

# Newstreams

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

*No 8. June 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**

### ***Shawn's Creek demonstration reach***

A recent field day at Shawn's Creek in the Upper Castlereagh River catchment showed landholders and community groups part of a new 14 km demonstration reach. More than 100 tonnes of native hardwood logs have been placed in the creek to enhance fish habitat and reduce the effects of erosion and runoff. Exotic trees have been poisoned and over 800 native trees have been planted along the creek to improve riparian biodiversity and in-stream structures. Over 2km of fences have been established to protect refuge pools, riparian zones and improve natural recruitment of native trees but still allow access to the creek for stock at specific locations. The two year project is coordinated by NSW DPI with funding from the Central West CMA and assistance from landholders. For more information, contact project officer Shaun Morris on 02 6881 1270 or [shaun.morris@dpi.nsw.gov.au](mailto:shaun.morris@dpi.nsw.gov.au).

### ***Yarrahapinni floodgates***

NSW DPI staff are monitoring fish species and water quality around the floodgates at Yarrahapinni Broadwater (Anderson Inlet, Macleay River) before opening new tide-activated floodgates this month. The new gates will allow water to flow between the estuary and wetland; if this stage is successful, approximately 100 metres of levee will be removed to open the wetland to the estuary. The project is a key component of a 12 month coastal rehabilitation monitoring and evaluation program which will also monitor the success of new fish passage at Stroud Weir (Karuah River) and a causeway on the Buckenbowra River upstream of Batemans Bay. For more information, contact Craig Boys at [craig.boys@dpi.nsw.gov.au](mailto:craig.boys@dpi.nsw.gov.au).

### ***New rock ramp fishway over Upper Ourimbah Weir***

NSW DPI has provided technical advice and facilitated the construction of a new rock ramp fishway at Upper Ourimbah Weir on Ourimbah Creek. The fishway 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. The fishway allows 20km of unimpeded fish passage which will boost the breeding and health of several fish species in the creek including Australian bass. The fishway was completed in May thanks to funding from the NSW Environmental Trust (via NSW DPI), Wyong Shire Council and the Department of Natural Resources. For further information contact Scott Nichols on 02 9764 3067 or [scott.nichols@dpi.nsw.gov.au](mailto:scott.nichols@dpi.nsw.gov.au).

### ***Darling River aquatic habitat management plan***

Approximately 60km of the Darling River will be assessed to create a management plan for work in and around the river near Wilcannia. The project, in a reach of the river extending from Murtee rock bar to Ten Mile Point, is funded by the Western CMA and coordinated by NSW DPI, and will involve landholders/managers and the Wilcannia community. This month DPI begins mapping important habitat such as snags. Riparian and site condition along the plan reach will also be assessed and recorded. This information and existing data will determine work priorities and the most suitable intervention/protection actions. Recommendations will be presented to the community and a final report submitted to the Western CMA in September. For more information, contact project officer Jennifer Warner on 02 6881 1215 or [jennifer.warner@dpi.nsw.gov.au](mailto:jennifer.warner@dpi.nsw.gov.au).

## ***Namoi habitat activities***

NSW DPI recently held two successful workshops with landholders and representatives of fishing clubs, industry and local government to discuss the Namoi Aquatic Habitat Initiative (NAHI). The Initiative aims to remediate eleven fish passage barriers in the catchment and establish a demonstration reach, with funding provided by the Namoi CMA. More than 50 people attended the workshops at potential demonstration reach sites at Narrabri and Manilla. Landholders in particular like the concept of a demonstration reach in their own backyard. Information obtained from participants will help NSW DPI select the demonstration reach site and appropriate onground works.

As part of the Initiative a redundant ford on the Macdonald River was removed in May, reinstating over 150 km of aquatic habitat in the Namoi catchment. For more information ring 02 6765 4243 or email to contact Milly Hobson ([milly.hobson@dpi.nsw.gov.au](mailto:milly.hobson@dpi.nsw.gov.au)) about the demonstration reach or Anthony Townsend ([anthony.townsend@dpi.nsw.gov.au](mailto:anthony.townsend@dpi.nsw.gov.au)) about fish passage.

## **NSW NEWS**

### ***New vertical slot fishways in Parramatta River***

New vertical slot fishways have recently been completed at two weirs on Parramatta River. The fishways at Kiosk Crossing Weir behind Parramatta Stadium and Charles Street Weir at the tidal limit on Parramatta River are the first of four fishways to be completed over the next two years. The vertical slot fishways provide a series of small steps along a gentle slope to help native fish swim over the weirs. When the fishways are complete, they will provide more than 8km of unimpeded fish passage in an urban environment, boosting the breeding potential and health of native fish species including Australian bass. The first of the fishways was completed in May thanks to funding from various sources including the Australian Government Community Recreational Fishing Grants Program, NSW Environmental Trust (via NSW DPI), NSW Recreational Fishing Trust, Upper Parramatta River Catchment Trust, and Parramatta City Council. For further information contact Scott Nichols on (02) 9764 3067, or download the council media release at [http://www.parracity.nsw.gov.au/home/media/2007/january\\_2007/getting\\_native\\_fish\\_back\\_in\\_the\\_river](http://www.parracity.nsw.gov.au/home/media/2007/january_2007/getting_native_fish_back_in_the_river).

### ***Improving habitat for Port Hacking fish***

Volunteers are working with Sutherland Shire Council and Oceanwatch to eradicate noxious weeds in riparian areas around Port Hacking and install drainage systems to prevent polluted water reaching the estuary/ocean. Volunteers and contractors initially clear noxious weeds from the public reserves and then assess how water flows through the reserves and enters the estuary. Drains are then built to ensure runoff flows straight into the ocean and does not seep through land polluted with garden fertiliser, pet droppings and nutrient-rich garden waste. Banks of indigenous plants are also planted where runoff has eroded soil in the riparian zone. Sydney Water has also constructed holding tanks to hold runoff and sewage during heavy rain. Fish to benefit from work done at Eurbalong Avenue Reserve on Burraneer Point at the head of Gunnamatta Bay include bream, pinkies-small snapper, John Dory, mullet, flathead, whiting, prawns and squid. Species benefiting from work at The Esplanade, Cronulla, include jewfish, yellowtail, sharks (bronze whalers, Port Jacksons), eastern rock lobsters and whiting. For more information contact John Olovich at [johnolovich@hotmail.com](mailto:johnolovich@hotmail.com).

### ***Clarence Floodplain Project is a Banksia Award finalist***

Clarence Valley Council's Clarence Floodplain Project is a finalist in the local government category in the national Banksia Awards for environmental achievements. The project began in 1997 when people from the local community, fishing, sugar and grazing industries, and government formed a partnership to tackle environmental issues on the Clarence river floodplain and estuary. Benefits to the environment have been spectacular and include better water quality, improved aquatic habitat, reduced acid discharges from acid sulfate soils and restoration of wetlands. In the last two years 27 floodplain watercourses and wetlands have been 'revived' with assistance from floodplain landowners and many other stakeholders. About 250 landholder volunteers have now signed management plans and actively manage the watercourses adjoining their properties. The project has also trialled a wide range of innovative water control structures, working with engineering companies to improve prototypes. The awards will be announced in July. In the meantime, have a look at the project's website at [http://www.clarence.nsw.gov.au/cmst/cvc009/view\\_doc.asp?id=4008&cat=211](http://www.clarence.nsw.gov.au/cmst/cvc009/view_doc.asp?id=4008&cat=211).

### **CMA to restore Morley's Creek**

Murrumbidgee CMA is funding a project to lower culverts to allow higher flows in Murrumbidgee River to enter Morley's Creek near Gundagai so that native fish can move up the creek. The project will also remove large amounts of sediment that has built up over the last 50 years. The banks of the creek were bulldozed in the 1950s to allow movement of people and machinery from nearby farmland, but this affected the health of the creek. The project will allow native fish to reach breeding sites during small river rises and create a healthier wetland system at the upper end of the creek. Source: [http://murrumbidgee.cma.nsw.gov.au/index.php?id=113&tx\\_ttnews\[cat\]=5&tx\\_ttnews\[tt\\_news\]=143&cHash=176feaa9ad](http://murrumbidgee.cma.nsw.gov.au/index.php?id=113&tx_ttnews[cat]=5&tx_ttnews[tt_news]=143&cHash=176feaa9ad).

### **Pontoon is not a registrable vessel**

A landholder who built a pontoon, registered it as a vessel and then anchored it against the shoreline, to the detriment of mangroves and seagrasses, has been ordered to remove it. The pontoon does not fit the description of a registrable vessel under Water Traffic Regulations-NSW and is not eligible for an occupation licence under the Management of Waters and Waterside Lands Regulations which require floating objects occupying navigable waters to have occupation licences. For more information, contact Allan Lugg, NSW DPI at [allan.lugg@dpi.nsw.gov.au](mailto:allan.lugg@dpi.nsw.gov.au) or 02 4441 8969.

## **AUSTRALIAN NEWS**

### **Slackwater habitats for Broken River fish**

Goulburn Broken CMA has designed and built slackwater habitats for native fish in Broken River in northeast Victoria. Logs were placed in the river to provide slow water areas which protect small fish from fast currents, and provide food and hiding places from predators. Monitoring shows that Murray cod, yellow belly (golden perch), silver perch and the endangered trout cod are using the constructed habitats. Source: [http://www.gbcma.vic.gov.au/default.asp?ID=177&post=116&tpl=news\\_full](http://www.gbcma.vic.gov.au/default.asp?ID=177&post=116&tpl=news_full).

### **Carp less fussy than cod about habitat**

A 2001 study of seven juvenile carp and eight young Murray cod found that the cod lived only in the mainstream Murray River among submerged woody habitats. In contrast, the carp occurred equally in mainstream and offstream areas, and among submerged wood and aquatic vegetation, suggesting that they can adapt to a variety of habitats. The cod were found in deeper and faster waters compared with the carp which moved further and more often than the cod. Read the paper 'Movements and habitat use of common carp (*Cyprinus carpio*) and Murray cod (*Maccullochella peelii peelii*) juveniles in a large lowland Australian river' by MJ Jones and IG Stuart in the June 2007 edition of the journal Ecology of Freshwater Fish, <http://www.blackwell-synergy.com/toc/eff/16/2>.

### **Rainfall affects fish**

A Queensland study has found that up to 30% of Queensland's total fish catch and up to 80% of the barramundi catch variation for specific regions can be explained by rainfall often with a lagged response to rainfall events. Many commercially important fish species use estuarine habitats such as mangroves, tidal flats and seagrass beds as nurseries or breeding grounds and have lifecycles correlated to rainfall and temperature patterns. This means climate change has big implications for fish numbers. Read the study 'Effect of rainfall as a component of climate change on estuarine fish production in Queensland' by Meynecke et al in the September 2006 edition of Estuarine, Coastal and Shelf Science, [http://www.cms.uq.edu.au/marbot/publications/pdf/2006\\_Meynecke+.pdf](http://www.cms.uq.edu.au/marbot/publications/pdf/2006_Meynecke+.pdf).

### **Joint freshwater conference**

New Zealand Freshwater Sciences Society and the Australian Society for Limnology are holding a joint conference in Queenstown NZ on 3-7 December 2007. The theme of the conference is 'Water: An inconvenient truth'. Find out more at <http://www.es.govt.nz/events/wit/index.aspx>.

## **INTERNATIONAL NEWS**

### **10 Waters to Watch**

The US National Fish Habitat Plan has launched a 10 Waters to Watch program where local communities are planting riparian vegetation, removing structures that block fish passage, and protecting rivers from the effects of agriculture runoff. To find out more go to <http://www.fishhabitat.org/waterstowatch/qanda.htm>.

## ***US More Fish campaign***

The More Fish Campaign is a five-year initiative launched by the US National Fish and Wildlife Foundation to raise awareness and funding to protect, conserve and enhance the nation's fish populations and their habitat in rivers, lakes, reservoirs, estuaries, coastal and marine zones. With the US EPA it recently provided \$5 million to help agricultural industries reduce nutrient pollution in Chesapeake Bay. Read more at

[http://www.nfwf.org/AM/Template.cfm?Section=More\\_Fish\\_Campaign&Template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=31&ContentID=5842](http://www.nfwf.org/AM/Template.cfm?Section=More_Fish_Campaign&Template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=31&ContentID=5842).

## ***Stream restoration indicators***

Aquatic biodiversity, ecosystem function and water quality are the main indicators to monitor to show the success of stream restoration, according to a recent NZ workshop on in-stream restoration indicators. These three indicators were far ahead of other indicators voted for by the workshop participants. The other indicators, in decreasing order of importance, were terrestrial biodiversity, education, health of downstream receiving environment, cultural, aesthetic, fisheries and recreation. Source: <http://limsoc.rsnz.org/Autumn%202007%20Newsletter.pdf>.

## ***River dams favour invasive species***

River dams make life easy for invasive species, according to a new US report. The dams 'homogenise' water flow and create 'one size fits all' river systems in which locally adapted species lose their competitive edge, allowing opportunistic invasive species to gain a foothold. Read the abstract of the paper 'Homogenization of regional river dynamics by dams and global biodiversity implications' by Poff et al in Proceedings of the National Academy of Sciences USA at

<http://www.pnas.org/cgi/content/abstract/104/14/5732>.

## ***Seagrasses under severe stress***

Seagrasses (marine flowering plants), produce and export organic carbon, cycle nutrients, stabilise sediments and enhance biodiversity. But they are under severe stress from sediment and nutrient runoff, physical disturbance, invasive species, disease, commercial fishing practices, aquaculture, overgrazing, algal blooms, and global warming. There is a critical need for a targeted global conservation effort to reduce the nutrient runoff and sediment that is killing the seagrass meadows. Read the paper 'A global crisis for seagrass ecosystems' by Orth et al in the December 2006 issue of BioScience, or read more at <http://www.umces.edu/grassecosystems.htm>

# **FISH HABITAT RESOURCES**

## ***NSW weir reviews***

NSW DPI has developed remedial options and recommendations for 109 weirs across NSW to reduce the impact of the weirs on fish passage and habitat. The weir reviews, grouped by catchment, can be downloaded at [http://www.fisheries.nsw.gov.au/aquatic\\_habitats/fish\\_passage2](http://www.fisheries.nsw.gov.au/aquatic_habitats/fish_passage2).

## ***Coastal catchment road crossing reports***

NSW DPI has completed an audit of road crossings in coastal waterways of NSW, identifying over 6800 road crossings, 1400 of which are potential barriers to fish passage. The four final reports outline ways to reduce the impact of road crossings on environmental flows, water quality and fish passage in coastal NSW. The reports, for the Hawkesbury Nepean, Hunter Central Rivers, Northern Rivers and Southern Rivers, were researched by NSW DPI and funded by the NSW Environmental Trust Program. Find them at [http://www.fisheries.nsw.gov.au/aquatic\\_habitats/fish\\_passage2](http://www.fisheries.nsw.gov.au/aquatic_habitats/fish_passage2).

## ***'What fish is this' now available in glovebox format***

The first stage of the NSW DPI Fish Friendly Farms program is nearing completion with a broad range of education and extension programs now concluded. One outcome of the program was the popular freshwater fish identification guide 'What fish is this?' which has now been reprinted in a smaller format that can be stored easily in your glove box, back pocket or fish tackle box. The free guide is available through NSW DPI or direct from Leanne Munro 6626 1279 or [leanne.munro@dpi.nsw.gov.au](mailto:leanne.munro@dpi.nsw.gov.au).

## ***Murrumbidgee CMA brochures***

Murrumbidgee CMA has produced three new brochures on fish and fish habitat in the catchment. Find them at <http://murrumbidgee.cma.nsw.gov.au/index.php?id=513>.

### ***Trout cod brochure***

NSW DPI has produce a new brochure 'Protecting trout cod: A guide for fishers' to help fishers differentiate trout cod from the similar looking Murray cod, and explain the cod's conservation stocking program in NSW. The brochure has been sent to relevant recreational fishing clubs and licence agents in NSW and is also available from Gabrielle Holder at [gabrielle.holder@dpi.nsw.gov.au](mailto:gabrielle.holder@dpi.nsw.gov.au) or 02 4916 3915.

### ***Southern Rivers CMA publications***

Southern Rivers CMA has a range of publications dealing with fish and habitat, including 'Protecting foreshore habitat', 'Caring for your foreshore', 'Shoalhaven River rehabilitation' and 'Recovering the fish of the Snowy River'. Find them at <http://www.southern.cma.nsw.gov.au/publications.php>.

### ***Fisheries guidelines for managing ponded pastures***

This 2004 Queensland publication identifies potential and actual impacts that ponded pasture has on native fish movement and survival, and recommends ways in which these impacts can be mitigated by property owners. Download it at <http://www2.dpi.qld.gov.au/extra/pdf/fishweb/pondedpastures.pdf>.

### ***SA fish habitat handbook***

This 66 page colour booklet, subtitled 'How to reduce the impacts of land-based development on South Australia's fish habitats', was published by the SA Department of Primary Industries and Resources in 2001. It describes estuarine and marine fish habitat and what we can do to protect them. Download it at [http://www.pir.sa.gov.au/byteserve/fisheries/environmental/fish\\_habitat\\_handbook.pdf](http://www.pir.sa.gov.au/byteserve/fisheries/environmental/fish_habitat_handbook.pdf).

### ***Freshwater bug guide***

The Murray Darling Freshwater Research Centre is developing an interactive online guide to help people identify aquatic invertebrates. See the current draft version at <http://www.mdfrc.org.au/bugguide/index.htm>.

### ***The state of the world's fisheries and aquaculture 2006***

FAO's recently published review of world fisheries includes a section on rehabilitation of riverine habitat for fisheries. Download the review at <http://www.fao.org/docrep/009/A0699e/A0699e00.htm>.

### ***Conservation without borders***

In 2006 the society for Conservation Biology held its 20th annual meeting on the theme conservation without borders. One of the symposia was the role of recreational fishers in conservation and management: lessons from freshwater systems for marine practitioners. You can read the abstracts at [http://www.conbio.org/activities/meetings/2006/Symposia/Symposium\\_fishing.cfm](http://www.conbio.org/activities/meetings/2006/Symposia/Symposium_fishing.cfm).

## **FISH HABITAT FUNDING**

### ***Envirofund for coastal and marine projects***

The Natural Heritage Trust has \$4 million available for projects to protect coastal catchments, ecosystems and the marine environment. Applications are due 20 July 2007. Download the application form at <http://www.nht.gov.au/envirofund/> or phone 1800 065 823.

### ***Recreational fishing community grants***

Results of Round 5 applications of this program are expected to be announced in August 2007. The Australian Government provided \$15 million for five funding rounds, so it is expected that this round of grants will be the last. Read more at <http://www.daff.gov.au/fisheries/recreational/recfishinggrants>.

### ***Qld fish habitat scholarships***

Queensland DPI&F and the University of Queensland are offering two marine fish habitat honours scholarships, one starting in July and the other in January 2008. Up to \$5000 (plus GST) is available per scholarship which are open to any students studying marine science. Closing date for the mid-year scholarship is 13 July 2007. Details can be found at: [http://www.dpi.qld.gov.au/cps/rde/xchg/dpi/hs.xsl/28\\_6070\\_ENA\\_HTML.htm](http://www.dpi.qld.gov.au/cps/rde/xchg/dpi/hs.xsl/28_6070_ENA_HTML.htm).

## **NSW DPI & 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***

Sydney (Flemington) 02 9764 3229

Sydney (Cronulla) 02 9527 8411

Batemans Bay 02 4478 9103

Huskisson 02 4441 8969

Port Stephens 02 4982 1232

Wollongbar 02 6626 1200

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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.fisheries.nsw.gov.au/aquatic\\_habitats](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](mailto: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 to Newstreams, email the editor, Rebecca Lines-Kelly, at [rebecca.lines-kelly@dpi.nsw.gov.au](mailto: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.