



RIVER MURRAY WEEKLY REPORT

FOR THE WEEK ENDING WEDNESDAY, 19 OCTOBER 2016

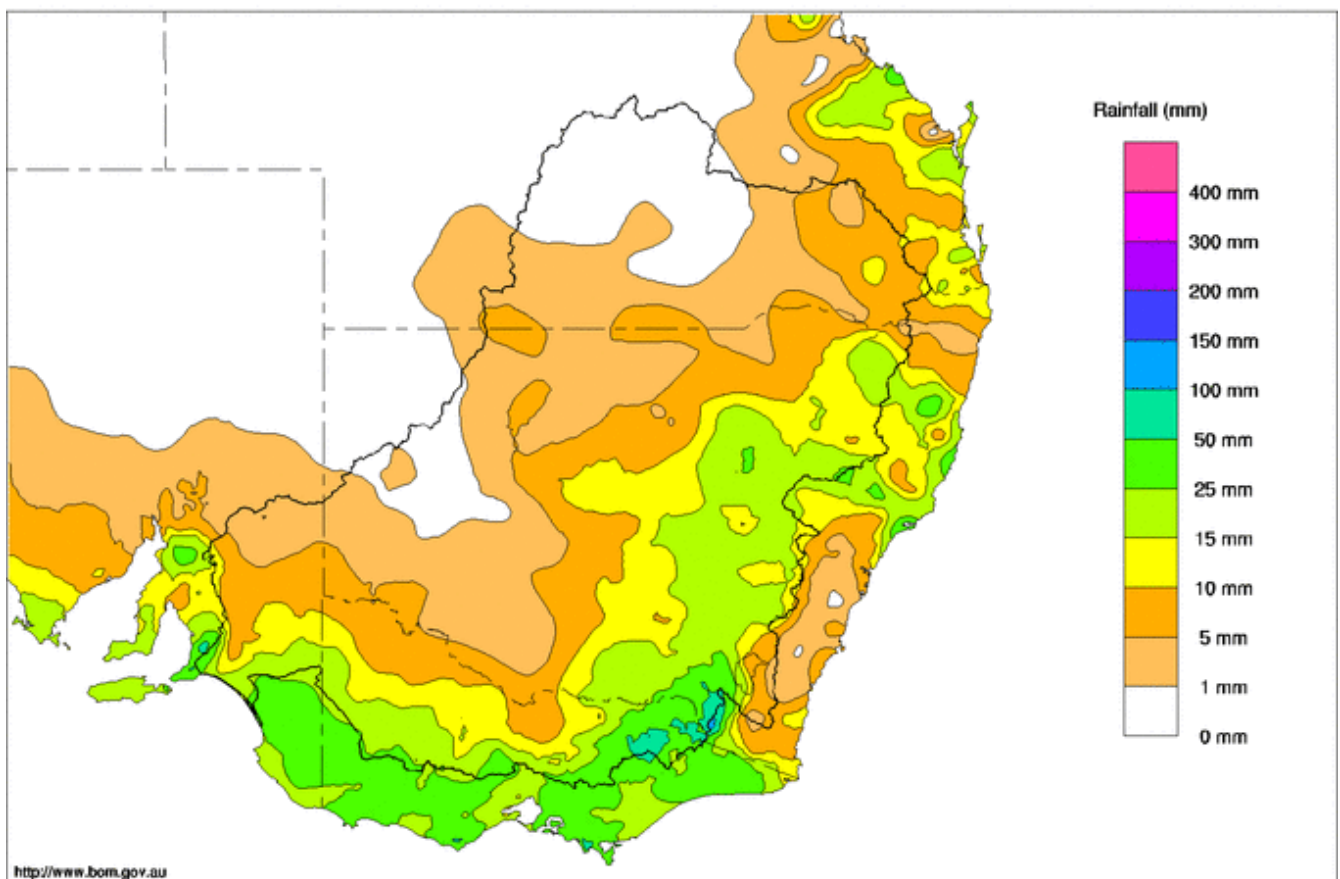
Trim Ref: D16/34282

Rainfall and inflows

Another cold front moved across the southern Murray–Darling Basin at the start of the week, bringing light falls of rain. There was further moderate rain after the weekend, due to a combination of cloud bands from a pre-frontal trough and another cold front.

Highest rainfalls were recorded in the Snowy Mountains and the Victorian Alps (see Map 1). There was 137 mm at Thredbo, 124 mm at Perisher Valley and 67 mm at Mount Hotham. 68 mm was recorded at Mount William in the Grampians. At other locations in NSW, Mendooran, on the Castlereagh River, recorded 28 mm while Mandagery, near Parkes, received 31 mm. In South Australia, there was 59 mm at Prospect Hill and 54 mm at Mount Compass.

Murray-Darling Rainfall Totals (mm) Week Ending 19th October 2016
Australian Bureau of Meteorology



© Commonwealth of Australia 2016, Australian Bureau of Meteorology

Issued: 19/10/2016

Map 1 - Murray-Darling Basin rainfall week ending 19th October 2016 (Source: Bureau of Meteorology)

Flows in the upper Mitta Mitta River at Hinnomunjie briefly exceeded 5,000 ML/day a couple of times during the last week. The flow there has now receded to 4,200 ML/day. In the Murray upstream of Hume Reservoir, the flow at Biggara briefly reached 7,500 ML/day but has now receded to 5,400 ML/day. Further downstream at Jingellic, the flow has remained above 18,000 ML/day throughout the week and is currently 23,400 ML/day.



River operations

- Natural 'blackwater events' occurring
- Menindee Lakes to be operated as a shared resource for NSW, Victoria and South Australia

Reaches of the River Murray system between Barmah-Millewa Forest and Wakool Junction are experiencing "**blackwater**". Blackwater occurs naturally when there is rapid breakdown of leaf litter from inundated areas. Breakdown of leaf litter is an important ecological process which provides nutrients for the growth of aquatic organisms. However, as is currently occurring in the Edward-Wakool system, this process can result in very low levels of dissolved oxygen and fish deaths. For more information on blackwater, and its management, see the attached media release.

The MDBA, together with New South Wales and Victorian agencies, will continue to monitor the water quality. More information on water quality can be found on the MDBA website at <http://www.mdba.gov.au/managing-water/water-quality/blackwater> and also NSW DPI website at <http://waterinfo.nsw.gov.au/wq/>

Total active MDBA storage has increased this week by 163 GL to 6,090 GL (76% capacity).

At **Dartmouth Reservoir**, the storage volume has increased by 67 GL to 2,795 GL (72% capacity) and the release remains at the minimum flow of 200 ML/day at Colemans gauge.

Flood operations continue at **Hume Reservoir**, where the storage volume has increased by 21 GL during the week to 2,962 GL (99% capacity). The release during the week was reduced from 40,000 ML/day to 25,500 ML/day, but is now 30,000 ML/day (as at 21 October) to match inflows from the recent rain. Releases will be managed over the coming weeks to ensure that the reservoir is effectively full (more than 99% capacity) when downstream demand exceeds inflows to the storage. Further information on MDBA's approach to [flood management](#) at Hume Dam is available on the MDBA website.

Communities and landholders are reminded that the flood risk has not yet passed and you should keep up with the latest [Flood Watches and Warnings](#) issued by the Bureau of Meteorology. In addition, community members living close to the river downstream of Hume Dam are reminded that they can [register](#) with the WaterNSW Early Warning Network (EWN) service. This service provides alerts when the River Murray increases to relatively high levels in the stretch downstream of Hume Dam to Albury via SMS, email or voice message notifications.

At **Yarrowonga Weir**, the release has been gradually reduced from its peak of about 180,000 ML/day on 7 October to 50,000 ML/day on 21 October. Over the coming week, assuming no further heavy falls of rain, the release is expected to slowly reduce below 45,000 ML/day. By early November, the release could be back to 15,000 ML/day. The pool level at Yarrowonga Weir is close to 124.7 m AHD and is expected to remain relatively steady in the coming week. Diversions at the major irrigation offtakes are around 1,000 ML/day at Mulwala Canal and 130 ML/day at Yarrowonga Main Canal. Irrigation demand is expected to increase over the coming weeks.

High flows through the Edward River and Gulpa Creek offtakes continue, and now total around 4,800 ML/day. Further downstream on the **Edward River** at Toonalook, the flow peaked on 17 October at around 51,000 ML/day. With contributions from Tuppal and Bullatale Creeks, the river level at Deniliquin peaked at 8.62 m (~89,000 ML/day) on 17 October—the highest level here since November 1975. For forecast flow peaks downstream on the Edward-Wakool system, see the latest [Flood Warnings](#) issued by the Bureau of Meteorology.

The flood waters in the **Barmah-Millewa Forest** are extending across areas of river red gums that have not been flooded for more than 20 years. Deeper water in some wetlands has promoted the growth of swamp wallaby grass, Moira grass and water ribbons which are all ecologically important species in the area. Many water birds are starting to nest and are assured an abundant food supply over the summer.



Photo 2 – Water ribbons are flourishing in Barmah Forest (Photo courtesy: Keith Ward, Goulburn-Broken CMA)

On the Murray at **Barmah**, the flow is just starting to recede from a broad peak where river levels reached 6.9 m. Inflows from the **Goulburn River** have receded to 12,000 ML/day and from the **Campaspe River** to around 1,200 ML/day. Further rain in coming days may see an increase in flow in these two rivers.

At **Torrumbarry Weir**, the flow peaked in the last few days at nearly 58,000 ML/day. With the gates out of the water, the river level is varying with the flow and is now about 30 cm above the normal full supply level. The level is expected to gradually fall below the full supply level over coming weeks as flows recede and before the weir gates are returned to operation.

At these high flows, large volumes of water are naturally entering Koondrook-Perricoota Forest from both upstream and downstream of Torrumbarry Weir, with water also naturally entering Gunbower Forest. Downstream at **Swan Hill**, the flow in the Murray has been steadily creeping up and has now reached 26,300 ML/day (4.2 m local gauge height). The [Bureau of Meteorology](#) is expecting the river at Swan Hill to remain below the minor flood level of 4.5 m.

Downstream at the Wakool junction, inflows from the **Wakool River** are rising and have increased the flow in the River Murray to 66,000 ML/day.

The flow in the **Murrumbidgee River** at Balranald continues to steadily rise and is now 11,400 ML/day. Further rises are expected in coming weeks due to water already in transit in the Murrumbidgee River. For more information, see the latest [Flood Warning](#) from the Bureau of Meteorology.

Downstream at **Euston Weir**, the flow has increased to around 58,000 ML/day. The weir at Euston has been removed, as is usual practice during high flows, and the river level is therefore varying with the flow rate. The flow at Euston is expected to continue rising for the next 2–3 weeks. For more information, see the latest [Flood Warning](#) from the Bureau of Meteorology.

Inflows to **Menindee Lakes** have increased the storage by 85 GL this week, to 612 GL (35% capacity). The storage is expected to reach 640 GL in the coming week, which means that the Lakes will be able to be operated in the coming months as a shared resource for the benefit of NSW, Victoria and South Australia. The storage will remain a shared resource until the volume next falls below 480 GL. The flow at Weir 32 remains at 700 ML/day.

At **Wentworth Weir**, at the junction of the Murray and Darling Rivers, the flow has been steadily climbing and has now reached 49,000 ML/day. This flow is expected to keep rising—see the latest [Flood Warning](#) from the Bureau of Meteorology. The weir was removed on Thursday 20 October as is normal practice during high flows.



At **Lake Victoria**, the storage volume decreased by 11 GL during the week. However, late in the week the storage commenced refilling and is currently 527 GL (78% capacity). It is expected that Lake Victoria will continue to be filled over the coming weeks.

The flow to **South Australia** averaged around 47,000 ML/day this week with the peak to South Australia forecast to arrive around early December, see [DEWNR's latest high flow advice](#).

At the **Lower Lakes**, barrage releases have averaged over 50,000 ML/day over the last week reducing the average lake level by 10 cm to 0.81 m AHD. Continuing dredging operations combined with recent substantial barrage releases have removed large volumes of sand, significantly improving conditions at the Murray Mouth.

For media inquiries contact the Media Officer on 02 6279 0141

DAVID DREVERMAN
Executive Director, River Management



Water in Storage

Week ending Wednesday 19 Oct 2016

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	468.22	2 795	72%	71	2 724	+67
Hume Reservoir	192.00	3 005	191.78	2 962	99%	23	2 939	+21
Lake Victoria	27.00	677	25.72	527	78%	100	427	-11
Menindee Lakes		1 731*		612	35%	(- -) #	0	+85
Total		9 269		6 896	74%	--	6 090	+163
Total Active MDBA Storage							72% ^	

Major State Storages

Burrinjuck Reservoir	1 026	976	95%	3	973	+11
Blowering Reservoir	1 631	1 573	96%	24	1 549	-65
Eildon Reservoir	3 334	2 528	76%	100	2 428	+56

* 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 18 Oct 2016

Storage	Active Storage (GL)	Weekly Change (GL)	Diversion (GL)	This Week	From 1 May 2016
Lake Eucumbene - Total	2 251	n/a	Snowy-Murray	+23	597
Snowy-Murray Component	979	n/a	Tooma-Tumut	+16	261
Target Storage	1 400		Net Diversion	7	335
			Murray 1 Release	+44	904

Major Diversions from Murray and Lower Darling (GL) *

New South Wales	This Week	From 1 July 2016	Victoria	This Week	From 1 July 2016
Murray Irrig. Ltd (Net)	8.4	75	Yarrowonga Main Channel (net)	0.7	3
Wakool Sys Allowance	0.0	0	Torrumbarry System + Nyah (net)	2.1	63
Western Murray Irrigation	0.3	1	Sunraysia Pumped Districts	1.2	5
Licensed Pumps	1.3	18	Licensed pumps - GMW (Nyah+u/s)	0	3
Lower Darling	0.0	2	Licensed pumps - LMW	6.3	48
TOTAL	10.0	96	TOTAL	10.3	122

* 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 unregulated flows.

Entitlement this month	170.0 *
Flow this week	329.4
Flow so far this month	803.1
Flow last month	1,045.1

(47 100 ML/day)

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

	Current	Average over the last week	Average since 1 August 2016
Swan Hill	250	260	150
Euston	-	-	-
Red Cliffs	150	150	140
Merbein	160	140	130
Burtundy (Darling)	320	350	990
Lock 9	150	140	140
Lake Victoria	160	160	160
Berri	170	170	170
Waikerie	210	210	190
Morgan	200	210	200
Mannum	220	230	210
Murray Bridge	220	240	230
Milang (Lake Alex.)	400	420	720
Poltalloch (Lake Alex.)	300	320	330
Meningie (Lake Alb.)	1 690	1 700	1 780
Goolwa Barrages	870	480	1 230



River Levels and Flows

Week ending Wednesday 19 Oct 2016

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	-	-	-	9 050	F	9 170	9 600
Jingellic	4.0	3.62	210.14	25 110	R	21 640	37 100
Tallandoon (Mitta Mitta River)	4.2	2.49	219.38	4 480	R	4 380	8 380
Heywoods	5.5	4.11	157.74	28 630	R	28 690	63 650
Doctors Point	5.5	4.74	153.21	29 150	R	28 640	83 490
Albury	4.3	3.87	151.31	-	-	-	-
Corowa	4.6	5.39	131.41	37 040	F	50 010	100 940
Yarrowonga Weir (d/s)	6.4	5.54	120.58	57 020	F	77 400	146 380
Tocumwal	6.4	6.28	110.12	70 580	F	92 610	153 870
Torrumbarry Weir (d/s)	7.3	7.80	86.35	57 570	S	57 320	53 470
Swan Hill	4.5	4.20	67.12	26 300	R	25 950	25 450
Wakool Junction	8.8	9.84	58.96	65 960	R	59 860	46 570
Euston Weir (d/s)	9.1	6.54	48.38	57 740	R	54 100	47 690
Mildura Weir (d/s)	-	-	-	49 460	F	47 290	43 150
Wentworth Weir (d/s)	7.3	5.70	30.46	49 070	R	46 440	41 820
Rufus Junction	-	6.74	23.67	44 810	F	47 050	41 980
Blanchetown (Lock 1 d/s)	-	2.66	-	38 500	R	37 250	-
Tributaries							
Kiewa at Bandiana	2.8	2.95	156.18	6 120	R	6 020	10 310
Ovens at Wangaratta	11.9	11.23	148.91	12 900	R	14 780	51 210
Goulburn at McCoys Bridge	9.0	6.26	97.68	11 970	F	20 140	38 080
Edward at Stevens Weir (d/s)	5.5	6.50	86.27	39 100	F	37 970	22 690
Edward at Liewah	-	6.29	61.67	11 920	R	11 490	9 920
Wakool at Stoney Crossing	-	7.40	60.89	35 310	R	31 460	20 390
Murrumbidgee at Balranald	5.0	5.99	61.95	11 380	R	10 810	10 010
Barwon at Mungindi	6.1	5.35	-	5 930	R	5 390	7 720
Darling at Bourke	9.0	10.13	-	37 020	R	35 550	30 080
Darling at Burtundy Rocks	-	0.99	-	910	F	1 010	1 080

Natural Inflow to Hume	38 470	77 350
------------------------	--------	--------

(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
Yarrowonga	124.90	-0.17	-	No. 7 Rufus River	22.10	+1.79	-28.25
No. 26 Torrumbarry	86.05	+0.34	-	No. 6 Murtho	19.25	+0.32	+2.61
No. 15 Euston	47.60	+0.94	-	No. 5 Renmark	16.30	+0.23	+2.38
No. 11 Mildura	34.40	-0.75	+2.85	No. 4 Bookpurnong	13.20	+0.39	+3.73
No. 10 Wentworth	30.80	-0.05	+3.06	No. 3 Overland Corner	9.80	+0.14	+3.02
No. 9 Kulnine	27.40	+0.00	+2.34	No. 2 Waikerie	6.10	+0.67	+2.87
No. 8 Wangumma	24.60	+0.68	+3.13	No. 1 Blanchetown	3.20	-0.08	+1.91

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.82
--	------

Barrages

Fishways at Barrages

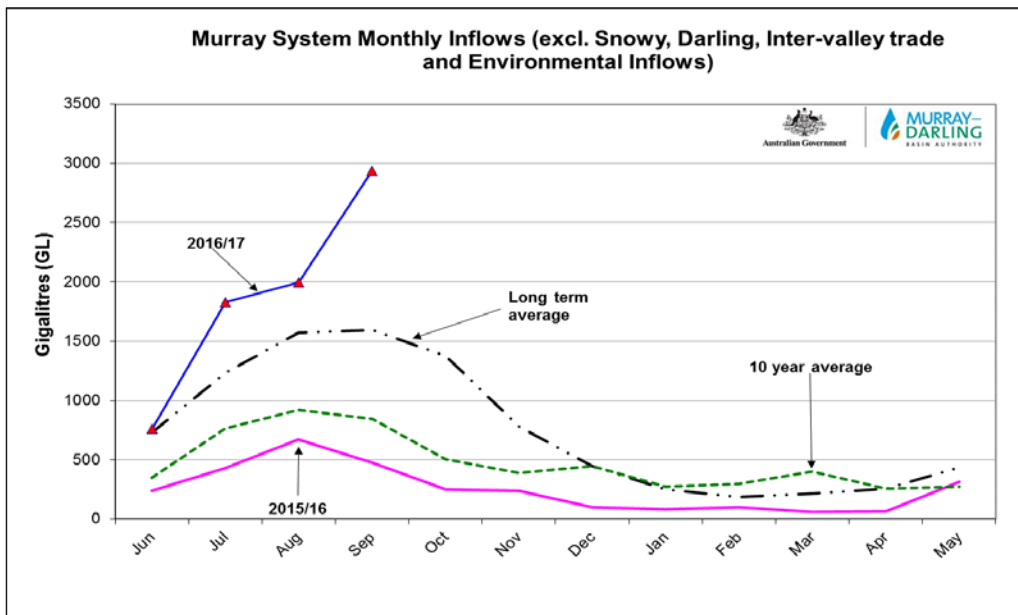
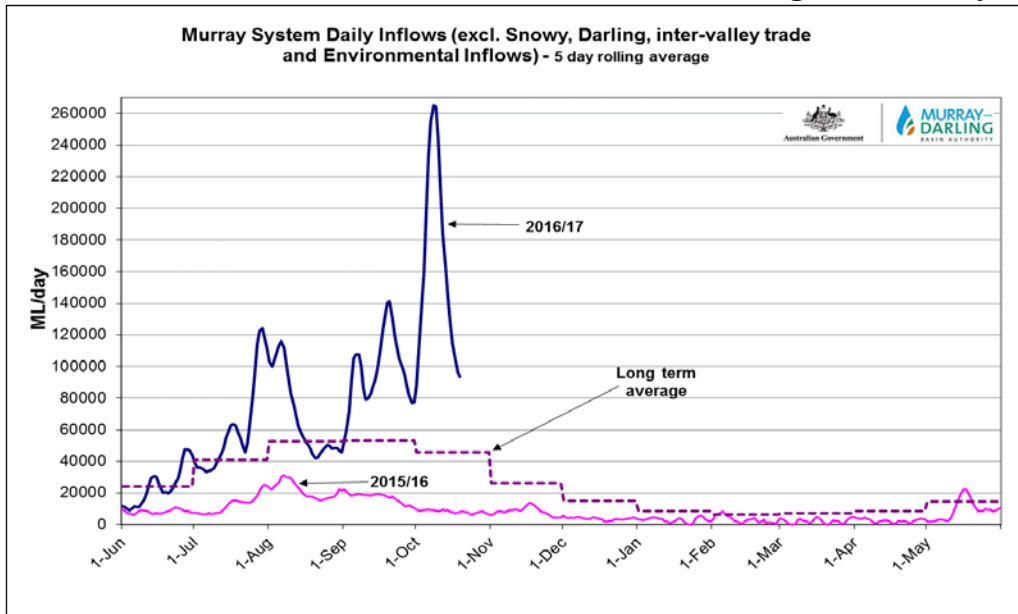
	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.82	All closed	-	Open	Open	-
Mundoo	26 openings	0.83	All closed	-	-	-	Closed
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	All closed	-	Open	-	-
Ewe Island	111 gates	-	All closed	-	-	-	Open
Tauwicheere	322 gates	0.83	182	Open	Open	Open	-

* Mundoo Barrage Dual vertical slots are currently under construction.

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



Week ending Wednesday 19 Oct 2016



State Allocations (as at 19 Oct 2016)

NSW - Murray Valley

High security	97%
General security	63%

Victorian - Murray Valley

High reliability	100%
Low reliability	0%

NSW - Murrumbidgee Valley

High security	95%
General security	71%

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>

VIC : <http://nvrn.net.au/seasonal-determinations/current>

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

MEDIA RELEASE

21 October 2016



Blackwater widespread after River Murray floods

River users may notice a darker water colour in parts of the River Murray and its tributaries over the coming weeks.

Flood waters during spring have mobilised large amounts of organic matter, such as leaves and wood, from the forest floor and floodplain. This organic matter is now decaying, resulting in low dissolved oxygen levels which may in turn cause fish to die.

The MDBA's head of River Management, David Dreverman, said blackwater events like this occur naturally.

"The high level of carbon and low levels of oxygen in the water due to the load of decaying organic matter is not unexpected," said Mr Dreverman.

"River users may also notice dead or distressed fish as a result of the sudden drop in oxygen levels."

Mr Dreverman said some higher parts of the floodplain, particularly in the Edward and Wakool systems, may not have been flooded for more than 20 years, adding to the high carbon load.

"With high carbon loads and floods over this extent of flood plain, it is possible that impacts will be widespread, extending downstream, potentially into South Australia.

"In most cases it is not possible to dilute the blackwater, but we are working closely with state agencies and environmental water holders to monitor the situation and will identify opportunities as they arise. That includes looking at whether better quality water can be delivered to affected areas to create local refuges with increased oxygen levels," Mr Dreverman said.

Similar blackwater responses could be occurring in tributaries such as the Goulburn and Murrumbidgee valleys.

More information on blackwater can be found at www.mdba.gov.au/managing-water/water-quality/blackwater.

To report sightings of stressed or dead fish, contact the following state authorities: Victoria — Environment Protection Agency 1300 372 842
New South Wales — NSW Fisheries Fishers Watch 1800 043 536.

ENDS

For more information, contact the MDBA Media office at media@mdba.gov.au or 02 6279 0141 Follow @MD_Basin_Auth on Twitter: twitter.com/MD_Basin_Auth

Find us on Facebook: facebook.com/MDBAuth