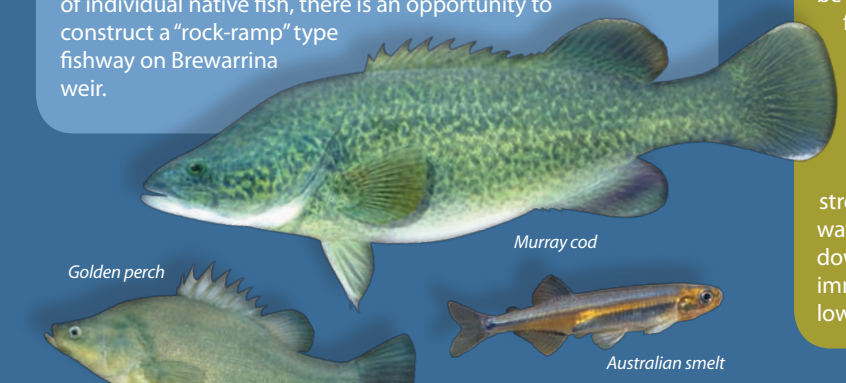
Brewarrina Weir
Fishway

Why does Brewarrina Weir need a fishway?

There are 13 native fish species in the Barwon Darling River that migrate both short or long distances to spawn, feed and seek shelter. Brewarrina weir prevents these movements by creating a physical barrier except during high flows when the weir is submerged. Currently, the weir is unable to be negotiated by fish 90% of the time. Large species such as Murray cod, yellowbelly and silver perch as well as several important smaller species need to be able to migrate past Brewarrina Weir.

To ensure the long-term survival of fish communities in the Barwon–Darling River system and to improve the survival chances of individual native fish, there is an opportunity to construct a "rock-ramp" type fishway on Brewarrina weir.



What will it look like?

The proposed new fishway is to be constructed near the left bank (southern town side) of the river, and will be approximately 30m wide and 45m long. It will be constructed at the deepest part of the channel cross-section, therefore ensuring the fishway remains operational over a larger range of flows and preventing the need for large scale excavation of the river bed. In effect, a 30m wide section of the weir wall will be set 45m back into the weir pool, and will be constructed under conditions that will prevent water loss.

The entire fishway structure is to be built within the weir pool on the upstream side of the weir wall (as opposed to previous plans which would have seen the fishway built on the downstream side of the weir wall). When the river is flowing, the fishway will create a rocky cascading effect of water starting from approx 45m upstream in the weir pool and ending at a lowered section of the weir wall, where the water will discharge in the river channel. The fishway will consist of a series of shallow resting pools separated by large rocks that will form ridges with gaps that fish can swim through. The fishway will be a low gradient to allow the fish to travel up and out into the river habitat upstream.

The exit (upstream) end of the fishway will be set at a height of full weir pool level, thus ensuring that near current weir pool capacity is maintained. The capacity of the weir pool will also be protected by constructing the sides of the fishway above the full weir pool level. Construction of the entrance (downstream) end of the fishway will involve removing a notch of the weir wall 13m wide and down to river bed level, creating an entrance for the fishway. This will remove the section of wall currently fitted with drop boards.

The weir crest on both sides of the fishway entrance (downstream) will be raised approximately 1.5m to prevent extra water escaping. To allow fish to approach the fishway from the downstream side a 10m wide section of the concrete apron immediately downstream of the weir wall will be replaced by a lower stepped apron.

When will the fishway operate?

The fishway will commence to operate when the weir pool rises near the level of the weir crest, allowing water to cascade into the rock-ramp, creating a series of slow flowing resting pools like a long flight of stairs. During this time fish can progressively move up the fishway by moving between the ridge rocks and resting in the pools until exiting at the upstream end of the fishway. When high flows 'drown-out' the weir, the water level downstream of the weir equals that upstream and fish are free to move over the entire crest of the weir, independent of the fishway. The fishway will cease to flow when the weir pool falls 20cm below the weir crest level, therefore preserving water levels in the weir pool. During critical times of drought and low river flows there are opportunities to temporarily close the fishway, for extended periods of time if required and maintain the water level at the weir crest.

Will the Ngunnhu (fish traps) be affected?

The new fishway would be built on the upstream side of the weir wall, within areas currently submerged by water. The location of the fishway and detailed planning at construction time would ensure that the fish traps were not disturbed both during construction as well as in the longer term.

Will the town water supply be affected?

There will be no change to town water supply. The fishway project can be undertaken without impacting upon water security for Brewarrina, landholders, stock and domestic requirements and irrigation demand. During typical flow scenarios the fishway has been designed to cease to operate when the water level within the weir pool drops to 20cm below the crest level. During critical times of drought and low river flows there are opportunities to temporarily close the fishway and maintain the water level at the weir crest.

During construction there is a requirement to guarantee and provide continuity of flow within the Barwon River at all times. There will be no obstruction to flows outside of the immediate works areas. In the construction area a coffer-dam will be in place for the period of construction. It is anticipated that coffer dams will not occupy the total river channel and the weir pool will function as normal.

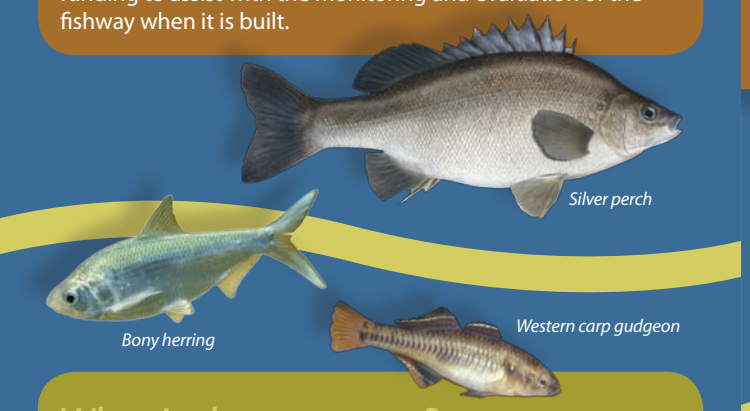
After construction, there will be no change to water supply. The weir will maintain the current level. The fishway itself will be fitted with seepage control to prevent water loss.

How much will it cost to build?

It is anticipated that the important and long-awaited fishway will cost approximately $1.3M.

How is the fishway being funded?

The Western Catchment Management Authority have allocated a portion of the Brewarrina to Bourke Demonstration Reach Project budget to address fish passage issues in the Barwon Darling River between Brewarrina and Bourke which will be used to construct the fishway. Prior to this, the Environmental Trust provided $100 000 to assist with the environmental assessment, design and construction of the fishway. The Murray Darling Basin Commission has contributed funding to assist with the monitoring and evaluation of the fishway when it is built.



What is the next step?

Several approvals are required from agencies, including the Heritage Office. NSW DPI will work with the community to identify key issues and addresses them in a Review of Environmental Factors. The processes will encompass both the significant benefits and any issues surrounding the project.

Who will build it?

NSW Commerce will coordinate a tender process which invites suitably qualified construction companies to bid competitively for the contract to build the fishway. Where practical, opportunities for local employment will be provided for. In particular, cultural heritage aspects will need monitoring and it is anticipated that local community members will be involved in this important project.

Any comments or concerns?

DPI is committed to providing continuing communication with the local community and agencies and as such is seeking comment on the proposed fishway. If you have any additional comments or questions about the proposal, please ring or address written submissions to DPI Dubbo office.

Submissions Close: 31 October 2008

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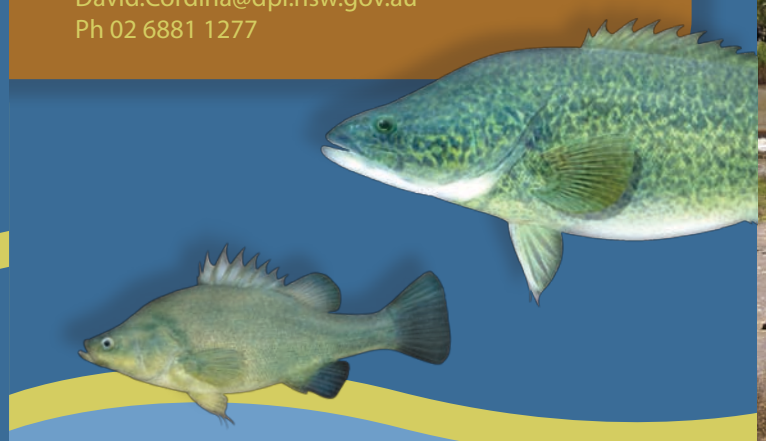

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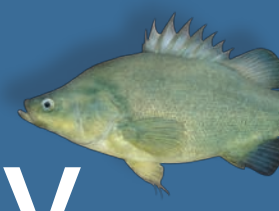
Brewarrina Weir
Fishway



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WESTERN Catchment Management Authority

Environmental TRUST

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