

Kin

Mardoowarra Nations have strong identity ties to **Mardoowarra**, which they see as a [living entity](#), their Law says they must protect it. Some Nyikina have freshwater mussel totems that are passed to certain individuals by family members for specific reasons². Those with totem species see them as kin and are directly responsible for caring for them.

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¹ Walker, K. F., Jones, H. A., & Klunzinger, M. W. (2014). Bivalves in a bottleneck: taxonomy, phylogeography and conservation of freshwater mussels (*Bivalvia: Unionoida*) in Australasia. *Hydrobiologia*, 735(1), 61-79.

² Poelina-Hunter, E., RiverOfLife, M., & BigFreshwaterMussel, W. (2026). Responsibilities when researching your personal totem. In L. Rankin, O. M. Abadia, & E. Dotte-Sarout (Eds.), *Indigenous Archaeology in Two Hemispheres: Approaches to Inuit and First Nations Pasts in Canada, Australia and Greenland* (pp. 303-324). Taylor & Francis..

Results of Poor Management

Limited access to water

Access to water places for purposes of culture, identity, drinking water, fishing, ceremony, and caring for Country (as part of culture) are Indigenous human rights under the United Nations Declaration of the Rights of Indigenous Peoples (Article 12). However, Aboriginal peoples suffer deeply from lack of access to rivers, water licenses, water infrastructure and management opportunities. It is common for property owners to restrict access to river Country, even though waterways are crown land. This means many culturally significant water places are not accessible to Aboriginal peoples. Water policy inherently separates water from land and treats it as a resource, not a living entity.

No protections

There are no specific management protocols or laws that protect freshwater mussels that are not listed as threatened species, other than state-based fisheries bag limits. Therefore, they are generally not monitored by government, and Traditional Custodians often do not have the resources to do their own monitoring.

There are no management protocols or laws that protect freshwater mussels occurring on any one Aboriginal group's lands. Instead, species are only listed as threatened after severe declines have been recorded across a large part of their range. For example, if *Wiliyanoo* became rare or extinct on Nyikina Country, this would be distressing and harmful to Nyikina community and detrimental to the health of the river, but if there are still many *Wiliyanoo* in other parts of the *Mardoowarra*, they still may not qualify as threatened.

Increased water regulation

Dams and weirs are often significant barriers for fish, and lack of river connectivity impacts mussels by reducing fish passage, thereby mussel breeding opportunities.

Poor land management practices

Because rivers are linear pathways of connection, impacts upstream can affect downstream values over great distances. Poor land management practices upstream can have impacts for many kilometres downstream, in terms of water quality and plant and animal movement. This is not something that can be solved by actions on Indigenous managed lands alone but must be addressed by all landholders.

Nyikina and Gunggari Vision

Voices heard

Our perspectives are diverse but grounded in Country, we recognise the importance of the wellbeing of rivers and waterways, giving voice to the largely silent Aboriginal stories and knowledge systems of freshwater mussels.

The gift held in Indigenous knowledge systems for water is our shared cultural responsibility for decision-making, management and sustainable economic development in communities for future generations.

Water management based on two-way science

Collectively, we want to see tangible changes in water management:

- Protection of water places where they occur on each traditional Country, as well as across all waterways where they are distributed
- Local Nations participating in fisheries management and setting monitoring indicators
- Fisheries management considering species biology, e.g. breeding times and mussel relationships with fish populations
- River management works protecting riparian vegetation, waterholes and deep pools
- Traditional Custodians participating in decisions and caring for locations of great cultural and environmental significance
- Water extraction must be more conservative, protecting river integrity and water quality
- River connectivity must be a priority, protecting flows and actively managing barriers associated with weirs, bridges, etc.
- Mechanisms for Traditional Custodians to have water rangers caring for Country.

Increased access

It is our cultural right and responsibility to maintain connection with, and care for, our rivers.