Queensland Government
Environmental Protection Agency
Queensland Parks and Wildlife Service

of south-western Queensland

Oxbows (cut-off river bends)

Landform and water regime

Oxbows occur in channels on floodplains of meandering rivers. They are former bends of the main river channel which have been cut-off from main channel flow by siltation or by formation of a new main channel. Larger examples may be hundreds of metres long and many tens of metres wide. Soils are heavy cracking clays.

Water supply is from stream flow that usually originates in distant parts of a river catchment. The oxbows may receive water from the main channel if the flood is large enough to cause minor connecting channels to flow. Inundation is usually semi-permanent and depth may vary from more than 3 m after filling to less than a metre during drought. Some examples may be dry or full for longer periods where human intervention has altered the water regime. Water normally is fresh and often is less turbid than water in the main channel due to settling-out of silt.

This type differs from permanent river reaches and waterholes in being cut off from the main river channel, thus receiving less inflow and probably subject to less scouring during floods.

Aerial photograph of Birch Lagoon, Balonne floodplain (Department of Natural Resources)

Typical vegetation

This wetland type is fringed by open to very open woodland, mainly of coolibah *Eucalyptus coolabah* but usually comprising several tree and shrub species. The trees may be more than 10 m high in some examples.

Associated wetland types

- Permanent river reaches and waterholes.
- Wooded watercourses.
- Lignum swamps.
- Eucalypt wooded swamps.

Distribution in south-western Queensland

This wetland type is uncommon in south-western Queensland and occurs mainly in the Darling Riverine Plains and Channel Country biogeographic regions.

Prominent examples of this type

- Birch, Horseshoe and Mooramanna Lagoons (Balonne floodplain south of St George).

Occurrence in protected areas

This wetland type occurs in only one national park (Lake Constance, Diamantina National Park) in south-western Queensland.

Principal conservation values

- Provide semi-permanent habitat for wetland fauna, especially fishes.
- Important habitat for many non-wetland fauna species (mammals, reptiles, frogs, woodland birds) that need to live near water and/or that favour trees with hollows.

Characteristic plant species

Trees and shrubs:

coolibah *Eucalyptus coolabah*
black box *Eucalyptus largiflorens*
river red gum *Eucalyptus camaldulensis*
river cooba *Acacia stenophylla*
river paperbark *Melaleuca linariifolia*
lignum *Muehlenbeckia florulenta*

Oxbows (cut-off river bends) *cont...*

Grasses, sedges and forbs:

common couch *Cynodon dactylon*
spiny mudgrass *Pseudoraphis spinescens*
club-rush *Schoenoplectus litoralis*
giant sedge *Cyperus exaltatus*
spike-rush *Eleocharis* spp.
knotweed *Persicaria* spp.
water convolvulus *Ipomoea diamantinensis*
wavy marshwort *Nymphoides crenata*
willow primrose *Ludwigia peploides*
common nardoo *Marsilea drummondii*

Characteristic waterbird species

Breeding species:

Australian wood duck *Chenonetta jubata*
Pacific black duck *Anas superciliosa*
grey teal *Anas gracilis*
Australasian grebe *Tachybaptus novaehollandiae*
darter *Anhinga melanogaster*
little pied cormorant *Phalacrocorax melanoleucos*
white-faced heron *Ardea novaehollandiae*
yellow-billed spoonbill *Platalea flavipes*

Some other species that occur:

hardhead *Aythya australis*
Australian pelican *Pelecanus conspicillatus*
white-necked heron *Ardea pacifica*
great egret *Ardea alba*
nankeen night heron *Nycticorax caledonicus*
Australian white ibis *Threskiornis molucca*
Eurasian coot *Fulica atra*
black-fronted dotterel *Elseyornis melanops*
masked lapwing *Vanellus miles*
whiskered tern *Chlidonias hybrida*

Other fauna

Oxbows in the Darling Riverine Plains provide habitat for fishes such as dew fish (freshwater catfish) *Tandanus tandanus* and Murray-Darling yellowbelly *Macquaria ambigua*. Silver perch *Bidyanus bidyanus* and small species such as crimson-spotted rainbowfish *Melanotaenia fluviatilis* possibly also occur.

Frogs that occur near permanent water, such as *Litoria latopalmata* and *Limnodynastes fletcheri*, presumably occur at oxbows. Other fauna likely to be present include Murray turtle *Emydura macquarii*, yabbies *Cherax destructor* and other invertebrates that occur at waterholes, such as insects that are water surface dwellers.

Threats to the conservation values

- Reduced inundation which may eliminate some wetland processes, reduce habitat diversity and prevent reproduction of wetland plants and animals.
- Proliferation of exotic fishes, notably carp *Cyprinus carpio*, which increase water turbidity and displace indigenous fishes (natural repopulation by indigenous fishes is dependent on occurrence of adequate floods).
- Contamination from agricultural chemicals in inflowing water and spread of exotic plants from agricultural areas.

Management responses required

- Community-wide consultation and education to prevent/minimise new water extraction/diversion schemes both upstream and on-site.
- Continue research on control of carp and implement appropriate carp control measures.
- Enforce controls on spread of polluted water and exotic plants beyond agricultural areas.

Gaps in knowledge

This wetland type has been one of the subjects of intensive wetland inventory in the Lower Balonne area (D. Moffatt, Department of Natural Resources). Results of this work may become publicly available in the near future.

Further reading

Blackman, JG. *et al.* 1996. Queensland. In, ANCA. *A Directory of Important Wetlands in Australia, 2nd edition.* Australian Nature Conservation Agency, Canberra. Site account for Balonne River Floodplain (p. 300).

Crimson-spotted rainbowfish
(D. Moffatt, Department of Natural Resources)

For further information, contact:

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