

of south-western Queensland

Permanent river reaches and waterholes

Landform and water regime

Permanent river reaches and waterholes occur in the channels of rivers, creeks and floodplains. They may consist of a single channel or a branched channel. Typically they are tens of metres wide and hundreds of metres long but some are more than 100 m wide and more than 10 km long. Soils comprise cracking grey clays and sand deposits. Water supply is from annual stream flow mainly from distant parts of the river catchment. Inundation is permanent but depth may vary from more than 10 m during flood to less than a metre during drought. Water normally is fresh and turbid, but a few examples on lower Eyre Creek are saline.



Tooley Wooley
Waterhole,
Cooper Creek
(R. Jaensch,
Wetlands
International)

Typical vegetation

This wetland type is fringed by open to very open woodland, mainly of eucalypts to 10 m height, but usually comprising several tree and shrub species.

Associated wetland types

- Wooded watercourses.
- Shrubby floodplain watercourses.
- Oxbows.
- Lignum swamps.

Distribution in south-western Queensland

This wetland type is widespread and common in south-western Queensland.

Prominent examples of this type

- Cooningheera Waterhole (Diamantina River, north-east of Birdsville).
- Eulbertie Waterhole (Cooper Creek, south-west of Windorah).
- Caiwarro Waterhole (Paroo River, Currawinya National Park).
- Waterholes at Charleville and Wyandra (Warrego River).

Occurrence in protected areas

This wetland type occurs in at least eight national parks in south-western Queensland.

Principal conservation values

- Provide permanent habitat for wetland fauna, especially fishes (notably the near-endemic tandan *Neosilurus* and yellowbelly *Macquaria* species).
- Provide drought refuge, which eventually enables re-population of temporary wetlands during floods.
- Vital habitat for fauna (mammals, reptiles, frogs, woodland birds) that need to live near permanent water and/or that favour trees with hollows.

Characteristic plant species

Trees and shrubs:

river red gum *Eucalyptus camaldulensis*
coolibah *Eucalyptus coolabah*
black box *Eucalyptus largiflorens*
yapunyah *Eucalyptus ochrophloia*
river cooba *Acacia stenophylla*
bauhinia *Lysiphyllum gilvum*
river paperbark *Melaleuca linariifolia*
creek wilga *Eremophila bignoniiflora*
lignum *Muehlenbeckia florulenta*

Grasses, sedges and forbs:

channel millet *Echinochloa turnerana*
spiny mudgrass *Pseudoraphis spinescens*
umbrella canegrass *Leptochloa digitata*
club-rush *Schoenoplectus litoralis*
giant sedge *Cyperus exaltatus*
knotweed *Persicaria* spp.
sesbania pea *Sesbania campylocarpa*
water convolvulus *Ipomoea diamantinaensis*

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Permanent river reaches and waterholes *cont...*

wavy marshwort *Nymphoides crenata*
giant water lily *Nymphaea gigantea*
water primrose *Ludwigia octovalvis*
willow primrose *Ludwigia peploides*
common nardoo *Marsilea drummondii*

Characteristic waterbird species

Abundant:

Australian wood duck *Chenonetta jubata*
Pacific black duck *Anas superciliosa*
grey teal *Anas gracilis*
Australian pelican *Pelecanus conspicillatus*
black-tailed native-hen *Gallinula ventralis*
Eurasian coot *Fulica atra*

Colonial breeding species:

darther *Anhinga melanogaster*
little pied cormorant *Phalacrocorax melanoleucos*
great egret *Ardea alba*
nankeen night heron *Nycticorax caledonicus*
yellow-billed spoonbill *Platalea flavipes*

Other breeding species:

tree-nesting duck species
Australasian grebe *Tachybaptus novaehollandiae*
white-faced heron *Ardea novaehollandiae*
white-necked heron *Ardea pacifica*

Some other species that occur:

plumed whistling-duck *Dendrocygna eytoni*
hardhead *Aythya australis*
white-bellied sea-eagle *Haliaeetus leucogaster*
black-fronted dotterel *Elseya melanops*

Other fauna

Permanent waterholes provide important fish habitat in south-western Queensland. They are vital for several endemic and near-endemic species including Lake Eyre yellowbelly *Macquaria* sp. and related species, and Cooper Creek tandan *Neosilurus* sp. Other fishes include hardyheads *Craterocephalus* spp. and gudgeons *Hypseleotris* spp.

Many species of frogs occur: the genera *Litoria*, *Limnodynastes* and *Crinia* are well represented. Turtles *Emydura* spp. commonly occur.

Invertebrates include yabbies *Cherax destructor*, shrimps *Macrobrachium australiense*, mussels *Alathyria jacksoni*, water surface insects such as the water strider *Limnogonus* sp. and copepods such as *Boeckella fluvialis*.

Mammals such as koala *Phascolarctos cinereus* and bats use the fringing woodland as patches or corridors of habitat in otherwise unsuitable country.

Threats to the conservation values

- Reduced inundation which may eliminate some wetland processes, reduce habitat diversity and prevent reproduction of wetland plants and animals.
- Siltation of waterholes due to erosion in catchments that are degraded by livestock and/or feral animals.
- Trampling of channel banks by cattle, causing loss of vegetation and increased erosion or collapse.
- Disturbance to fauna by humans making inappropriate recreational use of waterholes.
- Occurrence of exotic fishes.



Lake Eyre
yellowbelly
(Humphery
and Long)

Management responses required

- Community-wide consultation and education to prevent/minimise new water extraction/diversion schemes both upstream and on-site.
- Manage catchments to reduce erosion.
- Manage grazing along watercourses to ensure long-term viability of vegetation and stability of banks.
- Planned management of recreational use.
- Prevent introduction of exotic fishes to unaffected areas.

Gaps in knowledge

This wetland type is relatively well known in south-western Queensland in terms of ecology and species diversity.

Further reading

Blackman, J.G. et al. 1996. Queensland. In, ANCA. A Directory of Important Wetlands in Australia, 2nd edition. Australian Nature Conservation Agency, Canberra. Site accounts prepared by G. Ford for Birdsville-Durrie Waterholes Aggregation (p. 215) and Diamantina Lakes Area (p. 220).

Kingsford, R.T. ed. 1999. A free-flowing river: the ecology of the Paroo River. NSW National Parks and Wildlife Service, Hurstville.

For further information, contact:

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