

Newstreams

A NSW DPI email newsletter for recreational fishers and others interested in improving fish habitat to build native fish stocks

No 7. April 2007

About Newstreams

Newstreams is an email newsletter to keep people up to date about NSW fish habitat activities, and about important aquatic habitat developments in Australia and around the world. It is published electronically every two months by NSW Department of Primary Industries. In NSW many estuarine and freshwater habitats for juvenile and adult fish have been degraded or lost through urban, industrial and agricultural development. Communities around NSW are working actively to restore fish habitat.

NSW DPI NEWS

Namoi aquatic habitat initiative

This new initiative features a demonstration reach and removal of major barriers to fish passage in the Namoi catchment. The 18 month, \$1.1 million project is funded by the Natural Heritage Trust and will be managed by NSW DPI on behalf of Namoi CMA. To find out more contact Milly Hobson (demonstration reach) or Anthony Townsend (fish passage) on 02 6765 4243.

Mapping of NSW key fish habitats

NSW DPI has embarked on a project to map all the key fish habitats of NSW, including natural and semi-natural marine, estuarine and freshwater habitats, and high value artificial habitats such as man made lakes and impoundments. Artificial habitats of low value such as irrigation canals, stormwater drains, sewage treatment ponds and urban ponds are excluded except where they are known to be important to threatened species. Initial maps will be computer generated and ground-truthed by local conservation managers before being provided to councils to help them develop strategic plans and Local Environmental Plans. DPI conservation managers will be seeking input from locally based recreational fishers to help refine the mapping. For more information contact Allan Lugg on 02 4441 8969.

Rocky Mouth Creek restoration

Richmond catchment's Rocky Mouth Creek is in much better health thanks to a \$95,000 three year project funded by the NSW Environmental Trust. The drained former wetland is underlain by acid sulfate soils and has been the source of poor water quality and extensive fish kill events for many years. A group of six landholders chose a range of techniques to reduce the amount of acid entering the creek and improve water quality for estuarine fish. Over 80 ha have been laser levelled and limed to reduce the number of field drains and improve post-flood surface drainage. Over 1.5 kilometres of drains have been reshaped to reduce groundwater drainage, 19 ha of mature paperbark forest has been retained and a further 700 trees planted. As well, \$50,000 from the Northern Rivers CMA enabled the shallowing of another 2.5km of drains and installation of a sluice to actively manage a floodgated drainage system. The project's success is due to landholders' willingness to become involved, and neighbouring landholders have now approached DPI with a view to undertaking similar programs on their properties. To find out more about the project, contact Simon Walsh at simon.walsh@dpi.nsw.gov.au.

New fish friendly crossing at Buckenbowra River

NSW DPI has constructed a new fish friendly road crossing at Buckenbowra River west of Batemans Bay. The joint project between Eurobodalla Shire Council, Southern Rivers CMA & DPI; was funded through the Environmental Trust & Natural Heritage Trust (CMA & Bringing Back the Fish project). The twin box culvert crossing replaces a low-level causeway that had no pipe culverts and prevented fish from migrating in low to moderate river flows. The crossing was a high priority for Southern Rivers CMA because the migratory Australian grayling (*Prototractes maraena*), listed as vulnerable under the Federal Environment Protection and Biodiversity Conservation Act, has been recorded in the Buckenbowra River which provides excellent aquatic habitat. The crossing allows fish to move 28 km

upstream from the Clyde River confluence. Source: <http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/improved-structure-buckenbowra-river>.

Billabong Creek assessment

A new project is underway to assess road crossings that block fish passage along Billabong Creek in southern NSW. The project will identify crossings where improvements will benefit both native fish and provide better vehicle access following floods. NSW DPI will work with local landholders and the community to modify or upgrade identified crossings by removing obsolete road crossings or fitting existing low level road crossings with large culverts. Source:

<http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/fish-passage-billabong-creek>.

Automation of Balranald fish lock

The Deelder fishlock at Balranald Weir has been automated to provide a continuous pathway for fish to move up the Murrumbidgee River. The lock, the only one of its kind currently operating in the world, was originally developed in Belgium in 1950, and adapted to suit conditions at the Balranald site in 2003. It works like a navigation lock for boats, and until this year was operated manually, so fish could only migrate when staff were onsite. An initial fish migration assessment identified over 14,000 fish and shrimp (from 11 species) moving through the automated fishlock in 39 days. The success of this project has led fisheries managers to consider this lock for key sites in New South Wales. For more information, contact Lee Baumgartner at lee.baumgartner@dpi.nsw.gov.au.

Excluding exotic redfin perch

NSW DPI has received funding from the Hawkesbury-Nepean CMA to explore ways to exclude exotic redfin perch from habitats that support threatened Macquarie perch above Warragamba Dam. Redfin perch were introduced from Europe into Australia in the mid 1860s for recreational fishing and are implicated in the decline of native threatened and non-threatened fish, particularly Macquarie perch through predation on young fish, competition for food, and transfer of disease. The project will identify rivers or streams that may be suitable for exclusion devices to prevent redfin perch establishing. For more information contact Jamie Knight at the Port Stephens Fisheries Centre on 02 4916 3852 or james.knight@dpi.nsw.gov.au.

Threatened species habitat in Hawkesbury Nepean

NSW DPI researchers are currently surveying the Hawkesbury-Nepean catchment for remnant populations of two threatened species - Macquarie perch and Adams emerald dragonfly. The project will survey remote and/or previously unsurveyed streams and where remnant populations are found will identify habitat, water quality and sediment to develop guidelines for species recovery plans. At sites where populations are expected but not found, researchers will decide whether it is feasible to remediate the habitat and re-establish the two species. For more information contact Andrew Bruce at the Port Stephens Fisheries Centre on 02 4916 3814 or andrew.brace@dpi.nsw.gov.au.

Improving downstream passage of native fish

Murray cod and golden perch experienced substantial mortality when passing through 'undershot' style weirs in preliminary trials being undertaken by NSW DPI to investigate the effects of dams and weirs on the mortality of downstream migrating fish. The Murray-Darling Basin Commission has engaged NSW DPI to undertake a three year study to determine the source of this mortality and develop appropriate management interventions to improve the survival of native fish. Project contact is Lee Baumgartner at lee.baumgartner@dpi.nsw.gov.au.

Improved fish migration in the Murray River

NSW DPI researchers and recreational anglers have observed marked increases in fish migration along the Murray River since the construction of four new fish ladders funded by the Murray Darling Basin Commission. In December and January, scientists trapping the newly opened fishways and monitoring electronic tag data from fish in the river detected large numbers of golden perch moving along the Murray River around Wentworth and Mildura. Anglers have also reported significant increases in catches with fishing spots along the bank of the Murray becoming a sought after commodity. The increase in migrations indicates that the fishways are benefiting fish in the Murray River system.

Sonar reveals new opportunities for fish migration

NSW DPI is using its new dual-frequency identification sonar (DIDSON) to determine whether fish move through navigation locks at the same time as boats passing through. So far researchers from

NSW DPI and SARDI have identified several species, including mullet, golden perch and black bream, using the locks to move through the tidal barrages and into the Murray River. The survey results will be used to develop management options to increase these species' ability to complete their life cycles.

Tide to Table continues to expand

NSW DPI and OceanWatch Australia have combined to expand the existing Tide to Table program through funding from the National Landcare Program. The project will use commercial and recreational fishers' knowledge to identify key areas of habitat that require improved management or rehabilitation. The initial Tide to Table project focussed on the Sydney metropolitan area; the expanded project covers the Hawkesbury-Nepean and Hunter Central Rivers CMA regions. This unique initiative aims to improve communication between 'end users' of a resource - such as commercial and recreational fishers - and people upstream whose activities impact upon water quality and habitat.

NSW NEWS

New environmental flows and infrastructure for Shoalhaven river

The NSW Government will introduce new environmental flows for the lower Shoalhaven River when the current drought ends. Currently up to 90 million litres of water is released daily from Tallowa Dam for the health of the Shoalhaven River, but the new rules will see a far greater range of flows, with some up to 371 million litres per day, depending on the season. To support the environmental flows, new infrastructure will be built at Tallowa Dam this year to allow 10 native fish species to move along the river and to improve the temperature of water released from the dam. Source:

<http://www.sca.nsw.gov.au/news/media/99.html>.

AUSTRALIAN NEWS

Murray cod correction

In the last edition of Newstreams the news item on the Murray cod exhibition incorrectly stated that the cod was the world's largest freshwater fish. While the Murray cod is **Australia's** largest freshwater fish, there is some debate about the world's largest. The Giant Mekong Catfish has been recorded at 3m and 350kg, and South America's *Arapaima gigas* at 4.5m and 200kg. In comparison the Murray Cod has been recorded at 1.8m and 113.5kg. The enormous European Sturgeon (*Huso huso*) which can grow to 5m and 2000kg and live to 118 years, is not a wholly freshwater fish. It is anadromous, meaning that it matures in the ocean, and breeds in fresh water. Thanks to NSW DPI's Scott Nichols for resolving this issue. As this is a newsletter about fish habitat, not fish size, we won't continue the debate in these pages!

INTERNATIONAL NEWS

The US National Fish Habitat Science and Data Committee has released its draft framework for assessing the nation's fish habitat. Download the framework at

http://www.fishhabitat.org/science/documents/National_Fish_Habitat_Initiative-Science_Report.pdf.

FISH HABITAT RESOURCES

Design guidelines for reintroducing wood into Australian rivers: Step-by-step design principles

This new guideline provides design principles for reintroducing wood into different types of Australian rivers. Information about research projects that have been undertaken in Australia is provided, with case study examples, practical tips and visual aids clearly explaining the different strategies available for using wood to restore rivers. Download at

http://www.lwa.gov.au/products_details.asp?pc=PX061171.

Valuing wetlands (Ramsar Technical Report No. 3)

This guide gives advice on when and why wetland valuation should be undertaken and sets out a five-step framework for the integrated assessment and valuation of wetland services, with descriptions of

available methods for undertaking each of these steps. These are supplemented with case studies from around the world. Download at <http://www.biodiv.org/doc/publications/cbd-ts-27.pdf>.

Queensland urban fish habitat management research program

This program includes research into critical habitats for juvenile stages of key fish species, protection of habitat to maintain fish stocks, fish friendly development designs and quantification of value of recreating and rehabilitating fish habitats. Find out more at <http://www2.dpi.qld.gov.au/extra/pdf/fishweb/UFHM.pdf>.

Climate change impacts on Australia's coast and oceans

The Summer 2007 issue of Waves, the newsletter of the Marine & Coastal Communities Network, focuses on climate change and its current and projected impact on estuaries and coasts. Download it at <http://www.mccn.org.au/article.php?id=1462/>.

Saltmarsh restoration

This review looks at the ecology, disturbance and restoration of coastal saltmarsh in Australia. Saltmarsh habitats are important to a variety of commercially valuable fish and native mammal species and rehabilitation requires relatively little effort to remove weeds and fence off areas to regenerate naturally. Read "Ecology, disturbance and restoration of coastal saltmarsh in Australia: a review" by P. Laegdsgaard, in Wetlands Ecology and Management 14(5): 379-399, 2006. The abstract is at <http://www.springerlink.com/content/tw10p284r1346243>.

Impact of urbanisation on coastal wetland structure and function

This paper looks at the impact of concentrated runoff and poor water quality on coast wetland ecology. Read the paper by Lee et al in Austral Ecology 31(2): 149-163, 2006. The abstract is at <http://www.blackwell-synergy.com/doi/abs/10.1111/j.1442-9993.2006.01581.x>.

FISH HABITAT FUNDING

Envirofund

The Australian Government Envirofund helps communities undertake local projects to conserve biodiversity and promote sustainable resource use. Applications close 27 April 2007. More information is available at <http://www.nht.gov.au/envirofund/2006-2007/round9/index.html>.

Bundaberg Rum Bush Fund

Landcare Australia and Bundaberg Rum fund community groups up to \$5500 to tackle water quality projects to improve the health of our rivers and waterways. Applications are accepted all year round and funds allocated twice a year. Find out more at http://www.landcareonline.com/funding_opportunity_details.asp?fo_id=5.

ABOUT NSW DPI AND FISH HABITAT

NSW DPI is responsible for management of, and research into, fish habitat in NSW.

NSW DPI's on-ground work:

- map, prioritise and modify structures that block fish passage
- map and rehabilitate aquatic habitat such as wetlands
- reintroduce snags (large woody debris) into streams
- revegetate streambanks to provide habitat and improve the quality of water running into streams.

NSW DPI's research work:

- document the fish communities associated with different aquatic habitats
- understand the basic biology of key fish species – what they eat, when they breed, what their habitat requirements are
- evaluate management actions to see how effective they have been and what improvements may be possible.

NSW DPI's legislative, policy and planning work:

- review developments that may impact on fish habitats and negotiate impact reduction and/or compensatory works

- incorporate aquatic habitat protection requirements into land use planning, water management, and estuary and floodplain management
- help developers, local councils and other state agencies understand the importance of aquatic habitats for fish and options for ensuring their protection and rehabilitation.

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Send us your news

If you have news about fish habitat activities in your area, we'd like to hear from you. Email Rebecca Lines-Kelly at rebecca.lines-kelly@dpi.nsw.gov.au with your news items and suggestions.

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