

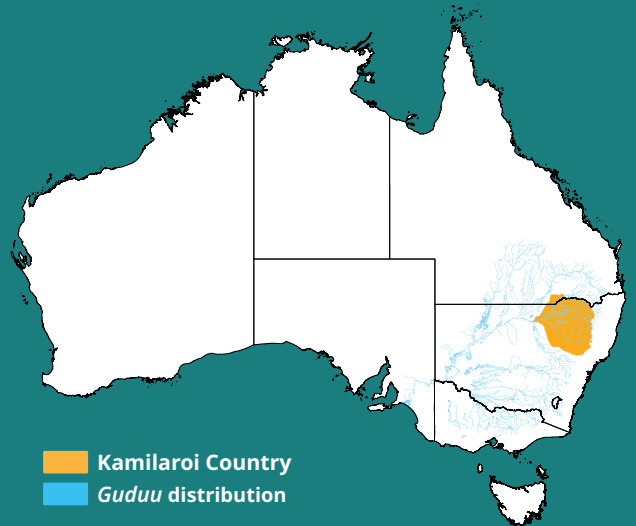
Guduu (Murray cod) on Kamilaroi Country

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Common names: Codfish, Murray cod

Scientific name: *Maccullochella peelii*

Language name: *Guduu*



Status



Description

Guduu are Australia's largest predatory native freshwater fish. They are an iconic species of river fish with individuals able to grow up to 1.8 m in length and weigh up to 110 kg. They are known for their large mouth and broad head. Their tail is rounded with a single dorsal fin and spikes across the centre top leading into the dorsal fin. The species matures around four to five years but can live to much older ages (up to possibly 100 years). *Guduu* eggs are large (3 to 3.5 mm in diameter), adhesive and are deposited onto hard surfaces such as rocks and logs.

Guduu are farmed in New South Wales, Victoria and Queensland in hatcheries for the restaurant industry and restocking rivers, dams and lakes.



Healthy *Guduu* from the Murrumbidgee River, 2023.
Photo: Kye Moggridge.

Distribution

Guduu are found throughout the waterways of the Murray-Darling Basin. Important rivers for *Guduu* on Kamilaroi Country include the Mehi, Gwydir, Macintyre, Dumaresq, Severn, Peel, Mooki, Barwon, Namoi and Castlereagh.

Guduu were once widespread; however, both their population size and distribution have been reduced significantly, with the species' existence now rare in many rivers across the Murray-Darling Basin.

Habitat

Guduu generally prefer slow-flowing, turbid water in streams and rivers, favouring deeper water around boulders, snags, undercut banks, overhanging vegetation and logs. These river structures are useful for *Guduu* as an ambush (sit and wait) predator eating fish, crayfish, water dragons, snakes, birds, turtles and frogs. *Guduu* are very territorial. Juveniles and sub-adults have been recorded to be relatively sedentary (with short ranges of 350 m) but some adults can travel over 100 km to spawn.

Threats

Threats to *Guduu* include:

- **Overfishing** associated with commercial and recreational activities
- **Poor water policy** across the Murray-Darling Basin leading to:
 - **altered flows**
 - **overextraction** from rivers through water planning and licensing
 - **large irrigation pumps** extracting large volumes of water without fish screens
 - **cold water pollution** from dams
 - **barriers** restricting movement
- **Climate change** resulting in extreme droughts and altered rainfall following major fires that lead to increases in carbon inputs and associated blackwater events
- **Pest species** such as European carp and riparian weeds reducing habitat quality
- **De-snagging for boat passage** resulting in habitat loss, as these snags are used for breeding and where *Guduu* ambush their prey
- **Salinity and pollutants** such as agricultural chemicals and hormones from sewerage effluent leading to reduced water quality
- **Genetic issues and disease**
- **Major fish deaths/kills** triggered by a combination of the above threats.

Cultural Connections



Guduu, Thagaay and Gaygay (used for the Native Fish Strategy across the Murray Darling Basin, 2008).
Artwork: Brad Moggridge.

Across the Murray-Darling Basin there are over 40 Aboriginal Nations that rely on freshwater places, including rivers, billabongs, wetlands and groundwater sources. For many groups, this reliance includes freshwater species such as the iconic *Guduu*.

The connection to *Guduu* and other aquatic species is evident today, as Aboriginal people fish on their respective Countries, they know the hot spots, they do not overfish and return the females. They respect totemic *Guduu*, eat them when not connected by Lore, they sing and dance *Guduu*, and pass down stories from the *Burruugu* (Dreaming) about *Guduu*.



Cultural Values

Country

There is a **Guduu** Dreamtime story depicted through The Ngurunderi Dreaming as **Ponde** or **Pondi** (Cod fish). It was recorded from the last initiated Ngarrindjeri man, Albert Karloan, who told anthropologist Ronald Berndt in 1939.

This Dreamtime story demonstrates the connection to Country and how **Guduu** created healthy catchment systems. **Guduu** are considered an indicator species of healthy Country. When **Guduu** are plentiful, the rivers and their catchments are healthy.

“Our rivers are our highways and song lines, not only for humans but for fish.”

Aunty Coral Peckham, Senior Knowledge Holder¹

Kin

Guduu are an important cultural species, being a large-bodied fish, they are a significant source of protein and fats. Kamilaroi also use their bones as a resource, the cultural connection is deep-seated going back to **Burruugu**. Protecting habitat and spawning grounds as well as fishing for the species are important cultural practices.

Knowledge

Guduu are an apex predator of freshwater systems, Kamilaroi know that and respect their presence in rivers and deep waterholes.

The many Dreamtime stories featuring **Guduu**, which can be found in literature, early recordings and stories passed down through the generations, often relate to the creation and design of rivers.

The connections to **Guduu** are evident in middens, established fish traps, large wooden structures to farm fish, trading/meeting places and in earth ovens (hearths).

The inclusion of Indigenous knowledge into recovery planning is critical for the protection of **Guduu**.

“To have my traditional knowledge gained through generational exchange listening to my stories through on-Country experiences and being present around the ceremonial fires, and for that knowledge to not be accepted as evidence or deemed fiction or myth as a non-referenced exchange by the academy is hard to accept. This further disenfranchises and excludes me as an Indigenous researcher.”

Brad Moggridge, Kamilaroi²



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Results of Poor Management

Lack of recognition of Culturally Significant Entities (CSE) in legislation and conservation planning/prioritisation

Current Western systems of determining what is threatened or a priority for conservation action and funding do not recognise the significance of **Guduu** to Kamilaroi. Kamilaroi have a responsibility to look after **Guduu** on their Country.

“Guduu need Kamilaroi and Kamilaroi need Guduu.”

Brad Moggridge, Kamilaroi

Reduced resilience to climate change

We know that populations have declined substantially since European settlement. As a result of climate change, **Guduu** now face increases in the frequency of extreme events with projected longer drier periods and wet events into the future.

Damage or decline of in-stream structures

Fish traps and other structures have been destroyed or built over in many places. Aboriginal people belonging to River Country and where **Guduu** exist must be part of their recovery and allowed to maintain current fish traps or be resourced to rebuild and reconnect with this ancient craft.

Planning without appropriate engagement/empowerment

The existing **Guduu Recovery Plan** (finalised in 2010) does briefly acknowledge the significance of the species to Aboriginal people but does not empower them to be a critical part of the recovery of the species. Engagement with Traditional Custodians is required in the preparation of these documents.

Kamilaroi Vision

Leading on-ground works

For **Guduu** to stay strong and healthy, the 40-plus Aboriginal groups must be at the forefront of its coordinated protection through Caring for Country principles. Key on-ground actions needed include re-snagging logs for habitat, removing weeds and pest species, protecting spawning grounds, removing barriers for movement (such as weirs, roadways) and installing fit-for-purpose fish ladders/ramps/fish ways.

Protecting water places for all species

We need:

- Access to Country
- Appropriate resourcing for ranger programs
- Management planning that is inclusive and respectful
- Respectful partnerships in Caring for Country
- Funded long term recovery projects led by Aboriginal people.

Acknowledgement of Indigenous knowledge

More broadly, for CSE to be recognised and protected, we need to follow my ‘Blackprint for Aboriginal knowledge and Country’:

- Indigenous science and Indigenous knowledge in the curriculum (Indigenise)
- Indigenous Ranger and Researcher Network (coordinate)
- Indigenous Centre of Excellence for Country - land, water and sky (decolonise)
- Research led/authored by Indigenous people - cultural methods and science
- Indigenous Strategy for Country allowing for truth-telling
- Indigenous Voice for Country (Indigenous Commissioner for Country).

¹ Murray Darling Basin Authority. *Native fish recovery strategy: working together for the future of native fish*. MDB Authority, Canberra, ACT; 2020.

² Weir JK, Morgain R, Moon K, Moggridge BJ. *Centring Indigenous peoples in knowledge exchange research-practice by resetting assumptions, relationships and institutions*. *Sustainability science*. 2024;19(2): 629-45.

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