

Welcome to the first edition of Newstreams email newsletter, a bi-monthly newsletter about fish habitat.

We have sent you this first issue because we have identified you as someone with an interest in fish habitat.

However, we realise that everyone suffers information overload, so if you find this newsletter is not useful to you, please send me a blank reply email with 'Unsubscribe Newstreams' in the subject line.

If you are happy to keep receiving Newstreams you don't have to do anything!

Best wishes, Rebecca Lines-Kelly, editor.

Newstreams

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

No 1. March 2006

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 now working actively to restore fish habitat.

NSW ONGROUND WORKS

\$360 000 for fish rehabilitation projects

The NSW Recreational Fishing Trust has given \$360 000 to 22 freshwater and saltwater fish rehabilitation projects in NSW. The projects include rehabilitation of floodplain and freshwater wetlands, saltmarsh and mangrove habitat, improved fish passage, and riparian restoration and weed removal. For a full list of projects go to

<http://www.dpi.nsw.gov.au/aboutus/news/releases/fisheries/2005/restore-fish-habitat>.

Fishermen donate \$5000 for habitat

Ballina mullet fishers have donated \$5000 from their mullet catch to Wetland Care Australia to rehabilitate wetlands in the Richmond River. The fishers donated 10 cents for every kilogram of mullet caught during the season. It is their second donation. The \$5000 donated in 2004 was used to restore degraded mangrove and saltmarsh areas on Cabbage Tree Island – important mullet habitat. Source: <http://www.abc.net.au/rural/nsw/stories/s1530924.htm>.

Murray catchment more fish friendly

Murray Catchment Management Authority and NSW DPI have removed two structures blocking fish passage and modified another after community groups, landholders and local government identified several such structures in the catchment.

- **Moulamein:** A block bank across the entrance of Smiths Lagoon was removed to allow fish to travel between the lagoon and the Edward River.
- **Moama:** An illegal block bank was removed to restore Murray River flows to a natural wetland.
- **Albury:** A road crossing was upgraded to include a more fish-friendly box culvert that allowed fish movement between Normans Lagoon and the Murray River.

Native fish such as Murray cod, silver perch and trout cod rely on these off-stream habitat areas to complete essential lifecycle processes. For more information, contact Adam Vey at Albury on 02 6042 4200 or adam.vey@dpi.nsw.gov.au.

Resnagging the Murray

A Murray Darling Basin Commission project under the Living Murray initiative will reintroduce woody habitats (snags) into the Murray River between Lake Hume and Yarrowonga to improve habitat for native fish. NSW DPI has worked in partnership with DSE Victoria, the North East Catchment Management Authority and the NSW Department of Natural Resources to plan the strategic resnagging of targeted areas to increase the population of native fish such as Murray cod and golden perch. De-snagging of inland rivers was a common practice to improve navigation and the delivery of water for irrigation and domestic needs, but has had a significant impact on habitat for native fish populations. This project, worth \$4M over the next three years, will return much of this timber to the channel to improve the quality and availability of instream habitat. For details, contact Adam Vey at Albury on 02 6042 4200 or adam.vey@dpi.nsw.gov.au.

Road crossings mapped for fish-friendliness

NSW DPI is working in several catchments to map road crossings and assess those that most need upgrading to improve fish passage. Reports will be given to catchment management authorities and local councils with recommendations for crossing upgrades. For more regional information contact the following DPI officers.

- North coast road crossings: contact Matt Gordos 02 6626 1395, matthew.gordos@dpi.nsw.gov.au.
- Sydney and south coast road crossings: contact Scott Nichols 9764 3067, scott.nichols@dpi.nsw.gov.au.
- Namoi catchment road crossings: contact David Ward, 02 6765 4591, david.ward@dpi.nsw.gov.au

Detailed weir review

NSW DPI is undertaking detailed reviews of more than 130 NSW weirs that are having severe impacts on fish passage. The review will look at all the issues that need to be addressed to modify the weirs, and develop plans to reduce their impact on fish. Contact Scott Nichols for more information on 02 9764 3067 or scott.nichols@dpi.nsw.gov.au.

North coast estuary habitat maps

NSW DPI has compiled maps showing the extent of seagrass, mangroves and saltmarsh in the Tweed, Brunswick, Richmond and Evans Rivers since the 1940s. The maps, produced for the Northern Rivers CMA, allow comparison of vegetation change over time. An accompanying report discusses the impacts of these changes and lists priorities for future management. To find out more, contact: Kylie Russell, Port Stephens, on 02 4916 3817 or kylie.russell@dpi.nsw.gov.au.

Richmond River fish woes

Thousands of fish in the Richmond River catchment have died after two episodes of low dissolved oxygen (DO) levels in catchment streams. In December 2005 an estimated 25,000 fish died after the sandbar at Evans Head's Salty Lagoon broke and water levels dropped. The contribution to the fish kill of black ooze on the lagoon floor is being investigated. In late January torrential rain resulted in extensive flooding on the Richmond River floodplain. Rapid drainage of poor quality floodwaters off the floodplain resulted in fish kills and widespread poor water quality in the Richmond River, with DO levels of 0.5mg/L (>4 mg/ L is necessary for aquatic life) . A meeting is being convened with government agencies, commercial and recreational fishers and businesses affected by the poor river water quality to discuss the outcomes of work undertaken since the massive 2001 fish kill and future actions that may be required.

Pacific Highway developments

NSW DPI is working closely with the Roads and Traffic Authority to minimise the impact of highway construction on habitat. Key matters to be addressed include route alignment, establishment of compensatory habitat where impact is unavoidable and construction techniques to minimise impacts on fish habitat. For instance, where possible, piles are driven into the riverbed from barges instead of earth platforms. Currently, key activities include:

- Karuah bypass: DPI approved the RTA accessing a large area of saltmarsh and mangrove wetland during construction on condition that saltmarsh and mangrove regrowth is monitored at six monthly intervals until the end of 2006 and then yearly until 2010.
- Taree to Coopers Creek: The RTA is rehabilitating fish habitat at Ghinni Ghinni Creek to compensate for removal of mangroves.

- Brunswick to Yelgun: DPI has negotiated a large compensatory habitat package involving saltmarsh and seagrass although seagrass transplanting was affected by the June 2005 floods. For more information about fish habitat protection along the Pacific Highway contact Marcus Riches on 02 6626 1370 or marcus.riches@dpi.nsw.gov.au

NSW RESEARCH

More fish in Williams River due to snagging trial

Initial results from a DPI snagging trial in the Williams River upstream of Dungog have found that introducing large woody structures has increased fish numbers. Rehabilitation involved reintroducing timber to create snag piles, root masses, riffles and complex channels. Sampling on two occasions after the introduction of the timber suggests an increase in fish numbers. Read more about the project, headed by Bob Creese, in DPI's list of current fisheries research projects, at http://www.fisheries.nsw.gov.au/_data/assets/pdf_file/43924/Complete_List_of_Current_Projects.pdf

Bass catches depend on river flow

A study of water flow and recreational catches of Australian bass has found a strong relationship between catches and river flows. This means that release of environmental flows from major dams will help maintain bass populations in the Hawkesbury-Nepean and other coastal streams. The exact flow required needs further study. Read the abstract of the paper at <http://www.blackwell-synergy.com/doi/abs/10.1111/j.0022-1112.2005.00605.x>.

Possible new threat to Murray cod larvae

A new study has found that Murray cod larvae may be killed when they pass through hydroelectric power stations or become stranded in anabranch and irrigation channels. Murray cod larvae drift wherever the water flows, but the study found no larvae in off-channel waters, suggesting that cod settle into habitats in the main channel at a post-larval stage. Results of this study are likely to be applicable to other species with drifting larval stages. Read the study abstract at <http://www.publish.csiro.au/nid/90/paper/ZO04086.htm>.

INTERNATIONAL NEWS

US fish habitat action plan

The US National Fish Habitat Initiative has released a draft action plan for fish habitat to restore waterways and bring back productive fisheries. The plan is modelled on the enormously successful North American Waterfowl Management Plan, which revolutionised wetland protection and contributed significantly to waterfowl population recoveries in North America over the last 20 years. The plan will be unveiled in a special session at the North American Wildlife and Natural Resources Conference in March: 'From landscapes to riverscapes: Adding fish to the mainstream of wildlife habitat initiatives.' Read more at <http://www.fishhabitat.org/>.

Wetlands degrading faster than other ecosystems

A new report by the Millennium Ecosystem Assessment on wetlands and water has found that the degradation and loss of wetlands is more rapid than that of other ecosystems. Wetlands deliver a wide range of ecosystem services that contribute to human well-being, such as fish and fibre, water supply, water purification, climate regulation, flood regulation, coastal protection, recreational opportunities, and, increasingly, tourism. Major policy decisions in the next decades will have to address trade-offs among current uses of wetland resources and between current and future uses. Particularly important trade-offs involve those between agricultural production and water quality, land use and biodiversity, water use and aquatic biodiversity, and current water use for irrigation and future agricultural production. Download the report at <http://www.millenniumassessment.org/en/Products.Synthesis.aspx>.

Oregon Plan for Salmon and Watersheds

The Oregon Plan for Salmon and Watersheds has completed more than 8000 projects with the help of private landholders. Landowners typically fence-off riparian areas and reseed them with native species, donate harvested timber to create in-stream log structures for fish habitat, and replace culverts that block fish passage. Incentive programs include grant money for streamside fencing; technical and financial assistance to protect and enhance habitat for at-risk species; reduced taxes for landholders who undertake projects that protect or enhance streamside habitat; and landholder payments for land set aside for wildlife. Most of the participants say the best incentive is walking a

stream with their families and seeing salmon spawning. Source:
<http://www.dfw.state.or.us/news/2005/june/018.asp>.

Washington State fish passage projects

In eight years Washington State's regional fisheries enhancement program has completed 398 fish passage projects, opened up 600kms of streams, and leveraged \$US10.3 million of state and federal funding into an additional \$49.6 million through partnerships and collaborations with individuals, groups, corporations, agencies, tribes, and foundations. Regional groups have removed, replaced or repaired culverts, bridges, and other barriers to salmon passage, and revegetated, rechannelled and reconstructed streams to allow salmon access to their spawning and rearing habitat. Find out more at http://wdfw.wa.gov/volunteer/feg/feg_outcomes.htm.

FUNDING RESOURCES FOR NSW FISH HABITAT

Forging Partnerships NRM funds

Funding of \$1.2 million is available to NSW projects under the Forging Partnerships program, a joint initiative between the NSW Government and the Natural Resources Advisory Council (NRAC). Proposals need to demonstrate cooperation between stakeholders and provide innovative models for improving natural resource management. Proposals of up to \$60 000 will be considered. There will be two rounds of funding. Applications for the first round of funding closed on 27 January 2006. The second round will close on 24 March 2006. More information at www.nrac.nsw.gov.au.

Federal recreational fishing community grants

The Federal government has funded 71 projects from 166 applications in Round 1 of the recreational fishing community grants. NSW received funding for 18 projects. Round 2 of the grants program is now open and will close at 5pm on Friday 17 March 2006. Find out more about both Round 1 and Round 2 at www.daff.gov.au/recfishinggrants.

Envirofund

Applications for Envirofund Round 8 for normal Envirofund activities close on 28 April. More details at <http://www.nht.gov.au/envirofund/>. Successful NSW applications from the Round 7 drought recovery round include several riparian projects. Find out more at <http://www.nht.gov.au/envirofund/2005-2006/round7/pubs/round7-nsw.pdf>.

Community water grants

Round 2 of the Federal Government's community water grants program opens in March 2006. The program provides grants of up to \$50 000 to communities to promote the wise use of water. The program is currently assessing thousands of applications from Round 1. Find out more at <http://www.communitywatergrants.gov.au/>.

INFORMATION RESOURCES

Special habitat issue of Freshwater Fisher

The NSW Council of Freshwater Anglers has produced a special habitat issue of its Freshwater Fisher newsletter. The issue covers habitat rehabilitation projects for fishing clubs, the type of projects that work, how to apply for funds, examples of projects such as willow clearing and removal of barriers to fish movement, important insurance and safety tips, key contacts, working with Landcare and more. You can download a copy at http://www.dpi.nsw.gov.au/__data/assets/pdf_file/25317/Freshwater_fisher_habitat_special.pdf.

NSW DPI aquatic habitat publications

NSW DPI has published a range of information leaflets and guidelines on aquatic habitat. You can access them at <http://www.fisheries.nsw.gov.au/publications/aquahab.htm>.

River rehabilitation

A new report 'Recent lessons on river rehabilitation in eastern Australia' by the CRC for Freshwater Ecology (CRCFE) summarises findings by its researchers and associated river managers and rehabilitation practitioners. The report considers ecological principles fundamental to successful rehabilitation, and discusses factors to consider when planning rehabilitation projects, as well as lessons learnt from projects applying rehabilitation 'tools' such as flow, installed habitat, riparian repair,

and restocking. It also touches on evaluating the effectiveness of rehabilitation projects, and future directions. Download the report at <http://freshwater.canberra.edu.au/>.

Monitoring aquatic biodiversity

'Assessing and monitoring aquatic biodiversity: what have we learnt?' is a summary of the CRC for Freshwater Ecology's knowledge about monitoring and assessing biodiversity. It describes different types of biodiversity study and choice of biotic groups to measure, study scale, sample numbers and data collection methods. Download at <http://freshwater.canberra.edu.au/>.

Murray Darling fish history

Anthony Scott has compiled historical evidence of native fish in the Murray-Darling Basin from the diaries of the first explorers and settlers during the early 19th century. The observations are useful historical information about the types and catchability of fish in the Murray-Darling Basin, pre-settlement and pre-river-regulation. Download the report at <http://freshwater.canberra.edu.au/>.

Aquatic habitat model

Land and Water Australia has produce some interactive diagrams showing the impact of land management practices on streams. Go to <http://www.rivers.gov.au/model/aquatichabitat.htm>.

Liquid assets: The critical need to safeguard freshwater ecosystems

This new book from the Worldwatch Institute looks at the benefits that healthy watersheds and freshwater ecosystems perform naturally. In 1997 New York City reached an agreement with local and federal officials, environmental organizations, and 70 towns to spend \$1.5 billion over ten years on watershed protection and conservation measures, thereby avoiding construction of a filtration plant that would cost \$6 billion to build and \$300 million a year to operate. Find out more at <http://www.worldwatch.org/press/news/2005/07/11/>.

About NSW DPI and fish habitat

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

The Department's on-ground works:

- 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

The Department's research work:

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

The Department's legislative, policy and planning work:

- reviews developments that may impact on fish habitats and negotiate impact reduction and/ or compensatory works
- incorporates aquatic habitat protection requirements into land use planning, water management, and estuary and floodplain management
- helps 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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