

Newstreams

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

No 15 August 2008

About Newstreams

Newstreams is an email newsletter to keep people up to date about NSW fish habitat activities and important aquatic habitat developments elsewhere. 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 work actively to restore fish habitat.

NSW DPI NEWS

New channel helps trapped fish swim to safety

A new channel below Brogo Dam north-west of Bega allows fish to move from the dam's spillway pool into the Brogo River. Previously, bass migrating upstream were stranded in the pool when the river level below the dam dropped. Last year almost 400 Australian bass (many weighing one kg or more) were rescued from the pool, and in October 2005 more than 1000 were rescued and released.

NSW DPI and State Water Corporation used a 30-tonne excavator (right) to remove large rocks and dig a 10 metre long by two metre wide channel between the spillway pool and the River.

The excavation works were funded by the NSW Recreational Fishing Freshwater Trust and supported by the Far South Coast Bass Stocking Association. NSW DPI is planning to introduce a recreational fishing closure immediately below the dam spillway to protect the migrating bass from excessive fishing pressure. For more information about the channel or the closure, contact NSW DPI fisheries conservation officer Trevor Daly on 4478 9103 or trevor.daly@dpi.nsw.gov.au.



New fishway in Sydney Olympic Park



A partial width rock ramp fishway has recently been completed thanks to funding from the Sydney Metropolitan CMA, NSW DPI (NHT - Bringing Back the Fish project), and Sydney Olympic Park Authority. A step at the downstream end of the Australia Avenue road culvert previously isolated sections of the inner city waterway until medium to high flows. The fishway allows native fish to migrate into Boundary Creek, linking wetland and creek habitat, and improving breeding opportunities for native species such as sea mullet, long finned eels, and gudgeon species. For more information contact Scott Nichols at

scott.nichols@dpi.nsw.gov.au. Photo: G Kirby, EarthTech.

New fish freeways in the Upper Namoi



NSW DPI has teamed up with the Namoi Catchment Management Authority (CMA) and Tamworth Regional Council to modify three road crossings in the Halls Creek and Manilla River systems near the towns of Manilla and Barraba. Fish were unable to swim upstream because of the excessive drop on the downstream side, low water depth and increased turbulence. Fish-friendly box culverts (above right) were installed at all three sites so that fish now have access to over 100 km of aquatic habitat in the upper Namoi region. Funding for the three projects was provided by the Namoi CMA's Namoi Aquatic Habitat Initiative program and Tamworth Regional Council. For more information contact Anthony Townsend at anthony.townsend@dpi.nsw.gov.au.

Improving water quality in Anna Bay



NSW DPI staff are working with the Anna Bay community near Port Stephens to remediate two acid sulfate soil hot spots in the Anna Bay subcatchment. Drainage has exposed underlying acidic soil layers (pictured left) leading to production and mobilisation of highly acidic groundwater and heavy metals. This polluted groundwater discharges into Tilligerry Creek where it has caused large fish kill events and affected downstream water quality, oyster cultivation and stock production. Remediation works include:

- applying lime on disturbed acid sulfate soils and on any soils disturbed in the future
 - raising the height of several side drainage pipes so that they are above the acid sulfate soil layer
 - installing a lowset weir to reduce over-drainage at a key hotspot, and also widening the drain at that point so that drainage capacity is not reduced
 - installing additional floodgate cells at the existing floodgate to improve drainage capacity of the overall system, while modifying one floodgate to enable a controlled degree of tidal exchange.
- The project is funded by Hunter Central Rivers CMA. For more information contact Adrienne Burke of NSW DPI on 4916 3846 or adrienne.burke@dpi.nsw.gov.au.

Acid sulfate soils in the lower Hunter

Investigations into acid sulfate soils at five sites in the Hunter River estuary have found that the soils occur at all sites. NSW DPI staff tested soil and water quality in the Lower Hunter wetlands, Kooragang and Shortland wetlands (both listed as Ramsar Wetlands of international importance), Tomago Wetland, Hexham Swamp and Fullerton Cove. In addition, elevation information (LiDAR) was used to update the acid sulfate soil risk maps for the study area. NSW DPI will work with landholders and land managers in the lower Hunter to reduce the impacts of acid sulfate soils through activities such as floodgate management. For more information about this project contact Jenny Fredrickson at Jenny.Fredrickson@dpi.nsw.gov.au. The project is funded by the Australian Government's Coastal Catchments Initiative.

New rock ramp fishways for Gloucester causeways



New rock ramp fishways at causeways on Barrington and Gloucester rivers have given native fish access to more than 300 km of upstream habitat. The causeways inhibited migrating fish from accessing upstream habitat due to the excessive drop on the downstream side of the causeways (above left). The new rock-ramp fishways (above right) provide a series of pools that allow fish to gradually swim up and over the old barrier. Due to the large amount of quality habitat upstream of the causeways, both sites were considered top priorities for improving fish passage. The project was a collaborative effort between NSW DPI, Gloucester Shire Council and Streamline River Restoration, and was funded by Natural Heritage Trust, Hunter Central Rivers CMA, Gloucester Council and the NSW Recreational Fishing Trust. For more information, contact Matthew Gordos at matthew.gordos@dpi.nsw.gov.au.

Indigenous groups help Castlereagh demonstration reach

Local indigenous groups have helped NSW DPI control exotic trees and revegetate the riverbank as part of the Upper Castlereagh River demonstration reach project funded by the Central West CMA. The exotic tree control team - an indigenous working crew from Uambi CDEP - has controlled exotic trees, including willows, on two selected properties downstream of Coonabarabran. The work will help restore riparian complexity and native biodiversity along the Castlereagh River. Landholders interested in employing the exotic tree control team on their property can contact Shawn Trindall on 6842 3654. For more information about the Upper Castlereagh River demonstration reach please contact Shaun Morris on 6881 1270 or shaun.morris@dpi.nsw.gov.au.

Did you know?

Willows provide little benefit to native fish and other fauna in terms of food and shelter, prevent native trees establishing, and consume large volumes of water. Research suggests that a one km stretch of willows on either side of a river will use up to eight megalitres of water per year, while native tree species consume 10 per cent of that amount. Controlling willows has an immediate affect on the longevity of refuge pools and water for stock in summer months.

Burtundy Weir fishway opens

This new fishway on Burtundy Weir on the Lower Darling River has given native fish access to an additional 234 km of the Darling River. They will also be able to use snags recently introduced upstream of the weir. Species that will benefit include Australian smelt, bony herring, golden perch, silver perch and Murray cod. For more information contact Adam Vey at adam.vey@dpi.nsw.gov.au.



Community helps Namoi demonstration reach



Community and school groups are assisting NSW DPI with onground works on the demonstration reach being established as part of Namoi Aquatic Habitat Initiative. Conservation Volunteers Australia have planted over 5000 native trees, followed up with watering and maintenance, controlled 800sq m of willows, and removed more than 150kg of rubbish. Students from Gunnedah High School and GS Kidd School have also planted trees throughout the reach, and Narrabri Community Bushcare Group were important contributors to the project's

success. Due to the positive response from these groups, two Boggabri school groups will participate in a tree planting day on crown land in Boggabri in the next few months. For more information contact Milly Hobson at milly.hobson@dpi.nsw.gov.au.

NSW NEWS

Two NSW waterways are Riverprize finalists

Two NSW waterways, Lake Macquarie and the Tweed River, are among seven finalists in this year's Thiess Riverprize. Lake Macquarie's improvement project has resulted in significant improvement in lake health, reduction in algae, an increase in seagrass coverage and rehabilitation of foreshore and once endangered wetlands. For more information visit www.livinglakemacquarie.org. Tweed River initiatives include water quality monitoring, acid sulfate soil research and improved land use management, estuary management program, community capacity building, and a sustainable living centre. For more information visit www.tweed.nsw.gov.au. To find out more about the other finalists go to <http://www.riversymposium.com/index.php?page=ThiessRiverprize>.

New culverts after 80 years

These new culverts under Yamba road in the Clarence River estuary have returned direct water flow in Shallow Channel for the first time in 80 years. A causeway built in the 1920s had blocked natural tidal flow, preventing fish from



Photo: Clarence Floodplain Project

moving upstream. The causeway was also linked with algal blooms and poor water quality in this section of the estuary. The \$412,000 project was supported by the Clarence Floodplain and Estuary Partnership. Find out more at

http://www.clarence.nsw.gov.au/content/uploads/CFP_Newsletter_August_2008_-_A4.pdf.

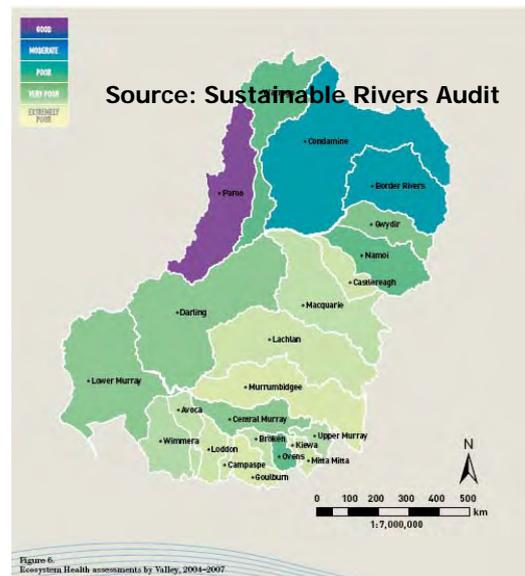
\$1.9 million for coastal floodplain project

An alliance of North Coast Councils has secured \$1.9 million from the Environmental Trust's urban sustainability program to tackle floodplain issues in the region. The project will address barriers to fish passage, wetland deterioration, acid sulfate soils, blackwater events, stormwater pollution, nutrient run-off, vegetation and erosion management. Activities include installing weirs, winches and tidal gates, establishing native vegetation on floodplain watercourses and restoring wetlands. More details are available at http://www.clarence.nsw.gov.au/content/uploads/CFP_Newsletter_August_2008_-_A4.pdf.

AUSTRALIAN NEWS

MDBC river audit shows fish communities in poor health

The Sustainable Rivers Audit (SRA) has issued a report card on river ecosystem health in each of the 23 river valleys in the Murray Darling Basin. The reports are based on observations of fish, macroinvertebrates and hydrology from 2004 to 2007. Fish communities were in moderate condition in the Paroo, Condamine and Border rivers valleys, in extremely poor condition in eight other valleys, and in poor or very poor condition in the remaining valleys. Alien species outvalled or outnumbered native fish in nine of the 23 valleys, especially the Campaspe, Gwydir, Macquarie and Murrumbidgee valleys. Find out more at http://www.mdbc.gov.au/SRA/river_health_check_sra_reprt_one.



Qld guidelines to identify instream structures



Queensland Department of Primary Industries and Fisheries is developing a framework and guidelines for identifying instream structures within declared Fish Habitat Areas (FHAs) and adjacent catchments in coastal north Queensland. Pictured left is Hinchinbrook FHA. The guidelines will provide NRM groups and other stakeholders with step-by-step instructions on how to undertake their own structure inventories. The guidelines will describe how to conduct an inventory and how to identify and prioritise problem structures. For more information contact project leader Mary Lawrence at Mary.Lawrence@dpi.qld.gov.au.

Canberra Carp-Out

1411 entrants removed 793 pest fish from Lake Burley Griffin weighing 702 kg in the inaugural Canberra Carp-Out earlier this year. They took 609kg of carp averaging 1.8kg, and 93kg of redfin averaging 200g. Heaviest carp weighed 6.23kg and 7 carp weighed in over 4kg. Heaviest redfin was a cracker at 1.28kg. Over \$6000 was raised on the day, which will be shared between native fish stocking in Canberra's lakes and the Eden Monaro Cancer Support Group. If you would like to know more, contact Shane Jasprizza from Canberra Fisherman's Club at info@canberrafishos.com.

INTERNATIONAL HABITAT NEWS

Fish ladders in the Mekong

Scientists from NSW DPI, Queensland Departments of Primary Industries and Fisheries and Kingfisher Research are helping Laos researchers develop fish ladders in the Mekong River to overcome the impact of thousands of dams and weirs in the Mekong Basin. Scientists will initially work with Lao researchers to install an experimental fishway on a known migration barrier and use it to determine the maximum swimming speed of Mekong River fish. Once this is known the team will build and install a permanent fish ladder based on the parameters determined in these experiments. Find out more at <http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/fish-ladders-in-the-mekong>

Valuable seagrasses face global warming threat

A new report from the International Union for the Conservation of Nature warns that seagrass meadows face a mounting threat from global warming. Seagrasses provide food and shelter for prawn and fish populations. Possible solutions to the threat include mixing genetically more diverse populations, introducing protected areas and linking underwater meadows to nearby mangrove plantations or coral reefs. Download the report at

http://www.seagrasswatch.org/Info_centre/Publications/pdf/report_seagrass_and_climate_change.pdf

Mangroves benefit fishing returns

Researchers have found that mangroves have a direct effect on the health of the Mexican fishing industry and local economy. They found that fish landings increased with the total area of mangrove fringe, and 32% of fish and crab varieties with commercial importance were related to the local abundance of mangrove. The researchers weighed economic, geographic and ecological factors and determined that a hectare (10,000 square meters, or roughly 2.5 acres) of mangrove fringe—the edge of mangrove forest in contact with the sea—in the Gulf of California is on average valued at about \$37,500 per year. Read more at <http://ucsdnews.ucsd.edu/newsrel/science/07-08Mangroves.asp>.

FISH HABITAT RESOURCES

New DPI Primefact about mangroves

This new Primefact presents a comprehensive summary of mangroves and their importance in NSW, and includes options and techniques for their rehabilitation. Download it at

<http://www.dpi.nsw.gov.au/fisheries/habitat/publications/aquatic-habitat---protection/mangroves>.

The importance of fish habitats -how fishers can protect them

This two page leaflet is produced by Fishers for Conservation, an Australian organisation run by recreational fishers. Find it at

http://www.ffc.org.au/FFC_files/Sustainable_fishing_edu_files/web_pdfs/4_Habitat_web.pdf.

The impacts of drought on freshwater ecosystems

This paper by Bond et al, published in Hydrobiologia in March 2008, provides a commentary on drought and its implications for the management of freshwater ecosystems in Australia. It highlights important knowledge gaps and provides some general principles for better incorporating droughts and their impacts into river management strategies. Read the abstract at

<http://www.springerlink.com/content/425n5483v025811g/>.

Distribution and habitat associations of the Oxleyan pygmy perch

This paper by Knight & Arthington, published in Aquatic Conservation in April 2008, documents the habitat associations of the Oxleyan pygmy perch in south-east Queensland and north-east NSW. Read the abstract at

<http://www3.interscience.wiley.com/journal/117934358/abstract?CRETRY=1&SRETRY=0>.

Watering wetlands

This discussion paper by Mark Siebentritt (2007) for Land & Water Australia includes recommendations on how to improve the way that scientific information can be used to help wetland managers. Find it at

http://downloads.lwa2.com/downloads/publications_pdf/PR071378.pdf.

HABITAT DATES

11th International Riversymposium, Brisbane

September 1-4 2008 <http://www.riversymposium.com/>

MDBC NSW youth environment conference, Tamworth

November 2008 <http://www.onelifeoneworldourfuture.com/index.php?pageid=272>

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, and their habitat requirements.
- 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.dpi.nsw.gov.au/fisheries/habitat>.

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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