

# Victorian Submission to Annual Transitional Period Water Take Report 2014/15

## 1 Overview of water resource management in Victoria

### 1.1 Achievements and Outcomes in Water Resource Management

Victoria is working closely with MDBA on the development of Water Resource Plans (WRPs) under the Basin Plan 2012 including the transition from Cap to Sustainable Diversion Limit (SDL) reporting. Current administration and assessment tools under the Cap will underpin the development of the WRPs. Existing arrangements will be continually improved by selection and implementation of appropriate cost effective, fit-for-purpose monitoring methods for all forms of use including interception activities.

Victoria is currently using the 'USE' method to adjust annual cap targets for environmental water. Post-2019 Victoria intends to use its SDL models for the purpose of determining permitted take. Therefore Victoria will continue using the 'USE' method to adjust Cap targets for environmental water use during the Basin Plan transition period.

#### 1.1.1 Victorian Basin Plan Models

The WRPs that states must develop under the Basin Plan set out water management arrangements from 2019 onwards. These plans must set out methods for determining the maximum quantity of water permitted to be taken for consumptive use during a water accounting period. Victoria's proposed method for determining Baseline Diversion Limits (BDLs), SDLs, and for the assessment of compliance with the SDLs for take from regulated rivers, is the use of hydrologic models. DELWP is preparing BDL and SDL models for the Wimmera-Mallee and Goulburn-Broken-Campaspe-Loddon systems for this purpose. These models are to be submitted to the Murray-Darling Basin Authority (MDBA) for accreditation by 2017-18. Although the REALM modelling platform is to be used initially, Victoria is currently working on the development and testing of the new National Hydrological Modelling Platform, "Source", with the aim of replacing the REALM SDL models with daily Source SDL models once these are deemed fit for purpose.

### 1.2 Available Water Resources

As occurred in the previous four seasons, entitlement holders in the Murray, Goulburn, Campaspe, Broken, Bullarook and Loddon systems received a seasonal determination of 100 per cent of high-reliability water shares (HRWS) during the 2014/15 season. Seasonal determinations in the Broken and Bullarook systems again reached 100 per cent of low-reliability water shares (LRWS). No other allocation was made against low-reliability entitlements. Entitlement holders on the Wimmera Mallee pipeline received a seasonal determination of 48 per cent allocation.

The carryover policy in the Murray, Goulburn and Campaspe systems allows unused allocation to be carried over by entitlement holders into the following season, with any water above their entitlement volume being subject to spills or pre-releases that occur from Lake Hume, Lake Eildon or Lake Eppalock respectively. The volume held above entitlement volumes by entitlement holders is held in spillable water accounts until a low risk of spill declaration is made for the relevant system. The carryover in the other northern Victorian regulated systems is not subject to any spill accounting. Due to an internal spill between

state shares in Lake Hume in September 2014, 47 GL was debited from spillable water accounts in the Murray system. There were no deductions from spillable water accounts in Goulburn or Campaspe systems in 2014/15.

In Victoria unregulated water course diversions are estimated to contribute to less than 2% of total diversions. Restrictions to access of unregulated waterways were implemented across Northern Victoria, in 2014/15 and in some cases were in place for the entire season.

### **1.3 Water Resource Use**

Victorian systems diverted a total of 2,576 GL from the Murray-Darling Basin during the 2014/15 season.

The volume diverted in the Murray/Kiewa/Ovens valley was 1,400 GL. In the Goulburn/Broken/Loddon designated river valley and the Campaspe River valley, diversions were 1,122 GL and 35.1 GL respectively. Wimmera-Mallee valley diversions were 19.3 GL.

The total volume delivered to northern Victorian regulated systems during 2014/15 was 2,197 GL. This is 193 GL more than the volume delivered in 2013/14. The total Victorian usage was 75 per cent of the total volume allocated.

Deliveries in the Murray/Kiewa/Ovens designated valley were 1,205 GL in 2014/15, 71 GL higher than the delivery of 1,134 GL in the previous year.

Total Wimmera-Mallee deliveries including water diverted from other valleys were 16.9 GL in 2014/15, 2.9 GL more than the 16.9 GL delivered in 2013/14.

There was a net temporary allocation trade out of Victoria of 337.7 GL in 2014/15. This was significantly more than the net 133.9 GL traded from Victoria in the previous season.

Interstate temporary allocation trading with New South Wales resulted in an overall net transfer to Victoria of 150.3 GL during 2014/15. This volume includes net allocation trade of 67 GL to Victoria from NSW Murray and 16.8 GL from the Murrumbidgee River basin. There was no trade into the Darling River from Victoria.

Trade with South Australia resulted in a net temporary allocation trade of 404.7 GL from Victoria, compared to 285 GL traded to South Australia from Victoria in the 2014/15 season. This includes the trade of environmental allocation.

### **1.4 Assessment Tools and Data**

#### **1.4.1 Interception Take**

Limited information is readily available to quantify 2014/15 take under interception activities in Victoria. Victoria uses policy instruments such as licencing to manage water usage by farm dams and commercial plantations.

There are a number of methods available that can be used to estimate take from interception activities. Selection of the most appropriate method for Victoria would include consideration of risks associated with the activity (proportion of diversions), policy context, cost and technical suitability of the method. In Victoria, farm dams to be used for irrigation or commercial purposes are required to have a licence. Risk of growth in this form of interception activity would therefore only be represented by stock & domestic components.

Similarly, the majority (about 80%) of commercial plantations in Victoria replaced native forest and the resultant change in evapotranspiration may not be significant. Victoria has developed some models to represent interception activities and continues to investigate better approaches to manage and quantify this water use component.

#### **1.4.2 Unregulated Take**

In Victoria unregulated watercourse take is estimated to represent less than 2% of total take. Calculation and estimation of other (regulated) take therefore has a higher priority than unregulated take. In previous years basic approaches that are considered sufficient have been used to estimate both long term average unregulated take and annual unregulated take. For Cap reporting purposes, unregulated take has previously been estimated either as a proportion of regulated take or a proportion of unregulated entitlements based on the pattern of regulated use. Since 2012/13, an improved method of estimating unregulated take has been trialled in Victoria. While the unregulated take in previous years was estimated based on regulated take, it is estimated in 2014/15 using some available metered unregulated take data to extrapolate for total unregulated take.

Significant resources and effort would be required to improve the estimation of unregulated take, and a key component of this would be metering of unregulated take in Victoria. An appropriate method is however also dependant on the cost effectiveness and risk associated with unregulated usage volumes. Victoria considers that the method applied for 2014/15 is sufficient.

#### **1.4.3 Regulated Take**

All the models used by Victoria to calculate Cap targets for regulated systems have been approved by the MDBA. The models used for the Goulburn/Broken/Loddon, Campaspe and Wimmera-Mallee Cap valleys were developed by Victoria, while the models used for the Victorian Murray/Kiewa/Ovens Cap valleys were developed by the MDBA. In the case of the Wimmera-Mallee system; two new Cap models have been approved by the MDBA to calculate Cap targets, a post pipeline model to be used from July 2011 to June 2013 and a post irrigation model to be used from July 2013. These models represent the completion of all pipeline projects in the Wimmera-Mallee system and the sale of irrigation entitlements in the Wimmera Mallee system respectively.

Data inputs for all the models used are extended annually in order to undertake the Cap audit. As part of the data extension process improvements to data estimation techniques are included where possible. Any changes that impact on Cap assessment are explained in the following paragraphs.

The model used for the Goulburn/Broken/Loddon and Campaspe valleys was approved by the then Murray Darling Basin Commission at meeting 93 on 4 September 2007. This model was re-calibrated for improved Campaspe Irrigation District diversion data and re-approved by the MDBA on 10 May 2012. In extending data inputs to 2014/15 for the Goulburn/Broken/Loddon and the Campaspe Cap model, there were some differences in stream flow data from those used in the 2013/14 data update and minor errors found in two inputs. The method for deriving the Lake Nillahcootie inflow was revised as part of the 2014/15 data update to resolve inconsistency in the modelling of Lake Nillahcootie storage behaviour, where the effects of rainfall on the storage were included as direct rainfall on the storage for part of the simulation period and combined with the storage inflow for the

remaining period. These led to a net increase of 16 GL in the Goulburn/Broken/Loddon cumulative Cap credits from 1997/98 to 2013/14, or approximately +0.8% of the long term average Caps respectively.

Regression models are used for the Kiewa and Ovens valleys and these were developed by the MDBA as part of their development of a computer simulation model for the Murray which includes the Victorian Murray. Both the regression models and the computer simulation model, excluding the Lower Darling component, were approved by the then Murray Darling Basin Commission at meeting 96 on 26 August 2008. The Murray model has since undergone a number of updates and an updated model has been used for the 2014/15 assessment. These updates and the input data extension to 2014/15 for the Victorian Murray/Kiewa/Ovens models have led to a net increase of 12 GL to the 1997/98 to 2013/14 cumulative Cap credit which is +0.7% of the long term average Cap. The reasons for this increase are changes to the model as well as changes in flow data received from states and reviews of the inflows carried out by MDBA. The Wimmera-Mallee Post Irrigation entitlement sale model has been used to calculate the 2014/15 Cap target for the Wimmera-Mallee valley. This model was approved by MDBA on 6 November 2013. The Wimmera-Mallee Post Pipeline model operated over the 114 year period from July 1895 to June 2009 yields a long-term annual diversion of 44.2 GL/yr, not including unregulated diversion outside the model area.

On 30 October 2010 the MDBA approved Victoria's proposed method for Cap adjustment for environmental water recovery that is required under the Murray Darling Basin Agreement Schedule E protocol "Adjusting Caps on Diversions for Environmental Entitlements and Uses". Similar to previous years, the Environmental Use method has been applied to 2014/15 Cap targets to account for water recovered for the environment through initiatives such as Snowy environmental flows, The Living Murray and Commonwealth purchases. A sliding scale method was used for the decommissioning of Lake Mokoan. MDBA agreed to continue using this method until the Basin Plan comes into effect. Victoria remains committed to the ongoing development of hydrological models of regulated systems for calculating baseline and sustainable diversion limits.

#### **1.4.4 Groundwater Take**

The permitted take and use of groundwater is based on the sum of the licensed entitlements for all groundwater bores, adjusted for any annual restrictions in place through a management plan. Actual take for the majority of licensed groundwater bores is measured through annual metering. All groundwater bores licensed for volume in excess of 20 ML/yr are metered. Many bores greater than 10 ML/yr are also metered. Meters are read at least once annually.

Domestic and Stock use is estimated based on the number of bores less than 30 years old (given the likely life of a domestic and stock bore) with an average use of 2ML/year per bore.

Licensed bores in the Shepparton Irrigation Region are not metered. Annual take is estimated based on a subset of bores.

## 2 Surface water overview

### 2.1 Annual permitted take compliance

#### 2.1.1 Victorian Murray, Kiewa and Ovens SDL Resource Units

Diversion from the Murray/Kiewa/Ovens valley was 1,400 GL, which is 439 GL less than the Cap target of 1,839 GL (with preliminary adjustment for trade and environmental releases). The diversion was 18% below the long-term Cap average of 1,702 GL/year. The cumulative Cap credit since July 1997 is 2,850 GL.

#### 2.1.2 Goulburn, Broken and Loddon SDL Resource Units

Diversion from the Goulburn/Broken/Loddon River Valleys was 1,122 GL, which is 187 GL less than the Cap target of 1,309 GL (with preliminary adjustment for trade, environmental releases, decommissioning of Lake Mokoan and inter-valley transfers). Diversions were 45% below the long-term average Cap of 2,034 GL/year. The cumulative Cap credit for the period from July 1997 to June 2015 is 3,093 GL.

#### 2.1.3 Campaspe SDL Resource Unit

Diversion from the Campaspe valley was 35.1 GL, which is 16.4 GL below the Cap target of 51.4 GL (with adjustment for trade to supply the Goldfields Superpipe and environmental release). Diversions were 71% below the long-term average Cap of 122 GL/year. The cumulative Cap credit for the Campaspe valley from July 1997 to June 2015 is 437.9 GL.

#### 2.1.4 Wimmera-Mallee SDL Resource Unit

Diversion from the Wimmera-Mallee River Valley in 2014/15 was 19.3 GL, which is 16.2 GL less than the Cap target of 35.6 GL. Diversions were 57% below the long-term average Cap of 45 GL/year. The cumulative Cap credit for the Wimmera-Mallee valley since July 1997 is 141.7 GL.

### 2.2 SDL SS2- Victorian Murray

#### 2.2.1 Resource Availability

There was a 57 per cent high-reliability water share seasonal determination at the start of July 2014 for Murray system entitlement holders. The seasonal determination gradually increased to 100 per cent by mid-September 2014. There was 47 GL debited from spillable water accounts in the Murray system due to an internal spill to New South Wales in September. On 10 December 2014, a declaration was made that the risk of spill at Lake Hume was low, which enabled the remaining water held in spillable water accounts to be accessed.

As the Menindee Lakes volume remained below 640 GL during the 2014/15 season, control of the storage remained with the NSW Office of Water.

During the 2014/15 season, there were suspensions to access for Murray System unregulated entitlement holders on four unregulated waterways. The duration of these restrictions ranged between 168 and 229 days, with all the suspensions continuing into the 2015/16 season.

#### 2.2.2 Annual permitted take

See Section 2.1.1 for the Murray/Kiewa/Ovens permitted take information.

### **2.2.3 Annual actual take**

The total actual take, excluding all environmental diversions, was 1,376 GL for the Victorian component of the River Murray valley. The total take during the 2014/15 season from the Victorian Murray was 1,375 GL. Of this, 3.5 GL was estimated to be the actual take in the unregulated system.

Water was returned by North East Water to the River Murray from the West Wodonga Water Treatment Plant for take by towns downstream. The total volume returned was 1.5 GL.

See Section 1.4 for how the unregulated actual take was calculated and information regarding interceptions.

### **2.2.4 Trade**

There was 618.7 GL of temporary allocation trade into the regulated Victorian Murray from other valleys. With reverse trade totalling 929.4 GL, net allocation trade out of the Victorian Murray in 2014/15 was 310.7 GL. There was a net temporary allocation trade of 183.2 GL from the Victorian Murray into South Australia, and 69.7 GL into New South Wales.

There was a net 53.2 GL of permanent high-reliability water share trade from Victorian Murray, with 25.1 GL going to non-water user entitlement holders.

## **2.3 SDL SS3- Kiewa**

### **2.3.1 Resource Availability**

During the 2014/15 season there were suspensions to access for Kiewa valley unregulated entitlement holders on 12 unregulated waterways. There was also one waterway that was placed under Stage 4 restriction. These restrictions went for between 135 and 236 days, with all suspensions continuing into the 2015/16 season.

### **2.3.2 Annual permitted take**

See Section 2.1.1 for the Murray/Kiewa/Ovens permitted take information.

### **2.3.3 Annual actual take**

Kiewa valley actual take of urban entitlements was 0.6 GL or 57 per cent of the entitlement volume. A further 5.2 GL was taken by private diverters.

See Section 1.4 for how the unregulated actual take was calculated and information regarding interceptions.

### **2.3.4 Trade**

There is currently no reporting on unregulated temporary and permanent trade.

## **2.4 SDL SS4- Ovens**

### **2.4.1 Resource Availability**

Access to spill water entitlements on the Buffalo and Ovens Rivers ceased at the start of December 2014, when spill flows fell below the minimum requirements in the regulated reaches. Access to spill water entitlements on the King River ceased at the end of November 2014. There were no restrictions to regulated high reliability supplies in the Ovens valley in 2014/15.

During the 2014/15 season there were suspensions to access for Ovens System unregulated entitlement holders on 7 unregulated waterways, and various stages of restriction on 13 of the unregulated waterways. These restrictions to access went for between 34 and 195 days, with some restrictions continuing into the 2015/16 season.

#### **2.4.2 Annual permitted take**

See Section 2.1.1 for the Murray/Kiewa/Ovens permitted take information.

#### **2.4.3 Annual actual take**

Actual take in the Ovens valley was 11.9 GL, or 26 per cent of the volume allocated for take in 2014/15. A further 6.5 GL was estimated to be taken in the unregulated system.

See Section 1.4 for how the unregulated actual take was calculated and information regarding interceptions.

#### **2.4.4 Trade**

There was 1.1 GL of temporary allocation trade within the Ovens valley. Current rules on trading restrict allocation trade to remain within the Ovens valley.

There was 1.5 GL of permanent high-reliability traded within the Ovens valley, with a net trade of 0.3 GL to non-water user entitlement holders.

### **2.5 SDL SS5- Broken**

#### **2.5.1 Resource Availability**

The Broken River system received an initial seasonal determination at the start of July 2014 of 15 per cent of high-reliability water shares. Seasonal determinations improved to reach 100 per cent of high-reliability and 37 per cent of low-reliability water shares by mid-September. A seasonal determination of 100 per cent of low-reliability water shares was announced in mid-December.

During the 2014/15 season there were suspensions to access for Broken valley unregulated entitlement holders on two unregulated waterways. These restrictions to access went for between 143 and 190 days, with one restriction continuing into the 2015/16 season.

#### **2.5.2 Annual permitted take**

See Section 2.1.2 for the Goulburn/Broken/Loddon permitted take information.

#### **2.5.3 Annual actual take**

Actual take from the Broken system was 11.9 GL, or 75 per cent utilisation of the total allocated volume. A further 3 GL was estimated to be taken in the unregulated system.

See Section 1.4 for how the unregulated actual take was calculated and information regarding interceptions.

#### **2.5.4 Trade**

The 2014/15 season was the first year that entitlement holders in the Broken system were able to be temporary trade allocation between systems. There was a net volume of allocation trade out of the Broken valley of 5.5 GL. A total of 2 GL was traded in while 7.5 GL was traded out.

There was 0.4 GL of permanent high-reliability water traded within the Broken valley, and a net trade of 0.9 GL to non-water user entitlement holders.

### **2.6 SDL SS6- Goulburn 2.6.1 Resource Availability**

High-reliability water share entitlement holders in the Goulburn system received an initial seasonal determination of 74 per cent. The seasonal determination reached a maximum of 100 per cent of high-reliability water shares at the start of August 2014. There has been no seasonal determination of low-reliability water shares since 1997/98.

A low risk of spill declaration was made on 10 November 2014, allowing customers access to water in spillable water accounts. There were no deductions from spillable water accounts in the Goulburn system in 2014/15.

During the 2014/15 season there were suspensions to access for Goulburn Valley unregulated entitlement holders on three unregulated waterways, and various stages of restriction on one other unregulated waterway. These restrictions to access went for between 44 and 236 days, with one suspension continuing into the 2015/16 season.

### **2.6.2 Annual permitted take**

See Section 2.1.2 Goulburn, Broken and Loddon permitted take information.

### **2.6.3 Actual take**

Approximately 498 GL was transferred to the Murray, Campaspe, Loddon and Wimmera-Mallee systems. The total take during the 2014/15 season from the Goulburn Valley was 1,078 GL. A total of 1.5 GL was transferred from north to south of the Great Dividing Range to Melbourne Water from the Goulburn River and Silver and Wallaby Creeks, which are tributaries of the Goulburn River. 7.4 GL was estimated to be taken in the unregulated system.

See Section 1.4 for how the unregulated actual take was calculated and information regarding interceptions.

### **2.6.4 Trade**

There was a net volume of temporary allocation trade into the Goulburn system of 55.3 GL. A total of 213.6 GL was traded in, while 158.2 GL was traded out. There was a net allocation trade of 4.3 GL into the Goulburn system from South Australia.

There was 2.4 GL of permanent high-reliability water traded within the Goulburn Valley, and a net trade of 12.7 GL out of the Goulburn Valley, including a net trade of 12 GL to non-water user entitlement holders.

### **2.7 SDL SS7- Campaspe**

The Campaspe River system supplies private diverters, environmental entitlements and the Coliban water supply system. Although physically located within the Campaspe catchment, the Rochester Irrigation Area receives its water from the Goulburn system via the Waranga Western Channel and is part of the Goulburn/Broken/Loddon designated river valley for Cap compliance. Seasonal determinations to irrigators in the Rochester Irrigation Area are the same as those in the Goulburn system.

### **2.7.1 Resource Availability**

Seasonal determinations in the Campaspe system opened at 100 per cent of high-reliability water shares and remained there for the rest of the 2014/15 season. A low risk of spill declaration was made on 10 October 2014, allowing customers access to water in spillable water accounts. There were no deductions from spillable accounts in the Campaspe system in 2014/15.

During the 2014/15 season there were suspensions to access for Campaspe Valley unregulated entitlement holders on all 20 unregulated waterways, and various stages of restriction on 13 of the unregulated waterways. These restrictions to access went for between 133 and 365 days, with all restrictions continuing into the 2015/16 season.

### **2.7.2 Annual permitted take**

See Section 2.1.3 for the Campaspe permitted take information.

### **2.7.3 Actual take**

There was 0.2 GL transferred via the Goldfields Superpipe for Central Highlands Water in 2014/15. There was 12.6 GL pumped from Lake Eppalock to Bendigo. There was no water transferred from the Goulburn system to Lake Eppalock this season.

In 2014-15 the actual take for the Goulburn SDL resource unit was 35 GL.

2.5 GL was estimated to be taken in the unregulated system.

See Section 1.4 for the how the unregulated actual take was calculated and information regarding interceptions.

### **2.7.4 Trade**

The net temporary allocation trade out of the Campaspe Valley was 4.5 GL, including a net 10.8 GL traded into the Rochester Irrigation Area.

There was 13.1 GL of permanent high-reliability water traded within the Campaspe valley, and a net trade of 4.8 GL out of the Campaspe valley, including a net trade of 4.1 GL to non-water user entitlement holders.

## **2.8 SDL SS8- Loddon**

### **2.8.1 Resource Availability**

On 1 July 2014 an initial seasonal determination of 74 per cent of high-reliability water shares was announced for the Loddon System (excluding Bullarook Creek). The seasonal determination reached a maximum of 100 per cent of high-reliability water shares at the start of August 2014. Entitlement holders in the Bullarook system received a seasonal determination of 100 per cent high-reliability water shares and 100 per cent low-reliability water shares by 1 September 2014.

During the 2014/15 season there were suspensions to access for Loddon Valley unregulated entitlement holders on 27 unregulated waterways. These restrictions to access went for between 30 and 365 days, with 22 waterway restrictions continuing into the 2015/16 season.

### **2.8.2 Annual permitted take**

See Section 2.1.2 for the Goulburn/Broken/Loddon permitted take information.

### **2.8.3 Actual take**

Actual take from the Loddon SDL Resource Unit was 29 GL in 2014-15.

See Section 1.4 for how the unregulated actual take was calculated and information regarding interceptions.

### **2.8.4 Trade**

The net temporary allocation trade out the Loddon Valley was 72.2 GL.

There was 26.1 GL of permanent high-reliability water traded within the Loddon Valley, a net trade of 3.0 GL out of the Loddon valley, and a net trade of 3.6 GL to non-water user entitlement holders.

## **2.9 SDL SS7- Wimmera-Mallee**

### **2.9.1 Resource Availability**

Water allocations for Wimmera-Mallee Pipeline Product for the 2014/15 water year reached 48 per cent. Glenelg River Compensation Flow received a 1.5 per cent allocation, while the Recreation entitlement and Wetland entitlement received no allocation in 2014/15. No allocation was made to the low-reliability entitlement held by the Commonwealth Environmental Water Holder.

### **2.9.2 Annual permitted take**

See Section 2.1.4 for the Wimmera-Mallee permitted take information.

### **2.9.3 Actual take**

For the 2014/15 season, take from water sourced within the Wimmera-Mallee Valley totalled 19.3 GL.

See Section 1.4 for how the unregulated actual take was calculated and information regarding interceptions.

### **2.9.4 Trade**

There was 7.8 GL of temporary allocation trade within the Wimmera-Mallee in 2014/15.

## **3 Groundwater use overview**

### **3.1 GW2 Goulburn-Murray (GS8)**

#### **3.1.1 Annual Permitted take and Actual take**

In the Goulburn-Murray groundwater resource plan area the permitted take in the Shepparton Irrigation Region was 194 GL and the metered actual take was 44 GL. The permitted take in the Highlands was 36 GL and the metered actual take was 18 GL. The permitted take in the Sedimentary Plain was 206 GL and the metered actual take was 119 GL.

There was 5.3 GL of temporary allocation trade and 8.8 GL of permanent trade within the Sedimentary Plain in 2014/15.

### **3.1.2 Resource Availability**

The allocation in the Shepparton Irrigation Region was 22 per cent, 50 percent in the Highlands and 58 per cent in the Sedimentary Plain.

## **3.2 GW3 Wimmera-Mallee (GS9)**

### **3.2.1 Annual Permitted take and Actual take**

In the Wimmera-Mallee groundwater resource plan area the permitted take in the Highlands was 3.6 GL and the metered actual take was 0.6 GL. The permitted take in the Sedimentary Plain was 16 GL and the metered actual take was 11.3 GL. The permitted take in the Deep Lead was 2.3 GL, with no metered actual take in 2014/15.

### **3.2.2 Resource Availability**

The allocation in the Highlands was 17 per cent and 71 per cent in the Sedimentary Plain. There was no allocation in the Deep Lead in 2014/15.

## **4 Environmental water – held and planned**

### **4.1 SDL SS2- Victorian Murray**

During periods of unregulated flows, 36.0 GL was used in the River Murray, which was delivered to Gunbower Forest, Hattah Lakes and other small wetlands downstream of Nyah. Lower Broken Creek was supplied with 8 GL from Murray entitlements and 26.3 GL from Goulburn entitlements. There was a total of 54 GL delivered to Hattah Lakes during 2014/15 and 5.1 GL to the Mulcra Island floodplain.

There was a net trade of 411 GL of environmental allocation traded out of the Victorian Murray system to environmental water holders in other systems. Of this volume, there was a net trade of 465.7 GL traded out to South Australia to facilitate the delivery of water from the Goulburn system as well as held water in the Murray system across the South Australian border. There was a net trade of 76.0 GL to the Victorian Murray from the NSW Murray. There was also trade of 15.6 GL within the Victorian Murray system, moving water between environmental water holders.

There was 314.0 GL of environmental water credited to the Murray system for reuse or trade downstream, originating from the Goulburn, Campaspe and Victorian Murray. There was also 23.5 GL of returns, resulting from use in June 2015, which will be recredited into environmental accounts in the 2015/16 season.

There is no planned environmental water reporting requirement for the Murray System.

### **4.2 SDL SS3- Kiewa and SS4 Ovens**

The Ovens system received 70 ML of environmental water, which was used to contribute towards a pulse in the Buffalo and King Rivers. This water was provided from Commonwealth entitlements. There is no held water in the Kiewa Valley.

There is a planned environmental water reporting requirement for the Ovens System, however due to the complex nature of minimum flow requirements, with different flow requirements at multiple sites along the system, this is difficult to report against.

#### **4.3 SDL SS5- Broken**

The Broken system received 887 ML of environmental water, which was used to provide water to Moodies Swamp. This water was provided from Commonwealth entitlements. There was trade of 0.1 GL within the Broken system, moving water between environmental water holders.

There is a planned environmental water reporting requirement for the Broken System, however due to the complex nature of minimum flow requirements, with different flow requirements at multiple sites along the system, this is difficult to report against.

#### **4.4 SDL SS6- Goulburn**

In the Goulburn system a total of 309 GL from The Living Murray (TLM), and Commonwealth and Victorian Environmental Water Holders entitlement's was delivered in-stream to provide environmental freshes and maintain additional passing flows downstream of Goulburn Weir. Of this volume, 250 GL was available for use downstream for Gunbower creek and trade to South Australia. There was 77.5 GL of returns, resulting from use in June 2015, which will be recredited into environmental accounts in the 2015/16 season.

There was a net 27.1 GL of environmental allocation traded into the Goulburn system to environmental water holders from other systems, and trade of 306.2 GL within the Goulburn system moving water between environmental water holders.

There is a planned environmental water reporting requirement for the Goulburn system. In 2014/15 there was no use of the Goulburn water quality reserve. There were no additional passing flow requirements below Lake Eildon in 2014/15, as the inflow triggers were not exceeded.

#### **4.5 SDL SS7- Campaspe**

The Campaspe River environmental entitlements were used to maintain increased passing flows in the Campaspe River and provide environmental freshes down the River as per environmental flow recommendations. A total of 28.2 GL was used from Commonwealth and Victorian Environmental Water Holder entitlements, and 2.6 GL from The Living Murray entitlements was used in 2014/15. There was 18.2 GL made available for further use in 2014/15 and an additional 0.7 GL, resulting from use in June 2015, which will be recredited into environmental accounts in the 2015/16 season.

There was a net 8.7 GL of environmental allocation traded out of the Campaspe Valley to environmental water holders in other systems, and trade of 6.7 GL within the Campaspe Valley, moving water between environmental water holders.

There is no planned environmental water reporting requirement for the Campaspe system, due to the current definition of planned environmental water.

#### **4.6 SDL SS8- Loddon**

A total of 2.0 GL was delivered to Lake Meran in the Boort wetlands in the Loddon Valley in 2014/15. The Loddon River received 4 GL of environmental water from Victorian and Commonwealth Environmental Water Holder entitlements and 8.1 GL was delivered from Wimmera-Mallee Pipeline Savings and East Loddon Water Works District Savings entitlements downstream of Loddon Weir. There was 100 ML used of the environmental entitlement in Birch Creek from Newlyn Reservoir.

There was a net 1.1 GL of environmental allocation traded into the Loddon System to environmental water holders from other systems, and trade of 2.9 GL within the Loddon system, moving water between environmental water holders.

There is no planned environmental water reporting requirements for the Loddon System, due to the current definition of planned environmental water.

#### **4.7 SDL SS7- Wimmera-Mallee**

In the Wimmera-Mallee system, 33.7 GL was delivered to the environment, including 112 ML from the Victorian Environmental Water Holder wetland entitlement.

There is no planned environmental water reporting requirements for the Wimmera-Mallee, due to the current definition of planned environmental water.

#### **4.8 Planned Environmental Water Reporting**

The submission of Victoria's reporting on the use of planned environmental water (PEW) in 2014-15 recognises recent discussions with the MDBA in which Victoria was informed that the majority of its non-held environmental water did not meet the Commonwealth definition for PEW. While much of Victoria's non-held environmental water contributes to environmental outcomes, it does not specifically meet section 6 of the Water Act 2007 (Cth), or as explained in the MDBA position statement 'Determining Planned Environmental Water: "the water cannot, to the extent to which it is committed or preserved, be taken or used for any other purpose"'.

At the MDBA's request, Victoria has submitted a short paper to the MDBA that outlines four forms of PEW that Victoria believes do meet the PEW definition, in that the flows are committed or preserved solely for environmental purposes. In order to be consistent, these four forms alone have been included in Victoria's 2014-15 reporting on the use of PEW. Victoria will continue to explore options with MDBA as to how other forms of non-held environmental water can be included in the water resource plans and overall accounting.

## **5 Progress of water reform**

### **5.1 Existing Administration of the Basin Plan**

Between 1995 and 1997, Victoria introduced and refined the following changes to water management in response to the Murray-Darling Basin Ministerial Council decision to Cap water use;

- restrictions on temporary and permanent water trading,
- reductions on allocations for a given resource, and
- limits on the issuing of new entitlements.

Monitoring of the effectiveness of the water management policies is undertaken on an ongoing basis. No new capping policies were introduced in 2014/15 and none are currently proposed for 2015/16 as existing measures have continued to be effective. There is no evidence of growth in diversions in any of the Victorian valleys.

Victoria currently administers the Cap through establishment and implementation of Bulk Entitlements, Streamflow Management Plans and licensing of irrigation farm dams.

During 2014-15 the Victorian Government has continued to undertake a number of transitional arrangements to ensure the progress of water reform in the Murray-Darling Basin. This has included:

- Continuing to work collaboratively with the MDBA and other Basin states to progress implementation of the Constraints Management Strategy through our ongoing involvement in the River Murray Constraints Steering Committee and the establishment of funding agreements and associated work plans to support the development of the Hume to Yarrawonga and the Goulburn River constraints business cases.
- Submitting twelve Phase 2 supply measure business cases to the Sustainable Diversion Limit Adjustment Assessment Committee. Nine of these are works based supply measures, developed in partnership with the Mallee and North Central Catchment Management Authorities, with the remaining three supply measures relating to operation rule change proposals. Victoria's final rule change proposal has been submitted and is currently progressing through the Phase 1 assessment process.
- Development and submission of the Annual Environmental Watering Priorities to the MDBA consistent with the Basin Plan, while working collaboratively with the Commonwealth Environmental Water Holder and through other formal coordination forums to successfully deliver our Seasonal Water Plan.
- Submission of our Basin Salinity Management Strategy Annual Report for 2014-15 to the MDBA Independent Audit Group and continuing compliance with salinity and water quality trigger points.
- Instigating a number of changes to align Victoria's trading rules with the Basin Plan, including the removal of the annual 4% limit on the volume of water shares traded out of irrigation districts, and a number of changes to allow anyone to buy water allocation. Victoria is also further refining procedures and policies to strengthen existing business practices to mitigate risks associated with the disclosure and management of water announcements.

## **5.2 Water Resource Plan Development**

Victoria's progress in developing its five water resources plans (WRPs) in 2014-15 focused on the following activities.

- Scoping of the requirements in Chapter 10 of the Murray-Darling Basin Plan for Victoria's WRPs.
- Long-Term Water Plans (LTWPs) – Victoria worked closely with catchment management authorities and the Victorian Environmental Water Holder to make significant progress in developing the LTWPs.
- Engagement with Indigenous groups – Victoria appointed an Aboriginal Water Policy Officer to facilitate engagement and manage consultation with Indigenous groups. Activities in 2014-15 included engagement with these groups to assist development of Victoria's approach to addressing Basin Plan requirements.
- Preliminary planning for the risk assessment.

- Coordination of the assessment of water quality requirements under the Basin Plan with the review of the state-wide water quality policy.
- Review of options for the form and content of the WRPs – Victoria’s water management framework comprises a large number of statutory and non-statutory instruments. Options were investigated about whether these should be part of the accredited WRP package or supporting evidence.

In addition, the work to progress the WRPs was coordinated with the development of the Victorian Water Plan, which will provide state-wide policy direction on key water management issues.