



RIVER MURRAY WEEKLY REPORT

FOR THE WEEK ENDING WEDNESDAY, 2 APRIL 2014

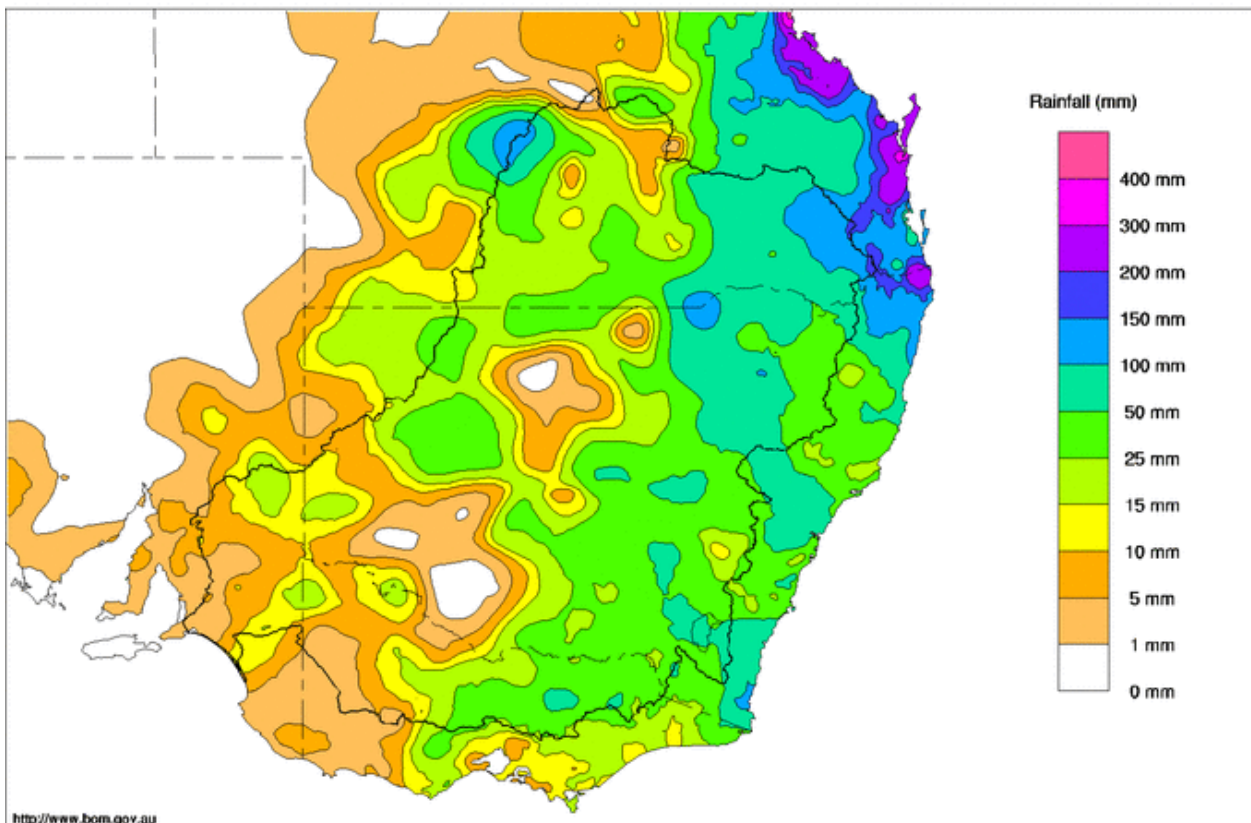
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Rainfall and Inflows

The recent wet weather across central and eastern parts of the Murray-Darling Basin continued during the past week as a large upper level trough system generated a thick band of cloud, rain and thunderstorms that persisted for several days over eastern Australia. The rain was positive news for many farming communities, but particularly in the north-eastern Basin where weekly totals between 50 and 150 mm were widespread (Map 1).

Stream flow responses were helped by rain falling during the previous week and were most significant along the Condamine-Balonne and Moonie Rivers in Queensland; and along the Namoi River in NSW. However, the higher flows were quite short in duration and at this stage, only relatively small volumes are expected to reach Menindee Lakes on the Darling River. Minor to moderate flooding developed for a few days at some sites in the north-east; however the more significant flood peaks were confined to coastal catchments to the east and north of the Basin. While there have been some minor flooding impacts on communities within the Basin, the overall benefits of the rainfall to the region will be considerable.

Murray-Darling Rainfall Totals (mm) Week Ending 2nd April 2014
Product of the National Climate Centre



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Issued: 02/04/2014

Map 1 - Murray-Darling Basin rainfall for the week ending 2 April 2014 (Source: Bureau of Meteorology).

Some of the highest weekly rainfall totals were recorded in Queensland's upper Condamine River catchment including 193 mm at The Head, 168 mm at Millmerran, 161 mm at Toowoomba, 150 mm at Macalister, 146 mm at Pittsworth, 137 mm at Dalby and 116 mm at Miles. In northern NSW, there was 148 mm recorded at Mogil Mogil and 140 mm in Mungindi; while totals along the Namoi River valley included 103 mm at Narrabri, 91 mm at Blackville, 79 mm at Boggabri and 73 mm at Gunnedah.



Totals in south-eastern parts of the Basin included 88 mm at Charnwood, 77 mm at Moorngag, 77 mm at Whitlands, 76 mm at Mt Buffalo, 67 mm at Burrinjuck Dam, 59 mm at Broken Weir and 51 mm at Tocumwal.

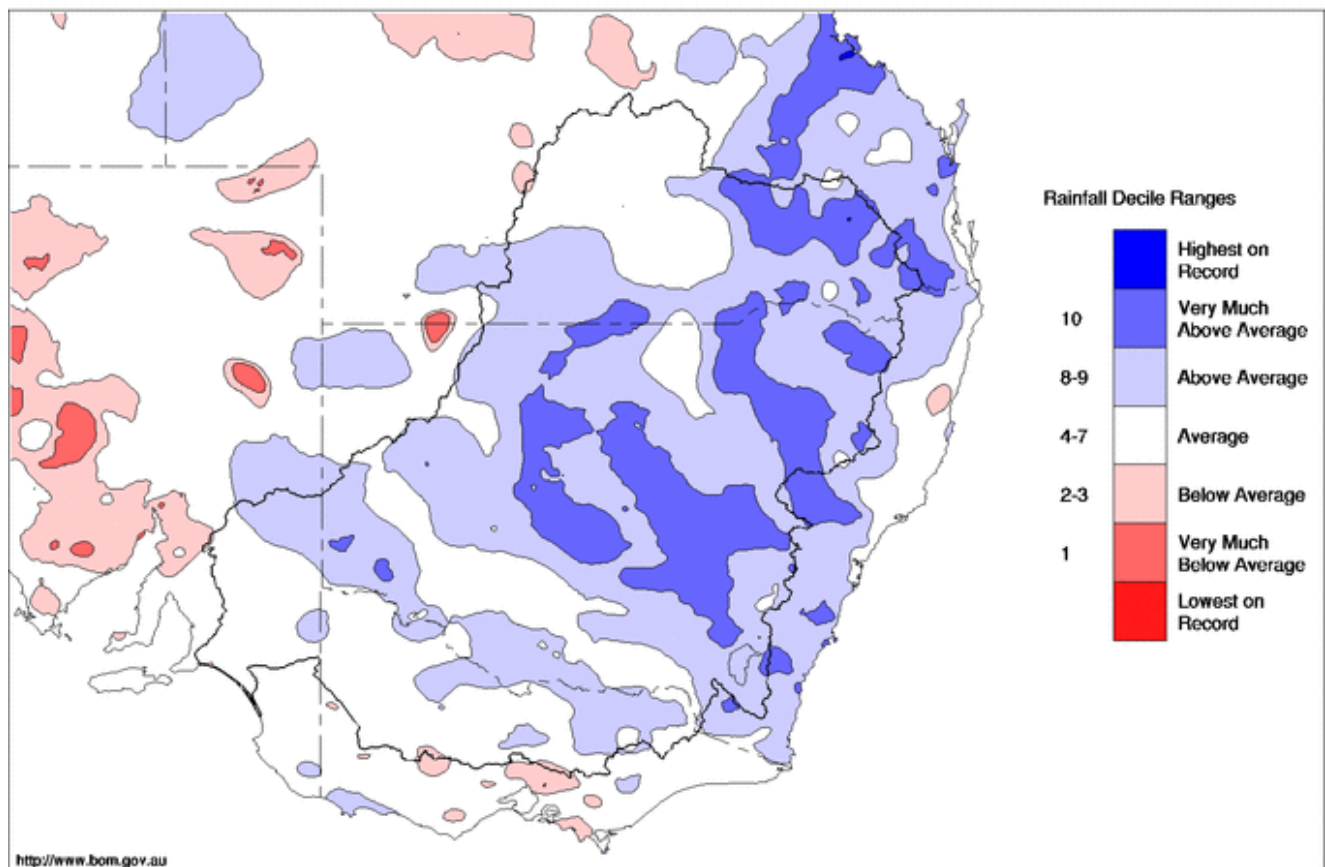
Rain in the south-east generated only modest stream flow responses in the upper Murray tributaries. On the Mitta Mitta River, the flow at Hinnomunjie Bridge peaked at around 600 ML/day, while on the Ovens River, the flow at Wangaratta increased from 400 to 650 ML/day.

March 2014 Summary

There was widespread, above-average rainfall across the Murray-Darling Basin during March 2014, while temperatures were fairly typical of the first month of autumn, although still above average overall. Conditions were particularly wet across central and eastern parts of the Basin where a series of trough systems brought rain and thunderstorms during the second half of the month (Map 2). Across the Basin as a whole, the Bureau of Meteorology has reported that rainfall was 64% above the long-term mean, with an area-averaged total of 63 mm. The Basin was notably wetter than the rest of the country, with much of the northern, central and western parts of Australia recording below average rain during March.

Murray-Darling Rainfall Deciles March 2014

Distribution Based on Gridded Data
Product of the National Climate Centre



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Map 1 - Murray-Darling Basin rainfall deciles for March 2014 (Source: Bureau of Meteorology).

Inflows to the River Murray System (excluding Snowy Scheme, Darling River and managed environmental inflows) increased slightly during March but remained just under 100 GL. The total was significantly less than the inflow volume recorded during March 2013 (around 150 GL), was well under the March long-term average of around 220 GL and was a fraction of the inflows recorded in 2011 and 2012 (994 GL and 2255 GL respectively).



River Operations

MDBA River Operations are currently operating to conserve water across the system, which is likely to result in lower releases from upper storages and therefore lower flows in the River Murray over autumn. Over the Easter holiday period, flows are expected to be lower than previous years and recreational users are advised to factor this into their river holiday planning. Forecast river levels for Easter will be dependent on a range of factors, especially the weather. More details on the Easter flow will be provided in next week's report. For more information on how River Operations accommodate recreation, please see the MDBA River Operations and Recreation page at <http://www.mdba.gov.au/what-we-do/managing-rivers/river-murray-system/operations-and-recreation>

Storage in Dartmouth Reservoir has reduced by 22 GL this week due to on-going low inflows and increased releases for harmony transfers to Hume Reservoir. See the attached flow advice for more information on Dartmouth releases during April.

Operations in the Hume and Yarrawonga reach were heavily influenced this week by the two weather events that bookend this weekly report. The first weather event brought rainfall across the NSW and Victorian irrigation areas in the middle of the week. This resulted in a "rain rejection" (when ordered irrigation water is left in the river) with the Mulwala Canal and Yarrawonga Main Channel (YMC) offtakes diverting only half the volumes ordered. These reductions left additional water in the Yarrawonga weir pool, which increased the level to around 124.9 m AHD (Full Supply Level) in response. Yarrawonga releases were increased temporarily from 7,300 ML/day to 8,300 ML/day to further assist in managing the pool level before being decreased to 6,500 ML/day over the weekend – the current target to meet downstream system demands.

The additional water stored above the Yarrawonga Weir target operating level of 124.7 m AHD was used to meet irrigation demands at Mulwala Canal and YMC and part of the downstream demand over the past few days.

Consequently, releases from Hume Dam (four days travel time upstream of Yarrawonga) were briefly reduced to 5,700 ML/day at Doctors Point to conserve water in Hume Dam. These reduced inflows have created airspace at Yarrawonga Weir ahead of a second rain event, forecast for the end of this week, which could further reduce irrigation demand.

On the Goulburn River, the environmental flow pulse peaked on Thursday 27 March at around 4,200 ML/day at McCoys Bridge and has now receded to 2,980 ML/day. The Goulburn is expected to continue falling over the next two weeks to a base flow of 950 ML/day. The environmental flow will continue to add 600 ML/day to the McCoys seasonal minimum flow (350 ML/day) until May.

Downstream at Torrumbarry Weir, the National Channel diversion decreased last Thursday from 3,500 to 3,000 ML/day in response to the rain. Diversions are expected to be similar over the coming week.

The flow at Swan Hill is forecast to peak at just below 6,000 ML/day around 4 April; under a dry scenario, the flow may decrease over the following two weeks with flows less than 3,000 ML/day (0.8 m gauge height) possible over the Easter period. These low flows will be due to the reduction in Yarrawonga Weir releases, the lower environmental flows on the Goulburn and the influence of National Channel diversions.

Lake Victoria's storage volume is still decreasing and is currently at 429 GL. Works continue on the outlet regulator which has reduced the outlet capacity flow to around 3,000 ML/day.

The 5 day average level for Lake Alexandrina is 0.62 m AHD. There are three gates open at both Goolwa and Tauwichee Barrages and one gate opened slightly at Boundary Creek Barrage. The total estimated outflow has increased to 1,640 ML/day.

For media inquiries contact the Media Officer on 02 6279 0141

DAVID DREVERMAN

Executive Director, River Management



Water in Storage

Week ending Wednesday 02 Apr 2014

| MDBA Storages | Full Supply Level | Full Supply Volume (GL) | Current Storage Level | Current Storage | | Dead Storage (GL) | Active Storage (GL) | Change in Total Storage for the Week (GL) |
|---------------------------|-------------------|----------------------------|-----------------------|-----------------|------------|----------------------|------------------------|--|
| | (m AHD) | | (m AHD) | (GL) | % | | | |
| Dartmouth Reservoir | 486.00 | 3 856 | 479.41 | 3 439 | 89% | 71 | 3 368 | -22 |
| Hume Reservoir | 192.00 | 3 005 | 179.71 | 1 099 | 37% | 23 | 1 076 | -6 |
| Lake Victoria | 27.00 | 677 | 24.82 | 429 | 63% | 100 | 329 | -12 |
| Menindee Lakes | | 1 731* | | 387 | 22% | (-) # | 0 | -1 |
| Total | | 9 269 | | 5 354 | 58% | -- | 4 773 | -41 |
| Total Active MDBA Storage | | | | | | | 57% ^ | |

Major State Storages

| | | | | | | |
|----------------------|-------|-------|-----|-----|-------|-----|
| Burrinjuck Reservoir | 1 026 | 476 | 46% | 3 | 473 | +15 |
| Blowering Reservoir | 1 631 | 803 | 49% | 24 | 779 | -3 |
| Eildon Reservoir | 3 334 | 2 320 | 70% | 100 | 2 220 | -33 |

* Menindee surcharge capacity – 2050 GL

** All Data is rounded to nearest GL **

NSW takes control of Menindee Lakes when storage falls below 480 GL, and control reverts to MDBA when storage next reaches 640 GL

^ % of total active MDBA storage

Snowy Mountains Scheme

Snowy diversions for week ending 01 Apr 2014

| Storage | Active Storage (GL) | Weekly Change (GL) | Diversions (GL) | This Week | From 1 May 2013 |
|------------------------|---------------------|--------------------|------------------|-----------|-----------------|
| Lake Eucumbene - Total | 1 516 | n/a | Snowy-Murray | +0 | 651 |
| Snowy-Murray Component | 711 | n/a | Tooma-Tumut | +4 | 241 |
| Target Storage | 1 340 | | Net Diversion | -4 | 410 |
| | | | Murray 1 Release | +7 | 947 |

Major Diversions from Murray and Lower Darling (GL) *

| New South Wales | This Week | From 1 July 2013 | Victoria | This Week | From 1 July 2013 |
|---------------------------|-------------|------------------|---------------------------------|-------------|------------------|
| Murray Irrig. Ltd (Net) | 16.0 | 1053 | Yarrowonga Main Channel (net) | 3.8 | 302 |
| Wakool Sys Allowance | 2.0 | 41 | Torrumbarry System + Nyah (net) | 18.7 | 484 |
| Western Murray Irrigation | 0.5 | 25 | Sunraysia Pumped Districts | 0.9 | 106 |
| Licensed Pumps | 5.2 | 221 | Licensed pumps - GMW (Nyah+u/s) | 1.2 | 158 |
| Lower Darling | 0.2 | 196 | Licensed pumps - LMW | 1.5 | 265 |
| TOTAL | 23.9 | 1536 | TOTAL | 26.1 | 1315 |

* Figures derived from estimates and monthly data. Please note that not all data may have been available at the time of creating this report.

** All data above is rounded to nearest 100 ML for weekly data and nearest GL for cumulative data**

Flow to South Australia (GL)

* Flow to SA will be greater than normal entitlement for this month due to the delivery of additional environmental water.

| | |
|------------------------|---------|
| Entitlement this month | 135.0 * |
| Flow this week | 42.5 |
| Flow so far this month | 10.7 |
| Flow last month | 222.7 |

(6 100 ML/day)

Salinity (EC) (microSiemens/cm at 25° C)

| | Current | Average over the last week | Average since 1 August 2013 |
|-------------------------|---------|----------------------------|-----------------------------|
| Swan Hill | 80 | 70 | 90 |
| Euston | 100 | 100 | 100 |
| Red Cliffs | 140 | 140 | 120 |
| Merbein | 160 | 150 | 120 |
| Burtundy (Darling) | 490 | 500 | 500 |
| Lock 9 | 150 | 160 | 180 |
| Lake Victoria | 230 | 230 | 250 |
| Berri | 270 | 270 | 270 |
| Waikerie | 380 | 400 | 320 |
| Morgan | 410 | 440 | 320 |
| Mannum | 480 | 430 | 340 |
| Murray Bridge | 430 | 420 | 350 |
| Milang (Lake Alex.) | 750 | 740 | 670 |
| Poltalloch (Lake Alex.) | 410 | 640 | 560 |
| Meningie (Lake Alb.) | 2 770 | 2 750 | 2 670 |
| Goolwa Barrages | 1 030 | 1 090 | 1 310 |



River Levels and Flows

Week ending Wednesday 02 Apr 2014

| River Murray | Minor Flood Stage (m) | Gauge Height | | Flow (ML/day) | Trend | Average Flow this Week (ML/day) | Average Flow last Week (ML/day) |
|----------------------------------|--------------------------|--------------|---------|------------------|-------|------------------------------------|------------------------------------|
| | | local (m) | (m AHD) | | | | |
| Khancoban | - | - | - | 460 | F | 440 | 430 |
| Jingellic | 4.0 | 1.16 | 207.68 | 1 230 | F | 1 410 | 1 150 |
| Tallandoon (Mitta Mitta River) | 4.2 | 2.15 | 219.04 | 2 780 | F | 3 730 | 2 240 |
| Heywoods | 5.5 | 2.65 | 156.28 | 8 110 | R | 6 340 | 12 720 |
| Doctors Point | 5.5 | 2.53 | 151.00 | 9 330 | R | 7 640 | 13 510 |
| Albury | 4.3 | 1.55 | 148.99 | - | - | - | - |
| Corowa | 3.8 | 2.00 | 128.02 | 7 890 | R | 8 520 | 14 540 |
| Yarrowonga Weir (d/s) | 6.4 | 1.19 | 116.23 | 6 530 | S | 7 300 | 7 370 |
| Tocumwal | 6.4 | 1.83 | 105.67 | 6 750 | F | 7 540 | 7 490 |
| Torrumbarry Weir (d/s) | 7.3 | 2.23 | 80.78 | 6 450 | F | 6 240 | 3 780 |
| Swan Hill | 4.5 | 1.19 | 64.11 | 5 580 | R | 4 270 | 3 310 |
| Wakool Junction | 8.8 | 2.37 | 51.49 | 5 300 | R | 4 580 | 4 900 |
| Euston Weir (d/s) | 8.8 | 0.90 | 42.74 | 3 810 | R | 4 040 | 5 100 |
| Mildura Weir (d/s) | - | - | - | - | - | - | - |
| Wentworth Weir (d/s) | 7.3 | 2.70 | 27.46 | 3 590 | S | 4 220 | 5 330 |
| Rufus Junction | - | 3.13 | 20.06 | 4 400 | F | 5 630 | 6 050 |
| Blanchetown (Lock 1 d/s) | - | 0.65 | - | 5 530 | F | 5 170 | 4 590 |
| Tributaries | | | | | | | |
| Kiewa at Bandiana | 2.7 | 0.88 | 154.11 | 380 | F | 600 | 430 |
| Ovens at Wangaratta | 11.9 | 7.97 | 145.65 | 550 | F | 570 | 420 |
| Goulburn at McCoys Bridge | 9.0 | 2.56 | 93.98 | 2 980 | F | 3 670 | 2 350 |
| Edward at Stevens Weir (d/s) | - | 0.83 | 80.60 | 590 | F | 620 | 650 |
| Edward at Liewah | - | 1.10 | 56.48 | 560 | R | 590 | 870 |
| Wakool at Stoney Crossing | - | 1.35 | 54.84 | 290 | F | 370 | 460 |
| Murrumbidgee at Balranald | 5.0 | 0.49 | 56.45 | 190 | S | 200 | 270 |
| Barwon at Mungindi | - | 3.41 | - | 550 | R | 210 | 40 |
| Darling at Bourke | - | 4.09 | - | 330 | F | 600 | 310 |
| Darling at Burtundy Rocks | - | 0.79 | - | 240 | F | 270 | 270 |

| | | |
|---|-------|-------|
| Natural Inflow to Hume (i.e. Pre Dartmouth & Snowy Mountains scheme) | 1 310 | 1 880 |
|---|-------|-------|

Weirs and Locks Pool levels above or below Full Supply Level (FSL)

| Murray | FSL (m AHD) | u/s | d/s | | FSL (m AHD) | u/s | d/s |
|--------------------|-------------|-------|-------|-----------------------|-------------|-------|-------|
| Yarrowonga | 124.90 | -0.13 | - | No. 7 Rufus River | 22.10 | +0.01 | +0.84 |
| No. 26 Torrumbarry | 86.05 | +0.00 | - | No. 6 Murtho | 19.25 | +0.02 | +0.16 |
| No. 15 Euston | 47.60 | +0.00 | - | No. 5 Renmark | 16.30 | +0.10 | +0.16 |
| No. 11 Mildura | 34.40 | +0.02 | +0.00 | No. 4 Bookpurnong | 13.20 | +0.08 | +0.66 |
| No. 10 Wentworth | 30.80 | +0.00 | +0.06 | No. 3 Overland Corner | 9.80 | +0.14 | +0.40 |
| No. 9 Kulnine | 27.40 | -0.09 | -0.46 | No. 2 Waikerie | 6.10 | +0.21 | +0.35 |
| No. 8 Wangumma | 24.60 | -0.45 | +0.05 | No. 1 Blanchetown | 3.20 | +0.18 | -0.10 |

Lower Lakes FSL = 0.75 m AHD

| | |
|--|------|
| Lake Alexandrina average level for the past 5 days (m AHD) | 0.62 |
|--|------|

Barrages

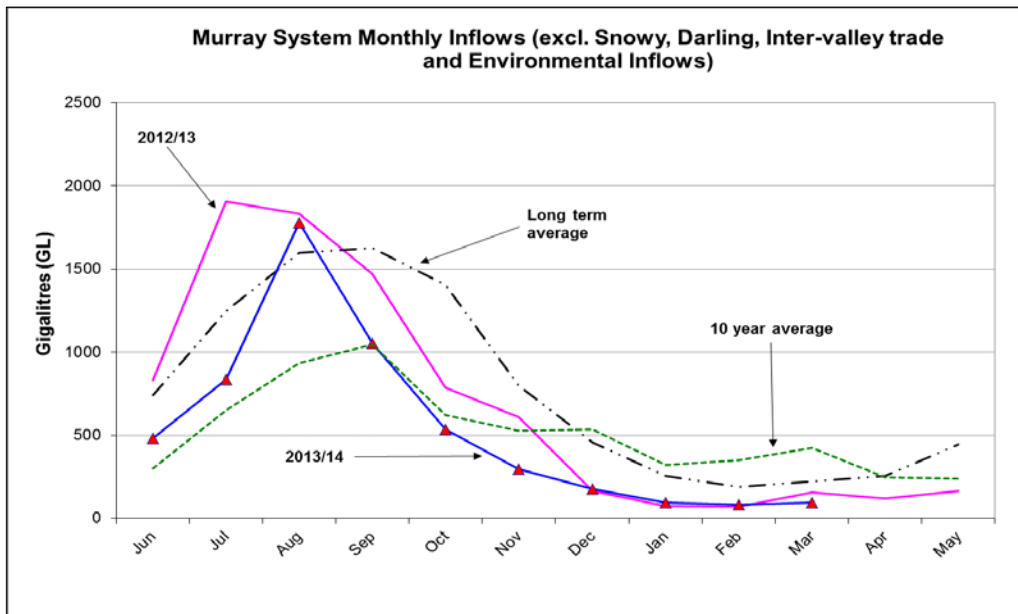
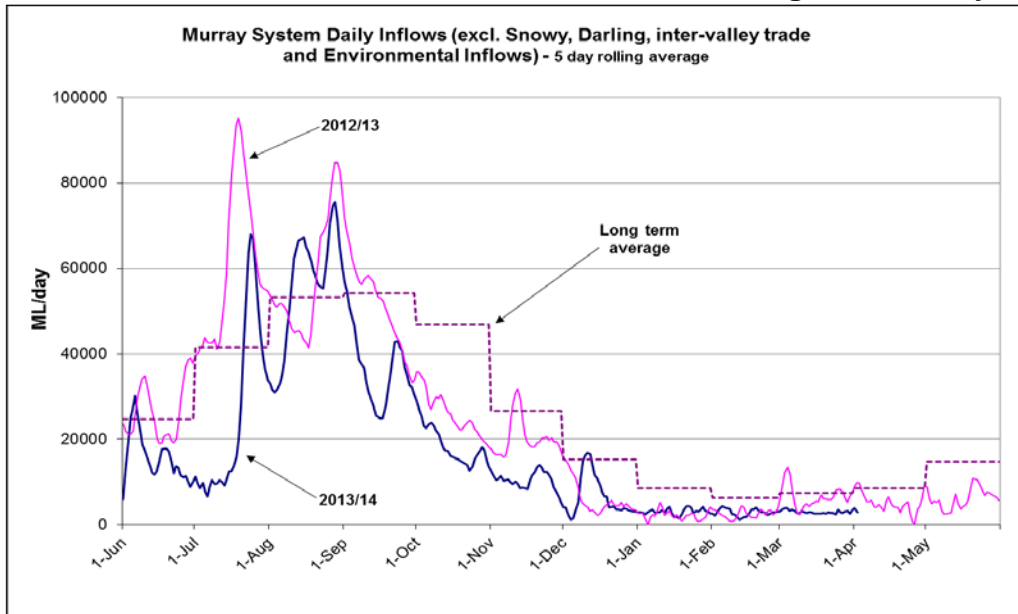
Fishways at Barrages

| | Openings | Level (m AHD) | No. Open | Rock Ramp | Vertical Slot |
|----------------|--------------|---------------|------------|-----------|---------------|
| Goolwa | 128 openings | 0.54 | 3 | - | Open |
| Mundoo | 26 openings | 0.56 | All closed | - | - |
| Boundary Creek | 6 openings | - | 0.1 | - | - |
| Ewe Island | 111 gates | - | All closed | - | - |
| Tauwichee | 322 gates | 0.51 | 3 | Open | Open |

AHD = Level relative to Australian Height Datum, i.e. height above sea level



Week ending Wednesday 02 Apr 2014



State Allocations (as at 02 Apr 2014)

NSW - Murray Valley

| | |
|------------------|------|
| High security | 100% |
| General security | 100% |

Victorian - Murray Valley

| | |
|------------------|------|
| High reliability | 100% |
| Low reliability | 0% |

NSW - Murrumbidgee Valley

| | |
|------------------|-----|
| High security | 95% |
| General security | 59% |

Victorian - Goulburn Valley

| | |
|------------------|------|
| High reliability | 100% |
| Low reliability | 0% |

NSW - Lower Darling

| | |
|------------------|------|
| High security | 100% |
| General security | 100% |

South Australia - Murray Valley

| | |
|---------------|------|
| High security | 100% |
|---------------|------|

NSW : <http://www.water.nsw.gov.au/Water-management/Water-availability/Water-allocations/Water-allocations-summary/water-allocations-summary/default.aspx>

VIC : <http://www.g-mwater.com.au/water-resources/allocations/current.asp>

SA : <http://www.environment.sa.gov.au/managing-natural-resources/river-murray>

Mitta Mitta River

Flow advice



1 April 2014

Reduced flows from Dartmouth in April

Landholders and river users should take into account reduced water releases from Dartmouth Reservoir into the Mitta Mitta River for the remainder of April.

The releases are aimed at ensuring the security of water supply for downstream water users, while maintaining as much airspace as possible within the reservoir.

Currently at 2900 megalitres per day (ML/day) the flow at Colemans gauge (1.9m gauge height) will be reduced over the remainder of this week to about 500ML/day (1.15m gauge height) by Friday 4 April and will remain steady for about 2 weeks.

The flow is then expected to increase to about 1500ML/day (1.55m gauge height at Colemans) on Friday 18 April and vary between 1000ML/day (1.4m gauge height) and 1500ML/day until Saturday 26 April.

Flows at Tallandoon are expected to follow a similar pattern, reaching a low of about 550ML/day (1.4m gauge height) in mid-April, followed by a peak of about 1500ML/day (1.8m gauge height) on Sunday 20 April. Higher flows are possible depending on rainfall and inflows from Snowy Creek.

A further flow advice will be issued if these forecasts change significantly.

The MDBA routinely updates the flow forecasts its website at mdba.gov.au/river-data/current-information-forecasts/storage-volumes each Wednesday.

ENDS

Media enquiries can be directed to the MDBA Media Office at media@mdba.gov.au or 02 6279 0141.

Public enquiries can be directed to engagement@mdba.gov.au or 02 6279 0100.

Join the discussion on the MDBA blog: <http://freeflow.mdba.gov.au>