

Newstreams

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

No 16 October 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 program: Fishers for fish habitat

NSW DPI, NSW Fishing Monthly, NSW Council of Freshwater Anglers and Murray Darling Basin Commission have joined forces in a new project called 'Fishers for fish habitat', funded by the Natural Resources Advisory Council's Forging partnerships program. Project coordinator Charlotte Jenkins wants to hear from recreational fishers already involved in projects to fix native fisheries, and fishers who have concerns about the health of their favourite fishing spots and want to know what they can do to help. Project staff will be available to meet and talk with fishing clubs, associations or individuals interested in improving fish habitat in NSW. The project will culminate in the first NSW fish habitat forum in June 2009. Registration details will be available shortly from NSW DPI. For information on the project please contact Charlotte Jenkins NSW DPI 02 6626 1107.

charlotte.jenkins@dpi.nsw.gov.au

Oyster habitat awards

Oyster farming and the environment was the theme of the fourth annual oyster industry field day held at Mooney Mooney on the Hawkesbury in September and organised by OceanWatch Australia's Tide to Table program in conjunction with NSW DPI and NSW Farmers Association. Winners of the 2008 NSW oyster industry environmental champion awards are Lyn Desoto-Southwell, of the Southern Rivers CMA natural resource reference group, and the Clyde River Environmental Management System (EMS) cluster group. Lyn helped initiate the dairy oyster partnership project, formed Shoalhaven River Oysters Inc, and organised the Shoalhaven clean water healthy community forum. The Clyde River group developed and implemented the Clyde River EMS which identifies environmental impacts of oyster production and outlines solutions to be implemented. Highly commended were Brett Peterkin for the development and implementation of the Clearwater model in Wallis Lake, and the NSW Farmers' Association Hastings River branch and Port Macquarie Council for acid sulfate soil and acid drainage remediation. The awards were initiated by the NSW Farmers' Association and the NSW Government to acknowledge innovative ways of coping with environmental challenges.

<http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/oyster-champions-announced>

New software helps CMAs prioritise works

NSW DPI has developed a suite of software programs to help catchment management authorities identify works needed to improve the condition of streams and waterways. The programs, known collectively as aquatic condition and reporting tools (ACART), allow the CMAs to combine various GIS data layers of information to generate maps of priority areas. Each CMA now has a copy of the software and data layers for their catchments, and a number are interested in using the tools to target specific areas for incentive works and to compare individual incentive bids. The tools may also be useful for other government agencies such as local councils. Contact Kylie Russell 02 4916 3817.

kylie.russell@dpi.nsw.gov.au

Log jams and log sills help the Upper Castlereagh

Works associated with restoring deep refuge pools in the Upper Castlereagh River demonstration reach project near Toorawandi now include a series of structures in Toorawandi Creek. These structures aim to reduce sediment movement into Castlereagh River and recreate the original 'chain of ponds' system in this tributary. In 2006 the project constructed log deflector jams in the Castlereagh River near Toorawandi and reshaped the river channel to concentrate water flow and prevent sediment settling. Slow moving sediment can fill deep pools in the river and allow willows to establish. The log jams create scour pools, protect the riverbank from erosion and provide valuable fish habitat. Just 24 hours after installation fish were using the logs for shade and protection.

Below top: Castlereagh River before and after willows were cleared and log jams installed.



Above: Toorawandi Creek before and after the sediment-catching log sills were installed

Expert advice from DWE recognised that most of the sediment in the river was coming from Toorawandi Creek. Originally the creek was a series of vegetated, wide shallow pools that slowed down surface and groundwater flows. Following European settlement, excessive stock access and consecutive heavy flooding events gradually eroded the bed material within and between the ponds, creating a deeper and defined channel. After major rain events, soil from the eroding channel was carried into the Castlereagh River where it filled deep pools and created a shallow, less complex channel dominated by sediment and willows.

A series of log sills constructed by NSW DPI along the creek have begun to recreate the pre-European settlement condition of wide shallow pools where flows gradually move downstream. After one recent rain event the sills had begun to trap sediment but the creek was still flowing five weeks later, a phenomenon the landholder had not seen in 30 years. The log sills will also assist in restoring historical groundwater levels, improving adjacent pasture and cropping opportunities. The works have the approval and funding of the Central West CMA and include long term vegetation monitoring (10 years) and bed monitoring (2 years) by local landholders.

For more information about this project, contact Shaun Morris 02 4916 3837.

shaun.morris@dpi.nsw.gov.au

Award for Murray resnagging project

Adam Vey, leader of a project to resnag the Murray River near Albury, has won a NSW DPI staff award for his achievement. Adam oversaw the introduction of 4000 dead trees into 120 km of the Murray River to build fish habitat. The project is a \$4M collaboration with Murray Darling Basin Commission, delivered a year ahead of schedule and for \$1.5M less than originally budgeted, so there's enough money for another 600 snags this year, far exceeding the project's original objectives. The project is Australia's largest re-snagging initiative, and had many partners. The RTA provided most of the snags from its Albury bypass development, and local government provided some from land releases. Heavy machinery teams lifted massive trees on to trucks, drove them to the river and positioned them in the water. Recreational fishers are helping survey fish species and numbers. Adam says the credit really goes to his hard working team of Jenny Fredrickson, Martin Casey, Kathryn Purnell and Nathan Reynoldson who made it an easy project to deliver.

Anglers helping to monitor resnagged reach

Anglers are helping scientists monitor fish use of the resnagged reach of the Murray River between Hume Dam and Yarrowonga. Victoria's Arthur Rylah Institute has fitted native fish in the river with external tags to help monitor their movements and use of the new snags. Anglers are encouraged to call the number printed on the tags and provide information about the length of fish and location of capture. Anglers who have joined the monitoring program have captured many Murray cod in the study area since December 2007, most of which have been released. The resnagging and monitoring project is a partnership between MDBC, the Victorian North East CMA, NSW DPI, NSW Department of Water and Energy and the Victorian Department of Sustainability and Environment.

http://www.mdbc.gov.au/_data/page/29/MR-More_Dead_Wood_Good_for_Native_Fish2792008.pdf

Indigenous training for demonstration reach project

NSW DPI has organised revegetation training for 10 members of the Kurnu-Barkindji landcare and cultural management group at Bourke. NSW DPI will employ the men to plant 7000 native trees grown from seed collected in the Bourke area along the Darling River as part of the Brewarrina to Bourke demonstration reach. Degradation of native riparian vegetation along NSW water courses is a key threatening process under the Fisheries Management Act 1994 because of its negative impacts on several threatened species, populations or ecological communities. These species include the endangered ecological community of the lowland catchment of the Darling River, silver perch (vulnerable), western populations of olive perchlet and purple-spotted gudgeon and the river snail.

<http://www.dpi.nsw.gov.au/aboutus/news/recent-news/agriculture-news-releases/indigenous-community-helps>

Unauthorised road crossing removed

A road crossing on Mogo Creek south of Batemans Bay has been removed to allow fish passage following unauthorised replacement of the crossing by the construction company building a new water supply pipeline from Moruya River to Deep Creek Dam (Batemans Bay water storage). The company contravened the conditions of its NSW DPI Fisheries permit for dredging and reclamation by changing the pipeline route across the creek and replacing the road crossing over Mogo Creek without notifying DPI Fisheries. The construction company was fined and issued with an infringement notice and has since removed the crossing and rehabilitated the site at a cost of \$28,000.

Below: The crossing before and after its removal.



Threatened species amendments

The NSW Fisheries Scientific Committee has amended the threatened status of several species. The grey nurse shark and Murray hardyhead are now listed as critically endangered species; the green sawfish is presumed extinct, and the purple spotted gudgeon, Macquarie perch and southern pygmy perch are now listed as endangered species.

<http://www.dpi.nsw.gov.au/fisheries/species-protection/fsc/final>

Carp muster at Manilla in November

Manilla's first carp muster will be held on November 22-23. Anglers will be able to learn about the impact of carp and how planting trees, removing willows and re-snagging the water benefits native fish. It is the second carp muster for the Namoi River - the first was held in Narrabri in March. The muster is open to everyone and only legal fishing methods can be used. Thousands of dollars worth of prizes are on offer for category winners, including the biggest carp caught, and mystery prizes in both senior and junior prize categories. Registration will be at the Manilla Showground 7am – 5pm Saturday 22 November and 7am – 12pm Sunday 23 November. For more information ring Milly Hobson NSW DPI on 02 6763 1206 or Anne Ferguson Namoi CMA 02 6742 9202.

NSW NEWS

Karl Schaerf acclaimed for habitat activities

Karl Schaerf has won NSW Council of Freshwater Anglers 2008 annual award for his contribution to the advancement of freshwater fisheries in New South Wales, particularly for his work for environmental issues. Karl led Central Acclimatisation Society (CAS) to widen its trout stocking focus to include environmental and native fish issues. He has been involved in numerous campaigns for fish habitat: he opposed riparian clearing and flood mitigation works on the Macquarie River, supported the trout cod recovery plan for the Macquarie River, and lobbied for Windamere Dam to be managed as a native species fishery. His efforts to retain vegetation for habitat was critical to Windamere becoming a first class native fishery. He pressed the State Pollution Control Commission to successfully prosecute Bathurst City Council for their gas works polluting the Macquarie River, and makes ongoing objections to irrigation licences for unregulated rivers. Source: Freshwater Fisher September 2008



Karl Schaerf, centre, with CFA president Steve Samuels, left, and John Humphries)

<https://promo-manager.server-secure.com/em/message/email/view.php?id=84037&u=1000983>

Habitat affects fish more than flows

University of New England research into fish communities in the lower Gwydir has found that diversity and structure of fish assemblages there are closely associated with habitat quality. Environmental contingency flows and other high flows had only minor effects. A strong increase in fish numbers in the second year coincided with increased median flows, suggesting that stable base flows benefit recruitment of some fishes. However the impact of poor habitat quality shows that restoring flows alone may not improve populations. For more information contact Glenn Wilson at UNE.

glenn.wilson@une.edu.au

Finding habitat for Macquarie perch in Cotter Dam

Ecologists are currently identifying new habitat for adult Macquarie perch above Cotter Dam. The dam is being raised 50 metres and the fish will be vulnerable to the initial filling and subsequent water fluctuations. Historically, adult perch shelter from cormorants by resting in aquatic plants during the day. More recently the fish have been sheltering in large woody debris deposited on the edge of the reservoir after bushfire. When suitable new habitat is identified, it will be incorporated into the dam construction program. For more information contact Brendan Ebner at ACT government.

brendan.ebner@act.gov.au

Water-dependent ecosystems position statement

The National Water Commission has published a position statement on water-dependent ecosystems in which it says protection of these ecosystems, including the recovery of over-allocated systems, continues to be a major challenge in implementing the National Water Initiative.

<http://www.nwc.gov.au/www/html/861-water-dependent-ecosystems.asp?intSiteID=1>

Adopt-a-Stream to improve fish habitat in Victoria

Victoria's Adopt-a-Stream program offers local community and interest groups to apply for dollar-for-dollar funding grants to improve fish habitat in their local streams to benefit recreational fishing. Suggested activities include collection of rubbish and waste along streambanks, control of weed species such as blackberries, planting of native vegetation to shade streams in summer, and installation of instream structures such as snags, boulders and fence boundaries.

<http://www.dpi.vic.gov.au/dpi/nrenfaq.nsf/LinkView/46BF85FB18B18F31CA2574040080EEC86AA8A0155835E25ACA25740900180F2E>

Artesian springs provide habitat for endangered native fish

Conservation group Bush Heritage Australia has purchased the central Queensland property Edgbaston to protect artesian springs that provide the only known habitat of the endangered native fish species redfinned blue-eye (pictured). The fish's habitat is threatened by cattle and wild pig damage, loss of groundwater flow, and the presence of ponded pastures and the exotic fish *Gambusia*. Photo: Bush Heritage

http://www.bushheritage.org.au/bha_news_09sept08.html

http://www.epa.qld.gov.au/nature_conservation/wildlife/native_animals/redfinned_blueeye



Study on climate change impacts on fish

The Murray-Darling Basin Commission has commissioned a study on the impact of climate change on native fish. The study will focus on how changed rainfall, evaporation and air temperatures might impact on stream temperatures and flows and on spawning seasons.

http://www.mdbc.gov.au/_data/page/29/MR-native-fish-forum-2008.pdf

First vertical fishway in Queensland Basin nears completion

The first vertical slot fishway in the Queensland part of the Murray Darling Basin will soon be operating at Loudoun Weir on the Condamine River. The fishway is the first in Australia to be completed with financial support from corporate investment, and will be a focal point of the Dalby demonstration reach for which preliminary planning is underway.

http://www.mdbc.gov.au/communications/s-scribe/eLetter_menu/e-letter_october_2008

Fish egg mortality higher in low flow estuaries

A Victorian study into egg and larval survival of estuarine fish has found that egg mortality was higher in the estuary of a drought affected river, possibly associated with low oxygen due to the low flow conditions. The results have significant implications in terms of climate change that is predicted to lead to warmer, drier conditions in south-eastern Australia, potentially increasing stratification and subsequent hypoxic zones.

<http://www.publish.csiro.au/nid/126/paper/MF07197.htm>

INTERNATIONAL HABITAT NEWS

US freshwater fish dwindling

Nearly 40 percent of US freshwater fish species are in jeopardy according to a recent study which lists 700 species as vulnerable (230), threatened (190) or endangered (280). Another 61 are extinct. Primary causes are habitat loss, dwindling range and introduction of non-native species. Climate change may further affect species.

<http://fisc.er.usgs.gov/afs/>

Biological invasions increasing due to freshwater reservoirs

Conversion of free-flowing rivers to standing waters may encourage the spread of invasive species according to a new US study. The research team looked at data from 4200 lakes and more than 1000 impoundments and found that non-indigenous species are up to 300 times more likely to occur in impoundments than in natural lakes, increasing the invasion risks for natural lakes.

<http://www.colorado.edu/eeb/facultysites/pieter/research.htm>

<http://www.sciencedaily.com/releases/2008/09/080902143245.htm>

US fish habitat act introduced

A National Fish Habitat Conservation Act has been introduced into the US Senate. If passed, the Act will provide a comprehensive strategy to allocate conservation dollars for restoration of US waterways.

<http://fishhabitat.org/>

US fish habitat partnerships

14 fish habitat partnerships have stated their intent to apply for recognition as an official partner under the National Fish Habitat Action Plan. The partnerships include Salmon in the city, Californian fish passage forum, and Fishers and farmers partnership.

http://fishhabitat.org/index.php?option=com_content&view=article&id=156:update-on-candidate-fish-habitat-partnerships&catid=36:news&Itemid=50

Riparian insects feed fish

Insects and spiders from riparian vegetation and leaf litter are an important part of fish diet according to recent Hong Kong research. Researchers analysed the stomachs of predatory minnows in four streams, two in shrublands and two in forests and found that flies, mosquitoes, springtails, ants, and flying insects accounted for 73% of the arthropod abundance. Terrestrial insects and spiders were more important prey in the two forest streams, accounting for 35–43% of prey abundance (39–43% by volume) v. 28% (27%) in the shrubland stream. Because riparian vegetation is the source of terrestrial arthropod in streams, degradation of streamside forests will have consequences for the diets of stream fishes.

<http://www.publish.csiro.au/nid/126/paper/MF07191.htm>

FISH HABITAT RESOURCES

The sea to Hume Dam: Restoring fish passage in the Murray River

This report assesses the performance of fishways on the Murray River and longer term benefits of improved fish passage. A team of freshwater fish scientists from NSW, Victoria and SA studied 242,500 fish at the tidal barrages, locks 1 to 3 and locks 7 to 10 and found that the fishways are optimally designed, located and operated, have reduced accumulations of fish downstream of barriers, allow a wide range of fish sizes and species communities to move along the river, and have improved abundance and diversity of native fish in the River. The new fishways are passing more than 1,000 fish a day, with a high diversity of about 13 species and a wide size-range of between 31 mm to 1040 mm long.

http://www.mdbc.gov.au/_data/page/672/The_Sea_to_Hume_Report.pdf

Our valuable estuaries, coast and marine environs: Making connections

OceanWatch Australia has developed this innovative resource with the NSW Department of Education and Training, Geography Teachers' Association of NSW and the NSW Fishermen's Cooperative Association with funding from NSW Environmental Trust. The education kit tackles coastal management in a holistic manner.

<http://www.oceanwatch.org.au/OurValuableEstuariesYear10.htm>

Lower Murray Darling river frontage action strategy

This strategy covers the lower Murray River, Darling River and Great Darling Anabranch in the Lower Murray Darling catchment. The strategy focuses on the thin strip of river redgum and black box trees along the rivers and lakes to learn more about landuse in this zone and land managers' needs, and to build collective knowledge through demonstration sites, guidelines and landholder actions. Challenges include weed control, willow removal, riverbank erosion control and vegetation management through livestock fencing and alternative water points, improved forestry practices, sustainable recreation practices and urban development of frontage areas. At a regional scale there are concerns about climate change and lack of regenerating floods.

http://www.lmd.cma.nsw.gov.au/pdf/LMD_RFAS_FINAL_July08web.pdf

Upper Hunter River rehabilitation

A technical manual outlining the specific findings of the Upper Hunter River rehabilitation initiative has been printed and distributed to river managers in State Water, DPI Fisheries, and Namoi, Northern Rivers, Murray Darling, Sydney Metro, and Hawkesbury Nepean CMAs.

<http://www.hcr.cma.nsw.gov.au/uhrri/index.php3>

Hunter River Explorer

The Hunter Central Rivers CMA has developed a website to highlight the Hunter River's history and raise awareness of issues that land managers are currently facing and addressing in the catchment.

<http://www.hunterriverexplorer.com.au/>

Where land meets water

This resource kit for landholders contains practical information on managing riparian lands to maintain river health.

http://www.hcr.cma.nsw.gov.au/wlmw_download.php3

Rocky shores resource kit

This education kit from Newcastle Council explains the habitat importance of coastal rock platforms.

http://www.hcr.cma.nsw.gov.au/ep_resources.php3

Resnagging the Darling

Watch a four minute video of Western CMA's Brewarrina to Bourke demonstration reach project.

http://www.western.cma.nsw.gov.au/Pages/Riversandgroundwater_Resnaggingvideo.html

HABITAT DATES

November 2008: MDBC NSW youth environment conference, Tamworth NSW

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

June 2009: Australian Society of Fish Biology conference, Fremantle WA

<http://www.ipfc2009asfb.com/call.html>

July 2009: Marine connectivity AMSA 2009 international conference, Adelaide

http://www.amsa.asn.au/conference/conf2009/images/AMSA2009_Flyer.pdf

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.

Aquatic habitat staff

Sydney (Cronulla) 02 9527 8411
Sydney (Wollstonecraft) 02 8437 4909
Batemans Bay 02 4478 9103
Huskisson 02 4441 8969
Port Stephens 02 4982 1232
Wollongbar 02 6626 1200
Tamworth 02 6763 1100
Dubbo 02 6881 1270
Tumut 02 6947 4188
Narrandera 02 6959 9021
Albury 02 6042 4200

Research staff

Port Stephens 02 4982 1232,
Narrandera 02 6959 9021
Cronulla 02 9527 8411

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.

Subscribe to Newstreams

Newstreams is a free newsletter available to anyone interested in fish habitat. To subscribe, email the editor, Rebecca Lines-Kelly, at

rebecca.lines-kelly@dpi.nsw.gov.au.

If you no longer wish to receive Newstreams, email the editor with 'Unsubscribe Newstreams' in the subject line.

Back issues

<http://www.dpi.nsw.gov.au/aboutus/news/newletters/newstreams>