

# Newstreams

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

## AUSTRALIAN NEWS

### Congratulations to all Habitat Heroes

What's become clear from the recent round of Fishers for Fish Habitat Forums in NSW and the nominations for the inaugural Habitat Hero Award is that there are more people quietly going about improving fish habitat than many of us know about. We need to share these stories more. Congratulations and thank you to all of you for your efforts.

#### The winner of the 2012 Habitat Hero Award is *Bass Sydney*.

The work that these fishers have been doing, off their own bat and in collaboration with other clubs, the local council and Greening Australia, is inspiring. Their initial efforts focussed on improving fish passage and they were instrumental in doing so at Liverpool and Lane Cove weirs. They also recognised that there was work to be done replanting the riparian areas that provide so much of the bass summer diet. It's the consistent commitment to this work when the benefits for their beloved bass are not immediate that truly makes the members of Bass Sydney 'Habitat Heroes'.



More habitat for fish, thanks to Bass Sydney, whose philosophy is 'If WE look after their environment, the FISH will look after themselves'. These photos show the change achieved in just 7 years, from bare banks (left), to first plantings (middle) to follow-up plantings (right). Photos: Bass Sydney.

All the nominees for the Habitat Hero Award deserve congratulations for their work and the outcomes they are generating for fish.



#### Australian Trout Foundation

The Australian Trout Foundation has been restoring habitat for the Barred Galaxius destroyed in the Black Saturday bushfires. Members of the community are pictured standing on the barrier maintained by ATF in their role as 'Guardian of the Trout Barrier'. Photo: ATF



#### Callandoon (Bruce Parncutt, Brian Buckland)

This Macquarie Perch larva, is an indication that the rehabilitation of the entire stretch of King Parrot creek through *Callandoon* is providing benefits for these fish. Photo: Joanne Kearns



#### Condamine Alliance

The work the Condamine Alliance and their partners have been doing along a 110km of Myall Creek, Oakey Creek and the Condamine River has seen a return of Hyrtl's tandan (pictured) for the first time in 15 years and an 1000% increase in the Golden Perch population. Photo: Condamine Alliance



### Fishcare South-west

The rehabilitation of a site on the Hopkins River estuary has been a focus for the group and their partners, reversing a history of poor maintenance. Photo: Fishcare SW



### Mallee Catchment Management Authority

By installing an environmental regulator on the inlet to Margooya Lagoon, off the Murray River, the Mallee CMA enabled drying of the Lagoon for the first time in 72 years. When the Lagoon refilled juvenile fish, and large numbers of carp gudgeon (pictured), were found to be taking advantage of the nursery habitat now available in the Lagoon. Photo: Mallee CMA



### Strath Creek Landcare Group and Flowerdale Landcare Group

The Macquarie perch population found in King Parrot Creek, a tributary of the Goulburn River, came under threat after the Black Saturday bushfires. These two groups have been restoring riparian vegetation at several sites and spreading the message locally, including with students from one of the local schools. Photo: Fern Hames

## Fishers for Fish Habitat getting the message out

The eight Fishers for Fish Habitat Forums 2012, held recently in regional centres in NSW, once again demonstrated the interest in and commitment recreational fishers have to learning more about fish habitat and sharing their experience in doing things to bring the fish back. Over 100 participants, most of whom were local fishers or members of local fishing clubs, heard some inspiring stories about changes people were making to their local fish habitats as well as identified key areas they would like to see improved. Some of the key needs identified were for more and improved coordination between the various organisations who could be involved, getting these organisations involved, keeping local recreational fishers informed and facilitating local participation. For more information about the Fishers for Fish Habitat program or the 2012 Forums, contact [Liz Baker](#) or visit: [www.dpi.nsw.gov.au/fisheries/habitat/rehabilitating/fishers](http://www.dpi.nsw.gov.au/fisheries/habitat/rehabilitating/fishers)

## Habitat message loud and clear at the National Recreational Fishing Conference

The importance of habitat for fisheries' productivity and the benefits to recreational fishers that come from habitat rehabilitation were consistent messages heard at the National Conference. Simon Evans, from the [Wye and Usk Foundation](#) in southern Wales, and Chris Hunt, from [Trout Unlimited](#) in the USA, both demonstrated how a focus on habitat rehabilitation and the involvement of recreational fishers have led to more fish and more opportunities for recreational fishers. Martin Salter, who prepared the *Keep Australia Fishing* report, reminded delegates that the restoration of habitat is one of the areas where collaboration and building alliances between sectors will strengthen both the recreational fishing industry and the fisheries themselves. The closing sessions of the conference reiterated the important role habitat rehabilitation has to play in the future of the recreational fishing industry.



One of the posters used at the National Recreational Fishing Conference. Image: Liz Baker

## Yallakool Creek weir

State Water has opened up 90 kilometres of the Murray River to native fish following completion of the Yallakool Creek weir refurbishment and fishway near Deniliquin in southern NSW. Fish passage was improved by installing new weir gates and a vertical-slot fishway. This is one of four fishway projects near Deniliquin in the Murray catchment that will together open up more than 500km of waterway to native fish. More information contact [Matthew Gordos](#) or visit: [www.statewater.com.au/About+us/News+and+events/Media+releases+2012/Yallakool+fishway](http://www.statewater.com.au/About+us/News+and+events/Media+releases+2012/Yallakool+fishway)

## Private benefits boost involvement in river rehabilitation

Landholders appear to be more likely to get involved in river rehabilitation projects if there are both public and private benefits. After interviewing landholders in the Mackay-Whitsunday area of coastal Queensland, researchers found the barriers to being involved included a bias within proposed programs towards ecological rather than production outcomes, impractical programs and mistrust of government. The researchers also found that landholders may be unwilling to get involved if they will not share equitably in the benefits of their investment. It appears that programs identifying landholder priorities and private benefits will do better in terms of commitment and participation than those that emphasise public benefits. Read more of this study by Januchowski-Hartley and others in *Journal of Environmental Management*:

<http://dx.doi.org/10.1016/j.jenvman.2012.05.011>



A sense of stewardship was one of the private benefits landholders identified as being important to their investment in river rehabilitation. Photo: NSW DPI

## Protecting the fisheries' baby factory

Using DNA fingerprinting technology, the dispersal of fish larvae has been tracked and it was found that 65% of larvae settled in areas outside the Marine Protected Areas (MPAs) in which they had been spawned. Researchers tracked juvenile coral trout and stripey snapper larvae from MPAs in the Keppel Island group, off the central Queensland coast. They found that most of the larvae settled within one to five kilometres of reserves but a significant proportion dispersed 10 kilometres or more to find a new home. The study also found that the 28% of the total Keppel reef area which is marine reserve generated 50% of the total juvenile fish produced on the reef. Read a summary:

[www.icrs2012mediaportal.com/wp-content/uploads/2012/05/ReefConnectionsBriefingRelease\\_FINAL2.pdf](http://www.icrs2012mediaportal.com/wp-content/uploads/2012/05/ReefConnectionsBriefingRelease_FINAL2.pdf)

Read the research paper by Harrison and others in *Current Biology*:

<http://dx.doi.org/10.1016/j.cub.2012.04.008>



A 5-day old snapper larvae is only 3mm long yet they are able to make journeys of one to five kms to settle in new habitat. Photo: DPI Victoria

## Trout Cod happy

Re-stocking has been part of a program that has successfully re-established the Trout Cod in the Ovens River, in north-east Victoria. On the verge of extinction in the late 1980s, there is now a naturally self sustaining population at this and other sites within its former range. This is due to a simultaneous program of re-stocking and efforts to reduce the impact of drought, sedimentation, barriers to migration and introduced fish. For more information:

[www.dse.vic.gov.au/about-dse/media-releases/cod-be-praised!-reintroduction-saves-the-trout-cod](http://www.dse.vic.gov.au/about-dse/media-releases/cod-be-praised!-reintroduction-saves-the-trout-cod)

Or, read the research paper in *Marine and Freshwater Research*:

[www.publish.csiro.au/paper/MF12034.htm](http://www.publish.csiro.au/paper/MF12034.htm)



As the overall condition of the Ovens River has improved so have the specific habitats supporting the recovery of the Trout Cod (*Maccullochella macquariensis*) population. Photo: Jarod Lyons

## Not so happy news for Darling River Hardyhead

The Fisheries Scientific Committee has made a proposed determination to list the Darling River Hardyhead in the Hunter River Catchment as an 'Endangered Population'. The threatening processes listed as having contributed to population decline include habitat degradation, thermal pollution and the presence of alien fish. The FSC is accepting written submissions regarding this determination until Friday September 28.

Additional information is available on the FSC's website:

[www.fsc.nsw.gov.au](http://www.fsc.nsw.gov.au)

## One habitat is not enough!

The habitats that fish use during the night are not well understood. Using remote underwater videos researchers looked at the habitats fish are using during the day, then at night and found many fish were using different habitats depending on the time of day. Australian herring, for example, were found to use macrophyte, sand and seagrass habitats during the day, but rhodolith (marine red algae that resemble coral) habitat during the night. Brown-spotted wrasse's daytime habitats included deep reef, *Ecklonia* beds (a macroalgae), other macrophytes and seagrass, while at night they stayed within the *Ecklonia* beds. For more information, see the paper by Harvey and others in *Journal of Experimental Marine Biology and Ecology*:  
<http://dx.doi.org/10.1016/j.jembe.2012.05.019>



**Yellowtail scad (*Trachurus novaezelandiae*) utilised seagrass, sand and rhodolith habitats day and night, but was only found in *Ecklonia* habitat during the day. Photo: David Harasti**

## Engineered log jams sweet news for fish

Over 300 logs have been used to construct eight Engineered Log Jams to improve fish habitat and river bank stability in the Upper Hunter River, near Muswellbrook, NSW. The structures are designed to withstand the large floods experienced in this river. The recent works were the fourth stage of an ongoing project to improve fish habitat in the Upper Hunter River and to provide a more natural approach to treating bank erosion. To date, there have been 9 fish hotels and 33 engineered log jams installed in neighbouring river reaches. Funds from the NSW Recreational Fishing Trust and the Commonwealth and NSW Government through the Hunter-Central Rivers CMA were used to complete the works. The logs themselves were provided by Roads and Maritime Services through the Hunter Expressway Project. For more information contact [Kylie Russell](mailto:kylie.russell@nsw.gov.au) on 02 4916 3817.



**The log jam in the construction phase. Logs were sourced from nearby highway construction. Photo: Kylie Russell**

## You're not from around here, are you?

Translocated fish are fish found where they do not occur naturally, even though they can be native to Australia. In the Thompson River, in the Lake Eyre Basin of Western Queensland, researchers are now finding increasing numbers of sleepy cod (*Oxyeleotris lineolata*). This fish is native to coastal rivers from Noosa, Queensland, to the Ord River in Western Australia. It appears likely that these fish, which can grow to 3kgs, have established themselves after being dumped from an aquaculture operation.



**A sleepy cod: not the right sort of native for the Thompson River. Photo: Adam Kerezsy**

One of the reasons their ongoing presence is of concern is that they are likely competitors of the Coopers Creek Catfish, which is only found in the Cooper / Barcoo / Thompson Rivers and about which little is known. To read more, download the following (1.6Mb) and scroll to page 7:  
[www.dcq.org.au/sites/default/files/Basin%20Bullet\\_April%2012\\_0.pdf](http://www.dcq.org.au/sites/default/files/Basin%20Bullet_April%2012_0.pdf)

## Victorian wetlands in good shape

The first report on the condition of Victoria's wetlands shows that, despite 13 years of drought, more than half of the state's high value wetlands are in good or excellent condition. Victoria has around 13,000 natural wetlands which vary greatly in character, from lakes, floodplain billabongs, alpine peatlands, marshes, shallow freshwater wetlands and saline wetlands, all of which contribute to fish habitat. Only 15% were found to be in poor or very poor condition. It is anticipated that these results will form the baseline against which changes over time and the effectiveness of wetland protection and enhancement programs can be measured. For more information:

[www.premier.vic.gov.au/media-centre/media-releases/4620-victorian-wetland-assessment-australian-first.html](http://www.premier.vic.gov.au/media-centre/media-releases/4620-victorian-wetland-assessment-australian-first.html)

### Fish in space

In perhaps the most extreme form of artificial habitat yet developed, fish are living in the International Space Station. Medaka (*Oryzias latipes*), a small native of Southeast Asia more usually found in rice paddies, is living and breeding in a specially designed habitat while researchers study the impacts of radiation, bone degradation, muscle atrophy and developmental biology. This is not the first time this species has contributed to space-based research. It carries the distinction of having been the first vertebrate to mate in orbit, the result which was a brood of healthy fry, hatched on the space shuttle Columbia in 1994. For more information:

[www.nasa.gov/mission\\_pages/station/research/news/aquatic.html](http://www.nasa.gov/mission_pages/station/research/news/aquatic.html)



The Medaka genome has been mapped, making it ideal for identifying any genetic changes due space radiation. Photo: Wikimedia Commons

### Dam gone and fish are on the move

Fish are returning to Elwha River, Washington, USA, after the removal of the dams that had been a barrier to migratory salmon for almost a hundred years. This dam removal was the largest in US history. Part of the restoration of the fishery includes releasing tagged fish to jump start the recolonisation process. However, those monitoring the fish populations are more encouraged by seeing the return of wild, un-tagged fish that found their own way up the river, including a 90cm long steelhead which was bigger than any of the fish tagged and released. It appears these wild fish sense that the river is open again and are recolonising the river without assistance and at a faster pace than was anticipated. More information:

[www.habitat.noaa.gov/highlights/elwhariverafterdamremoval.html](http://www.habitat.noaa.gov/highlights/elwhariverafterdamremoval.html)

### ... And eels too

American eels are declining across their range but there are indications of a population revival following removal of Embrey Dam on the Rappahannock River, Virginia, USA. The removal of this large but obsolete dam two years ago has seen increased numbers of eel every year since and in headwater streams nearly 100 miles away. Fish, such as shad and herring, are also found to be using habitat upstream of the dam site. For a summary:

<http://fisheriesblog.org/american-eels-return-to-mountain-streams-after-dam-removal>

To read the paper by Hitt and others in *Transactions of the American Fisheries Society*:

<http://dx.doi.org/10.1080/00028487.2012.675918>

### Helping fish through pipe culverts

Many of New Zealand's native fish that migrate are small and undertake upstream migrations as juveniles rather than adults. The barrier that pipe culverts represent to fish migration is well documented but removal might not be possible. Researchers looked at the impact of a retrofit consisting of both a ramp leading up to the culvert on the downstream side and spoiler baffles within the culvert itself to create refuges of low water velocity. There was some re-population of target species upstream but the researchers suspect that the baffle system within the pipe was either too steep or too long. For more information about this research by Franklin and Bartels in *Aquatic Conservation: Marine and Freshwater Ecosystems*:

<http://dx.doi.org/10.1002/aqc.2232>

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## TALES FROM REHAB

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Anecdotes from fishers about changes brought about by habitat rehabilitation.

### ... in Wolli Creek

Australian Bass have recently been found upstream of the Woolli Creek weir by members of Bass Sydney. This is the first time Bass have been seen in this area by these locals who fish this waterway regularly. The fishway was installed in 2009 and is apparently enabling Bass to get past the weir. Woolli Creek lies in inner south-west Sydney, south of the Cooks River.

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## HABITAT REFLECTIONS

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Incidental thoughts, observations and questions from subscribers

### Musing on Murray Cod habitat

Simon Kaminskas, a native fish ecologist who has done some formal study on Murray cod and spent much time researching the history of MDB native fish, writes: 'I was reflecting on the popular perception that Murray cod prefer turbid and sluggish water and was struck by the thought that one could almost argue the exact opposite! Some of our lowland MDB rivers, particularly the Murray and southern tributaries, once had regular periods in the pre-regulation summer/autumn low flow period when the water was extremely clear. This was gradually diminished because of soil disturbance, erosion and siltation from agriculture and stock grazing, probably affected by river regulation, and dramatically ended by the invasion of Boolara strain carp. The carp raised turbidity permanently and destroyed much of the submergent macrophytes ('water weeds') once found in the Basin, which historical research tells us had thrived in these clear water periods. Further, as a keen catch-and-release angler for Murray cod, I regularly catch these magnificent native fish in rocky clear-water upland river habitats, where they often like to sit in fairly fast currents. I'm also aware that Murray cod were once found in many more upland river habitats, again in clear, fast flowing waters and rocky habitats, than they are now. So, although Murray cod are found in turbid and sluggish waters, clear waters and faster flowing water can be just as much their thing, and definitely were more so in the past.'

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## HABITAT DATES

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<b>September 30</b>	<b>World Rivers Day</b> <a href="http://www.riverfoundation.org.au/event.php?e=410">www.riverfoundation.org.au/event.php?e=410</a>
<b>October 8-11</b>	<b>15th International Riversymposium, Melbourne</b> <a href="http://www.riverfoundation.org.au/index.php">www.riverfoundation.org.au/index.php</a>
<b>October 19 – 26</b>	<b>Native Fish Awareness Week, Murray-Darling Basin Authority</b> Basin-wide activities celebrating native fish and fish habitat rehabilitation.
<b>October 20</b>	<b>Narrandera Fish Festival</b> Free, with a focus on native fish, and the 50th Anniversary of the Narrandera Fisheries Centre. <a href="http://www.trade.nsw.gov.au/events/fisheries/fish-festival">www.trade.nsw.gov.au/events/fisheries/fish-festival</a>
<b>October 20 - 24</b>	<b>6th National Conference on Coastal and Estuarine Habitat Restoration, Tampa, Florida, USA</b> <a href="http://www.estuaries.org/conference/">www.estuaries.org/conference/</a>
<b>November 6 – 9</b>	<b>21st NSW Coastal Conference – 'NSW Coastal Management - Coming of Age', Kiama.</b> <a href="http://www.coastalconference.com/default.asp">www.coastalconference.com/default.asp</a>
<b>November 28 – 30</b>	<b>The inaugural conference of the Society for Ecological Restoration Australasia, Perth</b> <a href="http://www.seraustralasia.com/pages/conference.html">www.seraustralasia.com/pages/conference.html</a>

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## ENGAGEMENT AND FUNDING OPPORTUNITIES

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### Habitat Action Grants (NSW)

Angling clubs, individuals, community groups, local councils and organisations interested in rehabilitating fish habitats in freshwater and saltwater areas throughout NSW can apply for a small grant (maximum \$1,000 excluding GST) or a large grant (maximum \$40,000 excluding GST). Applications need to be on the habitat-specific funding application form and must relate to the enhancement of recreational fishing through the improvement of fish habitat. Applications close **5pm September 28, 2012**. For more information and the applications forms go to [www.dpi.nsw.gov.au/hag](http://www.dpi.nsw.gov.au/hag) or ring (02) 6881 1277 or email [fish.habitat@dpi.nsw.gov.au](mailto:fish.habitat@dpi.nsw.gov.au).

### Environmental Restoration and Rehabilitation Grants (NSW)

The objectives of the NSW Environmental Trust ERR program include the restoration of degraded environmental resources, the prevention or minimisation of future environmental damage, to enhance the quality of specific environmental resources and to improve the capacity of eligible organisations to protect, restore and enhance the environment. Applications close 5.00 pm, **31 August 2012**. For more information and application forms go to [www.environment.nsw.gov.au/grants/restoration.htm](http://www.environment.nsw.gov.au/grants/restoration.htm) or ring (02) 8837 6093 or e-mail [info@environmentaltrust.nsw.gov.au](mailto:info@environmentaltrust.nsw.gov.au).

### Everyone's Environment Grants (Queensland)

These grants provide established local community groups with funding of up to \$100 000 for activities that improve the local environment, including tree planting and restoring degraded land, cleaning up waterways and water quality improvement. Submissions close on **28 September 2012**. For more information and the applications forms go to [www.ehp.qld.gov.au/funding/everyones-environment/index.html](http://www.ehp.qld.gov.au/funding/everyones-environment/index.html) or ring (07) 3330 6360 or email [everyonesenvironmentgrants@ehp.qld.gov.au](mailto:everyonesenvironmentgrants@ehp.qld.gov.au).

### AUSMEPA Environmental Award 2012/2013

The AUSMEPA Environment Award recognises and promotes achievements, innovation and best practice in minimising marine pollution and the protection of the marine environment. Nominations are due by **30 September 2012**. For full details and criteria go to: [www.ausmeqa.org.au/marine-environment-protection-association-environmental-award.htm](http://www.ausmeqa.org.au/marine-environment-protection-association-environmental-award.htm)

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## HABITAT RESOURCES

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### Marine fish habitat activity booklet

This free activity booklet has been developed for primary school students in the middle to upper grades. It contains activities and information about Queensland's marine habitats and the fish that depend on them. Available to download from: [www.daff.qld.gov.au/28\\_9205.htm](http://www.daff.qld.gov.au/28_9205.htm)

### Guidelines for controlled activities on waterfront land

The NSW Office of Water has developed guidelines to assist applicants who are considering carrying out a controlled activity on waterfront land. Waterfront land includes the bed and bank of any river, lake or estuary and all land within 40 metres of the highest bank of the river, lake or estuary. The guidelines provide information on such things as instream works, waterway crossings and riparian corridors. [www.water.nsw.gov.au/Water-Licensing/Approvals/Controlled-activities/default.aspx#guide](http://www.water.nsw.gov.au/Water-Licensing/Approvals/Controlled-activities/default.aspx#guide)

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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 developments in fish ecology and habitat. It is free by email subscription. To **subscribe** or send in your habitat news, email the editor, Liz Baker ([newstreams@industry.nsw.gov.au](mailto:newstreams@industry.nsw.gov.au)). Back issues can be accessed from [www.dpi.nsw.gov.au/aboutus/resources/periodicals/newsletters/newstreams](http://www.dpi.nsw.gov.au/aboutus/resources/periodicals/newsletters/newstreams).

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### FHN Partners

- Fisheries NSW [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)
- SUNFISH [www.sunfishqld.com.au](http://www.sunfishqld.com.au)
- VRFish [www.vrfish.com.au](http://www.vrfish.com.au)
- Fisheries Victoria [www.dpi.vic.gov.au/fisheries](http://www.dpi.vic.gov.au/fisheries)
- VIC Department of Sustainability and Environment [www.dse.gov.au](http://www.dse.gov.au)
- Australian Fishing Trades Association <http://afta.net.au>

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



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