

Talking fish



Making connections with the rivers
of the Murray-Darling Basin



Authors

Jodi Frawley, Scott Nichols, Heather Goodall and Liz Baker.

Queensland content in association with Zafar Sarac and Greg Ringwood.

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Project steering committee

Terry Korodaj (MDBA), Cameron Lay (NSW DPI), Zafer Sarac (Qld DEEDI), Adrian Wells (MDBA Community Stakeholder Taskforce), Peter Jackson (MDBA Native Fish Strategy advisor), Fern Hames (Vic DSE) and Jonathan McPhail (PIRSA).

Project Team

Scott Nichols (NSW DPI), Cameron Lay, Craig Copeland (NSW DPI), Zafer Sarac, Jodi Frawley (UTS), Heather Goodall (UTS), Hamish Sewell (The Story Project), Phil Duncan (Ngnulu Consulting), Liz Baker (NSW DPI), Terry Korodaj, Fern Hames, Jonathan McPhail, Virginia Simpson (PIRSA), Will Trueman (researcher), Pam Clunie (Vic DSE) and Steve Saddlier (Vic DSE).

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The MDBA acknowledges the intellectual property rights of the people whose stories are featured in this publication.

Note: The term *Talking Fish* is also being used by the Australian River Restoration Centre as a way of sharing knowledge about people's connection to fish and waterways.

Readers are warned that this publication may contain the names and images of Aboriginal people who have since passed away.

Photo credits (L-R): Wentworth Historical Society (at 'Kalcurreha', donor: Patsy Crozier; 2007-29-1-8), Scott Nichols, Jodi Frawley, Trish Johnson, Scott Nichols. Fish images: NSW DPI.

Abbreviations

DPI	Department of Primary Industries
PIRSA	Primary Industries and Resources SA
DENR	Department for Environment and Natural Resources (SA)
SARDI	SA Research and Development Institute
LAP	Local Action Planning Association
MDBA	Murray-Darling Basin Authority
DSE	Department of Sustainability and Environment (VIC)

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Coorong and Lower Lakes

Participants: Brian Schulz, Terry Sim, John Yelland, Tracy and Glenn Hill, Garry Hera-Singh, Henry Jones, Sally Grundy and Dean Tugwell.

Advice and field support: Virginia Simpson, Phil Duncan (Ngnulu Consulting), Jonathan McPhail.

Katarapko

Participants: Howard Hendrick, Barry Porter, Tracy Bye, Kingsley Abdulla, Todd Goodman, Malcolm Wilksch, Gilli and Gladys Stoneham and Peter Teakle.

Advice and field support: Virginia Simpson (Rural Solutions SA), Phil Duncan (Ngnulu Consulting), Jonathan McPhail (PIRSA).

Lower Darling and the Great Anabranch

Participants: William Riley, Bill Lever, Rod Stone, Jenny Whyman, Dr Clayton Sharpe, Carmel Chapman, Bill and Elaine Grace, and Trish Johnson and her family.

Advice and field support: Phil Duncan (Ngnulu Consulting).

Murray

Participants: Dr Wayne Atkinson, Gavin Vale, Dennis Lean, Wally Cooper, Marg Crago, David Green, Colin Green, Hayden Green, John Douglas, Richard Kennedy, Ken Strachan, Kelli Cunningham, Merilyn Strachan, Peter Tidd, Graham Ellis, Jody and Harry Liversidge and J.O. Langtry.

Advice and field support: Phil Duncan (Ngnulu Consulting), Dr Wayne Atkinson, Charlie Carruthers.

Goulburn

Participants: Dr Wayne Atkinson, Ken Gilmore, Mick Hall, Donny Richter, Kaye Gibb, Gary Gibb, Don Collihole, Geoff Vernon, Ron Bain, Jim Hanley, Hayley Purbrick, Wally Cubbin, John Douglas, Daryl Sloane and Jody Liversidge. Thanks also to Hartley and Noel Briggs, Doug and Laelia Rogers, Jenny Sheilds, John Koehn, David Chalmers, Rolf Weber, Roy Patterson, Ern Holloway, Keith Jones, John Mackenzie and Ray Donald.

Advice and field support: Phil Duncan (Ngnulu Consulting), Fern Hames (Vic DSE), Pam Clunie (Vic DSE), Steve Saddlier (Vic DSE).

Ovens

Participants: Tom Cameron, Lyell Hogg, Ollie Evans, Gary Daws, Keith Snowden, Greg Sharpe, Adam Pascoe, Pat Larkin and Ron Dawson.

Advice and field support: Phil Duncan (Ngnulu Consulting), Fern Hames.

Upper Murrumbidgee

Participants: Dick and Gay Lawler, Bryan Pratt, Adrian Brown, Darren Roso and Sue and Vern Drew.

Advice and field support: Luke Johnston (ACT), Phil Duncan (Ngnulu Consulting), Charlie Carruthers (NSW DPI).

Namoi

Participants: Joe and Pearl Trindall, Eric and Carol Hannan, Spider Cunningham, Jason Simpson, Robert Horne, Tim and Mandy Gavin, Doug and Jacqui Jamieson and Darcy Harris. Thanks also to Helen and Gordon Cain.

Advice and field support: Phil Duncan (Ngnulu Consulting), Milly Hobson (NSW DPI), Anthony Townsend (NSW DPI).

Upper Darling: Brewarrina to Bourke

Participants: Gordon Brown, Phil Sullivan, Phillip Parnaby, Dwayne Willoughby, Feli McHughes, Mick and Barb Davis, Alma-Jean Sullivan, Cathy Simpson, Keith Coleman, Max Jeffrey, Brad Steadman and Joe Flick.

Advice and field support: Phil Duncan (Ngnulu Consulting), David Cordina, (NSW DPI), Anthony Townsend (NSW DPI).

Paroo

Participants: Colin and Beryl Leigo, Douglas MacGregor, Ron Heinemann, Ron Gardiner, Colin (Tud) Murphy, Fay and Donald Cooney, Gordon Warner, Kevin Eastburn, Lorna McNiven, and Paul Wheeler.

Advice and field support: Hamish Sewell (The Story Project), Greg Ringwood (Fisheries Queensland).

Culgoa - Balonne

Participants: Ned and Lynette Underwood, Roy and June Barker, Keith Codrington, George Thomas, Robert (Bob) Worboys, Rory Treweek, Margaret and Peter Peterson, Robert Lacey, Michael Anderson, Pat Stephens and Pat Cross.

Advice and field support: Hamish Sewell (The Story Project), Greg Ringwood (Fisheries Queensland).

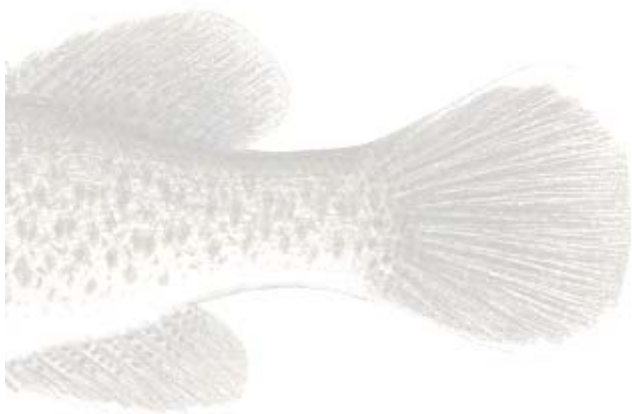
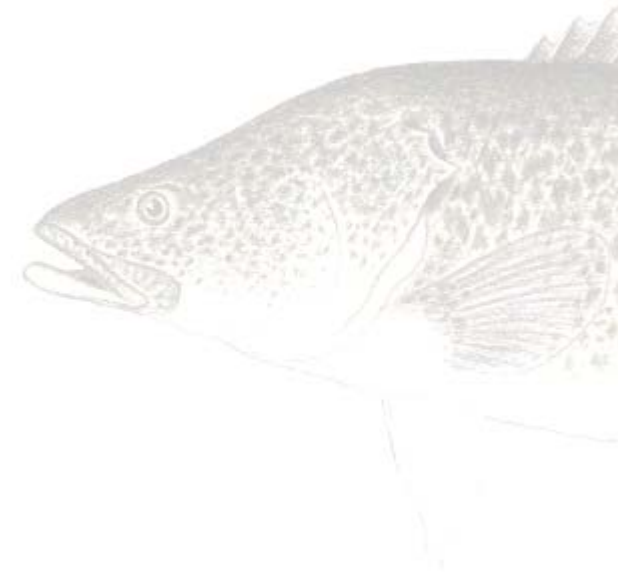
Upper Condamine

Participants: Sam Bonner, Noal Kuhl, Brian Kuhn, Dessie Obst, Geoff Reilly and Olive and Ray Shooter.

Advice and field support: Hamish Sewell (The Story Project), Greg Ringwood (Fisheries Queensland).

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Bringing back the fish

Source: Milly Hobson.



Bringing back the fish

Local projects aim to bring the fish back to the rivers of the Murray-Darling. These compliment large scale programs such as the MDBA's *Native Fish Strategy* and *The Basin Plan* that work with a wide range of stakeholders to ensure positive outcomes for the environment and fish of the Murray-Darling Basin.

The projects listed in this section provide examples of some of the projects being undertaken in each region across the Basin. Listing in this section does not imply endorsement. Contact details were correct at the time of publication (2011/2012).

Coorong and Lower Lakes

a) Coorong and Lower Lakes Recovery Program

In 2009 the Coorong and Lower Lakes Recovery program was developed to address environmental issues facing the region as a result of the drought and to rebuild healthy ecosystems that can better adapt in the future. The latest science, as well as traditional and local knowledge, was used to tackle issues like salinity, acid sulfate soils and loss of habitat.

It is hoped this will also help support the local communities and industries that rely on a healthy environment to prosper.

For more information visit
www.murrayfutures.sa.gov.au

b) Congolli match making

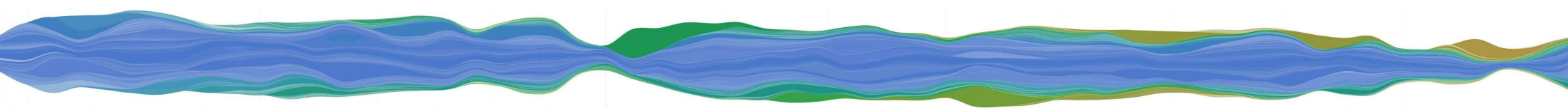
In July 2010, during the height of the drought, an emergency match making service was initiated to save the congolli population from possible extinction in the Murray-Darling Basin.

years, with the sexes remaining separated for much of the year until females migrate downstream from the Lakes to the Coorong to breed from July-September. By July 2010 record low water levels had disconnected the Lakes and Coorong and separated the male and females for over 3 years.

In August 2010, scientists, natural resource managers and river operators trialed the novel solution of operating the Goolwa barrage boat lock exclusively to assist downstream movement of female congolli into the Coorong. As a result, for the first time in 4 years, an estimated 20 000 congolli were observed moving through the lock over a 6 week period. Spawning was confirmed in spring/summer 2010 when thousands of 'young of the year' recruits migrated upstream through the barrage fishways.

For more information contact the SA DENR Lower Lakes and Coorong Icon Site Manager on (08) 8463 6800 or Brenton Zampatti at SARDI on (08) 8207 5491.

Adult congolli are thought to only live for 4-5



c) The Lakes Hub

The Lakes Hubs were established at Milang and Meningie were an initiative of the local community, through the Milang and District Community Association, as a way of sharing information between government and the community.

They have provided a local base for people to find out about urgent environmental works carried out as part of the Coorong and Lower Lakes Recovery program and also a way for the community to give their feedback and ideas to government about the long-term plan to restore the wetland.

The Lakes Hubs have also coordinated local volunteers, who have carried out water and soil monitoring, propagating and planting thousands of plants to restore habitat and manage acid sulfate soils and the rescue and recovery of native animals such as turtles and freshwater fish.

For more information about the Lakes Hubs visit www.lakeshubs.com

Resources

- Native Fish Strategy Coordinator, SA: Jonathan McPhail: (08) 8463 4418
- Goolwa to Wellington LAP: (08) 8536 5612
- Coorong Tatiara LAP: (08) 8757 2100
- Ngarrindjeri Regional Authority: (08) 8531 3868
- Murray Lower Darling Rivers Indigenous Nations: (02) 6051 9948
- The Lakes Hub (Milang): (08) 8537 0808
- Lower Lakes and Coorong Icon Site Manager: (08) 8463 6800
- SA DENR: (08) 8124 4784
- Native Fish Australia (SA): www.nativefishsa.asn.au
- Eastern Fleurieu Primary School: (08) 8537 0223
- Port of Goolwa & Inland Rivers Historical Society: 13 Goyder St, Goolwa SA 5214
- SA Memory: www.samemory.sa.gov.au
- National Library Australia: www.nla.gov.au

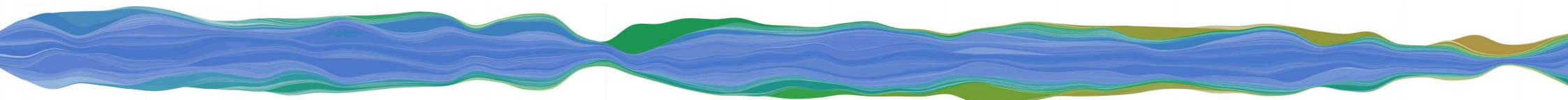
Katarapko

a) 'Katfish Reach'

The 'Katfish Reach' demonstration project within the Katarapko-Eckert Creek anabranch system is supported by the MDBA's *Native Fish Strategy*. The vision for the reach is 'A healthier and more productive aquatic and floodplain ecosystem that everyone can enjoy.' The key areas of activity to achieve this vision include:

- managing drainage water at the Berri Evaporation Basin to benefit the population of nationally threatened Murray hardyhead that lives there
- modifying or replacing road crossings, weirs and wetland structures to:
 - a) improve fish passage
 - b) allow flooding of the floodplain at low river flows
 - c) temporarily dry The Splash and Eckert Creek north and south arms
 - d) improve management of Ngak Indau, Katarapko Island, Horseshoe lagoons and Gerard wetlands.

You can get involved by volunteering, donating water to the environment and /or financial support. For more information contact the SA Department of Environment and Natural Resources (08) 8595 2111.



b) The Sea to Hume Dam program

This Murray-Darling Basin Authority project has begun restoring stream continuity within the Murray by constructing fishways on 14 mainstem structures on the river, including the tidal barrages at the Murray mouth – a distance of 2 225km! For more information contact the Murray-Darling Basin Authority on (02) 6279 0100.

c) Friends of Riverland Parks volunteers

If getting personal with water birds, bush birds, possums, Regent Parrots, or kangaroos is more your style you could join the Friends of Riverland Parks volunteers and help out with their fauna and wetland monitoring activities. The Friends group also conduct tree planting, weed control and walking trail maintenance if you are that way inclined. To find out how to get involved in these activities, contact the Friends of Riverland Parks (08) 8583 5430.

d) Wetland monitoring

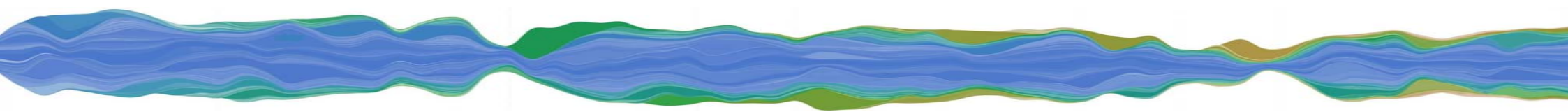
Both the Berri-Barmera and Loxton-Bookpurnong Local Action Planning (LAP) Associations undertake wetland monitoring activities either side of the River Murray including Martins Bend, Gurra Gurra Lakes, Yatco Lagoon, Spectacle Lakes, Loveday Lagoons and Overland Corner. Water quality, water birds, frogs, and tree health

surveys are conducted regularly. For more information and to get involved contact Berri-Barmera LAP (Paul Stribley: (08) 8582 2183) or Loxton-Bookpurnong LAP (Craig Ferber: (08) 8582 2824).

Similarly, the SA Murray-Darling Basin Natural Resource Management Board monitors over 40 different River Murray wetlands that are managed in some way – 21 of these have community wetland groups attached. The Board also conducts environmental monitoring technique training for the community. For more information and to get involved contact Rebecca Turner (08) 8532 1432.

Resources

- Native Fish Strategy Coordinator, South Australia: Jonathan McPhail: (08) 8463 4418
- Katfish Reach Demonstration Project: Kevin Smith (Chair), Katfish Reach Steering Group: (08) 8583 5430 or www.katfish.org.au
- Berri-Barmera LAP, Paul Stribley: (08) 8582 2183
- Loxton-Bookpurnong LAP: Craig Ferber: (08) 8582 2824
- SA Murray-Darling Basin Natural Resource Management Board, Rebecca Turner: (08) 8532 1432
- Gerard Reserve Council (Inc), Winkie SA: (08) 8583 7304
- Renmark/Berri Field and Game Association: 0488 587 101
- Berri & Districts Local Heritage Collection: Berri Community Library: (08) 8595 2666
- Murray Pioneer Newspaper: (08) 8586 8000



Lower Darling and the Great Anabranch

(a) The Lower Murray Darling Catchment Management Authority (LMD CMA)

The LMD CMA has been working with the local community to implement a number of activities within the Lower Darling River and the Great Darling Anabranch area:

- i) Wetland rehabilitation – Wetlands like Thegoa Lagoon have wetting and drying cycles reinstated. Wetlands that were disconnected now receive water and those that were permanently wet can be given a drying cycle for environmental benefits thanks to improved water delivery control structures. Other works include resnagging, weed control and a ground and surface water monitoring program.
- ii) Fish passage – vertical slot fishways have been installed at Burtundy Weir, Weir 32 and Pooncarie Weir, allowing fish passage within over 512km of the Darling River. Three Fish Habitat Management Plans have been developed and a fish monitoring program has been underway since 2004 with up to 65 sites monitored each year.

iii) Native fish releases – since 2005, the CMA in collaboration with agencies and industry, local schools, community groups, have released Murray cod and golden perch at locations including Fort Courage, Wentworth, Pomona, Burtundy and Pooncarie. In 2011, the LMD CMA also released threatened olive perchlets and southern pygmy perch fingerlings into Thegoa Lagoon.

iv) Habitat improvement - an 'Aquatic Threatened Species Habitat Management Zone' has been set up at Karoola Reach on 20km of the Darling River. Best Management Practices for protecting the aquatic environment are being demonstrated to landholders so they can improve 'their' section of river.

To be involved or find out more information about the above projects, contact LMD CMA on (03) 5021 9460.

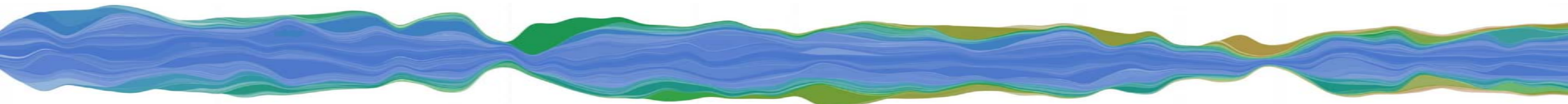
(b) The Murray-Darling Freshwater Research Centre (MDFRC)

The MDFRC has laboratories on the Murray River in Mildura and Albury-Wodonga where they research and monitor a number of aspects of aquatic ecology including environmental flows, water quality, nutrient cycles, algae, fish and invertebrate taxonomy and ecology.

The MDFRC can help community members to identify aquatic flora and fauna and assist with habitat use queries.

As part of some MDFRC projects fish are tagged to determine where they move. Apart from their own sampling, the MDFRC rely on recreational fishers to contact them if they catch a tagged fish so that they know can learn about their movements.

If you find a fish tagged as part of an MDFRC project or you want to find out more information about their work phone (03) 5051 4050 (Mildura) or (02) 6024 9650 (Albury-Wodonga) or visit www.mdfrc.org.au



River resources

- Native Fish Strategy Coordinator, Southern NSW Charlie Carruthers: (02) 6298 0802
- Lower Murray Darling Catchment Management Authority: (03) 5021 9460 or www.lmd.cma.nsw.gov.au
- Wentworth Angling Club, Fort Courage: (03) 5027 3097
- Menindee Local Aboriginal Land Council: (08) 8091 4541
- Dareton Local Aboriginal Land Council: (03) 5027 4721
- Northern Basin Aboriginal Nations: (02) 6279 0672
- Murray Lower Darling Rivers Indigenous Nations: (02) 6051 9948
- Wentworth Shire Library and Wentworth Historical Society: (03) 5027 5060
- National Library Australia: www.nla.gov.au

Murray River

a) Lake Hume to Yarrawonga Resnagging Project

Almost 25 000 snags were removed from the Murray River between 1976 and 1986. To reverse this impact, from 2006 to 2009 NSW DPI reinstated 4 450 snags in the river between Hume Dam and Yarrawonga (headwaters of Lake Mulwala).

It is hoped that resnagging will help to secure the long term viability of existing native fish populations such as Murray cod, trout cod and golden perch. These works effectively achieved 75km of habitat, connecting the remaining small isolated patches of fish habitat to create large viable areas of habitat.

For more information contact Cameron Lay on (02) 6738 8520.

b) The Sea to Hume Dam program

This project aimed to ensure native fish can migrate from the sea and Coorong estuary right up to Hume Dam at Albury-Wodonga, a distance of 2 225km. The Murray-Darling Basin Authority has begun restoring stream continuity within the Murray by constructing fishways on 14 mainstem structures on the

river, including the tidal barrages at the Murray mouth.

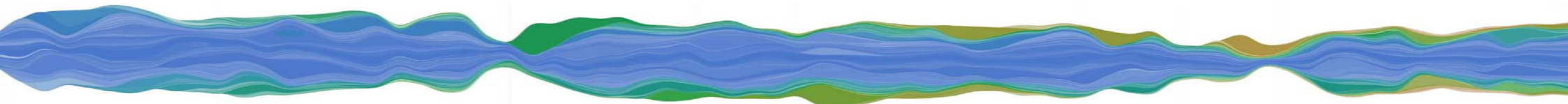
A tri-state (NSW, Victoria and SA) research and monitoring program accompanying the works has determined that some small fish like carp gudgeon, Murray rainbowfish and unspotted hardyhead actually migrate, but couldn't make it past the mainstem barriers. In response, dual fishways have been developed to allow for the movement of large and smaller species.

For more information contact the Murray-Darling Basin Authority on (02) 6279 0100.

c) Bidja Bila ('Men of the River') Indigenous Landcare Group

This group works on an area near Albury-Wodonga controlling weeds and planting native trees and grasses that will create more habitat for local endangered fauna. The group is supported by the North East CMA (Victoria).

For more information contact Richard Kennedy on 0428 266 786.



d) Community Fish Tagging Program

The Murray CMA (NSW) is developing a community-based fish tagging program for the Murray catchment, trialling it first in the Edward-Wakool system. Fish caught during competitions will be identified, measured, and microchipped, before being released. Fishers will be provided with hand held scanners, so they can identify fish captured and tell researchers about fish movements.

For more information contact John Conallin on (03) 5880 1400.



One of the snags soon to be providing habitat for Murray cod in the Murray River. Photo NSW DPI.

River resources

- Native Fish Strategy Coordinator, Southern NSW, Charlie Carruthers: (02) 6298 0802
- Murray Catchment Management Authority (NSW): (03) 5880 1400
- Goulburn Broken Catchment Management Authority (Victoria): (03) 5820 1100
- North East Catchment Management Authority (Victoria): (02) 6043 7600
- Murray Lower Darling Rivers Indigenous Nations: (02) 6051 9948
- Corowa Anglers Club: (02) 6033 3180
- Lake Mulwala Angling Club: (03) 5744 2258
- Corowa District Landcare Group: (02) 6033 0947
- Echuca Landcare Group (includes work on the banks of the Murray and Campaspe Rivers): (03) 5482 1560
- Waterwatch (hosted by the Murray CMA): Anthony Conallin: (02) 6051 2217
- Echuca Historical Society: (03) 5480 1325 between 11am – 3pm
- National Library Australia: www.nla.gov.au

Goulburn

a) Holland's Creek Demonstration Reach

This project is supported by the MDBA's Native Fish Strategy and managed by the Goulburn Broken CMA and Arthur Rylah Institute (DSE). The project aims to display the positive benefits of river rehabilitation for native fish, particularly the threatened Macquarie perch (*Macquaria australasica*). The creek is also highly valued for passive recreation, water supply and family heritage values.

Many actions are being undertaken including monitoring of fish populations, water quality and streamside condition and mapping of snags. On ground works have included weed control, fencing, erosion control and revegetation. A Community Reference Committee, comprising landholders and representatives from a range of organisations, meet regularly. Information sheets, fence signs and a webpage have also been developed and field days have been held.

To find out more about this project and how you can get involved, contact the Goulburn Broken CMA on (03) 5820 1100, or visit: www.gbcma.vic.gov.au/hollandscreek

b) The RiverConnect project

This project aims to establish a connection between the Greater Shepparton community and Broken and Goulburn Rivers. It aims to raise awareness of the environmental, cultural, recreational and economic value of the rivers. Many groups are involved in the project including the Greater Shepparton City Council, the Goulburn Broken CMA and other key natural resource management, Aboriginal and educational organisations. There are four working groups: Communications, Aboriginal Participation, Land Management and Education.

Regular RiverConnect newsletters provide information on current activities.

For more information on the RiverConnect projects and events contact Council's Culture and Community Strengthening branch on (03) 5832 9714 or visit: www.greatershepparton.com.au/council/environment/watermanagement/riverconnect.html

River resources

- Native Fish Strategy Coordinator, Victoria Fern Hames: (03) 5772 0273
- Goulburn Broken CMA, Shepparton: (03) 5820 1100
- Seymour Angling Club: PO Box 898 Seymour 3660 or (03) 5792 3260
- Alexandra Angling Club: PO Box 26 Alexandra 3714 or (03) 5772 1773
- Yorta Yorta Nation Aboriginal Corporation, Barmah: (03) 5869 3353 or reception@yynac.com.au
- Bangarang Goulburn Murray Tribe Aboriginal Corporation, Shepparton: marlenea@mcmedia.com.au
- Taungurung Clans Aboriginal Corporation, Tarneit: taungurung@gmail.com
- Murray Lower Darling Rivers Indigenous Nations: (02) 6051 9948
- Nagambie Landcare, Peter Robinson: (03) 5794 2274
- Seymour and District Historical Society, Seymour: (03) 5792 2311
- Shepparton Heritage Centre, Shepparton: (03) 5821 7717 (after hours)

Ovens

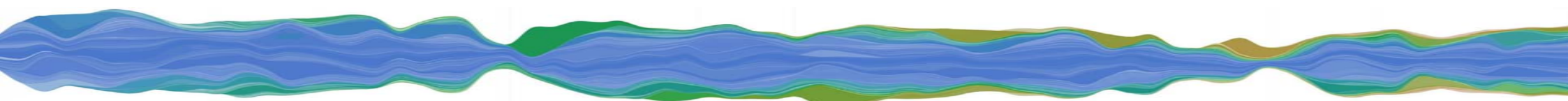
(a) Ovens River Demonstration Reach

Activities are being undertaken to improve conditions for native fish like the Murray cod and trout cod by maintaining, creating and restoring habitat within the river and reducing the effects of land use.

The North East CMA and Arthur Rylah Institute are working with community groups, LandCare, landowners and schools to control weeds and erosion, revegetate and install fencing along the river edge and map and reinstate snags in the water. Fish populations, water quality and riparian vegetation are being monitored to see what changes occur. Education activities, including electrofishing-survey, demonstrations have also been held. To find out how you can get involved, contact the North East CMA on (02) 6043 7600.

(b) Restoring Our Waterways (ROW)

This group works with community groups and government agencies on programs such as Adopt a Waterway, Water Week and National Tree Planting Day to raise awareness of water issues and provide opportunities for practical restoration of our waterways.



The group has several projects on the Ovens River and nearby One Mile Creek, working with local students to produce the *Croaker* newsletter and participate in local events. The group is part of the Wangaratta Sustainability Network. Get involved by contacting Di Farmer on (03) 5722 3823.

(c) Wangaratta Urban Landcare (WUL) Group

Wangaratta Urban Landcare group is working to improve river habitat in urban Wangaratta. The group has restored the degraded riparian (river edge) woodland in Kaluna Park Reserve, published a vegetation guide for riparian areas, and undertaken platypus and owl surveys.

To find out more, and get involved contact Elaine Jacobsen: jacobsen@netc.net.au

(d) Upper Ovens Valley Landcare Group

The Upper Ovens Valley Landcare group has been actively clearing willow and blackberry along the Ovens River from Porepunkah to Germantown over the past few years and is planning several projects including a native fish survey, Waterwatch and Adopt-a-stream programs. To find out more or get involved contact Trevor Danger 0439 393 019.



An electrofishing demonstration on the Ovens.
Photo: Fern Hames.



Ovens River Demonstration Reach sign.
Photo: Fern Hames.

Resources

- Native Fish Strategy Coordinator, Victoria: Fern Hames: (03) 5772 0273
- Bangarang Goulburn Murray Tribe Aboriginal Corporation, Shepparton: marlenea@mcmedia.com.au
- Yorta Yorta Nation Aboriginal Corporation, Barmah: (03) 5869 3353 or reception@yynac.com.au
- Taungurung Clans Aboriginal Corporation, Tarneit: taungurung@gmail.com
- Murray Lower Darling Rivers Indigenous Nations: (02) 6051 9948
- North East Catchment Management Authority: (02) 6043 7600
- Seymour Angling Club: (03) 5792 3260
- Alexandra Angling Club: (03) 5772 1773
- Nagambie Landcare, Peter Robinson: (03) 5794 2274
- Wangaratta Historical Society: (03) 5721 2957
- Bright and District Historical Society: (03) 5755 1949
- Australian National Library: www.nla.gov.au

Upper Murrumbidgee

(a) Upper Murrumbidgee Demonstration Reach (UMDR)

The UMDR was established in 2009 in a 70km reach of the Murrumbidgee River stretching from Bredbo in south-east NSW downstream to Casuarina Sands in the southern suburbs of the ACT.

In this reach a number of threatened native species are present including trout cod, Murray cod, Macquarie perch, silver perch, two spined blackfish, and Murray crayfish.

Landholders and agencies are improving conditions for these species and aquatic habitat generally by removing barriers to fish migration, controlling introduced carp and willows, reducing pollution inputs and monitoring the 'Bidgee and the organisms that rely on it.

To get involved or get more information contact Luke Johnson on (02) 6205 3168 or Lisa Evans on (02) 6207 2117.



Community-based monitoring of native fish populations is just one of the activities undertaken in the Upper Murrumbidgee Demonstration Reach.
Photo: Charlie Carruthers.

(b) ParkCare is a partnership between the ACT Government and community volunteer groups who have an interest in the natural environment. Volunteers can contribute to the protection of local parks, nature reserves and National Parks in the ACT, including the Murrumbidgee River Corridor.

Volunteers can get involved in seed collection, plant propagation, tree planting, weed removal, erosion control, vegetation mapping, water quality monitoring and maintenance of heritage sites.

To get involved, phone the ParkCare Coordinator on (02) 6205 7384 or 13 22 81, or for more information and registration forms go to:
www.tams.act.gov.au/play/pcl/get_out_there/volunteering/parkcare

(c) Southern ACT Catchment Group / Molonglo Catchment Group

Both these groups act as umbrella organisations for other environmental groups in ACT including LandCare, and WaterWatch and provide input into catchment management activities and plans.

The Southern ACT Catchment Group (SACTCG) represent all active environmental groups in the southern areas of the ACT. Contact Steve Welch from Tuesday to Friday on (02) 6296 6400.

The Molonglo Catchment Group is largely in NSW and extends from the Murrumbidgee to the headwaters of the Molonglo and Queanbeyan Rivers. Contact Andy Westcott on (02) 6299 2119.

(d) Upper Murrumbidgee Waterwatch

Waterwatch volunteers can be anyone who cares about their local waterway. Waterwatchers volunteer in their local region to collect and analyse water samples, undertake assessments of their local water bugs and riparian vegetation and help with an annual frog census. Volunteers can spend a few hours every month or a couple hours a year.

In the ACT, contact Tanya Noakes on (02) 6207 2246. In the upper Murrumbidgee (Cooma region) contact Antia Brademann on (02) 6452 4611.



Understanding alien fish distribution and abundance, such as these mosquito fish (*Gambusia holbrooki*-circled) is critical to their management.

Photo: Charlie Carruthers.

River resources

- Native Fish Strategy Coordinator (Southern NSW), Charlie Carruthers: (02) 6298 0802
- Upper Murrumbidgee Demonstration Reach: Luke Johnston: (02) 6205 3168 or Lisa Evans: (02) 6207 2117
- Murrumbidgee CMA: (02) 6229 7711 or matt.dejongh@cma.nsw.gov.au
- Kosciuszko to Coast: (02) 6299 2119 or projects@molonglocatchment.com.au
- Capital Region Fishing Alliance (CRFA): contact: info@crfa.org.au
- Billabong Aboriginal Development Corporation: (02) 6278 4799.
- Ngunnawal Land Council: (02) 6297 4152
- Murray Lower Darling Rivers Indigenous Nations: 02 6051 9948
- ACT Government: www.tams.act.gov.au/live/environment
- Australian National Library: www.nla.gov.au
- Queanbeyan Historical Society: 02 6299 7449

Namoi

a) The Namoi Demonstration Reach

Works are being undertaken over approximately 120km of the Namoi River and its tributaries between Gunnedah and Narrabri to benefit the river and improve conditions for native fish.

The MDBA's Native Fish Strategy supports NSW DPI, the Namoi CMA, local communities, industries, Councils and recreational fishers to reinstate snags, improve fish passage, control erosion, sediment and nutrient inputs, remove weeds and replant riparian vegetation.

To date over 240 snags have been reintroduced and over 14km of river opened up with 3 fish passage barriers addressed.

Twenty six kilometres of fencing and 13 off-stream watering points have improved stock management around the waterways, with over 20km of woody weeds removed and replaced with more than 11 000 native plants!

For more information contact NSW DPI Conservation Manager, Milly Hobson on (02) 6763 1206.



One of the Demonstration Reach signs.
Photo: Milly Hobson.

b) The Narrabri Amateur Fishing Club

In conjunction with NSW DPI, this fishing club have held 'Carp Musters' annually over the last four years to create awareness about the impacts of carp on native fish and to involve the community. The fishing club also undertake annual cod and yellowbelly stocking of Namoi River and contribute to tree planting days as part of the Namoi Demonstration Reach project.

For more information contact Tony Williams on 0428 661 358.

c) Red Chief Aboriginal Land Council

Cultural surveys and tree planting have been undertaken by Red Chief ALC as part of the Namoi Demonstration Reach project. The Council also has their own propagation unit growing native trees and aquatic plants.

For more information contact Red Chief ALC on (02) 6742 3602.

d) Boggabri Landcare-Rivercare Group

This group is active around Boggabri removing willows and other weeds and revegetating along the Namoi River.

For more information contact Robyn Watson on (02) 6743 4576.

d) Narrabri Community Bushcare Group

Narrabri Bushcare work with land owners to improve their property, promoting native vegetation around Narrabri. They hold community tree planting days at locations including the Namoi Demonstration Reach.

For more information contact Rose Broderick on (02) 6792 4596.

River resources

- Native Fish Strategy Coordinator, Northern NSW, Anthony Townsend: (02) 6763 1440
- Namoi Catchment Management Authority: (02) 6742 9220
- Narrabri Amateur Fishing Club
Tony Williams: 0428 661 358
- Red Chief Aboriginal Land Council
Robert Horne: (02) 6742 3602
- Narrabri Aboriginal Land Council
Koorine Trindall: (02) 6792 4228
- Northern Basin Aboriginal Nations:
(02) 6279 0672
- Boggabri Landcare-Rivercare Group
Robyn Watson: (02) 6743 4576
- Narrabri Community Bushcare Group
Rose Broderick: (02) 6792 4596
- Narrabri and District Historical Society
Don Douglas: (02) 6792 5100
- Narrabri Courier and Wee Waa News
Ian Dunnet: (02) 6792 1011
- National Library Australia:
www.nla.gov.au

Upper Darling: Brewarrina to Bourke

(a) Brewarrina to Bourke Demonstration Reach

This Demonstration Reach is being managed by NSW DPI Fisheries in collaboration with the Western Catchment Management Authority.

NSW DPI and the Western CMA have worked with landholders around Brewarrina and Bourke to undertake activities like resnagging the river, controlling gully erosion and planting riparian vegetation.

Demonstration Reach works also aim to minimise the effects of fish passage barriers and pest fish on native fish so that they can undertake breeding migrations within the Barwon-Darling and have decreased competition from introduced species.

If you would like to get involved or want to know more, contact David Cordina on (02) 6681 1277.

(b) Ngemba Billabong Restoration and Landcare Group

The rivers, lakes and floodplains of Brewarrina Ngemba Billabong are a significant historical and cultural site for the Ngemba Aboriginal people.

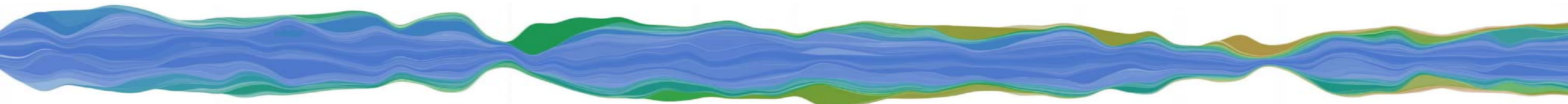
From 1876 to 1967 the Ngemba Billabong was the Brewarrina Aboriginal Mission for local Aboriginal people whose land was taken for grazing. Prior to this, Brewarrina was an important tribal meeting place.

The land is now listed on the NSW State Heritage Register as an Indigenous Protected Area and cared for by the traditional owners. While managing the river, floodplain and wetland, special emphasis is placed on educating members of the community about traditional values, Aboriginal history, and social inclusiveness.

To find out more about this project or to get involved, contact the Ngemba Billabong Restoration and Landcare Group on (02) 6872 2144.

River resources

- Native Fish Strategy Coordinator (Northern NSW) Anthony Townsend: (02) 6763 1440
- Brewarrina to Bourke Demonstration Reach Coordinator David Cordina: (02) 6881 1277
- Ngemba Billabong Restoration and Landcare Group: (02) 6872 2144
- Western Catchment Management Authority: (02) 6872 2144
- Northern Basin Aboriginal Nations: (02) 6279 0672
- Bourke Public Library: (02) 6872 2751
- Brewarrina and District Historical Society (via Brewarrina Tourist Information Centre): (02) 6839 2152
- Australian National Library: www.nla.gov.au



Paroo River

a) Interstate agreement on water extraction

The New South Wales and Queensland Governments signed an Interstate Agreement on the 18th of July 2003 to protect the Paroo River, its wetlands and flood plains. The agreement stops the issue of additional water licences other than those for minor irrigation and urban water uses. In addition the Queensland Government issued a moratorium on the construction of new water infrastructures on 9 June 2001.

The *Intergovernment Agreement for the Paroo River between New South Wales and Queensland* can be obtained at www.water.nsw.gov.au/Water-management/Law-and-policy/Intergovernmental-agreements/default.aspx#paroo

b) South West Natural Resource Management Group

South West Natural Resource Management is the designated regional body for natural resource management in South West Queensland. It works with the community and the community based groups, traditional owners, government

organisations and industry groups to achieve sustainable natural resource management and fosters landcare and catchment management ethics.

It is responsible for regional delivery of natural resource management program in the Bulloo, Nebine-Mungallala-Wallam, Paroo and Warrego catchments.

The main office of South West NRM is located in Charleville. For more information, phone (07) 4656 8500 or email swnrm@southwestnrm.org.au

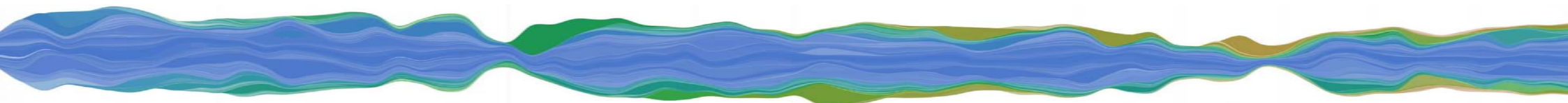
c) Western Catchment Management Authority

The Western Catchment Management Authority has been established to ensure the local community has a significant say in the management of natural resources including land, vegetation, rivers, groundwater and biodiversity. It assists the local community in being actively involved in natural resources management initiatives.

For more information, go to www.western.cma.nsw.gov.au

River resources

- Native Fish Strategy Coordinators:
Greg Ringwood (Qld): (07) 3224 2164
Anthony Townsend (NSW): (02) 6763 1440
- South West Natural Resource Management Group
Julie Frousheger: (07) 4656 8520 or email: biodiversity@swnrm.org.au or www.southwestnrm.org.au
- Western Catchment Management Authority
Maree Barnes: (02) 6841 2749 or www.western.cma.nsw.gov.au
- ABC Rural: www.abc.net.au/rural
- Charleville Fishing and Restocking Club
Judey Aiken: (07) 4654 1777
- Queensland Parks and Wildlife Service (Charleville): (07) 4654 4712
- NSW Parks and Wildlife Service: (02) 9995 5550
- Paroo Shire Council: (07) 4655 8440
- National Library Australia: www.nla.gov.au



Culgoa - Balonne

a) Queensland Murray-Darling Committee

The Queensland Murray-Darling Committee (QMDC) is a community-based, not-for-profit organisation that delivers natural resource management services along the parts of the Murray-Darling Basin within Queensland, including the Culgoa-Balonne Catchments. Its main objectives include improving the health of the rivers, wetlands and floodplains and reducing the threat of weeds and pest animals. One of the main pest species they target is the European carp. In addition to running regular carp-buster events to educate the members of the public about the impacts of the carp on native fish population, QMDC is planning to establish an integrated carp management program using fyke nets which are designed specifically for the control of carps. Further information can be obtained on (07) 4637 6200 or at www.qmdc.org.au

b) Aboriginal Rangers Program

The QMDC, in collaboration with the Federal Department of Sustainability, Environment, Water, Population and Communities has developed an Aboriginal Rangers Program to deliver environmental outcomes within the

Northern Murray-Darling Basin in Queensland. The area also includes the catchments of the Culgoa and Balonne Rivers. The Aboriginal Rangers work with land managers to boost the sustainability of the Basin. The program will result in an exchange of Aboriginal cultural knowledge along with strong natural and cultural outcomes. The catchment based activities that are carried out within the Aboriginal Rangers Program aim to improve aquatic habitat and fish populations by fencing river banks, undertaking weed control and protecting sites of cultural heritage. For further information and to get involved contact Mr Troy Turnbull (07) 4637 6200.

c) Western Catchment Management Authority (NSW)

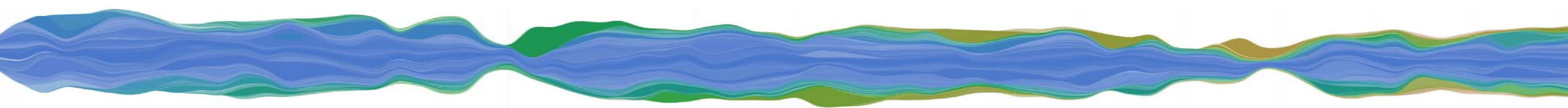
The NSW Western Catchment Management Authority has been established to ensure the local community has a significant say in the management of natural resources including land, vegetation, rivers, groundwater and biodiversity.

The Western CMA assists the local community in being actively involved in natural resources management initiatives.

Two of the management targets relating to improving rivers include:

- Habitat improvement in 20% of identified priority stream, floodplain, wetland and riparian areas by 2016.
- Water quality and salinity levels meeting ANZECC drinking water and recreational use criteria for greater than 95% of the time at key town use sites by 2016.

The main activities include management of floodplains, improvement and management of riparian zone, protection and rehabilitation of fish and threatened aquatic habitats, improving connectivity by providing fish passage and the control of alien species such as carp. For more information go to www.western.cma.nsw.gov.au



River resources

- Native Fish Strategy Coordinator, Queensland, Greg Ringwood: (07) 3224 2164
- Native Fish Strategy Coordinator, North NSW, Anthony Townsend: (02) 6763 1440
- Queensland Murray-Darling Committee: (07) 4637 6200 <http://www.qmdc.org.au>
- St George and District Fishing and Restocking Club Inc.: dkpanel@bigpond.com
- Culgoa Landcare Group: (02) 6836 1575
- Maranoa-Balonne Catchment Management Association: (07) 4622 6011
- Warroo Balonne Regional Landcare Inc., John Scriven: (07) 4625 3634
- Nindigully Landcare Group Inc., Liz Hill: (07) 4625 9159
- Balonne Beacon (newspaper): (07) 4162 2277
- Queensland National Parks and Wildlife Service: (07) 3227 8186
- NSW Parks and Wildlife Service: (02) 9995 5550
- Culgoa Dreaming Consultancy: (02) 6872 4647
- Balonne Shire Council: (07) 4620 8888

Upper Condamine

a) The Dewfish Demonstration Reach

The Condamine Alliance Natural Resource Management Group is undertaking the Condamine River Rescue Program to rehabilitate and protect the Condamine River catchment. Native fish are used as an indicator to gauge the health of the river system.

The Murray-Darling Basin Authority funded Native Fish Strategy 'Dewfish Demonstration Reach' is located within the Condamine catchment. This rehabilitation site is over 100km long.

The River Rescue Program and the Native Fish Strategy are working in partnership with landholders, local governments and stakeholders to deliver improved river health through improved land use practices like riparian fencing, off stream watering, erosion and weed control. Instream works include re-slagging, fishways and carp control.

You can get involved with this program by volunteering or providing financial support. For more information contact Kevin Graham or Condamine Alliance on 0418 411 351.

b) Restoring fish migration

Two weirs along the Condamine River were identified as major barriers to fish passage: Loudoun Weir and Reilly's Weir, a historical private weir. Both weirs have prevented fish passage since their construction. In 2009 both weirs had fishways retrofitted to improve fish passage. The improvements to Reilly's Weir allow fish movement along the Condamine River during flows for the first time since the weir was constructed in 1936.

For more information contact the MDBA Native Fish Strategy Coordinator on (07) 3239 0727.



The construction of Reilly's Weir. The recent installation of a fishway on this structure is giving fish access to habitat that have not had since 1936.

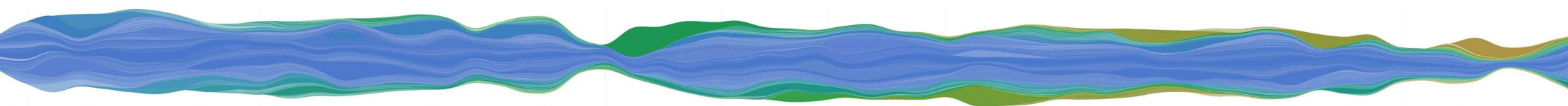
Photo source: Geoff and Sue Reilly.

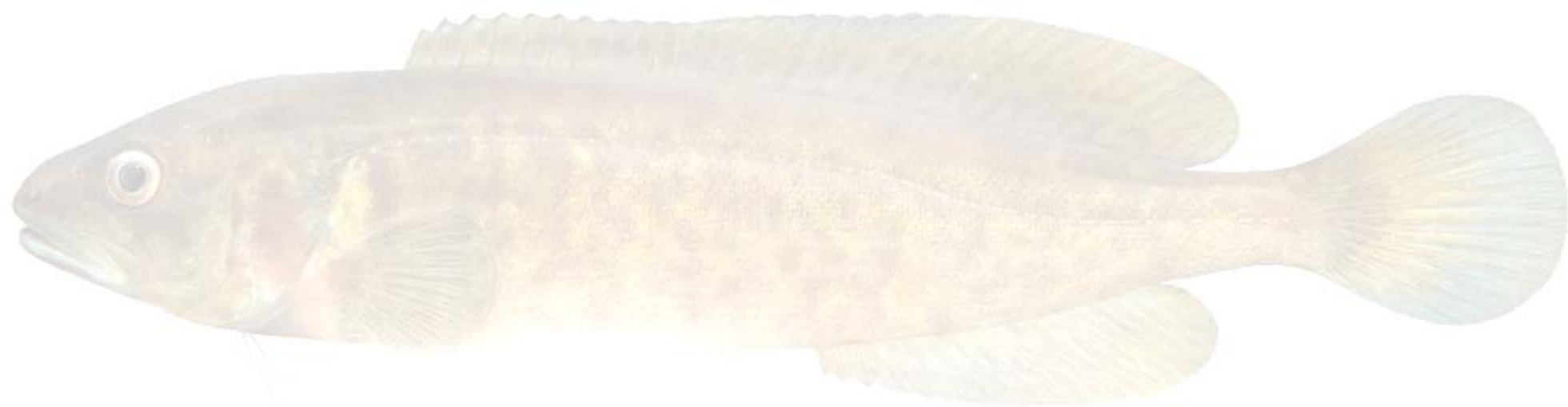
c) Condamine Headwaters Landcare Group Inc

Condamine Headwaters Landcare Group's initiative 'Love My River' aims to engage the community to better understand the catchment and the river environment. It includes story telling, a catchment crawl, water-bug testing, waterway monitoring and more. The initiative covers the Upper Condamine Area around Killarney, Dalveen, Leyburn, Maryvale and Allora. For more information contact Elspeth Cooper on (07) 4685 2096.

River resources -

- Native Fish Strategy Coordinator, Southern Queensland, Greg Ringwood: (07) 3239 0727 / 0423 829 028
- Condamine Alliance, Kevin Graham: 0418 411 351, <http://condaminealliance.com.au>
- Condamine Catchment Management Association, Mary-Lou Gittins: (07) 4666 6290
- Condamine Headwaters Landcare Group Inc.: (07) 4661 9909, landcare@chlgroup.org.au
- Chinchilla and District Amateur Fishing Club Inc.: PO Box 342 Chinchilla Q 4413.
- Chinchilla and District Landcare Group Inc: chinchilla_landcare@bigpond.com
- Crows Nest Historical Society: (07) 4698 1776, suepechey@skymesh.com.au
- Oakey Freshwater Fish Stocking Association PO Box 262, Oakey Qld 4401
- Nobby and District Fishing Club Inc.: brian.kuhn@bigpond.com.au
- North east Downs Landcare Groups Inc.: 0427 024 921, krausebuilder@bigpond.com
- Toowoomba Historical Society: (07) 4638 7362, history@icr.com.au
- National Library Australia: www.nla.gov.au
- Warwick District Recreational Fish Stocking Association: kemp3@dodo.com.au





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Photo: Jodi Frawley.



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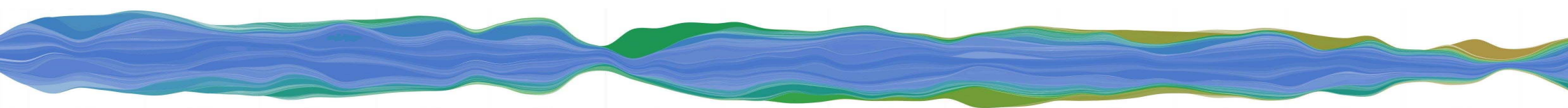
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10. refer Eric and Carol Hannan (Namoi), Chapter 9; Dick and Gaye Lawler (Upper Murrumbidgee), Chapter 8; Olive and Ray Shooter (Upper Condamine), Chapter 13.
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Coorong and Lower Lakes

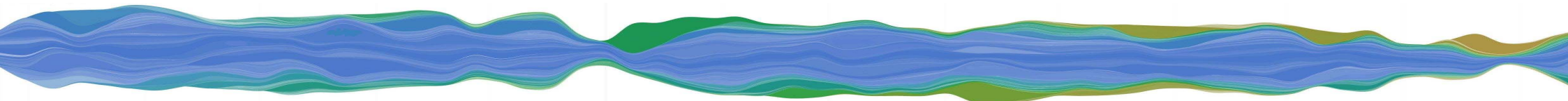
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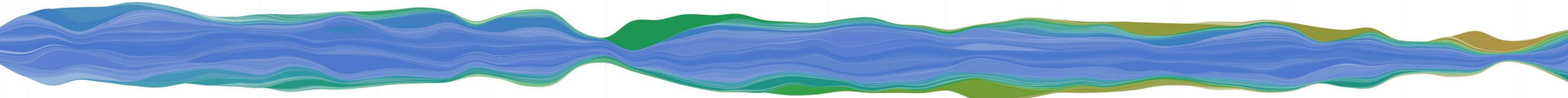


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Murray River

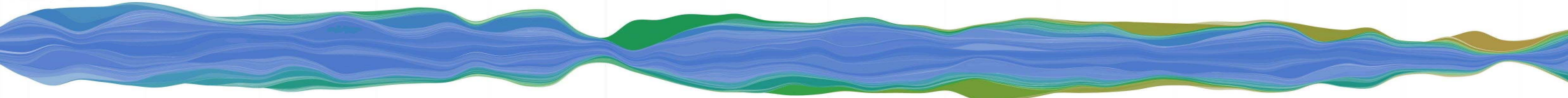
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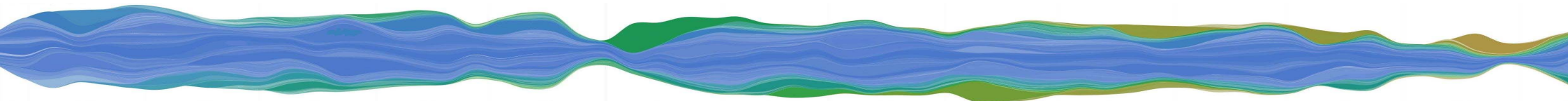
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Upper Murrumbidgee

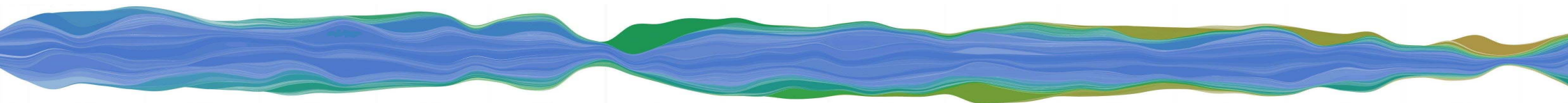
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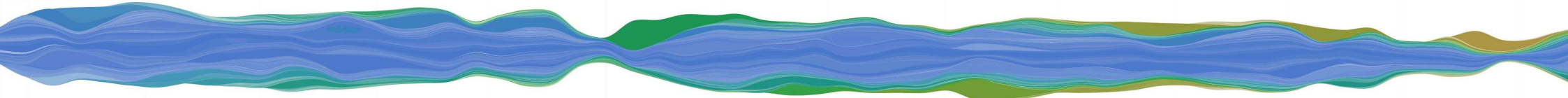
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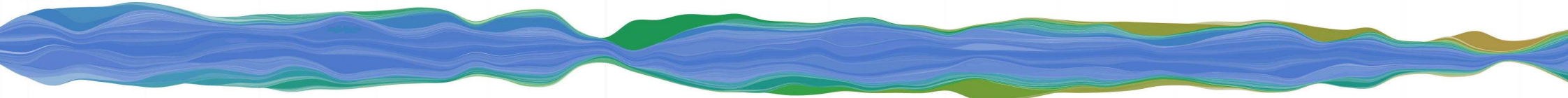
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Upper Condamine

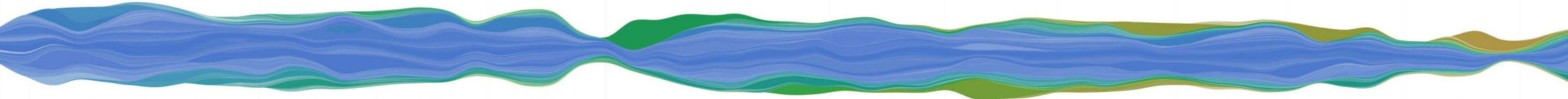
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Some of the aquatic species found in the Murray-Darling Basin

Native
(Not to scale)

Murray cod / Cod / Pondi



Mulloway / Jewie / Jewel fish / Butterfish



Macquarie perch / Macca / Black bream



Golden perch / Yellowbelly / Callop / Pilaki



Catfish / Eeltail catfish / Jewfish / Pomeri



Yabby / Craybob



Silver perch / Murray bream / Grunter / Tcheri



Blackfish /Slippery / Slimy / Greasy



Murray cray / Spiny cray



Introduced
(Not to scale)

European carp / Common carp



Redfin / English perch



Rainbow trout / Brown trout

