# Water Balance Report

## Lachlan Valley 2016 - 2017

| Water balance component | Sources of water | | Distribution of water | | % of volume measured |
|---|---|---|---|---|---|
| | Volume (ML) | % of total | Volume (ML) | % of total | |
| **Storage Volume** | | | | | |
| Volume in storage at start of year | | | 711,520 | | 100% |
| Volume in storage at end of year | | | 1,219,749 | | 100% |
| **Change in storage** | | | **508,229** | **18%** | **100%** |
| **Storage net evaporation (1)** | | | **210,423** | **8%** | **100%** |
| **Inflows** | | | | | |
| Storage inflows | 1,494,785 | 54% | | | 100% |
| Downstream tributaries (2) | **1,258,159** | 46% | | | 100% |
| **Subtotal** | 2,752,944 | 100% | | | **100%** |
| **Net Water diverted under riparian rights (3)** | | | | | |
| Domestic and stock rights | | | 4,211 | 0.2% | 0% |
| Native title rights | | | 0 | 0.0% | 0% |
| **Subtotal** | | | **4,211** | **0.2%** | **0%** |
| **Net Water diverted under access licences** | | | | | |
| Domestic and stock | | | 4,942 | 0.2% | 100% |
| High security (4) | | | 78,726 | 2.9% | 100% |
| General security | | | 105,419 | 3.8% | 100% |
| Local water utility | | | 6,331 | 0.2% | 100% |
| Major utility (5) | | | 0 | 0.0% | |
| Supplementary water | | | 0 | 0.0% | |
| Conveyance | | | 9,311 | 0.3% | 100% |
| **Subtotal** | | | **204,729** | **7.4%** | **100%** |
| **Environmental water** | | | | | |
| Net diversions to wetlands (6) | | | 22,571 | 0.8% | 100% |
| End of system flows (7) | | | 670,795 | 24.4% | 100% |
| **Subtotal** | | | **693,366** | **25.2%** | **100%** |
| **Other outflows (8)** | | | **316,622** | **11.5%** | **100%** |
| **Unaccounted difference (9)** | | | **815,364** | **29.6%** | |
| **Total** | **2,752,944** | **100%** | **2,752,944** | **100.0%** | |

### Notes:

(1) The evaporation figure includes net evaporation loss from Wyangala Dam, Lake Cargelligo and Lake Brewster.
(2) Downstream tributaries include Boorowa R and Belubula R contributed approximately 1258 GL and mostly during the flood in winter 2016. Since all of the ungauged tributaries were assessed as part of the flood water, the AUDs from Wyangala to Jemalong are not included now.

(3) Water rights are not metered. Values presented are as specified in Water Sharing Plan.
(4) Includes trading of allocations from General Security licences into state environmental licences.
(5) There are no Major Water Utility or Supplementary licences in Lachlan
(6) Planned environmental water delivery requirements were met 100% in 2015-16. A total of 350 GL/D of translucent flow was delievered by 11 Sep 2017 but ios not calculated here. Translucent is captured as end of system flow (similar to 2012/2013). About 16,027ML/D was delivered as WQA and 5,084 ML as Lake Brewster ECA. License Env water delivered - 1000 ML/D at Merrimajeel as continuation of the S/D, 33454 ML/D at Forbes/Condobolin and 1324 ML/D at Merrimajeel for the bird breeding program.
(7) Net flows in Willandra Ck at the homestead and at Booligal Weir over and above water extracted downstream are accounted as end of system flows.
8) Other outflows - Stock and domestic flows delivered into Booberoi Ck (3,521ML - assessment donw after the flood, starting from 19th January 2017), Merrowie Ck (7,968ML - but the flood also replenishment the creek with a total of 184GL), Willandra Ck (9,500 ML- but captured in End of System Flow), Merrimajeel and Muggabah Ck (6,377ML - but the flood also replenishment the creeks with a total of 129GL).

(9) Unaccounted difference is estimated as the difference between inflows, outflows and change in channel storage. This includes river evaporation, evapotranspiration, seepage, ungauged overbank flows, water in transit and channel breakouts and any measurement errors recording other components. This also includes the delivery losses in the regulated section of Willandra Ck.

All the above figures are based on operational data used by WaterNSW and are not quality coded. Archived data may differ from the operational data due to changes in the rating tables. There are some missing data due to instrument faults and have been filled by estimates.
The above water balance for Lachlan Valley includes Wyangala, Lake Cargelligo and Lake Brewster storages within the area covered by the Water Sharing Plan for the Lachlan Regulated River water source.