



Inland Rivers Network News

Quarterly Newsletter
Volume 8 Number 3 - Summer 2003

A good start on the Murray

Now let's finish the job

After nearly two years of reviews, consultations, missed deadlines, reports, and committee meetings, the Murray-Darling Basin Ministerial Council has released its "first step decision" for rehabilitating the ailing Murray River system.

In taking this decision the council expressly recognised that "the health of the River Murray is important to maintain biodiversity and the health and economic success of the communities its supports," and promised that the first step "marks the beginning of the council's collective actions to return the River Murray to the status of a healthy working river."

The moves have received mixed reviews from conservation groups, which have generally welcomed the commitment to recovering 500 GL in environmental flows for the river, but expressed concern at the council's decision to focus on six key 'environmental assets' at the expense of a 'whole-of-river' approach.

Conservation groups, including the Inland Rivers Network and the Australian Conservation Foundation, have been campaigning for an extra 1500 GL of water for the Murray River, while this decision will see the waterway receive only a third of that amount over the next five years, with a decision on a long-term amount to come in October 2004.

Continued p.2



'Open the mouth and say aaah...' Is the 'first step' enough to save an ailing Murray?
(Photo courtesy South Australia Department for Environment and Heritage)

IRN NEWS is available at our website www.irnsw.org.au



Inside IRN News

A good start on the Murray 1

Ministerial Council gets mixed reaction on the first step down the Murray

Editor's note 3

New legislation revamps NSW natural resource management 4

NCC's Samantha Newton and Clare Hammill report on the Carr government's NRM reform package

Across the Basin 5

Paroo River Agreement, Murray mouth opens, Darling aquatic communities endangered, and more

Special Report on the Living Murray First Step Decision 6

IRN Coordinator Brendan Fletcher assesses the first step decision, looks at the Scientific Review Panel's Murray flows report, and explains the meaning of "significant ecological asset"

Rings of River History 10

Fiction by Simon Kaminskas inspired by a report of the oldest recorded Murray Cod.

Basin News 11

Inland Rivers Network

Level 1, 29-35 Shepherd Street,
Chippendale NSW 2008
Tel: 02 9212 5112 Fax: 02 9212 6977
coordinator@irnsw.org.au
www.irnsw.org.au
ABN: 34 373 750 383

IRN News is produced by
Harvest Communication
PO Box A92, Sydney South, NSW, 1235
Tel: 1300 306 658
info@harvestcommunication.com.au
www.harvestcommunication.com.au

The key elements of the decision include:

- an initial focus on directing effort toward six 'significant ecological assets' with specific objectives defined for each asset. The "assets" are Barmah-Millewa Forest, Gunbower and Koondrook-Perricoota Forests, Hattah Lakes, the Chowilla Floodplain, the Murray Mouth including the Coorong, and the River Murray Channel
- a commitment to recover 500 gegalitres of new water over five years, with funding to be available from 1 July 2004 from the \$500 million committed by the Council of Australian Governments (COAG) in August 2003
- a realignment of a previously announced capital works program of \$150 million to be used to effectively manage the newly recovered water
- a commitment to identifying opportunities for Indigenous partnerships in planning and managing the Living Murray, and
- a commitment to have long-term actions building on the first step presented to the ministerial council in October 2004.

ACF Executive Director Don Henry said that "as a first step with a commitment to a longer-term decision next year, this is a good achievement." However, he added that "this short-term focus on 'icon' sites, while valuable in protecting some special values, is no substitute for a healthy Murray River."

Brooke Flanagan, NCC Executive Officer, said that: "500 GL over five years is a start but the science still says that the Murray River needs at least 1500 GL over ten years to give it a moderate chance of survival". Echoing the need for long-term action, Environment Victoria's Healthy Rivers Campaign Director, Paul Sinclair, said "state and federal governments have shown today that they can work together. But the job's not done. Our governments must not betray future generations by not finishing the job."

And that is the nub of the problem. We know we have a reasonably good first step, but will that momentum translate to long-term, comprehensive restoration? Will the initial focus on significant ecological assets be a sensible first step in a plan to restore health to the system as a whole, or will bringing environmental benefits to some of the Murray River's icons tempt our political leaders into taking credit for a high profile win while leaving the tough systemic problems to future generations? Will the \$500 million committed to sourcing new environmental water be spent in the most effective manner possible, or will it be frittered away on suboptimal "efficiency" projects that fail to return the greatest potential volume of water per dollar spent? Will the council summon the resolve to make a long-term decision in October 2004? And most importantly, will the council commit to returning at least 1500 gegalitres to the river, the *minimum* amount the science says is needed for a healthy, working river?

If we could answer those questions we'd be in the fortune-telling business instead of conservation, but for a more in-depth report on the council's decision, see our special report on The Living Murray - Round 1 on page 6.

Editor's note

Holton, Kansas, a small farmtown in the American Midwest (and my hometown), sits just above the confluence of two creeks – Elk Creek, which flows along the north edge of town, and Banner Creek, which curls around the southern and eastern edges of town before flowing into Elk. My family lived in the southeast part of town, with Banner an easy bike ride for me and my friends. Just four blocks to the end of town, out across the railroad tracks and onto the dirt Spring Road, a half-mile down to the Banner Creek bridge, then slip down through the nettles into the ankle-deep water of the creek.

Some days we'd go downstream, past the hole where we'd fish for chubs and the occasional sunfish with bamboo poles, through the narrows where the creek quickened its pace and you could float sticks, on to the woodpile where flood-borne branches had stacked up ten feet deep at a bend in the creek. Some days we'd go upstream, past the spring that flowed in from a paddock to the east, under the railroad bridge where one summer bullhead juveniles lived, and to 'the swimming hole,' which at four feet or so depth was about the only place in the creek you could get wet past your waist. The reach we knew was no more than a mile long, but we knew it well, we felt like it was ours, and in some way we felt a bit like we belonged to that reach of creek. A few decades on and half a world away, I still feel that way.

I believe that this reciprocity, the feeling of belonging to the land and the land belonging to us, drives many of us who work in conservation. And flipping through back issues of the IRN News, now approaching its ninth year, I am sure



'We're not in Kansas any more Toto' - Banner Creek Reservoir, near IRN Coordinator Brendan Fletcher's hometown of Holton, Kansas. Photo courtesy of www.holton.k12.ks.us.

that it has driven the work of the Inland Rivers Network. As the new IRN coordinator and editor of the IRN News, I hope to carry on the tradition of the IRN News as a forum for all of us who care about our inland rivers. I want the newsletter to be a place where we can share our campaigns, strategies, wins, and setbacks, a place where we can encourage others to get involved with rivers conservation, and a place where we can tell our stories about our rivers.

In this issue the focus is on Australia's greatest river, the Murray. On pages 6-9, we have a special section on the Murray-Darling Basin Ministerial Council's first step decision on the Living Murray Initiative, including items on the leadup to that decision and IRN's analysis of the Council's communique. Overall, the decision *could* be the beginning of an historic effort to save it from its current trajectory of decline, but whether the ultimate story is one of environ-

mental renewal for the Murray or a tremendous opportunity lost remains to be seen. It will take all of the environment movement's commitment, passion, intellect, and determination to achieve a successful outcome on the Murray; and if any of you would like to be involved, by all means contact IRN.

If you have comments about any of the stories in this issue of the IRN News, ideas for future stories about your river or your conservation work, or if you just want to jaw about rivers, please drop us a line here at IRN. All of you who read IRN News and support our work are the Network, and this is your newsletter, so don't hesitate to put in your two cents' worth.

Brendan Fletcher - Biography

Brendan Fletcher joined IRN in September 2003. He has worked as an advocate for the U.S. environment organization Defenders of Wildlife and as an attorney for the California Department of Fish and Game and the U.S. Department of the Interior.

His role as coordinator involves working to establish healthy rivers and environmental flows based on good science, liaising with community groups and river activists, publishing the IRN Newsletter, liaising with irrigation and commodity group representatives, and meeting with government.



New legislation revamps NSW natural resource management

Clare Hamill and Samantha Newton

The Native Vegetation Bill, Natural Resources Commission Bill and Catchment Management Authorities Bill (2003) were passed by the NSW Upper House on December 5, 2003. Generally, the new Bills are an improvement on previous legislation and will improve management of natural resources and provide a legislative framework for targets and standards that have been previously lacking.

The major concern is the amount of power the three Acts give to the Minister for Natural Resources, including power of appointment over Catchment Management Authority (CMA) Board members, control of all natural resource management plans, control of the Natural Resources Commission (NRC) and CMA functions and, the adoption (by government) of targets and standards).



The new minister faces a tough challenge on land and water management (photo courtesy Greg Williams).

The other point to bear in mind is that these three bills were based on the work of the Native Vegetation Reform Implementation Group chaired by Ian Sinclair, and while this gives them a strong grounding in native vegetation management, the government has not adequately demonstrated how it plans to include water management in the new regime.

Native Vegetation Bill

This landmark Bill is designed to stop broadscale landclearing, simplify vegetation management processes and offer financial incentives to landholders for conservation management. Much of the detail has been assigned to the regulations; however the Government appears to have made a strong commitment toward ensuring effective monitoring and compliance under the new regime.

Natural Resources Commission Bill

This Bill establishes an independent Natural Resources Commission to recommend *statewide and/or regional* targets and standards for natural resource management

issues. (CMAs will have input into regional application of standards and targets)

The NRC Act, once gazetted, effectively abolishes the Water Advisory Council Native Vegetation Advisory Council, State Catchment Management Coordinating Committee, Resource and Conservation Assessment Council, State Wetlands Advisory Council, Coastal Council, State Weir Review Committee, Healthy Rivers Commission, Fisheries Resource Conservation and Assessment Council, and the Advisory Council for Fisheries Conservation.

The Bill does have provision to establish a Natural Resource Advisory Council to replace many of the abolished groups. However, we have concerns about the structure and role of NRAC and will be seeking to discuss these with the Government.. It will be difficult for this committee to effectively advise on the plethora of natural resource issues affecting this State. There will need to be additional working groups or subcommittees, or the membership will need to vary according to the issues on the table.

Catchment Management Bill

This Bill establishes Catchment Management Authorities (CMAs), which will gradually assume the responsibilities of water management committees, native vegetation management committees, and catchment management committees. There are 13 CMAs around the state, with areas of responsibility roughly corresponding to major catchments; e.g. there is a Murrumbidgee CMA, a Lachlan CMA, etc.

The new CMAs will not have specific representational membership as did the committees being replaced. Instead, membership will be "skills-based" with a preference for residents of the catchment. The skills for board members include knowledge in primary production; social, economic, and environmental analysis; and after a push from us, water quality, biodiversity conservation, and cultural heritage.

The CMABill is well integrated with the other two Bills, so there should be greater consistency between statewide targets and standards and the regional expression/implementation of those targets.

Clare Hammill and Samantha Newton work with the Nature Conservation Council of NSW, as Native Vegetation Officer and Catchment Officer respectively. For more information on these Bills, visit NCC's website at www.nccnsw.org.au or call 9279 2466.

A PDF version of the three cognate Bills can be found on the NSW Parliament website using the following link: www.parliament.nsw.gov.au/prod/web/phweb.nsf/frames/bills.

Across the Basin

Barwon-Darling

The aquatic ecological community of the lowland catchment of the Darling River was listed as endangered under the *Fisheries Management Act*. The listing covers all fish and aquatic invertebrates within the main Barwon-Darling channel from Mungindi to the confluence with the Murray; arid zone intersecting streams including the Warrago, Culgoa and Narran Rivers, the Border Rivers; and regulated tributaries including the Gwydir, Namoi, Macquarie, Castlereagh and Bogan Rivers. Five of the 21 native fish species and one mollusc (the river snail) are separately listed as endangered or vulnerable.

Paroo

The Queensland and NSW governments signed the Paroo River Agreement, protecting the last wild river in the Murray-Darling Basin. The agreement will protect water quality and river flows by preventing dam and off-stream water developments.

Condamine-Balonne

The Queensland government released a draft Water Resources Plan for the Condamine-Balonne system. The Condamine is the major drainage system in southern Queensland, and the plan includes tributaries of the Ramsar-listed Narran Lakes. The consultation/submission period for the plan closes 3 February 2004.

Murray Mouth

September 2003: After a record 21 months of zero flows out of the mouth of the Murray River the barrages that regulate fresh water releases to the ocean were opened (the previous record was 11 months in 1967). The barrages are designed to reduce salinity in the Lake Albert, Lake Alexandrina, and the lower reaches of the Murray at times of low flow. In total, the barrages were opened for a total of 35 days and approximately 200GL of water flowed into the Coorong before eventually reaching the sea.

The ecological response of the internationally renowned Ramsar-listed wetlands of the Coorong is currently being studied.

Gwydir

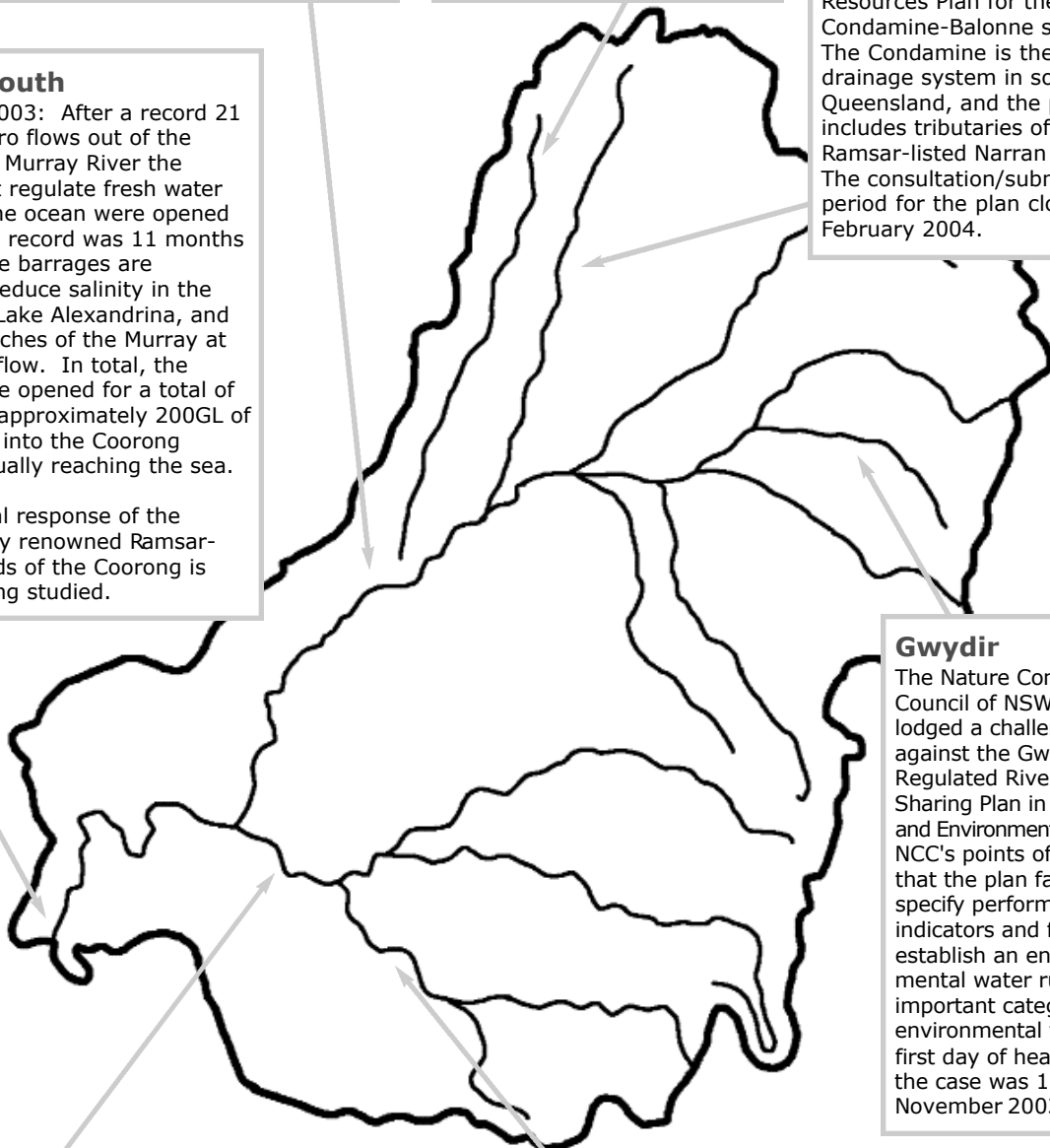
The Nature Conservation Council of NSW (NCC) lodged a challenge against the Gwydir Regulated River Water Sharing Plan in the Land and Environment Court. NCC's points of claim are that the plan failed to specify performance indicators and failed to establish an environmental water rule for two important categories of environmental flow. The first day of hearing for the case was 12 November 2003.

Murray and Edwards rivers

Millewa, Werai, and Koondrook State Forests in NSW were listed as wetlands of international significance under the Ramsar convention. The site contains rare wetland types within the Riverina bioregion (including floodplain lakes and meadows) and extensive River Red Gum forest. The listing obligates the site manager to maintain the site's essential ecological character and may offer potential as leverage for improved water, grazing and forestry management within these forests.

Murray system

The federal government listed the Murray cod, icon of Australia's greatest river, as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999*. As the fish predator at the top of the food chain in the Murray-Darling river system, Murray cod provide one of the best indicators of the health of the riverine system, including water quality and riverine habitat. They can live for up to 100 years and weigh over 100 kilograms.



COVER STORY

The Living Murray Round 1: IRN's appraisal of the Ministerial Council decision

As readers of this newsletter know, the Living Murray initiative has been one of IRN's core campaigns for several years. IRN representatives have sat on the Murray-Darling Basin Commission's Community Reference Panel; we've spread the word through the newsletter and particularly through our Living Murray special in IRN News 8(2); and we joined forces with the Australian Conservation Foundation, Nature Conservation Council of NSW, Environment Victoria, and the Conservation Council of South Australia, to submit detailed joint recommendations to the Murray-Darling Basin Ministerial Council.

Together we outlined four essential elements of a meaningful first-step decision.

1. We requested that council reaffirm its vision for the Living Murray by expressly acknowledging the goal of restoring the rivers of the southern Murray-Darling Basin to system-wide health, and by acknowledging the finding of the Interim Scientific Report that 1500 gigalitres is the minimum volume capable of delivering substantial system-wide benefits.
2. We requested that council set a long-term flow target in early-2004.
3. We recommended new policy, institutional, and consultative arrangements needed to begin water acquisition, whilst ensuring that the \$500 million committed by

Council of Australian Governments be tied to a volumetric target of at least 500 GL in increased annual flows, and directed to the most efficient ways of returning water to the environment.

4. We urged the council to use its influence to ensure that water policy development happens in sync between states.

So how did we do? Although the ministerial council's first step decision did not include everything we would have liked, as our cover story indicated there is consensus among the groups that joined in the recommendations that the decision is a good start.

The view from IRN is similar: as a first step, it's a good decision, but the true test will come in 2004 when the ministerial council makes a long-term decision on the Murray's future. But until then, it's worth looking at the first step in more detail to see what we achieved, what we missed out on, and what we need to focus our campaigning on in the lead-up to the October 2004 Ministerial Council meeting.

First, the positives from the decision.

- *Vision for the Living Murray.* Although council did not expressly recognise the Interim Scientific Report's central finding that at least 1500 GL in returned flows is necessary

Continued p.8

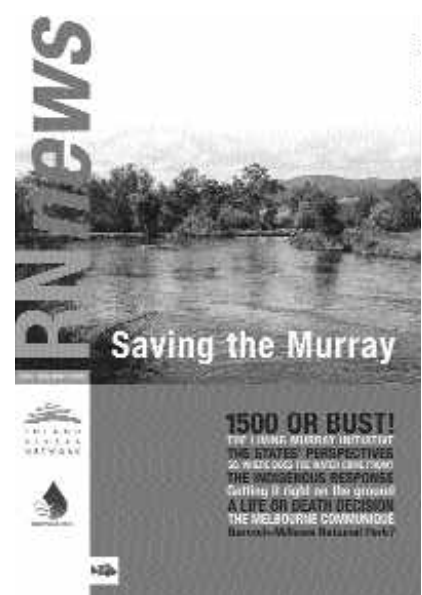
The truth will out: Report confirms Murray needs 1500

When it finally, officially came out, the answer was no surprise. Through a leak in the *Shepparton News*, everyone – whether irrigator, bureaucrat, or green – had heard that the Interim Report of the Scientific Review Panel (SRP) for the Living Murray Initiative concluded that a minimum of 1500 GL of recovered water, plus operational improvements, was required to give even a moderate chance of returning the Murray to a healthy, working river.

Yet the controversy that swirled around the report's release, with an attempted suppression of the report thwarted by public outcry from virtually all quarters, served only to underline the importance of credible, unbiased science to the success of the Living Murray.

The scientific process for the Living Murray began in earnest in February 2002, when the economically titled *Independent Report of the Expert Reference Panel on Environmental Flows and Water Quality Requirements for the River Murray System* was finalised. The report, which was compiled by a panel of Australia's foremost scientists in hydrology and freshwater ecology, tentatively concluded that with improved operations, returning 350 gigalitres (GL) in environmental flow to the Murray would provide a low probability of achieving a healthy

Continued p.9



IRN's case for a healthy Murray was the theme of our special 'Saving the Murray' issue of IRN News. If you would like a copy contact IRN or visit www.irnsw.org.au.



So... what *is* a significant environmental asset?

Sorry to disappoint all you green investors out there, but a ‘significant environmental asset’ is *not* that environmentally-friendly investment property you’ve been waiting for. It has nothing to do with ethical super funds; its value can’t even be adequately captured in monetary terms. No, ‘significant environmental asset’ is the catchy tag the Murray-Darling Basin Ministerial Council has chosen for the six sites targeted to receive recovered water under the council’s first step decision.

The site furthest upstream is the Barmah-Millewa Forest, the largest River Red Gum forest in the world, a wetland of international importance under the Ramsar Convention and the subject of a national parks campaign by the Victoria National Parks Association and the traditional owners, the Yorta Yorta Nation.

Next downstream are the Gunbower and Koondrook-Perricoota forests, a 50,000 hectare wetland and an important breeding area for waterbirds; Hattah Lakes, part of Hattah-Kulkyne National Park with 17 freshwater lakes; and the Chowilla Floodplain, one of the last remaining areas of the lower Murray floodplain that is not used for irrigation.

Finally, at the end of the system there is the Murray mouth and the internationally renowned Coorong, one of Australia’s top waterbird sites. Portions of all of these areas are Ramsar listed.

The Murray River’s channel is also considered to be a significant ecological asset for its entire length.

For each site, the council has set interim ecological objectives and expected outcomes, which include the following:

Barmah-Millewa	Successful waterbird breeding event in at least three out of ten years, and healthy vegetation in at least 55% of the forest
Gunbower and Koondrook-Perricoota	80% of permanent and semi-permanent wetlands in healthy condition, and 30% of River Red Gum forest healthy
Hattah Lakes	Restore the aquatic vegetation zone in and around at least 50% of the lakes, and increase successful breeding events for waterbirds to at least two in every 10 years
Chowilla Floodplain	Maintain high value wetlands, current area of River Red Gum, and at least 20% of original area of Black Box vegetation
Murray mouth and Coorong	Open Murray mouth, more frequent estuarine fish spawning, and enhanced migratory wader habitat in the Lower Lakes
Murray River channel	Increase the frequency of ecologically significant high spring flows, overcome barriers to fish migration, and maintain current levels of channel stability

On paper, it all looks fairly good, and as we’ve said elsewhere, it is a hopeful start. But the modesty of these objectives, with some only aiming to restore half or less of the riparian resource concerned, only underlines the degraded condition of the Murray system and the urgency of the task. If 500 GL can achieve such limited outcomes at best, the need for a minimum of 1500 GL is that much more apparent.

Also, many of us in the environment community have noted that at least part of each site, apart from the main channel, is Ramsar-listed, and the partner governments are obligated by international agreement to provide appropriate protection and management. While we are pleased to see the partner governments acting to fulfil their Ramsar obligations, suspicious minds fear that the governments may attempt to meet their international obligations and little more, at least if they can get away with it. It will be our job over the next few years to see that they can’t.

For full descriptions of the significant ecological assets, interim objectives, and expected outcomes, see Appendix B of the Ministerial Council Communique at www.mdbc.gov.au.



to return the Murray to a healthy working condition, the communiqué repeatedly emphasised that the November decision was only the beginning. The council promised “continuing work on appropriate further actions required to restore the River Murray system to healthy working condition.” Throughout, the language of the communiqué embraces a system approach to restoration.

- *Commitment to a volumetric goal.* The communiqué unambiguously sets a target of 500 GL/year of new water on average, to be recovered over five years, with the amount used in any given year depending on factors such as drought and flood. The commitment to a specific volume is particularly important because of a debate that swirled around in the months before the first step. Some decision makers and irrigation interests urged a reduced focus on volumes in favour of an ‘outcomes-based approach’, implying that environment groups were interested in particular volumes for volume’s sake alone. Australia’s foremost scientists have determined that to realise that vision a certain volume of water must be recovered, and that volume is at least 1500 GL. To have Council recognise the importance of concrete volumetric targets is a substantial step toward returning the river to health.



Restored flow regimes can bring fast results. This wetland is almost unrecognisable only five weeks after deliberate inundation by the Murray Wetlands Working Group. (Photo courtesy Murray Wetlands Working Group)

- *Commitment to further action in October 2004.* The communiqué is clear that this decision is only a first step, and just as importantly, it commits the council to further action in October 2004. The environment movement knew and accepted that the November decision would only be a first step and would not deliver the 1500 GL minimum needed. However, there remains the concern that the ‘first step’ could end up being the whole journey. While there are no guarantees that will not be the case, the council unmistakably signalled its intention to do more next year.

Along with these positive steps, the decision contains elements that cause the environment groups some concern. Some of these elements may ultimately become positives, some may become negatives – but all bear watching in the months to come.

- *Focus on significant environmental assets (icon sites).* The communiqué focuses heavily on benefits to the significant ecological assets, following on months of pronouncements from decision-makers emphasising a

shift away from volumes and toward ‘measurable outcomes’.” However, the communiqué also sets the initial focus in the context of plans for longer-term actions, and so long as the icon sites are a first step to system-wide health, there is no problem. But we will need to be on the lookout for indications that the partner governments intend to focus most or all of their future efforts on a few high-profile sites at the exclusion of whole-of-system health.

- *Failure to commit to cost-efficient water recovery.* The communiqué states that recovered water will come “from a matrix of options with a priority for on-farm initiatives, efficiency gains, infrastructure improvements and rationalisation, and market based approaches, and purchase of water from willing sellers, rather than by way of compulsory acquisition.” The environment groups have no quarrel with efficiency gains, so long as water is recovered in a cost-effective manner. However, a recent study by the Australian Bureau of Agricultural and Resource Economics notes that “[s]ince it is relatively expensive to source water from improvements in water

use efficiency, the quantity of water sourced from these investments is likely to be small.” We

will be watching to make sure that the partner governments pursue the optimal mix of investments to recover water.

- *Failure to commit to achieving the volumetric target.* Although the communiqué sets a clear 500 GL/year target, there is a significant hedge: the volume of water to be recovered is up to 500 GL/year. Those two qualifying words must not become weasel words that allow the council to claim success for a smaller amount of recovered water.

Finally, there are unresolved issues that will be the focus of our campaigning and policy advice between now and the next council meeting.

- *Making consultation work.* The communiqué commits the Murray-Darling Basin Commission to a comprehensive consultation strategy covering implementation of the first step and coordination between the Living Murray and National Water initiatives. We will be on board and active in ensuring that implementation of the first step and further steps toward a longer-term decision are transparent and informed by community input.



- *Setting up appropriate water management institutions.* There will need to be some form of manager for water recovered under the first step, and we will be pushing for a transparent managerial institution that will work in tandem with regional river management organisations and indigenous nations.
- *Getting to 1500!!* Finally, and most importantly, we will be fighting for the environmental water the Murray River needs and which all Australian communities deserve. Beneath all of the complexity of water allocation, beneath the layers of history along the river, beneath the important function of managing water so it brings the most environmental benefit possible, and

beneath the vital non-flow actions that can be taken to improve riparian habitat, there is a simple truth: rivers need water. We will have that truth foremost in our mind as we campaign toward the long-term decision.

The full text of the Murray-Darling Basin Ministerial Council Communiqué of 14 November 2003 is at the Murray-Darling Basin Commission website, www.mdbc.gov.au.

The full text of the Environment NGO Advice to the MDB Ministerial Council is at IRN's website, www.irnsw.org.au.

(So... What happened to the 1500? Continued from p.6) working River Murray system, 900 GL would provide low to moderate probability, 1950 GL would provide a moderate probability, and 4000 GL would provide a high probability (see "The Living Murray: A Life or Death Decision", *IRN News 8[2]*).

In April 2002, the Murray-Darling Basin Ministerial Council requested that the SRP expand this analysis into a comprehensive assessment of returning water to the Murray using three reference point for analysis - 350, 750, and 1500 GL. The report was finished and due for release in August 2003; but in mid-September the Murray-Darling Basin Commission announced the report would not be made public until *after* the ministerial council made its first-step decision in November, depriving interested stakeholders of all stripes the ability to draw on the most up-to-date science in their submissions to the council.

All hell broke loose. The Nature Conservation Council of NSW called the decision to withhold the report "short-sighted" and "disappointing", while Environment Victoria said that the report's suppression "fosters cynicism and scepticism" about the Living Murray process. Irrigator representatives called for the report's release, federal Agriculture Minister Warren Truss did the same, and the Shepparton News published excerpts of a leaked copy.

Under pressure from all sides, the Commission released the report in October. Its primary conclusions are as follows:

- The River Murray is likely to progressively improve as additional water is allocated to the environment (from 350 to 1500 GL).
- A 350 GL environmental allocation will provide little whole of river ecological benefit, but targeting flows to selected areas may provide *some* localised benefits.
- A 750 GL allocation may provide *some* whole of river ecological benefits with operational improvements.
- A 1500 GL allocation could provide *considerable* whole of river and local ecological habitat benefits.

For waterbird habitat, the 1500 GL allocation could provide some improvement in up to 60% of years and substantial improvements in 10% of years, as compared to 25-40% for the 750 GL option and 10-20% for the 350 GL option. For wetland vegetation 1500 GL could provide some improvement in over 40% of years and substantial improvement in over 10% of years, compared to improvements 15-25% with 750 GL and just over 10% with 350 GL. Results were similar for other categories, clearly demonstrating that 1500 GL combined with operational improvements is a must for the future health of the system.

The SRP's final report is due out before the October 2004 meeting of the ministerial council, and presumably the Commission has learned its lesson: The community wants, expects, and deserves transparency in the Living Murray Initiative and access to the best science on Murray flows Australia has to offer. The future of Australia's greatest river and the communities that it supports depends upon it.

The Australian Bureau of Agriculture and Resource Economics report Government Purchase of Water for Environmental Outcomes is at ABARE's website at www.abare.gov.au/research/landwater/envtflows.html.



Rings of River History

This story is inspired by a brief report in a fishing magazine of the oldest Murray Cod yet recorded. It was 49 years old and was born only two years after the end of World War II. This king of the river was found in 1996 with a broken back, almost certainly through being struck by a speedboat, and sadly had been starving to death. Also remarkable is that scientists suspect Murray Cod can reach far greater ages, perhaps in excess of 100 years. With the growth rate of Murray Cod in rivers roughly averaging 1kg a year, the largest Murray Cod ever (reliably) recorded, a 113.5 kg fish caught in the Barwon River in Walgett NSW in 1902, was almost certainly 100 years old or more. This article has attempted to bring together as much of our knowledge on Murray Cod breeding and biology as possible in an interesting story. Its description of Murray Cod breeding is therefore technically accurate**.*

It was November 1947 and the world was recovering from horrors of World War II. Germany was divided between Allied and Soviet caretaker regimes, and Japan was ruled by an American caretaker regime. The last of the Australian troops had long since returned home to giddy celebrations. Ben Chifley was Prime Minister and Australia was settling down to the task of populating and conquering its southern lands and the rivers that flowed through them.

As Don Bradman scored his 100th century against India in the SCG, the Murray River was flowing hard, pulsing with spring snow melt from the Australian Alps and widespread rains. Despite Hume Dam upstream, the Murray's annual spring flood was in progress, one of the last before the dams and weirs completely strangled the river.

Beneath the roiling flood waters, two Murray Cod performed an aeons-old courtship ritual. A female Cod, an enormous fish with an impressive green mottled expanse of a body, and a male Cod, almost as impressive, chose a red gum snag close to the inundated river bank as a spawning site. The snag was only a metre or two from the heavy timbered edge of the river, where the hatched fish must feed, but was far out enough to be caressed by some currents, which would help keep the eggs healthy and free of fungus.

The female Cod cleaned the spawning surface with sweeps of her massive black tail before positioning herself over it. She released her large eggs in streams, gentling bedding them down with her underbelly between releases. When she was finished, a matt of large sticky yellowish eggs covered a large part of the red gum snag. The male, who had been watching proceedings intently, positioned himself over them. Shuddering slightly, he released a cloud of white milt, enveloping and fertilising the egg matt.

The female Cod circled the spawning site several times and looked at the male Cod. Reassured that her job was done, she left. In August, as Prime Minister Chifley had announced the nationalisation of the banks to the nation, she had felt the rising waters and left her home snag - a

mighty sunken redgum - and migrated more than 100 kilometres upstream to spawn. Now she headed downstream to return to the exact same snag. Her mate had made a similar migration and would return to his home snag too, but first he must guard the eggs.

The male Cod guarded the eggs for a week. He chased away an inquisitive turtle and several Golden Perch, but otherwise spent the time resting and fanning the eggs with his tail to keep them clean. Now the eggs were beginning to hatch.

The juvenile Murray Cod struggled out of his individual cell in the sticky egg matt. He was only eight millimetres long, semi-transparent and poorly formed, and carried a large bulbous yolk sac under his chest. He and thousands of other larvae sat quietly around the hatching site, the male Cod still guarding them.

After 6 days, the juvenile Cod and all his siblings became more active and dispersed, each going their separate way. The male Cod, satisfied that his guard duty was complete, headed downstream for his home snag.

After 10 days the juvenile Cod, now reddish-brown in colour and looking more like a Cod in form, had used up his yolk sac. Now he turned to live prey. The rich flood plain waters spilled over the edge of the river channel and back into the river. Hunger and instinct drew the juvenile Cod to this fertile junction - a life-long habit of living and hunting along drop-offs was beginning. Weaving amongst the inundated redgum branches that normally line the bank, the juvenile Cod hovered finning in the murky floodwater currents. Suddenly his eyes caught the erratic darting motion of a zooplankton - a copepod borne along with the flood waters. He darted forward. In alarm the copepod zipped away, but with several extra beats of his tail the juvenile Cod pounced on it, his jaws slamming shut with tiny ferocity. Around him, his siblings hovered and darted, feeding the same way.

He grew strong on zooplankton in those critical early weeks, and as summer progressed and the floodwaters lessened, the little Cod - now a perfect green miniature of an adult Murray Cod - progressed to larger prey. First aquatic insect larvae, then tiny *Parataya* shrimp, and then larger *Macrobrachium* shrimps with their long and spindly claws. Finally, as the river assumed its normal level, his ferocious jaws started to slam upon juicy, dusky, darting little Western Carp Gudgeon. The little Cod grew rapidly. Soon he would be safe from birds, and in four or five summers' time, there would be almost nothing he could not eat, with his size and strength and cavernous mouth.

It was the summer of 1996. 49 years had passed since the Cod had hatched that warm November and pounced fiercely on the zooplankton that drifted through the floodwaters. Now a mighty fish, even bigger than his mother, the Murray Cod weighed 50 kilograms, and measured 1.27 metres. He was the king of the river, and a formidable predator. He could out-sprint any other fish. Several sharp beats of his massive tail would send him



hurtling mightily towards his prey - easily faster than any prey could flee - and there was no escape.

He had seen many changes in his life. Many of the snags he had used as homes and spawning sites had suddenly disappeared - de-snagging had seen to that. The spring floods in which he repeated the aeons-old courtship ritual had virtually disappeared - the construction of Dartmouth Dam had finally seen to that. The river ran upside down. There were no more spring floods, but in summer, when the river should have been warm and peaceful, the water roared and was cold - irrigation demands had seen to that. The rich weed beds and clear waters of summer disappeared, and the river became permanently muddy. Fish species he had known and hunted disappeared, while strange new fish arrived. And his own kind had grown few. But worse was to come.

He was near the surface, very near, hunting the strange new fish that often congregated near the surface and sucked away with pale rubbery lips. As he drifted near them, planning his attack, a strange droning noise bothered him in the background. He thought of his attack. But the droning noise was still there

coming closer

coming fast

LOUDER

LOUDER

DEAFENING

Suddenly he convulsed as a massive crippling blow struck

his back. Something enormous flashed over him, making an unbelievable noise, and left him rocking in its wake. His back burned with pain. It was broken. He could not swim.

Sadly he drifted, paralysed and starving, 49 years of river history and memory, his magnificent body wasting away. Until he was discovered and mercy given, his remains destined for research.

His otoliths or earbones were retrieved, sectioned and polished, and examined under a microscope. A ring of calcium spoke for each rich summer he had spent hunting for food in the river where he was king, like rings in a tree trunk. 49 of them. Raising his head from the microscope, the researcher lent back in his chair and paused. He realised a unique Australian - a giant among fish - had died.

© Simon Kaminskas

About the author: Simon Kaminskas is a passionate native fish ecologist, conservationist and catch-and-release angler. His interests cover all native fish species but the Maccullochella cods are his specialty.

** There have been a number of reliable reports of large Murray Cod being hit and killed by speedboats in the lower Murray River, and this is a probable cause of the fish's injuries. This reference is not intended as a criticism of boat drivers or water-skiers, but is made in the same sense as a reference to a tragic road kill incident.*

*** Acknowledgement: Dr Stuart J. Rowland, Scientist-in-Charge, Grafton Aquaculture Centre, NSW Fisheries, provided some technical feedback for this piece. His assistance is greatly appreciated.*

Basin News

Water Sharing Plans Delayed Again

A mere four months after delaying implementation of the Water Sharing Plans until 1 January 2004, the Department of Infrastructure, Planning and Natural Resources announced a further six-month delay until 1 July 2004.

Minister for Natural Resources, Craig Knowles, said that the deferral was to allow coordination with the National Water Initiative, which is scheduled to be put forward at the April 2004 meeting of the Council of Australian Governments. The deferral has also been incorporated into the timetable for transferring natural resource responsibilities to the new Catchment Management Authorities.

Inland Water Sharing Plan Workshop

Environment representatives on the state's water management committees have expressed

disappointment in the water sharing planning process but agreed that the process has had some beneficial outcomes.

Speaking at a workshop organised by IRN and NCC, the representatives said that improved transparency in planning processes and increased awareness of environmental problems within the bureaucracy were positive outcomes. However, they were concerned this increased transparency could be lost as responsibility for water management is transferred to the new CMAs. Reps were also concerned that water reform could get pushed off the agenda as CMAs struggle to take on vegetation and catchment management plans. Therefore, the group resolved to work together to ensure that the environment movement's voice continues to be heard by CMA members.

IRN's position on the draft water sharing plans can be seen in Issue 7(2) of the IRN News or viewed online at www.irnsw.org.au.

The Inland Rivers Network of NSW brings together community groups and individuals with the goal of restoring and conserving the biodiversity, natural function and health of the inland river systems and wetlands of NSW. Together with local, regional, state and national conservation groups, IRN seeks to promote greater understanding of the threats to inland rivers and the communities that rely upon their survival.

IRN steering committee member organisations:

- Australian Conservation Foundation
- Nature Conservation Council of NSW
- National Parks Association of NSW
- Coast and Wetlands Society
- Friends of the Earth



Help IRN protect our inland rivers and bring security and sustainability to regional communities. Send your donation to:

Water for Rivers Fund
Inland Rivers Network
Level 1, 29-35 Shepherd St
Chippendale NSW 2008

**Surface
Mail**

**Postage
Paid
Australia**

Inland Rivers Network

Level 1, 29-35 Shepherd Street, Chippendale NSW2008
Tel: 02 9212 5112 Fax: 02 9212 6977 Mob: 0407 279 088
E-mail: coordinator@irnsw.org.au
Web: www.irnsw.org.au
ABN: 34 373 750 383



IRN Conference Proceedings – Available Now

The Way Forward on Weirs (Available as book or CD-ROM)

Twenty thousand or so man-made structures block the passage of water and aquatic life in the waterways of southeastern Australia. The ecological, social and economic consequences have been enormous. Despite the damage to the natural environment only a handful have been removed.

Taken from the IRN-hosted conference of the same name, The Way Forward on Weirs addresses four key questions:

- What are the effects of weirs on the environment?
- How can weir operations be altered to reduce environmental impacts?
- How can weirs be removed or modified? And
- Lateral thinking about water supply and management.

Thermal Pollution of the Murray-Darling Waterways (Available on CD-ROM)

The phenomenon of thermal pollution is not new. The lowering of water temperatures downstream from large dams has resulted in a significant decline in native fish populations. The flow-on of this cold water pollution into a wide range of social, environmental and economic impacts is now only beginning to be documented.

The Thermal Pollution Workshop, held at Lake Hume, June 2002, brought together a diversity of expertise from scientists to engineers, professionals in water resources, fisheries and conservation management – people with first hand experiences of the thermal pollution problem.

**Order these proceedings by calling
02 9212 5112 or visit www.irnsw.org.au.**