



The Bureau  
of Meteorology

# Flood Forecasting and Services

May 2023

Hazard Preparedness and Response  
Queensland/New South Wales  
Decision Support Services

# Flood Warning Service

## Observations



Bureau, Water Agencies, Dam Operators, Councils

## Flood Forecasting and Warning



Bureau

## Decision Making



Emergency Management Agencies

## Response

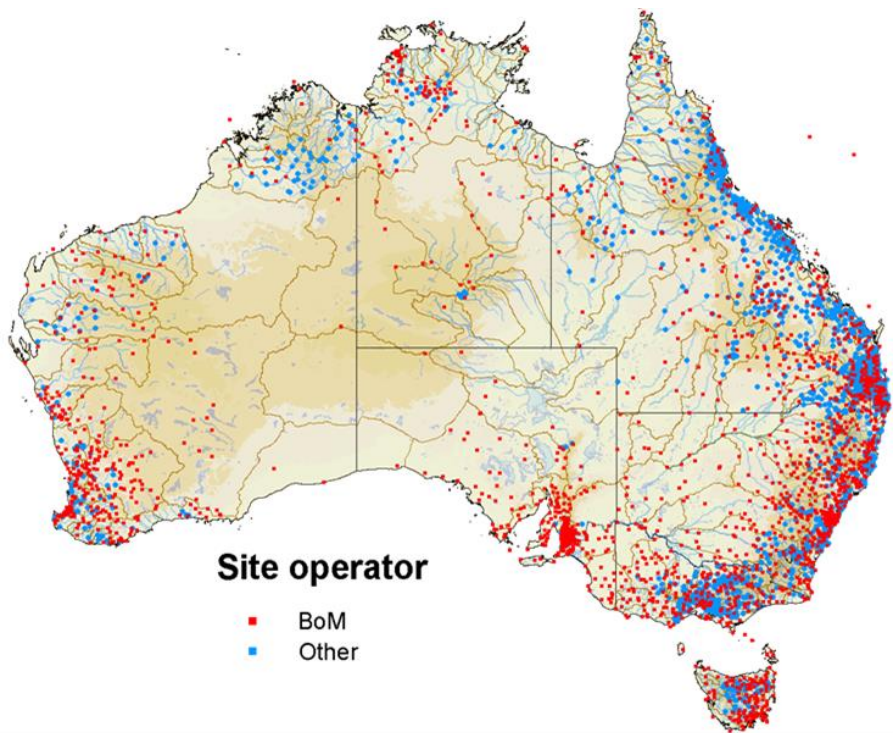


Community

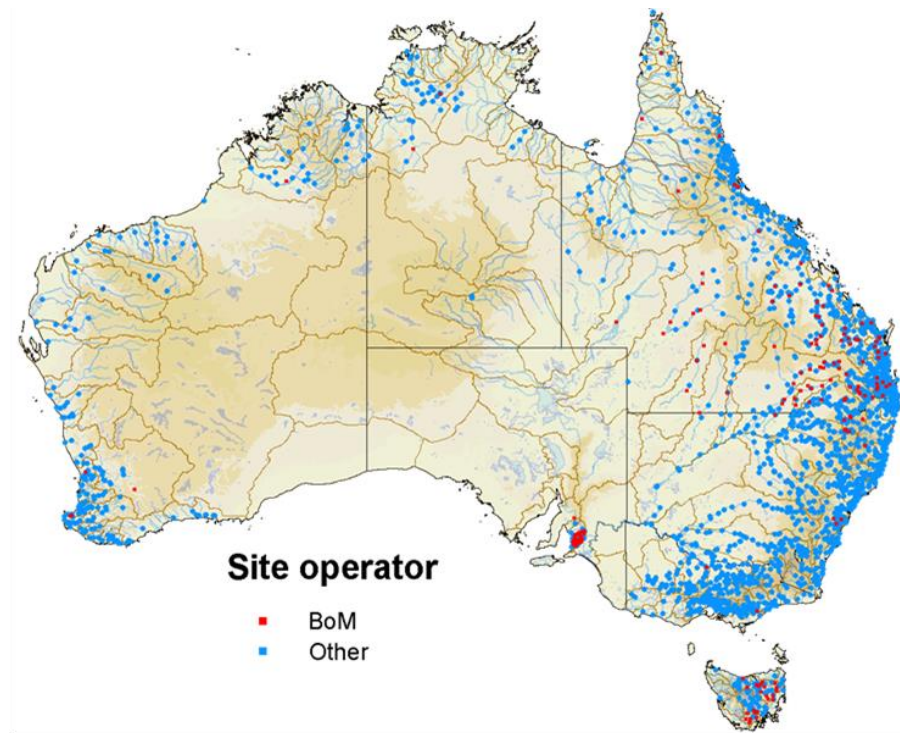
- The flood warning service is a partnership across all levels of government and the community
- Strong working relationships are essential



# Flood Warning Network



Rain gauges



River level gauges



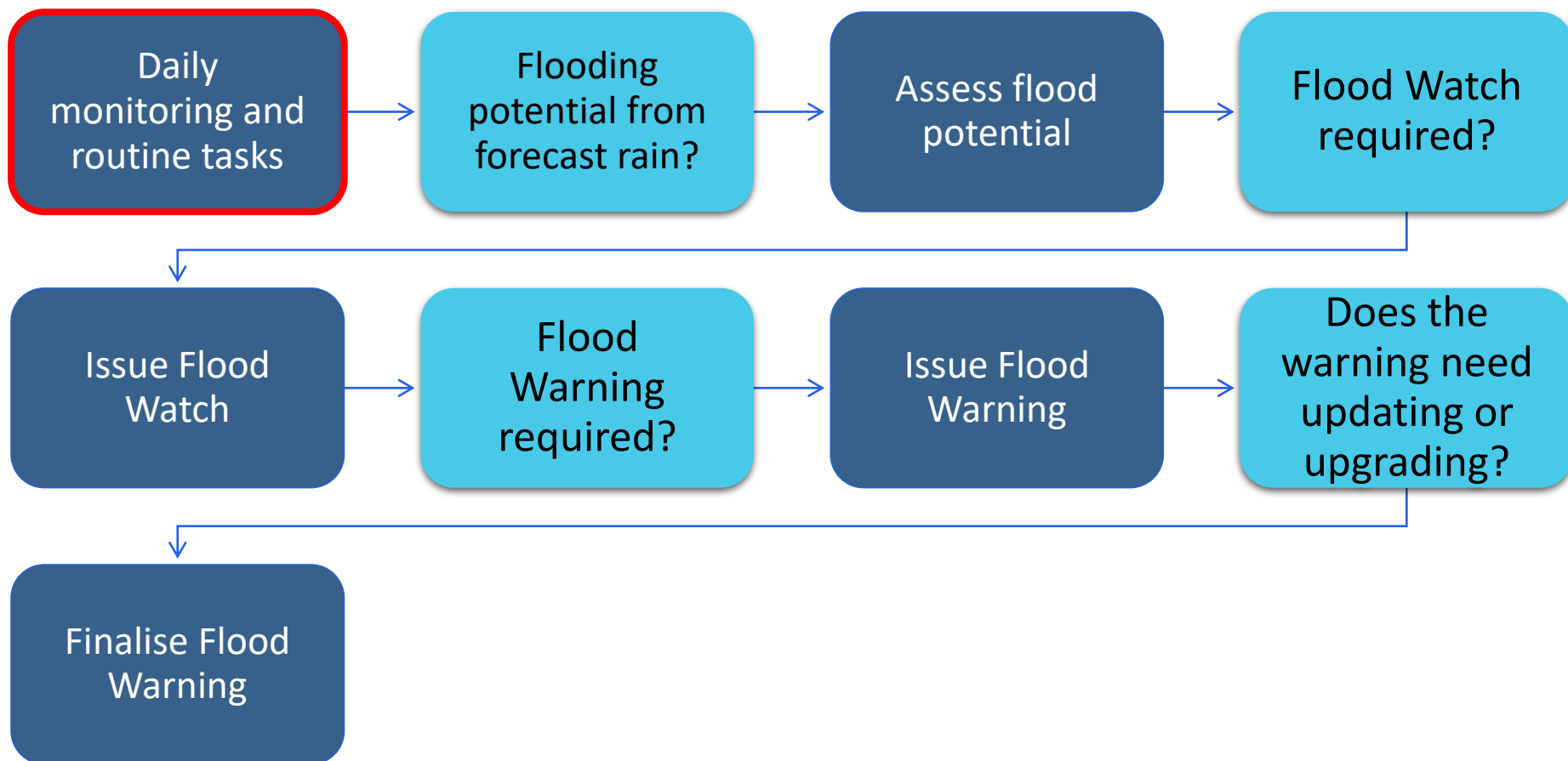
# Data uncertainty challenges

- Data is not always available
  - Manual stations
  - Network issues
  - Equipment issues
- Network sparsity
- Data can be unreliable



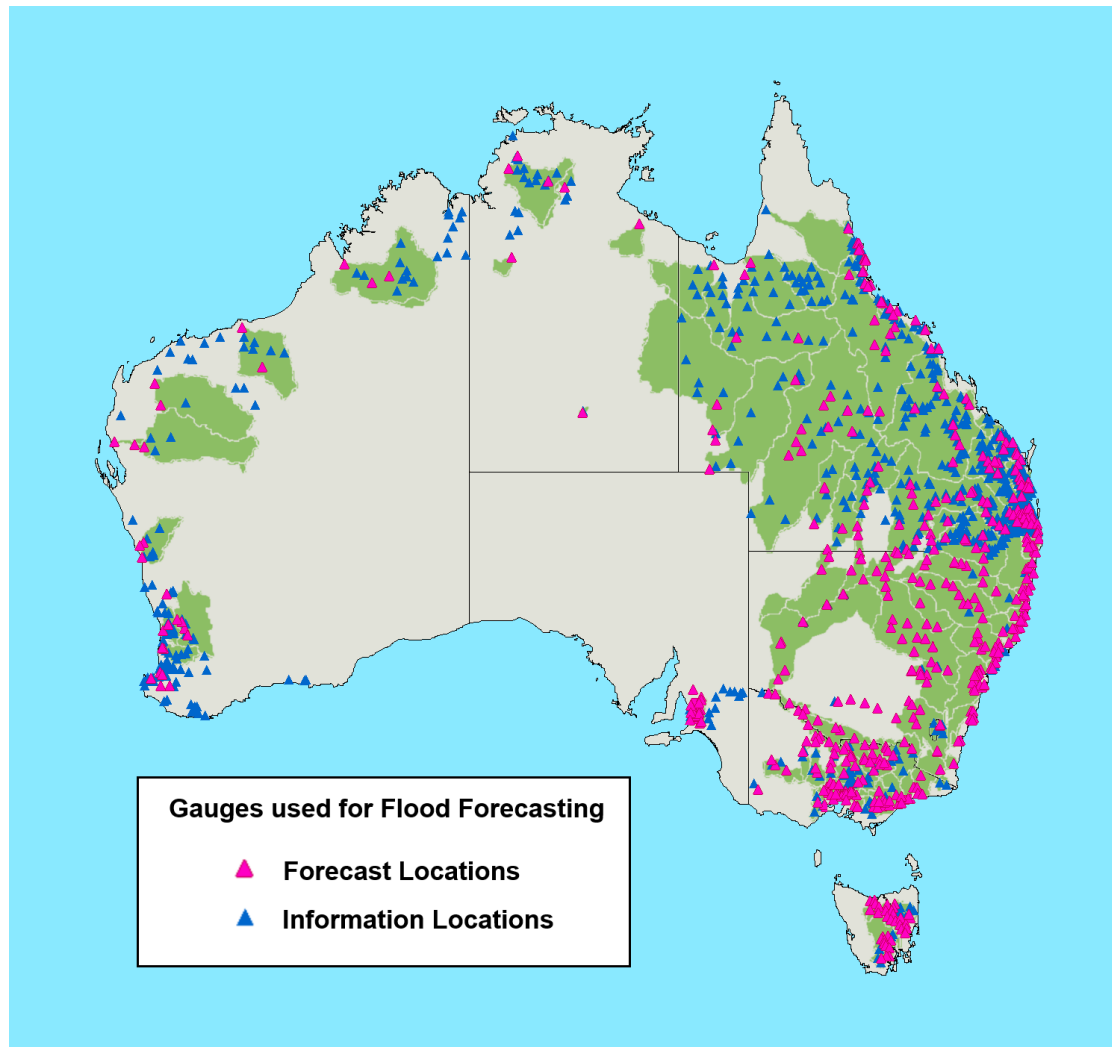
Manual and automatic rain and river level gauges

# Flood forecasting process






# Flood Warning Service







# Flood Watches and Warnings (riverine)

 BUREAU OF METEOROLOGY


## Flood advice




### WATCH

 **THINK & PREPARE**

-  **BROAD AREA**  
OF FLOOD RISK
-  **EARLY ADVICE**  
FOR POTENTIAL FLOODING
-  **ISSUED 1-4 DAYS**  
BEFORE IMPACT

### WARNING

 **TAKE ACTION**

-  **SPECIFIC LOCATION**  
OF FLOOD IMPACT
-  **MINOR  
MODERATE  
MAJOR**  
FLOODING
-  **ISSUED >6 HOURS**  
BEFORE IMPACT

**KNOW YOUR WEATHER.  
KNOW YOUR RISK.**

[bom.gov.au/australia/flood](http://bom.gov.au/australia/flood)



# Flood Watch

- Flood Watch - early advice of potential riverine flooding
- Issued when forecast rainfall and catchment or other hydrological conditions indicate that there is a significant risk of potential flooding
- For large scale flood producing weather systems generally issued up to 3 to 4 days in advance of the expected onset of flooding
- List catchments likely to be affected by flooding and flood classification

IDW39605

Australian Government Bureau of Meteorology

This Flood Watch provides early advice of possible flooding within the specified catchments.

**Flood Watch for the East Kimberley, West Kimberley, Fitzroy River, Sandy Desert and Sturt Creek District catchments**  
Issued at 11:39 am WST on Friday 30 September 2022

Flood Watch Number: 3

FLOODING POSSIBLE IN EAST KIMBERLEY, WEST KIMBERLEY, FITZROY RIVER, SANDY DESERT AND STURT CREEK DISTRICT CATCHMENTS FROM FRIDAY

A low pressure system will remain over the northern Gascoyne or inland Pilbara through to at least the weekend.

Moderate to heavy rainfall is forecast over the Flood Watch area during Friday and into the weekend.

Flooding of low lying areas and river level rises are expected with forecast rainfall. Some roads and possibly secondary highways are likely to be affected and communities may become isolated.

It is advised to check road conditions before travelling.

Catchments likely to be affected include:

- East Kimberley Rivers
- West Kimberley Rivers
- Fitzroy River
- Sturt Creek District
- Sandy Desert

This flood watch is available by dialling 1300 659 213. For more information on the Flood Watch Service visit <http://www.bom.gov.au/water/floods/floodWarningServices.shtml>

**Flood Safety Advice:**

DFES advises people and communities to be aware that flooding is possible and be prepared to relocate equipment and livestock. Watch water levels. Travellers need to be aware that road conditions may be adversely affected and travel plans may need to be reconsidered. Do not drive into water of unknown depth and velocity.

Community information is available from DFES at <https://www.emergency.wa.gov.au/>

Current river levels are available from Department of Water and Environmental Regulation at [www.water.wa.gov.au/maps-and-data/monitoring/river-level-monitoring](http://www.water.wa.gov.au/maps-and-data/monitoring/river-level-monitoring)

**Next Issue:**

The next Flood Watch will be issued by 12:00 pm WST on Saturday 01 October 2022.

*Image above: Flood Watch (WA) issued 30/9/2022.*

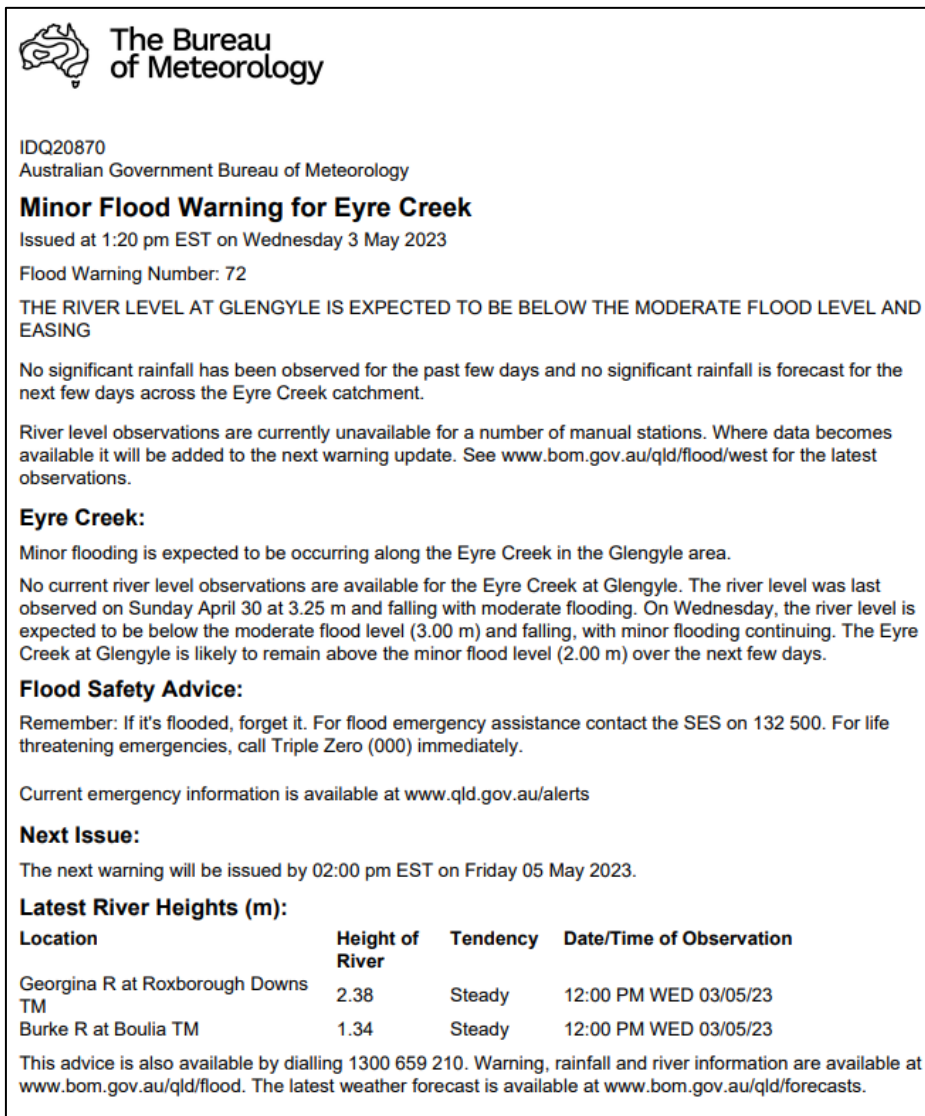
*Image left: Example QFES TOM display of Flood Watch and Warning areas from 11/5/2022.*





# Flood Warnings

- Issued when flooding is expected or occurring at a particular location.
- Issued when flooding is occurring or is expected to occur in a particular location or area
- Includes predictions of expected water levels and the timing of flood peaks at **forecast locations**
- May flag the possibility of higher potential flooding even if initial predictions are for lower flood levels
- **Flood classifications:**
  - Minor:**
    - closes minor roads and low level bridges
  - Moderate:**
    - inundation of low lying areas, may require evacuations, major bridges cut
  - Major:**
    - extensive rural inundation, towns isolated, urban areas flooded



The Bureau of Meteorology

IDQ20870  
Australian Government Bureau of Meteorology

**Minor Flood Warning for Eyre Creek**  
Issued at 1:20 pm EST on Wednesday 3 May 2023  
Flood Warning Number: 72

THE RIVER LEVEL AT GLENGYLE IS EXPECTED TO BE BELOW THE MODERATE FLOOD LEVEL AND EASING

No significant rainfall has been observed for the past few days and no significant rainfall is forecast for the next few days across the Eyre Creek catchment.

River level observations are currently unavailable for a number of manual stations. Where data becomes available it will be added to the next warning update. See [www.bom.gov.au/qld/flood/west](http://www.bom.gov.au/qld/flood/west) for the latest observations.

**Eyre Creek:**  
Minor flooding is expected to be occurring along the Eyre Creek in the Glengyle area.

No current river level observations are available for the Eyre Creek at Glengyle. The river level was last observed on Sunday April 30 at 3.25 m and falling with moderate flooding. On Wednesday, the river level is expected to be below the moderate flood level (3.00 m) and falling, with minor flooding continuing. The Eyre Creek at Glengyle is likely to remain above the minor flood level (2.00 m) over the next few days.

**Flood Safety Advice:**  
Remember: If it's flooded, forget it. For flood emergency assistance contact the SES on 132 500. For life threatening emergencies, call Triple Zero (000) immediately.

Current emergency information is available at [www.qld.gov.au/alerts](http://www.qld.gov.au/alerts)

**Next Issue:**  
The next warning will be issued by 02:00 pm EST on Friday 05 May 2023.

**Latest River Heights (m):**

Location	Height of River	Tendency	Date/Time of Observation
Georgina R at Roxborough Downs TM	2.38	Steady	12:00 PM WED 03/05/23
Burke R at Boulia TM	1.34	Steady	12:00 PM WED 03/05/23

This advice is also available by dialling 1300 659 210. Warning, rainfall and river information are available at [www.bom.gov.au/qld/flood](http://www.bom.gov.au/qld/flood). The latest weather forecast is available at [www.bom.gov.au/qld/forecasts](http://www.bom.gov.au/qld/forecasts).

Image above: Flood Warning issued 3/5/2023.

Image left: Example QFES TOM display of Flood Watch and Warnings from 11/5/2022.



# Flood Scenarios Outlook

Australian Government Bureau of Meteorology  
**QLD Flood Scenarios Outlook**  
 From Gladstone to the NSW border and inland to the Darling Downs

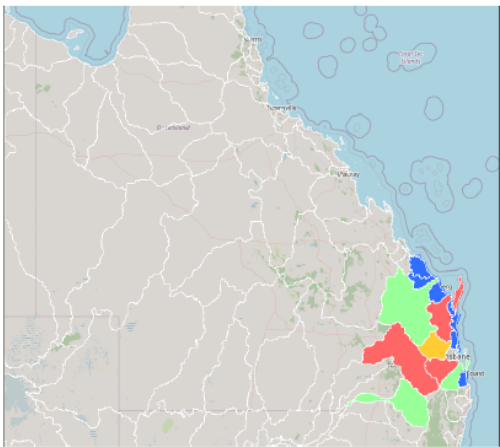
**FOR OFFICIAL USE ONLY.** Not for onward distribution. For use by emergency services agencies only, as a guide for preparedness. Information presented is uncertain.

ISSUE NUMBER - 1  
 ISSUE TIME  
 12/05/2022 15:15 AEST  
 START TIME OF FORECAST  
 12/05/2022 12:00 AEST

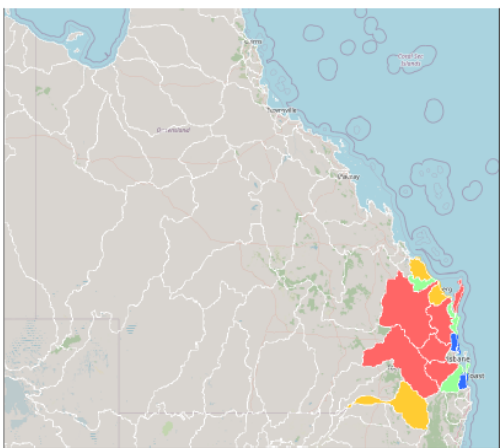
**Event Description**

- Minor to moderate flooding likely.
- Isolated areas of major flooding possible.
- Localised flooding possible in areas of heavy rain.
- A full list of affected catchments included in the Flood Watch.
- Higher possible includes more isolated rainfall risk.

**Scenario 1  
Most Likely**



**Scenario 2  
Higher Possible**



**Legend:**

- Below Flood Level
- Minor
- Moderate
- Major
- No Scenario

Maps show the highest flood classification reached in each area based on the 7-day model runs.

This report is produced to assist emergency services to plan and prepare for flood events. The scenarios presented use forecast rainfall and estimates of catchment wetness and rainfall losses, and are uncertain. The scenarios are based on the best available information at the time of issue, however actual river levels may differ from those shown in this report. Remember to check flood watches and flood warnings for the latest official forecasts.

- For use by emergency services agencies only.
- Accompanies some Flood Watches (not currently available for all catchments).
- Modelled flood level and timing at forecast locations under two rainfall scenarios: most likely, and higher possible (alternative credible).

Scenario 1 - Logan and Albert Rivers  
 Image: Excerpt from Flood Scenarios Outlook issued 12/5/2022

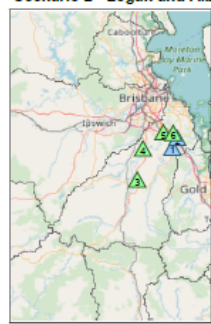


No	Site Name	Highest Modelled Level (m)	Time/Date
1	Wolfdene	4.7	13/05/2022 20:00 AEST
2	Beenleigh	2.0	13/05/2022 22:00 AEST
3	Beaudesert	5.2	13/05/2022 10:00 AEST
4	Macleans Bridge	11.4	14/05/2022 00:00 AEST
5	Waterford	4.9	14/05/2022 16:00 AEST
6	Parklands	2.8	14/05/2022 22:00 AEST

**7-DAY-OUTLOOK: Modelled Flood Level - Onwards from 12/05/2022 12:00, 6 hr increments**

No	Site Name	12/05	13/05	14/05	15/05	16/05	17/05	18/05	19/05
1	Wolfdene								
2	Beenleigh								
3	Beaudesert								
4	Macleans Bridge								
5	Waterford								
6	Parklands								

**Scenario 2 - Logan and Albert Rivers**

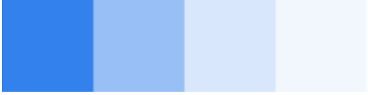


No	Site Name	Highest Modelled Level (m)	Time/Date
1	Wolfdene	5.7	13/05/2022 21:00 AEST
2	Beenleigh	2.5	13/05/2022 22:00 AEST
3	Beaudesert	8.5	13/05/2022 15:00 AEST
4	Macleans Bridge	13.3	14/05/2022 04:00 AEST
5	Waterford	6.1	14/05/2022 20:00 AEST
6	Parklands	3.4	14/05/2022 22:00 AEST

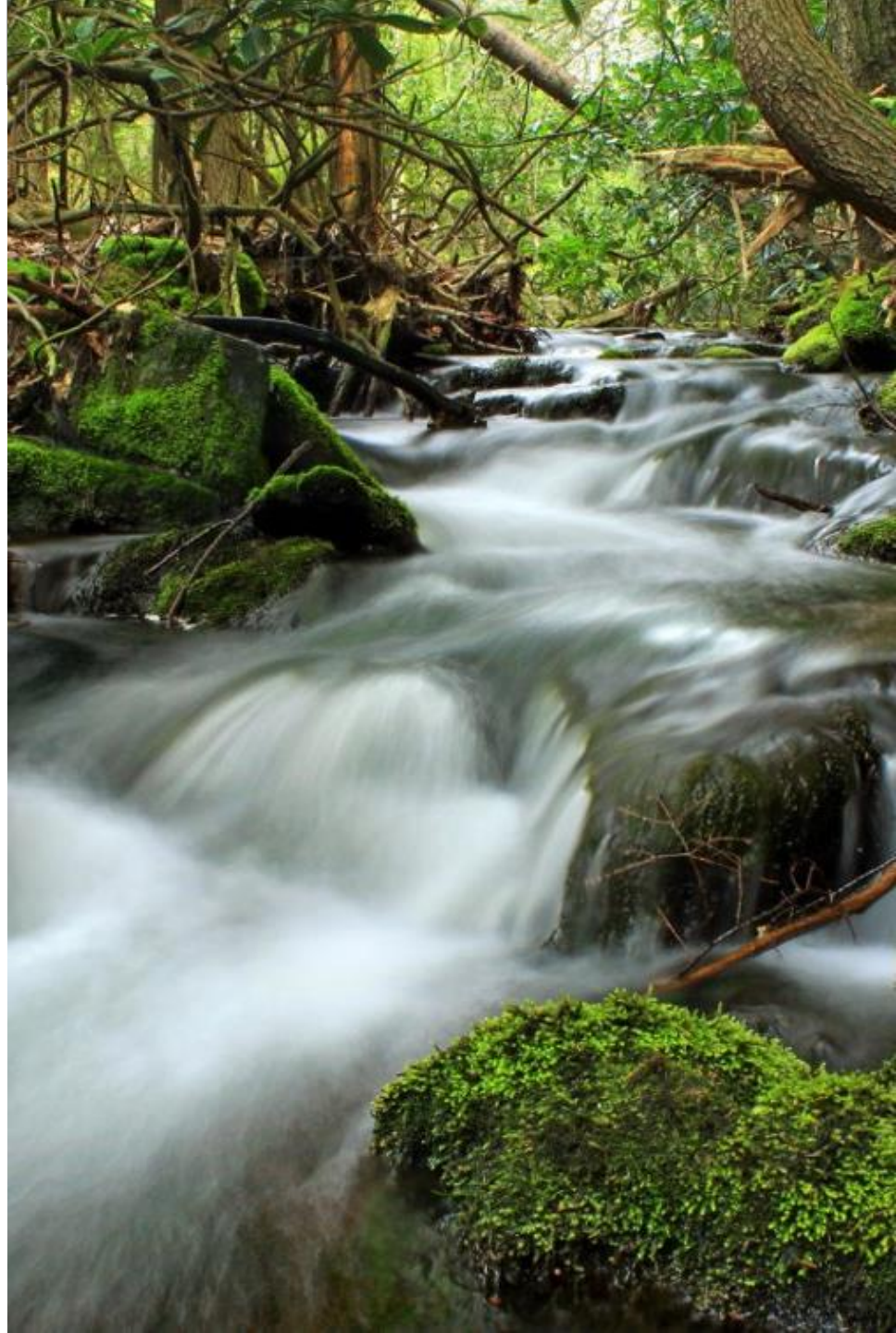
**7-DAY-OUTLOOK: Modelled Flood Level - Onwards from 12/05/2022 12:00, 6 hr increments**

No	Site Name	12/05	13/05	14/05	15/05	16/05	17/05	18/05	19/05
1	Wolfdene								
2	Beenleigh								
3	Beaudesert								
4	Macleans Bridge								
5	Waterford								
6	Parklands								





# Documentation



# Bureau of Meteorology Documentation

## Service Level Specifications

- [Flood Forecasting and Warning Services for Queensland](#)
- [Flood Forecasting and Warning Services for NSW and the ACT](#)

## Other

- [National Arrangements for Flood Forecasting and Warning](#)





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# Thank you

Hazard Preparedness and Response  
Decision Support Services

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