

# Building a more secure future for the Hunter

## PROGRESS REPORT

The Hunter is the source of water for agriculture, much of the State's power and mining industry and for some major towns. The River and the Hunter estuary are also important natural assets for New South Wales.

Over the last 130 years changes to land use, the building of dams and the supply and use of water have resulted in major changes to the natural flow of the Hunter River and damage to its health. The evidence of poor river health includes algal blooms, increasing salinity and nutrient levels, and dwindling numbers of native fish populations.

A partnership between the community and Government is the only way to restore the balance between the important natural processes of our river systems while also continuing to supply industrial and agricultural enterprises and domestic users with the water and services which they need.

A significant step in this direction came in October 1997 with the establishment of the Hunter River Management Committee to consider the complex issues involved and advise government on the best steps to take.

Its first task has been to develop a set of environmental flow rules for 1998/99. This involved difficult questions and intensive discussion and debate. The Committee was able to unanimously agree on most recommendations, an outcome which reflects well on the constructive approach adopted and the commitment of the members.

The River Management Committee will now move into the second stage, that of developing the Hunter River Management Plan. This will be an important component in further clarifying and strengthening water management in the Valley and achieving the correct balance between user needs and the environment.



WEJ Paradise, PhD  
Chair, Hunter River Management Committee

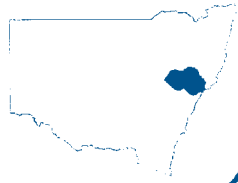


Richard Amery  
Minister for Land and Water Conservation  
Minister for Agriculture

As well as contributing to the well being of many thousands of people in the Hunter Valley, water from the Hunter underpins a major part of this State's economy and much of its exports.

The waters of the Hunter are a finite resource and the signs are that we have reached the limits of reasonable use.

To address the need for a better balance between river health and water use in our State's rivers, a major package of water reforms was introduced last year. A key 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.



## THE HUNTER REGULATED RIVER SYSTEM



## THE RIVER MANAGEMENT COMMITTEE PROCESS

The Hunter River Management Committee (RMC) was established as one of seven community based committees set up for the major regulated rivers<sup>1</sup> and the Barwon-Darling. Their initial task was to review draft environmental flow rules for 1998/99 and, by March this year, either endorse these rules or recommend alternatives which achieve a similar environmental result.

The Committee members have provided reports to Government. This document summarises the major recommendations of the Hunter RMC deliberations and details the environmental flow rules, now endorsed by Government, which will be put in place for the regulated sections of the Hunter River system for 1998/99.

## THE HUNTER REGULATED SYSTEM

### The regulated system

The Hunter River is the major regulated coastal river system. It has a catchment area of 22,000 square kilometres and its regulated sections

are 360 kilometres in length.

They extend from Glenbawn Dam to the Oakhampton Bridge and include Glennies Creek from downstream of Glennies Creek Dam to the Hunter River. The system includes the Paterson River, from Lostock Dam to the weir at Gostwyck.

There are three major storage dams operated by DLWC in the catchment, Glenbawn (870,000 Megalitres, including 120,000 Megalitres in flood mitigation storage), Glennies Creek (283,000 Megalitres), and Lostock (20,200 Megalitres) on the Paterson. Other significant storages on the regulated system include Lake Liddell (148,000 Megalitres) and Plashett (65,000 Megalitres) which are used to hold water for power station use.

### What we do with our water

Water is used for both agricultural and industrial purposes in the Hunter. Irrigation crops include vines, fodder, pasture and some cereal crops. Industrial uses include power generation and mining (mostly collieries). Supply of water for town water supply and stock and domestic use is also important in the Hunter.

In 1992/93, irrigated agriculture contributed \$126 million of a total agricultural output of \$400 million.

Mining has a gross value of just under \$2 billion, while Bayswater and Liddell power stations produce about 40% of the State's power. The estuary supports recreation and commercial fishing industries. Industries based on water use in the Hunter provide income and employment for many thousands of people and are the source of important export products for Australia.

Towns supplied from the regulated Hunter include Singleton (population 12,000) and Muswellbrook (10,000).

### Flows

The Hunter is relatively dry for a coastal catchment with an average annual rainfall of 660 mm. Natural flows in the Hunter near Maitland average about 1,040,000 Megalitres each year, but vary greatly from year to year and during each year.

The three major dams regulate approximately 20% of the total catchment run-off. The regulated system also receives substantial inflows from streams, such as the Goulburn, Williams, Wollombi, and Pages.

As a result, the effect of the dams on high flows along much of the system has not been as great as in most other major regulated rivers in the State. There have, however, been marked changes in the low to medium flow regime because of releases from the dams and water use.

<sup>1</sup> Regulated rivers are those whose supply is controlled or augmented by releases from dams and weirs operated by DLWC.

## River health effects

Although a decline in river health is the result of a number of factors, altered flows contribute to many of the changes which have occurred, including:

- poor water quality, particularly salinity and algal blooms, and degraded instream habitat, and
- modification of the upper estuary ecosystems (change in the saltwater/freshwater cycles resulting from loss of natural flow variability and periods of reduced flow).

## RIVER HEALTH FRAMEWORK

### Interim river flow objectives (RFOs)

Twelve interim State-wide river flow objectives (RFOs) have been established by Government for all major coastal NSW rivers. These objectives, listed below, underlie the indicative flow rules considered by the Hunter RMC. 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

<sup>2</sup> Shelf water is the term used for unallocated water in Glennies Creek and Glenbawn Dam which was previously available for sale.

<sup>3</sup> A conjunctive use licence is a class of licence which allows users to meet shortfalls in allocation from regulated rivers by extracting groundwater.

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
12. Maintain or rehabilitate estuarine processes and habitats.

### Committee's goals for this year

The Hunter RMC considered these broad RFOs and the specific circumstances in the Hunter and concluded that the following should be the targeted outcomes for the 1998/99 rules:

- Improvement in water quality and instream habitat,
- Restore triggers for migration of animals and reproduction of plants and animals
- Improvement in floodplain, riverine and wetland vegetation and
- Improvement in overall river health

In addition to these environmental outcomes, the Committee also agreed on the following goals:

- better participation by the community in the decision making process
- an aware and knowledgeable community about water management issues
- procedures to resolve differing objectives
- better definition and security for water users.

### River flow rules for 1998/99

#### *Environmental Contingency Allowance (ECA)*

Allowance of 20,000 Megalitres on the Hunter, shared between Glennies and Glenbawn Dams and 2,000 Megalitres on the Paterson in Lostock Dam. (from "shelf" water<sup>2</sup>)

#### *Access to high flows in regulated sections*

Access to high flows will be as follows:

- First 12 hours of the flow event be allowed to pass. Water previously ordered can still be diverted, and

- Maintain minimum discharge of the Hunter River at Singleton of 120 Megalitres/day from 1 May to 30 September and 300 Megalitres/day at Singleton between 1 October to 30 April. Maintain minimum discharge at Jerry's Plains of 100 Megalitres/day from 1 May to 30 September and 150 Megalitres/day at Jerry's Plains between 1 October to 30 April, and
- Maximum 50% extraction of high flow.

This rule will be trialed for 12 months with monitoring to assess the environmental benefits.

#### *Access to high flows in unregulated sections*

Ensure high flow pumping conditions in unregulated tributaries are linked to the regulated system rules

#### *Conjunctive use<sup>3</sup> of surface water and groundwater*

Conjunctive use of surface and groundwater will continue in 1998/99

#### *New water use*

No further sales of "shelf water" will be made in the regulated Hunter system

Existing river management and operation practices will be modified as necessary to accommodate the Hunter RMC recommended rules.

The Committee also endorsed the continued development and implementation, in 1998/99, of the current Salinity Trading Scheme.

#### **What the rules mean**

While the adoption of the rules will help support natural processes they will cause some loss of high flow access to some users. However, there will be no impact on water allocation reliability to most existing users.

Analysis indicates that the adopted rules will provide a more natural flow variability and restore some portions of the flow regime believed critical to the lost natural flow pattern. In particular the rules should reduce conditions favourable to algal blooms, and improve overall water quality and river health.

## WHERE TO FROM HERE?

### Now

The immediate step is to implement the adopted environmental flow rules in the Hunter.

Some of the Committee's recommendations for 1998/99 require legislative change and cannot be implemented immediately.

Others require more detailed information before rules can be developed. Other Hunter RMC recommendations are:

**Conjunctive use of surface water and groundwater** - The following has been agreed

- In principle support for the separation of conjunctive use in future years.
- Allocations and access rules will be established for subsequent years, following better definition of the boundary between surface and groundwater, assessment of economic impacts and extent of anomalies.
- Bores within 200 metres of the River will continue to be assessed as use of surface water and not groundwater.
- 12 month amnesty for registration of existing unlicensed bores
- Construction of new high yield (20 Megalitres/yr) bores to be embargoed.

**End of system flows** - Rules which introduce variability in delivery of end of system flows will be developed following further information on ecological and biological processes and the effectiveness of variability.

- Management of water use in the tidal zone - Water use below Oakhampton Bridge and Gostwyck will be managed in future years, once legislative change is made and a plan is developed which ensures consistent management of the whole regulated section of the Hunter River.

**Manage water use in estuarine section** - Develop access strategies for users in tidal sections to improve estuarine habitat, particularly for fish

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.

### River flow and water quality objectives

Consultation with communities on the State-wide interim 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 Hunter will be referred to the RMC to consider when developing annual river flow rules and other river management strategies.

The RMC will review the environmental flow rules annually for 5 years, and this experience will assist the Government in establishing long term river flow objectives for the Hunter, linked to the water quality objectives.

### Developing a river management plan

Better and balanced management of the Hunter depends on the RMC, as a 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 development will include opportunities for broader community participation and consultation.

The Plan must be 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 creation of an additional community-based committee, by June 1998, will ensure that water management in all parts of the Hunter catchment will be reviewed.

This committee will cover the unregulated rivers and connected groundwater systems and will develop its own plan, linked to the Hunter RMC plan as appropriate.

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:

- 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.

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## HUNTER RIVER MANAGEMENT COMMITTEE MEMBERS

WEJ Paradise, PhD	Independent Chair
P Brennan	Hunter Coal Environment Group
B Russell	Hunter Valley Water Users
J Neely	Macquarie Generation
J Davis	Hunter Environment Lobby
P Winn	Nature Conservation Council
M McLean / K McDonald	Nature Conservation Council
H Sternbeck	Hunter Catchment Management Trust
N McNamara	Hunter Region Organisation of Councils
R Griffith	NSW Aboriginal Land Council
A Burns	Dairy Farmers Association
R Alexander	Minewatch
C Cole	Hunter Water Corporation
A Burgin	Department of Land and Water Conservation
B Conroy	National Parks and Wildlife Service
J Wilson	NSW Agriculture
C Ferguson	Environment Protection Authority
D Grey	NSW Fisheries

For further information on the RMC and the Hunter flow rules contact Garry Hunt, Executive Officer of the Hunter RMC by telephone on (02) 6542 1222, by fax on (02) 6543 4164, or email [ghunt@dlwc.nsw.gov.au](mailto:ghunt@dlwc.nsw.gov.au)

