

Newstreams

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

No 6. February 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

Fish and chips

NSW DPI researchers are currently tagging fish in the Barwon-Darling River to find out how fish are responding to aquatic habitat rehabilitation works in the Bourke to Brewarrina demonstration reach. The demonstration reach is a collaboration between NSW DPI and the Western Catchment Management Authority and, with the assistance of the community, aims to improve aquatic habitat in the area and improve native fish stocks. The fish tagging program is monitoring the ecological outcomes of the proposed works.

External tags with a unique identification number are being fitted to Murray cod, golden perch, silver perch and carp. The fish will also have a small microchip device implanted in the shoulder, allowing them to be automatically scanned at the fixed stations and portable readers currently operating throughout the Murray-Darling Basin.

Anglers who catch tagged fish are asked to call the tag return hotline on freecall 1800 185 027 or visit www.fisheries.nsw.gov.au/science/freshwater_tagging. Those who respond will be given details of their tagged fish, and a prize.

The information gathered from the tagged fish will give researchers a better understanding of fish migration and changes in fish distribution due to river rehabilitation works such as strategic resnagging of the river channel, protection and restoration of riverside vegetation, removal of weeds and fish friendly livestock management.

The Barwon-Darling River fish tagging program is jointly funded by the Western CMA and MDBC. For more information on the program, contact Craig Boys at the Port Stephens Fisheries Centre, craig.boys@dpi.nsw.gov.au or 02 4916 3851. For more information about the Bourke to Brewarrina demonstration reach, contact David Cordina at david.cordina@dpi.nsw.gov.au or 02 6872 2077.

Bringing fish in from the cold

NSW State Water Corporation is proposing to replace a deep fixed level water offtake at Keepit Dam on the Namoi River with a multi-level offtake to potentially reduce cold water pollution which affects fish downstream of the dam. Cold water released from water storages has long been recognised for its negative impact on native fish and their habitats. As part of the Native Fish Strategy, MDBC is currently funding NSW DPI researchers to scope the feasibility of a four year investigation into how fish populations and habitats change once the multi-level offtake at Keepit Dam is installed. For more information, contact Craig Boys at the Port Stephens Fisheries Centre on 02 4916 3851 or at craig.boys@dpi.nsw.gov.au.

Fish ladders freak out some fish

NSW DPI's underwater DIDSON camera has revealed that black bream and mulloway 'freak out' when they approach fish ladders over barrages at the mouth of the Murray River. The ladders are used by 19 fish species, including yellowbelly, bony bream and small fish like smelt and gudgeon, but the black bream and mulloway swim up to the ladder, get spooked and swim away quickly. Researchers are now investigating whether the fish are deterred by the size of the ladder mouth, or

the rapid transition from salt to fresh water. Source: <http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/sonar-reveals-secret-fears-of-fish>.

Friends of the Mongarlowe to assess Macquarie perch habitat

With support from NSW DPI, a small community group has begun assessing the state of riparian and instream habitats in a tributary of the Shoalhaven River. In November 2006, NSW DPI conducted a community training day for the Friends of the Mongarlowe, which included topics such as project management, sampling design, habitat assessment and field methods. The group intends to sample a range of sites throughout the subcatchment with the overall goal of conserving habitats most important for Macquarie perch. Source: <http://wwf.org.au/publications/the-web-summer-2007>. For more information, contact the Port Stephens Fisheries Centre on 02 4982 2265: John Pursey (john.pursey@dpi.nsw.gov.au) or Tom Rayner (tom.rayner@dpi.nsw.gov.au).

MacDonald Valley Association to control carp

The historic MacDonald River flows south into the Hawkesbury-Nepean system. However, over the past 20 years carp have taken advantage of habitat changes in the river and their numbers have exploded. As part of a larger restoration program, the MacDonald Valley Association, together with NSW DPI, will address this issue with a series of surveys and targeted control efforts. The first stage of this process will take place early this year, with the aim of documenting the distribution and population structure of carp in the catchment. For more information, contact Tom Rayner at the Port Stephens Fisheries Centre on 02 4916 3917 or tom.rayner@dpi.nsw.gov.au.

Habitat discussions at Lower Darling schools

As part of the Burtundy Weir fish passage project, NSW DPI visited lower Darling schools at Dareton, Pooncarie and Pallinyewah to talk about fish habitat. Students developed a list of the river's natural and human features and discussed the changes in the river and the role of habitat in helping support and sustain native fish stocks. In the past pupils from Pooncarie Public School have made a presentation in the chamber of NSW State Parliament about the Darling, and students from Pallinyewah Public School featured in the ABC program Two Men in a Tinny. Several students were aware of the Murray fish passage program, particularly at Lock 10 at Wentworth, and were keen to try and win a lure for reporting capture of fish tagged to monitor the effectiveness of the fishways. More information from Mark Neeson at mark.neeson@dpi.nsw.gov.au.

New rock ramp fishway over Stroud Weir

A new rock ramp fishway at Stroud Weir on the Karuah River mimics a natural, shallow rocky area in the river, providing a series of small steps, and creating an overall gentle slope for native fish to swim over the weir. It will provide more than 70 km of unimpeded fish passage which will boost the breeding and health of freshwater mullet, Australian smelt and Australian bass in the river. The fishway was completed in November with funding from Environmental Trust, Natural Heritage Trust and MidCoast Water. Source: <http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/hunter-fishway>.

Pygmy perch relocated to Narrandera

NSW DPI are minding 100 southern pygmy perch at Narrandera Fisheries' Centre until there is enough water to return them to their usual home in a Murray River tributary near Holbrook. The fish were once widely distributed in south eastern Australia but are now threatened with only three known remnant populations remaining. NSW DPI located 371 southern pygmy perch in the small remnant waterholes of the tributary in December, and moved 100 individuals after the waterholes began drying out as the fish are vulnerable to bird predation, rising water temperatures and low dissolved oxygen levels. Source: <http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/nswdpi-staff-relocate-southern-pygmy-perch>.

Eastern freshwater cod males watch over eggs and young

NSW DPI's underwater cameras have found that once eastern freshwater cod females mate and spawn they leave the eggs in the care of the male. The male guards the eggs aggressively until they hatch and protects the young cod until they are old enough to fend for themselves. Unfortunately this territorial behaviour means the male is vulnerable to anglers. Tagging shows that it travels more than 30 kilometres, over waterfalls and barriers to mate and feed. Source: <http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/rare-fish-shows-soft-side>.

NSW NEWS

NSW fish habitat grants

NSW Recreational Fishing Trusts have announced funding of \$300,000 to restore and rehabilitate freshwater and saltwater fish habitats. The 18 projects include saltmarsh and mangrove rehabilitation in coastal estuaries, improving fish passage at a number of barriers including the causeway to Stuart Island on the Nambucca River, construction of a fishway on the Gloucester River, and improvement of waterways by removing weeds, stabilising riverbanks, and fencing off streams. Source:

<http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/fishing-licence-fees-to-fix-fish-habitat>.

Bass passage in Shoalhaven River

NSW Department of Natural Resources in collaboration with NSW DPI & Wollongong University has begun a research project into the movement of Australian bass on the lower Shoalhaven River. The project will investigate whether fish passage will be affected by extracting additional water from Tallowa Dam on the Shoalhaven to augment Sydney's water supplies. The study focuses on the river reach from Tallowa Dam to Burrier. Source:

<http://www.freshwateranglers.com.au/Adobe%20Files/Email%20N-letter%2021.pdf>

Tide to Table Project – Cabramatta Weir Falls

Oceanwatch's Tide to Table project has opened a further 5.77km of waterway with the removal of the Cabramatta Weir by Fairfield City Council in Sydney. The redundant concrete weir was a considerable barrier to migrating fish. The Tide to Table model piloted in the Sydney metropolitan area is due to restore fish habitat in the Hawkesbury Nepean and Hunter Central Rivers CMA regions this year.

Project ideas related to water quality or fish habitat between Pittwater and Laurieton are welcome.

Contact Simon Rowe (02) 9660 2262 for more information. Source:

http://www.oceanwatch.org.au/newsletter/OWANews_Summer_2006_07_Edition3_v2.htm#SeaNet_Best_Practice.

Local government habitat awards

Improving fish habitat helped several NSW local councils win awards in the NSW Local government and Shires Association 2005-2006 environmental awards. Winning projects included

- Oxleyan Pygmy Perch stormwater improvements and habitat regeneration plan (Richmond Valley)
- Electrofishing as a method to improve biodiversity and water quality in an urban waterway (Bankstown)
- Magdala Creek riparian restoration (Blue Mountains)
- Returning the tides to Poverty Creek (Clarence Valley)
- Glenbrook Lagoon restoration and education program (Blue Mountains)
- RiverLife interpretive tour (Marrickville & Canterbury)

Find out more details about the winning projects at <http://www.lgsa-plus.net.au/www/html/511-environment-awards.asp>.

AUSTRALIAN NEWS

Tagged native fish prove success of innovative fishways

Lockmasters at Lock 11 near Mildura have reported an increase in native numbers downstream of the lock, indicating that fish are moving through the new fishways further along the Murray. Many of the fish are showing tags that track them from lock 10 at Wentworth, completed in October last year along with Lock 9. Source: http://www.mdbc.gov.au/communications/s-scribe/eLetter_menu/e-letter_february_2007#Tagged.

Wetlands to be disconnected to save water

Some wetlands in the Murray-Darling Basin may be disconnected from the river system to provide water for drought-stressed communities. The MDBC says that temporary disconnection of low-lying wetlands that are usually full of water due to the weir pools along the mid to lower River Murray will save more than 50 gigalitres in evaporation losses from these wetlands. The wetlands will slowly dry out as the remaining water evaporates. While wetting and drying are part of natural wetland cycles there is concern that the dry wetlands may acidify and salinise. For more information read the new fact

sheet on drying of wetlands at http://thelivingmurray.mdbc.gov.au/_data/page/195/TLMfactsheet-dryingwetlands.pdf.

La Trobe University joins Murray-Darling Freshwater Research Centre

La Trobe University is now a formal partner in the revamped Murray-Darling Freshwater Research Centre (MDFRC) along with the Murray-Darling Basin Commission (MDBC) and CSIRO. The Centre's research will focus on the river's nutrient cycles, algal blooms, fish and invertebrate ecology. It will be located at La Trobe University campuses at Albury-Wodonga and Mildura. The centre was established in 1986 to generate and communicate knowledge for managing aquatic ecosystems, particularly iconic assets such as the Murray River. Source: http://www.mdbc.gov.au/communications/scribe/eLetter_menu/e-letter_february_2007#New-venture.

Murray cod artworks

A travelling art exhibition honouring the Murray cod, the world's largest freshwater fish, is on display at Shepparton Art Gallery until 25 March, and then at Mildura, Albury, Sale, Shepparton and Flinders University before finishing at Melbourne Museum in May 2008. The exhibition showcases visual art inspired by Australia's most iconic fish, including historical taxonomic drawings and lithographs, contemporary Indigenous paintings prints and sculptures, carved emu eggs and weavings, a series of commissioned photographs, and images from local families' photo albums. Find out more at <http://www.netsvictoria.org/MurrayCod/>.

As well, SA sculptor Indiana James is working on a sculpture of a giant Murray cod to replicate the biggest Murray Cod ever photographed, a fish 2.5 m long and 186kg photographed in Echuca in 1908. James has been touring his construction along the Murray River to raise awareness of the plight of the river. Over the past 4 years communities along the river have been helping him build the massive fish, which will be completed at Torrumbarry weir in Victoria this year. Mr James said evidence collected from the river communities showed a significant decline in the size of the Murray cod since 1908, from 186 kilograms to 34 kilograms. Source: <http://www.murraypioneer.com.au/archive2006/20061128.htm>.

Things look up for Basin's native fish

Things are looking up for the native fish of the Murray-Darling Basin, according to the second annual implementation report of the MDBC's Native Fish Strategy. The strategy's achievements to date include:

- construction of fishways on the Murray River and at the barrages
- positive response of threatened species such as trout cod to resnagging
- significant progress with the establishment of demonstration reaches at various locations across the Basin to showcase resnagging, riparian rehabilitation, fishways and carp management
- progress with the development of new carp control techniques, including the carp separation cage.

For a copy of the report go to www.mdbc.gov.au/NFS/nfs_publications.

Native Fish Awareness Week, 5-9 March 2007

Native Fish Awareness Week is on 5-9 March 2007. This year it will feature a Murray River tour between Mildura and the river mouth in South Australia. As part of the tour, native fish coordinators will visit schools, landholders, local Government, catchment management organisations, recreational fishers, indigenous representatives and industry to promote the benefits of looking after the river for native fish populations and explain how they can get involved in looking after the fish for the future. If you are interested in obtaining some native fish educational material (such as brochures and fish ID guides) or are after some further information on the Native Fish Strategy please visit <http://www.mdbc.gov.au/NFS/> or contact the NSW NFS coordinator David Harasti at david.harasti@dpi.nsw.gov.au.

Coastal Custodian award for mangrove specialist

The fifth annual Award for Coastal Custodians has been awarded to Tim Ealey who has developed a method to mass-cultivate environmentally friendly seagrasses and mangroves in Westernport Bay in Victoria. Dr Ealey enlisted the help of volunteers from five different community groups to trial a number of techniques in Coronet Bay within Westernport. Read more about his work at <http://www.seagrass.com.au/pdfs/Seagrass%20and%20Mangrove%20Review%20July%202006.pdf>.

Read more about the award at <http://www.environment.gov.au/coasts/publications/oceans-action/8dec06.html>.

Coral bleaching affects fish numbers

A recent study conducted by the ARC Centre of Excellence for Coral Reef Studies (CoECRS) has concluded that the gradual degradation of coral reefs is inducing a dramatic decline in the population of coral feeding fish. Coral bleaching is caused by the increasing temperature of the world's oceans; corals shed their symbiotic bacteria and die, resulting in a chalk white appearance of the corals. The process eradicates the main food source of coral-feeding fish and, as a result, their predators, such as the coral trout, which will have a knock on effect on the marine ecosystem as well as fishing. Reproduction rates of coral-feeding fish has also fallen steeply, further contributing to the falling population levels. Source: http://www.coralcoe.org.au/news_stories/butterflyfish.html.

Agricultural chemicals affect coral

Spawning coral are very sensitive to agricultural chemicals, a new study has found. The study measured the sensitivity of the eggs, larvae and adults of *Acropora millepora* to a number of common pollutants, including four classes of agricultural insecticides and a fungicide commonly used in GBR river catchments. While fertilisation rates and adult branches were not affected by the insecticides coral settlement was reduced by 50-100% after 18 hours exposure to very low concentrations of each insecticide. All life stages of coral were affected by the fungicide which caused bleaching of adult corals even at scarcely detectable levels. Source: http://www.coralcoe.org.au/news_stories/pesticides.html.

INTERNATIONAL NEWS

Global warming is creating an ocean famine

Global warming is creating an ocean famine in swathes of tropical and sub-tropical seas, according to research using nearly a decade of satellite data. The finding, which has long been predicted by computer models, suggests that as warming continues, fish stocks in tropical and sub-tropical regions will drop significantly. The study showed that in some ocean regions microscopic plants known as phytoplankton respond to rising temperatures by scaling down their productivity by 30 per cent or more. With less production at the bottom of the food chain, fish and other large ocean creatures have less to eat. <http://www.guardian.co.uk/fish/story/0,,1965873,00.html>

FISH HABITAT RESOURCES

What fish is this?

The NSW DPI fish friendly farms team has produced a 16 page free booklet **What fish is this?** to help landholders identify fish they find in their streams. The booklet has colour photographs of the 49 freshwater fish native to NSW and 7 commonly found introduced species, with details about their size, preferred habitat and distribution in NSW. The guide complements the **7 key tips for a fish friendly farm**. Fish friendly farm information sessions are being held throughout the state with presentations at Mudgee and Tarcutta this month. For more information about the program or to obtain a copy of the new guide contact Charlotte Grove on charlotte.grove@dpi.nsw.gov.au or (02) 6626 1107.

Fixing fish habitat in the Clarence estuary

This new free publication features 13 projects that have helped rejuvenate native fish habitat in the Lower Clarence. Produced by NSW DPI and the Recreational Saltwater Fishing Trust, the booklet provides details of successful projects funded by the Clarence River Pilot Fish Habitat Grant Program. To obtain a copy, contact Charlotte Grove on charlotte.grove@dpi.nsw.gov.au or (02) 6626 1107.

New brochures: Fish friendly road crossings and weirs

NSW DPI has produced two A5 brochures outlining how landholders and councils can make their road crossings and weirs more fish friendly. To obtain the brochures contact Scott Nichols on 02 9764 3067 or scott.nichols@dpi.nsw.gov.au.

Habitat restoration: Beyond the easy fix for fish stocks?

This paper by Jim Tait of Ecoconcern, was delivered at the 2006 national workshop on research extension and development priorities for stock enhancement, fish stocking and stock recovery. The workshop was an initiative of the Fisheries Research and Development Corporation (FRDC) and was managed by Recfish Australia. Read the paper on page 101 of the workshop proceedings at <http://www.recfish.com.au/reports/pdf/Workshop%20report%20final.pdf>.

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.

NSW Recreational Fishing Trusts: small grants program

<http://www.fisheries.nsw.gov.au/rec/coastal/small-grants/home-small-grants.htm>

The small grants program funds proposals up to \$5,000 for small, local or regional projects aimed at enhancing recreational fishing. They should be matched by funds from the applicant and / or other sources. The closing date for the next round of applications is 7 March 2007 and the committees are then meeting in April 2007 to make recommendations. Enquiries can be directed to the Recreational Fishing Trusts Executive Officer on 02 9527 8411 or email recreationalfishingtrust@dpi.nsw.gov.au. Further information is also available on the NSW DPI website www.dpi.nsw.gov.au/recreational.

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.

Aquatic Habitat staff

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Website

http://www.fisheries.nsw.gov.au/aquatic_habitats

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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