

## Lake Brewster (Ballyrogan)

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Lake Brewster was originally an ephemeral floodplain wetland. In the 1950s it was developed as an off-river storage and modified through the construction of flood embankments, inlet and outlet canals and regulators. It is now used as regulatory storage for the delivery of water to the lower Lachlan system and has the capacity to hold 155, 000 ML. Total area is approximately 6150 ha giving an average depth of 2.5 m.

Lake Brewster is listed on the [Directory of Important Wetlands](#) as it is a good example of a seasonal/intermittent freshwater lake (floodplain lake), provides important refuge habitat, and supports a high diversity of wildlife, including a number of threatened species.

Up until the 1960s the waters of Lake Brewster were often clear and supported dense submerged vegetation and large quantities of fish. The spread of carp, possibly as a consequence of the 1974 floods, saw significant increases in turbidity resulting in the progressive loss of the majority of perennial submerged plants. Such changes are thought to be a result of a combination of seasonal and long-term changes in the river flows, rapid changes in water level, turbidity coupled with the effects of the feeding habitat of carp and inappropriate grazing regimes. This combination of factors has resulted in serious water quality problems, including turbidity and salinity but particularly with regard to blue-green algae.

To address the declining water quality and impacts on wetland values and water efficiency, the Lake Brewster Water Efficiency Project was funded in 2006 with the main objectives of:

- To improve water quality in Lake Brewster by establishing constructed wetlands within the lake, and by control of carp and farm animal grazing;
- To continue to provide storage for flood water for use by downstream irrigators;
- To enable complete drainage of the lake;
- To maintain the function of the existing channels as by-pass channels for delivering water from the Lake Brewster weir pool to the downstream users; and
- Maintain and improve biodiversity values of the lake and surrounding system.

The proposed reconfiguration of the lake is based on the premise that the provision of functioning wetlands (approximately 1100 ha) combined with a smaller and deeper storage cell will assist in increasing water quality and increasing complexity of the ecosystem. These changes will be combined with a number of other initiatives, including complete drainage of the system, widening and deepening of outflow channels, control of carp and stock grazing. The Lake Brewster Land and Water Management Plan, Brewster Deck, Fish Management and Operations Plan and Monitoring and Evaluation Plan have been developed to assist in the adaptive management process. The water savings expected to be generated from the Lake Brewster Water Efficiency project will be used to re-establish wetland vegetation and provide wetland habitat for improved water quality and ecological outcomes.

Lake Brewster still provides a valuable habitat for a variety of waterbirds including the Australasian Bittern (*Botaurus poiciloptilis*), Freckled Duck (*Stictonetta naevosa*), Great Egret (*Ardea alba*), Glossy Ibis (*Plegadis falcinellus*), White-bellied Sea-eagle (*Haliaeetus leucogaster*), Marsh Sandpiper (*Tringa stagnatilis*) and the Common Greenshank (*Tringa nebularia*). It is also an important habitat for the Australasian Shoveler (*Anas rhynchotis*) and is utilised as an important nesting area for Black Swans (*Cygnus atratus*) and Australian Pelicans (*Pelecanus conspicillatus*).