

Newstreams

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

No 23 December 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 Industry & Investment NSW. 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.

DEPARTMENT NEWS

Billabong restoration at Brewarrina

Old Mission Billabong east of Brewarrina fills from the Barwon River during high flows and is a significant historical and cultural site for the Ngemba Aboriginal people. The Wetlands on Farms project produced a management plan in consultation with members of the community identifying a range of threats and actions needed to remediate this site and protect the remains of the Old Mission buildings and cemetery. The local community subsequently established a landcare group and received funding from the Western CMA to fence the site and prevent cattle access, control weeds and pest animals, manage waste and plant 1500 trees and shrubs. The funding also helped train the landcare group and others in Certificate 2 and 4 of Conservation and Land Management. The Ngemba Billabong Restoration and Landcare Group were runners up in this year's Indigenous Landcare Awards and in the future they are hoping to receive funding to buy the balance of the billabong from neighbours. For more information contact Libby McIntyre 02 6881 1233.



Above: Bert Gordon from Western CMA at the restored billabong. Photo: Libby McIntyre I&I NSW

Green light for fishway

A fishway to be constructed at Brewarrina Weir will allow fish uninterrupted access to a 324 kilometre reach of the Barwon-Darling river system. The reverse rock-ramp fishway design will be built entirely within the existing weir pool and is the first of its kind in Australia. The design ensures the preservation of the Ngannhu, or Aboriginal fishtraps (pictured) immediately downstream of the weir. I&I NSW will construct the fishway which is funded by Western CMA, NSW Environmental Trust, Murray Darling Basin Authority and NSW Recreational Fishing Trusts as part of the Brewarrina to Bourke demonstration reach project.

<http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/brewarrina-fishway>



Above: Brewarrina fish trap. Photo: Heritage NSW.

http://www.heritage.nsw.gov.au/images/history/brewarrina_fish_trap_2.jpg

Purple spotted gudgeons return to Gulligal Lagoon

After many years absence, purple spotted gudgeons have returned to Gulligal Lagoon on the Namoi River. One hundred of the fish, bred at I&I NSW's Narrandera hatchery, were released into the lagoon in October. The lagoon has been restored thanks to the Namoi Aquatic Habitat Initiative project and the Wetlands on Farms program. It is now fenced off from cattle, native trees have been planted on the banks, erosion is controlled, and fish passage improved. The lagoon filled after flooding late last year, so the fish now have ideal living conditions. Fish numbers and water quality will be monitored regularly. Purple spotted gudgeons were once abundant throughout the entire Murray-Darling Basin, but now they're under threat, with impacts from alien fish, the removal of aquatic plants and changes to natural flows. The Namoi Aquatic Habitat Initiative, managed by I&I NSW, is supported by fishing clubs, councils, landholders, Indigenous groups and industry to benefit native fish in the Namoi catchment. For more information, contact Milly Hobson 02 6763 1206.

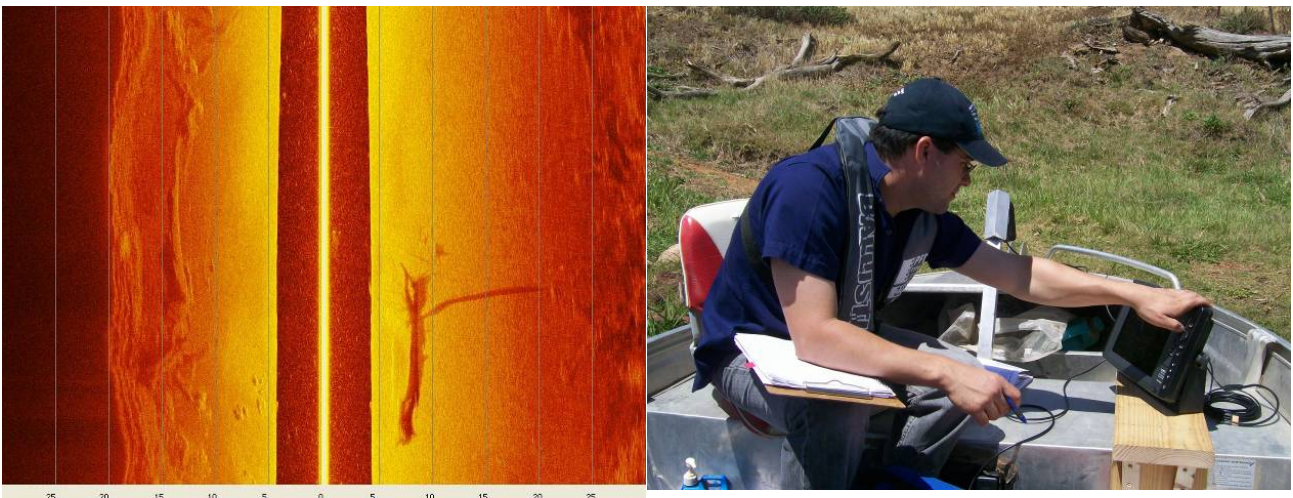


Above: I&I NSW conservation managers Milly Hobson and David Ward with a gudgeon fingerling about to be released into the lagoon. Photo: Anthony Townsend I&I NSW

Smarter use of technology in the Macquarie

Fisheries staff from the Conservation Action Unit are using technology developed for recreational angling to map fish habitat condition in the Macquarie River. Project staff operate a side-scanning sonar mounted in a small punt to measure the depth of refuge pools and record the location and extent of woody structure (snags) submerged in the river. The sonar also picks up the presence of water plants. Features such as bank erosion, stock access and weed infestation are recorded on a GPS/GIS interface. Historical accounts and explorer diaries will be used to gain an idea of the original condition of the river and a habitat action plan will be developed to prioritise future activities. As part of the Macquarie RiverSmart project funded by Central West CMA and Murray Darling Basin Authority, the habitat assessment of the river and riparian area to date has been from Burrendong Dam outlet valve to Dubbo, but will extend to Marebone Weir near the Macquarie Marshes over coming months. For more information email Sam Davis or ring her 02 6881 1284.

sam.davis@industry.nsw.gov.au



Above left: Output from the side-scanning sonar showing river depth, width & submerged fish habitat. Above right: David Cordina checks the image on the sonar. Photos: Sam Davis I&I NSW.

Lake Woytchugga restoration

Thanks to a Wetland on Farms management plan, Wilcannia's Lake Woytchugga, one of a few off-channel Darling River wetlands that are protected, has been restored. The ephemeral lake has significant cultural and environmental importance and normally receives water every 7-10 years. When full it supports a diverse range of flora and fauna, and is an important drought refuge. With funding from Western CMA, the Wetlands on Farms project produced a management plan for Central Darling Shire Council to protect and conserve 2045 ha of the lake. After initial community consultation, 25 km of fencing has been installed to reduce access, and weeds and rubbish have been controlled and removed. Two interpretive signs are now up at Wilcannia and on the Barrier Highway overlooking the lake. For more information contact Libby McIntyre 02 6881 1233.

Improved Mongarlowe culverts benefit Macquarie perch

The Macquarie perch population in Mongarlowe River has received a boost thanks to recently completed works at Bourkes Crossing improving access to 20km of upstream habitat. Bourkes Crossing crosses the Mongarlowe River (a tributary to the Shoalhaven River) 17km from the township of Braidwood, and 3km from the village of Mongarlowe. Three large box culverts have replaced pipe culverts that created high water velocities and stopped fish from moving upstream at low to medium flows. The new culverts include a deep cell to allow fish passage at low flows, and two higher set culverts allowing water transfer at medium and high flows. The works were funded through the Bringing Back the Fish project with support from Southern Rivers Catchment Management Authority and Palerang Council.

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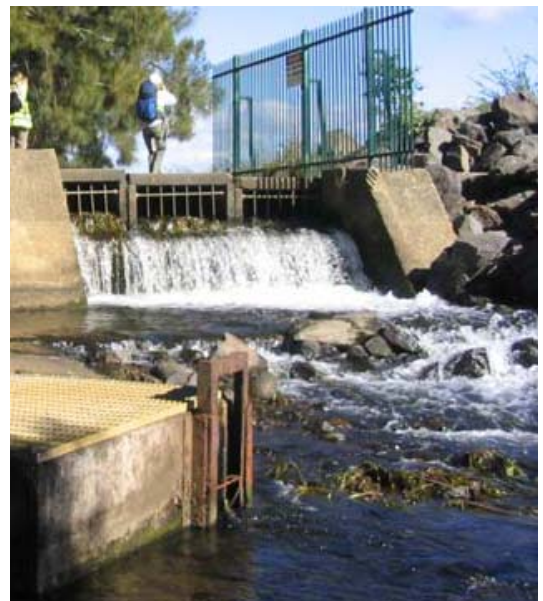


Above: Narrow pipe culverts, left, have been replaced by large box culverts that allow fish passage even in low flows. Photos: Scott Nichols, I&I NSW.

New fish ladder for Penrith weir

Penrith Weir is off limits to fishers until 28 February 2010 while the weir's fish ladder is converted to a new vertical slot fishway. The new design will allow thousands of fish of all sizes to move upstream of the weir. It will allow more natural migration for Australian bass which move from freshwater to brackish saltwater during their breeding season and then return to freshwater. I&I NSW researchers will assess fish numbers around the fishway which is part of a Sydney Catchment Authority upgrade to improve environmental flows in the river from upstream water supply dams. During the weir closure fishing is still allowed upstream and downstream of the weir.

<http://www.dpi.nsw.gov.au/aboutus/news/recent-news/fishing-and-aquaculture/penrith>



Right: Existing fish ladder at Penrith Weir. Photo: NSW Planning

New fishway on Currowan Creek

A full width rock ramp fishway has been completed on The River Road causeway at Currowan Creek, 20km from the township of Nelligen on the south coast. The causeway acts as a bed control structure so it was not possible to install culverts. Instead, the fishway was built and water levels over the crossing raised by 10cm, allowing native fish, including the threatened Australian grayling, access to approximately 16km of habitat upstream. The project was funded through the Bringing Back the Fish project and the Recreational Fishing Trust, with support from Southern Rivers Catchment Management Authority and Shoalhaven City Council.

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**Above: The new rock ramp fishway , right, is much more fish friendly than the original causeway, left.
Photos: Scott Nichols I&I NSW**

'Think like a fish' stormwater workshop

22 people attended a workshop at Casino last month to learn how to manage aquatic habitat in urban stormwater drains, with a focus on the needs of the endangered Oxleyean pygmy perch. The participants rated the workshop highly and appreciated its mix of talks and field site visits and the importance of 'thinking like a fish'. This bodes well for future management of stormwater drainage systems and the natural habitat they often drain into. This joint project between I&I NSW and Richmond Valley Council, funded by the Environmental Trust, also includes the development of four factsheets. These will be available on the council and I&I NSW websites in early 2010. For more information contact Liz Baker.

liz.baker@industry.nsw.gov.au



RVC administrative engineer Michael McKenzie discusses drain maintenance practices near Evans Head.

63 applications for Habitat Action Grants

There is a high level of interest the NSW Recreational Fishing Trust's Habitat Action Grants program this year. The Trust has received 63 applications requesting more than \$1.5 million for projects with in-kind funding of over \$3.1 million. Proposed projects include fish passage improvement, re-snagging, saltmarsh and mangrove rehabilitation, and riverbank revegetation, weed control, fencing, and erosion control. A technical assessment panel will assess each application and recommend proposals to Trust expenditure committees. Announcements about successful proposals are expected in December 2009-January 2010. For more information contact Charlotte Jenkins at NSW Industry & Investment.

charlotte.jenkins@industry.nsw.gov.au

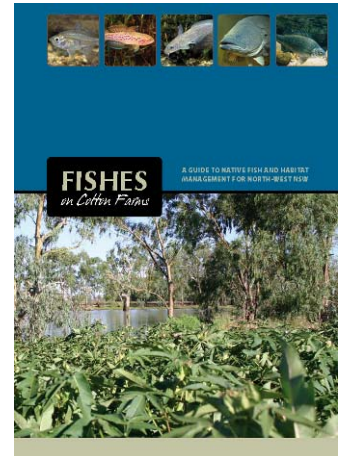
Fish rescues planned for the Lachlan River

I&I NSW plans to rescue Lachlan River fish this summer to prevent them dying in deoxygenated water. There is so little water in Wyangala Dam that water will only be released into the Lachlan in short pulses which are expected to push low-quality water full of rotting leaves and other organic matter down the river, causing oxygen levels to plunge. I&I NSW conservation officers are prepared to stun fish, including endangered Murray cod, so they float to the top of drying and oxygen-deprived pools from where they can be rescued. The aim is to rescue as many fish as possible to save the genetic integrity of the river.

<http://theland.farmonline.com.au/news/state/agribusiness-and-general/general/all-hands-to-big-fish-rescue/1649530.aspx?src=enews>

New guide helps cotton farmers help fish

Irrigators and anglers in North West NSW will be able to learn more about how they can help native fish and their habitat with the release of the 'Fishes on Cotton Farms'. The 54 page book has been developed to help landholders protect native fish and includes information on common species of fish in north-west NSW. The guide, produced by Industry & Investment NSW, the Cotton Catchment Communities CRC and the Murray-Darling Basin Authority, will be launched on Wednesday, December 16 at the Australian Cotton Research Institute Narrabri, in partnership with the Namoi Cotton Growers Association. For more information contact Anthony Townsend 02 6763 1440.



Tracking large predatory fish

NSW I & I fisheries researcher Charles Gray has received \$450,000 over three years to monitor the movements of large predatory fish in estuaries and the coastal ocean including mullet, flathead and bream. Little is known about the distribution and movements of large fish in estuaries and the coastal ocean so this project will determine 'hot-spots' for the fish, where they live and breed, and their migratory patterns. The project is funded by I&I NSW, Australian Research Council and the Recreational Fishing Trust.

<http://www.dpi.nsw.gov.au/aboutus/news/recent-news/general/funding-boost-for-forests-and-fisheries-projects>

Comments invited on draft carp control plan

The NSW Government has unveiled its draft carp control plan, which outlines what is currently being done and what should be done to stop further spread of carp, control the size of carp populations and increase the understanding and involvement of the community. Public comment and submissions on the plan can be emailed by the close of business Friday 29 January 2010.

<http://www.dpi.nsw.gov.au/fisheries/pests-diseases/freshwater-pests/species/carp/draft-control-plan>

Black cod recovery plan

A draft recovery plan for black cod (*Epinephelus daemeli*) is on public exhibition until 18 December 2009. A large reef-dwelling fish that occurs in the warm temperate and subtropical waters of the south western Pacific, including off south eastern Australia, black cod is listed as a vulnerable species under the NSW Fisheries Management Act 1994.

<http://www.dpi.nsw.gov.au/fisheries/species-protection/conservation/what/recovery/black-cod>

NSW NEWS

Macquarie marshes structure audit

An audit of 119 banks, levees and channels in and around the Macquarie Marshes has seen the removal or modification of 28 structures and there is hope that water flows through the marshes will improve as a result. To read the media release about the audit go to the website below, scroll down to NSW Office of Water and 21 October 2009.

<http://www.water.nsw.gov.au/About-Us/Media-Releases/default.aspx>

Richmond fish kills caused by de-oxygenated backswamp water

Researchers have pinpointed the cause of fish kills which often follow floods on the Richmond River floodplain. The source is deoxygenated waters in the mid-estuary backswamp basin. In the past these swamps were inundated for about 100 days after the main floodwaters receded, and the water gradually evaporated. Now drainage works allow the backswamps to drain in a matter of weeks, so the river receives large slugs of deoxygenated water. The deoxygenation is caused by rotting of dryland pastures that grow in the drained swamps and cannot tolerate inundation. Microorganisms feeding on the dead vegetation consume all the oxygen in the floodwaters. The warmer it is the faster the microorganisms decompose the vegetation and consume the oxygen which explains why the fish kills occur in summer rather than winter.

http://www.rccc.nsw.gov.au/index.php?element=Issue_7_2009

Fishers want desalination plant at Albury

Recreational fishers have called for a desalination plant to be built at the Norske Skog paper mill near Albury to process saline waste water before it is discharged into the Murray River. NSW Office of Water has allowed Albury paper mill Norske Skog at Albury to discharge three megalitres of moderately saline wastewater into the Murray River each day when river flows exceed 1800 megalitres/day. The mill has to meet strict water licence conditions and fund the continuous operation of the nearby Billabong Creek salt interception scheme.

<http://abc.com.au/news/stories/2009/10/13/2712709.htm>

http://www.water.nsw.gov.au/Water-management/Water-quality/Salinity/Salt-interception/quality_salinity_salt_interception_billabong/default.aspx

Water for Lowbidgee wetlands

The Commonwealth has released 2000 ML of water at Mercedes Swamp and Twin Bridges wetland, upstream of Balranald on the Lowbidgee Floodplain in the Murrumbidgee Catchment. The two sites are important breeding areas for the endangered Southern Bell Frog, and have been watered by the NSW Government for the past two years.

<http://www.climatechange.gov.au/en/minister/wong/2009/media-releases/October/mr20091028b.aspx>

AUSTRALIAN NEWS

Rare yarra pygmy perch found in SA



Rangers sifting through a catch of native fish at a wetlands open day near Lameroo in October found two female yarra pygmy perch (*Nannoperca obscura*) with eggs. It was an exciting find as the species has not been found in the area since 2005 so was thought to be extinct. It is listed nationally as vulnerable.

<http://www.abc.net.au/news/stories/2009/10/09/2709226.htm>

Photo: Michael Hammer.

<http://www.environment.sa.gov.au/biodiversity/southeast-bcp/images/yarra-pygmy-perch.jpg>

Riparian plant materials feed fish

Riparian plantings are vitally important to aquatic foodwebs according to recent research which found plant material and associated biofilms from Eucalyptus, Phalaris (grasses) and Juncus (rushes) species are the major energy sources assimilated by macroinvertebrates in waterways over spring and summer. The importance of these energy sources is reflected in populations of predatory macroinvertebrates and fish. As streams dry to disconnected pools in summer, higher nutritional materials such as filamentous algae and macrophytes become important food sources for the macroinvertebrates. Read the paper by Reid et al in *Freshwater Biology*.

<http://www3.interscience.wiley.com/journal/120121450/abstract>

Queensland celebrates 40 years of fish habitat areas

This year Queensland celebrates the 40th anniversary of its declared fish habitat area network which protects fish feeding, breeding and nursery habitats in estuaries and inshore areas from development, while still allowing legal fishing. The first seven habitat areas were established in January 1969, and there are now 70 protecting more than 880,000 ha of high-quality fish habitat.

http://www.dpi.qld.gov.au/28_13189.htm

MDBA calling for comments on water extraction limits

The Murray-Darling Basin Authority is calling for comments on the amount of water that can be taken from the Basin's rivers, waterways and groundwater without compromising the environment. Submissions can be any length and any form (email, fax, audio cassette or mail) and need to reach MDBA by 18 December 2009.

http://www.mdba.gov.au/media_centre/media_releases/mr-water-extraction-limits

Gladstone creek restoration

Gladstone Regional Council recently secured funding through OceanWatch Australia's Tide to Table program to restore a bank being used for boat access on a near pristine creek. Road base was removed and large boulders installed to prevent vehicle and vessel access. Council also strategically placed large woody debris over the sites to accelerate the recovery of mangroves and other vegetation on the creek bank. For more information, contact Michelle Haase on 4181 2999.

New report on Coorong crisis

A new report on the water crisis in the Coorong says increased flows from the Murray river are the only hope for its survival. Salinity levels are limiting the growth of freshwater plants and fish that were part of the food chain for the Coorong's once huge bird populations. The survival of at least three freshwater fish species is threatened, and one is possibly locally extinct. Marine and estuarine organisms are invading the lakes and tubeworms have colonised hard surfaces in Lake Alexandrina, producing heavy, coral-like growths that weigh down and kill freshwater turtles and other animals.

http://www.wetrivers.unsw.edu.au/CLLMM_final_SCREEN.pdf



Above: Volunteers remove marine tubeworms from Coorong freshwater turtles.

<http://www.abc.net.au/news/stories/2008/07/14/2303044.htm?site=news>

Freshwater fish taskforce established

A national task force has been set up to help preserve native freshwater fish species. Group president Professor Gordon McGregor Reid says there is a need to rehabilitate ecosystems, and many problems stem from state and territory governments cutting off wetlands during drought.

<http://www.abc.net.au/news/stories/2009/11/26/2754098.htm>

INTERNATIONAL NEWS

Farm paddocks are fish sanctuaries in floods

US researchers have found that farmers' paddocks that are seasonally inundated with floodwaters create a flood sanctuary for fish, and give the fish access to high-energy foods and breeding areas. The intermittent floodways are dominated by native fishes whose behaviour may have evolved to take advantage of such conditions. Researchers discovered 13 different fish species, 10 of them native, use paddock water from December through May; of the 1,526 fish captured, almost 99 percent were native. The fish prefer shallow ditches that meander through slightly wooded areas, or have a riparian buffer of shrubs separating the channel from the paddock.

<http://oregonstate.edu/ua/ncs/archives/2009/nov/osu-study-finds-farm-fields-play-key-role-health-native-fish-species>

Priorities for wetland restoration in a changing climate

A policy paper commissioned by the Ramsar Convention on Wetlands says climate change is having a huge effect on wetland systems, and restoration and management plans will be determined by habitat type (floodplains, mangroves, seagrasses, saltmarshes, arctic wetlands, peatlands, freshwater marshes and forests).

<http://www.springerlink.com/content/g122g3213q031u46/>

California: Water for fish or agriculture?

In 2007 a Californian judge ordered the huge pumping stations of the Sacramento Delta, the largest estuary on the west coast of the Americas, to reduce the water they pumped to farms to protect the delta smelt, a translucent fish considered endangered under federal law. Drought-stricken farmers are angry their access to this water is restricted, and California is now trying to develop legislation to appease both environmentalists and farmers. In October, The Economist published a long article about this water war.

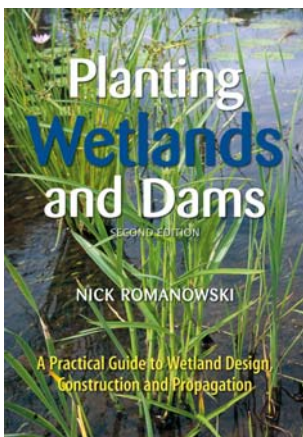
http://www.economist.com/displaystory.cfm?story_id=14699639

US focus on reservoirs as habitat

The US Fish and Wildlife Service has teamed with state fish and wildlife agencies and others in a national Reservoir Fisheries Habitat Partnership (RFHP) to change thinking and management about reservoirs for fish and their habitat. RFHP partners are addressing the systemic watershed failures that clog reservoirs, reduce their capacity and flow, and degrade fish habitat.

<http://www.fws.gov/eddies/pdfs/EddiesSummer2009.pdf>

HABITAT RESOURCES



New book: Planting wetlands and dams

This practical guide to wetland design, construction and propagation is a step-by-step, plain language guide to the creation of conditions in which wetland plants will thrive, from design and construction to collecting plants, seeds and propagation.

<http://www.publish.csiro.au/pid/6162.htm>

Climate change risks to Australia's coasts

A new report 'Climate change risks to Australia's coasts', says the coastal ecosystems likely to be most at risk from climate change include estuaries and associated wetlands, coral reefs, constrained tidal flat communities and beaches where there is a lack of sediment replenishment.

<http://www.climatechange.gov.au/en/publications/coastline/climate-change-risks-to-australias-coasts.aspx>

Eradicating carp in farm dams

I&I NSW has produced a new Primefact 'Carp in farm dams' outlining methods to reduce carp numbers in dams.

<http://www.dpi.nsw.gov.au/fisheries/pests-diseases/freshwater-pests/species/carp/farm-dams>

Right: Common carp. Image: Pat Tully, I&I NSW



Qld fish habitat guidelines

The Queensland government has produced several guidelines to help NRM groups and other stakeholders manage fish habitat in fresh, estuarine and marine waters. The guidelines provide information on planning, design and management efforts towards best management practices for fish habitats.

http://www.dpi.qld.gov.au/28_12907.htm

Marine climate change report card

Australia's first report on how climate change is affecting the sea and marine life, says Australian ocean temperatures have warmed, the flow of the East Australian Current has strengthened, marine biodiversity is changing in south-east Australia, and coral decline is likely.

<http://www.oceanclimatechange.org.au/content/index.php/site/welcome/>

HABITAT DATES

14-15 April 2010 River restoration conference, York UK

http://www.therrc.co.uk/rrc_conferences.php

12-14 July 2010 Australian Fish Biology, conference, Melbourne

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

ABOUT I&I NSW 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

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Website

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

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

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