

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

AUSTRALIAN NEWS

2012 Banksia Water Award - another winner for fish

The Condamine Alliance has won the Banksia Environmental Award – Water category. This award comes after their recent 2012 Australian Riverprize win. The Alliance's rehabilitation work concentrated on the 110km long Dewfish Demonstration Reach in south-east Queensland. Their biggest achievement is the tremendous increase in native fish numbers along the Reach. Golden perch have increased by 1000%, Dewfish (eel-tailed catfish) by 300% and Bony Bream by 200%. The Hyrtl's tandan has also returned for the first time in 15 years. For more about their work, go to:

www.condaminealliance.com.au/dewfish-demonstration-reach



Dewfish Demonstration Reach coordinator, Greg Ringwood, celebrating the public recognition of their hard work and tangible results in improving fish habitat. Photo: Condamine Alliance.

Victorian fishers put their hand up for habitat

In a recent Fisheries Victoria survey of Recreational Fishing Licence holders, more than 600 fishers volunteered to get involved in fish habitat and population monitoring projects. The survey was designed to improve understanding of recreational fishers' priorities and to include these in the Victorian Government's review of the River Health Strategy (Victorian Waterway Management Strategy) which provides a blueprint for future investment in river health restoration. The survey also provided some valuable insights into fishers' preferred species and how fishing can be improved. One of the most common suggestions for improving fish habitat was to 'improve water flows and levels that benefit fish'. The survey can be downloaded at www.dpi.vic.gov.au/inlandfishingsurvey

More habitat for Hat Head

The Hat Head Fishing Club has successfully completed stage 2 of their rehabilitation works on the Korogoro Creek foreshore. With Habitat Action Grant funds from the NSW Recreational Fishing Trust, donated top soil, mulch and plants and over 237 hours of voluntary labour, club members are continuing the transformation of this part of the estuary. Over 1000 plants were planted along 2.5ha of riverbank and saltmarsh. The club, with assistance from Kempsey Shire Council, had also controlled weeds on the site and erected erosion controls.



Members of the Hat Head Fishing Club preparing to make more habitat for fish in the Korogoro Creek estuary. Photo: Hat Head Fishing Club.

Tweed farms more fish friendly

In the latest stage of the NSW Fish Friendly Farms program, creek frontages on 10 properties along Cobaki, Piggabeen, Duroby and Bilambil Creeks in the Tweed River catchment in northern NSW have been rehabilitated. This NSW Environmental Trust funded project assists the ongoing Tweed Shire Council River Health Improvement program, with the individual farm projects contributing to the improvement of aquatic health locally. For information on the Fish Friendly Farms in the Tweed project, contact Scott Nichols (Fisheries NSW) on 02 6626 1396 or scott.nichols@dpi.nsw.gov.au or Tom Alletson (Tweed Shire Council) on 02 6670 2577 or talletson@tweed.nsw.gov.au.

Mapping Queensland coastal fish habitat vulnerability

Fisheries Queensland has audited and mapped intertidal fish habitats and their vulnerability in coastal Queensland using marine plant community distribution changes as a measure of response to sea level rise. Project staff applied GIS and remote sensing data with LiDAR contour data, existing marine plant mapping and a series of sea level rise scenarios to quantify the loss or gain of fish habitats by 2100. The mapping represents a valuable tool for determining appropriate management for areas to be protected as current fish habitat or to accommodate fish habitat shift to retain local and regional fisheries. For more information, contact [John Beumer](mailto:John.Beumer@daf.qld.gov.au) on 07 3330 5644. The project reports are available at: www.daff.qld.gov.au/28_22211.htm

The Darling flood

Joshua Smith is a photographer who has documented the flood pulse from the Culgoa and Barwon Rivers as the floodwater flowed into the Darling River earlier this year. These aerial photos provide a small sense of the scale and impact of the vast amounts of water that flowed through these outback river floodplain systems. See more at: www.joshuajs.com/#/topical/the-darling-river-at-bourke-nsw-before-after



A natural wonder – the western floodplains of NSW in full flood. Photo source: www.joshuajs.com/#/topical/the-darling-river-at-bourke-nsw-before-after.

Coastal wetlands – familiarity breeds neglect?

Mangroves and saltmarsh may be familiar to people living on the eastern seaboard but, Paul Boon argues, they are only two of a wide variety of coastal wetland types and all are neither well understood nor the focus of attention that they should be given the ecosystem services they provide and the threats they face. It is estimated that the value of coastal wetlands in terms of the ecosystem services provided is 6 times more per hectare than that of inland wetlands. In addition, the value of coastal wetlands is likely to increase due to their capacity to buffer the effects of climate change, including more powerful storm surges. Boon provides an overview of what is known about coastal wetlands and the issues associated with improving knowledge and management in a paper in *Marine and Freshwater Research*: <http://dx.doi.org/10.1071/MF12205>

Protect, Repair, Connect in Dubbo – celebrating 10 years of achievement

Dubbo Macquarie River Bushcare celebrated 10 years of achievement on the banks of the Macquarie River at Dubbo in central west NSW. Alongside the usual celebratory activities, information on native fish and fish habitat and weed identification lessons was provided. The group was also celebrating the future, having been awarded a \$250 000 grant from the NSW Environmental Trust for the 'Protect, Repair, Connect' project. For more information contact Rodney Price (Fisheries NSW) at Rodney.Price@dpi.nsw.gov.au.



Celebrating both 10 years of work to improve the Macquarie River at Dubbo and the opportunities ahead with recent successful funding. Photo: Sam Davis.

Weeding out the problem in the Little River

Weeds impact on fish by taking up riverbank real estate normally occupied by native plants, impacting on channel shape and altering water chemistry. In addition, river corridors are high risk pathways for spread of weeds. Recently, Fisheries NSW, in collaboration with Wellington Council and with financial support from the NSW Environmental Trust, undertook a comprehensive survey of weeds along the entire 124 km length of the Little River in central west NSW. Emerging pest plant species in the area, including osage orange, century plant, pepper tree, poplar, white cedar, and willow were mapped using a GIS/GPS interface. In order to preserve the Little River's status as prime Murray Cod breeding habitat, the health of the riparian area will now be protected by strategic control of weeds in identified hotspots. For more information, contact Sam Davis (Fisheries NSW) on 02 6881 1284 or sam.davis@dpi.nsw.gov.au.

How does your carp cage work?

A carp separation cage is a specially designed trap usually installed on infrastructure such as a fishway. It takes advantage of the jumping behaviour of migrating carp by drafting them into a holding cage for later removal, while allowing native fish to continue swimming upstream. How this works was recently demonstrated using a one of two automated carp traps that will be installed into waterways at sites within the Macquarie Marshes, in central west NSW. Fisheries NSW, Central West CMA and State Water Corporation were on site at the demonstration to answer questions about managing carp in the Macquarie Marshes. The carp separation cages will intercept carp along their migration pathways: one of the key recommendations for controlling this species identified in the 'Carp Strategy for the Macquarie Marshes'. For more information contact Rodney Price at Rodney.Price@dpi.nsw.gov.au.



A carp separation cage waiting for high enough water flows to allow installation in the Macquarie Marshes. Photo: Sam Davis.

Bequest helps Giralong Reach

The Raymond Borland Bequest Program came about because Raymond Borland, a Sydney businessman, decided to help community environmental groups do something about the extent and severity of landscape and water quality degradation he saw on his travels through country NSW. Nambucca Valley Landcare has used the funds they received to address river bed issues along a 5km stretch of key habitat in the Nambucca River at Giralong, NSW. Eight rock bed controls were either installed or reinforced. In addition, a landowner used his own funds and a Northern Rivers CMA grant to repair 3 bed controls and the Nambucca Shire Council installed another to control bank erosion. Landowners were also involved with riparian weed control and replanting. For more information: www.northern.cma.nsw.gov.au/news/other-stories/giralong-reach-project.html



The Nambucca River at Giralong. Protecting the reach from further bed lowering will improve its recovery potential. Photo: Nambucca Valley Landcare.

New use for old pools

Dr Callan Spielman's pool at his home on Sydney's north shore is swarming with native fish, such as Empire and Spotted Gudgeons. His family's backyard swimming pool was being used about six times a year, so it became one of 50 in this area that have been turned into ponds. The move is supported by Ku-ring-gai Council's 'Wild Things' program. For more on this story: www.smh.com.au/environment/conservation/little-fish-in-a-big-pond-save-power--and-the-planet-20121118-29k6x.html#ixzz2EoSKgn3p

Oxleyan pygmy perch recovery dependent on habitat

Researchers and managers have been working together for over a decade to protect and conserve the Oxleyan pygmy perch, a small species not targeted by commercial or recreational fishers, threatened with extinction. A review of the conservation biology and management of this species has contributed to filling key knowledge gaps in understanding the biology of this species and threats to its survival. Based on this research, management objectives were developed to assist with the protection of populations throughout its entire range in NSW and Queensland. The three key elements of this, in common with nearly every recovery plan for endangered fishes are: formal protection of preferred habitats, minimising the impacts of introduced fish, and engagement with key stakeholders. Read the review by Knight and others in *Endangered Species Research*:

www.int-res.com/articles/esr_oa/n017p169.pdf [Open access]

Mangroves on the mend on Muddy Island

Muddy Island, in Tuross Lake Recreational Fishing Haven on the NSW South Coast, is experiencing a regrowth of mangroves and reeds after the removal of an illegal causeway. The causeway allowed stock from neighbouring freehold land to access Muddy Island and graze the mangroves and saltmarsh and it also restricted tidal flow to some marine vegetation upstream. The work by Crown Lands was funded by Oceanwatch and Southern Rivers CMA, with the support of Fisheries NSW, Marine Parks Authority and oyster farmers. Stock had been prevented from accessing the site previously and there had been some recovery of the vegetation on the island. With the causeway now gone, 'accidental' straying of stock is prevented and this recovery can continue. For more information, contact [Helen Wheeler](#) on 02 4428 9133.



The causeway, at left, was restricting tidal flow. Mangroves were grazed and stunted and other vegetation grazed out completely.



The remaining causeway will erode away with rain and tidal action.



Mangrove regeneration in the wetland after grazing ceased.

Photos: Helen Wheeler

Fish, floods and floodplain wetlands

Research into what happens to fish populations, both native and alien, when the inland floodplain wetlands become flooded has found that the response is variable and dependant on a range of environmental factors. Beesley and others found that longer and ongoing river-wetland filling was associated with greater total abundance of newly recruited fish. However, this was true for both Common Carp and the native Carp Gudgeon. Another study by Ho and others found that the relative abundance of Carp Gudgeon and the introduced *Gambusia* differed between regularly and irregularly flooded pools. If the pools were regularly flooded from spring through to autumn, following a major spring flood, Carp Gudgeon were dominant. *Gambusia* was more abundant in irregularly flooded pools from summer until pools dried completely. To read more of the work by Ho and others in *Freshwater Biology*:

<http://dx.doi.org/10.1111/fwb.12047>

To read more of the work by Beesley and others in *Freshwater Biology*:

<http://dx.doi.org/10.1111/j.1365-2427.2012.02865.x>

INTERNATIONAL NEWS

Anglers value their 'moral responsibility'

For American hunters and anglers, the conservation of natural heritage is a priority issue and confronting global warming to protect the future is a shared moral responsibility. A national poll shows that hunters and anglers put conservation on par with gun rights and prioritise protecting public lands above energy production. Nearly 80 percent favour restoring the US Clean Water Act protections to wetlands and waterways, including smaller creeks and streams, to protect important fish and wildlife habitat. Over 37 million Americans took part in hunting, fishing or both, an increase of 9 percent (hunting) and 11 percent (fishing) in the period 2006 – 2011, contributing \$90 billion to local economies. To read more about the poll (with a link to the press conference):

www.nwf.org/News-and-Magazines/Media-Center/News-by-Topic/Wildlife/2012/09-25-12-Sportsmen-Poll-Public-Lands-Protection-Trumps-Energy-Production.aspx

Too much of a good thing kills saltmarsh

Researchers have found that saltmarsh dies if it gets too much nutrient-rich water. Until this study, it was assumed that saltmarsh had unlimited capacity for nutrient removal. In a large-scale experiment in Plum Island Estuary, Massachusetts, USA, nutrient inputs into saltmarsh were manipulated to resemble what typically occurs around densely developed coastal areas. A few years after the experiment began, wide cracks began forming in the grassy banks of the tidal creeks, which eventually slumped down and collapsed into the muddy creek. Saltmarsh was replaced with mud flats. In the next phase of the research, the scientists will study the recovery of the nutrient-enriched marsh. To read more:

www.sciencedaily.com/releases/2012/10/121017141811.htm

To read the research paper by Deegan and others in *Nature*:

<http://dx.doi.org/10.1038/nature11533>



Nutrients entering saltmarsh from housing areas and parklands can lead to the deterioration and loss of this valuable habitat. Photo: Trevor Daly.

Waves not good for the bottom of the food chain

Boat wake is usually thought of as being a bank erosion issue, however researchers in the USA have found that it also impacts invertebrates, which are important sources of food for fish. The researchers found that the more the 'shear stress' associated with the wake increased, the higher the percentage of invertebrates that were affected. Recreational boating at a distance of 20m from the shore and a speed of 11 km/hr led to 75% of the invertebrates becoming detached. However, habitat structural complexity reduced the impact of shear stress, with reed habitat being twice as effective as simple sand. For more on this research by Gabel and others in *Freshwater Biology*:

<http://dx.doi.org/10.1111/fwb.12011>

FROM THE ARCHIVES – A RIPARIAN 'IF ONLY'

From the Sydney Gazette, 9 October 1803

Listed under "General Orders", and in response to emerging river bank erosion problems caused by the over-clearing of bank-side vegetation, Governor King declared that:

"From the improvement method taken by the first settlers on the sides of the Hawksbury and creeks in cutting down timber and cultivating the banks, many acres of ground have been removed, lands inundated, houses, stacks of wheat, and stock washed away by former floods, which might have been prevented in some measure if the trees and other native plants had been suffered to remain, and instead of cutting down to have planted others to bind the soil of the banks closer, and render them less liable to be carried away by every inconsiderable flood ..."

*"As several settlers have been and are now fencing on the lower part of the Hawkesbury, along the Napean, South Creek, and George's River, in situations where the above evil may be prevented, **it is hereby directed** that no settler or other person to whom ground is granted or leased on the sides of any river or creek where timber is now growing, do on any account cut down or destroy, by barking or otherwise, any tree or shrub growing within two rods [about 10 meters] of the edge of the bank, except for an opening one rod wide to have access to the water."*

Unfortunately, hardly anyone took any notice ... <http://trove.nla.gov.au/ndp/del/page/5777>

HABITAT DATES 2013

February 2	World Wetlands Day www.ramsar.org/cda/en/ramsar-activities-wwds-wwd2013index/main/ramsar/1-63-78%5E25913_4000_0
February 12 – 13	Biodiversity Offsetting for Mining, Energy & Infrastructure Development (East Coast) , Brisbane, Queensland http://biodiversityoffsetdelivery.com/
March 22	World Water Day www.unwater.org/worldwaterday/
April 22 – 24	World Ocean Council Sustainable Ocean Summit , Washington DC, USA www.oceancouncil.org/site/summit_2013/

ENGAGEMENT AND FUNDING OPPORTUNITIES

Recreational Fishing Large Grants Program 2012/13 (Victoria)

The Large Grants Program provides grants from \$5,001 up to \$100,000 (GST excl.) for projects, including recreational fisheries' sustainability and habitat improvement projects. Applications close **28 February 2013**.

More information and application forms are available from:

www.dpi.vic.gov.au/fisheries/about-fisheries/fishing-grants-program/large-grants-program.

Funding now available to help fishy friends in the Namoi (NSW)

Applications for funding from the Australian Government's Clean Energy Future Biodiversity Fund are invited from landholders adjacent to the Namoi River and associated tributaries, and local councils, community groups and fishing clubs, along the 150 kilometre strip from Gunnedah to downstream of Narrabri. Contact [Milly Hobson](mailto:Milly.Hobson@dpi.nsw.gov.au) on 02 6763 1206 or visit:

www.dpi.nsw.gov.au/fisheries/habitat/your-catchment/namoi/eoi-namoi

Communities for Nature Grants (Victoria)

These grants are targeted towards local community groups and organisations, including schools. The program has up to \$700 000 for grants of up to \$10,000 each. Projects are expected to address local environmental issues, including revegetation of areas that enhance existing habitat or connectivity or cleaning up waterways (creeks, wetlands, streams, rivers and seas). Applications can be submitted online and close at midnight on **19 December 2012**. For more information and application guidelines:

www.dse.vic.gov.au/conservation-and-environment/biodiversity/communities-for-nature-grant-program

Coastal Management and Estuary Management Program (NSW)

This funding is provided to assist **local councils** to carry out coastal and estuary management projects, helping them plan, manage and protect their coasts and estuaries. Applications close on **14 February 2013**.

Grant application guidelines and forms are available at:

www.environment.nsw.gov.au/coasts/coastalgrants.htm (for coastal)

www.environment.nsw.gov.au/coasts/estuarygrants.htm (for estuary)

Listing the Murray Cray as 'Vulnerable' (NSW)

The NSW Department of Primary Industries is seeking public submissions on a proposal by the Fisheries Scientific Committee to list Murray Crayfish as a vulnerable species under the NSW *Fisheries Management Act 1994*. The species is facing a high risk of extinction in NSW due to several factors, including habitat loss and river regulation. The FSC is seeking written submissions from the public on any information that may assist their deliberations, including information on abundance, distribution and any historical information, such as old catch records. Submissions close on Friday, **21 December 2012**. Further information, including submission details, is available at www.fsc.nsw.gov.au or here:

www.dpi.nsw.gov.au/aboutus/news/all/2012/murray-crayfish-proposal

HABITAT RESOURCES

Estuary plants and what's happening to them in south-east Australia

This new book by Sainty and Associates has 652 pages of information on estuary plants, including species information on seagrasses, algae, low-marsh and high-marsh plants as well as fringing and brackish plants. In addition, there are 23 sections written by specialists on management, monitoring, rehabilitation, case histories, catchment, midges, birds, fish and mosquitoes. For more information and ordering:

www.sainty.com.au/Estuary%20Book/estuarypage.html



A Guide to Australia's Spiny Freshwater Crayfish

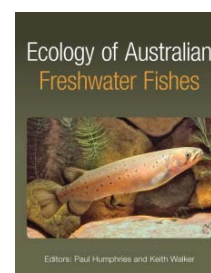
This book by Robert B McCormack discusses all 50 species found in Australia, from the iconic giant Murray lobster to exceedingly rare and tiny species. For more information and ordering:

www.publish.csiro.au/pid/6804.htm

Ecology of Australian Freshwater Fishes

This book, edited by Paul Humphries and Keith Walker, reviews our understanding of the ecology of Australian freshwater fishes, compares patterns and processes in Australia with those on other continents and considers how best to manage our species and their habitats in the face of current and future threats. To be published in March 2013, it is now available for pre-orders. More information and ordering:

www.publish.csiro.au/pid/6515.htm



From Sea to Source: International guidelines for the restoration of fish migration highways

The concept underlying this new book is the increasingly recognised need for preservation but, more frequently, the restoration of free migration for all species of fish. The book covers important societal and subsistence issues, bringing together fish migration experts from every relevant continent, each of whom has direct practical experience of the issues and challenges. This book can be downloaded for free as a low-resolution PDF here:

www.fromseatosource.com/?page=DOWNLOAD [free download]

More information about the book and order information for hard copy:

www.fromseatosource.com/?page=ABOUT

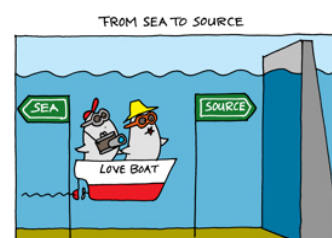


Image source:
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HABITAT WORKS



Bream and Mullet taking advantage of the newly installed auto-tidal floodgate at Ocean Shores, northern NSW.
Photo: Simon Walsh

ABOUT NEWSTREAMS

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). Back issues can be accessed from 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
- NSW Council of Freshwater Anglers www.freshwateranglers.com.au
- Recreational Fishing Alliance of NSW www.rfansw.com.au
- Australian National Sportfishing Association - NSW www.ansansw.com.au
- Ecofishers www.ecofishers.com
- NSW Fishing Clubs Association www.nswfca.com.au
- SUNFISH www.sunfishqld.com.au
- VRFish www.vrfish.com.au
- Fisheries Victoria www.dpi.vic.gov.au/fisheries
- Victorian Department of Sustainability and Environment www.dse.gov.au
- Australian Fishing Trades Association <http://afta.net.au>
- PIRSA Fisheries and Aquaculture www.pir.sa.gov.au/fisheries

Website www.fishhabitatnetwork.com.au



Department of
Primary Industries

