

HIGHFIRE RISK PROJECT

BLOW-UP FIRE EVENT (BUFE) POTENTIAL SOUTH-EAST AUSTRALIA

--The Hierarchical Predictive Framework--

Level 1: ; Level 2: 

This page shows current Alerts
for Blow-Up Fire Event
potential.

Current daily SSTA charts
(NOAA Coral Reef Watch)

Click maps to see at full size on NOAA site.

ISSUE DATE:
9 JUNE 2026.

This is an Operational Tool.
It is an intelligence product to
aid in informed decision
making, and should not be
used in any other way.

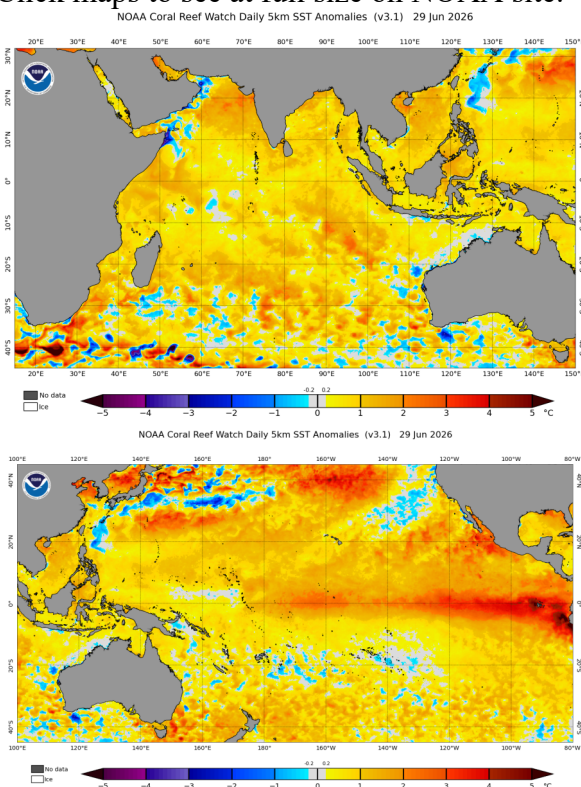
A REQUEST

If anyone uses this model
operationally, can they please
send their results to the author:

[Rick McRae](#)



UNSW
CANBERRA



LEVEL 1
CANBERRA
DIPOLE

Current Alert Status:



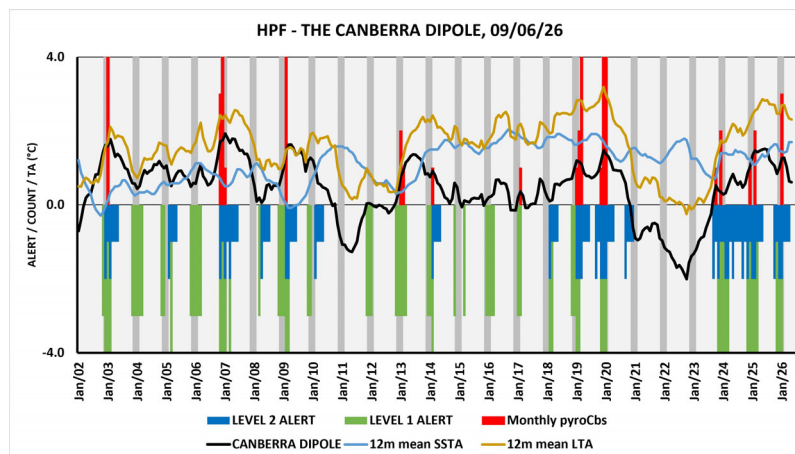
NO ALERT

This reflects interactions
between land and sea that

influence synoptic patterns conducive to wildfires (or rain).

Data:

- Sea Surface Temperature Anomalies (SSTAs) - [NOAA Coral Reef Watch](#);
- Land Temperature Anomalies (LTAs) & River flows - [Bureau of Meteorology](#);
- PyroCbs - [Australian pyroCb Register](#).



[Click on image to enlarge.]

ANALYSIS: Cooler weather has reduced fire risks in many areas, however some areas carry some level of drought. It is of note that cool SSTAs are forming off the north-west Australian coast. This is potentially a source of reduced rainfalls, as cooler air carries less moisture. If the warm SSTAs in the Tasman Sea were to dissipate, and if the forecast strong El Nino event were to form, then careful monitoring of the HPF would be essential.

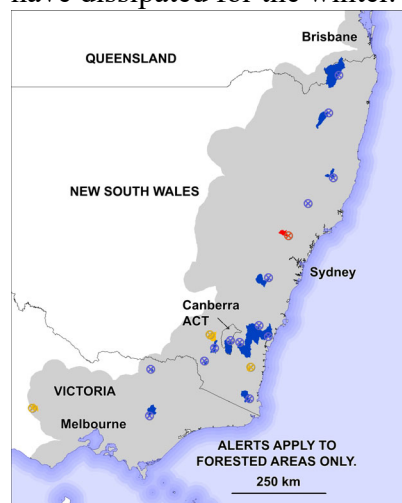
LEVEL 2 RIVER DRYING EVENTS

Current Alert Status:

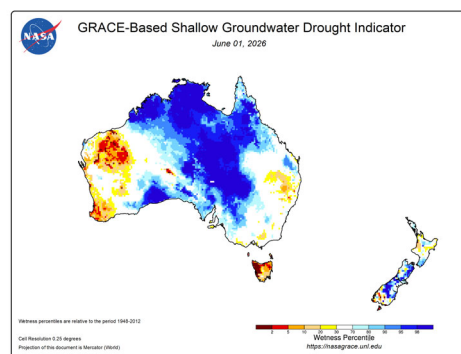


LEVEL 2 ALERT HAS LARGELY ENDED.

ANALYSIS: Most river flows have risen. Hopefully the risks have dissipated for the winter.



NASA's GRACE system maps soil moisture based on gravity anomalies. Here is the current map:



Note Tasmania.

LEVEL 3 BLOW-UP FIRE OUTLOOK

It is recommended that FBANs and other technical specialists learn more about BUFES. Operations at Level 3 require use of the BUFO2 model to assess the potential for a BUFE during an on-going fire. This requires a series of data feeds specified in the model. It is suggested that FBANs should skill-up on using the BUFO2 model.

[Click here for the BUFO2 worksheet.](#)

[Click here for a PowerPoint presentation on BUFO2, from a workshop at the AFAC21 Conference.](#)

Could anyone using the spreadsheet during the HPF trail please copy their results to us.

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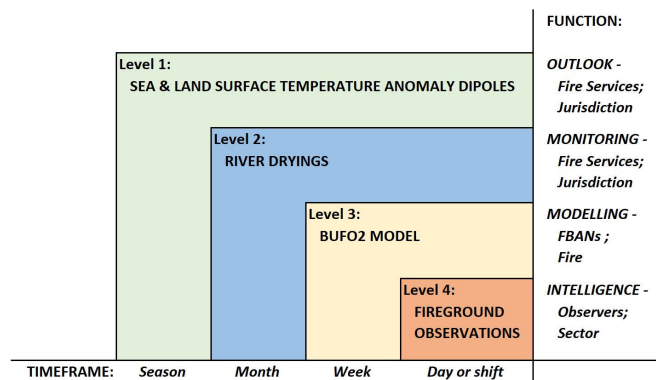
UNSW
CANBERRA



UNSW
Bushfire

BASIS

This work is based on both analyses of data from Black Summer and operational work. The structure of the four-tier Hierarchical Prediction System is designed to progress into smaller-scales of timeframe and function, shifting from seasonal outlook to incident operations:



HPF is described in a peer-reviewed paper in the October 2023 edition of the Australian Journal of Emergency Management. A follow-up paper reports on HPF performance in the following year.

LEVEL 2 SOURCE DATA

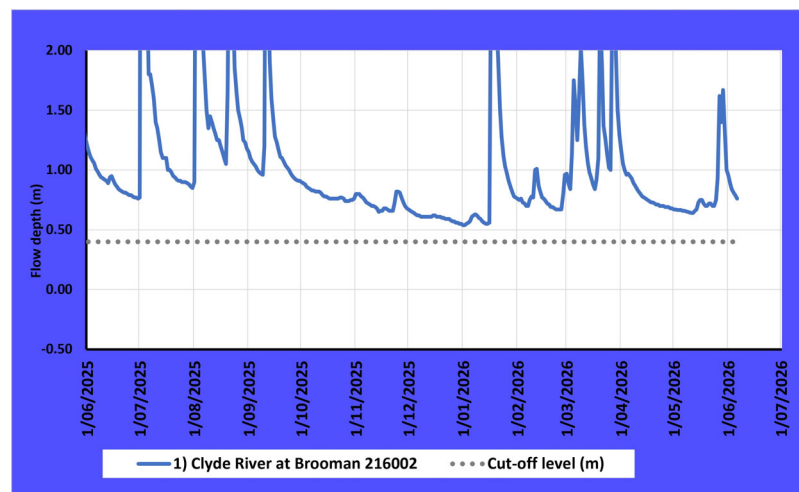
The table and map below describe the stream flow reference sites used.



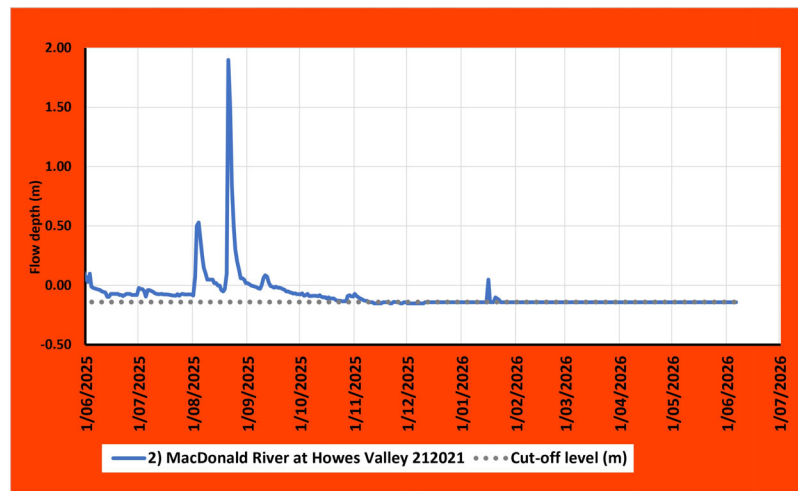
No.	Site Code	Name	Latitude	Longitude	Owner	1st date on record	Concave level (m)
1	216002	Clyde River at Brooman 216002	-35.4681	150.2394	NSW DILW	8/07/1960	0.40
2	212021	MacDonald River at Howes Valley 212021	-32.8611	150.8611	NSW DILW	9/02/1976	-0.10
3	41000261	Goobarragandra River at Mac's Crossing 41000261	-35.4183	148.4357	NSW DILW	13/06/2012	0.90
4	225219	MacAlister River at Glencairn 225219	-37.5162	146.5665	Vic DELWP	7/04/1967	0.30
5	220004	Towamba R at Towamba 220004	-37.0715	149.6593	NSW DILW	5/04/1970	0.35
6	212260	Kowmung River at Cedar Ford 212260	-33.9481	150.2431	NSW DILW	17/05/1968	0.30
7	204014	Mann River at Mitchell 204014	-29.6931	152.106	NSW DILW	10/05/1972	0.20
8	204051	Clarence River at Paddys Flat 204051	-28.7198	152.4198	NSW DILW	26/03/1976	0.55
9	207015	Hastings River at Mt Seaview 207015	-31.3683	152.2425	NSW DILW	31/05/1984	0.55
10	208001	Barrington River at Bob's Crossing 208001	-32.0284	151.4671	NSW DILW	31/01/1944	0.58
11	410535	Murrumbidgee River above Tantangara Reservoir 410535	-35.7706	148.5703	Snowy Hydro Ltd	2/05/1960	0.45
12	401554	Tooma River at Pinegrove 401014B	-36.1	148.26	Snowy Hydro Ltd	19/09/1968	0.90
13	215208	Shoalhaven River at Hillview 215208	-35.1845	149.9536	NSW DILW	6/11/1973	0.45
14	410734	Queanbeyan River at Tinderry 410734	-35.6144	149.35	Icon Water	2/08/1966	0.70
15	403221	Reedy Creek 403221	-36.3109	146.6012	Vic DELWP	11/11/1964	0.22
16	218007	Wadbilliga River at Wadbilliga 218007	-36.257	149.6926	NSW DILW	12/06/1974	0.75
17	410731	Gudgenby River at Tennent 410731	-35.5722	149.0683	Icon Water	12/11/1964	0.45
18	236219	Hopkins R at Ararat	-37.3158	142.9414	DELW&P	30/05/1989	0.075

- A new site 18 has been added - near Ararat in Victoria to represent dryness north-west of Melbourne.
- These plots are of data from the Bureau of Meteorology (BoM) and WaterNSW (<https://realtimedata.waternsw.com.au/water.stm>).
- These sites do not reflect risk to life or property, rather they are from streams with long records that are not dammed or otherwise significantly modified, and are intended to reflect underlying hydrological dynamics. Elevated levels or concave drying trends indicate wet landscapes. Near minimum flows or low flows decaying in a convex curve are indicators of a River Drying Event.
- Note that minimum flows are not zero flows - the value reflects the circumstances at the flow measuring station.
- Also note that many catchments burnt out during Black Summer, and this may cause anomalous flow dynamics.
- There are occasional disruptions to data provision, causing gaps in the graphs. These may be removed as datasets are updated.

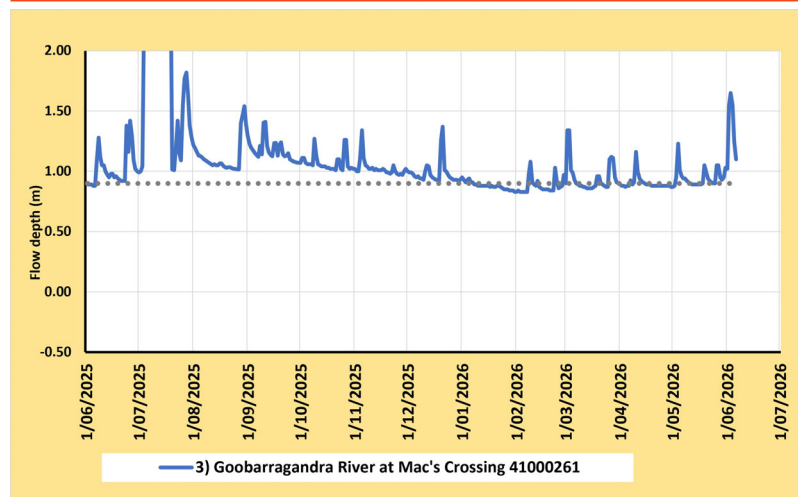
1. Clyde R at
Brooman (site ID
216002)
Min. level = 0.40 m.



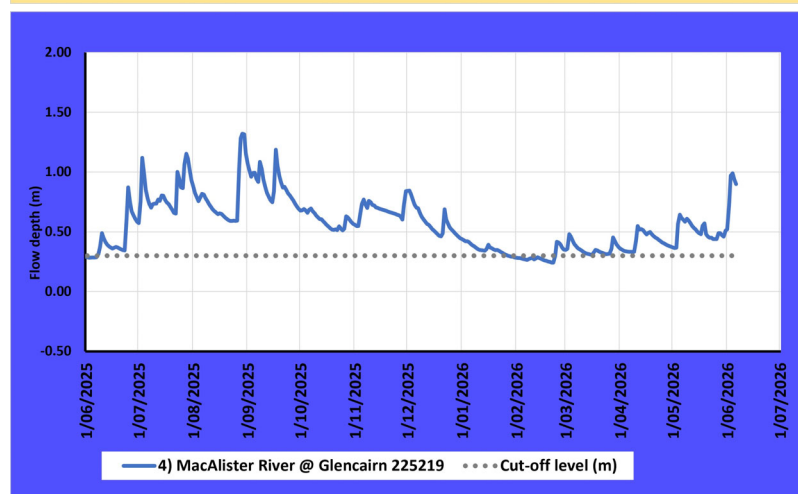
2. Macdonald R at
Howes Valley (site
ID 212021)
Min. level = -0.10
m.
This site has
questionable data -
the river is notorious
for silting up after
major wildfires.



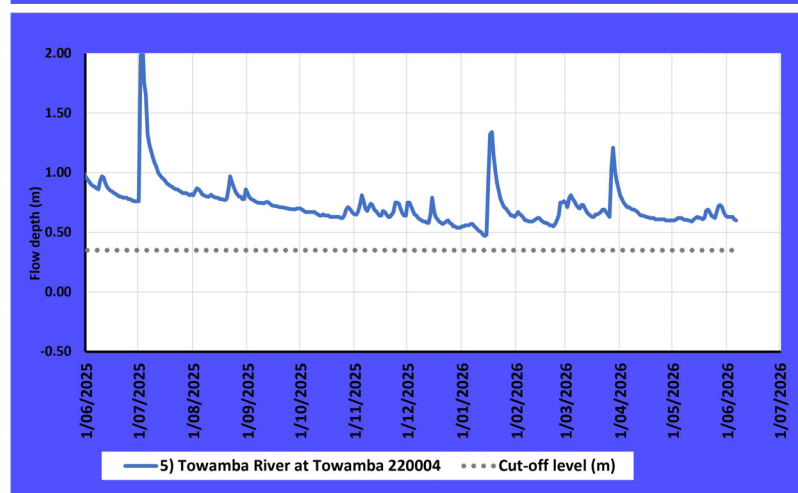
3. Goobarragandra
R at Macs Crossing
(site ID 41000261)
Min. level = 0.90 m.



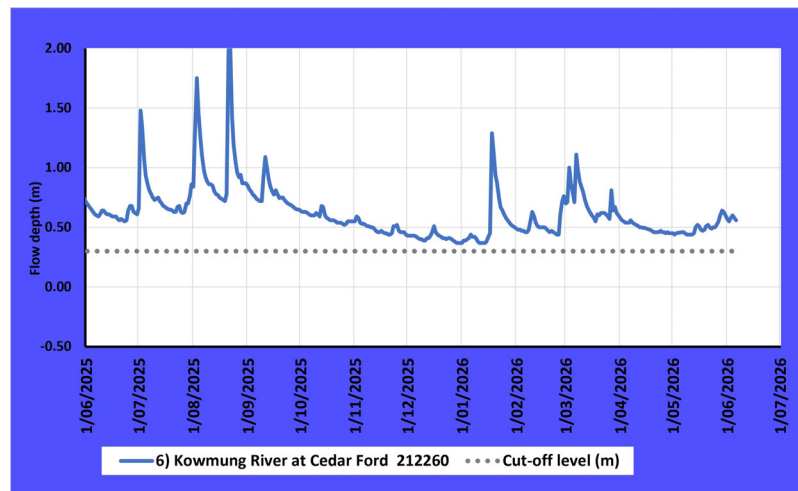
4. Macalister R at
Glencairn (site ID
225219)
Min. level = 0.30 m.



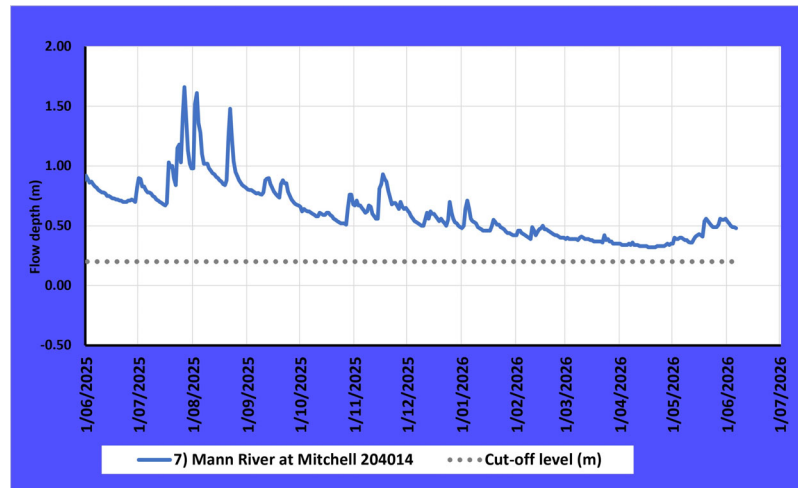
5. Towamba R at
Towamba (site ID
220004)
Min. level = 0.35 m.



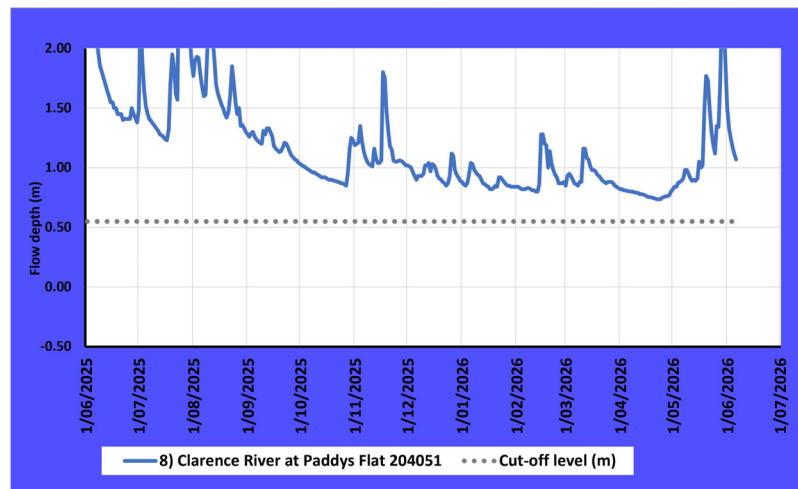
6. Kowmung R at
Cedar Ford (site ID
212260)
Min. level = 0.40 m.



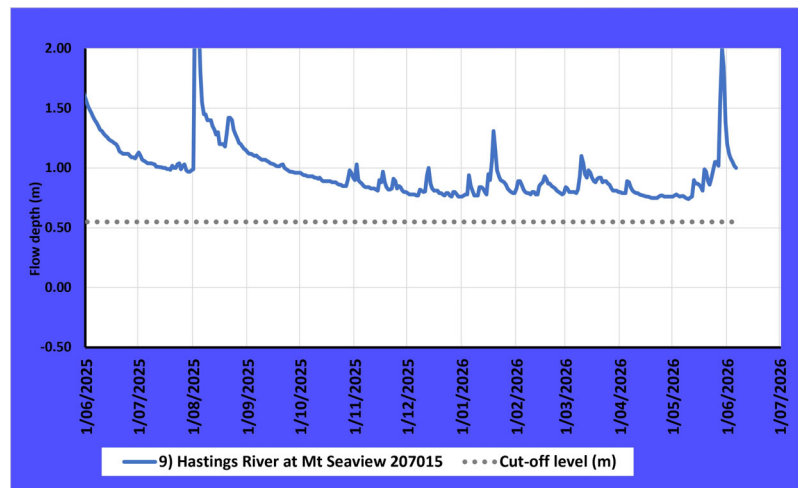
7. Mann R at
Mitchell (site ID
204014)
Min. level = 0.20 m.



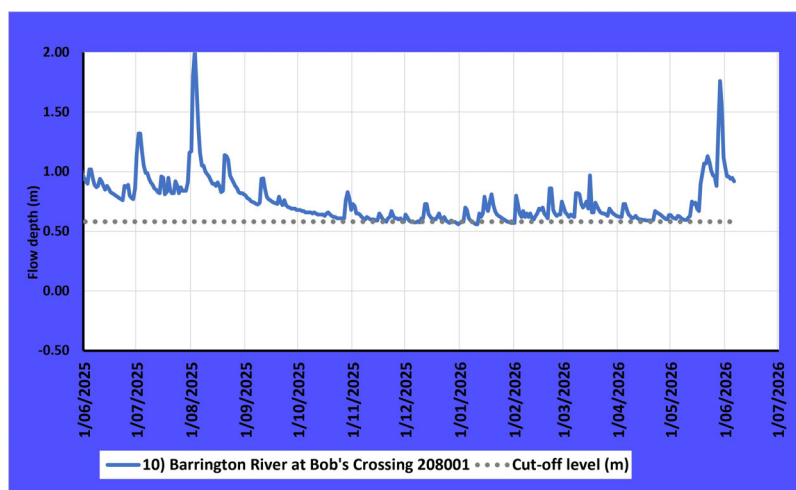
8. Clarence R at
Paddys Flat (site ID
204051)
Min. level = 0.55 m.



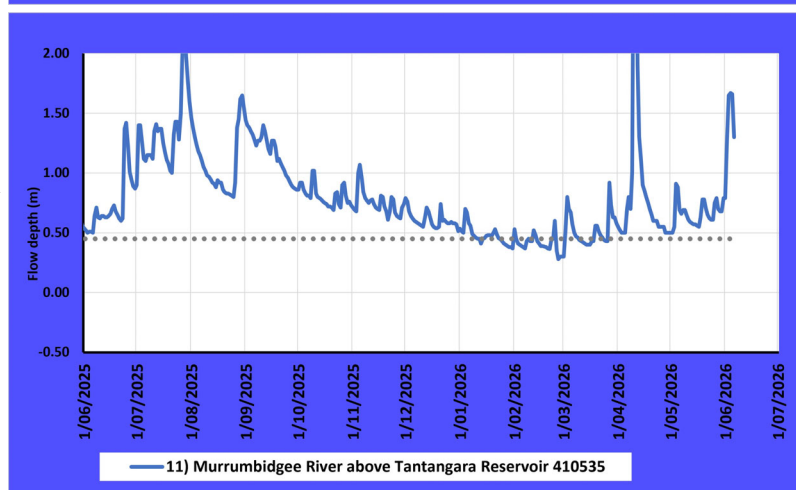
9. Hastings R at Mt
Seaview (site ID
207015)
Min. level = 0.55 m.



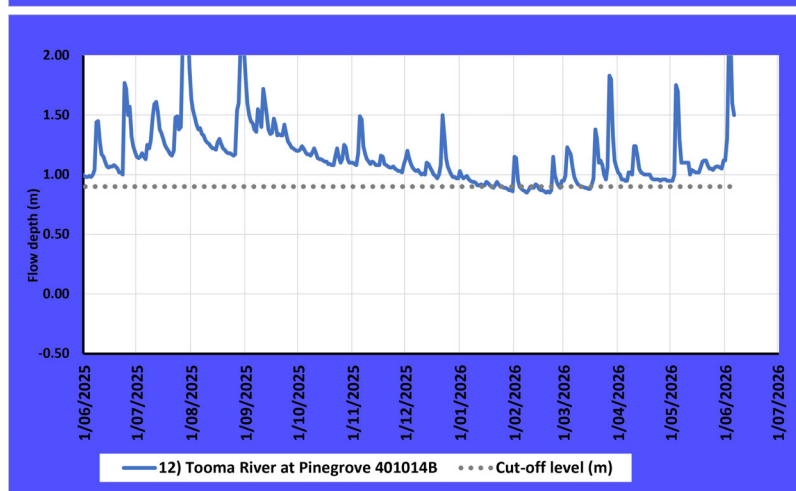
10. Barrington R at
Bobs Crossing (site
ID 208001)
Min. level = 0.58 m.



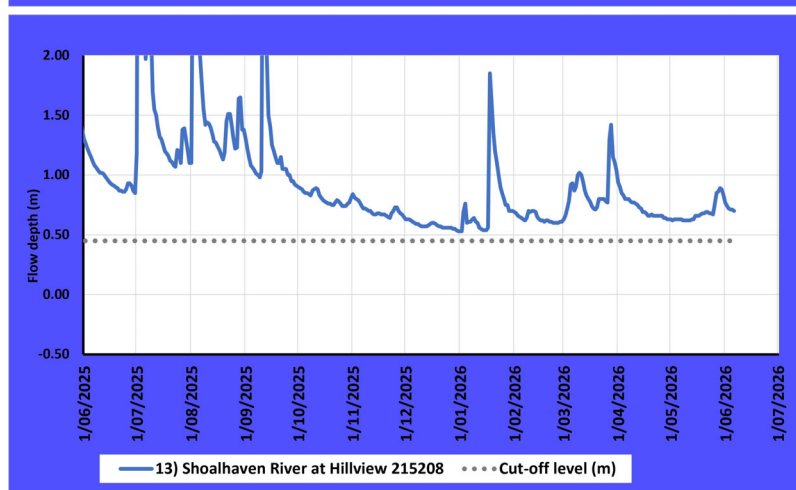
11. Murrumbidgee R
above Tantangara
Reservoir (site ID
410535)
Min. level = 0.45 m.



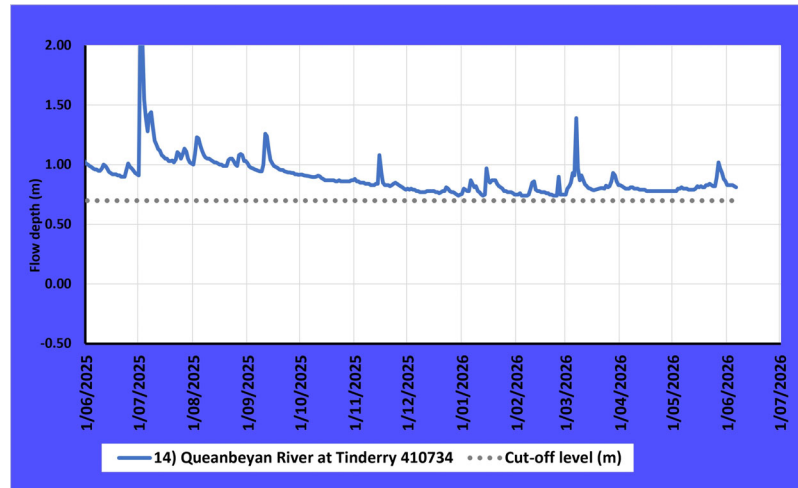
12. Tooma River at
Pinegrove (site ID
401014B)
Min. level = 0.88m.



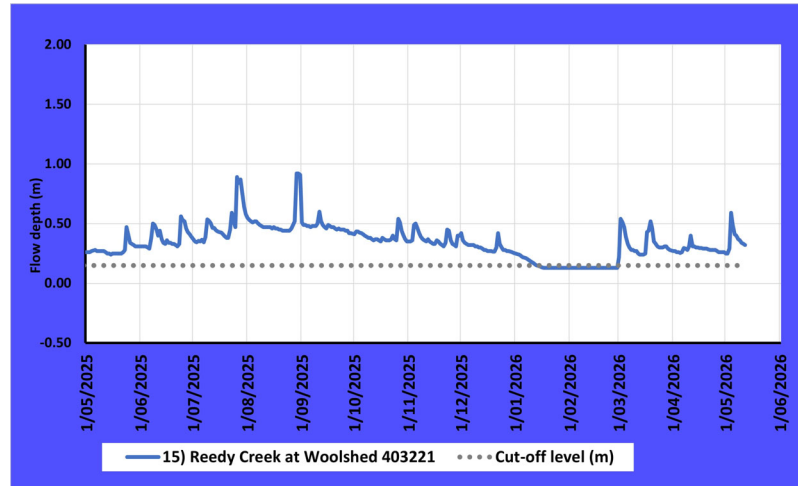
13. Shoalhaven R at
Hillview (site ID
215208)
Min. level = 0.45 m.



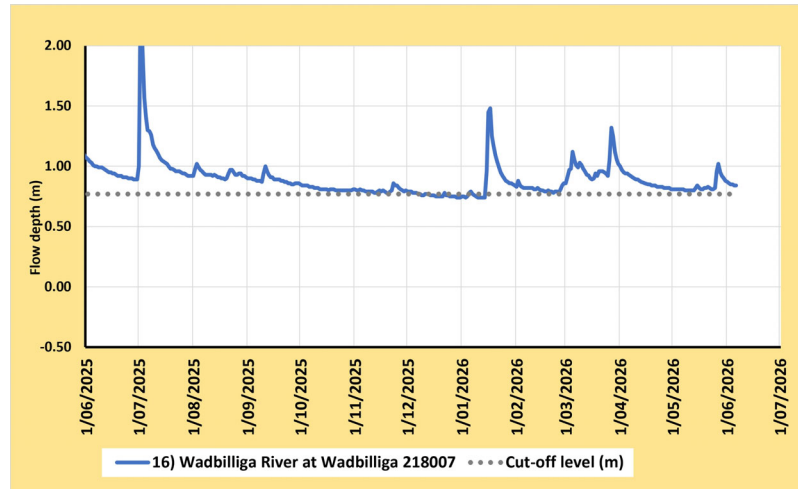
14. Queanbeyan R
at Tinderry (site ID
410734)
Min. level = 0.70 m.



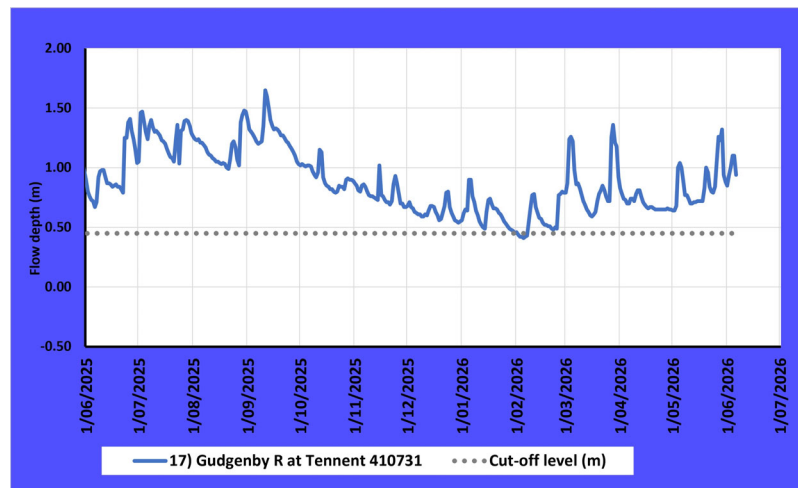
15. Reedy Creek
(site ID 403221)
Min. level = 0.22 m.



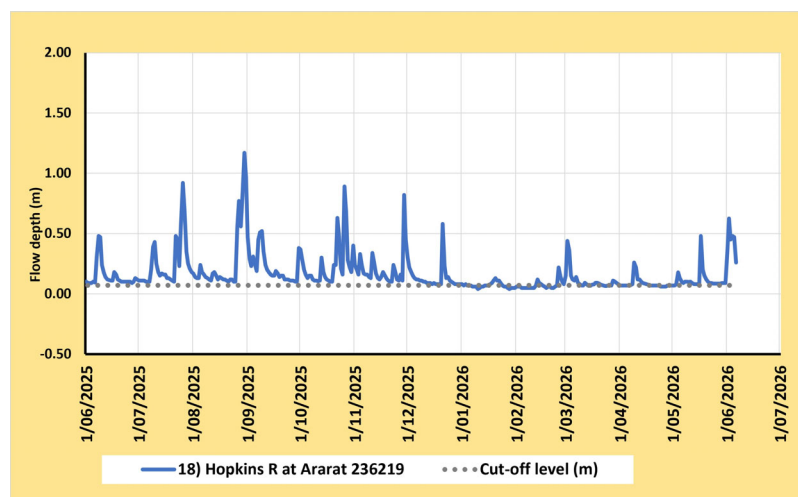
16. Wadbilliga R at
Wadbilliga (site ID
218007)
Min. level = 0.75 m.



17. Gudgenby R at
Mt Tennent (site ID
410731)
Min. level = 0.45 m.



18. Hopkins R at
Ararat (site ID
236219)
Min. level = 0.075
m.



ARCHIVE

Note that when
these are archived,
the real-time SSTA
maps are for the
print date not the
issue date.

- [Early 5/26](#)
- [Early 4/26](#)
- [Early 3/26](#)
- [Late 1/26 update](#)
- [Mid 1/26 update](#)
- [Mid 12/25](#)
- [End 11/25](#)
- [Early 11/25](#)
- [Early 10/25](#)
- [Early 09/25](#)
- [Mid 08/25](#)
- [Early 07/25](#)
- [Early 06/25](#)
- [Early 05/25](#)
- [Mid 04/25](#)
- [Early 04/25](#)
- [Early 03/25](#)
- [Late 01/25](#)
- [Late 12/24](#)
- [Early 11/24](#)
- [Early 10/24](#)
- [Late 08/24](#)
- [Early 08/24](#)
- [Early 07/24](#)
- [Early 06/24](#)
- [Early 05/24](#)
- [Mid 04/24](#)
- [Mid 03/24](#)
- [End 02/24](#)
- [Mid 02/24](#)
- [End 01/24](#)
- [Early 01/24](#)

 [End 12/23](#)
 [Early 12/23](#)
 [End 10/23](#)
 [End of 09/23](#)
--- End of list ---