

## **Newstreams**

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

**No 3. July 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.

## **MANAGEMENT AND ONGROUND WORKS**

### **Upper Castlereagh demonstration reach**

Central West Catchment Management Authority, NSW DPI and local landholders are working together to establish a demonstration reach on the upper Castlereagh catchment. Demonstration reaches show a number of ways to rehabilitate waterways to improve native fish habitat and populations. On ground works began in June with the poisoning of over 2000 exotic trees, including willows, honey locusts and trees of heaven along 13 km of river frontage. The area is known habitat of the increasingly rare river blackfish, *Gadopsis marmoratus*. For more information, contact Shaun Morris, 02 6881 1283.

### **Port Macquarie fishcare work**

Fishcare volunteers will help regenerate mangroves on the Hastings River at Settlement Point and upstream of the Hibbard ferry. The Hibbard ferry site need replenishing as self-sown seedlings are not recruiting onto the intertidal area in sufficient numbers. The Settlement Point work will rectify vandal activity where limbs have been chopped off and trees poisoned. Source:

[http://www.dpi.nsw.gov.au/aboutus/news/releases/fisheries/fishing\\_and\\_aquaculture\\_news\\_2006/fishcare-volunteers](http://www.dpi.nsw.gov.au/aboutus/news/releases/fisheries/fishing_and_aquaculture_news_2006/fishcare-volunteers)

### **Skidders Creek fish passage**

Ballina Council's replacement of a concrete causeway with a bridge has removed the only physical barrier to fish migration in the Skidders Creek catchment on the NSW north coast. The work was supported by a \$10,000 contribution from the Recreational Fishing Freshwater Trust. Source:

[http://www.dpi.nsw.gov.au/aboutus/news/releases/fisheries/fishing\\_and\\_aquaculture\\_news\\_2006/fish-friendly-road-crossing](http://www.dpi.nsw.gov.au/aboutus/news/releases/fisheries/fishing_and_aquaculture_news_2006/fish-friendly-road-crossing)

### **Clarence Floodplain Project**

The Clarence Floodplain Project was established in 1997 to improve water quality and habitat in drains and watercourses across the floodplain. The innovative project involves all floodplain stakeholders, from landholders and fishers to industry and environmental groups and local and state governments. In 2004 the project won a major environmental excellence award from the NSW Local Govt and Shires Association, and a national award for integrating biodiversity conservation into planning and management. More than 250 landholders have signed management plans and are actively managing watercourses on their properties. Their floodgate management has improved water quality and attracted fish and birdlife to the floodplain's extensive drain network. To find out more about this very successful project go to

[http://www.crc.nsw.gov.au/cmst/cvc001/view\\_doc.asp?id=471&cat=102](http://www.crc.nsw.gov.au/cmst/cvc001/view_doc.asp?id=471&cat=102).

### **Fine for dredge damage to seagrass**

A NSW north coast dredging operator has been fined \$6000 and ordered to pay costs totalling \$13,065 for harming marine vegetation after a dredging pipeline drifted onto seagrass beds in the Clarence River and caused extensive damage to the seagrass. Source:

[http://www.dpi.nsw.gov.au/aboutus/news/releases/fisheries/fishing\\_and\\_aquaculture\\_news\\_2006/court-fines-dredging-operator](http://www.dpi.nsw.gov.au/aboutus/news/releases/fisheries/fishing_and_aquaculture_news_2006/court-fines-dredging-operator)

## ***Native Fish Strategy forum***

Over 60 freshwater fish researchers and managers met in Canberra in June to discuss developments under the MDBC Native Fish Strategy. Delegates heard information on a range of projects, including innovations in tracking migratory fish, the successful response of fish spawning events following environmental flows, and options for the development of freshwater protected areas within the Murray-Darling basin. Read the press release at [http://www.mdbc.gov.au/\\_\\_data/page/29/MR-NFSannual-forum140606.pdf](http://www.mdbc.gov.au/__data/page/29/MR-NFSannual-forum140606.pdf).

## ***Underwater camera reveals fish habits***

NSW DPI's new acoustic underwater camera is showing how fish are reacting to improved habitats. A trial held on the Clarence floodplain last year showed fish passing through floodgates at various stages of the tidal cycle. Eels, for example, were far more active at night. More trials will be held over the next year. For more information, contact Simon Walsh at [simon.walsh@dpi.nsw.gov.au](mailto:simon.walsh@dpi.nsw.gov.au).

## **RESEARCH**

### ***Hawkesbury mussel decline indicates river health concerns***

University of Sydney researchers have found that the decline in mussel populations in the Hawkesbury-Nepean River highlights concerns for the overall health of the river system and the need to identify the effects of habitat modification. Read the abstract by Brainwood et al in the journal Aquatic Conservation: Marine and Freshwater Ecosystems, Volume 16, Issue 5, at <http://www3.interscience.wiley.com/cgi-bin/abstract/112597903/ABSTRACT>.

### ***Burrowing crayfish affected by cattle grazing***

A study of burrowing crayfish in Victoria has found that cattle grazing on stream banks may have reduced populations of burrowing crayfish in these streams, and that subsequent fencing and the presence of remnant native vegetation may be insufficient to ameliorate these effects. Blocks of native forest that remain on these streams had more than twice the densities of freshwater crayfish burrows than other land uses so may act as an important refuge for these species in agricultural areas. Read the abstract by March & Robson in Aquatic Conservation: Marine and Freshwater Ecosystems, Volume 16, Issue 2 at <http://www3.interscience.wiley.com/cgi-bin/abstract/110576269/ABSTRACT>.

### ***Debate over removal of carp***

Charles Sturt University researcher Ian Taylor has warned that removal of the carp will affect bird species reliant on carp for food because native fish have been depleted. To ensure bird survival, he wants native fish numbers boosted before carp are removed. However, other research has suggested that native fish populations are unlikely to recover until carp numbers are reduced. Source: <http://abc.gov.au/news/items/200605/1640497.htm?victoria>.

### ***Hessian helps seagrass***

SA researchers are finding that coarse hessian bags are very effective in helping seagrass establish in bare seabeds. The seedlings have tiny grappling hooks on them that attach to the hessian. Find out more at [http://www.sardi.sa.gov.au/pages/organisation/media\\_products/media\\_releases/2006/seagrasssaasco.p.htm:sectID=1179&templID=1](http://www.sardi.sa.gov.au/pages/organisation/media_products/media_releases/2006/seagrasssaasco.p.htm:sectID=1179&templID=1).

### ***Stakeholder knowledge of Macquarie marshes ecosystems***

Interviews with land managers in NSW's Macquarie Marshes have found they have extensive understanding of the marshes' ecosystems which is particularly useful for guiding future scientific research and management of the marshes. The findings reinforce the need for stakeholders to be involved in making decisions about conservation and resource use, along with ecologists. Read the Ecology and Society paper at <http://www.ecologyandsociety.org/vol11/iss1/art25/>.

## **INTERNATIONAL NEWS & RESEARCH**

### ***\$2million for US fish habitat***

In the US, more than \$2 million has been allocated to five regional fisheries conservation pilot projects across 15 states with support of more than 500 partner groups, building on the April 2006 rollout of the National Fish Habitat Action Plan. Source: [http://www.fishhabitat.org/news/july5\\_01.htm](http://www.fishhabitat.org/news/july5_01.htm)

## **US More Fish campaign**

The US National Fish and Wildlife Foundation has launched a More Fish campaign to improve aquatic habitat in rivers, lakes, reservoirs, estuaries, coastal and marine zones. Fifty percent of the nation's waterways are impaired and over 40 percent of the fish and aquatic species in the U.S. are in decline or threatened with extinction. The top contributing factor for this decline is habitat degradation and loss. The campaign aims to restore healthy fish populations, increase public awareness, and protect waterways. Source: <http://www.nfwf.org/programs/morefish/>.

## **Estuary degradation**

Investigations of 12 once diverse and productive estuaries and coastal seas worldwide show that human impacts have depleted more than 90% of formerly important species, destroyed more than 65% of seagrass and wetland habitat, degraded water quality, and accelerated species invasions. Twentieth-century conservation efforts have so far failed to restore former ecosystem structure and function. Read the report by Lotze et al in Science magazine, 23 June 2006, or at **Lack of**

## **oxygen promotes male fish**

Oxygen-depleted waterways may be transforming female fish into males. Researchers have found that oxygen deprivation in the first month can alter fish sex hormones. The oxygen deprivation can be caused by fresh river water sitting above denser salt water, but the biggest cause is agricultural and industrial run-off. Nitrogen and phosphorus in the runoff promote algal blooms that are decomposed by oxygen-consuming bacteria. Read more at <http://www.bioedonline.org/news/news.cfm?art=2494>. Read the abstract at <http://pubs.acs.org/cgi-bin/abstract.cgi/esthag/2006/40/i09/abs/es0522579.html>

## **Pesticide mixtures ubiquitous in US streams**

US water quality research has found two or more pesticides in more than 90% of stream samples. The National Water Quality Assessment program found a prevalence of complex mixtures, often at levels that may impact aquatic life or fish-eating wildlife. These findings indicate that the current regulatory approach of setting standards for individual chemical compounds may be inadequate. Source: <http://pubs.acs.org/subscribe/journals/esthag/40/i11/html/060106news3.html>

## **Shellfish clean up nitrogen in water**

Shellfish may be a key to cleaning up nitrogen polluting US coasts. The nitrogen comes from air pollution, septic systems and lawn fertilisers. Researchers have found that 100 oysters can remove 28 g of nitrogen from the watershed. Source: <http://pubs.acs.org/subscribe/journals/esthag/40/i10/html/051506news4.html>.

## **Fish farms increase mercury**

Researchers in Canada have found that salmon farms can increase the amount of mercury found in wild fish that live close to the salmon pens, creating possible health problems for locals fishing in the area. Read more <http://pubs.acs.org/subscribe/journals/esthag/40/i11/html/060106news2.html>. Read the abstract at <http://pubs.acs.org/cgi-bin/abstract.cgi/esthag/2006/40/i11/abs/es0520161.html>.

## **Dragonfly indicators**

With their semi-aquatic habitat, dragonflies are proving useful indicators of habitat quality above and below the water surface. In Kenya, the endangered dragonfly *Notogomphus maathaiae* is being promoted as a 'guardian of the watershed'. Source: [http://www.iucn.org/en/news/archive/2006/05/02\\_pr\\_red\\_list\\_en.htm](http://www.iucn.org/en/news/archive/2006/05/02_pr_red_list_en.htm)

# **FISH HABITAT INFORMATION RESOURCES**

## **Six main risks to MDB streamflow**

A new report has identified six major risks to stream flow in the Murray Darling Basin. Those risks are climate change, large scale tree planting, groundwater extraction, irrigation management, farm dams and bushfires. Overall the report suggests that if present trends continue the total reduction in stream flow from all six risks in the next 20 years is likely to range between 2500-55000 GL/year, a reduction of 10-23% of average annual flow. Read the report at [http://www.mdbc.gov.au/nrm/risks\\_to\\_shared\\_water\\_resources/report\\_part2\\_Risks](http://www.mdbc.gov.au/nrm/risks_to_shared_water_resources/report_part2_Risks).

## **Habitat disturbance**

The Coastal CRC has identified habitat disturbance as one of 15 stressors affecting the health of coastal catchments. To view the 15 stressors and find out more about habitat disturbance, go to <http://www.coastal.crc.org.au/ozcoast/issues/index.asp>.

### ***Willows newsletter***

The National Willows Taskforce has a new newsletter The Willow Strip, on willow control techniques to reduce their impact on stream and wetland hydrology and biodiversity. Find it at [http://www.weeds.org.au/WoNS/willows/docs/willow\\_strip-edition\\_1\\_jan\\_06.pdf](http://www.weeds.org.au/WoNS/willows/docs/willow_strip-edition_1_jan_06.pdf).

### ***Fishers For Conservation Inc.***

Fishers for Conservation was formed in 2005 with a strong membership base in South Australia. It supports conservation and ecologically based management of the coastal, marine and freshwater environments. Its objectives are to conserve natural environmental and ecological processes, promote understanding and protection of natural ecosystems, educate recreational fishers on the benefits of environment conservation and sustainable fishing practices, and research. Find out more at <http://www.ffc.org.au/index.html>.

### ***New kids newsletter on aquatic habitat***

MDBC has released a new interactive newspaper for kids - The River. The first issue covers fishways, frogs, carp busting and native fish. Find it at [http://www.mdbc.gov.au/subs/The\\_River/index.html](http://www.mdbc.gov.au/subs/The_River/index.html).

### ***The blue highway***

ABC has an interactive webpage 'The blue highway' showing the importance of all the different types of aquatic habitat for fish. Explore the page at <http://www.abc.net.au/science/bluehighway/>.

### ***New Recfishing awards***

Recfish Australia is introducing awards for excellence. Categories include best research project with recreational outcomes and best recreational enhancement project. Nominations close Monday 18 September 2006. Find out more at [www.refish.com.au](http://www.refish.com.au).

### ***Australian Coastal Society established***

At the Coast to Coast conference in May, delegates agreed to establish the Australian Coastal Society for people committed to the health of Australia's coast. Professor Bruce Thom, University of Sydney, was appointed interim chairman. For further information contact Tania Ewing on 0408 378 422.

### ***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>.

## ***FUNDING RESOURCES FOR NSW FISH HABITAT***

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

Round 3 of the recreational fishing community grants program is now open, and closes on 28 July. Details are at <http://www.daff.gov.au/recfishinggrants>. If you want to be notified about Round 4 rounds, email [fishinggrants@daff.gov.au](mailto:fishinggrants@daff.gov.au).

### ***Project AWARE***

Project Aware provides grants for activities directly related to the conservation of underwater environments, both marine and freshwater. Details at <http://www.projectaware.org/asiapac/english/grants/>

### ***Community water grants***

Round 2 of the Federal Government's community water grants program is now open, closing in August. There are three themes: water use, efficiency and conservation, water reuse and recycling, and improving surface and groundwater health. More information at <http://www.communitywatergrants.gov.au/>.

### ***Recreational Fishing Trust small grants program***

The small grants program enables fishing clubs, councils and other community members to submit proposals for projects aimed at enhancing recreational fishing. Funding proposals are limited to \$5,000 per project and should be matched by funds from the applicant and / or other sources. One of

the outcomes of this program is habitat improvement. Applications can be submitted at any time.  
[http://www.fisheries.nsw.gov.au/recreational/inland/small\\_grants\\_program](http://www.fisheries.nsw.gov.au/recreational/inland/small_grants_program).

## ***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 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

### **The Department'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

### **The Department'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 4472 4032
- Huskisson 02 4441 8969
- Port Stephens 02 4982 1232
- Wollongbar 02 66261 200
- Tamworth 02 6765 4591
- Dubbo 02 68811270
- Tumut 02 6947 4188
- Narrandera 02 6959 9021
- Albury 02 6042 4200

## ***Research staff***

- Port Stephens 02 49182 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.