

# Section 71 Report for South Australia 2015-16

## Surface Water and Groundwater

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### 1. PURPOSE

This report contributes to South Australia's requirements under section 71 of the *Water Act 2007* (Cth) for surface water and groundwater for 2015-16.

The water resource plan (WRP) areas under the Basin Plan are subdivided into Sustainable Diversion Limit (SDL) resource units for both surface water and groundwater. The information provided in this report is presented at the SDL resource unit level.

All information is current at 31 March 2017.

### 2. WATER RESOURCE MANAGEMENT OVERVIEW FOR THE STATE

Water resource management at a State level is governed by the *Natural Resources Management Act 2004* (SA) (NRM Act). Under the NRM Act, the State Natural Resources Management Plan (NRM Plan) is the overarching management plan that covers all geographical areas that are defined by the SDL resource units. Regional NRM Plans for the South Australian Murray-Darling Basin NRM Region, South Australian Arid Lands NRM Region and the South East NRM Region then cover one or more of the SDL resource unit areas. These plans provide general policies for managing the water resources within the areas they cover.

A number of the areas that represent the SDL resource units have been prescribed under the NRM Act and are managed under a Water Allocation Plan (WAP). Each SDL resource unit can therefore be categorised as being either prescribed or unprescribed. This description indicates the extent of water management (including monitoring and compliance) that is currently undertaken at a State level.

The SDL resource unit areas covered by this report are listed below.

#### Surface Water SDL Resource Units

- South Australian Non-Prescribed Areas (SS10)
- South Australian Murray (SS11)
- Marne-Saunders (SS12)
- Eastern Mount Lofty Ranges (SS13)

#### Groundwater SDL Resource Units (with aquifer sub-units denoted in italics)

- Angas Bremer (GS1) – *Quaternary Sediments, Murray Group Limestone*
- Eastern Mount Lofty Ranges (GS2)
- Mallee (GS3) – *Pliocene Sands, Murray Group Limestone, Renmark Group*
- Marne Saunders (GS4) – *Fractured Rock, Murray Group Limestone, Renmark Group*
- Peake, Roby and Sherlock (GS5) – *Unconfined, Confined*
- SA Murray (GS6)
- SA Murray Salt Interception Schemes (GS7)

#### Stock and Domestic Use

Stock and domestic take is generally unlicensed in South Australia and is authorised under section 127(1) of the NRM Act. All reported values for stock and domestic take (permitted or actual) in this report, other than the South Australian Murray (SS11), are represented by an estimated value. In the South Australian Murray (SS11), the reported values for stock and domestic take represent the licenced use.

#### Licensed Use

Water use data for licensed take is usually metered or estimated (for example, using crop estimates where a meter is broken for all or part of the year). It is currently not possible to differentiate between metered and

## Section 71 Report for South Australia 2015-16

### Surface Water and Groundwater

---

estimated take within the SA licensing system, so licensed take is reported as a single figure. Estimated data is only a very small proportion of the overall use within any SDL resource unit. Despite this, a process for differentiating between the licensed components of actual take is being considered as part of the development of South Australian water resource plans.

#### Conjunctive Use

There is some potential for the double accounting of take due to the conjunctive use of water for licensed and non-licensed purposes and the conjunctive use of surface water and groundwater resources in SDL resource units that contain prescribed areas. In particular:

- Extraction of groundwater into a surface water dam from where it is then used for consumptive purposes. It is possible that part or all of a volume recorded against a groundwater allocation may also be subsequently recorded against a surface water allocation.
- Non-licensed use, particularly for stock and domestic purposes, may be taken though the same meters used to record licensed use. An operating procedure is under development to support the identification of meters recording both licensed and non-licensed take and subsequently reduce any double accounting.

In both cases, the volume double accounted is likely to be small.

#### State wide Authorisations for Prescribed Areas

A number of state wide authorisations under section 128 of the NRM Act authorise the take of water without a licence in prescribed water resource areas for the following purposes:

- underground water in the course of any operation or activity reasonably necessary for, or incidental to the drilling, construction or testing of a hydrocarbon exploration well pursuant to section 11 of the Petroleum Act 2000;
- fire-fighting;
- road making;
- for the purpose of the application of chemicals to non-irrigated crops and non-irrigation pasture and for the control of pest plants and animals;
- up to or equal to 500 kL per annum of surface water from a connected roof area; and
- native title purposes.

In addition, within the South Australian Murray SDL resource unit (SS11) there is an s128 authorisation to create or enlarge an artificial water body with a surface area equal to or less than 190 m<sup>2</sup> or maintaining the water level of an artificial water body with a surface area equal to or less than 190m<sup>2</sup> (including to compensate for water lost from the artificial water body through evaporation).

The actual take for these uses has not formally been quantified for each SDL resource unit. The volumes of water used for these purposes are variable from year to year and are extremely small compared to the licensed and stock and domestic use in these areas.

### **Surface Water Overview**

#### Unprescribed Areas

The water resources within these areas are generally considered to be at a low risk from current or future development. Development is generally low due to a number of factors including low water availability, high evaporation and high groundwater salinity.

## Section 71 Report for South Australia 2015-16

### Surface Water and Groundwater

---

#### *South Australian Non-Prescribed Areas (SS10)*

The South Australian Non-Prescribed Areas (SS10) is unprescribed and no licences have been issued, allocations have not been made and no trade allowed. No metering or estimation of water use is currently undertaken. There are no environmental entitlements held in this SDL resource unit.

#### Prescribed Areas with a Water Allocation Plan

The water resources within these areas are under development pressure and require more active management. Water licences are issued and Water Allocation Plans (WAPs) developed to sustainably manage and monitor the available resources. Licensed purposes generally include irrigation, industrial, intensive animal keeping, recreation and town water supply.

The South Australian Murray (SS11) SDL resource unit is managed under the River Murray Prescribed Watercourse WAP, the Marne-Saunders (SS12) SDL resource unit is managed under the Marne-Saunders WAP and the Eastern Mount Lofty Ranges (SS13) SDL resource unit is managed under the Eastern Mount Lofty Ranges WAP.

The Eastern Mount Lofty Ranges WAP is still in the early stages of implementation, in particular, finalising the issuing of licences and installation of meters. As such, there was limited information available for 2015-16 regarding actual water use.

### **Groundwater Overview**

#### Unprescribed areas

The water resources within these areas are generally considered to be at a low risk from current or future development. Development across these areas is generally low due to a number of factors including low water availability, high evaporation and high groundwater salinity.

#### *SA Murray (GS6)*

The area is not prescribed so no licences have been issued, allocations have not been made and no trade is allowed. No metering or estimation of water use is currently undertaken. There are no environmental entitlements in this SDL resource unit.

#### Partially Prescribed Areas and Prescribed Areas with a Water Allocation Plan

The water resources within these areas are under development pressure and require more active management. Water licences are issued and WAPs developed to sustainably manage and monitor the available resources. Licensed purposes generally include irrigation, industrial, intensive animal keeping, recreation and town water supply.

The South Australian groundwater SDL resource units are managed under the following WAPs:

- Angus Bremer (GS1) and Eastern Mount Lofty Ranges (GS2) – Eastern Mount Lofty Ranges WAP
- Mallee (GS3) – Mallee and Noora WAPs
- Marne-Saunders (GS4) – Marne-Saunders WAP
- Peake-Roby-Sherlock (GS5) – Peake, Roby and Sherlock WAP
- SA Murray Salt Interception Schemes (GS7) – partially managed under the Noora WAP

Carryover is permitted under the Angus Bremer (GS1), Eastern Mount Lofty Ranges (GS2) and Marne-Saunders (GS4) WAPs only.

The Eastern Mount Lofty Ranges WAP is still in the early stages of implementation, in particular, finalising the issuing of licences and installation of meters. As such, there was limited information available for 2015-16 regarding actual water use.

## Section 71 Report for South Australia 2015-16

### Surface Water and Groundwater

---

#### Aquifer Recharge

Managed aquifer recharge is currently only undertaken within the Angas Bremer (GS1) SDL resource unit.

Recharge occurs using allocations from two surface water SDL resource units (SS11 and SS13) but it is currently not possible to identify the source unit of the water used. The allocations are generally against irrigation licences and are not allocations specifically provided for aquifer recharge.

Aquifer recharged volumes are available for up to four years from the time of injection and this is reflected in annual allocations in subsequent years for this purpose. The allocations are accounted for as part of the annual permitted take and use is accounted for under actual annual take.

### 3. CAP COMPLIANCE

The Cap on Diversions is established and managed under Schedule E of the *Murray-Darling Basin Agreement 2008* (the Agreement) and is defined as a long-term limit on the volume of surface water that can be used for consumptive purposes in river valleys within the Murray-Darling Basin.

#### **Schedule E Requirements for South Australia**

There are four Cap valleys defined for South Australia under schedule E, clause 7, each with its own long-term diversion Cap. Compliance with each long-term diversion Cap occurs on an annual basis with respect to an *annual diversion target*. The methods used to calculate this target differs between Cap valleys, from an analytical model to fixed annual or multi-year limits.

Once calculated, the annual diversion targets are adjusted for permanent and temporary trade (as permitted), allocation levels, private carryover and to account for those entitlements where the purpose of use has changed from consumptive to environmental (a requirement introduced subsequent to the setting of the long-term diversion Caps). The latter adjustment for Held Environmental Water (HEW) is undertaken using a scaling approach agreed with the MDBA. Cap compliance is then assessed through comparison of the final target with the actual diversions for consumptive purposes that occurred in that year.

#### Metropolitan Adelaide and Associated Country Areas

The Metropolitan Adelaide and Associated Country Areas long-term diversion Cap (Metropolitan Adelaide Cap) covers diversions for water supply purposes delivered to Metropolitan Adelaide and associated country areas through the Swan Reach-Stockwell, Mannum-Adelaide and Murray Bridge-Onkaparinga pipeline systems.

Schedule E applies the following limits and conditions on diversions from the Metropolitan Adelaide Cap valley:

- Limit is 650 GL over any period of five consecutive years [clause 7(1)(a)]; and
- No part of any Entitlement created in South Australia with respect to this Cap can be used, or transferred for use, for any purpose other than use in Metropolitan Adelaide and associated country areas [clause 7(2)(a)].

The annual diversion target is calculated as 650 GL minus the sum of diversions of the preceding four years.

A climate-adjusted Cap model, as required under clause 11(3), is still under development.

#### Lower Murray Swamps

The Lower Murray Swamps (LMS) diversion Cap covers diversions within the Lower Murray Reclaimed Irrigation Area (LMRIA). The LMRIA is located between the townships of Mannum and Wellington. The area was formally a series of wetlands that were permanently connected to the River Murray but were reclaimed for irrigation in the early 1900s. The area has historically been used for dairy farming, however water use also includes stock, domestic and industrial use.

## Section 71 Report for South Australia 2015-16

### Surface Water and Groundwater

---

Schedule E applies the following limits and conditions on diversions from the LMS Cap valley:

- Annual maximum of 94.2 GL per year [clause 7(1)(b)]; and
- At least 22.2 GL of diversions are reserved for environmental purposes and are not transferrable [clause 7(2)].

No Cap model is required as the annual diversion target is a fixed volumetric limit (94.2 GL) that is adjusted for Entitlement trade (permanent trade), allocation trade (temporary trade) and for held environmental water.

#### Country Towns

The Country Towns Cap covers diversions for South Australian Country Towns not covered by the Metropolitan Adelaide Cap. This includes towns adjacent to the River Murray as well as those on the Yorke and Eyre Peninsulas.

Schedule E limits diversions from the Country Towns Cap valley to an annual maximum of 50 GL per year [clause 7(1)(c)].

No Cap model is required as the annual diversion target is a fixed volumetric limit (50 GL) that is adjusted for allocation trade (temporary trade) and for held environmental water.

#### All Other Purposes

The All Other Purposes (AOP) Cap covers all other metered River Murray water extractions that are not covered under the Metropolitan Adelaide, Lower Murray Swamps and Country Towns Caps. Use includes irrigation, stock and domestic, recreation and industrial.

Schedule E limits diversions from the AOP Cap valley to a long-term average of 449.9 GL per year [clause 7(1)(d)]. The annual diversion target is determined using an accredited regression model for this valley, in accordance with Schedule E, clause 11(3). The target is then adjusted for Entitlement trade (permanent trade), allocation trade (temporary trade) and for held environmental water.

### Assessment of Cap Compliance

The assessment of Cap compliance is shown in the table below. Annual diversions are below Annual Cap Targets in all Cap valleys. Additionally, all valleys have a cumulative Cap credit.

Cap Valley	Annual Cap Target (GL)	Annual Diversion (GL)	Compliance Assessment
Metropolitan Adelaide	402.31	153.34	Compliant
Lower Murray Swamps	31.66	17.18	Compliant
Country Towns	38.00	36.13	Compliant
All Other Purposes	421.69	390.82	Compliant

In 2015-16, the annual Cap target has been adjusted by 8.34 GL to account for the temporary trade to the First Use licence. The First Use licence is used to account for additional water required for Metropolitan Adelaide on top of the water available under the Metropolitan Adelaide Cap. Allocations of 8.34 GL were acquired from other designated Cap valleys and use was recorded against the First Use licence.

## Section 71 Report for South Australia 2015-16

### Surface Water and Groundwater

---

#### 4. TRANSITION PERIOD SECTION 71 REPORT

##### Permitted take [s71(1)(b)]

###### *South Australian Non-Prescribed Areas (SS10)*

In development of the SA Murray Region water resource plan it has been proposed that the annual permitted take be represented as a “fixed annual limit” that is equal to the SDL. However, it has also been recommended that the BDL and SDL be reviewed. Until this is completed through accreditation of the water resource plan, the permitted take has been reported as the current BDL estimate, which is equal to 3.5 GL.

###### *South Australian Murray (SS11)*

Permitted take for the South Australian Murray SDL resource unit is defined as the sum of the annual diversion targets that are calculated based on the existing Cap on Diversions under clause 7 of Schedule E of the Agreement.

A value of 897.55 GL has been determined as the permitted take for the SA Murray SDL resource unit. This excludes any adjustments for the disposal or acquisition of held environmental water. It consists of:

1. Metropolitan Adelaide = 402.31 GL
2. Lower Murray Swamps = 31.66 GL
3. Country Towns = 38.00 GL
4. All other purposes = 425.58 GL

###### *Marne-Saunders (SS12)*

The permitted take for 2015-16 for Marne-Saunders is calculated as:

$$\begin{aligned} \text{Permitted take} &= \text{Allocated volumes (entitlements)} - 2016-17 \text{ carryover} + 2015-16 \text{ carryover} \\ &\quad + \text{stock and domestic (BDL estimate)} + \text{farm dam losses (BDL estimate)} \\ &\quad + \text{commercial forestry (BDL estimate)} \end{aligned}$$

The permitted take for 2015-16 is 3.085 GL, comprising:

1. Take from watercourses = 0.183 GL
2. Take from farm dams = 2.874 GL
  - a) Dam extractions = 1.278 GL
  - b) Dam losses = 1.1 GL (BDL estimate)
  - c) Stock and domestic extractions = 0.496 GL (BDL estimate, assumed to come from farm dams)
3. 2015-16 carryover issued = 0.179 GL (0.028 GL from watercourses, 0.151 GL from farm dams)
4. 2016-17 carryover issued = 0.151 GL (0.014 GL from watercourses, 0.137 GL from farm dams)
5. Net take by commercial forestry = 0 GL (forestry is negligible as established through development of the BDL and SDL)

###### *Eastern Mount Lofty Ranges (SS13)*

The permitted take for 2015-16 for the Eastern Mount Lofty Ranges is calculated as:

$$\begin{aligned} \text{Permitted take} &= \text{Modelled watercourse and dam extractions (BDL model)} \\ &\quad + 2015-16 \text{ carryover} - 2016-17 \text{ carryover} + \text{farm dam losses (BDL estimate)} \\ &\quad + \text{commercial forestry (BDL estimate)} \end{aligned}$$

## Section 71 Report for South Australia 2015-16

### Surface Water and Groundwater

---

The modelled watercourse and dam extractions are derived using the BDL model with 2015-16 climatic data.

The permitted take for 2015-16 is 16.30 GL, comprising:

1. Take from watercourses = 3.52 GL (3.841 GL BDL model – 0.317 GL for 2016-17 carryover)
2. Take from farm dams = 9.68 GL
  - d) Dam extractions = 6.27 GL (6.379 GL BDL model – 0.104 GL for 2016-17 carryover)
  - e) Dam losses = 3.3 GL (BDL estimate)
3. Net take by commercial forestry = 3.2 GL (BDL estimate)
4. 2015-16 carryover issued = 0 GL

#### *Angas Bremer (GS1)*

The permitted take for the Angas Bremer (Quaternary Sediments) aquifer has been reported as a fixed annual limit equal to the SDL of 1.09 GL.

The permitted take for the Angas Bremer (Murray Group Limestone) is calculated as:

$$\begin{aligned} \text{Permitted take} &= \text{SDL (representing licensed take and stock and domestic use)} \\ &+ 2015-16 \text{ carryover} - 2016-17 \text{ carryover} + \text{aquifer recharge allocations} \end{aligned}$$

The permitted take for 2015-16 is 10.01 GL, comprising:

1. SDL = 6.57 GL
2. Carryover 2015-16 = 0.545 GL
3. Carryover 2016-17 = 0.486 GL
4. Aquifer recharge allocation = 3.386 GL

#### *Eastern Mount Lofty Ranges (GS2)*

The permitted take for the EMLR SDL resource unit is calculated as:

$$\begin{aligned} \text{Permitted take} &= \text{SDL (representing licensed take and stock and domestic use)} \\ &+ 2015-16 \text{ carryover} - 2016-17 \text{ carryover} \end{aligned}$$

The permitted take for 2015-16 is 36.49 GL, comprising:

1. SDL = 38.50 GL
2. Carryover 2015-16 = 0 GL
3. Carryover 2016-17 = 2.013 GL

#### *Mallee (GS3)*

The permitted take for the Mallee (Pliocene Sands) aquifer has been reported as a fixed annual limit that is equal to the SDL of 41.4 GL.

The permitted take for the Mallee (Renmark Group) aquifer has been reported as a fixed annual limit that is equal to the SDL of 2.0 GL.

The permitted take for the Mallee (Murray Group Limestone) aquifer has been reported as a fixed annual limit that is equal to the proposed revised SDL of 63.578 GL. This has the following components:

1. WAP limit = 61.3 GL
2. Stock and domestic = 2.278 GL (BDL estimate)

## Section 71 Report for South Australia 2015-16

### Surface Water and Groundwater

---

#### *Marne-Saunders (GS4)*

The permitted take for both the Marne-Saunders (Fractured Rock) aquifer and the Marne-Saunders (Murray Group Limestone) aquifer is calculated as:

$$\begin{aligned} \text{Permitted take} &= \text{SDL (representing licensed take, stock and domestic, and commercial plantations)} \\ &+ 2015-16 \text{ carryover} - 2016-17 \text{ carryover} \end{aligned}$$

The permitted take for the Marne-Saunders (Fractured Rock) aquifer is 2.13 GL and comprises:

1. SDL = 2.09 GL
2. Carryover 2015-16 = 0.325 GL
3. Carryover 2016-17 = 0.290 GL

The permitted take for the Marne-Saunders (Murray Group Limestone) aquifer is 2.42 GL and comprises:

1. SDL = 2.38 GL
2. Carryover 2015-16 = 0.191 GL
3. Carryover 2016-17 = 0.147 GL

The permitted take from the Marne-Saunders (Renmark Group) aquifer has been reported as a fixed annual limit that is equal to the SDL of 0.5 GL.

#### *Peake-Roby-Sherlock (GS5)*

The permitted take for the Peake-Roby-Sherlock (unconfined) aquifer is a fixed annual limit that is equal to the SDL of 3.41 GL.

The permitted take for the Peake-Roby-Sherlock (confined) aquifer is a fixed annual limit that is equal to the SDL of 2.58 GL.

#### *SA Murray (GS6)*

The annual permitted take for the SA Murray has been reported as a fixed annual limit that is equal to the SDL of 64.8 GL.

#### *SA Murray Salt Interception Schemes (GS7)*

The SA Murray Salt Interception Schemes SDL resource unit incorporates the River Murray floodplain and adjacent areas, extending west from the South Australian – Victorian border to the east of Morgan. Parts of this SDL resource unit are contained in the Noora Prescribed Wells Area and the Designated Area defined under the *Groundwater (Border Agreement) Act 1985* (SA). The remainder is not prescribed.

There is a single water access right within the Noora Prescribed Wells Area that was made in 2009 and is for extraction from the Pliocene Sands aquifer for the Murtho salt interception scheme.

The annual permitted take for the SA Murray Salt Interception Schemes is a fixed annual limit that is equal to the SDL of 28.6 GL.

### **Actual take [s 71(1)(c)]**

#### *South Australian Non-Prescribed Areas (SS10)*

Water use is not currently determined. The best estimate of the actual take is the current BDL estimate of 3.5 GL.

## Section 71 Report for South Australia 2015-16

### Surface Water and Groundwater

---

#### *South Australian Murray (SS11)*

Water use data for licensed take in the South Australian Murray SDL resource unit is a combination of metered and estimated (using crop estimates) data. Actual take for 2015-16 was 597.47 GL and comprised:

1. Metropolitan Adelaide = 153.34 GL
2. Lower Murray Swamps = 17.18 GL
3. Country Towns = 36.13 GL
4. All other purposes = 390.82 GL

#### *Marne-Saunders (SS12)*

Water use data for licensed take in the Marne-Saunders SDL resource unit is a combination of metered and estimated (using crop estimates) data. Estimates are provided for non-licensed take (same values as for permitted take).

Actual take for 2015-16 was 2.021 GL and comprised:

1. Take from watercourses = 0.004 GL
2. Take from farm dams = 2.017 GL
  - a. Dam extractions = 0.917 GL (stock, domestic and irrigation from commercial farm dams)
  - b. Dam losses = 1.1 GL (BDL estimate)
3. Commercial plantations = 0 GL (BDL estimate)

#### *Eastern Mount Lofty Ranges (SS13)*

The actual annual take for licensed purposes in the EMLR SDL resource unit comprises metered (dam and watercourse extractions), modelled (floodplain diversions) and BDL estimates (dam losses, forestry take, stock and domestic take).

Water use of 12.008 GL comprises:

1. Take from watercourses = 1.600 GL (including 0.468 GL of modelled floodplain diversions)
2. Take from runoff dams = 7.208 GL
  - a. Dam extractions = 3.908 GL (including BDL estimate of 3.483 GL for stock and domestic; metered irrigation from commercial farm dams)
  - b. Dam losses = 3.3 GL (BDL estimate)
3. Net take by commercial forestry = 3.2 GL (BDL estimate)

#### *Angas Bremer (GS1)*

There was no take from the Angas Bremer (Quaternary Sediments) aquifer.

Water use data for licensed take from the Angas Bremer (Murray-Group Limestone) aquifer is a combination of metered and estimated (using crop estimates) data. Estimates are provided for non-licensed take (same values as for permitted take).

In order to explicitly determine use for the various purposes, the order of use from the EMLR WAP has been applied at a licence level:

- i. Base Allocation (Water Access Right)
- ii. Carryover
- iii. Aquifer Recharge

## Section 71 Report for South Australia 2015-16

### Surface Water and Groundwater

---

Water use from the Angas Bremer (Murray Group Limestone) aquifer of 1.72 GL comprises:

1. Groundwater take (water access right, carryover) = 1.65 GL
2. Aquifer Recharge = 0.52 GL
3. Stock and domestic = 0.068 GL (BDL estimate)

#### *Eastern Mount Lofty Ranges (GS2)*

Water use data for licensed take from the EMLR SDL resource unit is a combination of metered and estimated (using crop estimates) data. Estimates are provided for non-licensed take (same values as for permitted take).

The implementation of the EMLR WAP is continuing but some water users did not have water meters installed prior to the start of 2015-16. As such, the actual take for licensed purposes may be underestimated.

Water use of 9.57 GL comprises:

1. Groundwater take (water access right) = 7.44 GL
2. Stock and domestic = 0.653 GL (BDL estimate)
3. Net take by commercial plantations = 1.483 GL (BDL estimate)

#### *Mallee (GS3)*

Water use data for licensed take from the Mallee (Murray Group Limestone) aquifer is a combination of metered and estimated (using crop estimates) data. Estimates are provided for non-licensed take (same values as for permitted take).

Water use of 34.97 GL comprises:

1. Groundwater take (water access right) = 32.70 GL
2. Stock and domestic = 2.278 GL (BDL estimate)
3. Groundwater take (s128 authorised use) = 0.011 GL (see details below under: Other decisions that permit water to be taken [s71(1)(e)])

There was no take from the Mallee (Pliocene Sands) and Mallee (Renmark Group) aquifers.

#### *Marne-Saunders (GS4)*

Water use data for licensed take from the Marne-Saunders (Fractured Rock) and (Murray Group Limestone) aquifers is a combination of metered and estimated (using crop estimates) data. Estimates are provided for non-licensed take (same values as for permitted take).

Water use from the Marne-Saunders (Fractured Rock) aquifer of 0.60 GL comprises:

1. Groundwater take (water access right, carryover) = 0.50 GL
2. Stock and domestic = 0.094 GL (BDL estimate)
3. Net take by commercial plantations = 0.0 GL (BDL estimate)

Water use from the Marne–Saunders (Murray Group Limestone) aquifer of 1.53 GL comprises:

1. Groundwater take (water access right, carryover) = 1.35 GL
2. Stock and domestic = 0.176 GL (BDL estimate)
3. Net take by commercial plantations = 0.0 GL (BDL estimate)

There is no licensed take for the Marne-Saunders (Renmark Group) aquifer. Any stock and domestic take is very small and has been included in the estimate for the Mallee (Murray Group Limestone) aquifer, as per the BDL determination.

## Section 71 Report for South Australia 2015-16

### Surface Water and Groundwater

---

#### *Peake-Roby-Sherlock (GS5)*

Water use data for licensed take from the Peake-Roby-Sherlock (unconfined) and Peake-Roby-Sherlock (confined) aquifers is a combination of metered and estimated (using crop estimates) data. Estimates are provided for non-licensed take (same values as for permitted take).

Water use from the Peak-Roby Sherlock (Unconfined) aquifer of 0.19 GL comprises:

1. Groundwater take (water access right) = 0.0 GL
2. Stock and domestic = 0.19 GL (BDL estimate)

Water use from the Peake-Roby Sherlock (Confined) aquifer of 0.50 GL comprises:

1. Groundwater take (water access right) = 0.09 GL
2. Stock and domestic = 0.41 GL (BDL estimate)

#### *SA Murray (GS6)*

The best estimate of the annual actual take from the SA Murray SDL resource unit is the BDL of 1.8 GL.

#### *SA Murray Salt Interception Schemes (GS7)*

All take from salt interceptions schemes is metered. The total use for 2015-16 was 11.85 GL.

### **Water allocations [s71(1)(d)]**

#### *South Australian Murray (SS11)*

For the 2015-16 water year, there was a 100 percent allocation against water access rights under the *Water Allocation Plan for the River Murray Prescribed Water Course*.

An additional 15 GL was allocated against Class 6 Metropolitan Adelaide water access rights, for a total of 145 GL. This is permitted under the water allocation plan, which allows an allocation greater than 100 percent when required, so long as use complies with the maximum permitted use under Schedule E of the Agreement.

#### Private Carryover

The South Australian Government has a policy for the allocation of private carryover against non-CHWN water access entitlements. No private carryover within was allocated within this SDL unit in 2015-16.

#### Critical Human Water Needs Carryover

Allocation to SA Water of preserved carryover for Critical Human Water Needs was 172GL. This annual allocation has been made since 2011-12.

#### *Marne-Saunders (SS12), Eastern Mount Lofty Ranges (SS13)*

For the 2015-16 water year, there was a 100 percent allocation against water access rights.

Carryover is permitted under the Marne-Saunders WAP and the Eastern Mount Lofty Ranges WAP. The value reported under s 71(1)(d) is the sum of the allocations against water access entitlements and for carryover.

#### *Angas Bremer (GS1), Eastern Mount Lofty Ranges (GS2), Mallee (GS3), Marne Saunders (GS4), Peake Roby Sherlock (GS5) and SA Murray Salt Interception Schemes (GS7)*

For the 2015-16 water year there was a 100 percent allocation against water access rights.

### **Other decisions that permit water to be taken [s71(1)(e)]**

Allocation decisions are not normally made outside of a WAP, unless specific circumstances occur (such as drought) and / or additional authorisations are made under Section 128 of the NRM Act. Aside from the Mallee SDL resource unit, no other decisions outside of any WAPs permitted water to be taken in 2015-16.

## Section 71 Report for South Australia 2015-16

### Surface Water and Groundwater

---

#### *Mallee (GS3)*

In addition to the state wide authorisations issued pursuant to section 128 of the NRM Act there is an authorisation for no more than 42,920 ML over ten years and a maximum of 6,000 ML per annum to be taken from the Mallee (Murray Group Limestone) aquifer for mineral sands operations in the Hundreds of Mindarie, Chesson, McPherson and Allen.

#### **Trade details [s71(1)(f)]**

##### *South Australian Murray (SS11)*

All water access entitlements and allocations can be traded within the SDL resource unit and interstate within the Murray-Darling Basin as enabled by Schedule D of the Agreement with the exception of:

- entitlements issued for water supply purposes delivered to Metropolitan Adelaide and associated country areas through the Swan Reach – Stockwell, Mannum-Adelaide and Murray Bridge-Onkaparinga pipelines
- entitlements and allocations issued for environmental land management in the Lower Murray Swamps.

##### *Marne-Saunders (SS12) and Eastern Mount Lofty Ranges (SS13)*

Trade is permitted under the Marne-Saunders WAP and the Eastern Mount Lofty Ranges WAP, but within the SDL resource units only.

##### *Angas Bremer (GS1), Eastern Mount Lofty Ranges (GS2), Mallee (GS3), Marne Saunders (GS4) and Peake Roby Sherlock (GS5)*

Trade is only permitted within the individual SDL resource unit.

##### *SA Murray Salt Interception Schemes (GS7)*

Trade is only permitted within the Noora Prescribed Wells Area of this SDL resource unit.

## **4. ENVIRONMENTAL WATER – HELD AND PLANNED**

There are now large volumes of South Australian entitlements held for environmental purposes, as well as environmental allocations issued in New South Wales and Victoria that are delivered and used in South Australia.

At the start of 2015-16, there were 222.4 GL of held environmental water entitlements in South Australia.

During 2015-16:

- 691.59 GL of environmental allocations from interstate were traded to South Australia from the Commonwealth Environmental Water Holder, the Victorian Environmental Water Holder and The Living Murray Program;
- 110.85 GL to South Australia from an environmental water delivery trial by Water NSW (BED trial);
- 0.095 GL of consumptive allocations were traded from interstate for environmental purposes and a net volume of 3.8 GL of South Australian consumptive allocations used for environmental purposes;
- 1028.4 GL of allocations were used for environmental purposes; and
- 157.498 GL of planned environmental water was available in South Australia.

## **5. PROGRESS ON WATER REFORM**

Please refer to South Australia's 2015-16 Basin Plan Annual Report submitted to the Department of Agriculture and Water Resources which reports against the milestones set out in Schedule A of the *National Partnership Agreement on Implementing Water Reform in the Murray-Darling Basin*.