

Newstreams

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

No 9. August 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

Darling River habitat update

The big dry does have its advantages! Habitat features such as snags and refuge pools have been surveyed by NSW DPI along a 60 km stretch of the Darling River near Wilcannia in recent months. The collaborative project between the Western Catchment Management Authority and NSW DPI will produce an aquatic habitat management plan to protect areas of the river in good condition and improve other areas. Much of the reach, which extends from the Murtee rockbar upstream of Wilcannia through to Ten Mile Point was dry at the time of assessment, allowing access to the bed of the river channel and an opportunity to see exposed areas which have been submerged for many decades. Sub-zero overnight temperatures and lack of flow in the river produced an unusual phenomenon for this part of the world - ice on the Darling River in the mornings. A total of 1771 large woody habitats were recorded, with densities ranging from a high of 56 snags per km to a low of just 6 snags per km. The distribution of native waterplants was also recorded, with watermilfoil, azolla, water primrose and curly pondweed present in many of the 26 refuge pools along the reach. An unexpected but pleasant surprise was a small patch of ribbon weed, a favoured habitat of eel-tailed catfish, a species absent from the area for many years. Could this be a chance for a comeback? Deposits of shells of the endangered river snail, *Notopala sublineata* were recorded at several sites.

The amount of rubbish along the river banks and bed was also a notable feature – machinery parts, bottles, cans, plastic bags and discarded fishing gear were among the things that could be seen every 50 metres along the reach. On average, there was one tyre dumped in the river per kilometre and a pair of boxer shorts found every 10 kilometres! The data that was collected will now be used to determine intervention and protection actions and priorities. Recommendations will be presented to the community for comment in September and a final report submitted to the Western CMA to action. For more information, contact DPI project officer Jennifer Warner on 02 6881 1215.

Resnagging in the Barwon-Darling demonstration reach

More than 200 large trees and stumps from road developments and other locations across western NSW will be reintroduced into the Barwon-Darling River at 11 priority sites later this year as part of the Brewarrina to Bourke demonstration reach project funded by the Western Catchment Management Authority. The resnagging will be followed by two seasons of sampling to see how the fish respond to the snags. Similar projects have found that the higher the density of resnagging, the greater the response from native fish.

During the project all captured fish greater than 200 mm are being tagged externally and internally so they can be easily identified when caught by anglers. All reports of tagged fish from last season's tagging have come from the upstream Brewarrina end of the demonstration reach. The first tag return was a 300 mm carp caught downstream of Brewarrina Weir a month after being tagged. It had moved 50 metres from the place where it was originally captured.

Recreational anglers are strongly encouraged to continue reporting any catches of tagged fish in and around the demonstration reach on Freecall 1800 185 027 or the website www.fisheries.nsw.gov.au/sciencefreshwater_tagging. All participating anglers will receive a prize and be given details about the movements of their tagged fish. For more information, contact David Cordina at david.cordina@dpi.nsw.gov.au or 02 6881 1277.

Lower Darling resnagging

NSW DPI is working with landholders to replace snags in the lower Darling River for use by native species including Murray cod, golden perch and the endangered silver perch. The three month program will provide 19 woody habitats or snags for the fish to spawn, feed and avoid predators. The snags are recycled timber from the Robinvale Bridge, Pooncarie Mine powerline and other construction sites. Source: <http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/fertile-breeding-ground>.

Manilla river weir removed

Around 30 kilometres of fresh water habitat have been opened up for native fish following the recent removal of an unlicensed weir and associated infrastructure in the Manilla River near Barraba. The project was funded by the Recreational Freshwater Fishing Trust, Namoi CMA and Tamworth Regional Council, with NSW DPI providing advice and support. Negotiations with landholders mean they retain existing access to the river for stock and domestic water. For more information contact Anthony Townsend on 6765 4243 or 0427 782 701 or anthony.townsend@dpi.nsw.gov.au. Source: <http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/fish-get-free-passage>.

Clyde River cleanup

DPI's aquatic habitat protection unit has been working with Southern Rivers CMA and a team of oyster farmers on the Clyde River to remove derelict infrastructure from 6 former oyster leases. The former leases are now zoned as sanctuary zone and habitat protection in the Batemans Marine Park and will no longer be used for aquaculture. NSW DPI obtained a three-year permit from the Marine Parks Authority to approve the clean-up of these leases and any other former lease areas located in the Marine Park. NSW DPI and the CMA are negotiating with the Eurobodalla Shire Council to waive or discount the tip fees for disposal of the materials removed from the former leases in the River. For more information, contact Trevor Daly at Batemans Bay on 4478 9103 or trevor.daly@dpi.nsw.gov.au.

Feral red fin perch found in central NSW

Red fin perch have been found in the upper Lachlan, Abercrombie and Wollondilly river catchments in the central ranges of NSW. The aggressive, voracious predators prey on native Macquarie perch and southern pygmy perch, both threatened species, and carry a deadly virus that can devastate popular angling fish such as Murray cod, native perch species and trout. To recognise the feral perch, download the [Redfin perch poster](#). Source: <http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/redfin-perch>.

Pygmy perch released

NSW DPI has released more than 400 southern pygmy perch into a creek in the Upper Lachlan catchment, east of Boorowa. The fish were once widely distributed throughout the Lachlan, Murrumbidgee and Murray River systems but are now listed as a threatened species in NSW, with only three known populations remaining. The release site has many pools, healthy and continuous native riparian vegetation, aquatic plants and snags and no alien or predatory fish species. Source: <http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/threatened-fish-released>.

Wetlands on Farms program

Wetlands on Farms is a new program to help Murray Darling Basin landholders integrate their wetlands into their farming system. The program will outline how wetlands can improve the productive & financial value of farms, provide opportunistic grazing & cropping, and slow down overland flows, thereby reducing soil erosion. The program will work with individual landholders, groups of neighbouring landholders and Catchment Management Authorities to improve wetland management west of the Dividing Range. Contact Steffan Holmes at steffan.holmes@dpi.nsw.gov.au or 6881 1216 for more information.

Mapping of key fish habitats

NSW DPI has embarked on a statewide project to identify all aquatic habitats that are important to the survival and recovery of threatened aquatic species and the sustainability of recreational and commercial fishing industries.

Key fish habitats will include all marine and estuarine habitats up to highest astronomical tide level (ie 'king' tide level) and permanent and semi-permanent freshwater habitats including rivers, creeks, lakes, lagoons, billabongs, weir pools and impoundments up to the top of the bank.

Small headwater creeks and gullies (first and second order streams) that only flow for a short period after rain will generally be excluded, as will farm dams constructed on such systems. Artificial waterbodies such as irrigation channels, urban drains and ponds, and salt and evaporation ponds will also be excluded except where they support threatened species.

The main impetus for this work has been local government land use planning, so the key fish habitat maps will clearly identify waterways that deserve protection. So far maps have been prepared for 51 local government areas, about a third of the state.

For further information, contact Allan Lugg on 4441 8969 or allan.lugg@dpi.nsw.gov.au, or Antonia Creese on 4916 3810 or antonia.creese@dpi.nsw.gov.au.

Glovebox fish guide a success

The glovebox format of NSW DPI's 'What fish is this' has been very popular since its publication in June. Of the 10,000 copies printed, thousands have already made their way into gloveboxes and fish tackle boxes around NSW. If you would like copies of the guide for you or your organisation, please contact Fish Friendly Farms coordinator Charlie Grove on 6626 1107 or charlotte.grove@dpi.nsw.gov.au.

NSW NEWS

New fishways for Edward River

MDBC is funding two new innovative fishways on the Edward River system to open up 1350 kms of waterways including off-river habitats in the Barmah-Millewa forest. Stevens Weir downstream of Deniliquin and the Edward River offtake regulator near Mathoura are the only fish barriers in the 380 km Edward River. The fishways, currently being designed, will be completed in three years. Source: [http://www.mdbc.gov.au/_data/page/29/New_\\$5.7_million_fishways_for_Edward_River_system_announced.pdf](http://www.mdbc.gov.au/_data/page/29/New_$5.7_million_fishways_for_Edward_River_system_announced.pdf).

AUSTRALIAN NEWS

Sea to Hume fish passage project wins SA award

The 'Sea to Hume' fishways project has won the 2007 South Australian Seafood Industry's Fishing for the Future Environment Award. The project aims to provide native fish passage along the Murray from the ocean to Hume Dam - a distance of about 2300 kilometres. Five fishways have already been completed on the river and at the barrages near the river mouth resulting in the movement upstream of thousands of juvenile common galaxias, congolli and lampreys. There have also been reports of increases in populations of silver perch, golden perch, Murray cod and bony herring at different points along the river. At the barrages, the fishways are allowing some species to complete life cycles that require adults to spawn in estuarine reaches and return to the sea while the juveniles move upstream into freshwater. The fishways are also improving understanding of European carp behaviour, resulting in innovative new carp cages that catch the carp but allow native species to swim unhindered.

Source: http://www.mdbc.gov.au/_data/page/29/MR_Sea-to-Hume-fishwaysproject-wins-environmental-award.pdf.

Murray Bridge resnagging

Logs up to 11 metres long will be placed in the river near Murray Bridge SA as part of a resnagging project to increase native fish habitat. Ten piles of large logs will be placed in the river channel about 14 kilometres north of Murray Bridge. Source:

<http://www.abc.net.au/news/stories/2007/07/03/1968498.htm>.

Murraylands demonstration reach

A demonstration reach is being established on SA's Katarapko and Eckerts Creek floodplain in the Murraylands Region. The floodplain contains five wetland complexes. So far SARDI has undertaken a baseline fish survey and Conservation Volunteers Australia have assessed fish habitat. There is also ongoing monitoring of water birds and water quality in the wetlands and surveys of bush birds relative to vegetation type and health. Future activities include removing fish and environmental flow barriers, preparing a salinity ground water map of Eckerts Island area, and modelling to explore environmental flow options. Source: http://www.environment.sa.gov.au/dehaa/vol_news_2007_07_06.html.

Ovens trout cod beat drought and bushfires

The Ovens River's population of critically endangered trout cod are surviving low flows and sediment eroding into the river from bushfire scarred hills, probably due to the good health of the lower Ovens River. Shade from riverbank vegetation stops the remaining deep pools heating up, and large woody snags provide shelter from predators. During the past decade about 300,000 trout cod fingerlings have been released into the river to re-establish a natural population and monitoring shows the stocking program had been successful. Source: http://www.mdbc.gov.au/communications/s-cribe/eLetter_menu/e-letter_august_2007#Ovens-trout.

Rehabilitation of trout cod habitat

Victoria's only known self-sustaining population of trout cod is confined to a 10km section in the upper reaches of Seven Creeks, near Euroa. The creek runs through steep gorges where a granite and large boulder substrate provide good quality habitat but the fish are trapped in poorer quality habitat downstream where lower gradients, shallow water and sandbeds provide little habitat, degraded further by riparian vegetation clearing and unrestricted stock grazing. A series of waterfalls prevents the fish moving from this section into the better upstream habitat. Goulburn Broken CMA has undertaken fencing, erosion control and resnagging to improve the downstream habitat, and monitoring suggests that there are now some deeper water refuges and greater habitat diversity. Seventy of the fish have ID tags and loggers are being installed in the creek to record movements. For further information contact Jarod.Lyon@dse.vic.gov.au. Source:

<http://www.dse.vic.gov.au/DSE/nrenari.nsf/LinkView/BCE14DCF803DD913CA256DB900345FFBA2A10FA90B8883144A256DEA0017F485#troutcodseven>.

Coastal waters will warm

A new CSIRO coastal climate change vulnerability index predicts that sea surface temperatures around Australia will warm by 1-2C by 2030, and by up to 3C by 2070, with the greatest warming off southeastern Australia and the Tasman Sea. The warming waters will encourage fish to move south and pose great risk to cold water kelp forests that are already in decline off Tasmania. Source:

<http://www.theaustralian.news.com.au/story/0,20867,22040318-601,00.html>.

FISH HABITAT RESOURCES

The Murray River's 'Sea to Hume Dam' fish passage program

This paper by Jim Barrett and Martin Mallen-Cooper looks at the results of the fish passage program and implications for future directions. Find it in the December 2006 edition of the journal [Ecological Management & Restoration](#), pp. 173-183(11) or <http://www.blackwell-synergy.com/doi/pdf/10.1111/j.1442-8903.2006.00307.x>

Impacts of climate change on Australian marine life

This CSIRO report was launched at the Australian Marine Sciences Association conference in July. Download it at <http://www.greenhouse.gov.au/impacts/publications/marinelife.html>.

Marine science conference abstracts

Seagrass and intertidal habitat featured strongly in presentations and posters at the Australian Marine Sciences Association conference in Melbourne in July. Read the abstracts at https://www.amsa.asn.au/conference/conf2007/conf_pdfs/AMSA2007_Abstracts.pdf.

Review of habitat associations of native fish in the Murray Darling Basin

This 2003 review provides a good introduction to habitat issues. Download it at http://www2.mdbc.gov.au/naturalresources/fish/pdf/Fish_habitat_review_Project_R2105.pdf.

Snags: a valuable but scarce resource

This 10 page brochure produced by the former CRC for Freshwater Ecology is a useful illustrated introduction to snags and fish habitat. Find it at <http://www.ewatercrc.com.au/newbushfire/snags.pdf>.

The role of physical processes in mangrove environments

This manual for the preservation and utilisation of mangrove ecosystems is a useful tool for managers and decision-makers working to safeguard mangrove ecosystems. View the table of contents at <http://www.aims.gov.au/ibm/pages/news/pdf/the-role-of-physical-processes-in%20mangrove-environments.pdf>.

New book: Fish conservation

Gene Helfman, Island Press, USA , 2007

Fish Conservation summarises the current state of knowledge about the degradation and restoration of diversity among fishes and the productivity of fishery resources, pointing out areas where progress has been made and where more needs to be done. Details at

<http://www.publish.csiro.au/pid/5679.htm>.

Ecosystem-based fishery management

Ecosystem-based fishery management aims to integrate the management of human activities that affect the marine environment to protect and restore marine ecosystems. Read more about it at

<http://www.mccn.org.au/article.php/id/658/> and <http://www.mccn.org.au/article.php/id/562/>.

Restoring environmental flows by modifying dam operations

This paper by Richter & Thomas in the June 2007 issue of Ecology & Society describes an assessment framework that can be used to evaluate the benefits that might be restored through dam re-operation. Assessing the potential benefits of dam re-operation begins by characterising the dam's effects on the river flow regime, and formulating hypotheses about the ecological and social benefits that might be restored by releasing water from the dam in a manner that more closely resembles natural flow patterns. <http://www.ecologyandsociety.org/vol12/iss1/art12/>.

UK fish habitat booklet

The UK environment Agency has a new 28 page booklet 'Better habitats make better fishing'. You can download it at [http://www.environment-](http://www.environment-agency.gov.uk/commondata/acrobat/421376_ea_fish_hab_v6_1445307.pdf)

[agency.gov.uk/commondata/acrobat/421376_ea_fish_hab_v6_1445307.pdf](http://www.environment-agency.gov.uk/commondata/acrobat/421376_ea_fish_hab_v6_1445307.pdf).

HABITAT FUNDING

Tide to Table seeks projects

The Tide to Table program has funding available for habitat projects in the Hawkesbury Nepean and Hunter Central Rivers CMA regions. It has already funded nine projects in each of the CMA regions with works ranging from saltmarsh rehabilitation to dairy effluent system upgrades to reduce nutrient pollution. Landowners have provided matching contributions to the value of \$277,000.

The Tide to Table model is an OceanWatch Australia initiative, first developed in the Sydney metropolitan area. This extension of the pilot project involves a partnership with NSW DPI, OceanWatch Australia, NSW Farmers Association, NSW Food Authority and the Hawkesbury Nepean and Hunter Central Rivers Catchment Management Authorities, and has received funding through the Australian Government's National Landcare Program.

If you have a project proposal, or would like to find out more, contact Scott Machar on 9764 3067 or scott.machar@dpi.nsw.gov.au, or go to the OceanWatch website at www.oceanwatch.org.au.

HABITAT DATES

28-29 August 2007

Wetland watering - understanding wetland hydrological needs, Newcastle

www.wetlandsedu.org.au

3-6 September 2007

International river symposium & environmental flows conference, Brisbane

www.riversymposium.com/index.php?page=Home

11-15 September 2007

Australian Society for Fish Biology Workshop & Conference, Canberra

<http://www.asfb.org.au>

12-14 November 2007

Climate change & coastal and marine ecosystems, Brisbane

<http://www.cmar.csiro.au/news/events/climate/index.html>

26-27 November 2007

5th National Waterwatch conference, Canberra, ACT

www.waterwatch.org.au

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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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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