RIVER MURRAY FLOW REPORT and WATER RESOURCES UPDATE

Report #36/2013
Issued 10:00 am 13 September 2013

This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 6 September 2013. The next flow report will be provided on Friday, 20 September 2013.

In this report, for ease of representation, large volumes of water are expressed in gigalitres (GL), while smaller volumes are expressed in megalitres (ML). One GL is equal to 1 000 ML.

WATER RESOURCES UPDATE

During August 2013, the total River Murray System inflow was approximately 1 740 GL, which is above the August long-term average of 1 590 GL. Inflow to Menindee Lakes (from the Darling System) during August 2013 was approximately 10 GL, which is below the August long-term average of 180 GL.

The flow to South Australia during August 2013 was approximately 389 GL (compared to 1 249 GL in August 2012), which comprised 124 GL of Entitlement Flow and approximately 265 GL of unregulated flow.

The flow to South Australia is currently around 15 000 ML/day, which comprises the September Entitlement Flow of 4 500 ML/day plus unregulated flow. The unregulated flow is a result of inflows from tributaries in north-eastern Victoria, storage conditions, pre-releases from Hume and Dartmouth Reservoirs, and Lake Victoria operations. The major Murray-Darling Basin Authority controlled storages are holding around 92 per cent capacity.

STORAGE VOLUMES

Murray-Darling Basin Authority storage volumes at 11 September 2013 and 11 September 2012

Storage	Full Supply Volume (GL)	11/09/2013 (GL)	11/09/2012 (GL)	Long-term average (end of September)
Dartmouth	3 856	3 789 (98%)	3 669 (95%)	
Hume	3 003	2 971 (99%)	2 931 (98%)	
Lake Victoria	677	597 (88%)	606 (90%)	
Menindee Lakes	1 731*	1 205 (70%)	2 010 (116%)	
TOTAL	9 267	8 562 (92%)	9 216 (99%)	7 458 (80%)

*Menindee Lakes can be surcharged to 2 015 GL

RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for September to November 2013 indicates that a wetter than normal season with cooler days is more likely for south-eastern Australia.

The climate is being influenced by a weakening negative (almost ceased) Indian Ocean Dipole (IOD), a neutral-to-cool tropical Pacific, and warm sea surface temperatures around the coast of Australia A negative IOD during winter-spring increases the chance of above-average rainfall over southern Australia.

WATER ALLOCATION OUTLOOK

South Australia will receive its full Entitlement Flow of 1 850 GL in 2013-14. As a result, South Australian River Murray Water Access Entitlement Holders will have access to 100 per cent water allocation in 2013-14. Water is also being progressively reserved under the Murray-Darling Basin Agreement clause 103 (minimum reserve) to assist with supplying South Australia's Entitlement Flow in 2014-15.

SOUTH AUSTRALIA'S STORAGE RIGHT

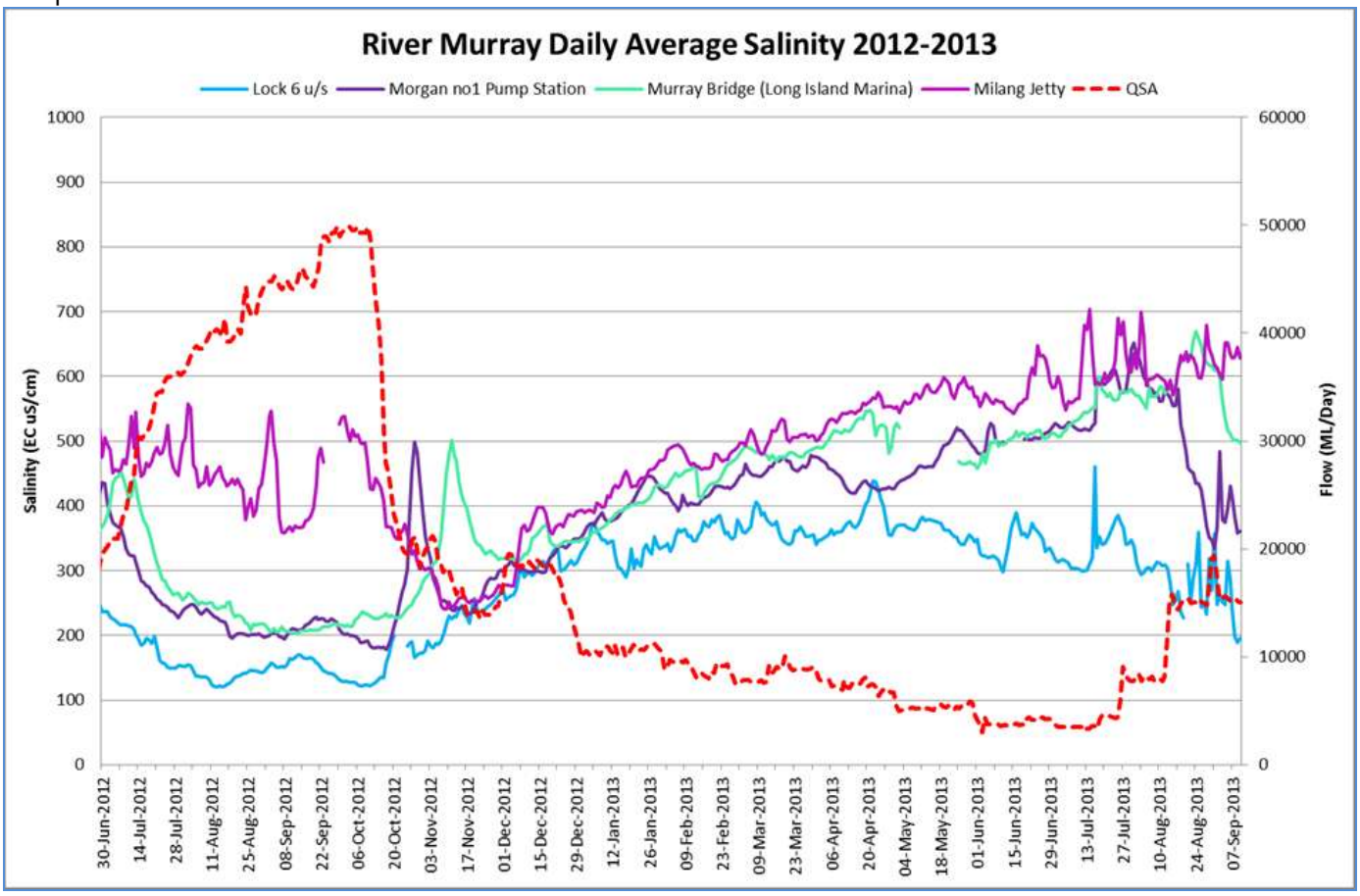
The Department of Environment, Water and Natural Resources continues to pursue opportunities to defer and store an amount of Entitlement Flow during 2013-14 for use in future years. However, pre-releases from Hume and Dartmouth Reservoirs and the high possibility of spill from the upstream storages, limits South Australia's ability to defer and store water at this point in time. If South Australia had deferred and stored water in Hume Reservoir it would have already spilt from the storage. The situation is being reviewed on a monthly basis.

WATER QUALITY

A number of targets are identified under the Basin Plan, which all Basin States must have regard to in managing River Murray flows. The targets for real-time salinity are identified below. Salinity must not exceed these values for 95 per cent of the time:

- 580 EC at Lock 6
- 800 EC at Morgan
- 830 EC at Murray Bridge
- 1 000 EC at Milang

The following graph shows the salinity at these locations and the flow to South Australia (QSA) from July 2012 to September 2013. It confirms that salinity has not exceeded the target at any of these four locations during this period.



Note: Data gaps are due to technical issues experienced at the site

FLOW OUTLOOK

The flow at the South Australian border is approximately 15 000 ML/day and will increase to around 18 000 to 20 000 ML/day during the coming week, depending on upstream operations, extractions, and rainfall events. The flow comprises the September Entitlement Flow of 4 500 ML/day plus unregulated flow. South Australia is likely to receive unregulated flow into October 2013.

The flow over Lock 1 is approximately 14 500 ML/day and will increase to around 16 500 ML/day during the coming week, depending on weather conditions and extractions.

It is important to note that flow forecasts in this advice are based on the information available at the time of preparation. They may change as new gauging information becomes available, or due to rainfall events or changed operations upstream. Flow forecasts are dependent on predictions made by the Bureau of Meteorology, Murray-Darling Basin Authority and water management agencies in upstream jurisdictions. They will be revised as new information becomes available.

BARRAGE OPERATIONS AND WATER LEVELS IN THE LOWER LAKES

The water level in Lake Alexandrina is approximately 0.71 m AHD and approximately 0.94 m AHD in Lake Albert. During the coming week, barrage operations will target a water level between 0.70 m AHD and 0.75 m AHD in both Lakes. Barrage releases are being prioritised through the Goolwa and Tauwitchere barrages to maintain an open and functioning Murray Mouth and to promote native fish migration. All barrage fishways are in operation and are being supplemented with attractant flows in adjacent bays. SA Water will continue to operate the barrages to minimise any negative salinity impacts from reverse flow events during these conditions.

To see live salinity data at various locations on the River Murray and in the Lower Lakes, please refer to the following website: http://www.waterconnect.sa.gov.au/Systems/RTWD/SitePages/Home.aspx

Water levels and barrage operations are monitored closely by various agencies of the South Australian Government, Murray-Darling Basin Authority and Commonwealth Environmental Water Office.

NAVIGATION ISSUES

Sandbars in the vicinity of the Murray Mouth may cause navigation hazards. Mariners are advised to navigate with caution when operating in the area. Sandbars are also present along sections of the River Murray in South Australia and all watercraft should be aware of, and regularly check, the river depth. The high flows during 2011-12 and 2012-13 have resulted in the deposition of sediments at some locations creating new sandbars.

CONSTRUCTION WORKS

Currency Creek

Subject to confirmation by the Commonwealth Government under the *Environment Protection and Biodiversity Conservation Act* 1999 (Cwlth), water-based works to remove the Currency Creek Regulator are now completed. The boating exclusion zone has been removed. The site has a few items of plant and equipment remaining, and a stockpile of rock material that was removed from the regulator. These will be removed when weather conditions improve to enable access.

Chowilla

Construction of the Chowilla Creek Environmental Regulator and associated structures is ongoing. For public safety reasons the Chowilla Creek remains closed to navigation at the construction site. Works are also underway to upgrade the weirs on Pipeclay Creek and Slaney Creek to improve the management of flows into the Chowilla anabranch and to enable fish passage. Public access around the weirs is restricted during this construction program.

RIVER MURRAY WATER LEVELS

Below is a table of River Murray water levels at a number of locations from Lock 10 (near Wentworth) to Murray Bridge.

River Murray Water Levels on 11 September 2013

Location	River km	Normal Pool Level	Current Level (m AHD)	1974 Flood Level (m AHD)	1993 Flood Level (m AHD)
Lock 10	825.0	30.80	30.88	33.81	33.32
Lock 9 Kulnine	764.8	27.40	27.62	30.03	29.44
Lock 8 Wangumma	725.7	24.60	25.09	27.60	27.19
Lock 7 Rufus River	696.6	22.10	22.12	25.70	25.24
Lock 6 Murtho	619.8	19.25	19.29	21.03	20.50
Renmark	567.4	-	16.33	18.54	18.04
Lock 5	562.4	16.30	16.32	18.07	17.50
Lyrup	537.8	-	13.23	16.85	16.26
Berri	525.9	-	13.13	15.81	15.74
Lock 4	516.2	13.20	13.14	15.65	15.08
Loxton	489.9	-	10.44	15.05	14.12
Cobdogla	446.9	-	9.86	13.44	12.38
Lock 3	431.4	9.80	9.76	13.16	12.02
Overland Corner	425.9	-	6.64	12.73	11.58
Waikerie	383.6	-	6.35	11.26	10.24
Lock 2	362.1	6.10	6.14	10.28	9.30
Cadell	332.6	-	3.49	9.17	8.08
Morgan	321.7	-	3.39	8.85	7.65
Lock 1 Blanchetown	274.2	3.20	3.20	6.81	5.38
Swan Reach	245.0	0.75	0.85	6.06	4.51
Mannum PS	149.8	0.75	0.77	3.15	1.90
Murray Bridge	115.3	0.75	0.82	2.06	1.26

Note that the above water levels may be affected by local wind conditions.

FURTHER INFORMATION

The Government of South Australia recently enhanced the WaterConnect website, which is South Australia's comprehensive water information portal.
The new WaterConnect site can be accessed at: http://www.waterconnect.sa.gov.au

Up-to-date River Murray flow and water level information can be accessed at the Department of Environment, Water and Natural Resources, SA Water and Murray-Darling Basin Authority websites:
http://www.waterconnect.sa.gov.au/Systems/RTWD/SitePages/Home.aspx
www.sawater.com.au/SAWater/Environment/TheRiverMurray/River+Murray+Levels.htm
www.mdba.gov.au/water/live-river-data

The Department of Environment, Water and Natural Resources has published a series of inundation maps for the River Murray. They are available at: http://www.waterconnect.sa.gov.au/Systems/RMIM/Pages/default.aspx

Information on the discharge of acid drainage water into the Lower River Murray can be accessed online at:
http://www.epa.sa.gov.au/environmental_info/water_quality/acid_sulfate_soils_ass/lower_river_murray_reclaimed_irrigation_area_lmria

Details of river height and rainfall information in the River Murray within Victoria and New South Wales are available at the Bureau of Meteorology website: http://www.bom.gov.au/vic/flood

Information provided by the Commonwealth Environmental Water Office can be accessed at:
www.environment.gov.au/ewater/southern/murray/lower-murray.html

Information on The Living Murray can be accessed at:
http://www.mdba.gov.au/about-basin/environmental-sites

Information is also available from the SA Water Hotline on **08 8595 2299**

Department of Environment, Water and Natural Resources
http://www.environment.sa.gov.au/Home

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