

Newstreams

A NSW DPI email newsletter for recreational fishers and others interested in improving fish habitat to build native fish stocks

No 21 August 2009

About Newstreams

Newstreams is an email newsletter to keep people up to date about NSW fish habitat activities and important aquatic habitat developments elsewhere. It is published electronically every two months by NSW Department of Primary Industries. In NSW many estuarine and freshwater habitats for juvenile and adult fish have been degraded or lost through urban, industrial and agricultural development. Communities around NSW work actively to restore fish habitat.

NSW DPI NEWS

New fish hotels open for business

A 1.5km reach of the Hunter River between Aberdeen and Muswellbrook now has 2 new snag hotels and 11 deflector logjams. The snag hotels mimic instream tangles of rock and wood that provide fish habitat and can also serve to protect the toe of eroded banks. The logjams deflect base flows away from eroding outside bends and into the middle of the channel, while also stabilising the river bed. They also help re-establish favoured fish habitats such as larger pools, stable riffles and in-stream complexity. The project was a substantial team effort by NSW DPI, Dept of Lands (Soil Conservation Services), Hunter Central Rivers CMA, local landholders and Anglo-Coal. For more information, contact Shaun Morris NSW DPI.

shaun.morris@dpi.nsw.gov.au

Top right: A fish hotel out of water.

Lower right: One of the log jams on the Hunter River reach. The ballast material on the in stream side will be gradually removed by future flow events exposing only the outer edge of the structure and creating additional fish habitat.

Photos: Shaun Morris NSW DPI



Innovative fish counter to help monitor Murray fish migration

The first Australian trial of an infrared fish counter at Lock 10 (Wentworth) on the Murray will boost scientists' understanding of native fish migration along the river. The system counts fish by establishing an infrared grid around a point of known fish migration, such as within a fishway. When fish migrate through the grid they are counted and measured. Information obtained on each fish passing through the infrared scanner includes: date, time, upstream or downstream direction and body depth. As fish pass through the grid, the system is also able to map an outline of the shape of the fish. This is converted into a picture file as a silhouette diagram, which is being used to help identify different species.

<http://www.dpi.nsw.gov.au/research/updates/issues/june12-2009/innovative-fish-counter>

Open road for Molong Creek fish



This Molong Creek crossing was once high priority for remediation because the original small shallow culverts were set so high that fish couldn't move over them, and debris tended to accumulate. With the help of Cabonne Shire Council, NSW DPI and Central West CMA have installed two larger box culverts (pictured). These allow more water through in low to medium flows, and have opened up 107 km of creek to fish. This 'Bringing Back the Fish' project complements Molong Landcare Group's instream and riparian restoration activities including fencing out of stock and the reinstatement of snags. For more information please contact Kirby Byrne. Photo: Kirby Byrne, NSW DPI.

kirby.byrne@dpi.nsw.gov.au



Clyde River in 2006.
Photo: Trevor Daly NSW DPI

Clyde River oyster farmers clean up

The Clyde River is cleaner these days 18 months after oyster farmers established an environmental group and developed an environmental management system to reduce the impact of their activities on the river. So far they have cleared Budd Island of 20 tonnes of steel rubbish and are removing weeds. After NSW DPI conservation manager Trevor Daly raised the issue of road sediment entering the river in 2006, they obtained \$30,000 funding from Dept of Lands and Southern Rivers CMA, and with advice from NSW DPI, installed sediment control and road drainage works at Lattas Point, Batemans Bay. The group contributed labour and resources valued at \$20,000. There is now less sediment in the river, and the cleaner water benefits fish and oysters. For more information, contact Trevor Daly 02 4478 9103.

Seagrass-friendly moorings available at Manly



Above: Inventor of the seagrass friendly mooring, Des Maslen, on the ABC New Inventors series in 2007.

<http://www.abc.net.au/tv/newinventors/txt/s1940114.htm>

NSW DPI is conducting a three year trial of seagrass-friendly mooring devices in partnership with Sydney Metropolitan CMA, NSW Maritime and Manly Council. The mooring device is drilled into the seabed, and a shock absorber raises the connecting rope off the seafloor before it connects to the mooring float. This protects seagrass beds which are damaged by chain drag from traditional mooring devices. The trial, funded by the Australian Government through Bringing Back the Fish, offers boat licencees a free device and three years free maintenance in priority areas of Manly Cove. For more information, contact Scott Nichols 02 8437 4909.

scott.nichols@dpi.nsw.gov.au

First fishers for fish habitat forum a great success



Fishers on location during the forum. Photo: Charlie Jenkins NSW DPI

Nearly 80 participants converged on Ballina in June for the first ever Fishers for Fish Habitat Forum. Recreational fishers from across NSW and interstate joined scientists and natural resource managers to discuss impacts on fish habitat, how to improve habitat for native fish and how fishers can put something back into the sport they enjoy. The two day event included a field trip to rehabilitation sites in the lower Richmond catchment

and a dinner with fishing personality Steve 'Starlo' Starling. The event was a major success with all participants supportive of the Fishers for Fish Habitat project and of the Department hosting a similar event in the future. The Fishers for Fish Habitat forum was funded by the Natural Resources Advisory Council and the NSW Recreational Fishing Trusts. For more information about the forum or Fishers for Fish Habitat, contact Charlie Jenkins. charlotte.jenkins@dpi.nsw.gov.au

Bob Dove, editor of the Hastings Fly Fishers Newsletter, had this to say about the forum in the July newsletter.

On June 18th and 19th I attended the inaugural Fishers for Fish Habitat Forum held in Ballina. It was a very interesting forum and conference. I thought I knew a little about fish habitat and I was right. I knew a little. I now know a lot more. There were numerous expert guest speakers from DPI and the CMA covering aspects of fish habitat, wetlands management the status of recreational fishing in NSW and the possible effects of climate change in the future.

A field trip was conducted around various waterways in the area that showed the effects of drainage gates and culverts. How these impacted upon fish breeding and migration up and downstream was made very clear to everyone. It was a 'Bass eye View' of rivers and streams in the area. The effects of salt-water swamp draining was explained and its contribution to acid sulfate soil demonstrated. The persons behind the organisation of the conference are to be congratulated and I hope that there will be subsequent conferences. If there are then I recommend attendance by all who can manage it.

Government depts cop a great deal of criticism which sometimes it could be argued is warranted. However, in this case the government departments behind the fish habitat conference receive a deserved pat on the back. A particular thank you to Charlotte Jenkins, conservation manager from Wollongbar DPI research office. Charlotte worked tirelessly in organising and presenting the conference, which was deemed a success by all I spoke to up there. In future issues information from the conference and some articles on fish habitat, wetlands and catchment management will be included.

Demonstration reach will help restore fish habitat

Euabalong Town Common now has a demonstration reach to show how instream and riverside aquatic habitat are assisting native fish in the Lower Lachlan. The reach is part of a project to encourage landholders to undertake habitat works on their own properties. Protecting riverbanks and managing stock access to the river reduce sediment entering the river and protect town water supply pumps. The demonstration reach is a joint initiative of the Lachlan CMA, Cobar Shire Council, Euabalong Town Common Committee, and NSW DPI. For more information contact Nathan Reynoldson.

nathan.reynoldson@dpi.nsw.gov.au

A small break in the causeway: a giant leap forward for fish



Little River causeway before and after remediation. Photos: Kirby Byrne NSW DPI

Remediation of a causeway on the Little River in NSW Central West has opened up 63km of water for native fish. Little River is one of the most pristine waterways in the Central West catchment. It has large areas of excellent riparian vegetation and deep refuge pools that are home to a healthy array of native fish species ranging from small gudgeons to the larger freshwater species, the Murray cod and golden perch. The river is also a haven for at least five endangered freshwater species. The 400 mm high causeway was built in 1951 on natural bedrock in a shallow section of the river. The Department of Lands Soil Conservation Service removed part of the causeway and adjusted large protruding rocks to prevent damage to vehicles fording the river. Parts of the causeway were kept intact to bypass a natural boggy spring, to help stabilise the bank, and reduce the impact of vehicles on the river bank. The project is a collaboration between Central West CMA and NSW DPI. For more information contact Kirby Byrne.

kirby.byrne@dpi.nsw.gov.au

Fish passage restored in Billabong Creek

NSW DPI has worked in partnership with the CMA and landholders to remove a road crossing on the Billabong Creek, 15km east of Culcairn, as part of the Bringing Back the Fish project. The original 1.2m pipe culvert was a complete barrier to fish passage due to high velocities and limited lighting within the pipes. CMA funding enabled DPI to replace the concrete pipes with a multi celled box culvert crossing so that native fish now have 117km of unimpeded aquatic habitat. For more information contact Nathan Reynoldson.

nathan.reynoldson@dpi.nsw.gov.au



Above: This 'fish-unfriendly' pipe culvert has been replaced by a palatial new box culvert crossing. Photos: Nathan Reynoldson NSW DPI

Wilcannia makes more fish

As part of the 'Wilcannia make more fish?' project funded by the Western Catchment Management Authority, NSW DPI is undertaking a range of on-ground works and engaging the Wilcannia Aboriginal community. DPI has installed 525 large woody habitat (snags) at 12 priority sites, and in coming months will fence up to 9km of riparian vegetation, and provide 6 alternative watering points to protect and improve 18km of river frontage currently under substantial grazing pressure. NSW DPI has also organised training for four members of the Wilcannia Aboriginal community in native plant identification, seed collection and propagation techniques. Training was undertaken by horticulture and indigenous studies teacher Scott Lillis through TAFE Western NSW. The training helped members of the local community better understand the role of native riparian vegetation and gave students skills to improve native fish habitat in the Darling River near Wilcannia. NSW DPI hopes to engage these students in the future to plant trees grown from the seed collected during the course, and improve the health of the Darling River. For more information, contact David Cordina.

david.cordina@dpi.nsw.gov.au



Now you see them.....now you don't! Some of the 525 snags installed in the Darling River near Wilcannia to improve fish habitat. Photos: Martin Casey NSW DPI

New floodgate for Jellat Jellat Creek, Bega

As part of the Bringing Back the Fish project, NSW DPI has worked with local landholders to replace old wooden flap gates on a floodgate structure at Jellat Jellat Creek, 8km south of Bega. The floodgate manages water movement into a complex of SEPP14 coastal wetlands including Betunga Swamp, Benooka Lake (Whiteley's Waterhole), Penooka Swamp and Horseshoe Lagoon. Landholders had to get into the water to close the old gates. Now they stay dry on the safe work platform and winch the gates open and closed. The new gates will be able to stay open more often as there is less need to pre-emptively close them in preparation of rising water, so fish will have more opportunity to access the upstream creek and wetlands. The works complement the Fish Friendly Farms project which replaced a stock bridge crossing and funded revegetation of the Jellat Jellat Creek riparian zone. For more information, contact Scott Nichols.

scott.nichols@dpi.nsw.gov.au



Above: The old wooden floodgates, and the new gates with winches and platform. Photos: Scott Nichols NSW DPI

Longer lower fishway helps Lane Cove fish

A longer, lower fishway at Lane Cove weir means fish now have more time to use it. The original fishway, built on the upstream side of the weir, was only accessible at the top of the tidal cycle when water covered a step in one of the weir's culverts. The new longer, lower fishway is now accessible to fish for half the tidal cycle, which makes it easier for them to move into 30 km of upstream habitat. Work is continuing to improve the upstream (older) section of the fishway to further improve conditions for fish. NSW DPI, Sydney Metropolitan CMA and Department of Environment and Climate Change, collaborated on the project with funding from CMA's Waterways Health Strategy and NSW DPI's Bringing Back the Fish project. For more information, contact Scott Nichols.

scott.nichols@dpi.nsw.gov.au



Above: The original culverts at low tide, and the new fishway near high tide. Photos: Scott Nichols NSW DPI

New culverts for Nelligen

Works are well underway to improve flushing flows through The River Road causeway at Nelligen, near Eurobodalla. Narrow pipes under the causeway created high water speeds at high tide and in floods, making it difficult for fish to move into 11km of upstream habitat. Eurobodalla Shire Council has now installed two box culverts next to the existing pipe culverts to reduce water speeds. Council had previously sealed approaches to the causeway to minimise sediment washing into the creek. NSW DPI had identified the causeway as the second highest priority road crossing site in the Southern Rivers CMA region. The project was funded by Bringing Back the Fish and the Saltwater Fishing Trust. For more information contact Scott Nichols.

scott.nichols@dpi.nsw.gov.au



Above: The problematic causeway pipes at low tide. Photo: Scott Nichols NSW DPI



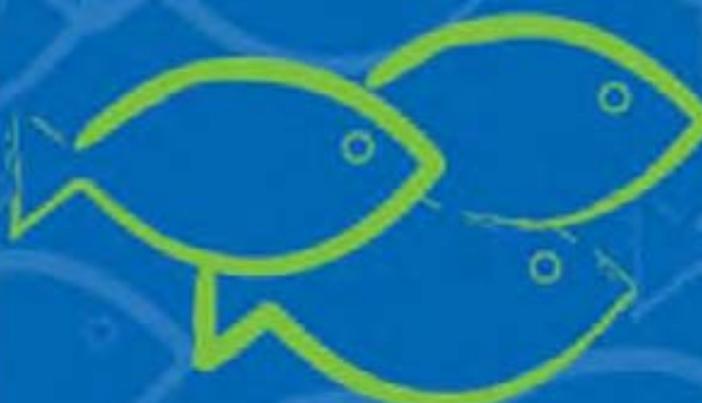
Above: Traffic diversion around the culvert works. Photo: Ian Macgrath, Eurobodalla Council

More complex habitat installed between Brewarrina and Bourke

As part of the Brewarrina to Bourke demonstration reach project funded by the Western CMA, NSW DPI has introduced another 250 large woody habitats (snags) into the Barwon-Darling River, bringing the total to over 450 habitats. The snags have been installed in 5 of 11 previously resnagged sites, to build on less complex structures previously installed. Scientists now have the opportunity to investigate native fish response to habitat of varying levels of complexity. For more information, contact David Cordina.

david.cordina@dpi.nsw.gov.au

Would you like to help make more fish... naturally?



Well... now you can!

Grants of up to \$30,000 are now available for projects to improve fish habitat.

Remember:
Habitat makes fish happen!

Fish habitat rehabilitation projects of direct benefit to recreational fishing that involve recreational fishers will be given preference.

Want to find out more?

Then go to www.dpi.nsw.gov.au and search for 'Fish Habitat Grants' or contact Charlotte Jenkins 66261107 or Sharon Molloy 49163926 or email fish.habitat@dpi.nsw.gov.au

Proudly brought to you by the NSW Recreational Fishing Trusts in conjunction with NSW Department of Primary Industries



Recreational Fishing Trusts
NSW DEPARTMENT OF PRIMARY INDUSTRIES

\$350,000 audit of Williams River fish

Hunter Water is funding researchers from NSW DPI to build a database of fish communities in the Williams River. If the proposed Tillegra Dam is approved, the study will help in the design of a long-term fish monitoring program to identify any changes to the resident fish population and guide decisions on the dam's operation, habitat rehabilitation and other river improvement works.

http://www.hunterwater.com.au/files/HW_eNews24.pdf

Central West wetland plans in demand



Above: A healthy, well-managed wetlands on Boree Plains.
Photo: Rodney Price NSW DPI

Several landholders in the Central West catchment now have wetland management plans thanks to Central West CMA funding and NSW DPI expertise. Nine plans are completed and the CWCMA has funded a further three landholder plans including one being developed for the Warren Aboriginal Land Council. A further two plans are being produced in the Macquarie Marshes for the Department of Environment and Climate Change under the Rivers Environmental Restoration Program. DPI wetland officers work with each landholder and agency to identify goals and actions needed to manage the wetlands, and assist with funding applications. Well managed wetlands such as this one on Boree Plains provide healthy

habitat for a wide diversity of plants, animals, water birds and fish and can also be an important production resource for landholders. For more information contact NSW DPI Dubbo Office on 02 6881 1284.

NSW NEWS

Lake Macquarie is much healthier

WATER clarity in Lake Macquarie has improved by 96 per cent in the past 10 years. Since 1999 the Lake Macquarie Improvement Project has spent \$27 million reducing sediment and nutrient inflows. Hundreds of volunteers have rehabilitated wetlands and planted 600,000 plants. Seagrass cover, the foundation of the lake's ecosystem, has increased by 25 per cent or 2.5 million square metres over that period.



Above: How Herald cartoonist Peter Lewis saw the Lake Macquarie in 1997.

Source:

<http://www.theherald.com.au/news/local/news/general/lake-macquarie-much-healthier-naturally/1553372.aspx>

Hexham swamp opens to king tides for the first time



Hexham Swamp Rehabilitation Project, a project of the Hunter-Central Rivers CMA, aims to reintroduce tidal flows to Hexham Swamp to improve habitat for migratory waders and waterbirds, and nursery areas for fish and prawns. The tide is entering via Ironbark Creek floodgates, first opened in December 2008. The floodgates have to be opened gradually to check changes in water levels and water quality, and monitoring team has been trying to check levels during king tides but was unable to do so until late June. In summer's king tides the gates were closed to minimise mosquito breeding, and in the May king tides they were closed due to flood warnings. In late June's king tides, the floodgates were finally allowed to open so that Hunter Central Rivers CMA could monitor water levels to confirm tidal inundation models.

http://www.hcr.cma.nsw.gov.au/enews_july2009.html

Ironbark Creek floodgates open in June. Photo: Jenny Bates

<http://blogs.abc.net.au/nsw/2009/06/sunrise-at-the-hexham-floodgates.html>

AUSTRALIAN NEWS

New water release strategy for Snowy River habitat

A new strategy for water releases from Jindabyne Dam into the Snowy River will allow greater flow variability to maintain habitat in the wet - dry littoral zone along the Snowy River, with two peak flows during summer designed to improve the water quality in the deep pools found in the Jindabyne Gorge. All releases will be from surface waters further improving the environmental outcomes. The strategy is the result of recommendations by the Snowy Scientific Committee.

http://snowyssc.org/pdf/ssc_2_2009_release_recommendations_20092d2010.pdf

Photo: http://www.ballarat.edu.au/ard/sci-eng/staff/proj_photos/snowy_river.JPG

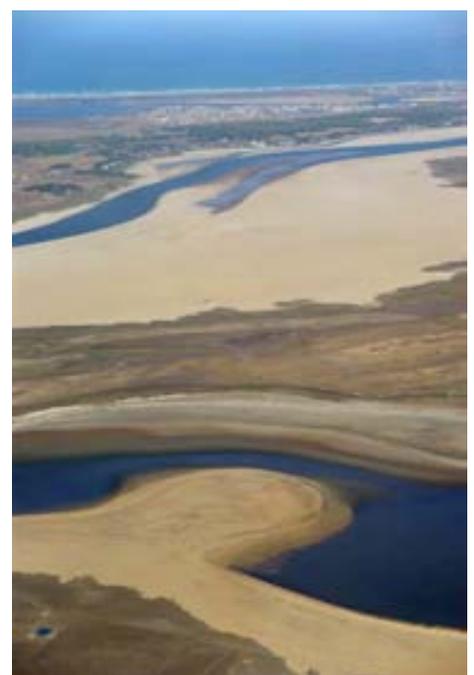


Southern Coorong in dire straits

A small number of salt-tolerant species is all that survives in some areas of the Coorong lakes system at the mouth of the Murray river due to record low flows. A three-year study, led by CSIRO, has found that the most remote southern lagoons are now hyper-saline, with water between four and six times saltier than seawater. A crucial seagrass, *Ruppia tuberosa*, has all but disappeared from the south lagoon and with it bird and fish species. All that remains is a species of salt-water shrimp and two bird species, the banded stilt and chestnut teal. The CSIRO study recommends an influx of freshwater; the SA govt is investigating pumping out the hypersaline water and replacing it with seawater to prevent the dry lake beds oxidising acid sulfate soils.

<http://www.theage.com.au/environment/the-coorong-is-dead-but-can-be-revived-20090722-dtl3.html?FORM=ZNR5>

Photo: <http://csiro.au/files/files/pr9t.pdf>



INTERNATIONAL NEWS

Global warming is making fish smaller

Fish have lost half their average body mass and smaller species are making up a larger proportion of European fish stocks as a result of global warming, a study has found. Individual species have lost an average of 50 per cent of their body mass over the past 20 to 30 years while the average size of the overall fishing stock had shrunk by 60 per cent. Smaller fish tend to produce fewer eggs. They also provide less sustenance for predators - including humans - which could have significant implications for the food chain and ecosystem. Earlier research has already established that fish have shifted their geographic ranges and their migratory and breeding patterns in response to rising water temperatures. It has also been established that warmer regions tend to be inhabited by smaller fish.

<http://www.abc.net.au/news/stories/2009/07/21/2631836.htm?site=news>

Jellyfish dominating oceans

Giant jelly fish are taking over parts of the world's oceans due to overfishing and other human activities, particularly in Southeast Asia, the Black Sea, the Gulf of Mexico and the North Sea. Jellyfish are normally kept in check by fish, which eat small jellyfish and compete for jellyfish food such as zooplankton, he says. However overfishing means jellyfish numbers are increasing, and as they feed on fish eggs and larvae, fish numbers are further affected. Nitrogen and phosphorous in run-off cause red phytoplankton blooms, which create low-oxygen dead zones where jellyfish survive, but fish can't.

<http://www.abc.net.au/science/articles/2009/06/08/2592139.htm>

HABITAT RESOURCES

Keep pests off your boat

National biofouling management guidelines are now available for recreational fishers. The guidelines have been developed to help recreational fishers prevent their boats becoming havens for aquatic pests.

http://www.marinepests.gov.au/_data/assets/pdf_file/0009/1109592/Biofouling_guidelines_rec.pdf

Fish habitat in Queensland

OceanWatch has produced this illustrated guide to fish habitat.

http://www.oceanwatch.org.au/documents/OldAquaticHabitatPhotoboards_000.pdf

Fish habitat: More than meets the eye

This Canadian booklet outlines what fish need to survive and prosper.

<http://www.qc.dfo-mpo.gc.ca/habitat/en/Pdf/D%E9pliant%20anglais.pdf>

New report: Abandoned, lost or otherwise discarded fishing gear

Discarded fishing gear from commercial and recreational fishers makes habitat hazardous for fish and aquatic life. This UN report outlines the extent of the issue and suggests ways to prevent the hazard occurring.

http://www.unep.org/regionalseas/marinelitter/publications/docs/Marine_Litter_Abandoned_Lost_Fishing_Gear.pdf

Article: Engaging recreational fishers in management and conservation

This paper by Granek et al in Conservation Biology journal includes case studies of recreational fisher involvement in conservation in Mongolia, Germany, South Africa, US, Canada and Australia.

<http://megafishes.org/wp-content/uploads/2008/10/conservation-biology-article-oct2008.pdf>

Environmental water allocation forum

An environmental water allocation forum held in Canberra in June included discussion of allocation in regulated and unregulated systems, policy instruments for achieving environmental water allocation, and the linking of environmental water allocation to the broader context of regional water plans.

<http://lwa.gov.au/news/2009/jun/19/environmental-water-allocation-forum-presentations>

Land and Water publication clearance

Land and Water Australia has closed and its enormous catalogue of free publications is being dismantled. There are several publications available on aquatic habitat, including rehabilitation manuals for Australian streams, wetland management guides, and guides to managing creeks and waterways. Access the full catalogue at the website below.

<http://lwa.gov.au/products/stock>

HABITAT DATES

23-27 August

SERI conference on ecological restoration, Perth

<http://www.seri2009.com.au/>

21-24 September

12th international river symposium, Brisbane

<http://www.riversymposium.com/>

18-21 October

International river health conference, Canberra

<http://www.onelifeoneworldourfuture.com/index.php?pageid=218>

18-24 October

National water week

<http://www.nationalwaterweek.org.au/>

[11th River Restoration Conference](#)

14-15 April 2010

York, UK

ABOUT NSW DPI AND FISH HABITAT

NSW DPI is responsible for management of, and research into, fish habitat in NSW.

On-ground activities

Map, priorities and modify structures that block fish passage

Map and rehabilitate aquatic habitat such as wetlands.

Reintroduce snags (large woody debris) into streams.

Revegetate streambanks to provide habitat and improve the quality of water running into streams.

Research activities

Document the fish communities associated with different aquatic habitats

Understand the basic biology of key fish species- what they eat, when they breed, and their habitat requirements.

Evaluate management actions to see how effective they have been and what improvements may be possible.

Policy and planning activities

Review developments that may impact on fish habitats and negotiate impact reduction and/or compensatory works

Incorporate aquatic habitat protection requirements into land use planning, water management, and estuary and floodplain management.

Help developers, local councils and other state agencies understand the importance of aquatic habitats for fish and options for ensuring their protection and rehabilitation.

Aquatic habitat staff

Sydney (Cronulla) 02 9527 8411

Sydney (Wollstonecraft) (02 8347 4909

Batemans Bay 02 4478 9103

Huskisson 02 4441 8969

Port Stephens 02 4982 1232

Wollongbar 02 6626 1200

Tamworth 02 6763 1100

Dubbo 02 6881 1270

Tumut 02 6947 4188

Narrandera 02 6959 9021\

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Research staff

Port Stephens 02 4982 1232

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Cronulla 02 9527 8411

<http://www.dpi.nsw.gov.au/fisheries/habitat>

Website

Send us your news

If you have news about fish habitat activities in your area, we'd like to hear from you.

Email Rebecca Lines-Kelly with your news and suggestions.

rebecca.lines-kelly@dpi.nsw.gov.au

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rebecca.lines-kelly@dpi.nsw.gov.au

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