

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

## AUSTRALIAN NEWS

### Marebone Weir fishway: the latest in the *Fish Superhighways* program

Under NSW State Water's *Fish Superhighways* program, native fish will benefit from access to an additional 214 kilometres of the Macquarie River and improved passage to the Macquarie Marshes following the opening of the Marebone Weir fishway. State Water's *Fish Superhighways* program is the largest native fish passage restoration program in Australia, opening up aquatic habitat equivalent to the distance from Sydney to Cairns. Construction of 12 fishways and the removal of six redundant weirs has opened up 1,317 kilometres of waterway, with a similar distance to result from upcoming projects. For more information, contact Dr [Matthew Gordos](#) 02 66261 395 or visit:

[www.statewater.com.au/About+Us/News+and+Events/Media+releases+2011/NSW+leading+the+nation+in+fish+passage](http://www.statewater.com.au/About+Us/News+and+Events/Media+releases+2011/NSW+leading+the+nation+in+fish+passage)



The vertical slot fishway at Marebone Weir.  
Photo: NSW DPI

### More good news for Wallamba River fish

The construction of a three cell box culvert at the Wellers Lane crossing of the Wallamba River near Nabic has opened up 18 kilometres of upstream aquatic habitat to native fish. Prior to the improvements constructed at Wellers Lane, fish passage at the crossing was greatly restricted during most flow conditions. The crossing at Wellers Lane was the last remaining high priority structure on the Wallamba River, as recent works have also restored fish passage downstream at Dargavilles Crossing and at Clarksons Crossing. Construction of the fish passage was managed by NSW DPI, with funding from NSW Recreational Fishing Trust, Greater Taree City Council and the Hunter Central Rivers CMA, through the Australian Government's Caring for our Country Program. For more information contact [Kylie Russell](#) on 02 4916 3817 or visit: [www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/wallamba-river-more-fish-friendly](http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/wallamba-river-more-fish-friendly)

### Low flows and fish movement offstream

Many freshwater fish use offstream habitats but not a lot is understood about how they access these vital habitats. Despite record low flow conditions during the research, researchers recorded the movement of 210 000 fish from 18 species between the Murray River and six perennially inundated wetlands in South Australia. They found that both adults and juveniles were moving back and forth between the wetlands and the river. The movement back and forth was unexpected but it is thought it might be due to low-flow conditions and the virtually permanent connections between the wetlands and channel maintained by weirs and other structures. In addition, most of the species recorded were 'generalist' species. Read more of this research by Conallin and others in *River Research and Applications*:

<http://onlinelibrary.wiley.com/doi/10.1002/rra.1419/abstract>



Carpark Lagoon, South Australia. Fish move from river channels into wetlands such as this one to breed, shelter or feed. Photo: SA Department of Environment and Natural Resources.

## 1000km of waterway protection

Landowners have been the key to improving the health of the Glenelg River, fencing 1000km of waterways. Some of these landholders in the Glenelg-Hopkins CMA and Victoria's Department of Sustainability and Environment have put together a video that shows clearly the benefits of fencing off riparian areas. As well as easier management of stock, the landholders are seeing cleaner water and more fish. For more information about the riparian fencing projects:

[www.ghcma.vic.gov.au/news/article/glenelg-river-landowners-key-to-milestone](http://www.ghcma.vic.gov.au/news/article/glenelg-river-landowners-key-to-milestone)

To watch the video:

<http://theriparianproject.com.au/%20fencing-for-healthy-rivers-dse-victoria>

## Weed eating weevils unleashed

Weed-eating weevils from South America have been released into the Salvinia-choked Alligator Creek, near Townsville in North Queensland. One of Australia's worst environmental weeds, Salvinia is a free floating plant which can form huge mats that clog waterways, reducing water quality and leading to significant declines in local fish populations. The weevil (*Cyrobagous salviniae*) is among the most successful examples of biological control and can reduce weed infestations to manageable levels. Primary school students from Burdekin Christian College and Maidavale State School have been involved in breeding the weevils needed for the releases. This project is supported by NQ Dry Tropics through funding from the Australian Government's Caring for our Country initiative. For more information:

[www.nqdrytropics.com.au/sites/default/files/2011\\_21\\_10-11%20Weevil%20school.pdf](http://www.nqdrytropics.com.au/sites/default/files/2011_21_10-11%20Weevil%20school.pdf)



**The Salvinia-choked Alligator River.**  
Photo: NQ Dry Tropics



**Weevil infested Salvinia ready to be released.** Photo: NQ Dry Tropics



**The weevil (*Cyrobagous salviniae*).**  
Photo: NQ Dry Tropics

## Joe's Creek fish lose their shopping trolley

Local recreational fishers were among those cleaning-up Joe's Creek, near Batehaven, southern NSW. A popular fishing area, the ICOLL (Intermittently Closed and Open Lake or Lagoon) also provides a significant breeding ground for many fish species. However illegal dumping was fouling the Creek. The successful clean up yielded tyres, shopping trolleys, plastic bottles, old furniture and plastic bags. The Joe's Creek clean-up day was part of Eurobodalla Shire Council Recreational and Sustainable Fishing Education Program, funded by the NSW Recreational Fishing Trust. For more information, contact Tom Dexter from Eurobodalla Shire Council on 02 4474 7491.



**Volunteers helping with the submerged rubbish in Joe's Creek.** Photo: Trevor Daly.

## Hope for recovering sulfidic wetlands

There is not a lot known about how sulfidic sediments found in freshwater wetlands affect aquatic life. Researchers looked at wetlands across the southern Murray-Darling Basin that were variously affected by sulfidic sediment and / or acidification. By looking at the hatching of microscopic animals (zooplankton) and the germination of aquatic plants, they found that while aquatic life was present, the number of species occurring in wetlands affected by sulfidic sediments was significantly lower than in non-affected wetlands. For more on this research by Ning and others in *Freshwater Biology*:

<http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2427.2011.02657.x/abstract>



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## INTERNATIONAL NEWS

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### More concrete in the catchment = less oxygen in the water

Researchers in the USA have looked at the relationship between the percentage catchment area under impervious surfaces (like concrete and bitumen) and the dissolved oxygen (DO) available in bottom waters in summer within estuaries of Chesapeake Bay. Fish numbers decline once the DO level falls below 3 mg/L. The researchers found that in rural catchments where 5.5% or less of the area was covered by impervious surfaces the mean bottom DO in estuaries was maintained above 3 mg/L. Mean DO seldom exceeded 3 mg/L in estuaries whose catchments had more than 10% coverage (the suburban threshold). For more about this research by Uphoff and others in the *North American Journal of Fisheries Management*: [www.tandfonline.com/doi/abs/10.1080/02755947.2011.598384](http://www.tandfonline.com/doi/abs/10.1080/02755947.2011.598384)

### Mapping fish extinctions against land use change

Researchers in France looked at changes in fish species and distribution in a catchment experiencing land use changes over a 10 year period. They found that both urbanisation and agriculture affected fish, however waterways in agricultural lands had higher extinction rates. Cold water species were more susceptible to landscape changes, especially those species living in waterways at higher elevations. To read more on this work by Kopp and others in *Marine and Freshwater Research* visit: [www.publish.csiro.au/nid/126/paper/MF11142.htm](http://www.publish.csiro.au/nid/126/paper/MF11142.htm)

### Cows and creeks

Using macroinvertebrates as indicators, researchers looked at the impacts of livestock on creeks and what happens when stock are excluded. They found bank angle, temperature, fine sediment cover and erosion were higher in grazed areas, while riparian cover was lower. The presence of grazing meant significantly fewer species of macroinvertebrates. When they looked at the effects of excluding stock at small-scales they found no improvements for in-stream communities and only moderate positive effects on riparian vegetation, however the number of macroinvertebrate species increased significantly after a 4-year period of no grazing. For more details from this research by Herbst and others in *Freshwater Biology*: <http://dx.doi.org/10.1111/j.1365-2427.2011.02706.x>



**Better not - aquatic life benefits when stock are kept out of creeks.** Photo: NSW DPI

### History helps lake restoration

Restoring aquatic habitat can rely on looking at lists of species that were once present. Researchers in England have used various historical sources to better understand the 200 years of changes to plant species, the structure of the plant community and the characteristics of a shallow lake in the east of the country. They used plant databases, museum herbaria, journal articles, old photographs, eyewitness accounts and sediment core sample to understand changes to the lake. They found that before the late 1800s, plant communities were diverse. Around 1900, the addition of nutrients changed the species found in the community, although it remained diverse. However, when swamp vegetation disappeared in the 1950s, a sparse, species-poor community resilient to both eutrophication and turbulent open waters developed. The research highlights the importance of understanding changes to the nutrient levels and the characteristics of the waterway, as well as the species, when trying to restore aquatic habitat. For more of this work by Madgwick and others in *Freshwater Biology*: <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2427.2011.02652.x/abstract>

## Undisturbed floodplains tell the story of fish and flooding

The lower Volga River floodplains (Russian Federation) are still relatively undisturbed and so are ideal for studying the influence of flooding and temperature on fish recruitment in floodplain rivers. Researchers studied young-of-year responses to flood pulses and rising water temperatures in the Spring. They found that areas with a long duration of flooding had high densities of young fish. In addition, a flood synchronised with rising temperature improved recruitment success. For more results from this study by Gorski and others in *Freshwater Biology*:

<http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2427.2011.02647.x/abstract>

## Fish in the Mekong needing help

NSW Department of Primary Industries (NSW DPI) researcher at Narrandera Fisheries Centre Jarrod McPherson is temporarily relocating from Narrandera to Laos to assist with the development of a fish passage program for the Lower Mekong Basin. This system has some striking similarities between the Mekong and Murray-Darling Basin. Both systems drain a similar geographical area and rely on regular flooding to maintain fisheries productivity. The main differences are that the Mekong has much more water, a lot more species of native fish and is yet to see substantial declines in native fish numbers. Working as an Australian Volunteer, Jarrod will be helping develop a fish passage program for the Lower-Mekong River. This is timely given the imminent decision on whether to allow dams on the Mekong for hydro-power generation. For more information:

[www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/fisheries-researcher-helps-asian-partner](http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/fisheries-researcher-helps-asian-partner)

Information about the pending decision on Mekong dams:

[www.guardian.co.uk/environment/2011/dec/07/decision-mekong-dam?INTCMP=SRCH](http://www.guardian.co.uk/environment/2011/dec/07/decision-mekong-dam?INTCMP=SRCH)



The Mekong River Basin. Image: Wikipedia



The Mekong catfish – one of the species threatened by construction of hydropower dams and restriction of fish passage. Image: [www.guardian.co.uk](http://www.guardian.co.uk)

## The emptying of the Colorado River

Photographer Peter McBride travelled along the USA's Colorado River from the Rocky Mountains to the Sea of Cortez. In this Yale Environment 360 video, he follows the natural course of the Colorado by raft, on foot, and overhead in a small plane, telling the story of a river whose water is siphoned off at every turn, leaving it high and dry 80 miles from the sea. To access the video:

[http://e360.yale.edu/feature/video\\_colorado\\_river\\_running\\_near\\_empty/2443/](http://e360.yale.edu/feature/video_colorado_river_running_near_empty/2443/)

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## ENGAGEMENT AND FUNDING OPPORTUNITIES

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### Murray-Darling Basin Plan – draft for consultation

The Murray-Darling Basin Authority has released the Draft Basin Plan for 20 weeks consultation.

Information about the Basin Plan, the document itself and a plain English summary are available at:

[www.mdba.gov.au/media\\_centre/media\\_releases/draft-basin-plan-for-public](http://www.mdba.gov.au/media_centre/media_releases/draft-basin-plan-for-public)

### Coal Seam Gas Water Management Policy – draft for consultation (Queensland)

The Queensland Department of Environment and Resource Management has developed draft amendments to the Coal Seam Gas Water Management Policy June 2010 and is inviting feedback. All submissions are due by 5 pm, **23 December 2011**. Documents and submission details are available from:

[www.derm.qld.gov.au/environmental\\_management/coal-seam-gas/water.html#csg\\_water\\_management\\_policy](http://www.derm.qld.gov.au/environmental_management/coal-seam-gas/water.html#csg_water_management_policy)

### 2012 RiverPrize open

Stage 1 applications for the 2012 RiverPrize are open and due (electronic submission) by 16 March 2012.

For more information:

[www.riverfoundation.org.au/riverprize\\_entering.php](http://www.riverfoundation.org.au/riverprize_entering.php)

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## HABITAT DATES

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2 February 2012	World Wetlands Day
6 – 8 February 2012	'Managing for Extremes': 6th Australian Stream Management Conference, Canberra. <a href="http://www.asm6.org.au/">www.asm6.org.au/</a>
22 – 24 February 2012	World Oceans Summit <a href="http://www.economistconferences.asia/event/world-oceans-summit">www.economistconferences.asia/event/world-oceans-summit</a>
8-11 October 2012	15th International Riversymposium, Melbourne <a href="http://www.riverfoundation.org.au/index.php">www.riverfoundation.org.au/index.php</a>

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## HABITAT RESOURCES

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### Talking Fish: making connections with the rivers of the Murray-Darling Basin

A collection of booklets that tell the stories of fish, fishing and change in twelve rivers of the Murray-Darling Basin.

[www.nativefishweek.com.au/talking-fish.html](http://www.nativefishweek.com.au/talking-fish.html)

For more information about the *Talking Fish* project:

[www.dpi.nsw.gov.au/fisheries/habitat/help/work-with-your-community/talking-fish-in-the-murray-darling-basin](http://www.dpi.nsw.gov.au/fisheries/habitat/help/work-with-your-community/talking-fish-in-the-murray-darling-basin)

### Proceedings, 2011 RiverSymposium

[www.riversymposium.com/index.php?page=Proceedings&utm\\_source=MailingList&utm\\_medium=email&utm\\_campaign=2011+eNews+14++Proceedings+available](http://www.riversymposium.com/index.php?page=Proceedings&utm_source=MailingList&utm_medium=email&utm_campaign=2011+eNews+14++Proceedings+available)

### Grazing for Healthy Coastal Wetlands: Guidelines for managing coastal wetlands in grazing systems

Developed by the Queensland Department of Employment, Economic Development and Innovation to provide graziers, landowners and extension officers with information on managing grazing in and around Queensland's coastal wetlands to maintain healthy coastal wetlands and productive grazing enterprises.

[www.epa.qld.gov.au/wetlandinfo/site/ManagementTools/Guidelines/LandManagement.html](http://www.epa.qld.gov.au/wetlandinfo/site/ManagementTools/Guidelines/LandManagement.html)

Note: this document is downloadable as a PDF but is a large file (28MB). To access the link, scroll down to the first major subheading.

### Indigenous fish traps and weirs in Queensland - factsheet

[www.derm.qld.gov.au/factsheets/pdf/cultural\\_heritage/ch17.pdf](http://www.derm.qld.gov.au/factsheets/pdf/cultural_heritage/ch17.pdf)

### 2011 South East Queensland Healthy Waterways Report Card

The South East Queensland Healthy Waterways Ecosystem Health Monitoring Program (EHMP) is a comprehensive marine, estuarine and freshwater monitoring program. It delivers a regional assessment of the ambient ecosystem health for each of South East Queensland's 19 major catchments, 18 river estuaries, and Moreton Bay, highlighting where the health of waterways is getting better or worse.

[www.health-e-waterways.org/reportcard](http://www.health-e-waterways.org/reportcard)

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## PIC FOR DECEMBER

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Murray Cod eggs. Photo: Sascha Schultz.



And the protective Murray Cod. Photo: Sascha Schultz.

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## ABOUT NEWSTREAMS

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*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 the Conservation Action Unit within NSW DPI (Fisheries) on behalf of the Fish Habitat Network.

The Fish Habitat Network (FHN) is both a partnership of organisations working on fish habitat and a network of fishers engaged in fish habitat issues.

### FHN Partners

- NSW Department of Primary Industries [www.dpi.nsw.gov.au/fisheries/habitat](http://www.dpi.nsw.gov.au/fisheries/habitat)
- NSW Council of Freshwater Anglers [www.freshwateranglers.com.au](http://www.freshwateranglers.com.au)
- Recreational Fishing Alliance of NSW [www.rfansw.com.au](http://www.rfansw.com.au)
- Australian National Sportfishing Association [www.ansansw.com.au](http://www.ansansw.com.au)
- ECOfishers [www.ecofishers.com](http://www.ecofishers.com)
- NSW Fishing Clubs Association [www.nswfca.com.au](http://www.nswfca.com.au)
- VR Fish [www.vrfish.com.au/](http://www.vrfish.com.au/)

**Website** [www.fishhabitatnetwork.com.au](http://www.fishhabitatnetwork.com.au)

The FHN is supported by the NSW Recreational Fishing Trust and the Murray Darling Basin Authority's Native Fish Strategy.

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[newstreams@industry.nsw.gov.au](mailto:newstreams@industry.nsw.gov.au)

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[www.dpi.nsw.gov.au/aboutus/resources/periodicals/newsletters/newstreams](http://www.dpi.nsw.gov.au/aboutus/resources/periodicals/newsletters/newstreams)