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Newstreams

News, research, on-ground works, innovation and events with a focus on improving fish habitat

AUSTRALIAN NEWS

Tales of rivers and fish

Documenting the history of our rivers is a fascinating and rewarding way of revealing how our waterways, and their fish, have changed. As part of the Murray Darling Basin Authority's *Talking Fish* project, ABC Radio National broadcast a collection of stories from fishers across the Basin. Booklets documenting the oral history of twelve Murray-Darling rivers will be released during native Fish Awareness Week in November. To listen or download:
www.abc.net.au/rn/hindsight/stories/2011/3289153.htm

Hamish Sewell collecting fishers stories for the *Talking Fish* project. Photo: Greg Ringwood.

It's not just inland rivers that are having their history documented. *The Bhunduu - The Clyde River Story* has been written by students from Batemans Bay Public School. This Southern Rivers CMA sponsored project involved the students learning about the river's plants and animals, Aboriginal culture and heritage and the local industries which rely upon it, then writing a book in both English and the local Aboriginal Dhurga language. For more information:
www.southern.cma.nsw.gov.au/documents/25%20July%202011%20The%20Bhunduu%20-%20The%20Clyde%20River%20Story%20Book%20Launch.pdf

The Hunter River is also having part of its story told. The book *Maitland, City on the Hunter: Fighting floods or living with them?* details the major Lower Hunter floods of the past 200 years and contains historical photos and personal tales of survival dating back to 1930. For more information:
www.hcr.cma.nsw.gov.au/articles/news.asp?news_id=72

In an international example, the story of 15 years work to restore the biologically critical Fossil Creek in Arizona has been documented in film. The film examines the ecological effects of a 100-year-old dam and hydroelectric facility and highlights the success of this restoration for people and native species. For more information:
www.mpcer.nau.edu/riverreborn/

Hat Head habitat heroes

Hat Head Fishing Club has been busy planting native salt tolerant plants, including saltmarsh, to revegetate 1.2ha of the estuarine reach of Korogoro Creek. Nearly 40 club members and community volunteers, aged from 2 to 85, have been involved, including 11 fishing club juniors. Given the seniors handed responsibility for the staking and watering of their new plantings to the kids, it was almost inevitable that the final day included a water fight. The work was supported by the Club members, Kempsey Shire Council and funds from the Habitat Action Grants. For more information, email Peter Hemmings, Hat Head Fishing Club.

One of the up-and-coming generation of fish habitat rehabilitators. Photo: Peter Hemmings.

Bass Sydney busy with habitat business

Bass Sydney is leading the way in getting involved in fish habitat rehabilitation. Their latest venture is a rehabilitation project at a site at Emu Plains. The club volunteers recently spent two Saturdays dealing with the copious amount of Balloon Vine that was slowly strangling the trees and shading the ground as well as dealing with lantana and privet. In the 3.5 hours each day they racked up a total 80 person hours of work. The club has regular working bees like this one. For more information: www.basssydney.com/environmental/index.php or www.facebook.com/BassSydneyFishing

Fishers monitoring fish in the Namoi

For the past 8 months, fishers along the Namoi River and its tributaries have been logging their fishing expeditions and recording total catch and fish size and health. Data collected so far shows apparent 'hot spots' along the Namoi River, particularly in the Boggabri area, where local fishers have been catching high numbers of native fish and fewer introduced species like carp. Waterways in the Boggabri area have some good remnant habitats that are being linked by rehabilitation efforts of landholders, Council, Local Aboriginal Land Councils and the Livestock Health and Pest Authorities. This monitoring program is part of the Namoi Demonstration Reach Project. For more information, contact Milly Hobson on 02 6762 1306

Improving fish habitat along the Yowaka River

Everyone getting their hands dirty to improve Yowaka River. Photo: SRCMA.

Areas along the tidal reach of the Yowaka River are being rehabilitated. The landowners used a Habitat Action Grant to work with Southern Rivers Catchment Management Authority, as well as neighbours and local community members, to fence 500 metres of river frontage and plant 400 native trees and shrubs. 2 000 native grasses were also densely planted along a tributary to help reduce erosion and sediment entering the Yowaka River during flooding. The project provides an important linkage with revegetation and erosion works completed downstream as well as rehabilitation works that are currently underway upstream. For further information contact Shannon Brennan, Southern Rivers CMA, on 02 6491 8200 or go to: www.southern.cma.nsw.gov.au/documents/22%20June%202011%20MR%20Improving%20fish%20habitat%20Yowaka%20River.pdf

Salvinia ≠ a harmless pond plant!

Salvinia. Photo: NSW DPI.

Salvinia is about as noxious as a water weed can get, so imagine the dismay when it was found at a local garden nursery in the Adelaide Hills, where it was being kept mistakenly as a harmless pond plant. A member of the public advised the retailer that it was a 'declared' plant and shouldn't be sold. The weed is gone now from this nursery but this is the latest in a number of recent sightings of salvinia for sale in South Australia. If anyone has a plant they suspect is salvinia they should advise their nearest NRM Board office. The destruction of salvinia has to be handled carefully to prevent it spreading: throwing it into the rubbish or a green recycling bin could well result in it escaping into local waterways. For further information about salvinia in South Australia, contact the SA MDB NRM Board on 8532 9100 or http://samdbnrm.sa.gov.au/ . For information about salvinia in general, visit: www.weeds.gov.au

Yabbies on the move

Did you somehow miss seeing these pictures of yabbies in Cooper Creek?
www.fishingworld.com.au/news/cooper-creek-yabby-mystery

Cooper Creek flows into the recently flood-filled Lake Eyre in south-east Central Australia crossing the South Australian and Queensland borders. Thousands of western blue claw yabbies attempted to migrate upstream during a flow event and were held up at a road crossing. Fisheries departments and local councils continue to work on replacing such barriers with fish-friendly – and yabby-friendly – culverts. These yabbies can live up to 7 years, so hopefully by the next time Lake Eyre floods they'll be able to migrate freely along Cooper Creek. For more information of fish-friendly road crossings go to in NSW:
www.dpi.nsw.gov.au/fisheries/habitat/protecting-habitats/toolkit or in Qld
www.dpi.qld.gov.au/documents/Fisheries_Habitats/FHMOP008-Fish-Hab-Manage.pdf

Migration of yabbies being held up by a road crossing. Photo: www.fishingworld.com.au/news/cooper-creek-yabby-mystery.

Maccas breeding for success in the Goulburn-Broken

Populations of Macquarie perch in northern Victoria were significantly diminished by the 2009 bushfires but one small creek is helping them recover. Fish were removed from the badly affected waterways in the aftermath of the fires and kept for safekeeping at the Snobs Creek Hatchery. These fish have since been released back into the creeks and researchers from the Arthur Rylah Institute (ARI) are now monitoring the Macquarie perch population. They found one small area in which the fish were breeding successfully. Now this crucial location has been identified, the researchers, Goulburn-Broken Catchment Management Authority and local Landcare groups will be working to make sure it is protected as much as possible from future sediment inputs and bank erosion. For more information:
www.dse.vic.gov.au/about-dse/media-releases/threatened-species-keeps-a-fin-hold-in-the-goulburn-broken-catchment

Community effort improving Numeralla River

Bank stabilisation and revegetation on the Numeralla River in the Murrumbidgee catchment area will help arrest soil erosion and lead to improved water quality, river health and native fish habitat. Two sites were identified as point sources for sediment input. At one site, rock armouring was used to improve earlier erosion control works, willows were removed and the area replanted with native species. The other site benefited from the construction of 'cribs' and 'pin sets', both of which have been designed to stabilise the eroding river bank. This site was also revegetated with native plants. The Numeralla River In-Stream Project has been a community based effort, involving Landcare, local landholders, the Murrumbidgee CMA, the Land and Property Management Authority, NSW Department of Primary Industries, Upper Murrumbidgee Waterwatch and Cooma-Monaro Shire Council. For more information, contact Matt deJongh at the Murrumbidgee CMA on 02 6932 3232.

One of the 'pin sets' installed to help control bank erosion on the Numeralla River. Photo: Charlie Carruthers.

Hardwood timber cribs were placed between the pin-sets to protect the eroding bank and increase the deposition of suspended sediment from the water column. Photo: Charlie Carruthers.

INTERNATIONAL NEWS

What happens after the dams are gone?

Scuba divers are exploring and cataloguing marine life at the mouth of Washington's Elwha River downstream of the Elwha and Glines Canyon Dams. These dams are being removed over the next three years so the survey will provide a baseline that will enable monitoring of how underwater plant and animal life react and adapt to the downstream effects of dam removal. The dive teams, in collaboration with the Lower Elwha Klallam Tribe, are establishing and surveying marked transects spread throughout the Elwha River nearshore zone, as well as transect pairs at sites far from the Elwha River mouth. These same strips of seafloor will be monitored during and after dam removal to see how fish, kelp and invertebrate populations respond to changes in deposited and suspended sediments. More than 19 million cubic meters of sediment has accumulated behind the Elwha River dams. Studies indicate that high concentrations of sediment will create turbid conditions in the river and coastal waters for up to five years. The Elwha River Restoration Project, created by an Act of the US Congress in 1992, aims at the full restoration of the Elwha River ecosystem and its native anadromous fisheries. For more information:
www.usgs.gov/newsroom/article.asp?ID=2872

New ways to finance wetland restoration

The first loan that uses private capital to finance environmental restoration closed recently, providing funds to restore wetlands in New Jersey. Restore Capital and 3Sisters Sustainable Investments conceived of the environmental restoration loans which use the project's ecosystem market credits as collateral and as a repayment source for the loan. This allows for more private capital funding to be available for environmental restoration work. They plan to use this innovative approach to financing to support wetlands mitigation, stream restoration, water quality trading, and other ecosystem markets as they emerge, rather than relying on government subsidies and charity or expensive private equity. For more information:
www.sustainablebusiness.com/index.cfm/go/news.display/id/22748

Fish after 50 years of floodplain isolation

There are areas of lowland Germany that have been transformed into a ' polders' with low summer dikes close to the river and high winter dikes farther away to protect the arable farm land in between from summer floods. The last time some of the floodplain waterbodies connected to the main channel was an accidental break in a dyke in 1947. This provides a rare opportunity to study aquatic communities of floodplain water bodies that have been effectively isolated for over 50 years. Researchers studied the fish communities living in these floodplain waterbodies as well as ones more frequently connected with the main channel and in the main channel itself. They found that long-term isolation of floodplain water bodies had a significant effect on the fish assemblages by promoting species preferring still water. Limnophilic and floodplain specialist species significantly increased with isolation. Fish densities, species richness and diversity clearly differed between the main channel and floodplain water bodies. For more of this study by Schomaker and Wolter in *Freshwater Biology*:

http://dx.doi.org/10.1111/j.1365-2427.2011.02583.x

Wood in streams

A study in Spain has looked at the impact of adding large wood into streams of various sizes. The researchers included branches as well as larger logs and this appears to have contributed to their finding of significant increases in the storage of organic matter. Despite the increased amounts of organic matter, decomposition rates remained constant, as did the population density of microinvertebrates. The researchers argue that improving channel complexity by adding large woody debris improves environmental conditions for invertebrate communities and affects the functioning of the stream ecosystem. For more on this work by Loreo Flores and others in *Freshwater Biology*:

http://dx.doi.org/ 10.1111/j.1365-2427.2011.02643.x

ENGAGEMENT AND FUNDING OPPORTUNITIES

Funding to help make more fish

Habitat Action Grant funding is now available for projects to rehabilitate fish habitat in NSW. Grants of up to $40,000 are available for larger projects or up to $1,000 for smaller projects. Applications close on Wednesday, 28 September 2011 at 5pm. For more information, contact Charlie Jenkins on 02 6626 1107 or email fish.habitat@industry.nsw.gov.au. Project ideas and application forms can be found at:
www.dpi.nsw.gov.au/fisheries/habitat/rehabilitating/ahr-grants-program

WetlandCare Australia Art and Photography Competition

The WetlandCare Australia Art and Photography Competition 2012 will open for entries on 1st September 2011. For more information and entry forms:
www.wetlandcare.com.au

AUSMEPA environmental award

The Australian Marine Environment Protection Association Environment Award recognises achievements, innovation and best practice in minimising marine pollution and the protection of the marine environment. Submissions due: 30 September. For more information:
www.ausmepa.org.au/marine-environment-protection-association-environmental-award.htm

HABITAT RESOURCES

Alien fish control

For a factsheet on using fishing as a carp control method:
www.feral.org.au/pestsmart-factsheet-fishing-as-a-carp-control-method
For a review of the management of freshwater fish incursions:
www.feral.org.au/management-of-freshwater-fish-incursions
For a review of the issues associated with managing non-native fish in the environment (research review article by J.R. Britton and other in *Fish and Fisheries*):
http://onlinelibrary.wiley.com/doi/10.1111/j.1467-2979.2010.00390.x/abstract

River restoration resources

The Australian River Restoration Centre has reorganised its website making it much easier to access a huge range of both practical (and a few theoretical) resources for NRM practitioners planners, community members and community groups. Visit:
http://australianriverrestorationcentre.com.au/resources/

Fish kills in NSW demystified

A new FAQ factsheet answers common questions about fish kills in New South Wales, including the average number of fish kills that occur a year, the causes and species affected, and visual observations that can be made in the field to assist in identifying and reporting a fish kill. Details on how you report a fish kill in NSW are also provided. To download:
www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/402790/Fish-Kills-FAQ-August-2011.pdf

More about mangroves and seagrasses

The factsheets, now available in hard copy, outline everything you need to know about seagrasses and mangroves in NSW, including where various species occur, their value as fish habitat, how they can be harmed, the legislation and policies established to protect them and, for mangroves, methods for rehabilitation. If you would like to obtain hard copies, please contact Gaie Hall at gaie.hall@industry.nsw.gov.au.
These Primefacts remain available online:
Mangroves: www.dpi.nsw.gov.au/__data/assets/pdf_file/0020/236234/mangroves.pdf
Seagrasses: www.dpi.nsw.gov.au/__data/assets/pdf_file/0019/203149/seagrasses-primefact-629.pdf

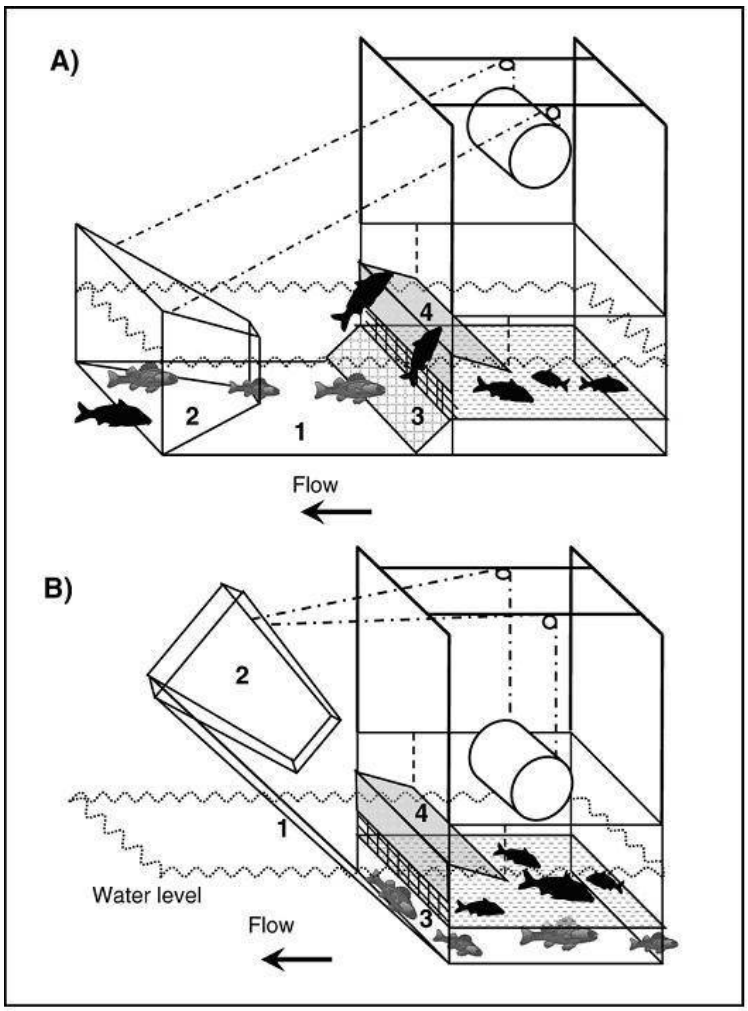
HABITAT DATES

22 – 23 August	**Healthy catchments, healthy communities: integrating catchment actions, Wangaratta, Vic** www.awa.asn.au/EventDetail.aspx?id=4294970002
17 September	**International Coastal Cleanup** www.oceanconservancy.org/our-work/marine-debris/international-coastal-cleanup-11.html
26 - 29 September	**The Value of Rivers: 14th International River*symposium*, Brisbane, QLD** www.riversymposium.com/index.php?page=Program
23 - 25 October	**2011 International Kids Teaching Kids River Conference, Adelaide, SA** www.kidsteachingkids.com.au/conferences/2011-int-kids-teaching-kids-river/
5 - 12 November	**Native Fish Awareness Week, Native Fish Strategy, Murray-Darling Basin Authority** www.mdba.gov.au/programs/nativefishstrategy

EVER WONDERED?

How does a carp separation cage work?

A Carp Separation Cage (CSC) is a trap that takes advantage of the jumping behaviour of carp. It does this by isolating them in a holding cage from which they can then be removed. Carp attempt to migrate to breeding sites when water temperatures increase. If a carp cage is located in their migration pathway they will approach the cage and swim into it through a funnel and are then trapped. This is where the jumping behaviour comes in. When confronted by a barrier within a river, carp will attempt to jump over it so by placing a wire barrier in the carp cage, their jumping instinct is triggered and the carp are then trapped as they attempt to swim further upstream. Native fish can swim under the barrier and baffle component as it cycles through its lifting procedure (Figure 1). The number of carp escaping out of the cage with the native fish is minimised through the instalment of a baffle and timing of cage lifting.



Carp are generalists in terms of food and habitat requirements and thrive in waterways that have been modified, which often results in an environment more suited to carp than to native species. CSCs are one effective tool for reducing carp numbers but an approach that integrates the physical removal of carp with river rehabilitation is the most effective way of reducing carp. Strategic aquatic habitat rehabilitation in our rivers, which includes restoring fish passage and retaining instream habitat, is imperative to establishing healthy native fish populations and giving them a fighting chance against carp.

(Thanks to Rodney Price, NSW DPI, for providing this overview.)

Figure 1. Details of the Williams' carp separation cage.
A) shows the operating position to catch and separate jumping carp (black fish symbols) and non-jumping Australian native fish (grey fish symbols)
B) shows the raised position, where
1 is the false lifting floor
2 the cone-trap
3 native fish exit gate
4 the non-return slide.
(From Stuart et al, 2006.)

ABOUT NSW DPI AND FISH HABITAT

NSW Department of Primary Industries (DPI) is responsible for management of, and research into, fish habitat in NSW.

On-ground activities

- 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.

Research activities

- 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.

Policy and planning activities

- 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
Batemans Bay - 02 4478 9103
Huskisson - 02 4428 3401
Port Stephens - 02 4982 1232
Wollongbar - 02 6626 1200
Armidale - 02 6738 8520
Tamworth - 02 6763 1100
Dubbo - 02 6881 1270
Albury - 02 6042 4200

Research staff

Port Stephens - 02 4982 1232
Narrandera - 02 6959 9021
Cronulla - 02 9527 8411
Batemans Bay – 02 4478 9111

Website

www.dpi.nsw.gov.au/fisheries/habitat

About Newstreams

Newstreams is an email newsletter to keep people up to date about fish habitat activities and important aquatic habitat developments. It is published electronically every two months by NSW DPI.

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newstreams@industry.nsw.gov.au

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