

# Newstreams

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

## AUSTRALIAN NEWS

### Fish friendly floodplains

First there was interest, then a field day, then follow-up. Interest is spreading amongst landholders on the Richmond River floodplain in managing floodplain flows and improving the health and function of wetlands following on from a recent field day. Managing wetlands on coastal floodplains can help fish by reducing the impact of acid sulfate soils, as well as building up the biomass that provides food a long way down the fish food chain. A recent field day showcased work to manage dropboards so that tidal freshwater could move in and out of wet areas, with benefits for cattle, farmers and fish ([More on this story](#)). For more information about ongoing coastal floodplain habitat rehabilitation in NSW, contact [Simon Walsh](#), Fisheries NSW.



Troy Aleckson, a Richmond River floodplain farmer, hosted the field day to demonstrate the work he has done on his property that will stabilise acid sulfate soils and improve water quality downstream. Photo: Simon Walsh.

### Warmer Spring waters on the way below Burrendong

Work is underway on the temperature control structure that will mitigate cold water pollution from Burrendong Dam, on the Macquarie River, Central-west NSW. The structure is built around the intake tower of the dam to enable warmer water from the surface of the dam to be released downstream, reducing the impact of cold water on native fish. It can also be raised and lowered with the storage level to ensure the system continues to work regardless of the water level in the dam. It's expected to be operational in time for warmer Spring flows, which is good news for the native fish living downstream. [More](#)

### Giving fish the shivers

The impacts of cold water pollution on the fish communities of the Murray–Darling Basin has been documented in a review by Lugg and Copeland. Cold water pollution can extend for several hundred kilometres downstream of large dams with adverse implications for fish survival, growth, spawning and recruitment. [More](#)

## Not so stinky Bookmark Creek

During the drought, Bookmark Creek, near Renmark, South Australia, was a few ponded wet areas known by locals as 'Stinky Creek'. During this time, the health of surrounding floodplain vegetation also declined. Now, thanks to three years' flow and a collaborative effort by community and government, Bookmark Creek is a picture of health. It is a unique site in South Australia as it bypasses a lock, creating a significant flowing habitat for a range of native fish species. The latest fish surveys caught 13 species of fish, including a range of small and large-bodied native fish. [More](#)

## A pearl out of place is a pest

A pearl cichlid was not what scientists doing routine monitoring in the Condamine River, in the northern Murray-Darling Basin in Queensland, wanted to find. These are aggressive fish and this one, 15cm long, was caught upstream of Warwick. Pearl cichlid are a popular aquarium species native to South America. Being both hardy and aggressive, these fish have the potential to be a serious pest if dumped alive into waterways. Pearl cichlid have been found in coastal catchments but to date this is the first official sighting in the Murray Darling Basin. For more information contact [Kevin Graham, Condamine Alliance.](#)



The Pearl Cichlid is a species to watch out for. If spotted or caught, contact your State's Department of Fisheries. Photo: NSW DPI.

## Hacking into Honey Locust for fish

Inverell Shire Council, in northern NSW, has successfully completed a fish habitat improvement project on a section of the Severn River. The Habitat Action Grant funded project involved control of Honey Locust, the major problem woody weed in the riparian area. Control of this invasive weed will now allow native riverbank plants to regenerate naturally. To get things underway, 500 native trees, shrubs and grasses were planted in the project area, with the enthusiastic assistance of local children from Ashford Central Primary School. [More](#)



Students from Ashford Central Primary School planting trees along an area of riverbank as part of ongoing projects to restore this reach of the McIntyre River. Photo: Brian Clancy, Inverell Shire Council.

## The first 'fish friendly' marina in Queensland

North Queensland's Mackay Marina Village & Shipyard is the first marina in Queensland to be certified with this status as part of the International Clean Marina program coordinated by the Marina Industries Association. The certification focuses on the development and promotion of marina fish habitats. The initiative is attached to MIA's International Clean Marinas Program which promotes positive environmental standards and practices at marinas. Additional fish friendly criteria and an audit are requirements to achieve Fish Friendly Marina accreditation. [More](#)

## **Is a meadow a meadow if it's seagrass?**

The Environmental Offsets Policy, a component of the Commonwealth *Environment Protection and Biodiversity Conservation (EPBC)* Act, allows 'unavoidable' losses of biodiversity attributed to development to be 'offset' by protecting or rehabilitating an equal or greater quantity of that same biodiversity elsewhere. The policy was developed specifically for terrestrial ecosystems, but applies equally to marine ecosystems. What this policy might mean for seagrass is being teased out by researchers at the University of Queensland. Seagrass is recognised as having significant environmental and economic value and being vitally important nursery habitat for many fish species. A short summary of this work is available [here](#).

## **Fish habitat in the Vasse-Wonnerup Estuary**

The movement patterns of Black Bream and Sea Mullet in the Vasse-Wonnerup Estuary, Western Australia, are the focus of monitoring now underway. It's estimated that 7 000 fish died on both sides of the Vasse and Wonnerup floodgates in the 2013 fish kill event and water quality issues appear to have contributed. Toxic algae are implicated in a fish kill event last month ([more](#)). Black Bream and Sea Mullet are important recreational fishing species and were impacted by the fish kill events but it's not known how they use the estuary. Stephen Beatty, from Murdoch University, is one of the researchers trying to find out how readily these fish pass through the floodgates and how they respond to rainfall events, fluctuating salinity and dissolved oxygen levels. The monitoring will help researchers identify important habitats, such as nursery areas. [More](#)



The Vasse-Wonnerup Estuary has been severely modified from its natural state. Floodgates were installed in 1907. Photo: [www.murdoch.edu.au](http://www.murdoch.edu.au)

## **Yarrawonga tornado provides accommodation for fish**

Timber reclaimed from a tornado in the Yarrawonga area is being used to create a series of fish 'motels' along the Ovens River between Tarrawingee and Everton, in northern Victoria. Previous mapping of in-stream woody habitat in the Ovens River identified a lack of in-stream logs and timber for native fish species. The motels are tower-like structures providing bulk and complexity for the fish species through differing water heights of the river. They are held in place within the river by large poles that are pinned into the river bed. [More](#)

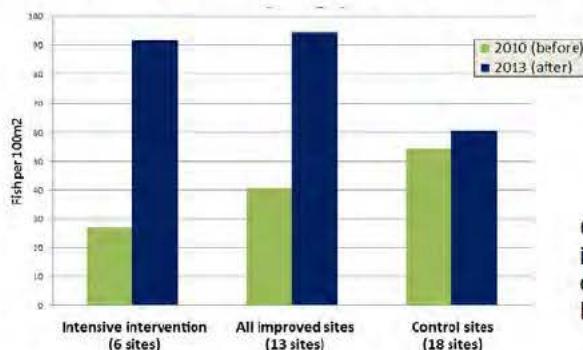
## **Tracking the gold(ens)**

Twenty-five Golden Perch are helping researchers working for North Central CMA understand more about how this species use habitat, specifically in the lower part of Gunbower Creek, northern Victoria. Each fish will have a transmitter weighing about 2g surgically fitted. This will enable their movements to be recorded. Goulburn-Murray Water is assisting by delivering environmental flows to attract the fish and encourage their movement. [More](#)

## INTERNATIONAL NEWS

### More salmon on the way down the Wye

The final report of the Irfon Special Area of Conservation Project, a major effort by the Wye and Usk Foundation in Wales to address whole-of-catchments issues in an upper tributary, showcases some enviable results, all for a considerably lower expenditure than initially planned. Funded by the European Union Life+ Nature Fund, the project developed a method of improving stream habitat that leads to immediate and substantive increases in salmon numbers in upland streams as well as cost effective method for correcting the problems of acid waters. Salmon were the primary species of interest and initial estimates based on improved salmon numbers indicate a financial payback for the project of 4.2 to 1 over the next 15 years. Following on from the results of the project, there is now a commitment from the Welsh government to remove all forestry trees planted in blanket bogs across the country, a move that will be a huge step forward for rivers, fisheries, water supply, flood reduction and carbon sequestration. The report is available [here](http://bit.ly/1oit92R). For an angler's eye view on the first signs of fish life returning to the Upper Irfon: <http://bit.ly/1oit92R>



Changes in average juvenile salmon densities as a result of improving riparian habitat. The blue is the density at each type of site in 2013, after rehabilitation works. Source: Wye and Usk Foundation Report, p10.

### Fish habitat gets bipartisan support in the USA

Two US Senators, one a Democrat and one a Republican, introduced 'S. 2080 the National Fish Habitat Conservation Act' last week. This legislation authorises the National Fish Habitat Action Plan, the national partnership effort aiming to protect, restore and enhance aquatic resources and fish habitat across the USA. Senator Cardin argued the case like this: "Choosing to protect our natural resources is good for our environment and our economy. Right now we need deliberate and targeted action to stem the loss of our precious aquatic habitats. Our bill takes a comprehensive approach to stopping the single greatest cause of declining fish populations by stemming the decline of healthy aquatic ecosystems that are critical to all fish species." [More](#)

### Three cheers for the Chub

The Oregon chub is a tiny minnow that lives only in backwaters in Oregon, USA. It is also the first fish ever taken off U.S. Endangered Species Act protection because it is no longer threatened with extinction. The recovery plan focused on establishing partnerships with landowners to restore key habitats, breeding and transplanting fish to those places and getting the U.S. Army Corps of Engineers to alter dam releases to more closely resemble natural river flows. The recovery of this small fish species is a good sign for other, more popular fish. It means the river still has the processes that will support juvenile chinook salmon, for example. [More](#)



Using a seine net while surveying for Oregon chub in the Willamette River. Photo: Oregon Department of Fish and Wildlife.

## Fish migration works on an industrial scale

While work is not yet underway, this plan to build a ‘Fishmigrationriver’ between the Wadden Sea and the IJsselmeer, Netherlands, is spectacular in scale. Fish will be able to migrate back and forth between the two waterbodies while salt water from the sea is prevented from entering the freshwater basin. The construction of the Afsluitdijk in 1932 meant that the Zuiderzee’s mix of brackish and salt water became purely fresh water and non-tidal. The migratory fish species suddenly found the route to their spawning grounds blocked and their populations collapsed. This [video](#) shows how the Fishmigrationriver Afsluitdijk works.

## An artistic take on riparian rehabilitation

Basia Irland is an artist who has focused her creativity on rivers for thirty years. Her aim is to connect people to their local waterways in ways that will foster appreciation and stewardship. Each project begins by carving frozen river water into the form of a book. Some books are large and weigh as much as 250 pounds; others are the size of a pocket book. Each is then embedded with local native seeds to look like text. The book is then placed back into the stream. The seeds are released as the ice melts in the current, colonising degraded riverbanks in much the same as would happen naturally.

[More](#)



A young girl “reads” ice-book text comprised of Fremont cottonwood seed beside the Rio Grande in Albuquerque, New Mexico. Source: <http://bit.ly/1hzwoCH>

## Using *Salvinia* to kill itself

Researchers in the USA have developed a new approach to controlling Giant Salvinia (*Salvinia molesta*). The team wondered why their Salvinia plants weren’t thriving in the greenhouse. They investigated and found substances, known as “endocides”, produced by plants themselves that will eliminate the parent plant or other individuals of the same species when externally applied. These substances are highly selective in acting against salvinia species and to date haven’t been found to damage other species. Giant salvinia is native to Brazil and has become one of the most widespread and environmentally, economically and socially destructive invasive plant species in the world. The plant can double its biomass in two or three days under favourable conditions and may still be alive after drying for days. It forms dense mats that reduce oxygen levels and block all sunlight, seriously threatening habitat. [More](#)



Salvinia is a Weed of National Significance in Australia ([www.weeds.org.au/WoNS/salvinia/](http://www.weeds.org.au/WoNS/salvinia/)). It can form habitat destructive mats (left, source [www.anbg.gov.au](http://www.anbg.gov.au)) and be densely packed (right, source [www.lrm.nt.gov.au](http://www.lrm.nt.gov.au)).

## Fish by-passing power plant

The fish bypass at the Neuötting power plant on the River Inn, in Austria, is 250m long and means that local fish, such as graylings, barbs and nases, now have the chance to bypass the barrier safely. The bypass is a combination of trough channel with natural stone rows as well as a vertical slot pass made of concrete. Due to the European Union Water Framework Directive, important areas of flowing water in the EU have to allow fish and other living organisms in the water to pass through. Along with creating ways to allow for fish migration at this and other power plants, the authority which manages the power plants will also be implementing measures along the River Inn to connect and revitalise the aquatic habitats which the diverse fish populations will now be able to access. [More](#)



Work on the new fish bypass at the Neuötting power plant on the River Inn, in Austria. Image source: <http://pixabay.com/en/fish-ladder-ladder-fish-pass-238637>

## High school fishers getting wet and dirty for fish

Lay Lake, in Alabama, USA, is just one of the sites that are benefitting from a partnership between Alabama Power Company, B.A.S.S Nation Fishing Clubs and high schools through the Renew Our Rivers program. At Lay Lake, the 15<sup>th</sup> year of the program kicked off with more than 100 student-anglers from high schools across the state helping. These students can also be part of a workshop later in the year where they will construct fish habitats which they will then help install in Alabama Power lakes. All these activities are part of ongoing efforts to engage the next generation in stewardship of our lakes and rivers. [More](#)



Overcoming freezing temperatures, more than 30 students from four high school fishing teams across the state removed more than 5,000 pounds of trash from Lay Lake to kick off the 2014 Renew Our Rivers campaign in partnership with the Alabama Bass Trail. Source: <http://renewourrivers.com>

## An Outdoor Hall of Fame

In Montana, USA, the founder of the "Orion - the Hunter's Institute", Jim Posewitz, along with a diverse range of agencies including Montana Trout Unlimited, is behind the effort to honour people who've contributed to the restoration and conservation of Montana's fish, wildlife and other outdoor amenities. [In this interview](#), Posewitz explains his lifelong passion for fishing, hunting and the outdoors and for acknowledging and telling the stories of those who contribute to healthy habitats in Montana.



## River restoration by mail order

With the help of Orvis, America's oldest mail order outfitter and longest continually-operating fly fishing business, and their customers, Trout Unlimited is able to continue its 1,000 Miles Campaign. The goal is to reconnect 1,000 miles of fishable streams by repairing or replacing poorly constructed culverts. Orvis partners with its customers through a matching funds grant program: every dollar a customer donates, Orvis will match with another dollar. This is the third year that TU has been part of this grants program and will see another US\$180 000 go towards the 1,000 Miles campaign. Orvis commits 5% of pre-tax profits to protecting and sustaining the natural world, which in 2014 equated to more than US\$1 million. In addition to TU, the Chesapeake Bay Foundation is also being funded to restore oyster beds and fish habitat. [More](#)



## Habitat from on high

The Mattole Salmon Group and other partners flew trees in by helicopter to create fish habitat in the Mattole River, Northern California, USA. More than 200 trees, roots and all, were in position in only 11 hours. The project actually saved money by using the helicopter rather than trucking them to the site. The trees were Douglas firs that had been removed from a nearby prairie, which is being restored and replanted with native grasses. Rather than burning the trees they were used as snags: good version of re-use and the new habitat will benefit fish like salmon and steelhead. [More](#)



Habitat restoration the high way: The Mattole Salmon Group will monitor the site to see what kind of changes the trees bring to the river. Image source: [www.habitat.noaa.gov](http://www.habitat.noaa.gov)

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## RESOURCES

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### 2014 Riverprizes

Applications for the 2014 Riverprize are now open. Stage 1 applications are due by **9 May**.

Information about past winners and application process details and forms at:

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

### REFORM web-based tool

This is a knowledge and information system that provides a compilation of case studies describing restoration and rehabilitation projects on European rivers. The case studies provide the link between hydromorphological pressures, possible restoration and rehabilitation measures, and expected effects on the physical environment and biota. Set up as a GEO-WIKI, it is intended to help practitioners by presenting experiences about success or failure of the application of different measures.

[http://wiki.reformrivers.eu/index.php/Category:Case\\_studies](http://wiki.reformrivers.eu/index.php/Category:Case_studies)

### New tool for oyster restoration practitioners (US)

*The Oyster Habitat Restoration Monitoring and Assessment Handbook* is a new tool for oyster restoration practitioners provided by NOAA. It provides restoration-based monitoring metrics for oyster restoration projects. Contact your local Fisheries Office for advice on application to Australian projects. [Download](#)

### Wetland education resources

Queensland Wetlands Program have compiled these resources, which include a toolkit aligned to the National Science and Geography curriculum, an intensive 10-week field curriculum and examples of implementation.

<http://wetlandinfo.ehp.qld.gov.au/wetlands/resources/education/>

## FROM THE ARCHIVES - SNAGS

As late as 1995, removing snags was seen as a good thing. Snags were removed on a large scale to improve navigation and because it was thought they caused erosion of river banks and increased the incidence of flooding. The impact on fish was both immediate and prolonged. A de-snagging event was reported in Adelaide's *The Register News* on 26 February 1930:

*The S.S Industry has been between Lock 4 and Loxton for some time ... About 50 large snags have been removed. Some were 50 feet long and yards round. Tackling broke like pieces of string when these huge logs were being lifted clear of the river. Cod and large crayfish dropped out of holes in the logs - which Captain Harry Brand considered had been on the river's bottom for half a century or more.*

Snags provide important structural habitat for native fish and the removal of large woody debris (snags) is a key threatening process under the *NSW Fisheries Management Act 1994*.



From de-snagging in the Namoi River in 1995 to resnagging in the Namoi River in 2000. Photo right: Milly Hobson

### Reminiscences of snags and fish

The following excerpts are taken from *Talking Fish - making connections with the rivers of the Murray-Darling Basin*, Murray-Darling Basin Authority, Canberra (2012.)

Years ago there was another very famous fishing spot, the **Katarapko** [near Renmark, South Australia]. The fish seemed to like creeks where all the logs had fallen over the years. Whereas in the main river they used to clear it for the paddle steamers, clear the logs out and make it a safe passage. Where no one worried about the creeks because there was no big ships, or boats rather, going up the creeks, so they were full of logs. And that was a marvellous breeding place for fish to feed and catch shrimps and all that sort of thing too.

Howard Hendrick (Katarapko)

I did actually see them catch 91 and 96 pound cod—probably dozens, if not hundreds of 50, 60 pounders [in the Ovens River]. I tell the people that all those Murray red gums leaning over into the river aren't from the floods. It's where my father used to tether his bigger fish! . . .

Tom Cameron (Ovens)

[The Narran River has] never been a navigable river. So what snags were there, have stayed there. And, from that point of view, very good fish habitat, particularly in the large waterholes that are a natural refuge during the drought.

Rory Treweek (Culgoa-Balonne)



As every fisher knows, the majority of Murray Cod are found close to snags. Photo: Craig Copeland.

## 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

Amateur Fishing Association of the Northern Territory (AFANT) <http://afant.com.au/>

Australian Fishing Trades Association <http://afta.net.au>

Australian National Sportfishing Association - NSW [www.ansansw.com.au](http://www.ansansw.com.au)

Capital Region Fishing Alliance <http://crfa.org.au/>

Ecofishers [www.ecofishers.com](http://www.ecofishers.com)

Fisheries NSW [www.dpi.nsw.gov.au/fisheries/habitat](http://www.dpi.nsw.gov.au/fisheries/habitat)

Fisheries Victoria [www.dpi.vic.gov.au/fisheries](http://www.dpi.vic.gov.au/fisheries)

Freshwater Fishing & Stocking Association of Queensland (FFSAQ) [www.ffsaq.com.au](http://www.ffsaq.com.au)

NSW Council of Freshwater Anglers [www.freshwateranglers.com.au](http://www.freshwateranglers.com.au)

NSW Fishing Clubs Association [www.nswfca.com.au](http://www.nswfca.com.au)

PIRSA Fisheries and Aquaculture [www.pir.sa.gov.au/fisheries](http://www.pir.sa.gov.au/fisheries)

Recfish Australia <http://recfishaustralia.org.au/>

RecfishSA [www.recfishsa.com.au](http://www.recfishsa.com.au)

RecfishWest [www.recfishwest.org.au](http://www.recfishwest.org.au)

Recreational Fishing Alliance of NSW [www.rfansw.com.au](http://www.rfansw.com.au)

SUNFISH [www.sunfishqld.com.au](http://www.sunfishqld.com.au)

Sweetwaterfishing <http://www.sweetwaterfishing.com.au>

Victorian Department of Environment and Primary Industries [www.depi.vic.gov.au](http://www.depi.vic.gov.au)

VRFish [www.vrfish.com.au](http://www.vrfish.com.au)

Western Australia Department of Fisheries: [www.fish.wa.gov.au/Pages/Home.aspx](http://www.fish.wa.gov.au/Pages/Home.aspx)

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

**Facebook** [www.facebook.com/fishhabitatnetwork](https://www.facebook.com/fishhabitatnetwork)

