

Building a more secure future for the Barwon-Darling

PROGRESS REPORTS

Over the last 50 years the Barwon-Darling¹ has been increasingly affected by the growing use of water for agriculture, industry and stock and domestic needs between Mungindi and Menindee Lakes and also on its tributary streams in New South Wales and Queensland.

The use of water on the Barwon-Darling contributes more than \$50 million to the agricultural output of the far west of NSW, and is now an important component of the local economy. But there is clear evidence that the stress on the River is now high. The algal bloom of the early 1990's was perhaps the most widely reported symptom of poor river health we have seen in this country. There are also other important issues such as fish and wetland declines.

A partnership between the community and Government is the only way to restore the balance. We need to devise ways to maintain the important natural processes of our river systems while also continuing to supply agricultural enterprises, towns, stock and domestic users with the water and services that they now need. The recently formed Barwon-Darling River Management Committee will play a key role in this. Although a unanimous decision was not reached by the Committee this year, I am pleased with the progress it has made.



Richard Amery
Minister for Land and Water Conservation
Minister for Agriculture

Over the last 4 months, the Committee has worked on developing a set of low flow environmental rules for 1998/99 which strike a better balance between supporting natural processes and diversions of water.

Unfortunately, it was not possible to devise a unanimously agreed set of recommendations. Nevertheless, all members of the Committee have adopted a committed, constructive and cooperative approach and this provides confidence that it will be able to deal with the complex issues already raised and the many more before it.

The Committee will now move into the second stage of developing the Barwon-Darling River Management Plan. This will further clarify and strengthen future water management arrangements along the river and better balance river health and use of water.



Rory Treweeke
Chair, Barwon-Darling River Management Committee

Water from the Barwon-Darling system now supports a major irrigation industry and provides income and employment for many people on farms and in towns along its course. Much of the industries' production is exported, providing millions of dollars in income for Australia.

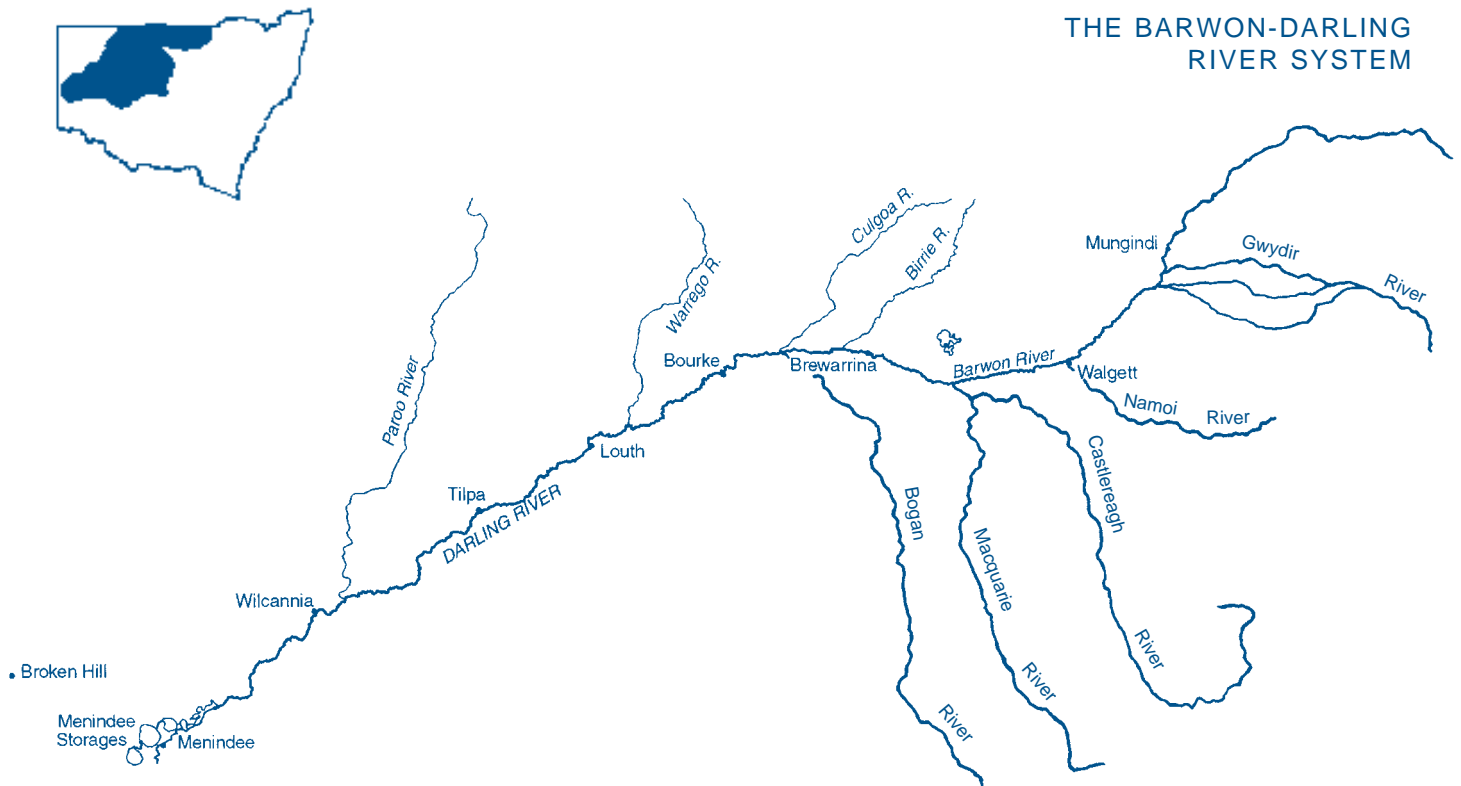
The long term economic viability of the valley depends on the continued health of the river. The river also provides habitat for many species of fish and other wildlife and water for large areas of wetlands, important features in an, otherwise, very arid area.

The waters of the Barwon-Darling are a finite resource and the signs are that we have reached the limits of sustainable use.

To address the need for a better balance between river health and use the NSW Government introduced a major package of water reforms last year. A major target is achievement of more explicit and careful sharing of water between the environment and water users. This is essential if we are to provide greater clarity and certainty in water use rights and a better long term foundation for investment. The package is also aimed at improving the level of community involvement in the choices which are made about water management.

¹ The Barwon-Darling is an abbreviated term used to refer to the Barwon and Darling Rivers.

THE BARWON-DARLING RIVER SYSTEM



THE RIVER MANAGEMENT COMMITTEE PROCESS

In late 1997, the Barwon-Darling River Management Committee (RMC), was established. It was one of seven community based Committees established for the major regulated² rivers and the Barwon-Darling. The Barwon-Darling was also considered a high priority because the river is heavily impacted upon by development in its regulated tributaries (in NSW and Queensland) on the river itself.

The RMC's initial task was to review indicative environmental flow rules for 1998/99 and, by March this year, either endorse these rules or recommend alternatives which achieve a similar environmental result.

This document summarises the outcomes of the Barwon-Darling River Management Committee's (RMC) deliberations and details the environmental flow rules which government has decided to apply after considering the advice provided by the RMC.

THE BARWON-DARLING SYSTEM

The Barwon-Darling and its tributaries drain over 650,000 square kilometres including much of far west NSW. The section covered by the Barwon-Darling RMC extends from Mungindi, on the Queensland border, to Menindee and is some 1,600 kilometres long.

Nearly all river flows in the Barwon-Darling come from inflows from its major tributary streams to the east and north. The most important of these in terms of flow contributions are the Culgoa, Dumaresq/Macintyre and Namoi. Smaller quantities of water also come from the Gwydir, Macquarie and Bogon systems.

The 17 major weirs on the system are an important feature, as they create long relatively still stretches of water, especially in low flow times.

What we do with our water

Irrigators between Mungindi and Menindee rely entirely on unregulated flows in the Barwon-Darling. They pump into extensive off-river storages or directly onto crops. Irrigation from

the Barwon-Darling has grown rapidly over the past decade, mainly for cotton production. The yearly value of this production is more than \$50 million or about one third of total agricultural production in the region.

Some of the weir pools store water needed in droughts by towns, which do not have alternative water sources. Towns which draw on the river include Mungindi, Collarenebri, Walgett, Brewarrina, Bourke, Louth, Tilpa, Wilcannia and Menindee.

The river and its weir pools are also a focus for local communities and visitors, who use them for eco-tourism, boating, fishing, swimming and other recreational activities.

Flows

Natural yearly flows in the Barwon-Darling average about 3,500,000

² Regulated rivers are those whose supply is controlled or augmented by releases from dams and weirs operated by DLWC

Megalitres. A characteristic which the Barwon-Darling shares with all other inland rivers in the State is the high variability of flows between years and within years.

The floodplain, its wetlands and natural features of the river channel are largely a product of these natural flow patterns. These flow patterns are also essential for the life cycles of many native plants and animals existing in and along the river.

The volume which can be stored behind major dams on streams flowing into the Barwon-Darling now approaches 5,000,000 Megalitres.

There are also hundreds of thousands of Megalitres of on-farm storages on these streams and along the Barwon-Darling - it is estimated that there are 230,000 Megalitres in such storages on the Barwon-Darling alone.

These storages and water extraction in the tributaries and along the Barwon-Darling itself, has greatly effected flow patterns. Periods of low flows are much longer than would have occurred before development, and flow peaks are now considerably reduced. Average flows have been reduced by more than one third.

River health effects

Although declines in river health are the result of a number of factors, altered flows are cited as important contributors to many of the changes which have occurred, including:

- increased occurrence of blue-green algal blooms,
- riverbank instability and bank slumping and changes in channel form,
- decreased opportunities for fish breeding and migration,
- decreased wetland inundation, and
- breakdown in natural processes, including a decline in the production of food to support fish and waterbird populations.

RIVER HEALTH FRAMEWORK

Interim river flow objectives (RFOs)

Eleven interim State-wide river flow objectives (RFOs) have been established by Government for all major NSW rivers. They are currently subject to broad community consultation. The objectives are:

- 1 Protect natural water levels in river pools and wetlands during periods of no flow
- 2 Protect natural low flows
- 3 Protect or restore a portion of freshes and high flows
- 4 Maintain or restore the natural inundation patterns and distribution of floodwaters supporting natural wetland and floodplain ecosystems
- 5 Mimic the natural frequency, duration and seasonal nature of drying periods in naturally temporary streams
- 6 Maintain or mimic natural flow variability in all streams
- 7 Maintain the rates of rise and fall of river heights within natural bounds
- 8 Maintain groundwater within natural levels and variability, critical to surface flows or ecosystems
- 9 Minimise the impact of in-stream structures
- 10 Minimise downstream water quality impacts of storage releases
- 11 Ensure that the management of river flows provides the necessary means to address contingent environmental and water quality events

Committee's targets for this year

The major overall impact on flows in the Barwon-Darling comes from dams and use of water on streams which feed the River. The effect of use on the Barwon-Darling itself is greatest in low flow times.

The initial emphasis of the RMC has, therefore, been on the low flow regime. However, the Committee also

recognises the need to address flows in the medium to high range once the low flow rules are finalised and the impacts of environmental flow rules in the regulated tributaries are clearer.

The control of the overall levels of use in line with the agreement reached between all Murray-Darling Basin States, in 1995, to limit Basin water use and several other matters have been identified for examination by the RMC in the near future.

River flow rules for 1998/99

The low flow rules for 1998/99 are a combination of Government's indicative rules and proposals put forward by Committee members. They protect more of the low flows than is possible under present flow rules.

Rule 1:

Threshold for all B class licenses above the Namoi junction to be set at the 60th percentile natural flow.

Rule 2:

Threshold for all B class licenses below the Namoi junction to be raised:

- by 200 Megalitres/day from Namoi junction to Brewarrina (ie, Walgett threshold from 700 to 900 Megalitres/day)
- from 390 to 1150 Megalitres/day at Bourke
- from 280 to 1000 Megalitres/day at Louth
- review thresholds below Louth.

Rule 3:

Introduce limits on diversions below the Namoi junction, for flows between those set out in Rule 2 and the natural 60th percentile, details of this are yet to be determined. Rules for A and C class licences have also to be finalised

What the rules mean

While the adoption of the rules will help support natural processes they will cause some loss of water supply to some users. It is estimated this reduction would on average be about 5% of current use along the River.

WHERE TO FROM HERE?

Now

The immediate step is to implement the Committee's decision on the flow of water in the Barwon-Darling.

As part of its broader role, the Committee will monitor the impacts of these rules - on the environment and on the social and economic fabric of the valley - and recommend any appropriate modifications. Having clearly defined procedures means the impact of change on water users, communities and the environment can be understood by all. In particular the matters raised but not resolved to date will need to be debated.

River flow and water quality objectives

Consultation with communities on the State-wide river flow and water quality objectives by Government will finish in May 1998. Interim water quality objectives will be set by Government, based on this consultation.

The outcomes of this consultation about river flow objectives for the Barwon-Darling will be referred to the RMC to consider when developing annual river flow rules and other river management strategies.

Following the 5 years of experience in flow rules, the Government will establish long term river flow objectives for the Barwon-Darling, linked to the water quality objectives.

Developing a river management plan

Better and balanced management of the Barwon-Darling depends on the River Management Committee, as the key community based mechanism, achieving an agreed way forward. It will do this by developing a river management plan which will be the basis of future water resource management in the valley.

The plan must strike a balance between environmental, social and economic needs. To make decisions will therefore require information on the impacts of change on the environment, economy and community.

The Committee will have 4 more years to fully develop the Plan. It will then be submitted for endorsement to the NSW Ministers for Agriculture, Land and Water Conservation, and Environment.

The work of the Committee will be complemented by the activities of the existing Great Artesian Basin Advisory Committee who deal with groundwater matters. A further River Management Committee will be formed to advise on management in the streams which cross the New South Wales/Queensland border such as the Warrego, Paroo and Culgoa systems.

These plans will do 4 things:

1. Guide government water management decisions by providing a framework for:

- access rules and pollution control strategies
- trading rules within a valley and between valleys
- linking water flow with water quality management and groundwater management
- auditing and monitoring implementation

2. Recommend supporting actions to local communities by:

- determining local priorities
- containing actions for water quality and river flow
- linking with local government and their planning powers
- recommending community projects (such as revegetation, wetlands, etc)
- linking with regional and catchment strategies
- linking with funding programs

3. Guide investment decisions of:

- State and local Government (such as structural changes to dams and

sewage treatment works)

- the private sector

4. Ensure decision making is transparent by:

- listing all information considered
- listing all consultation undertaken
- explaining how options have been developed
- describing analytical processes
- explaining how the preferred option has been selected
- demonstrating the balance between environmental outcomes and socio-economic impacts
- representing community consensus

In the end, the success of water reform depends on effective community involvement at various levels - through smarter decision making on river flow management, - through agreed water quality actions, - and through increased water use efficiency.

By working together we can strike a balance.

BARWON-DARLING RIVER MANAGEMENT COMMITTEE MEMBERS

Rory Treweek	Chairperson
Ian Cole	Irrigation interests
Bruce Jackson	Irrigation interests
Ian McDonald	Irrigation interests
Dr Judy Messer	Environmental representative
Wayne O'Malley	Local government representative
Peter Thompson	Environmental interests
Jenny McLellan	Western Catchment Management Committee
Charlie Mitchell	Local Government representative
Wayne Leigh	Riparian landholders representative
Roy Barker	Aboriginal community representative
Maureen O'Donnell	Aboriginal community representative
Geoff Wise	Department of Land and Water Conservation
Mike Maher	National Parkes and Wildlife Service
Geoff Woods	NSW Agriculture
Richard Whyte	Environment Protection Authority
Peter Gehrke	NSW Fisheries
Bill Williams	Independent scientist

For further information on the RMC and the Barwon-Darling flow rules contact Peter Terrill, Executive Officer of the Barwon-Darling RMC by telephone on (02) 6883 3029, by fax on (02) 6883 3099, or e-mail pterrill@dlwc.nsw.gov.au

