River Murray Weekly Report

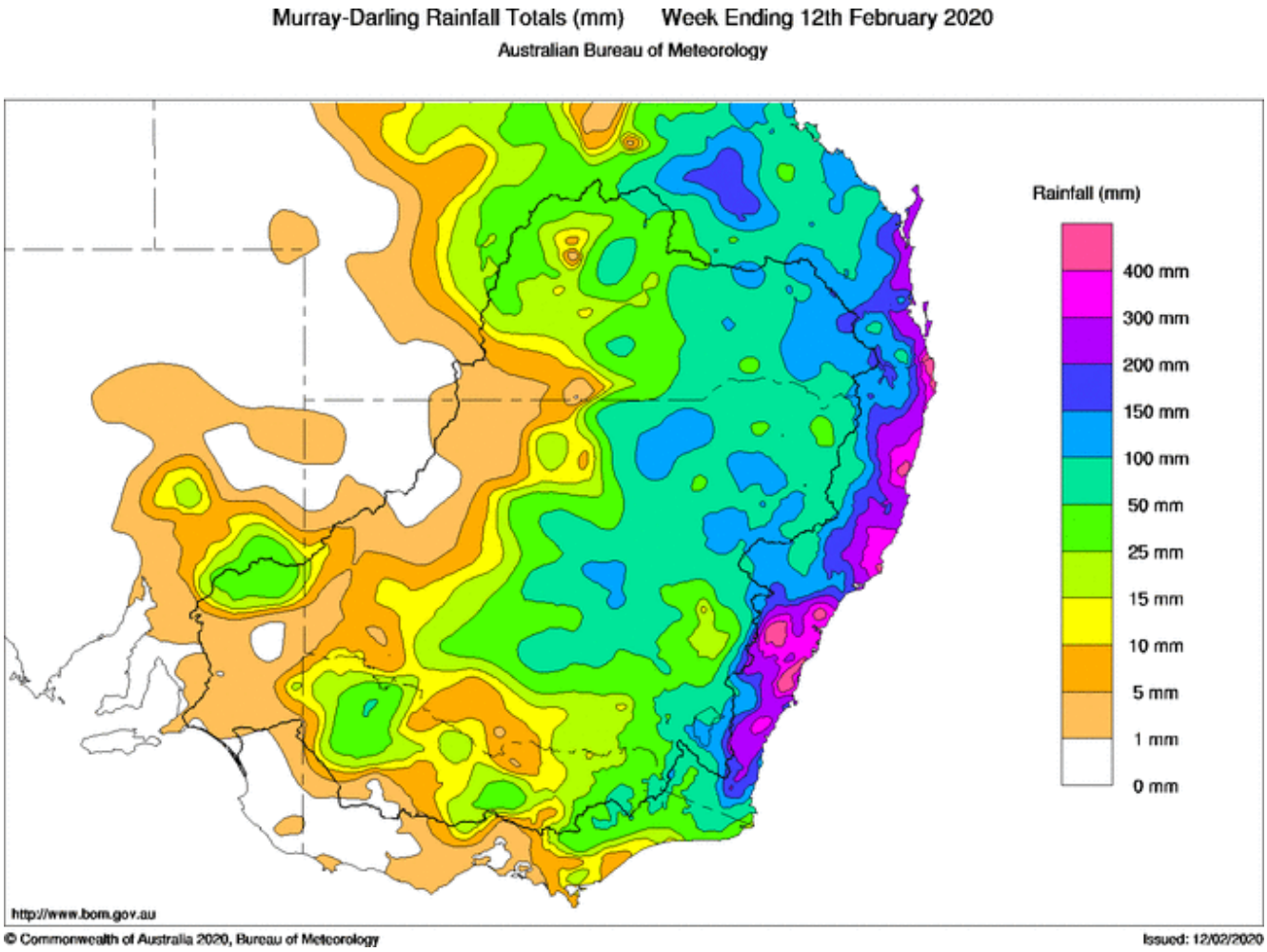
For the week ending Wednesday, 12 February 2020

Trim Ref: D20/7165

Rainfall and inflows

Widespread rainfall was recorded across the Murray-Darling Basin this week (Map 1). The Bureau of Meteorology reported a slow-moving coastal trough over the southeast of Queensland and northern New South Wales that resulted in showers, extensive areas of rain and heavy falls. In the northern Basin, falls of 100-200 mm were recorded across headwater catchments of the Barwon-Darling. In Queensland, 215 mm fell at Oakey in east Darling Downs and 143 mm fell at Warwick at the top of the Condamine River. In northern NSW, 173 mm fell at Collarenebri on the Barwon River and 132 mm fell at Narrabri on the Namoi River.

Further south, moderate and widespread rainfall was recoded across the southern Basin. In the upper Murray catchment, 34 mm was recorded at Biggara and 64 mm at Jokers Creek in Victoria's northeast. In, south eastern NSW, Narrandera received 36 mm and Gundagai recorded 55 mm.



Map 1 – Rainfall across the Murray-Darling Basin for the week ending 12 February 2020. Source: Bureau of Meteorology.

This week's rainfall produced modest streamflow rises in upper Murray tributaries. Specific information about flows at key locations in the upper Murray catchment including Hinnomunjie Bridge on the upper Mitta Mitta River, Biggara on the upper Murray, Bandiana on the Kiewa River as well as Peechelba on the Ovens River can be found at

the MDBA's River Murray data webpage. Up-to-date river data for sites in the upper Murray can also be found at Bureau of Meteorology's (BoM) website and in the Murray River Basin daily river report at the WaterNSW website.

Looking ahead, the Bureau of Meteorology is currently forecasting continuing rainfall across the Murray-Darling Basin in the coming 8 days. However, forecast totals are moderate with the highest totals expected along the Great Dividing Range.

Photo 1 – River Murray at Albury (Photo Courtesy of Tegan Abbott)

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River operations

- Bushfire activity not impacting water storage and delivery
- Further rainfall forecast across the Basin over coming days
- Blue-green algae alert issues for Lake Mulwala/Yarrawonga Weir and caution warning issued for River Murray downstream Yarrawonga Weir to Tocumwal
- IVT deliveries continue from Goulburn and Murrumbidgee valleys
- Red Alerts for blue-green algae continue in Menindee Lakes and lower Darling

Bushfire Impacts

The MDBA and state constructing authorities are continuing to monitor bushfire activity in the upper Murray catchment. To date, the fires have not posed any significant risk to any MDBA operated structures and have not impacted river operations. MDBA will continue to monitor the situation closely and will work with relevant fire and emergency management agencies where necessary. To stay updated on fire risks visit:

New South Wales – Rural Fire Service

Victoria – Vic Emergency

South Australia – Country Fire Service

It is likely water quality will deteriorate in some locations as ash and sediment is washed into water courses following rain and further fish deaths could occur. Several fish deaths occurred in the upper Murray following recent rain. The extent and timing of water quality or aquatic impacts depends on the location of burnt catchment as well as the intensity and duration of rainfall events.

For information on current water quality and any impacts to your water supply, contact your retail water supplier.

River operations

In the past week MDBA total active storage reduced by 66 GL to 2,479 GL (29% capacity). Murray System inflows (excl. Snowy, Darling, inter-valley trade and environmental tributary inflows) continue to track well below the long-term average (see plot on last page of this report).

At **Dartmouth Reservoir**, the storage decreased by 32 GL to 1,835 GL (48% capacity). Over the last week the release from Dartmouth, measured at Colemans, increased to 5,600 ML/day before gradually reducing to the current release of 4,500 ML/day. Releases are expected to continue to fall away over the coming week. Variable releases from Dartmouth aim to limit erosion in the lower Mitta Mitta River while transferring a total volume of around 100 GL during February to support water levels at Hume Reservoir. Transfer requirements from Dartmouth to Hume Reservoir are continually reviewed and revised in response to observed conditions and updated forecast demands across the system. Transfers are expected to continue in the coming months.

At **Hume Reservoir**, the storage decreased by 23 GL to 541 GL (18% capacity). The Hume release varied between 9,000 ML/day and the current release of 10,500 ML/day. Releases within this range are expected in the coming days.

At **Lake Mulwala,** the pool level is currently 124.71 m AHD and is expected to remain above 124.7 m AHD over the coming week. This week diversion into Yarrawonga Main Channel averaged near 350 ML/day and diversion to Mulwala Canal averaged 1,200 ML/day. System transfers through Murray Irrigation Limited (MIL) infrastructure have recently reduced as downstream requirements have eased and further reductions are expected to be made in the coming week. Of the diversion to Mulwala Canal this week, approximately 800 ML/day is being diverted around the Barmah Choke through MIL infrastructure and released back into the Murray, via Pericoota Escape (100 ML/day), and the Edward River, via Edward Escape (700 ML/day). Similarly, on the Victorian side around 135 ML/day continues to travel through Yarrawonga Main Channel and into the Broken Creek, again to bypass the Barmah Choke and transfer water to meet demands in the lower system.

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The release from **Yarrawonga Weir** varied between 8,500 ML/day and 8,000 ML/day. The current release meets the expected downstream demands and may target around 8,400 ML/day over the coming week.

Goulburn-Murray Water (GMW) has issued a blue-green algae warning (red alert) for Yarrawonga Weir and Lake Mulwala. In addition, WaterNSW has issued a caution (amber alert) for the River Murray downstream of Yarrawonga Weir to Tocumwal, as harmful concentrations of blue-green algae may be present.

Flows through the **Edward River** offtake remain at around 1,550 ML/day. On the **Gulpa Creek,** diversion at Gulpa offtake is near 250 ML/day. Downstream along the Edward River, approximately 50 ML/day is passing through the Wakool offtake regulator, 190 ML/day through Yallakool Creek offtake and 170 ML/day into Colligen Creek. The flow downstream of Stevens Weir is currently targeting 1,900 ML/day and is expected to remain at this rate over the weekend before gradually reducing to 1,100 ML/day.

Flow in the **Goulburn River**, measured at McCoys Bridge, remained near 1,200 ML/day this week. This comprises the normal February minimum flow rate of 350 ML/day and delivery of Goulburn Inter Valley Trade (IVT) water to meet demands on the River Murray as a result of trade from the Goulburn to the Murray Valley. The delivery of IVT from the Goulburn System is being managed in consultation with Goulburn-Murray Water (GMW) and Goulburn Broken Catchment Management Authority (GBCMA) to deliver flows at a variable rate to limit environmental impacts to the lower Goulburn River. Over the coming days, the varied delivery of IVT will increase the flow at McCoys Bridge up to 3,000 ML/day before gradually reducing back to 1,200 ML/day by late February.

Small volumes of IVT are also being delivered via the Broken Creek and Campaspe River. For February, the volume of IVT from the Goulburn System has reduced to 45 GL as specified on the GMW website. Delivery of IVT water will continue over coming months to meet the demands of entitlement holders that have traded water from the Goulburn system. Information regarding opportunities for allocation trade between the Goulburn and Murray Valleys is available at the Victorian water register website.

Diversions to National Channel from the Torrumbarry weir pool have remained around 1,450 ML/day. The **Torrumbarry Weir** pool is currently at the Full Supply Level (FSL) of 86.05 m AHD. Downstream of Torrumbarry Weir, the release is currently around 6,700 ML/day and expected to increase over the coming week as IVT delivery increases from the Goulburn River.

Inflow from the **Murrumbidgee River**, measured at Balranald, remained around 1,440 ML/day. This is comprised of normal end of system flows and delivery of Murrumbidgee IVT water. The MDBA has requested WaterNSW to deliver up to 40 GL for the month of February. Approximately 100 ML/day of Murrumbidgee IVT is currently being delivered via the Billabong Creek, which reaches the Murray through the Edward-Wakool River system.

The Murrumbidgee IVT balance is currently below 80 GL and trade out of the valley is open. Further information on expected IVT deliveries from the Murrumbidgee is provided by WaterNSW.

At **Euston**, the weir pool level is targeting FSL. Over the past week the downstream release eased slightly and is currently near 9,200 ML/day. The downstream release is expected to remain near this rate for the coming week.

The **Menindee Lakes** storage is approximately 6 GL (less than 1% capacity). WaterNSW continues to manage the Menindee Lakes in accordance with the Lower Darling Annual Operations Plan. WaterNSW has advised that releases at Weir 32 are only planned to recommence when significant inflows are received into the Menindee Lakes. A Red Alert for blue-green algae is in place for Lake Wetherell and Wilcannia and parts of the lower Darling. More information is available on the WaterNSW Algae webpage.

Recent rainfall in the northern Basin has produced some good streamflow response in the Barwon-Darling. WaterNSW reports that the forecast flow may result in some inflow into the Menindee Lakes. Due to very dry conditions and long travel times, the accuracy of the expected inflow is difficult to forecast. However, WaterNSW are currently forecasting that inflows into Lake Wetherell may be in the order of 10 to 30 GL.

As a result of the ongoing drought conditions in NSW, extensive water restrictions remain in place. More information on drought management activities in NSW can be found on the NSW Government website - Drought Hub. Links to other drought services and assistance can be also accessed via the MDBA drought webpage.

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At **Wentworth Weir**, the pool level is currently targeting 10 cm above FSL to assist pumpers in the upper reaches of the Darling River arm of the weir pool whilst there is no inflow from the Darling River. The downstream release is near 6,950 ML/day.

The **Lock 9** weir pool level is targeting FSL to 10 cm below FSL. At **Locks 8 and 7**, the weir pool levels are being varied as part of the weir pool variability program. Currently, Lock 8 is targeting a level between 90 and 100 cm below FSL and Lock 7 is targeting a level between 50 and 60 cm below FSL.

At **Lake Victoria,** the storage volume reduced by 11 GL to 297 GL (44% capacity). Lake Victoria's current storage volume is relatively low for this time of year. Current forecasts indicate the storage will continue to fall over the coming months as water is released to assist meeting demands. Current planning forecasts indicate that Lake Victoria is likely to reach low levels by early autumn 2020 if the dry conditions continue.

This week, the flow to **South Australia** averaged 7,800 ML/day, which comprises the delivery of South Australia's monthly Entitlement, net trade into the state and environmental water. The flow is expected to increase in the coming week to target 8,500 ML/day and remain around this rate for the rest of the month. For more information on South Australia's Entitlement flow, see the South Australian Department for Environment and Water's latest River Murray flow report.

The **Lower Lakes** 5-day average water level increased by 5 cm to 0.58 m AHD this week in response to reduced losses in the lower Murray and Lower Lakes since the rainfall last week. Releases are currently only occurring through fishways with all barrage gates now closed to help manage the level of the Lower Lakes through the warmer months. For information on barrage releases see the South Australian Department for Environment and Water Weekly River Murray Flow Report.

For media inquiries contact the Media Officer on 02 6279 0141

ANDREW REYNOLDS
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Australian Government

MURRAY–DARLING BASIN AUTHORITY

River Murray Weekly Report

Water in Storage

Week ending Wednesday 12 Feb 2020

MDBA Storages	Full Supply Level (m AHD)	Full Supply Volume (GL)	Current Storage Level (m AHD)	Current Storage (GL)	Current Storage %	Dead Storage (GL)	Active Storage (GL)	Change in Total Storage for the Week (GL)
Dartmouth Reservoir	486.00	3 856	448.13	1 835	48%	71	1 764	-32
Hume Reservoir	192.00	3 005	174.00	541	18%	23	518	-23
Lake Victoria	27.00	677	23.52	297	44%	100	197	-11
Menindee Lakes		1 731*		6	0%	(- -) #	0	-0
Total		**9 269**		**2 679**	**29%**	**- -**	**2 479**	**-66**
Total Active MDBA Storage							29% ^	
Major State Storages								
Burrinjuck Reservoir		1 026			0%	3	- 3	-0
Blowering Reservoir		1 631		615	38%	24	591	-20
Eildon Reservoir		3 334		1 285	39%	100	1 185	-28

* Menindee surcharge capacity – 2050 GL ** All Data is rounded to nearest GL **

NSW has sole access to water when the storage falls below 480 GL. MDBA regains access to water when the storage next reaches 640 GL.

^ % of total active MDBA storage

Snowy Mountains Scheme

Snowy diversions for week ending 11 Feb 2020

Storage	Active Storage (GL)	Weekly Change (GL)	Diversion (GL)	This Week	From 1 May 2019
Lake Eucumbene - Total	890	n/a	Snowy-Murray	+7	331
Snowy-Murray Component	511	n/a	Tooma-Tumut	+2	189
Target Storage	1 460		Net Diversion	5	141
			Murray 1 Release	+12	497

Major Diversions from Murray and Lower Darling (GL) *

New South Wales	This Week	From 1 July 2019	Victoria	This Week	From 1 July 2019
Murray Irrig. Ltd (Net)	2.4	111	Yarrawonga Main Channel (net)	2.4	88
Wakool Sys Allowance	2.3	35	Torrumbarry System + Nyah (net)	0.2	201
Western Murray Irrigation	0.6	19	Sunraysia Pumped Districts	2.9	85
Licensed Pumps	3.5	92	Licensed pumps - GMW (Nyah+u/s)	2.6	16
Lower Darling	0.0	1	Licensed pumps - LMW	12.3	292
TOTAL	**8.8**	**258**	**TOTAL**	**20.4**	**682**

* Figures are derived from actual and estimates where data is unavailable. 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 environmental flows and delivery of trade.

Entitlement this month	194.0 *
Flow this week	54.9
Flow so far this month	94.2
Flow last month	251.2

(7 800 ML/day)

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

	Current	Average over the last week	Average since 1 August 2019
Swan Hill	80	80	70
Euston	-	-	-
Red Cliffs	-	30	50
Merbein	80	80	90
Burtundy (Darling)	-	-	1 220
Lock 9	90	90	100
Lake Victoria	150	130	110
Berri	140	150	140
Waikerie	210	200	210
Morgan	200	200	220
Mannum	240	250	260
Murray Bridge	270	270	290
Milang (Lake Alex.)	960	940	850
Poltalloch (Lake Alex.)	890	1 060	810
Meningie (Lake Alb.)	1 780	1 820	1 750
Goolwa Barrages	2 450	2 670	1 970

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River Levels and Flows

Week ending Wednesday 12 Feb 2020

River Murray	Minor Flood Stage (m)	Gauge Height local (m)	Gauge Height (m AHD)	Flow (ML/day)	Trend	Average Flow this Week (ML/day)	Average Flow last Week (ML/day)
Khancoban	-	-	-	3 240	F	2 040	3 280
Jingellic	4.0	1.66	208.18	4 330	R	2 710	4 720
Tallandoon (Mitta Mitta River)	4.2	2.56	219.45	4 990	F	5 400	5 350
Heywoods	5.5	2.94	156.57	10 470	R	9 610	10 880
Doctors Point	5.5	2.70	151.17	11 450	R	10 540	11 760
Albury	4.3	1.71	149.15	-	-	-	-
Corowa	4.6	2.21	128.23	9 470	R	9 610	11 280
Yarrawonga Weir (d/s)	6.4	1.39	116.43	8 380	R	8 450	8 580
Tocumwal	6.4	1.97	105.81	8 170	F	8 410	8 460
Torrumbarry Weir (d/s)	7.3	2.33	80.87	6 720	S	6 590	6 600
Swan Hill	4.5	1.33	64.25	6 870	F	6 850	7 280
Wakool Junction	8.8	3.22	52.34	9 100	R	9 130	9 690
Euston Weir (d/s)	9.1	1.65	43.49	9 210	R	9 410	9 670
Mildura Weir (d/s)		-	-	8 290	F	8 440	8 360
Wentworth Weir (d/s)	7.3	2.86	27.62	6 950	S	6 840	6 700
Rufus Junction	-	3.63	20.56	7 550	R	7 480	7 560
Blanchetown (Lock 1 d/s)	-	0.79	-	5 090	F	5 320	5 170
Tributaries							
Kiewa at Bandiana	2.8	0.77	154.00	220	R	190	350
Ovens at Wangaratta	11.9	7.82	145.50	290	R	200	190
Goulburn at McCoys Bridge	9.0	1.72	93.14	1 370	R	1 250	1 230
Edward at Stevens Weir (d/s)	5.5	2.06	81.84	2 090	F	2 000	2 280
Edward at Liewah	-	2.89	58.27	2 370	F	2 470	2 560
Wakool at Stoney Crossing	-	1.38	54.87	390	S	400	420
Murrumbidgee at Balranald	5.0	1.85	57.81	1 440	F	1 470	1 410
Barwon at Mungindi	6.1	2.12	-	0	F	0	0
Darling at Bourke	9.0	2.86	-	0	F	0	0
Darling at Burtundy Rocks	-	0.50	-	0	F	0	0

Natural Inflow to Hume	1 080	240

(i.e. Pre Dartmouth & Snowy Mountains scheme)

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
Yarrawonga	124.90	-0.19	-	No. 7 Rufus River	22.10	-0.56	+1.31
No. 26 Torrumbarry	86.05	+0.00	-	No. 6 Murtho	19.25	-0.01	+0.14
No. 15 Euston	47.60	+0.02	-	No. 5 Renmark	16.30	+0.02	+0.25
No. 11 Mildura	34.40	+0.03	+0.25	No. 4 Bookpurnong	13.20	+0.05	+0.77
No. 10 Wentworth	30.80	+0.12	+0.22	No. 3 Overland Corner	9.80	+0.03	+0.24
No. 9 Kulnine	27.40	-0.09	-0.83	No. 2 Waikerie	6.10	+0.05	+0.23
No. 8 Wangumma	24.60	-1.00	-0.29	No. 1 Blanchetown	3.20	+0.06	+0.04

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.58

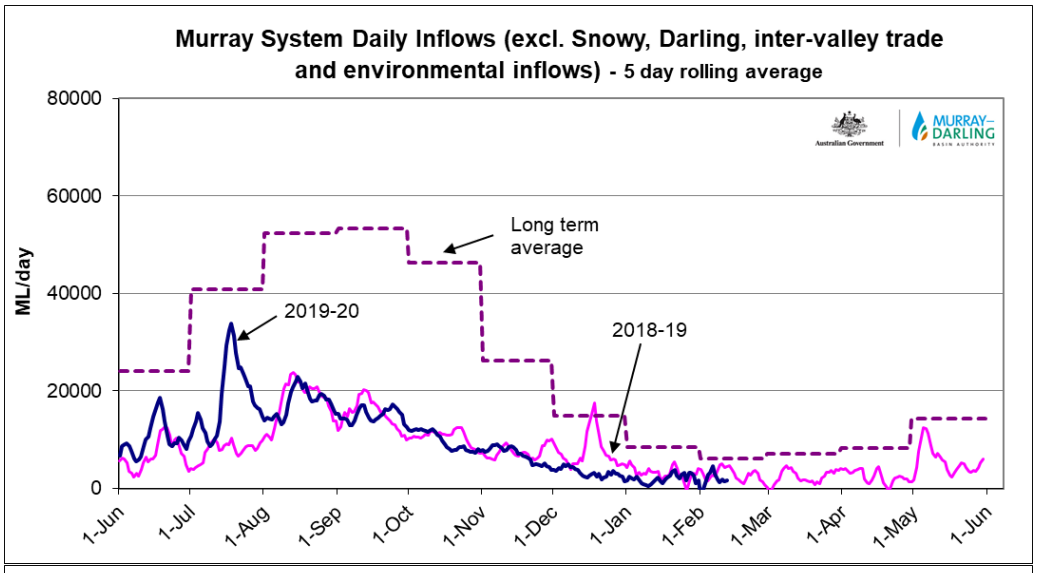
Barrages

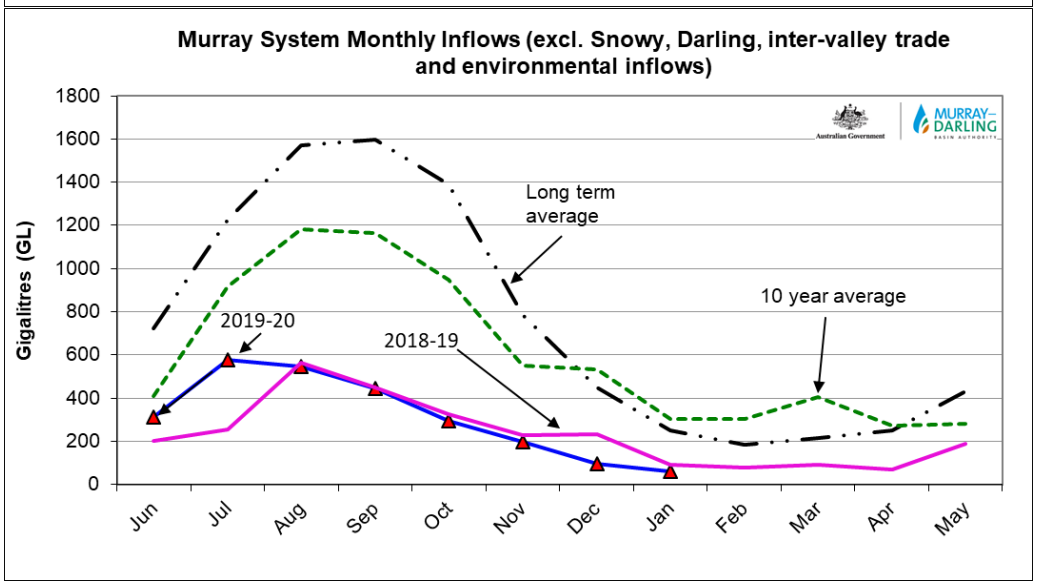
Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.64	All closed	-	Open	Open	-
Mundoo	26 openings	0.59	All closed	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	All closed	-	Open	-	-
Ewe Island	111 gates	-	All closed	-	-	-	Open
Tauwitchere	322 gates	0.57	All closed	Open	Open	Open	-

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

Week ending Wednesday 12 Feb 2020





State Allocations (as at 12 Feb 2020)

NSW - Murray Valley

High security	97%
General security	0%

Victorian - Murray Valley

High reliability	56%
Low reliability	0%

NSW – Murrumbidgee Valley

High security	95%
General security	6%

Victorian - Goulburn Valley

High reliability	70%
Low reliability	0%

NSW - Lower Darling

High security	30%
General security	0%

South Australia – Murray Valley

High security	100%

NSW : https://www.industry.nsw.gov.au/water/allocations-availability/allocations/summary
VIC : http://nvrm.net.au/seasonal-determinations/current
SA : http://www.environment.sa.gov.au/managing-natural-resources/river-murray