

## **Attachment 2: Benefits of 75 GL of water for the environment from Stage 1.**

### **1. How much water will be provided to the environment?**

The environment will benefit from up to an extra 75 GL (billion litres) of water on average each year, created by the NVIRP's savings. Combined with the completion of stage 2, the project will provide up to 175 GL<sup>1</sup> of water for the environment. This will be in addition to existing Victorian Government water recovery commitments to the Living Murray and Snowy River initiatives. Together with other existing water recovery projects, a total of about 900 GL of water will be made available for northern Victorian rivers and wetlands, depending on the Commonwealth Government's water purchase program<sup>2</sup>.

### **2. What are the characteristics of this water?**

The 75 GL of environmental water will be converted into a statutory environmental entitlement. Environmental entitlements have similarities to water shares held by other water users (for example, they can be a callable volume in storage, can accrue allocations, temporary trade, be extracted for use at specific locations and have carry over provisions). The 75 GL for the environment will also have properties which enable the water to be used at multiple locations as the water travels downstream (provided losses and water quality issues are accounted for). This means that the water can be called out of storage at desired times to meet specific environmental needs at a number of sites. The environmental water will also have the same reliability as the savings supplied to Melbourne and irrigators.

### **3. Where will the water be used?**

The environmental water will be used primarily to help improve the health of priority stressed rivers and wetlands in northern Victoria such as the Goulburn and Campaspe rivers and the Kerang Lakes. Using the extra water in Victoria will also increase flows into the River Murray, which can then be again used for the Murray's floodplains and wetlands, including the Barmah and Gunbower forests, the Hattah Lakes and Lindsay-Wallpolla Island.

Environmental water requirements have been defined for a number of priority sites in northern Victoria to inform the use of recovered water. This includes the northern Victorian tributaries (Goulburn, Campaspe, Broken Ck and Loddon River), Living Murray icon sites and the Ramsar listed Kerang wetlands.

The 75 GL of environmental water from NVIRP may also be used for drought measures such as emergency River Red Gum watering or providing critical drought

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<sup>1</sup> The Commonwealth Government has pledged \$1 billion towards Stage 2 of NVIRP to deliver up to 100GL of savings for the environment. While this water will be held by the Commonwealth Government for use across the Murray Darling Basin, Victoria will work with the Commonwealth to seek complementary use of environmental water to maximise outcomes .

<sup>2</sup> Total commitment is \$3.1b throughout the Murray-Darling Basin. This estimate assumes one-third to half of this is spent in Victoria. At an average price of \$2,000/ML, this could purchase 500-700 GL of high-reliability water share in Victoria. The rate of purchase will be restricted by trading rules that limit trade out of irrigation districts (from the Draft Northern Region Sustainable Water Strategy fact sheet number 5)

refuge for threatened species such as the critically endangered Murray Hardyhead. The current drought has shown that existing environmental allocations available do not meet the needs of the Kerang Lakes and other non-Living Murray wetlands. Consequently large tracts of River Red Gums have died and the condition of the rest is in decline; most wetlands are now dry with a resultant loss of habitat, feeding and breeding areas for threatened water birds, fish and frogs. In recent times, environmental water allocations have only been used to meet critical environmental needs to prevent species extinctions and catastrophic events and provide drought refuge to enable future recovery.

#### **4. Who will manage this water?**

It is proposed that an Environmental Water Holder will be established to hold and manage the environmental water from NVIRP. The Victorian EWH will be an independent statutory body that will integrate the 75GL from NVIRP with other environmental water allocations to achieve efficient and transparent use as well as streamlined management of environmental water. The Victorian EWH will also work collaboratively with the Commonwealth Environmental Water Holder to integrate environmental water use (including the 100GL from Stage 2 of NVIRP and the Living Murray Water) to maximise outcomes for the River Murray and its wetlands.

#### **5. How will the water be managed?**

The use of the environmental entitlement will be managed as part of an existing overall framework which aims to allocate environmental water to its highest value environmental use each year. Key components of this framework include:

- The development of environmental operating strategies which establish long term environmental objectives and priorities for watering;
- Annual watering plans to guide the use of available water in any one year;
- Detailed monitoring programs (see below);
- Reporting; and
- Complementary river restoration activities undertaken by Catchment Management Authorities to maximise environmental outcomes.

Watering sites will be chosen based on existing criteria that maximises environmental outcomes for high-value sites throughout Northern Victoria and will include consideration of:

- Consistency of the likely outcomes with ecological objectives;
- Significance of the predicted ecological outcomes;
- Watering history of the site;
- Associated ecological risks;
- Consequence of not providing water
- Effects on other water users; and
- Financial costs.

Due to the on-going drought, further criteria have been developed to prioritise the use of limited environmental water (which will also apply to the 75GL), which aims to:

- 1) Avoid critical loss of threatened species.
- 2) Avoid irreversible damage or catastrophic events.

3) Provide drought refuge to allow re-colonisation following drought.

## 6. How will the benefits be monitored and reported?

Use of the environmental water from NVIRP will be monitored and reported through an existing monitoring and reporting framework and includes annual compliance reports (volumes of water used, components of the flow regime delivered) and longer term monitoring studies, which measures ecological response to environmental flows).

As a result, reporting on environmental water use can be classed into two main types, as identified in Figure 1.

**Figure 1: Types of environmental water reporting**

Water Accounting	Ecological outcomes
<p>Volume and flows at specific locations</p> <p>For example:</p> <ul style="list-style-type: none"><li>- Entitlement volume</li><li>- Volume allocated</li><li>- Volume used</li><li>- Location of use</li><li>- Carryover, losses, credits and return flows</li><li>- Trade and donations</li><li>- Passing flow compliance</li><li>- Total environmental water for the basin</li></ul>	<p>As measured by ongoing monitoring programs such as VEFMAP (Victorian Environmental Flow Assessment Program)</p> <p>For example:</p> <ul style="list-style-type: none"><li>- Fish breeding event</li><li>- River Red Gum survival</li><li>- Bird breeding event</li><li>- Channel form maintenance</li><li>- Adequate water quality</li></ul>

Use of water against the environmental entitlement will be reported through the annual State Water Report and the Victoria Water Register. The Victorian Water Register is an inventory of all entitlements and an accounting system which report on water allocations, usage and trade. The use of the environmental entitlement created from NVIRP and the volumetric compliance will be reported via the register, and will include how much environmental water has been used, when and where watering has taken place.

Monitoring of ecological outcomes of environmental watering are closely monitored in Victoria through the Living Murray program, the Victorian Environmental Flows Monitoring and Assessment Program (VEFMAP) and other monitoring plans for priority sites that currently receive environmental water allocations. Monitoring the effectiveness of environmental water use in achieving objectives allows the management approach to be adapted and improved over time.