Summary of BARWON–DARLING REGION

From the Guide to the proposed Basin Plan

This publication summarises proposals outlined in the Guide to the proposed Basin Plan as they relate to the Barwon–Darling region.

THE REGION

The region’s major feature is the Barwon–Darling River, which flows south-west from Collarenebri in the north-east to Wilcannia in the south-west. The region occupies a key position in the Basin, receiving high inflows from a number of wetter regions in the north and north-east. The Barwon–Darling flows into the Lower Darling region between Wilcannia and Menindee.
WATER USE AND ENVIRONMENTAL HEALTH

The Authority has compiled the current limits for all forms of water extraction in the Murray–Darling Basin. For surface water these current diversion limits include watercourse diversions for town and community water supplies, irrigation and industries, floodplain harvesting, and interception activities such as farm dams and forestry plantations. For groundwater they include all water diverted from the aquifers of the area. Current diversions are limited by existing transitional and interim water resource plans where these are in place. These are existing plans, prepared by Basin states, and recognised under the Water Act 2007 (Cwlth) (the Act). Where there are no existing plans, or plans do not apply to certain types of water extraction, the current diversion limit reflects the current level of use.

The surface water long-term average current diversion limit for the Basin as a whole has been estimated at around $13,700$ GL/y and at $310$ GL/y for the Barwon–Darling region. The Basin wide groundwater long-term average current diversion limit is $1,786$ GL/y.

<table>
<thead>
<tr>
<th>Barwon Darling Region</th>
<th>surface water Current Diversion Limit (GL/y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interceptions</td>
<td>Watercourse Diversions</td>
</tr>
<tr>
<td>110</td>
<td>200</td>
</tr>
</tbody>
</table>

The Barwon–Darling region’s agricultural production is dominated by dryland grazing. There is increasing development of land for grazing and intensive cropping in the eastern margin of the region. The dominant irrigated crop in the region in 2005–06 was cotton, which accounted for $93\%$ of water used for irrigation. Other agricultural commodities include rice, other broadacre crops, fruit and nuts, grapes, vegetables, nurseries, cut flowers and cultivated turf.

There are a number of factors indicating moderate ecological condition in the Barwon–Darling. For example: While vegetation condition is poor, much of the cover is considered remnant and particularly so along water courses. Fish communities are moderately diverse. Hydrological conditions in the region are generally considered poor with marked changes in the hydrological regime of the Barwon–Darling over the last 100 years. Macroinvertebrate communities exhibit low to moderate diversity. Stream condition is considered moderate to poor.

Total phosphorus and turbidity levels are consistently poor with high levels of nutrients and varying levels of salinity, at times exceeding $3000 \mu S/cm$.

ASSESSING ENVIRONMENTAL WATER NEEDS

Many of the environmental assets and functions of the Murray–Darling Basin have been degraded by the over-extraction of water from the Basin’s rivers. The Act and Basin Plan seek to address the over-extraction of water to restore and maintain the Basin’s key environmental assets and key ecosystem functions.

To determine sustainable diversion limit (SDL) proposals it is necessary to work out how much water is needed to sustain the health of the Basin’s river systems, wetlands and floodplains. To do this, the Authority has undertaken an assessment of the environmental water requirements of key environmental assets and key ecosystem functions across the Murray–Darling Basin. In the most part, the assets assessed are large flood-dependent wetland and floodplain systems that support populations of waterbirds and fish, and large forests and woodlands. The assessment of key ecosystem functions gave particular attention to the environmental water requirements of rivers, and system wide processes such as connectivity between rivers and floodplains.

Together, these assessments included specific analysis of flows at 106 hydrologic indicator sites across the Basin (88 sites to assess the water needs for the Basin’s key ecosystem functions and 18 to assess the water needs for key environmental assets), as well as analysis of end of system flows in each region.

The environmental water requirements at a Basin scale have been estimated between $22,100$ GL/y and $26,700$ GL/y (an increase between $3,000$GL/y to $7,600$GL/y from the $19,100$ GL/y currently available for the environment).

In the Barwon–Darling region, 64 key environmental assets have been identified. Of the 106 hydrological indicator sites across the Basin the Barwon Darling region contains three hydrological indicator sites for key ecosystem functions.

The environmental water requirements for the Barwon–Darling region have been estimated between $1,734$ GL/y and $1,755$ GL/y (an increase between $228$ GL/y and $249$ GL/y from the $1,506$ GL/y currently available for the environment).

SUSTAINABLE DIVERSION LIMIT PROPOSALS AT THE BASIN AND REGIONAL SCALE

The Authority is required to establish new long-term average SDLs for surface water and groundwater. SDLs represent the long-term average amount of water which can be used for consumptive purposes after meeting the environmental water needs that have been identified.

In the Guide, the Authority presents the SDLs as a range of scenarios for discussion at this stage, rather than choosing a particular value in this range. This range takes into account all the available evidence, the quality of that evidence, and the inherent uncertainty of modelling.

The Authority has determined that 3% of the current diversion limit (around 410 GL/y for the Basin as a whole and around 9 GL/y for the Barwon–Darling region) is an appropriate allowance to account for the effect of climate change on surface water SDL proposals. The SDL proposals for groundwater do not include a climate change component.

The SDL proposals would require a reduction in the current long-term average surface water diversion limit at the Basin scale from 13,700 GL per year to between 10,700 GL and 9,700 GL per year (reduction between 3,000 GL and 4,000 GL per year or 22% to 29%).

For the Barwon–Darling region this would equate to a reduction in the current long-term average surface water diversion limit from 310 GL/y to between 267 GL and 253 GL per year (reduction between 44 GL and 57 GL per year or 14% to 18%).

The SDL proposals would also require a reduction in the current long-term average groundwater diversion limit at the Basin scale by an aggregate 186 GL or an average reduction of 10% across the Basin. The reductions in current diversion limits are required in only 11 of the 78 groundwater SDL areas. No reductions are proposed for the remaining 67 groundwater SDL areas where the current diversions are assessed as sustainable.

SDL proposals for the surface water and groundwater SDL areas of the Barwon–Darling region are set out on page 5. Each upstream catchment has adequate water for the health of its own key environmental assets and key ecosystem functions. In addition all hydrologically connected catchments contribute to the environmental water needs of the Darling, within a range of identified practical constraints.

SUPPORTING COMMUNITIES

The Murray–Darling Basin Authority acknowledges that implementing SDLs may have significant social and economic implications for individual entitlement holders and communities across the Basin.

However, the Australian Government has committed to recovering sufficient water access entitlements to fully offset the impact of SDLs across the Basin, including the Barwon–Darling region. This will be achieved through a combination of purchasing entitlements in the market and investments in more efficient irrigation infrastructure.

Consequently, should these targets be met, there are likely to be no reductions in individual water entitlement holder allocations.

Public meeting at Wilcannia, New South Wales
# SUSTAINABLE DIVERSION LIMIT PROPOSALS
## BARWON–DARLING REGION

### Surface Water

There are two surface water SDL areas in the Barwon–Darling region.

1) **Barwon–Darling**
   - Current diversion limit: 305 GL/y
   - SDL proposal: from 262 GL/y to 249 GL/y
   - Reduction: from 43 GL/y (14%) to 56 GL/y (18%)

2) **Intersecting Streams**
   - Current diversion limit: 5.4 GL/y
   - SDL proposal: from 4.6 GL/y to 4.4 GL/y
   - Reduction: from 0.8 GL/y (14%) to 1 GL/y (18%)

### Groundwater

There are eight groundwater SDL areas wholly or partly contained within the Barwon–Darling region.

1) **Kanmantoo Fold Belt**
   - Current diversion limit: 8.2 GL/y
   - SDL proposal: 8.2 GL/y
   - Reduction: Nil – potential for unassigned water

2) **Lachlan Fold Belt: Western**
   - Current diversion limit: 1.2 GL/y
   - SDL proposal: 1.2 GL/y
   - Reduction: Nil – potential for unassigned water

3) **Lower Darling Alluvium**
   - Current diversion limit: 1.4 GL/y
   - SDL proposal: 1.4 GL/y
   - Reduction: Nil – potential for unassigned water

4) **Lower Lachlan Alluvium**
   - Current diversion limit: 108 GL/y
   - SDL proposal: 64.8 GL/y
   - Reduction: 43.2 GL/y or 40%

5) **Lower Namoi Alluvium**
   - Current diversion limit: 86 GL/y
   - SDL proposal: 75 GL/y
   - Reduction: 11 GL/y or 13%

6) **NSW Alluvium above the Great Artesian Basin**
   - Current diversion limit: 1.2 GL/y
   - SDL proposal: 1.2 GL/y
   - Reduction: Nil – potential for unassigned water

7) **Upper Darling Alluvium**
   - Current diversion limit: 2.4 GL/y
   - SDL proposal: 2.4 GL/y
   - Reduction: Nil – potential for unassigned water

8) **Western Porous Rock**
   - Current diversion limit: 29.3 GL/y
   - SDL proposal: 29.3 GL/y
   - Reduction: Nil – potential for unassigned water
ABOUT MDBA

The Murray–Darling Basin Authority (MDBA) is the statutory agency that manages, in conjunction with the Basin states, the Murray–Darling Basin’s water resources in the national interest.

MDBA is responsible for preparing and overseeing a legally-enforceable management plan — the Basin Plan.

The Basin Plan will:

• optimise social, economic and environmental outcomes
• set and enforce environmentally sustainable limits on the quantities of water that may be taken from Basin water resources
• set Basin-wide environmental, water quality and salinity objectives
• develop efficient water trading regimes across the Basin
• set requirements for state water resource plans
• improve water security for all Basin users.

This document has been prepared by the Murray–Darling Basin Authority for public consultation purposes, using the best efforts to ensure that the material it presents is current and accurate. The opinions, comments and analysis (including those of third parties) expressed in this document are for consultation purposes only.

FURTHER INFORMATION AND FEEDBACK

For further information on the Guide to the proposed Basin Plan, visit the MDBA website at: www.mdba.gov.au

Our website also provides details about community information sessions and ways to provide feedback on the Guide.

You can also find out about upcoming events and information releases by subscribing to our engagement email and the monthly E-newsletter.

You may also phone us on 1800 230 067 (free call) or write to us at:

Murray–Darling Basin Authority
GPO Box 3001, Canberra ACT 2601.

PHOTOGRAPHER CREDITS

Denise Fowler: page 1
Arthur Mostead: page 3, back page