



HOW TO FIND COAST, ESTUARY AND FLOOD DATA

A basic guide to open data for natural systems

Report MHL2655
September 2022

Prepared for:



**Planning and
Environment**

Biodiversity and Conservation Division

Cover Photograph: Lake Tabourie water level monitoring station, Lake Tabourie

How to find coast, estuary and flood data

A basic guide to open data for natural systems

Report MHL2655
September 2022

Sarah Dakin

Water Information Team Leader

110b King Street

Manly Vale NSW 2093

T: 02 9949 0242

E: sarah-kate.dakin@mhl.nsw.gov.au

W: www.mhl.nsw.gov.au

Document control

Issue/ Revision	Author	Reviewer	Approved for issue	
			Name	Date
Draft v1	C Mercado S Dakin	M Galloway	A Joyner	07 June 2019
Draft v2	C Mercado	M Fitzhenry, DPE C Parmenter, DPE	A Joyner	11 August 2021
Final	C Mercado	M Fitzhenry, DPE C Davies, DPE S Young, DPE T Ingleton, DPE	B McPherson	16 Sept 2022

© Crown in right of NSW through the Department of Planning and Environment 2022



The data contained in this report is licensed under a Creative Commons Attribution 4.0 licence. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0>

Manly Hydraulics Laboratory and Biodiversity and Conservation Division, NSW Department of Planning and Environment permit this material to be reproduced, for educational or non-commercial use, in whole or in part, provided the meaning is unchanged and its source, publisher and authorship are acknowledged.

While this report has been formulated with all due care, the State of New South Wales does not warrant or represent that the report is free from errors or omissions, or that it is exhaustive. The State of NSW disclaims, to the extent permitted by law, all warranties, representations or endorsements, express or implied, with regard to the report including but not limited to, all implied warranties of merchantability, fitness for a particular purpose, or non-infringement. The State of NSW further does not warrant or accept any liability in relation to the quality or accuracy of the report and no responsibility is accepted by the State of NSW for the accuracy, currency, reliability and correctness of any information in the report provided by the client or third parties.

Report classification

<input checked="" type="checkbox"/>	Public	Report existence and contents publicly available.
<input type="checkbox"/>	Release by consent only	Report existence is known but contents are available only with consent by MHL's client and the MHL Director.
<input type="checkbox"/>	Private	Report existence and content are strictly confidential.

Report No. MHL2655

First published as draft in June 2019



Manly Hydraulics Laboratory is Safety, Environment & Quality System Certified to AS/NZS 4801, ISO 14001 and ISO 9001

110B King Street

Manly Vale NSW 2093

T 02 9949 0200

TTY 1300 301 181

ABN 20 770 707 468

www.mhl.nsw.gov.au

Foreword

Water information relevant to NSW is stored in many different locations and by different government organisations in NSW and other state and federal agencies and research institutions. It is difficult to know what water monitoring data exists and where to find it. NSW government's specialist advisor, Manly Hydraulics Laboratory (MHL) was commissioned by the Biodiversity and Conservation Division (BCD) of the Department of Planning and Environment (DPE) to create a "how to" document for finding open water related data on the web to assist with various data enquiries that BCD receives. Please note that DPE's Environment and Heritage Group (EHG) was known as the Office of Environment and Heritage (OEH) prior to 1 July 2019.

This report represents key NSW water information sources (natural environment) at the time of publication. These sources will be updated and new information sources developed over time. Current developments are underway for DPE's *SEED* portal, WaterNSW's *Water Insights Portal*, Department of Customer Service's *Spatial Collaboration Portal* and Bureau of Meteorology's *Water Data Online*.

The quality and suitability for use of the datasets presented in this "how to" document are not verified. Individuals must contact the data custodians for further details on whether the information provided on these websites is suitable for their purpose(s).

How to use this report

This report can be explored in different ways, depending on the document file available and whether the data type or data source is known.

This report is divided into four sections based on the type of data required and information location is driven by links in the report's water information directory and table of contents.

First, if the data type is known or the document file is a printed copy, proceed to the table of contents (page 8) and identify the type of data required:

1. surface water
2. groundwater
3. meteorological data (including rainfall)
4. coastal topography.

Second, based on the type of data from the list (1-4 above), for example surface water, identify the specific water information required relative to the area of interest from the following chapters/sections: (1) rivers, creeks and streams; (2) intermittently closed and open lakes and lagoons; (3) estuaries; (4) ocean tide; (5) sea surface temperature and sea currents; (6) wave; or (7) storages. Third, identify the specific data source provider and/or parameter type required in that water information area or subgroup. Then determine the corresponding page number and locate the page within the hardcopy report.

Alternatively, if this report is used as an electronic file (e.g. PDF), go to the water information directory in the following section. It provides a quick reference guide to assist in finding data sources identified in this report. If the data source is known, locate the data source under the "Data source website" column and click the link below the organisation name to be redirected to the website. Then, click on the parameter type under the "Parameter" column to go straight to that specific section in this report. Another method is to simply click on the page number in the Table of Contents and you will be redirected to the relevant section.

Follow the steps described in the report section to obtain the water data of interest.

Water information directory

The following table provides a summary of the various websites where water related information can be found with hyperlinks for quick access to the associated source data websites and 'parameter' links to the step-by-step instructions within the body of the report itself. The step-by-step instructions in the following chapters describe how to access the water information within each website. Note that the parameter “water quality” covers a range of one or more parameters such as temperature, salinity, conductivity, dissolved oxygen and turbidity.

Data source website	Parameter
Australian Institute of Marine Science https://www.aims.gov.au/docs/data/data.html	sea surface temperature
Australian Ocean Data Network https://portal.aodn.org.au/	historical sea surface temperature historical wave bathymetry and coastal topography
Australian River Assessment System https://ausrivas.ewater.org.au	bioassessment and physical assessment software
Buoyweather http://www.buoyweather.com/map/new-south-wales	tide forecast wave forecast wind and weather forecast
Bureau of Meteorology http://www.bom.gov.au/	water level water level, discharge and water quality tide charts sea surface temperature and currents offshore wave forecast groundwater explorer weather and climate, rainfall, temperature and solar exposure online information system spatial datasets

Data source website	Parameter
	water data service
CoastAdapt https://coastadapt.com.au/	shoreline information
CSIRO Climate Science Centre https://research.csiro.au/slrwavescoast/	past sea level changes wave
Digital Earth Australia https://maps.dea.ga.gov.au/#share=s-DEACoastlines&playStory=1	coastlines
DPE and NSW State Emergency Service https://flooddata.ses.nsw.gov.au/	flood modelling data portal
DPE Environment and Heritage Group https://www.environment.nsw.gov.au/	various publications live nearshore wave water quality
ELVIS http://elevation.fsd.org.au/	elevation and depth
Floods Near Me NSW http://floodsnearme.manly.hydraulics.works/	flood information and flood warning
Foundation Spatial Data Framework http://fsdf.org.au/	spatial datasets
GESLA https://gesla.org/	extreme sea level
Hunter Water https://waterstorage.hunterwater.com.au/	water storage level
Integrated Marine Observing System http://oceancurrent.imos.org.au/	sea surface temperature, currents and ocean colour (chlorophyll-a) surface waves wind speed
Manly Hydraulics Laboratory https://www.mhl.nsw.gov.au/	water level water quality tide charts sea surface temperature

Data source website	Parameter
	wave rainfall barometric various publications
Murray–Darling Basin Authority https://www.mdba.gov.au/	water level, discharge and water quality water storage level rainfall
National Collaborative Research Infrastructure Strategy (NCRIS) http://groundwater.anu.edu.au/	groundwater database
NSW Beach Profile Database http://www.nswbpd.wrl.unsw.edu.au/photogrammetry/nsw/	beach profile / cross-section survey
NSW Government (Data.NSW) https://data.nsw.gov.au/data/dataset	various datasets
NSW Nearshore Wave Forecast http://nearshore.waves.nsw.gov.au <i>(collaboration between the DPE, MHL and Baird Australia)</i>	nearshore wave forecast
OpenGov NSW https://www.opengov.nsw.gov.au	various publications
Permanent Service for Mean Sea Level https://www.psmsl.org/	monthly and annual mean sea level
Port Authority of New South Wales http://wavewindtide.portauthoritynsw.com.au/	tide height current wave
Queensland Government https://www.qld.gov.au/environment/coasts-waterways/beach/monitoring/waves-sites/tweed-heads	wave (Tweed Heads)
Spatial Collaboration Portal https://portal.spatial.nsw.gov.au/	spatial datasets
Seabreeze https://www.seabreeze.com.au/weather/wind-forecast/sydney	tide forecast wave forecast

Data source website	Parameter
Sharing and Enabling Environmental Data https://www.seed.nsw.gov.au/	various datasets
WaterNSW https://realtimedata.waternsw.com.au/	water level, discharge and water quality water storage level groundwater data weather stations
WillyWeather https://www.willyweather.com.au/	tide chart swell weather, wind, rainfall and UV index
Windguru https://www.windguru.cz/map/spot/?lat=-33&lon=150&zoom=5.5	tide chart weather forecast
Windy.com https://www.windy.com	wave forecast wind and weather forecast

Please note that future sea level change information has not been included in this directory as it is constantly being updated and users need to research and assess their particular requirements to obtain the latest information. Some examples of sea level change information websites include [CoastAdapt](#), [Coastal Risk Australia](#)¹, [CSIRO Climate Science Centre](#) and [International Panel on Climate Change \(IPCC\) sixth assessment report](#).

¹ When using the manual option on the coastal inundation mapping (setting the inundation level using the slider), the level is labelled as the height above current day mean sea level, this map may be showing the highest astronomical tide (HAT) instead. Use the data with caution and confirm as needed.

Contents

HOW TO USE THIS REPORT	2
1. SURFACE WATER	10
1.1 Rivers, creeks and streams	10
1.1.1 Manly Hydraulics Laboratory – water level	10
1.1.2 Bureau of Meteorology – water level (quick view)	11
1.1.3 Manly Hydraulics Laboratory – water quality	13
1.1.4 Murray-Darling Basin Authority – water level, discharge and water quality	14
1.1.5 WaterNSW – water level, discharge and water quality	16
1.1.6 Bureau of Meteorology – water level, discharge and water quality	17
1.1.7 Australian River Assessment System – software	19
1.1.8 Sharing and Enabling Environmental Data – various datasets	21
1.1.9 NSW Government (Data.NSW) – various datasets	24
1.1.10 Manly Hydraulics Laboratory – various publications	26
1.1.11 Australian Water Resources Information System – online information system	27
1.1.12 Australian Hydrological Geospatial Fabric (Geofabric) – spatial dataset	28
1.1.13 Foundation Spatial Data Framework – spatial datasets	30
1.1.14 OpenGov NSW – various publications	32
1.1.15 DPE Environment and Heritage Group – various publications	33
1.1.16 DPE and NSW State Emergency Service – flood data portal	34
1.1.17 Floods Near Me NSW – PC and mobile application	37
1.1.18 Spatial Collaboration Portal – spatial datasets	39
1.1.19 Bureau of Meteorology – Australian Water Data Service	41
1.2 Intermittently closed and open lakes and lagoons (ICOLLS)	45
1.2.1 Manly Hydraulics Laboratory – water level	45
1.2.2 Bureau of Meteorology – water level (quick view)	45
1.2.3 Bureau of Meteorology – water level, discharge and water quality	45
1.2.4 Sharing and Enabling Environmental Data – various datasets	45
1.2.5 NSW Government (Data.NSW) – various datasets	46
1.2.6 Australian Water Resources Information System – online information system	46
1.2.7 Australian Hydrological Geospatial Fabric (Geofabric) – spatial dataset	46
1.2.8 Foundation Spatial Data Framework – spatial datasets	46
1.2.9 OpenGov NSW – various publications	46
1.2.10 DPE Environment and Heritage Group – various publications	47
1.2.11 DPE Environment and Heritage Group – water quality	47
1.2.12 Bureau of Meteorology – Australian Water Data Service	48
1.3 Estuaries	49
1.3.1 Manly Hydraulics Laboratory – water level and water quality	49
1.3.2 Bureau of Meteorology – water level (quick view)	49
1.3.3 Bureau of Meteorology – water level, discharge and water quality	49
1.3.4 WaterNSW – water quality	49
1.3.5 Sharing and Enabling Environmental Data – various datasets	50
1.3.6 NSW Government (Data.NSW) – various datasets	51
1.3.7 Australian Water Resources Information System – online information system	51
1.3.8 Australian Hydrological Geospatial Fabric (Geofabric) – spatial dataset	51
1.3.9 Foundation Spatial Data Framework – spatial datasets	52
1.3.10 OpenGov NSW – various publications	52
1.3.11 DPE Environment and Heritage Group – various publications	52
1.3.12 DPE Environment and Heritage Group – water quality	52
1.3.13 Bureau of Meteorology – Australian Water Data Service	52
1.4 Ocean tide	54

1.4.1	Manly Hydraulics Laboratory – water level	54
1.4.2	PSMSL – monthly and annual mean sea level	54
1.4.3	Manly Hydraulics Laboratory – tide charts	57
1.4.4	Bureau of Meteorology – tide charts	58
1.4.5	Buoyweather – tide forecast	59
1.4.6	Seabreeze – tide forecast	60
1.4.7	CSIRO Climate Science Centre – sea level	61
1.4.8	GESLA - extreme sea level	62
1.4.9	CoastAdapt – shoreline information	63
1.4.10	Port Authority of New South Wales – tide height	65
1.4.11	NSW Government (Data.NSW) – various datasets	65
1.4.12	OpenGov NSW – various publications	66
1.4.13	DPE Environment and Heritage Group – various publications	66
1.4.14	WillyWeather – tide chart	67
1.4.15	Windguru – tide chart	70
1.5	Sea surface temperature and sea currents	72
1.5.1	Bureau of Meteorology – sea surface temperature and currents	72
1.5.2	Integrated Marine Observing System (IMOS) – sea surface temperature, currents and ocean colour (chlorophyll-a)	73
1.5.3	Manly Hydraulics Laboratory – sea surface temperature	76
1.5.4	Australian Institute of Marine Science – sea surface temperature	77
1.5.5	Australian Ocean Data Network – historical sea surface temperature	78
1.5.6	Port Authority of New South Wales – current	81
1.5.7	NSW Government (Data.NSW) – various datasets	81
1.6	Wave	83
1.6.1	Manly Hydraulics Laboratory – wave	83
1.6.2	CSIRO Climate Science Centre – wave	84
1.6.3	Buoyweather – wave forecast	85
1.6.4	Windy.com – wave forecast	85
1.6.5	Seabreeze – wave forecast	87
1.6.6	Port Authority of New South Wales – wave	87
1.6.7	Queensland Government – wave (Tweed Heads)	88
1.6.8	Australian Ocean Data Network – historical wave	89
1.6.9	NSW Nearshore Wave Forecast – nearshore wave forecast	91
1.6.10	Bureau of Meteorology – offshore wave forecast	93
1.6.11	NSW Government (Data.NSW) – various datasets	94
1.6.12	DPE Environment and Heritage Group – various publications	94
1.6.13	DPE Environment and Heritage Group – live nearshore wave data	95
1.6.14	WillyWeather – swell	97
1.6.15	Integrated Marine Observing System (IMOS) – surface waves	101
1.7	Storages	103
1.7.1	Bureau of Meteorology – water storage dashboard	103
1.7.2	Bureau of Meteorology – storage level and volume	103
1.7.3	WaterNSW – water storage level	103
1.7.4	Murray-Darling Basin Authority – water storage level	104
1.7.5	Hunter Water – water storage level	105
1.7.6	Sharing and Enabling Environmental Data – various datasets	106
1.7.7	NSW Government (Data.NSW) – various datasets	106
1.7.8	Australian Water Resources Information System – online information system	107
1.7.9	Australian Hydrological Geospatial Fabric (Geofabric) – spatial dataset	107
1.7.10	Foundation Spatial Data Framework – spatial datasets	107
1.7.11	OpenGov NSW – various publications	107
1.7.12	Bureau of Meteorology – Australian Water Data Service	107
2.	GROUND WATER	108

2.1	WaterNSW – groundwater data	108
2.2	Bureau of Meteorology – Australian Groundwater Explorer	109
2.3	NCRIS – groundwater database	110
2.4	Sharing and Enabling Environmental Data – various datasets	112
2.5	NSW Government (Data.NSW) – various datasets	113
2.6	Australian Water Resources Information System – online information system	113
2.7	Australian Hydrological Geospatial Fabric (Geofabric) – spatial dataset	113
2.8	Foundation Spatial Data Framework – spatial datasets	113
2.9	OpenGov NSW – various publications	114
2.10	DPE Environment and Heritage Group – various publications	114
2.11	Bureau of Meteorology – Australian Water Data Service	114
3.	METEOROLOGICAL	115
3.1	Bureau of Meteorology – weather and climate, rainfall, temperature and solar exposure	115
3.2	Manly Hydraulics Laboratory – rainfall	117
3.3	Murray-Darling Basin Authority – rainfall	117
3.4	Manly Hydraulics Laboratory – barometric	119
3.5	WaterNSW – weather stations	120
3.6	Bureau of Meteorology – wind and weather forecast	121
3.7	Buoyweather – wind and weather forecast	121
3.8	Windy.com – wind and weather forecast	121
3.9	Sharing and Enabling Environmental Data – various datasets	123
3.10	NSW Government (Data.NSW) – various datasets	124
3.11	OpenGov NSW – various publications	124
3.12	DPE Environment and Heritage Group – various publications	124
3.13	WillyWeather – weather, wind, rainfall and UV index	125
3.14	Windguru – weather forecast	132
3.15	Integrated Marine Observing System (IMOS) – wind speed	133
4.	COASTAL TOPOGRAPHY	134
4.1	Australian Ocean Data Network – bathymetry and coastal topography	134
4.2	ELVIS – elevation and depth	137
4.3	NSW Beach Profile Database – beach profile / cross-section survey	138
4.4	Sharing and Enabling Environmental Data – various datasets	141
4.5	Sharing and Enabling Environmental Data – Seabed NSW	141
4.6	NSW Government (Data.NSW) – various datasets	142
4.7	Digital Earth Australia – coastlines	142

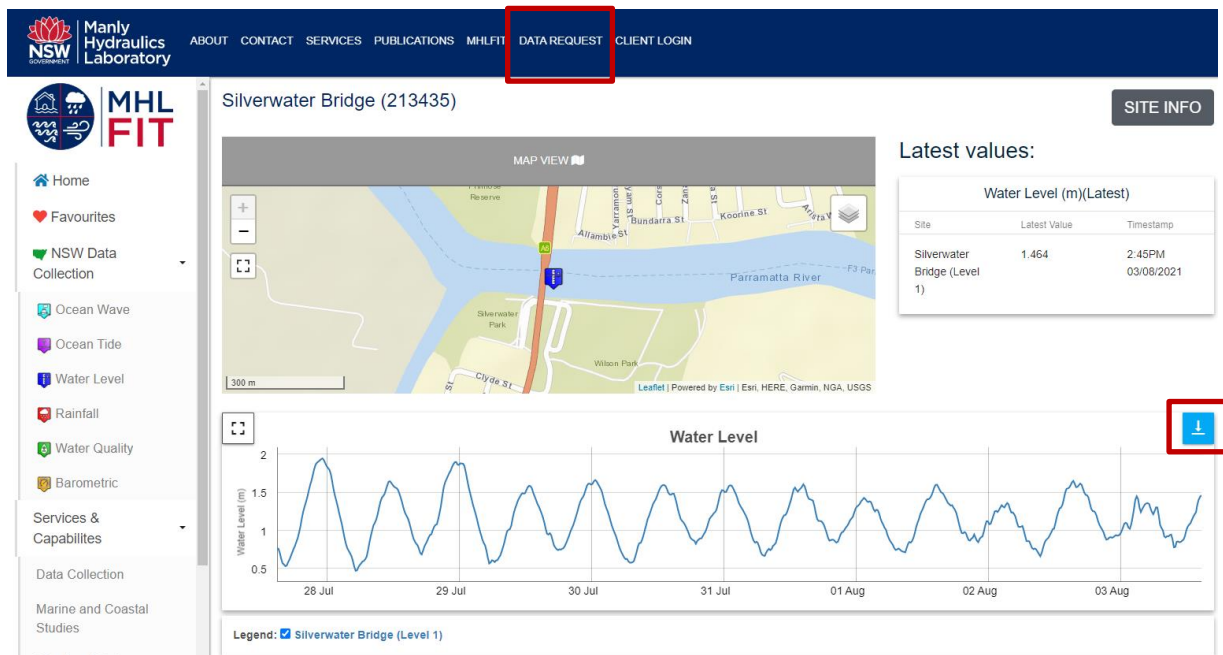
1. Surface water

1.1 Rivers, creeks and streams

1.1.1 Manly Hydraulics Laboratory – water level

MHL displays some of the coastal and environmental data collected on behalf of the NSW Government. This includes rivers, creeks, streams, estuaries and coastal water, ocean tide, sea surface temperature, and NSW wave data.

1. Go to <https://www.mhl.nsw.gov.au/Data-Level>
2. Locate a station using the map. Select the station marker and then click on “Go to site page >>” under the station name.
3. A plot of the water level for the last 7 days will be shown. If available, other parameters monitored for that station will also be shown.
4. Click on the download icon at the upper-right corner of the plot to save the data in .csv format.



5. To request the data in .csv format for a specific period, select “Data Request” from the top ribbon and fill out the web form.
6. Alternatively, If the station marker cannot be found, go to the home page <https://www.mhl.nsw.gov.au/> and search for the station name or number in the search field or locate the station on the homepage map. (Note: The type of marker a station has does not necessarily represent all the data parameters available for that station.)
7. Select the station name and then click on the “Go to site page” icon at the end of the search field.

Manly Hydraulics Laboratory (MHL) provides specialist and impartial advice relating to coastal and water engineering and water flow assurance, utilising physical and numerical modelling, NATA accredited facilities and extensive data collection programs in water, sewer, stormwater, irrigation, coastal, riverine and environmental systems. MHL is a business unit within the Water Division of the Department of Planning, Industry and Environment (DPIE).

MHL proudly hosts the NSW Modelling and Monitoring knowledge Hub (MaMH) and is a key member of the Engineering Emergency Management Team. For more information click on [Capabilities / Services](#) or visit the [About Us](#) page.

The majority of data presented online by MHL has been collected under the NSW Coastal Data Network Program managed by the Climate Change and Sustainability Division (CCSD) of DPIE.

For more information on coasts, estuaries and floods visit: environment.nsw.gov.au

MHL and CCSD work closely with other agencies, local government and communities across New South Wales to ensure the long-term protection, conservation and restoration of coastal, estuary and floodplain environments by reducing the risks posed by coastal hazards such as extreme tides, sea level rise and floods.

For current warnings and additional water data please visit the Bureau of Meteorology at: www.bom.gov.au.

1.1.2 Bureau of Meteorology – water level (quick view)

This part of the Bureau of Meteorology (BoM) website presents a quick view of the water level at a particular station for the past 4 days. Available stations can be browsed by catchment and they are organized or listed by river.

1. Go to <http://www.bom.gov.au/>

2. Hover the mouse pointer over the “NSW” tab at the top ribbon and then click on “Rainfall & River Conditions”. The next page will show a map with river (flooding) conditions at different stations all over NSW.

A. Searching by map

- A.1. Click on the map to select a region.
- A.2. Search for the station of interest on the map and then click on the station marker to view a plot of the river height or water level for the last 4 days.

Central Coast Rainfall and River Conditions

View the current warnings for New South Wales

-Display on map
 River Conditions 24 Hour Rainfalls
 Since 9am Rainfalls Last 1 Hour Rainfalls
[About Map](#)
 Note: Map contains unchecked data from automatic equipment.
 Please remember to refresh page so the data is up to date.
 Move mouse over station for more data.

LONG JETTY	
Station No	561080
River Height (m)	0.473
Time of Obs	17-04-2019 14:00:00

Latest Observations:

- ▶ River Heights
- ▶ 24 Hour Rainfalls
- ▶ 3 Hour Rainfalls
- ▶ 1 Hour Rainfalls
- ▶ Sydney Radar Loop
- ▶ Newcastle Radar Loop

Zoom to:

- ▶ Northern Rivers
- ▶ Coffs Harbour
- ▶ Mid North Coast
- ▶ Newcastle
- ▶ Central Coast
- ▶ Sydney Basin
- ▶ South Coast
- ▶ North West
- ▶ Central West
- ▶ South West
- ▶ Far West
- ▶ Wimmera Mallee (Vic)

Zoom out to:

- A.3. Click on “Data as Table” below the graph to view the data in table form.

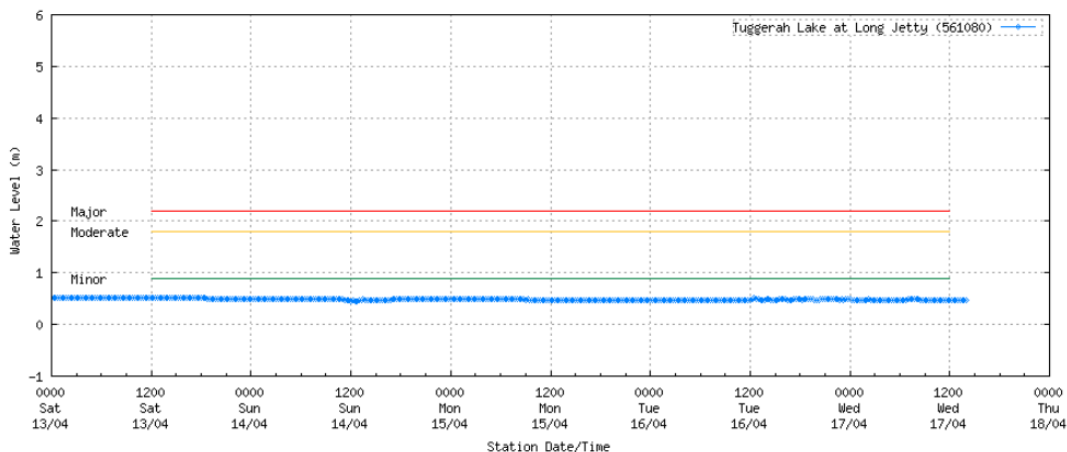
Latest River Heights for Tuggerah Lake at Long Jetty

Issued at 2:46 pm EST Wednesday 17 April 2019

[About river height plots](#) | [About this Plot](#)

Station details: Station Number: 561080 Name: Tuggerah Lake at Long Jetty
Flood levels: Minor: 0.90 Moderate: 1.80 Major: 2.20

Data from the previous 4 days.



Australian Government Bureau of Meteorology

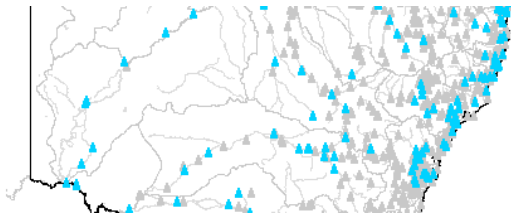
(Generated: 17/04/2019 14:46:05)

[Data as Table](#) | [Previous Station](#) | [Next Station](#) | [Back to Bulletin](#)

B. Searching by catchment

- B.1. You can search for the station of interest on a list of catchments by clicking on the “Rain & River Data” on the right-hand side pane while in map view or by going to the following link:

http://www.bom.gov.au/nsw/flood/rain_river.shtml



Other Links:

- ▶ **Rain & River Data**
- ▶ Forecast Rainfall
- ▶ Recent Rainfall Maps
- ▶ NSW Service Level Specification
- ▶ Flash Flood Advisory Resource (FLARE)
- ▶ Flood FAQ

B.2. Select the catchment below the “Latest River Height Data” section.

New South Wales Rain and River Data

View the current warnings for New South Wales

Latest River Height Data (including plots and tables)

- [Tweed, Brunswick, Richmond, Wilsons, Clarence](#)
- [Bellinger, Nambucca, Macleay, Hastings, Manning, Hunter](#)
- [Wyong, Nepean-Hawkesbury, Georges, Parramatta](#)
- [Shoalhaven, Moruya, Clyde, Tuross, Bega, Pambula, Snowy](#)
- [Macintyre, Gwydir, Namoi, Peel, Castlereagh](#)
- [Macintyre\(QLD\), Dumaresq\(QLD\), Weir\(QLD\), Moonie\(QLD\)](#)
- [Macquarie, Bogan, Lachlan](#)
- [Queanbeyan-Molonglo, Cooma, Murrumbidgee, Murray](#)
- [Culgoa, Warrego, Paroo, Barwon, Darling](#)

• [All NSW & ACT Rivers - Daily River Bulletin](#)

Zoom to:

- ▶ Northern Rivers
- ▶ Coffs Harbour
- ▶ Mid North Coast
- ▶ Newcastle
- ▶ Central Coast
- ▶ Sydney Basin
- ▶ South Coast
- ▶ North West
- ▶ Central West
- ▶ South West
- ▶ Far West
- ▶ Wimmera Mallee (Vic)

B.3. Click on “Plot” or “Table” links at the end of the row of the station of interest to see the river heights data in a graph or table, respectively.

Latest River Heights for the NSW Central Coast

Issued at 3.15pm on Wednesday, 17 April 2019

[About river heights](#) | [About this table](#) | [Flood Warning Centre](#) | [Rain and River Data](#)

[Lake Macquarie](#) | [Wyong - Tuggerah Lake](#) | [Gosford](#) | [Northern Beaches](#) | [Wollondilly River](#) | [Coxs River](#) | [Warragamba Dam](#) | [Nepean River](#) | [Grose River](#) | [Hawkesbury River to Windsor](#) | [South Creek](#) | [Colo River](#) | [Macdonald River to St Albans](#) | [Lower Hawkesbury River](#) | [Parramatta River](#) | [Georges River](#) | [Woronora River](#) | [Cooks River](#)

Station Name	Time/Day	Height	Tendency	Flood Class	Recent Data
Lake Macquarie					
Cockle Ck at Barnsley Vale	2.30pm Wed	0.21	steady		Plot Table
Cockle Ck at Cockle Ck Railway Stn	2.00pm Wed	0.09	steady		Plot Table
Lake Macquarie at Marmong Point	1.53pm Wed	0.09	steady		Plot Table
Lake Macquarie at Belmont	2.15pm Wed	0.05	steady		Plot Table
Stoney Creek at Toronto	3.04pm Wed	0.03	steady		Plot Table
Dora Ck at Cooranbong	2.00pm Wed	0.58	steady		Plot Table
Stockton Ck at Morrisset	2.03pm Wed	0.07	steady		Plot Table
Dora Ck at Kalang Rd	2.04pm Wed	0.07	steady		Plot Table
Lake Macquarie at Swansea Channel	1.37pm Wed	-0.40	steady		Plot Table
Wyong - Tuggerah Lake					
Wyong R at Yarramalong	2.15pm Wed	0.84	steady		Plot Table
Wyong R at Gears	2.32pm Wed	0.20	steady		Plot Table
Wyong R at Gracemere	2.15pm Wed	0.23	steady		Plot Table

1.1.3 Manly Hydraulics Laboratory – water quality

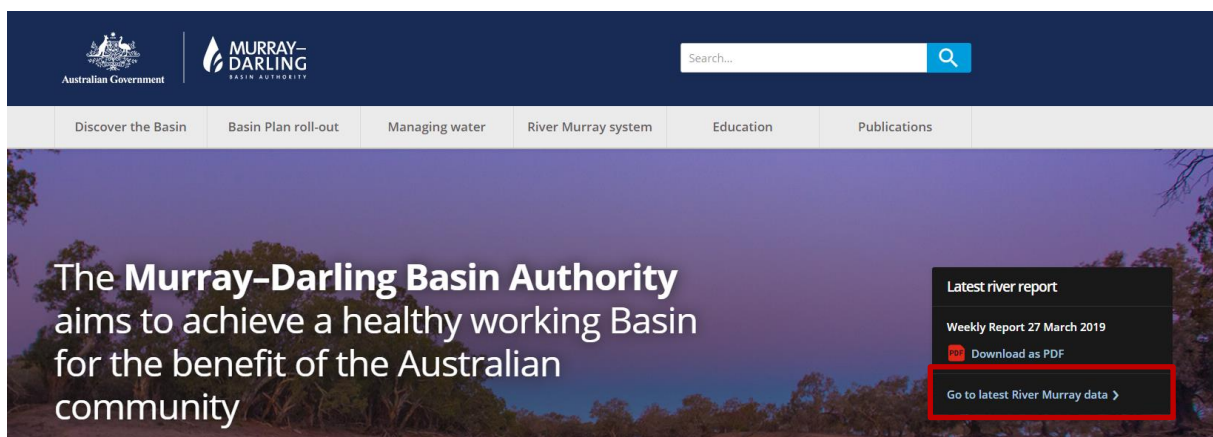
MHL displays some of the coastal and environmental data collected on behalf of the NSW Government. This includes rivers, creeks, streams, estuaries and coastal water, ocean tide, sea surface temperature, and NSW wave data.

1. Go to <https://www.mhl.nsw.gov.au/Data-WQ>
2. Follow steps 2-5 described in [Section 1.1.1](#) of this document.

1.1.4 Murray-Darling Basin Authority – water level, discharge and water quality

The Murray-Darling Basin Authority (MDBA) website provides information on the water level, river flow, water temperature, salinity, dissolved oxygen, water level forecast, flow forecast and salinity forecast of the sites within the Murray-Darling River system.

1. Go to <https://www.mdba.gov.au/>
2. Click on the “Go to latest River Murray data >”



3. Click on a site name within the chart to view a detailed information and historical data of the selected site.

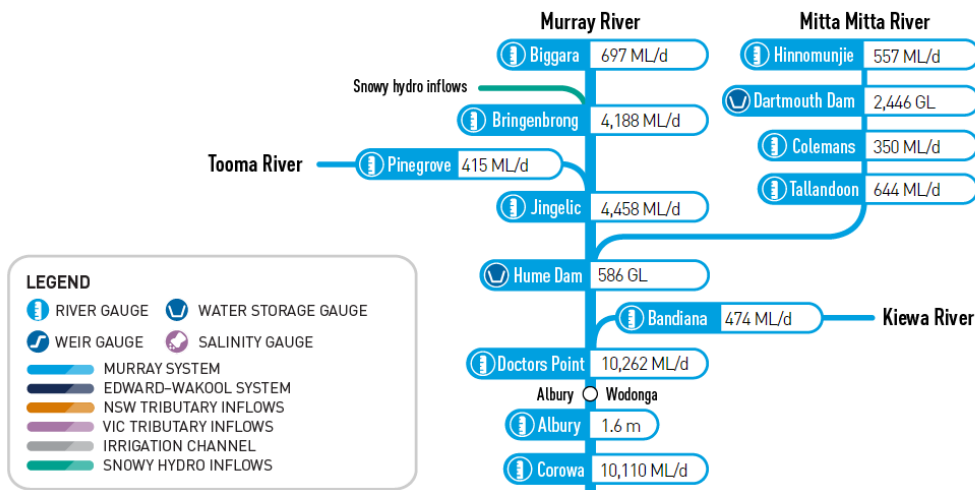
The River Murray system

System view provides a simple overview of water flow rates, release rates and river heights across the River Murray system and its tributaries. In this view we have nominated the most relevant data that is available to show water moving through the system.

Weekly forecasts are available for some sites for storage levels, flows and salinity of the River Murray. Forecasts are updated weekly usually on Wednesdays.

See the [list view](#) for detailed information, including any alerts.

Click on a site name to view detailed information and historical data.



- Alternatively, click on the “List View” tab on the top ribbon to see a list of all the sites and a summary of the data available per site. Click on a site name under the “Location” column or the “Full data” button at the end of the row.

Forecasts are only available for sites displaying the forecast symbol.

Some water levels are actually in metres AHD (Australian Height Datum), click individual sites for more details.

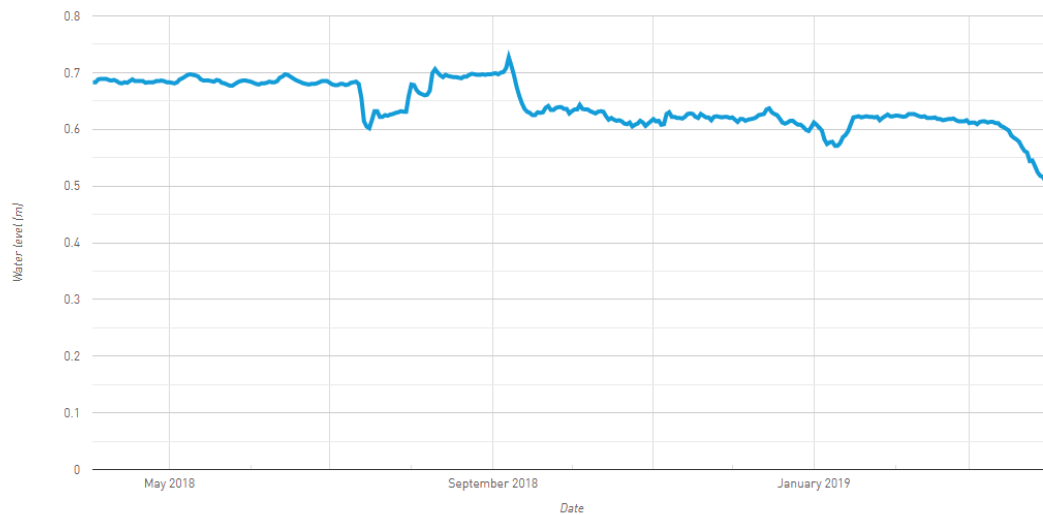
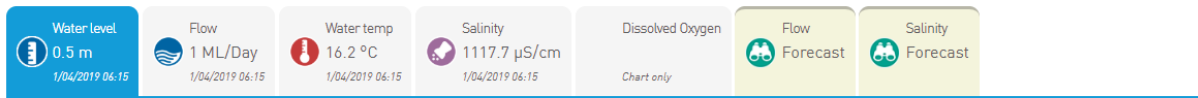
River gauges, storages, and weirs in the Murray–Darling Basin

Type	Location	River	Water level	Flow	Volume	Release	Water temp	Salinity	Rainfall	
RIVER GAUGE	Albury (Union Bridge)	Murray	1.7 m 17/04/2019 9:00	Not measured	Not measured	Not measured	17.9°C 17/04/2019 9:00	58.9 µS/cm 17/04/2019 9:00	Not measured	Full data
RIVER GAUGE	Balranald	Murrumbidgee	0.44 m 17/04/2019 8:45	186 ML/Day 17/04/2019 8:45	Not measured	Not measured	18.4°C 17/04/2019 8:45	160.2 µS/cm 17/04/2019 8:45	Not measured	Full data
RIVER GAUGE	Bandiana	Kiewa	0.79 m 17/04/2019 8:45	241 ML/Day 17/04/2019 8:45	Not measured	Not measured	15.9°C 17/04/2019 8:45	26.7 µS/cm 17/04/2019 8:45	Not measured	Full data

- Click the tabs above the graph to view the plots of the available data parameters for the selected site.
- Click on the “Download historical data” and “Download chart data” buttons below the graph to download the available data in .csv format.

Burtundy Darling

Water resources in the Menindee Lakes are currently critically low. WaterNSW is managing the Menindee Lakes in accordance with the [Lower Darling Annual Operations Plan](#). As part of drought contingency measures, WaterNSW has installed temporary block banks across the lower Darling. Releases from Menindee Lakes are being used to fill pools behind these block banks and this action is resulting in very low flows and potentially inconsistent gauged data at Burtundy.



The MDBA website also gives access to weekly reports that provide updates on operations within and current conditions of the basin. Under the “River Murray system” tab on the top ribbon, select “Weekly reports” and then click on the weekly report link to view or download the document. Other reports are available under the “Publications” tab.

1.1.5 WaterNSW – water level, discharge and water quality

WaterNSW is the custodian of a large network of stations monitoring surface water, groundwater, storage, meteorological, water use, and other water information stations. The other water information includes environmental monitoring program that is collecting information on macroinvertebrates and is used to assess the biological health of Australian rivers.

1. Go to <https://realtimedata.watnsw.com.au/>
2. Expand “Real Time Data – Rivers and Streams” from the left-hand side pane.

help · contact · customise

State Overview
 State Overview

Rivers and Streams
 favourites · search · download sites · find a site
 Real Time Data - Rivers And Streams

Daily River Reports
 Daily River Reports

Dams
 favourites · search · download sites · find a site
 Real Time Data - Major Dams

Groundwater (Telemetered data)
 favourites · search · download sites · find a site
 Real Time Data - Bores

All Groundwater Site details
 search · download sites · find a site
 All Groundwater Map

Meteorology
 favourites · search · download sites · find a site
 Real Time Data - Weather Stations

Hunter Integrated Telemetry System
 Hunter Integrated Telemetry System

bandwidth high low

[glossary and metadata](#)

State Overview
STATE_OVERVIEW
 All data times are Eastern Standard Time

Flows Bores

State overview

3. Locate the station of interest by expanding the list on the left-hand side pane or search for the station on the map. Click on the station name and then select the “Custom Outputs” tab.
4. Select the parameters and period of record required and then press “Get Output” to download a zipped CSV to your PC.

help · contact · customise

State Overview
 State Overview

Rivers and Streams
 favourites · search · download sites · find a site
 Real Time Data - Rivers And Streams

- 201-Tweed River Basin
 - 201001 Oxley @ Eungella
 - 201005 Rous@ Boat Harbour 3
 - 201012 Cobaki Ck @ Cobaki
 - 201015 Tweed R @ D/S Palmer**
 - 201900 Tweed @ Uki
- 202-Brunswick River Basin
- 203-Richmond River Basin
- 204-Clarence River Basin
- 205-Bellinger River Basin
- 206-Macleay River Basin
- 207-Hastings River Basin
- 208-Manning River Basin
- 209-Karuah River Basin
- 210-Hunter River Basin
- 211-Macquarie Tuggerah Lakes Basin
- 212-Hawkesbury River Basin
- 213-Georges River Basin
- 214-Wollongong Coast Basin
- 215-Shoalhaven River Basin
- 216-Clyde River Basin

Rivers And Streams » Real Time Data - Rivers And Streams » 201-Tweed River Basin
Tweed R @ D/S Palmer
 All data times are Eastern Standard Time

Latest Values Details Prepared Outputs **Custom Outputs**

Stream Water Level (Metres) (100.00-100.00) 27/04/2009 to 01/04/2019
 Discharge Rate (Megalitres/Day) (100.00-141.00) 27/04/2009 to 01/04/2019

Period: Custom Output: Download Data Interval: 15 minutes

start date: 00:00_01/01/2019
 hh:mm_dd/mm/yyyy

end date: 00:00_01/04/2019
 hh:mm_dd/mm/yyyy

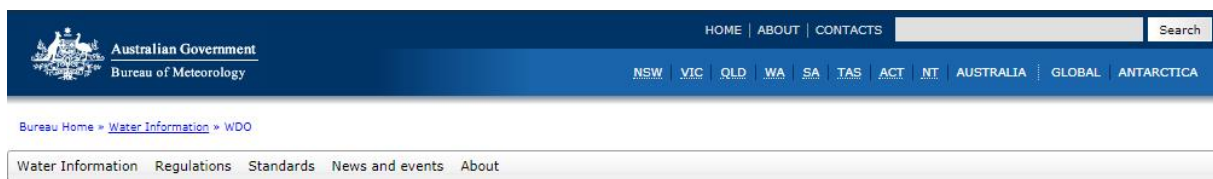
Get Output

1.1.6 Bureau of Meteorology – water level, discharge and water quality

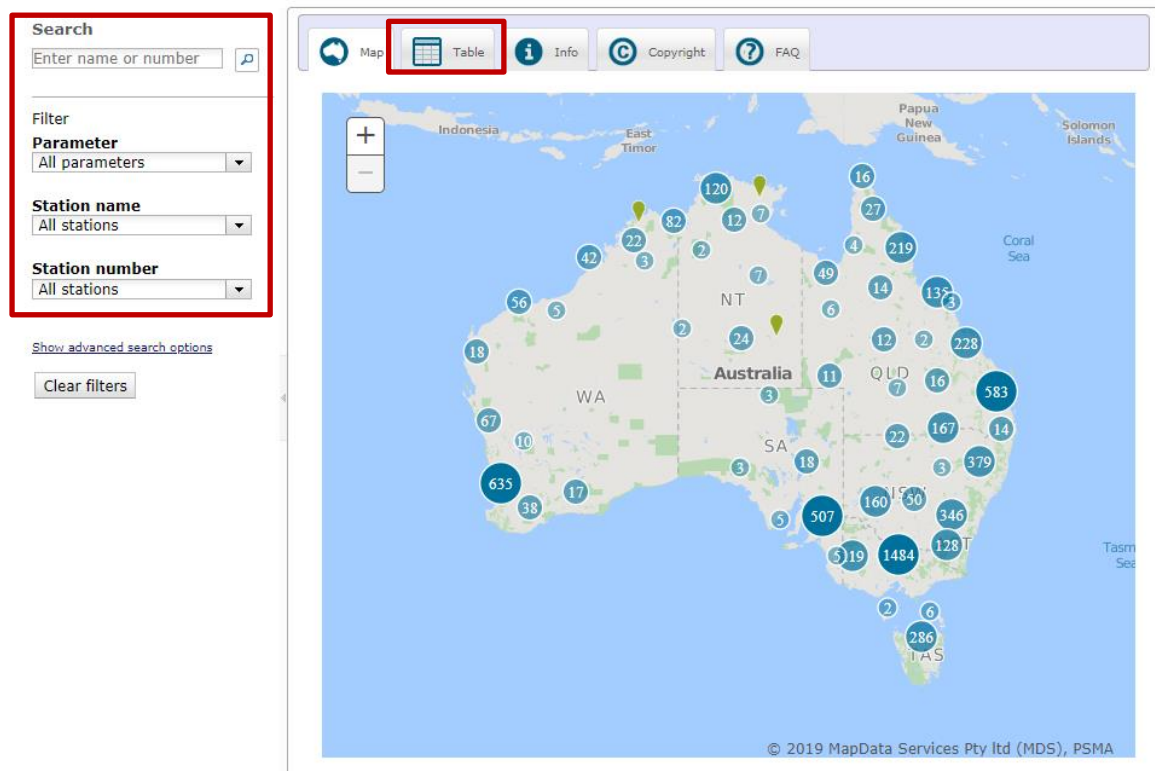
The BoM Water Data Online provides free access to current and historical water information including water level, water discharge, and water quality measurements. The information displayed is supplied by lead water organisations from each State and Territory in Australia.

These organisations are the custodians and licensees of the data. In NSW, the contributors are Central Coast Council, Hunter Water, WaterNSW, DoI Lands and Water, and Snowy Hydro Limited. The data is a combination of validated and provisional data and can be viewed graphically and downloaded. Water Data Online does not display near real time data.

1. Go to <http://www.bom.gov.au/waterdata/>
2. Searching for a station can be done in either of the following ways:
 - zoom in on the map to locate the station of interest;
 - search for the station name or number in the search box;
 - filter the station name on the dropdown box on the left pane;
 - filter the station number on the dropdown box on the left pane;
 - go to the “Table” tab above the map and search for the station name or number.



Water Data Online



3. Click on the station marker or station name.
4. A window will popup showing the available data parameters for the selected station. Select “Data download” tab and click on the “Data download” underneath.
5. Select the parameter and time series.

- Set the period of record required and then select the file format.
- Press “Preview” to check the data and then click on “Download” to download a zipped file of the data to your PC.

1.1.7 Australian River Assessment System – software

Australian River Assessment System (AUSRIVAS) is a prediction system used to assess the physical, chemical, and biological health of Australian rivers. It has two main software, the Physical Assessment for geomorphic, physical and chemical assessment protocols and the Bioassessment for biological assessment protocols.

- Go to <https://ausrivas.ewater.org.au>
- Hover over the “Physical Assessment” tab, then click on “Physical & Chemical” that appears below.

The screenshot shows the AUSRIVAS website interface. At the top left is the AUSRIVAS logo (Australian River Assessment System). A navigation menu includes: Home, Bio Assessment, Physical Assessment (with a sub-menu 'Physical & Chemical' highlighted), Training and Accreditation, Resources, My Models, Contact, and Forum. Below the menu is the title 'AUSRIVAS Geoassessment: Physical & Chemical'. On the left, a menu contains links: Introduction Protocol, Get the reporting software (highlighted), manuals and databases, Help, Links & Further Information, and AUSRIVAS account request. Below this is a login form with fields for Username/Email and Password, a Login button, and instructions: 'Please login using your Toolkit username/email and password. Become a member Forgot your password?'. To the right is a photo of a river with moderate bed erosion, captioned 'River with moderate bed erosion. Photo courtesy of EA & CRCFE'. At the bottom are logos for eWater CRC, Australian Government Department of Sustainability, Environment, Water, Population and Communities, and Australian Government Land & Water Australia.

3. On the left-hand side menu, select “Get the reporting software”.
4. Click the “Ausrivis PhysChem 1.0” link to download and install the software.
5. Click the “Physical & Chemical Reporting software users manual” link for information on using this software and on interpreting results.

The “AUSRIVAS Physical Assessment Protocol” link displays a standardised protocol for the assessment of physical condition of rivers and streams, and the “AUSRIVAS Physical and Chemical Assessment Module Final Report” link displays further information on the relationship between the abovementioned protocol and the reporting software.

AUSRIVAS
Australian River Assessment System

Home ▾ Bio Assessment ▾ Physical Assessment ▾ Training and Accreditation ▾ Resources My Models Contact ▾ Forum

Physical & Chemical Geoassessment: Get the Reporting Software

Getting started with AUSRIVAS Physical & Chemical Reporting software is a quick four step process. The links below take you to where you need to go at each step

Steps to getting and using the software

Step	Go to
1. Download the Physical & Chemical Reporting software	Ausrivas PhysChem 1.0
2. Install the software	
3. Consult the software documentation to find out how to use the AUSRIVAS Physical & Chemical Reporting software	Software user manual Recent changes to the software

Read the manuals!

You should refer to the [Physical & Chemical Reporting software users manual](#) for information on using this software and on interpreting your results.

You can also refer to the [AUSRIVAS Physical Assessment Protocol](#), a standardised protocol for the assessment of stream physical condition, and the [AUSRIVAS Physical and Chemical Assessment Module Final Report](#) for further information on the relationship between the abovementioned protocol and this software.

Developer resources

You can also access [developer resources](#) such as the latest developer release and program change information.

Manuals and datasheets for the Physical & Chemical Reporting software can be found by selecting the “Manuals and Datasheets” link on the left-hand side menu.

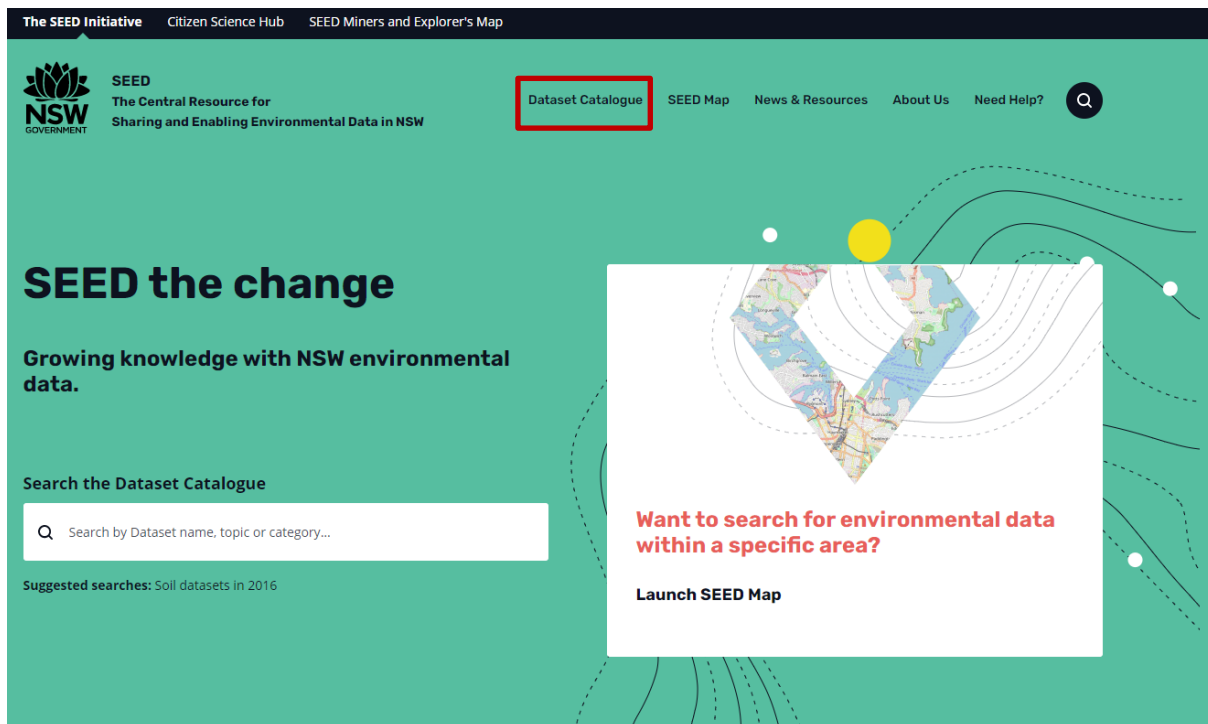
Alternatively, select the “Resources” tab at the top to browse all the software, manuals, and datasheets available for download.

Macroinvertebrate Predictive Modelling is found in the “Bio Assessment” tab.

1.1.8 Sharing and Enabling Environmental Data – various datasets

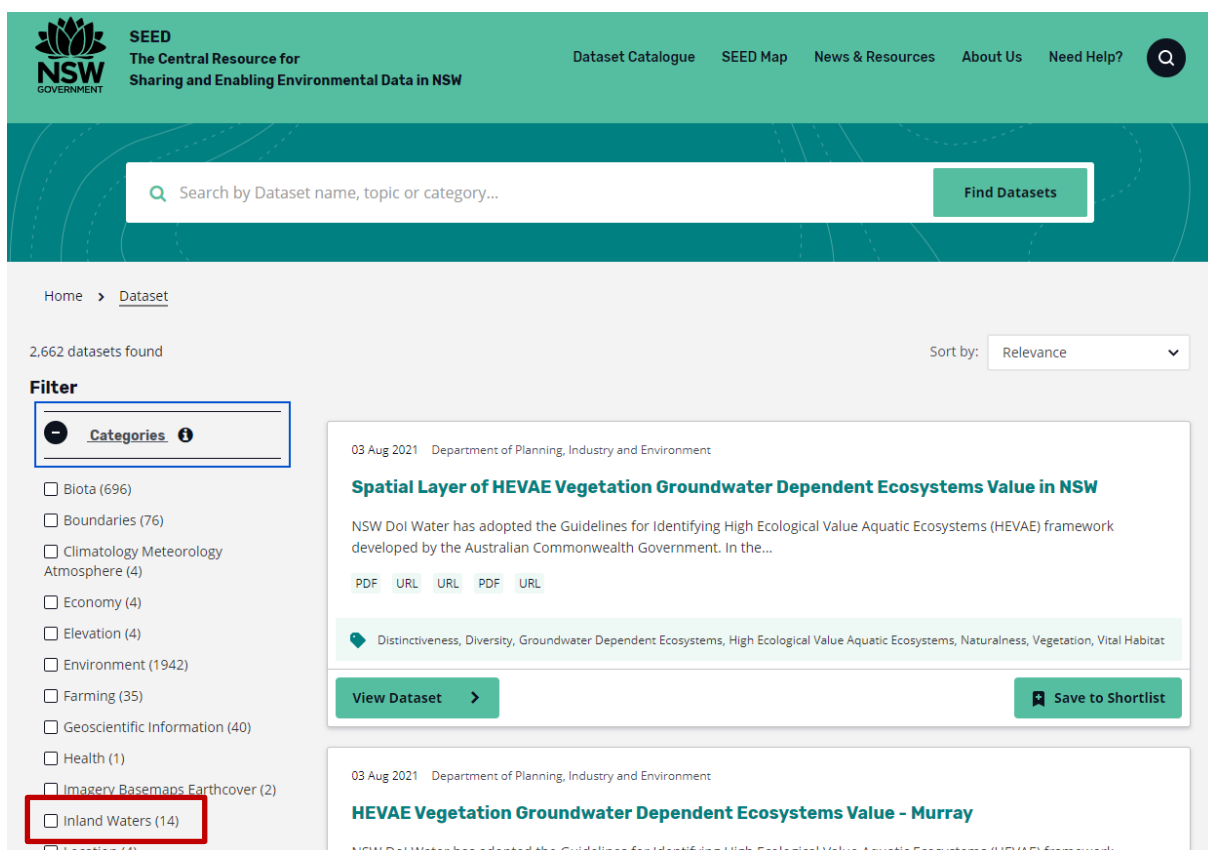
The Sharing and Enabling Environmental Data (SEED) website is a portal that has been developed with and for the community of NSW. SEED provides publicly accessible data or links on environmental data within NSW. Currently, it incorporates 2,400-plus land, water and air datasets from agencies responsible for environment, planning, resources and energy, primary industries, industry, water and spatial services. Open data from SEED automatically uploads to Data.NSW.

1. Go to <https://www.seed.nsw.gov.au/>
2. Select the “Dataset Catalogue” tab on the top ribbon.



3. Under “Categories” on the left-hand side pane, select “Inland Waters”.

To search for more datasets, type in a topic in the search box instead of selecting a category. Click the “Find Datasets” button and wait for the results before applying any filters.



- Click on the dataset title or the “View Dataset” button.
- Download the dataset, metadata and other documents under “Dataset Packages” and/or “Documents”, if available.

The screenshot shows the SEED (The Central Resource for Sharing and Enabling Environmental Data in NSW) website. The page is for the dataset 'Water Quality - Murray Darling Basin' from the Department of Primary Industries - Water (DPI-Water). The page features a green header with the SEED logo and navigation links. Below the header, there is a breadcrumb trail: Home > Dataset > Organisations > Department of Primary... > Water Quality - Murray... The main content area has a dark green background with the dataset title 'Water Quality - Murray Darling Basin' and a 'Subscribe' button. Below this, there is a description of the data: 'Water quality data collected monthly from 115 sites in the Murray-Darling Basin in NSW, between 2007 and 2012. Parameters include: Turbidity -lab; Turbidity -field; Total phosphorus; Total nitrogen; pH -field; Dissolved oxygen -field percent saturation'. A sidebar on the right contains buttons for 'Save to Shortlist', 'Export metadata', and 'Contact Data Broker', along with a 'Tags' section listing 'Quality, Water' and a 'Top 10 Datasets This Month' list. At the bottom of the main content area, there are sections for 'Data Quality Statement', 'Dataset Packages' (highlighted with a red box), 'Documents', and 'Metadata Summary' with a link to 'what is metadata?' and an 'Export metadata' button.

- You can click on the “Show on SEED Map” button under “Map Viewer” to see the dataset on SEED’s built-in map. Different types of data can be viewed on SEED’s map to have a better look at the environmental conditions in a location.

The screenshot shows the SEED (The Central Resource for Sharing and Enabling Environmental Data in NSW) website. The header includes the NSW Government logo and navigation links: Dataset Catalogue, SEED Map, News & Resources, About Us, and Need Help?. The breadcrumb trail is: Home > Dataset > Organisations > Department of Primary... > Regulated Rivers.

The main content area features a teal header with the dataset name 'Regulated Rivers' and a 'Subscribe' button. Below this, a description states: 'Polyline features defining those sections of rivers in New South Wales that are gazetted as Regulated Rivers under the NSW Water Management Act 2000'.

On the left side, there are three expandable sections: 'Data Quality Statement', 'Dataset Web Services', and 'Map Viewer'. The 'Map Viewer' section is highlighted with a red box and contains a 'Show on SEED Web Map' button with the text 'Display dataset on SEED's map'.

On the right side, there are several utility buttons: 'Save to Shortlist', 'Export metadata', 'Contact Data Broker', and 'Show on SEED Map'. Below these is a map of New South Wales with a red box highlighting the area around Mt. Kosciuszko (2228m). The map data is attributed to OpenStreetMap contributors and Stamen Design (CC BY 3.0).

1.1.9 NSW Government (Data.NSW) – various datasets

Data.NSW is the NSW Government's open data catalogue, bringing together datasets and data portals from NSW Government agencies and departments into one searchable website. Each dataset is licenced with a specific licence that describes how the data can be used.

1. Go to <https://data.nsw.gov.au/>
2. Click on the datasets link under the search box.



Find open data



An open portal to **15243 datasets** throughout NSW State Government

3. Search a dataset by using the search box and apply filters based on the filtering options to narrow down the selection of data records.



Search for data



Any Organisation

Any Location

Any Format

Any Date

RESULTS (15243)

NSW Property

Spatial Services (DFS1)

NSW PropertyPlease NoteWGS 84 = GDA94 serviceThis dataset has a spatial reference of [WGS 84 = GDA94] and can NOT be easily consumed into GDA2020 ...

Dataset Updated 21/07/2021 | Linked Data Rating: ★★☆☆☆ | ESRI MAPSERVER / WMS |

4. Click on the dataset title.

Department Of Planning, Industry And Environment
STE: New South Wales
Any Format
Any Date
Clear All

RESULTS WITH 2 FILTERS (232)

Environmental Planning Instrument - Drinking Water Catchment

Department of Planning, Industry and Environment

This Spatial dataset shows land that has been identified as the Drinking Water Catchment. Development in the Drinking water catchment land must ...

Dataset Updated 09/12/2019 | Linked Data Rating: ★★☆☆☆ | PDF / WMS / ESRI MAPSERVER / WFS / PLAIN |

NSW Estuary Water Quality Data Compilation: 2007 - 2020

Department of Planning, Industry and Environment

Estuary water quality data has been collected by the Estuaries and Catchments Team of the Environment, Energy and Science Group in the Department of ...

Dataset Updated 27/08/2020 | Linked Data Rating: ★★☆☆☆ | PDF / CSV |

5. Download the dataset and other documents under “Files and APIs”.

1.1.10 Manly Hydraulics Laboratory – various publications

The Manly Hydraulics Laboratory publications library is a database of all the reports published by MHL since 1946. All reports classified as *public* can be downloaded from the library via a link sent to email. All reports classified as *client consent* can be requested from MHL, and MHL will seek approval from the client.

1. Go to <https://www.mhlservices.net/apps/library/search.php>
2. Search by report number, AWACS report number, keyword, author or client etc.

- Click on the pdf icon to request a link to be sent to email or make a request for a *client consent* report. N.B. Check junk mail if the email does not arrive within an hour of submission.







Manly
Hydraulics
Laboratory

MHL Home
Library

MHL Library

KEY: Publicly Available Release Is Subject To Client Consent

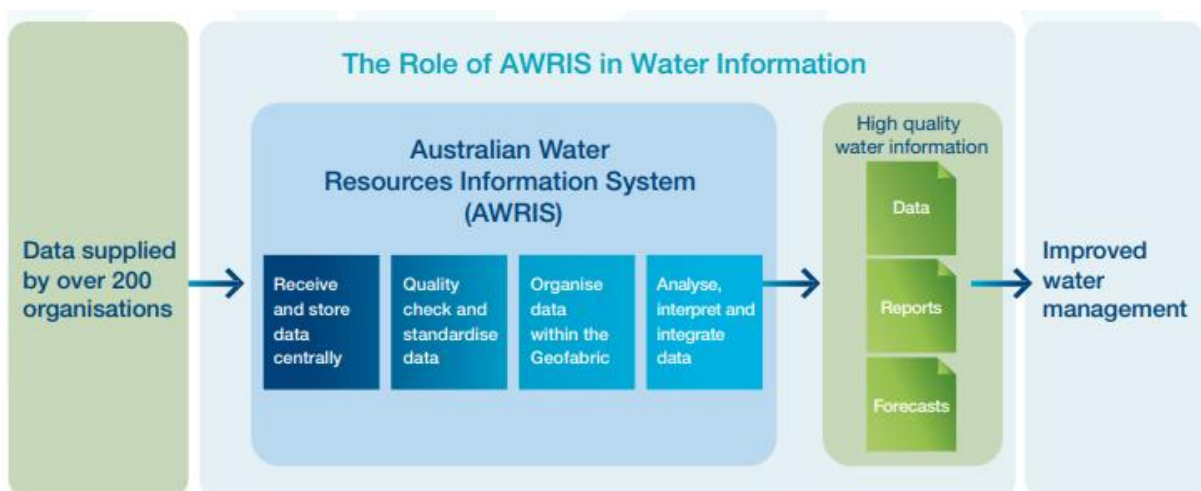
MHL Report Number	AWACS Report Number	Title	Author	Client	Date Created	Link
469		HAWKESBURY/COLO RIVERS: TIDAL DATA '78	L Maule	Rivers & Ports	1987-03-31	
866		Ploom M2 Ecological Modelling and Nutrient Pathways	D Van Senden	DAL LORD & ASSOCIATES	1997-05-14	
1080		Ecological Monitoring for the Coffs/Clarence Regional Water Supply Scheme - Spring 2000	D Van Senden	THE ECOLOGY LAB : M LINCOLN-SMITH	2000-10-10	
10093	90/24	Forster Keys Canal Estate Hydraulics & Ecology - An Overview	J R Wilson, J H Laxton, J D Duell, D R Cox	Great Lakes Shire Council	1990-12-01	

1.1.11 Australian Water Resources Information System – online information system

The Australian Water Resources Information System (AWRIS) is an online information system made by the Bureau of Meteorology that can receive, collate, store, quality check, standardise, organise, analyse and interpret water data supplied by different organisations to deliver high quality water information.

The AWRIS website can be accessed through this link:

<http://www.bom.gov.au/water/about/wip/awris.shtml>



Water information within the AWRIS are presented in a spatial context through the Australian Hydrological Geospatial Fabric (Geofabric).

1.1.12 Australian Hydrological Geospatial Fabric (Geofabric) – spatial dataset

Geofabric is a specialised Geographic Information System (GIS) that is a project by the Bureau of Meteorology. It provides access to a digital database of surface and groundwater features and it can show the spatial relationship between various hydrological features (e.g. rivers, water bodies, aquifers and monitoring points).

1. Go to <http://www.bom.gov.au/water/geofabric/index.shtml>
2. Under the “Geofabric” menu box, select “Get Data”.

The screenshot shows the Australian Hydrological Geospatial Fabric (Geofabric) website. The header includes the Australian Government logo and navigation links for HOME, ABOUT, MEDIA, CONTACTS, and a search bar. Below the header, there are regional links for NSW, VIC, QLD, WA, SA, TAS, ACT, NT, AUSTRALIA, GLOBAL, and ANTARCTICA. The main navigation bar includes 'Water Information', 'Regulations', 'Standards', 'News and events', and 'About'. Under 'Water Information', there are sub-links for 'Water data', 'Water status', and 'Water forecasts'. The main content area is titled 'Australian Hydrological Geospatial Fabric (Geofabric)' and includes a description: 'The Australian Hydrological Geospatial Fabric (Geofabric) is a specialised Geographic Information System (GIS). It registers the spatial relationships between important hydrological features such as rivers, water bodies, aquifers and monitoring points.' Below the text is a video player with the title 'Geofabric: a digital street directory o...'. To the right of the video is a 'Geofabric' menu with the following items: 'About Geofabric', 'Get data' (highlighted with a red box), 'Documentation', 'Tutorials', 'Drainage Divisions and River Regions', 'Glossary', 'Partnerships', and 'User feedback'. Further right is a 'Water links' section with links to 'Water Act 2007', 'Water Regulations 2008', 'Water market information', 'Water Dictionary', 'Publications', 'News', and 'Contact Us'. At the bottom right, there are three buttons: 'Subscribe to e-news', 'Watch water videos', and 'Download Water Storage App'.

3. Under “Data formats”, click on the “Download the Geofabric data” link to be redirected to the Geofabric FTP directory.

Get data

To use the Geofabric please download or access the data.

Data formats

The Geofabric is available in an [Esri](#) File Geodatabase format.

Systems must be compatible with [Esri](#) ArcGIS 9.3 or above.

[Download the Geofabric data](#) from the Geofabric FTP site. Nationally available version 2 products are available under the base level Geofabric ftp directory. Version 3 products, including 4 drainage divisions and a National V3.0.5 Beta product can be found under the [version3](#) subfolder.

For those users who do not have access to Esri's ArcGIS, the Geofabric can be supplied as ESRI Shapefiles on request by emailing ahgf@bom.gov.au.

Web services

Version 2 Geofabric is available as Web Map Services (WMS) and Web Feature Services (WFS). [Access the Web Services](#).

The Geofabric [Web Services User Guide \(1.4Mb\)](#) explains how to connect to the Geofabric.

Sample toolset

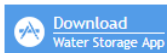
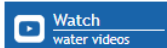
A sample toolset has been developed to perform the common hydrological task of creating catchments for a set of user defined points using the Geofabric with ESRI ArcGIS Desktop. Download the Sample toolset from the [Geofabric FTP site](#). The [Sample toolset tutorial \(4.2Mb\)](#) provides instructions on how to use the standard workflow tools in the toolset.

Geofabric

- About Geofabric
- **Get data**
- Documentation
- Tutorials
- Drainage Divisions and River Regions
- Glossary
- Partnerships
- User feedback

Water links

- [Water Act 2007](#)
- [Water Regulations 2008](#)
- [Water market information](#)
- [Water Dictionary](#)
- [Publications](#)
- [News](#)
- [Contact Us](#)



4. Click on the links to download a zipped file of the dataset.

Version 2 products or datasets are nationally available on the Geofabric ftp directory page or base level. Version 3 products can be found under the “version3” subfolder.

Index of /anon/home/geofabric/

[\[parent directory\]](#)

Name	Size	Date Modified
GW_Cartography_GDB_V2_1_1.zip	591 MB	8/20/14, 10:00:00 AM
Geofabric_Metadata_GDB_V2_1_1.zip	74.1 kB	8/20/14, 10:00:00 AM
Geofabric_Sample_Toolset_v1_6_1.zip	76.6 MB	4/30/15, 10:00:00 AM
Geofabric_V2_1_1_FTP_README.txt	5.7 kB	6/30/15, 10:00:00 AM
Geofabric_V2_1_1_PRODUCT_README.txt	16.7 kB	8/20/14, 10:00:00 AM
HR_Catchments_GDB_V2_1_1.zip	9.2 MB	8/20/14, 10:00:00 AM
HR_Regions_GDB_V2_1_1.zip	1.2 MB	8/20/14, 10:00:00 AM
Local Disk (C) - Shortcut.lnk	458 B	1/25/19, 7:07:00 PM
NetworkGhostNode_BetaMonitoringPoint_V2_1_1.zip	729 kB	11/3/14, 11:00:00 AM
SH_Cartography_GDB_V2_1_1.zip	398 MB	8/20/14, 10:00:00 AM
SH_Catchments_GDB_V2_1_1.zip	151 MB	8/20/14, 10:00:00 AM
SH_Network_GDB_V2_1_1.zip	356 MB	11/3/14, 11:00:00 AM
version3/		1/25/19, 7:29:00 PM

The available spatial datasets are briefly described in the “About Geofabric” page, link under the “Geofabric” menu box.

About the Geofabric

The enduring nature of the Geofabric is based on a set of contracted nodes (points) which represent important hydrological features in the landscape.

These points have a permanent identifier included in all versions of the Geofabric, and provide a persistent framework through space and time.

A subset of the contracted nodes is used to create a simplified node-link network with associated contracted catchments.

[Our Information Sheet offers an overview of the Geofabric.\(312Kb\)](#) .

Phase 2 is available as a National dataset based on 1:250,000 scale mapped features and the 9 second digital elevation model (DEM) and comprises the following 6 products:


- 1. Geofabric Surface Cartography**
Cartographic representation of surface hydrological features
- 2. Geofabric Surface Network**
Network representation of hydrological features
- 3. Geofabric Surface Catchments**
Catchment boundaries derived from the 9 second Digital Elevation Model
- 4. Geofabric Groundwater Cartography**
Cartographic representation of groundwater hydrology features
- 5. Geofabric Hydrology Reporting Catchments**
Contracted nodes, contracted catchments and node-link network
- 6. Geofabric Hydrology Reporting Regions**
Reporting regions based on aggregations of contracted catchments.


Geofabric


- **About Geofabric**
- Get data
- Documentation
- Tutorials
- Drainage Divisions and River Regions
- Glossary
- Partnerships
- User feedback

Water links

-  [Water Act 2007](#)
-  [Water Regulations 2008](#)
-  [Water market information](#)
-  [Water Dictionary](#)
-  [Publications](#)
-  [News](#)
-  [Contact Us](#)

 [Subscribe to e-news](#)

 [Watch water videos](#)

 [Download Water Storage App](#)

The Version 2 products are also available as web map services and web feature services can be viewed via the National Environmental Information Infrastructure (NEII) viewer.

Go to the “Get Data” page and click on the “Access the Web Services” link under the “Web Services” section.

The “Documentation” page, link under the “Geofabric” menu box, contains product guides for both version 2 and version 3 Geofabric product suites.

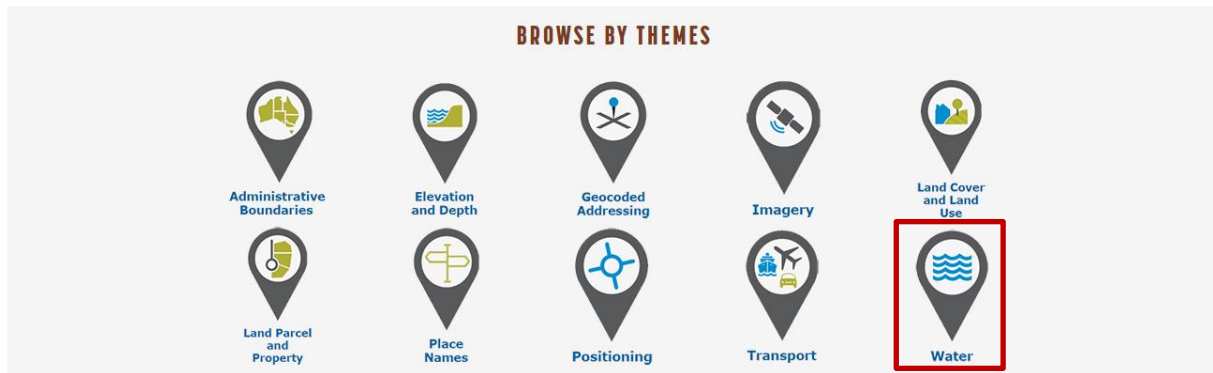
The “Tutorials” page, link under the “Geofabric” menu box, contains various tutorials on how to use the Geofabric products.

1.1.13 Foundation Spatial Data Framework – spatial datasets

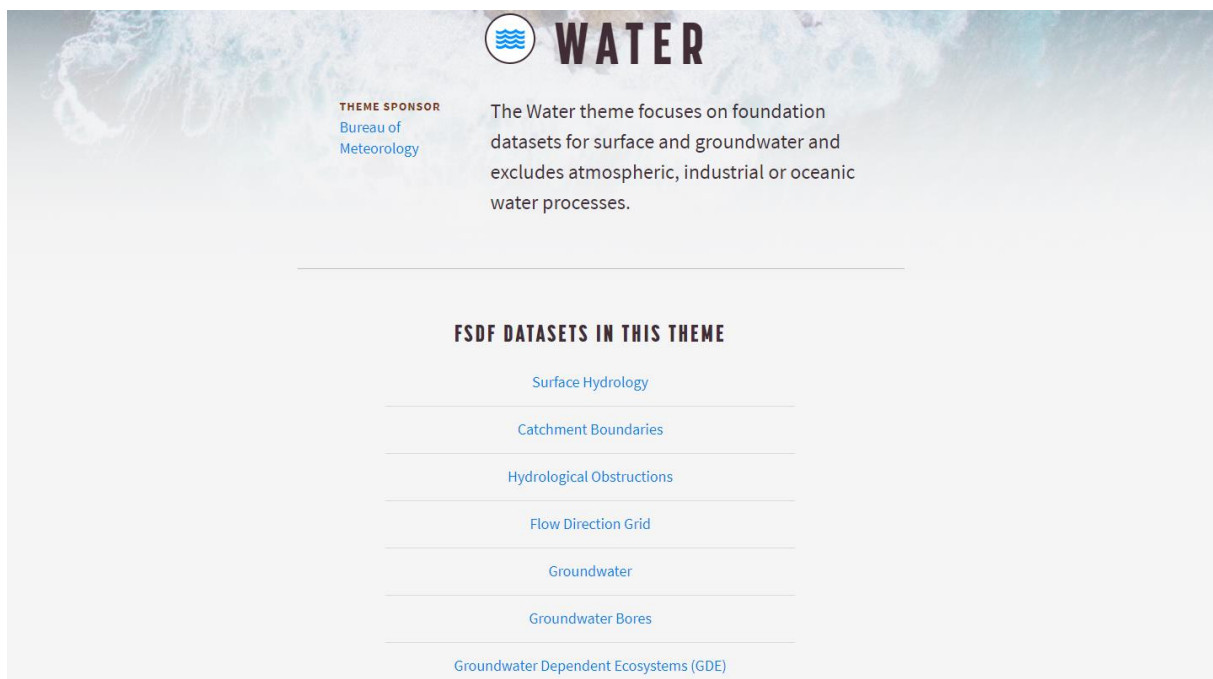
The Foundation Spatial Data Framework provides a common reference for the assembly and maintenance of Australian and New Zealand foundation level spatial data in order to serve the widest possible variety of users. It delivers open, accessible, affordable and usable national coverage foundation spatial data.

1. Go to <http://fsdf.org.au/>
2. Scroll down and click on the “Water” icon.





3. Click on one of the datasets under the Water theme.



4. Click on one of the links under the "Input Datasets" on the left to see the metadata address of a specific dataset.
5. Click on one of the links under the "Output Products" on the right.
6. Click on the product link to download the dataset or be redirected to another URL.

INPUT DATASETS
NATIONAL DATASET
OUTPUT PRODUCTS

ACT 2 >

COMMONWEALTH 6 >

NSW 7 >

NT 3 >

QLD 6 >

SA 14 >

TAS 4 >

VIC 6 >

WA 4 >

NATIONAL SURFACE HYDROLOGY

THEME
Water

JURISDICTION
Commonwealth

CUSTODIAN
Geoscience
Australia

The National Surface Hydrology dataset is an aggregation of each of the state and territories surface hydrology into a single coverage for all of Australia.

This dataset provides a set of related feature classes to be used as the basis for the production of consistent hydrological information.

Australian Hydrological Geospatial Fabric (Geofabric)

Hydrology Surface Cartography

Hydrology Surface Network

National Surface Hydrology - 250K

Surface Hydrology database

Surface Hydrology Lines (Regional)

Water Observations from Space

Digital Topographic Mapping Data

1.1.14 OpenGov NSW – various publications

OpenGov is an online repository for NSW Government publications. It contains annual reports, strategic plans, guides, policy documents, and open access information released under the Government Information (Public Access) Act 2009 (GIPA Act), which has been published by NSW Government agencies.

1. Go to <https://www.opengov.nsw.gov.au>

The screenshot shows the OpenGov NSW website interface. At the top, there are navigation links for Data NSW, NSW Spatial Data Catalogue, NSW State Archives, and Information and Privacy Commission NSW. The main header includes the NSW Government logo, 'OpenGov NSW', and navigation links for Search, About, FAQs, Contact, and Agency Login. Below the header, a search bar displays '6177 publications' and a search filter dropdown menu with options for Agency, Publication type, Published after, and Published before. The search bar contains the text 'Enter what you are looking for' and a 'Search' button. Below the search bar, a large blue banner reads 'Welcome to OpenGov NSW' and provides information about the site's purpose. Below the banner, there are two columns of results: 'Recently Published' and 'Popular'. The 'Recently Published' column shows two entries for 'Campbelltown City Council Meeting Minutes' with their respective dates and agency names. The 'Popular' column shows 'NSW Police Force Annual Report 2014-15' with its date and agency name. At the bottom of the results, there are navigation arrows.

2. Search for a publication by typing a topic in the search box and then click “Search”. Once results are found, you can apply filters based on the filtering options on the left-

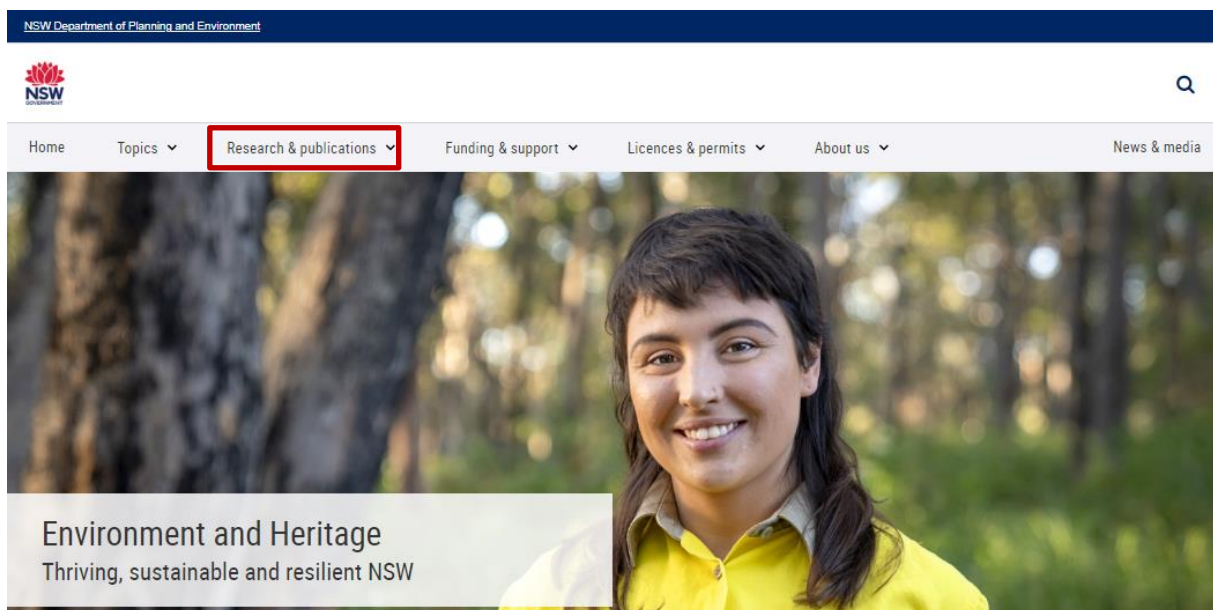
hand side to narrow down the selection of data records.

3. Click on the publication title to see the publication information.
4. Click on the “Download” button to download the publication.

1.1.15 DPE Environment and Heritage Group – various publications

DPE is the custodian of a number of surface water, urban water and meteorological monitoring stations. These stations include the water quality monitoring program run by DPE Beachwatch. This DPE webpage provides reports, research and publications on water and environmental information. The webpage also provides a link to the NSW Government’s Sharing and Enabling Environmental Data (SEED) portal.

1. Go to <https://www.environment.nsw.gov.au/>
2. Hover the mouse pointer over the “Research & Publications” tab at the top ribbon and then select “Publications”



3. Search for a publication by typing a topic in the search box and then click on the search icon. Once results are found, you can apply filters based on the filtering options on the left-hand side to narrow down the selection of data records.

Search publications

Filter

- Topics
- Date
- Regions
- Publication

Update

Clear all filters

Show all 3,312 results

Sort By Publication date (newest first)

	<h4>New England National Park, Baalijin Nature Reserve and Jobs Mountain Nature Reserve Plan of Management</h4> <p>28 Jul 2021</p> <p>Publication, Plan of management</p> <p>ISBN 978-1-922672-09-4</p> <p>PDF 3MB</p> <p>Download More info</p>
	<h4>Yarriabini National Park Plan of Management</h4> <p>28 Jul 2021</p> <p>Publication, Plan of management</p> <p>Yarriabini National Park covers 2192 hectares of land and is located on the mid-north coast of New South Wales, about 10 kilometres south of Macksville between the villages of Stuarts Point, Scotts Head and Warrell Creek.</p>

4. Click on the publication title to see the publication information.
5. Click on the “Download” button to download the publication.

1.1.16 DPE and NSW State Emergency Service – flood data portal

The NSW Flood Data Portal provides access to various datasets and reports from flood projects under the current NSW Floodplain Management Program.

1. Go to <https://flooddata.ses.nsw.gov.au/>
2. Search for a flood project using the search box or the map.

Search for a Flood Project on the NSW Flood Data Portal

Q

Popular Tags: flood study hydraulic model hydrologic model

NSW Flood Data Portal Statistics

442

Flood Projects

143

Organisations

119

Datasets

38

Datasets (public)

Search Spatially for a Flood Project



The NSW Flood Data Portal is a joint partnership

- Alternatively, click on one of the tabs at the top to browse by “Flood Projects”, “Datasets”, or “Organisations”.

[HOME](#)
[FLOOD PROJECTS](#)
[DATASETS](#)
[ORGANISATIONS](#)
[ABOUT](#)
[HELP](#)


[Home](#) / [Flood Projects](#)

What are Flood Projects?

Flood Projects are studies and/or plans which have been developed as a part of the Floodplain Risk Management Process, to determine flood affectation and its effects, over a defined study area.

Location

Define search extent



Organisations

Central Coast Council (96)

Search Flood Projects... GO

442 Flood Projects found

Order by: Relevance v

Flood Project

Floodplain Risk Management Study and Plan

Murwillumbah CBD Levee & Drainage Study

Completed Publication date: 22/08/2018

A study to better define flooding and drainage behaviour within the CBD associated with local catchment runoff as well as levee overtopping. A key objective of the study was to...

Flood Project

Guidance, Tools and Resources

Revised 2016 Design Rainfalls Investigations into the need for and Derivation...

Completed Publication date: 26/07/2018

In 2016, a revision of Australian Rainfall and Runoff was released with updated IFD design rainfalls. The IFDs were derived using more data and modern methods than previous...

Flood Project

Flood study

- In the “Flood Projects” and “Datasets” tabs, filtering options found on the left-hand side can be applied to narrow down the selection of projects or datasets.

© Crown 2022


MHL2655 – 35
Classification: Public

5. Select the project or dataset title.
6. Download the data and resources by clicking on either the file format icon or the download button.

Murwillumbah CBD Levee & Drainage Study

Followers
1

Organisation



Tweed Shire Council
Tweed Shire Council, the largest Council on the north coast of New South Wales, was declared on 1 January 1947 following the amalgamation of the municipality of Murwillumbah and... [read more](#)

FLOODPLAIN RISK MANAGEMENT STUDY AND PLAN

Murwillumbah CBD Levee & Drainage Study

A study to better define flooding and drainage behaviour within the CBD associated with local catchment runoff as well as levee overtopping. A key objective of the study was to also identify the merits of implementing a range of potential measures to assist in better managing the flood risk for those sections of the town contained behind the levee system.

Datasets

Report PDFs - all volumes

Final

Tweed Valley Floodplain Risk Management Study - Report and Figures

Publication date: 22/08/2018


PDF copies of final report and figures

.pdf
.zip

Tweed Valley Floodplain Risk Management Study - Report and Figures

Followers
0

Organisation



Tweed Shire Council
Tweed Shire Council, the largest Council on the north coast of New South Wales, was declared on 1 January 1947 following the amalgamation of the municipality of Murwillumbah and... [read more](#)

Social

Dataset

Murwillumbah CBD Levee & Drainage Study




Report PDFs - all volumes

Tweed Valley Floodplain Risk Management Study - Report and Figures

Completed Publication date: 22/08/2018

PDF copies of final report and figures

Data and Resources

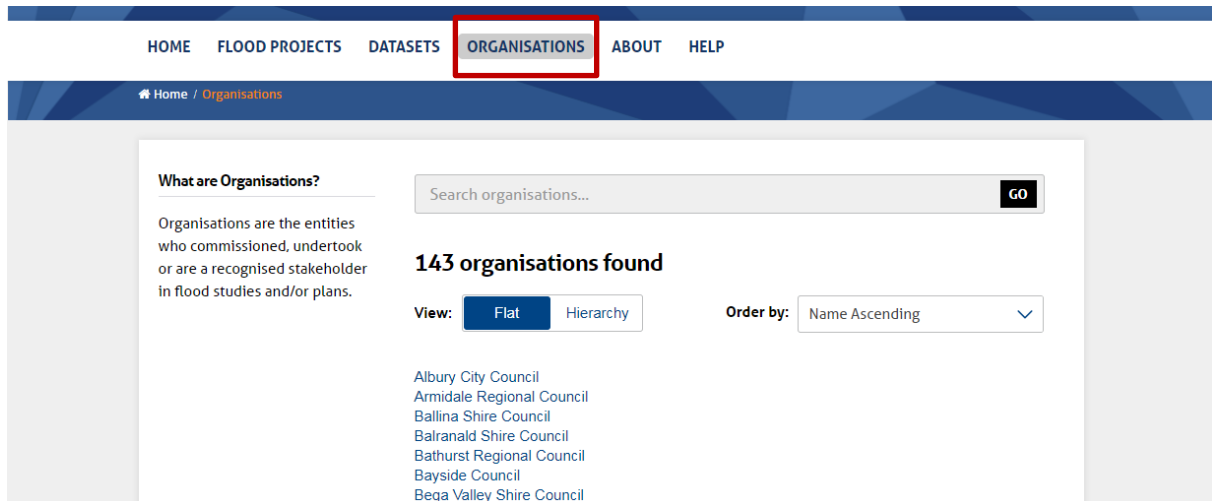
 Murwillumbah Levee & ... (149.2 MB)	<div style="border: 2px solid red; padding: 5px; display: inline-block;"> More info Download </div>
 Murwillumbah Levee & ... (25.3 MB)	<div style="border: 2px solid red; padding: 5px; display: inline-block;"> More info Download </div>
 Murwillumbah Levee & ... (180.1 MB)	<div style="border: 2px solid red; padding: 5px; display: inline-block;"> More info Download </div>

CBD
Drainage
Levee
Murwillumbah

Additional Information

Field	Value
Title	Tweed Valley Floodplain Risk Management Study -

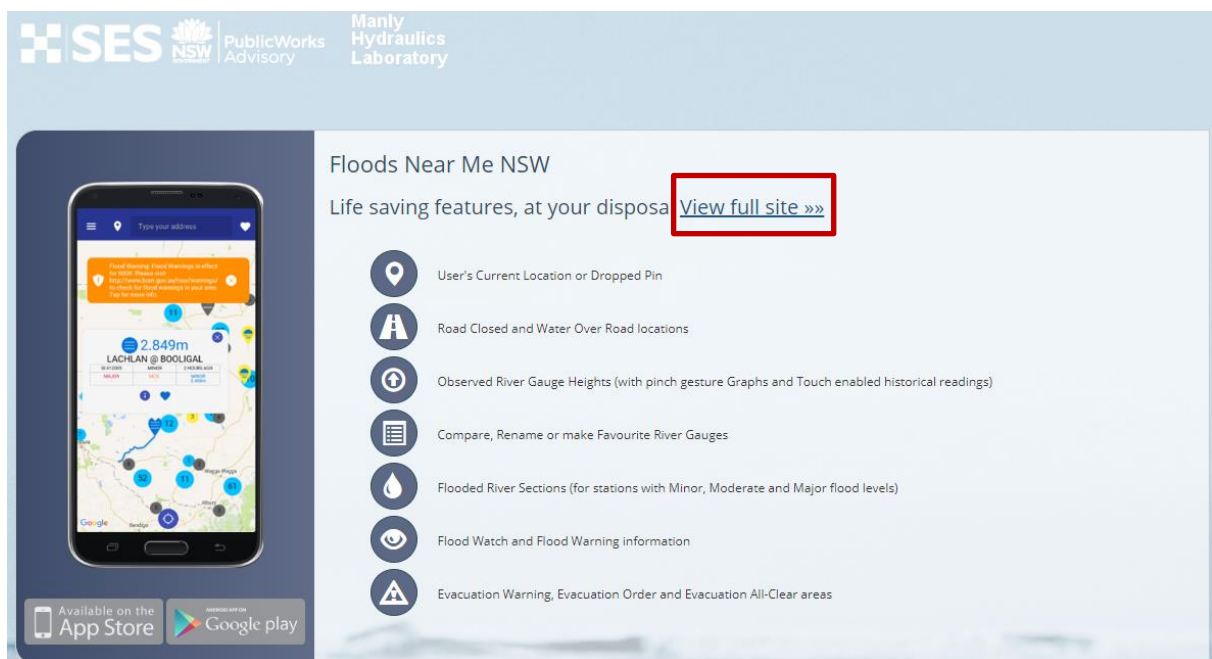
7. In the “Organisations” tab, select the organisation name to see all the projects and datasets under that organisation.



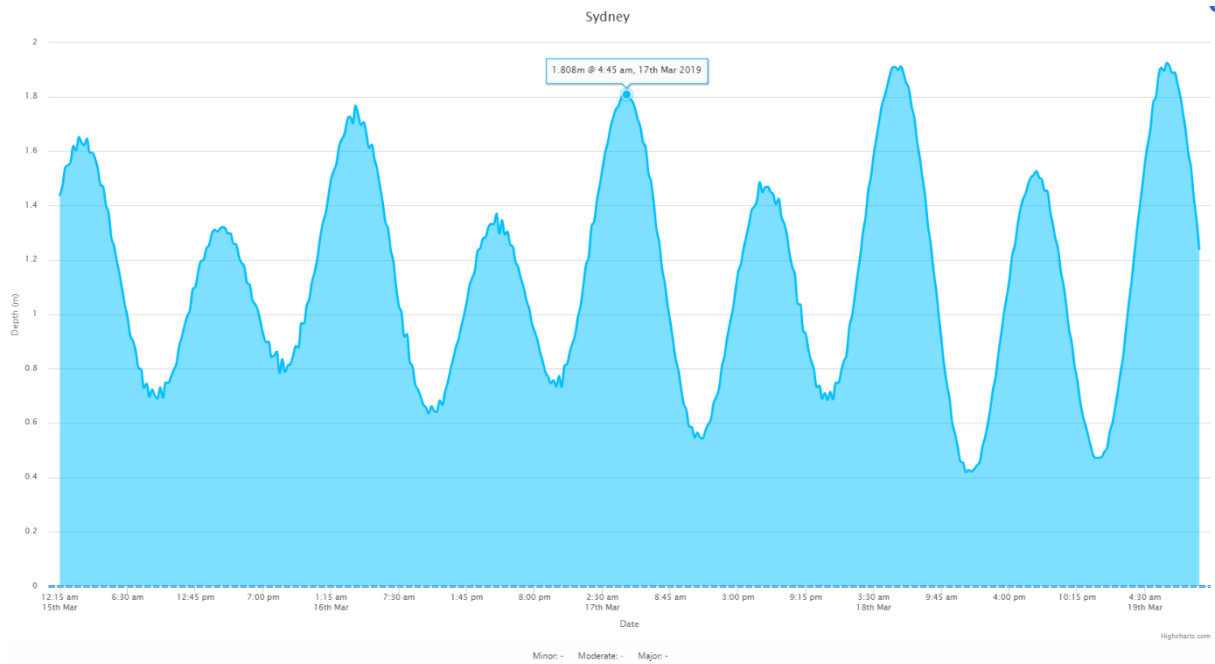
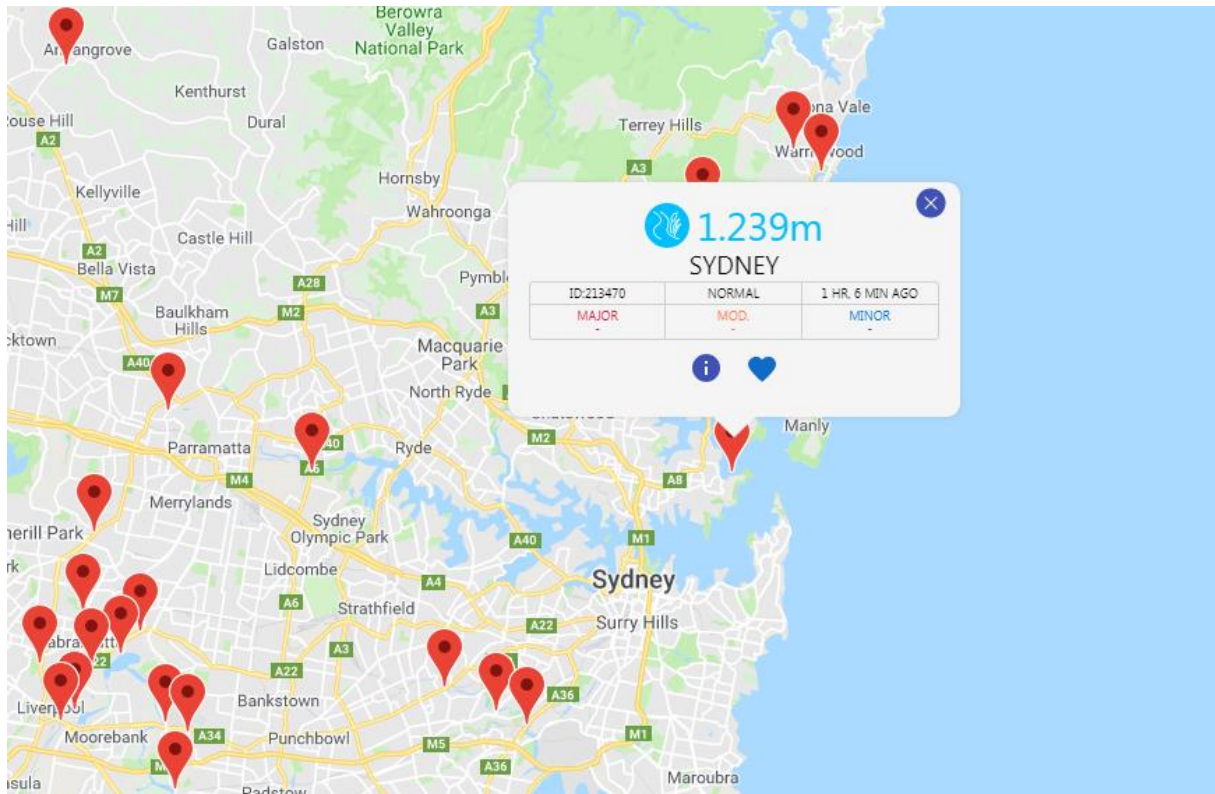
1.1.17 Floods Near Me NSW – PC and mobile application

This flood warning app brings together flood related information in NSW and provides the user with tailored warnings.

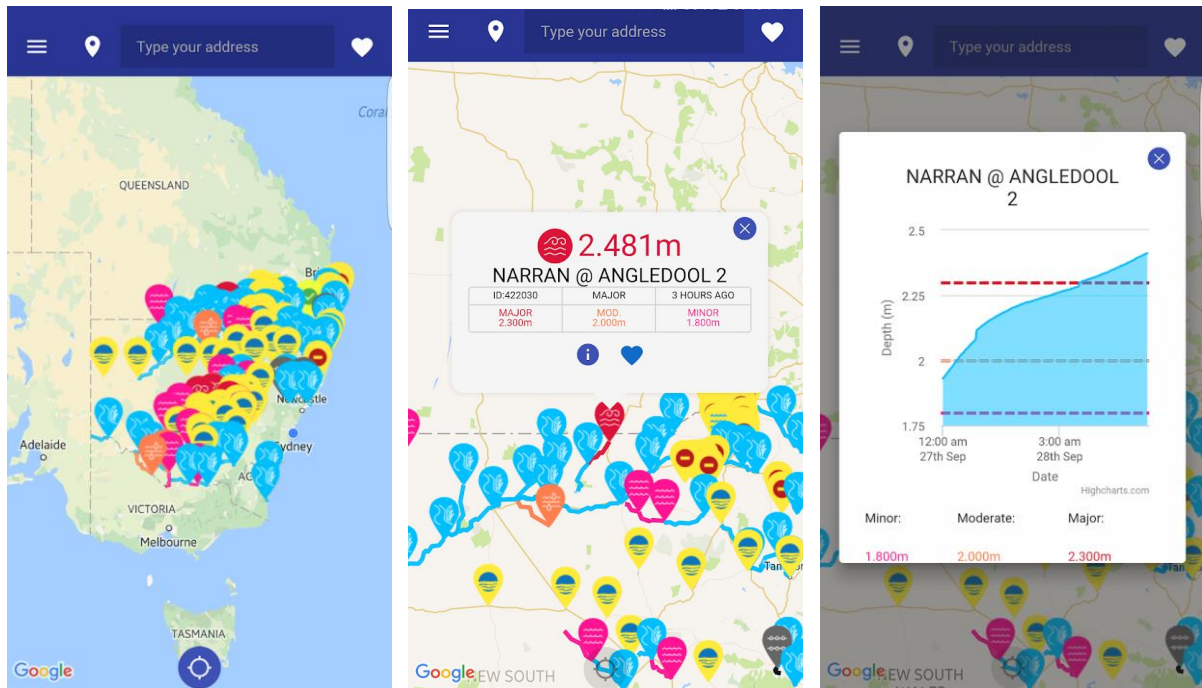
1. Go to <http://floodsnearme.manly.hydraulics.works/>
2. Click “View full site >>”



3. Select the location marker of the area of interest and then click on the information icon.
4. A plot of the water level for the last 4 days will be shown. Hover the mouse pointer over the plot to see the water level measurements at every 15-minute time interval.



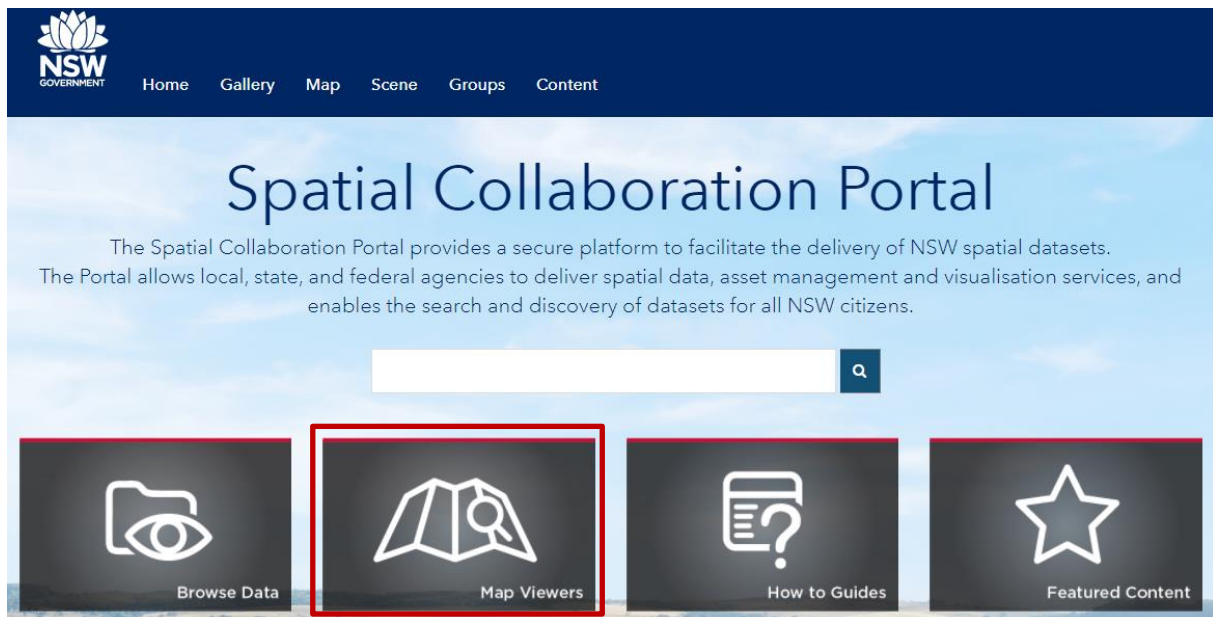
This can also be done through the mobile version which can be downloaded from the App Store or Google Play Store.



1.1.18 Spatial Collaboration Portal – spatial datasets

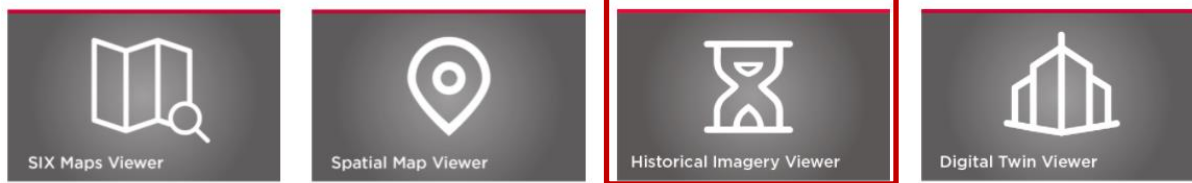
This historical imagery viewer contains current and historic imagery data from 1943 to 2006 that can be accessed by the community and utilised for GIS mapping applications.

1. Go to <https://portal.spatial.nsw.gov.au/portal/apps/sites/#/home>
2. Click the “Map Viewers” icon. Then, click the “Historical Imagery Viewer” icon.

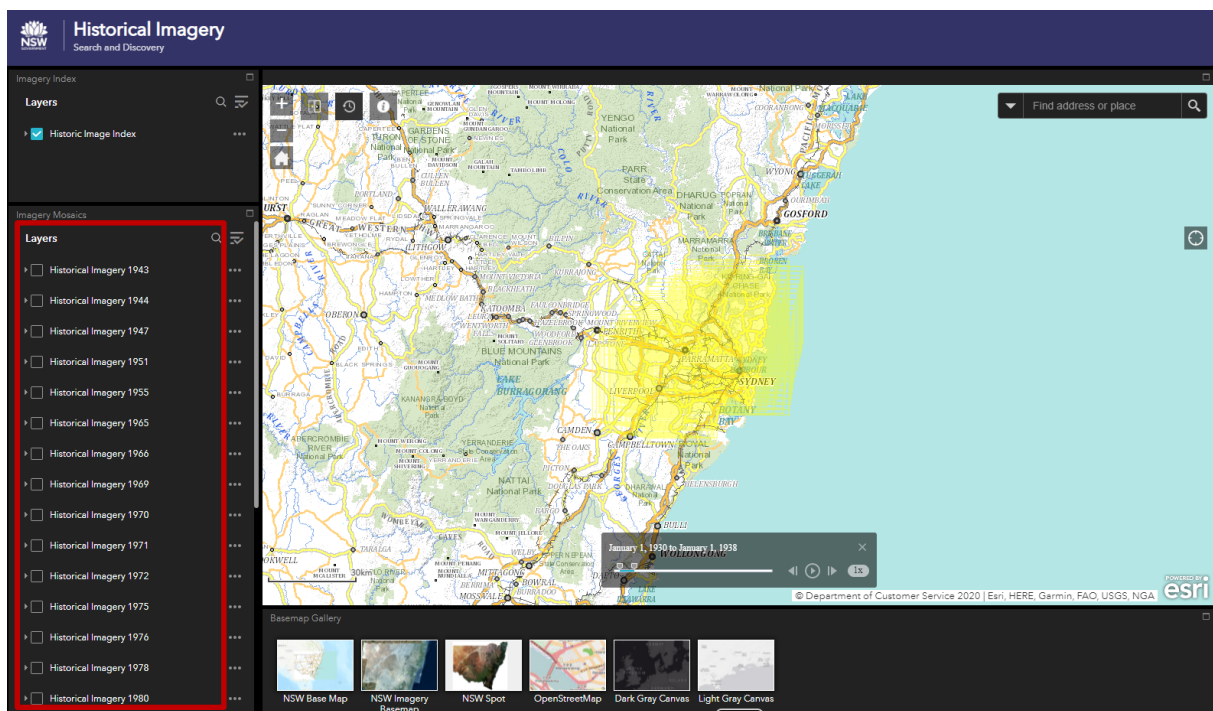


Map viewers

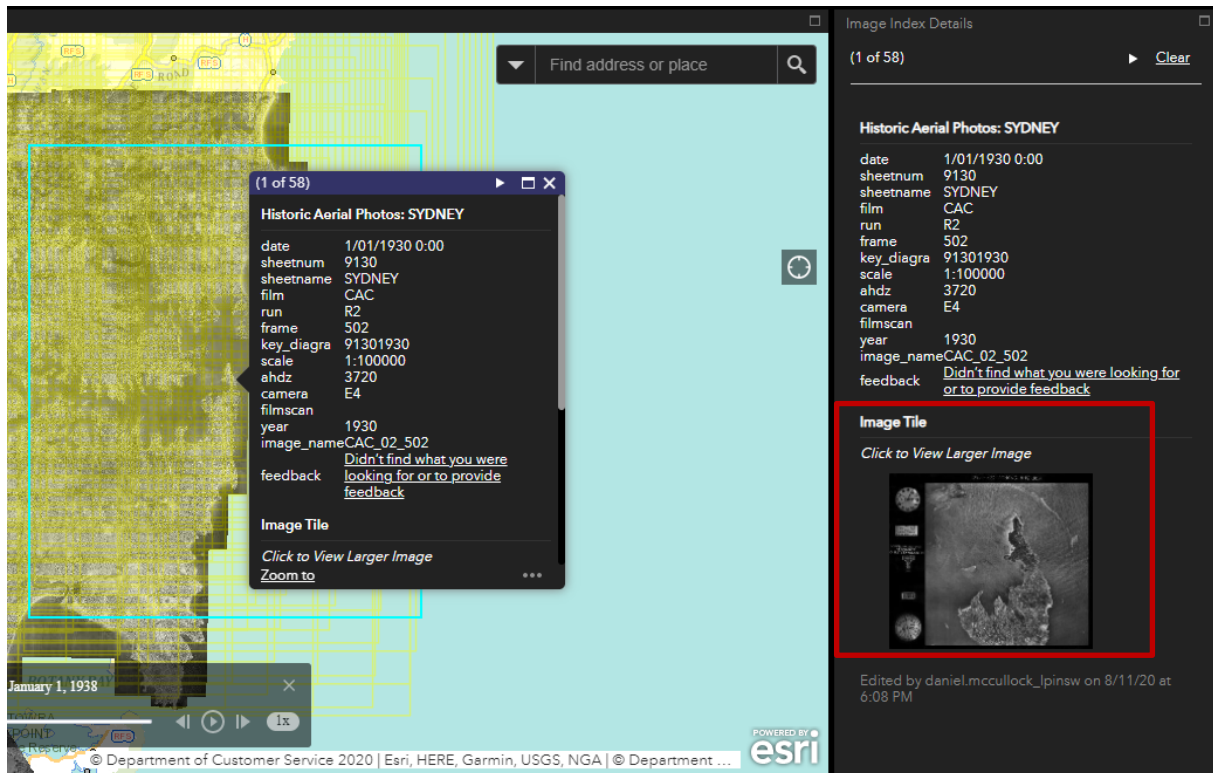
The NSW open source map viewing options allows users to explore, visualise and analyse compatible data types and sources in an online map.



3. Click on the desired year of historical imagery on the left-hand side pane. Mosaic images will show in the map.



4. Click on the map on the desired area to show the historical image. Click on the image to show it on a new tab and download.



1.1.19 Bureau of Meteorology – Australian Water Data Service

The Australian Water Data Service (AWDS) is a website created by BoM that provides access to spatial water data, APIs and maps that contain water information that are published on the BoM website. It also provides links to the various water related web applications that are owned by BoM.

1. Go to <https://portal.wsapi.cloud.bom.gov.au/arcgis/apps/sites/#/australian-water-data-service>
2. On the search box, type in a keyword of the data you are looking for and then press enter. Alternatively, scroll down to the “Search Bureau data by category” section and click on one of the category icons such as groundwater, surface water, water storage and flood.

Australian Water Data Service

Connecting you to the Bureau's water data, maps and APIs

The Australian Water Data Service (AWDS) provides access to spatial water data, APIs and maps that underpin water-related insights, analysis and information published on the Bureau website. The AWDS enables you to search and discover data, tailor inputs for your own region-specific or Australia-wide analysis and reporting, incorporate data into your own Geographic Information System (GIS) or web mapping application, and build new applications to serve the unique needs of your customers.

To start working with the AWDS, enter keywords in the search bar or search by category by clicking on an icon.

If you are searching for time series data from water monitoring stations please visit [Water Data Online](#).

On this page

- [Search Bureau data by category](#)
- [Water applications](#)
- [Related content](#)

Search Bureau data by category



3. You can filter the water data, documents and maps on the left-hand side pane or you can search using the search box at the top.

Q Search

All Data Documents Apps & Maps

Filters Reset

Content Type ^

- feature service
- map service
- vector tile service
- image service
- site application

[More](#)

Categories ^

- surface water
- modelling
- ogc
- wms
- groundwater

[More](#)

Tags ^

Last Updated ^

1 - 10 of 46 results Relevance

Data

AWO Modelled Historical Water Balance Variables - Daily (1985-present) - Physical Units, National Region, CSV
awra_publish

This end-point provides regionally aggregated data in tabular form, at the regional scale stated in the summary above. For more information about the modelled variables it includes, please see...

Type: Feature Service Last Updated: August 31, 2022
Sharing: Public Tags: awo, awra, awra historical data, awra day physical uni...

Data

AWO Modelled Historical Water Balance Variables - Daily (1985-present) - Physical Units, State Region, CSV
awra_publish

This end-point provides regionally aggregated data in tabular form, at the regional scale stated in the summary above. For more information about the modelled variables it includes, please see...

4. Click on the title name of the data, document or map.
5. Click on the “Data” tab to see a CSV table of the data.

Overview **Data** API Explorer

8/31/2022 Feature Service Custom License 1 Layers Download **APIs**

Showing 1 to 10 of 192,584 Hint: Filter columns using

OBJECTID	date	variable	r_1
1	1/1/1985, 11:00 AM	pen_pet	11.4616785
2	1/2/1985, 11:00 AM	pen_pet	12.22602844
3	1/3/1985, 11:00 AM	pen_pet	11.24279976
4	1/4/1985, 11:00 AM	pen_pet	11.62466621
5	1/5/1985, 11:00 AM	pen_pet	11.43928719
6	1/6/1985, 11:00 AM	pen_pet	11.34736347
7	1/7/1985, 11:00 AM	pen_pet	12.13089275
8	1/8/1985, 11:00 AM	pen_pet	12.98601055
9	1/9/1985, 11:00 AM	pen_pet	12.56391716
10	1/10/1985, 11:00 AM	pen_pet	12.58830357

Showing time fields in Australia/Sydney timezone.

You can obtain the API URLs for GeoService and GeoJSON by clicking on the “APIs” dropdown arrow on the upper-right corner of the page. Alternatively, you can click on the

“API Explorer” tab to explore the dataset’s API. Modify the fields under the “Query” section to populate the query URL and/or apply attribute filters, then click the “Try It Out” button to see the code in the JSON box.

The screenshot shows the API Explorer interface. The 'Query' section is active, displaying a table with 'Parameter' and 'Value' columns. The 'Where' section shows 'No Active Filters' with a plus button. The 'Out Fields' section shows four checked fields: 'objectId', 'date_', 'variable', and 'r_1'. Below this, it states 'The fields to be included in the returned result set.' The 'Output Options' section has 'Try It Out' and 'Reset' buttons. The 'JSON' section displays the following JSON output:

```
{
  "exceededTransferLimit": true,
  "features": [
    {
      "attributes": {
        "objectId": 1,
        "date_": 473385600000,
        "variable": "pen_pet",
        "r_1": 11.4616785
      }
    },
    {
      "attributes": {
        "objectId": 2,
        "date_": 473472000000,
        "variable": "pen_pet",
        "r_1": 12.22602844
      }
    }
  ]
}
```

To the right of the interface, the 'Query URL' is displayed as:

```
https://hosting.wsapi.cloud.bom.gov.au/arcgis/rest/services/Hosted/awra_historical_physical_data_multivariable_national_data/FeatureServer/0/query?where=1%3D1&outFields=*&outSR=4326&f=json
```

The Australian Water Data Service website also provides links to the following BoM web applications:

- Australian Hydrological Geospatial Fabric (Geofabric)
- Australian Groundwater Explorer
- Groundwater Dependent Ecosystems Atlas
- Water Storage dashboard
- Australian Water Outlook

1.2 Intermittently closed and open lakes and lagoons (ICOLLs)

1.2.1 Manly Hydraulics Laboratory – water level

MHL displays some of the coastal and environmental data collected on behalf of the NSW Government. This includes rivers, creeks, streams, estuaries and coastal water, ocean tide, sea surface temperature, and NSW wave data.

1. Go to <http://www.mhl.nsw.gov.au/>
2. Follow steps 2-5 described in [Section 1.1.1](#) of this document.

1.2.2 Bureau of Meteorology – water level (quick view)

This part of the BoM website presents a quick view of the water level at a particular station for the past 4 days. Available stations can be browsed by catchment and they are organized or listed by river.

Follow all the steps described in [Section 1.1.2](#) of this document.

1.2.3 Bureau of Meteorology – water level, discharge and water quality

The BoM Water Data Online provides free access to current and historical water information including water level, water discharge, and water quality measurements. The information displayed is supplied by lead water organisations from each State and Territory in Australia. These organisations are the custodians and licensees of the data. In NSW, the contributors are Central Coast Council, Hunter Water, WaterNSW, DoI Lands and Water, DPE BCD (stations operated and maintained by MHL), and Snowy Hydro Limited. The data is a combination of validated and provisional data and can be viewed graphically and downloaded. Water Data Online does not display near real time data.

Follow all the steps described in [Section 1.1.6](#) of this document.

1.2.4 Sharing and Enabling Environmental Data – various datasets

The Sharing and Enabling Environmental Data (SEED) website is a portal that has been developed with and for the community of NSW. SEED provides publicly accessible data or links on environmental data within NSW. Currently, it incorporates 2,400-plus land, water and air datasets from agencies responsible for environment, planning, resources and energy, primary industries, industry, water and spatial services. Open data from SEED automatically uploads to Data.NSW.

1. Go to <https://www.seed.nsw.gov.au/>
2. Search for a dataset by typing a topic in the search box and then click the search icon. Once dataset results are found, you can apply filters based on the filtering options on the left-hand side to narrow down the selection of data records.

3. Follow steps 4-6 described in [Section 1.1.8](#) of this document.

1.2.5 NSW Government (Data.NSW) – various datasets

Data.NSW is the NSW Government's open data catalogue, bringing together datasets and data portals from NSW Government agencies and departments into one searchable website. Each dataset is licenced with a specific licence that describes how the data can be used.

Follow all the steps described in [Section 1.1.9](#) of this document.

1.2.6 Australian Water Resources Information System – online information system

The Australian Water Resources Information System (AWRIS) is an online information system made by the Bureau of Meteorology that can receive, collate, store, quality check, standardise, organise, analyse and interpret water data supplied by different organisations to deliver high quality water information.

Follow the steps described in [Section 1.1.11](#) of this document.

1.2.7 Australian Hydrological Geospatial Fabric (Geofabric) – spatial dataset

Geofabric is a specialised Geographic Information System (GIS) that is a project by the Bureau of Meteorology. It provides access to a digital database of surface and groundwater features and it can show the spatial relationship between various hydrological features (e.g. rivers, water bodies, aquifers and monitoring points).

Follow all the steps described in [Section 1.1.12](#) of this document.

1.2.8 Foundation Spatial Data Framework – spatial datasets

The Foundation Spatial Data Framework provides a common reference for the assembly and maintenance of Australian and New Zealand foundation level spatial data in order to serve the widest possible variety of users. It delivers open, accessible, affordable and usable national coverage foundation spatial data.

Follow all the steps described in [Section 1.1.13](#) of this document.

1.2.9 OpenGov NSW – various publications

OpenGov is an online repository for NSW Government publications. It contains annual reports, strategic plans, guides, policy documents, and open access information released under the Government Information (Public Access) Act 2009 (GIPA Act), which has been published by NSW Government agencies.

Follow all the steps described in [Section 1.1.14](#) of this document.

1.2.10 DPE Environment and Heritage Group – various publications

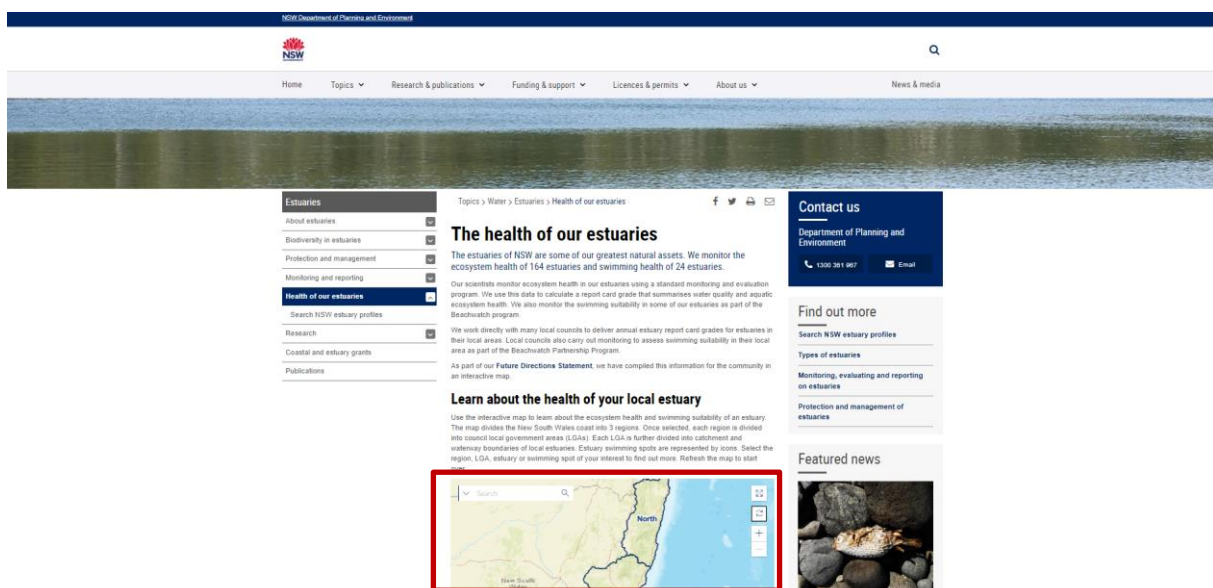
DPE is the custodian of a number of surface water, urban water and meteorological monitoring stations. These stations include the water quality monitoring program run by DPE Beachwatch. This DPE webpage provides reports, research and publications on water and environmental information. The webpage also provides a link to the NSW Government’s Sharing and Enabling Environmental Data (SEED) portal.

Follow all the steps described in [Section 1.1.15](#) of this document.

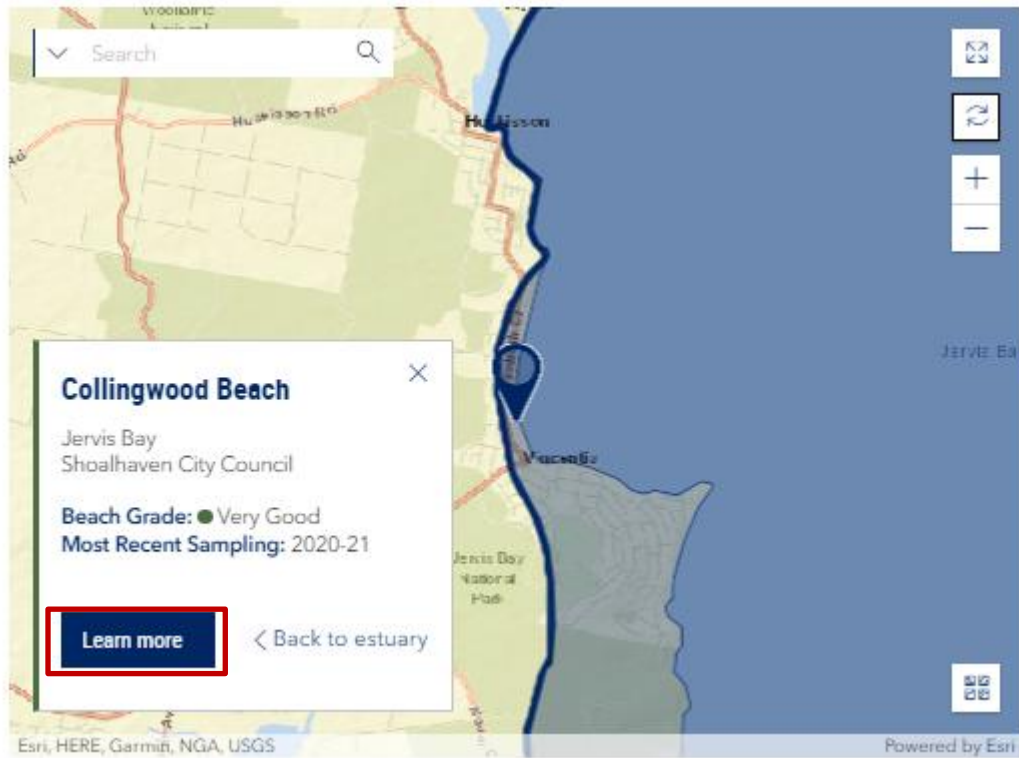
1.2.11 DPE Environment and Heritage Group – water quality

DPE is the custodian of a number of surface water, urban water and meteorological monitoring stations. These stations include the water quality monitoring program run by DPE Beachwatch. The DPE website also provides an estuaries water quality dashboard that shows the ecosystem health and swimming suitability of an estuary.

1. Go to <https://www.environment.nsw.gov.au/topics/water/estuaries/estuaries-of-nsw>
2. Scroll down to the interactive map and select the north, central or south of New South Wales coast.



3. Then select the council local government area (LGA). Then select the estuary or swimming spot (represented by icons) of your interest. If you want to start over, refresh the map.
4. Click the “Learn more” button to find out information about the estuary health and features such as water quality and swimming suitability.



1.2.12 Bureau of Meteorology – Australian Water Data Service

The Australian Water Data Service (AWDS) is a website created by BoM that provides access to spatial water data, APIs and maps that contain water information that are published on the BoM website. It also provides links to the various water related web applications that are owned by BoM.

Follow all the steps described in [Section 1.1.19](#) of this document.

1.3 Estuaries

1.3.1 Manly Hydraulics Laboratory – water level and water quality

MHL displays some of the coastal and environmental data collected on behalf of the NSW Government. This includes eastern flowing rivers, creeks, streams, estuaries and coastal water, ocean tide, sea surface temperature, and NSW wave data.

1. Go to <http://www.mhl.nsw.gov.au/>
2. Follow steps 2-5 described in [Section 1.1.1](#) of this document.

1.3.2 Bureau of Meteorology – water level (quick view)

This part of the BoM website presents a quick view of the water level at a particular station for the past 4 days. Available stations can be browsed by catchment and they are organized or listed by river.

Follow all the steps described in [Section 1.1.2](#) of this document.

1.3.3 Bureau of Meteorology – water level, discharge and water quality

The BoM Water Data Online provides free access to current and historical water information including water level, water discharge, and water quality measurements. The information displayed is supplied by lead water organisations from each State and Territory in Australia. These organisations are the custodians and licensees of the data. In NSW, the contributors are Central Coast Council, Hunter Water, WaterNSW, DoI Lands and Water, DPE BCD (stations operated and maintained by MHL), and Snowy Hydro Limited. The data is a combination of validated and provisional data and can be viewed graphically and downloaded. Water Data Online does not display near real time data.

Follow all the steps described in [Section 1.1.6](#) of this document.

1.3.4 WaterNSW – water quality

Salinity and temperature data collected for the WaterNSW water sharing plan project across NSW estuaries and rivers can be downloaded from WaterNSW's real time data website.

Follow all the steps described in [Section 1.1.5](#) of this document.

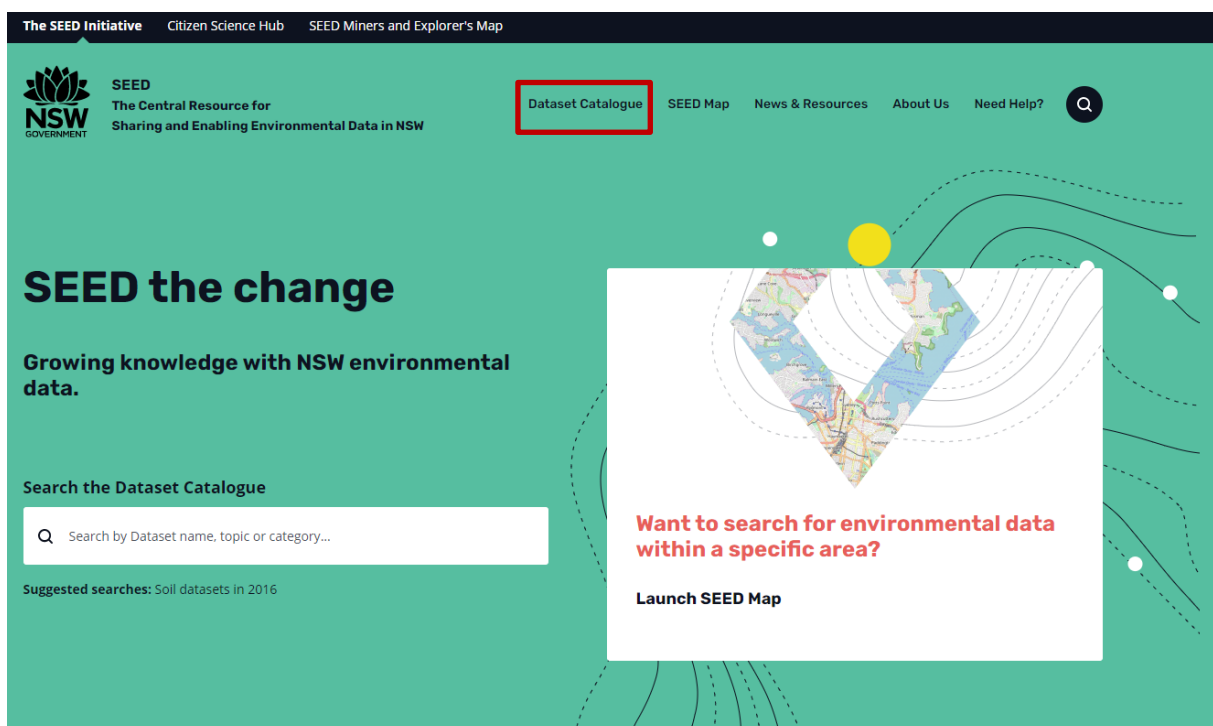
To find a listing of stations that have salinity and temperature data that is current and historical, refer to the *NSW OEH estuary and river water quality annual summary* reports:

<https://www.mhl.nsw.gov.au/Publications/>

1.3.5 Sharing and Enabling Environmental Data – various datasets

The Sharing and Enabling Environmental Data (SEED) website is a portal that has been developed with and for the community of NSW. SEED provides publicly accessible data or links on environmental data within NSW. Currently, it incorporates 2,400-plus land, water and air datasets from agencies responsible for environment, planning, resources and energy, primary industries, industry, water and spatial services. Open data from SEED automatically uploads to Data.NSW.

1. Go to <https://www.seed.nsw.gov.au/>
2. Select the “Dataset Catalogue” tab on the top ribbon.



3. Under “Categories” on the left-hand side pane, select “Oceans”.
4. Click on the “Estuary Drainage Catchments” dataset title or the “View Dataset” button.

5. Under “Dataset Packages” and “Data Web Services”, click on the desired file format to download the dataset.
6. You can click on the “Show on SEED Map” button under “Map Viewer” to see the dataset on SEED’s built-in map. Different types of data can be viewed on SEED’s map to have a better look at the environmental conditions in a location.

To search for more datasets, type in a topic in the search box instead of selecting a category. Click the search icon and wait for the results before applying any filters.

1.3.6 NSW Government (Data.NSW) – various datasets

Data.NSW is the NSW Government's open data catalogue, bringing together datasets and data portals from NSW Government agencies and departments into one searchable website. Each dataset is licenced with a specific licence that describes how the data can be used.

Follow all the steps described in [Section 1.1.9](#) of this document.

1.3.7 Australian Water Resources Information System – online information system

The Australian Water Resources Information System (AWRIS) is an online information system made by the Bureau of Meteorology that can receive, collate, store, quality check, standardise, organise, analyse and interpret water data supplied by different organisations to deliver high quality water information.

Follow the steps described in [Section 1.1.11](#) of this document.

1.3.8 Australian Hydrological Geospatial Fabric (Geofabric) – spatial dataset

Geofabric is a specialised Geographic Information System (GIS) that is a project by the Bureau of Meteorology. It provides access to a digital database of surface and groundwater features and it can show the spatial relationship between various hydrological features (e.g. rivers, water bodies, aquifers and monitoring points).

Follow all the steps described in [Section 1.1.12](#) of this document.

1.3.9 Foundation Spatial Data Framework – spatial datasets

The Foundation Spatial Data Framework provides a common reference for the assembly and maintenance of Australian and New Zealand foundation level spatial data in order to serve the widest possible variety of users. It delivers open, accessible, affordable and usable national coverage foundation spatial data.

Follow all the steps described in [Section 1.1.13](#) of this document.

1.3.10 OpenGov NSW – various publications

OpenGov is an online repository for NSW Government publications. It contains annual reports, strategic plans, guides, policy documents, and open access information released under the Government Information (Public Access) Act 2009 (GIPA Act), which has been published by NSW Government agencies.

Follow all the steps described in [Section 1.1.14](#) of this document.

1.3.11 DPE Environment and Heritage Group – various publications

DPE is the custodian of a number of surface water, urban water and meteorological monitoring stations. These stations include the water quality monitoring program run by DPE Beachwatch. This DPE webpage provides reports, research and publications on water and environmental information. The webpage also provides a link to the NSW Government's Sharing and Enabling Environmental Data (SEED) portal.

Follow all the steps described in [Section 1.1.15](#) of this document.

1.3.12 DPE Environment and Heritage Group – water quality

DPE is the custodian of a number of surface water, urban water and meteorological monitoring stations. These stations include the water quality monitoring program run by DPE Beachwatch. The DPE website also provides an estuaries water quality dashboard that shows the ecosystem health and swimming suitability of an estuary.

Follow all the steps described in [Section 1.2.11](#) of this document.

1.3.13 Bureau of Meteorology – Australian Water Data Service

The Australian Water Data Service (AWDS) is a website created by BoM that provides access to spatial water data, APIs and maps that contain water information that are published on the BoM website. It also provides links to the various water related web applications that are owned by BoM.

Follow all the steps described in [Section 1.1.19](#) of this document.

1.4 Ocean tide

1.4.1 Manly Hydraulics Laboratory – water level

MHL displays some of the coastal and environmental data collected on behalf of the NSW Government. This includes rivers, creeks, streams, estuaries and coastal water, ocean tide, sea surface temperature, and NSW wave data.

1. Go to <https://www.mhl.nsw.gov.au/Data-OceanTide>
2. Select a station under “Station Locations” or using the map and then click the station name. A graph will show the plots of forecast, measured and residual data.

The screenshot shows the Manly Hydraulics Laboratory website. The top navigation bar includes links for ABOUT, CONTACT, SERVICES, PUBLICATIONS, MHLFIT, DATA REQUEST (highlighted with a red box), and CLIENT LOGIN. The main content area is titled "NSW Ocean Tide Data Collection Program" and includes a "TIDE CHARTS" button. The "Station Locations" section is highlighted with a red box and lists 17 stations along the NSW coast. A map on the right shows the NSW coastline with station locations marked by purple icons.

3. Follow steps 4-5 as described in [Section 1.1.1](#) of this document.
4. Tidal anomaly data is also available and can be requested by selecting “Data Request” from the top ribbon and filling out the web form.

1.4.2 PSMSL – monthly and annual mean sea level

The Permanent Service for Mean Sea Level (PSMSL), established in 1933, has been responsible for the collection, publication, analysis and interpretation of sea level data from the global network of tide gauges.

1. Go to <https://www.psmsl.org/>
2. Select “Data” tab on the top ribbon and then click on “Obtaining tide gauge data”



You are here: home > data >

Data


- o Obtaining
- o Supplying
- o High-Frequency
- o Bottom Pressure Records
- o Other Long Records
- o GLOSS/ODINAFRICA Calibration Data

Other Links


- o Explore data sets via Google Earth
- o Associated data sets (GIA, GPS, atmospheric pressure)
- o All products from PSMSL
- o Report: Ancillary Time Series of Mean Sea Level Measurements

Data

Obtaining Tide Gauge Data:



Station ID	Name	Country	Latitude	Longitude	Start Date	End Date	Period
800001



Obtain files and plots of individual stations via a map-based explorer or a table, or download the entire dataset


Supplying Tide Gauge Data:

Learn more about contributing data to PSMSL


High Frequency Data:

Learn more about obtaining fast and delayed mode high frequency data

Bottom Pressure Records:



Station ID	Name	Country	Latitude	Longitude	Start Date	End Date	Period
800001



Obtain files and plots of bottom pressure data via a map-based explorer or a table, or download the entire dataset

Long Records:

Use this page to obtain long time series that are not in PSMSL main data set

GLOSS/ODINAFRICA Calibration Data:

Obtain calibration data for the ODINAFRICA sites

3. Select a station ID from the listing.
4. Under the "Tide Gauge Data" section, click "Download monthly mean sea level data" or "Download annual mean sea level data" to obtain a .txt format of the data in the web browser.

SYDNEY, FORT DENISON

Data

- Obtaining
- Supplying
- High-Frequency
- Bottom Pressure Records
- Other Long Records
- GLOSS/ODINAFRICA Calibration Data

Data Notes


- Individual Station Data and Plot Notes
- Referencing the Data Set
- PSMSL Help File
- 2010 Changes to the PSMSL Data Files

Extracted from Database
21 Jan 2019

Station Information

Station ID: 65
Latitude: -33.85
Longitude: 151.233333
GLOSS ID: 57
Coastline code: 680
Station code: 141
Country: AUSTRALIA
Time span of data: 1886 – 1993
Completeness (%): 100
Date of last update: 10 May 2000

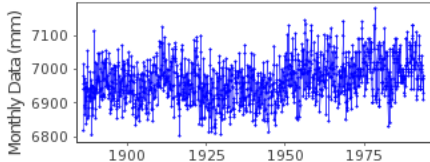
Green Arrow: Current Station
Yellow Marker: Neighbouring RLR Station
Red Marker: Neighbouring Metric Station



Sources: Esri, Garmin, HERE, NGA, USGS

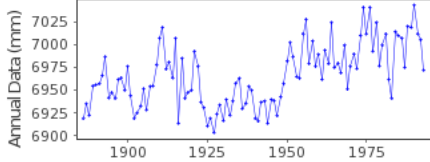
Please note: In many cases, the station position in our database is accurate to only one minute. Thus, the tide gauge may not appear to be on the coast.

Tide Gauge Data



[Link to larger image of monthly data plot](#)

[Download monthly mean sea level data.](#)



[Link to larger image of annual data plot](#)

[Download annual mean sea level data.](#)

The data file output is semi-colon delimited. The monthly files list the date in year-month in decimal form then the mean sea level value for the month and the number of missing days in the month.

	1992.0417;	6971;	0;000
year	1992.1250;	6981;	0;000
	1992.2083;	6941;	0;000
	1992.2917;	7011;	0;000
	1992.3750;	7031;	0;000
	1992.4583;	7101;	0;000
	1992.5417;	7071;	0;000
	1992.6250;	7041;	0;000
	1992.7083;	7001;	0;000
	1992.7917;	6951;	0;000
	1992.8750;	7021;	0;000
month	1992.9583;	6941;	0;000
	1993.0417;	6941;	0;000
	1993.1250;	6941;	0;000
	1993.2083;	6971;	0;000
	1993.2917;	6991;	0;000
	1993.3750;	7001;	0;000
	1993.4583;	7041;	0;000
	1993.5417;	7011;	0;000
	1993.6250;	6971;	0;000
	1993.7083;	6911;	0;000
	1993.7917;	6971;	0;000
	1993.8750;	6931;	0;000
	1993.9583;	6981;	0;000

Monthly mean sea level value (millimetres, datum: Revised Local Reference (RLR))

Quality flag

Number of missing days in the month

5. Back to the station page, scroll down to the “Station Documentation” section.
6. Click on “Link to RLR information”.
7. A diagram will be shown on how the Revised Local Reference (RLR) for the selected station is based on a primary benchmark (PM) and how it can be converted to other levels (e.g. AHD, MSL, local datum, tide gauge zero).

1.4.3 Manly Hydraulics Laboratory – tide charts

MHL produces tide charts using the Foreman tidal prediction method. The tide charts provide differences for secondary locations across the NSW coastline. Tide charts based on the tidal prediction for DPE’s Sydney ocean tide gauge at Middle Head (Gubbuh Gubbuh) HMAS penguin are available for download at <https://www.mhl.nsw.gov.au/TideCharts>.

Click on the year link (e.g. “2019 »») to see the tidal prediction chart for that year. If you only need the prediction for the next few days, click on “Sydney Predicted Tide Plot »»”.

NSW Tide Charts

MHL has been producing NSW Tide Charts since 1990 available through newsagents. As of 2015 MHL will now publish these in electronic form available from this website. The printed versions available from newsagents will cease. The new version will allow users free access to the charts which can be viewed or printed as required.

If you only require some predictions for the next few days check our [Sydney Predicted Tide Plot »»](#)

Download

The NSW Tide Charts are now available for download

- [2021 »»](#)
- [2020 »»](#)
- [2019 »»](#)
- [2018 »»](#)
- [2017 »»](#)
- [2016 »»](#)
- [2015 »»](#)

1.4.4 Bureau of Meteorology – tide charts

Tide charts based on the tidal predictions for ocean tide gauges all over Australia are available for download. Proudman is the tidal prediction method used.

1. Go to <http://www.bom.gov.au/australia/tides/>
2. Select “NSW” and zoom in on the map to search for the station of interest. Alternatively, click on the “Location List” to see all the tide locations in NSW.
3. Click on the name of the station of interest.

The screenshot displays the Bureau of Meteorology's website interface for tide predictions. At the top, there is a navigation bar with the Australian Government logo and the Bureau of Meteorology name. A search bar is present on the right. Below this, a breadcrumb trail reads 'Bureau Home > Marine & Ocean > Tide Predictions for Australia, South Pacific and Antarctica'. The main heading is 'Tide Predictions for Australia, South Pacific and Antarctica'. The page is divided into two main sections: 'LOCATIONS MAP' and 'LOCATIONS LIST'. The 'LOCATIONS MAP' section shows a map of Australia with numerous red location pins. A legend below the map indicates 'Tide locations' (red pin) and 'Tidal streams' (purple pin). The 'LOCATIONS LIST' section is currently empty. To the right of the map, there is a sidebar with two main sections: 'Sea Level Forecasts' and 'Sea Temperature Analysis'. The 'Sea Level Forecasts' section includes a map icon and text: 'Map based ocean forecasts for temperature, currents, sea level and salinity.' The 'Sea Temperature Analysis' section includes a map icon and text: 'Ocean temperature maps for the Sea Surface and Subsurface. Daily, weekly and monthly periods covering Australia, nearby regions and the globe.' Below the sidebar, there is a 'Further Tidal Information' link. At the bottom of the page, there is a 'Select a location to begin' button and a 'results' label.

4. Click on the PDF links to download the tidal prediction charts for the selected tide location.
5. Below the map, a 7-day tide prediction quick view is shown. You can change the start date and save the table by clicking on “Print Table”.

LOCATIONS MAP LOCATIONS LIST

NSW | VIC | QLD | WA | SA | TAS | NT Offshore & Pacific | Antarctica

To begin, choose a location from the map or locations list.

Sydney (Fort Denison), NSW

Next high tide in: 10 hrs 0 min 1.79 m

Next low tide in: 3 hrs 46 min 0.27 m

Current Time Zone: AEST (UTC +10:00)
 Latitude: 33° 51' 17" S
 Longitude: 151° 13' 33" E

PDF Links:
[2018 Tides](#)
[2019 Tides](#)
[2020 Tides](#)

[Sea Level Forecasts](#)
 Map based ocean forecasts for temperature, currents, sea level and salinity.

[Sea Temperature Analysis](#)
 Ocean temperature maps for the Sea Surface and Subsurface.

Daily, weekly and monthly periods covering Australia, nearby regions and the globe.

[Further Tidal Information](#)

Sydney (Fort Denison), NSW – April 2019 PRINT TABLE

THU 18 APR	FRI 19 APR	SAT 20 APR	SUN 21 APR	MON 22 APR	TUE 23 APR	WED 24 APR
LOW 1:00 am 0.38 m	LOW 1:54 am 0.32 m	LOW 2:45 am 0.30 m	LOW 3:35 am 0.32 m	LOW 4:26 am 0.37 m	LOW 5:16 am 0.44 m	LOW 6:09 am 0.52 m
HIGH 7:12 am 1.84 m	HIGH 8:02 am 1.80 m	HIGH 8:51 am 1.72 m	HIGH 9:40 am 1.62 m	HIGH 10:29 am 1.50 m	HIGH 11:16 am 1.39 m	HIGH 12:06 pm 1.30 m
LOW 1:31 pm 0.27 m	LOW 2:14 pm 0.29 m	LOW 2:55 pm 0.35 m	LOW 3:34 pm 0.44 m	LOW 4:14 pm 0.53 m	LOW 4:53 pm 0.63 m	LOW 5:34 pm 0.72 m
HIGH 7:45 pm 1.79 m	HIGH 8:30 pm 1.86 m	HIGH 9:14 pm 1.88 m	HIGH 9:57 pm 1.87 m	HIGH 10:40 pm 1.82 m	HIGH 11:23 pm 1.75 m	

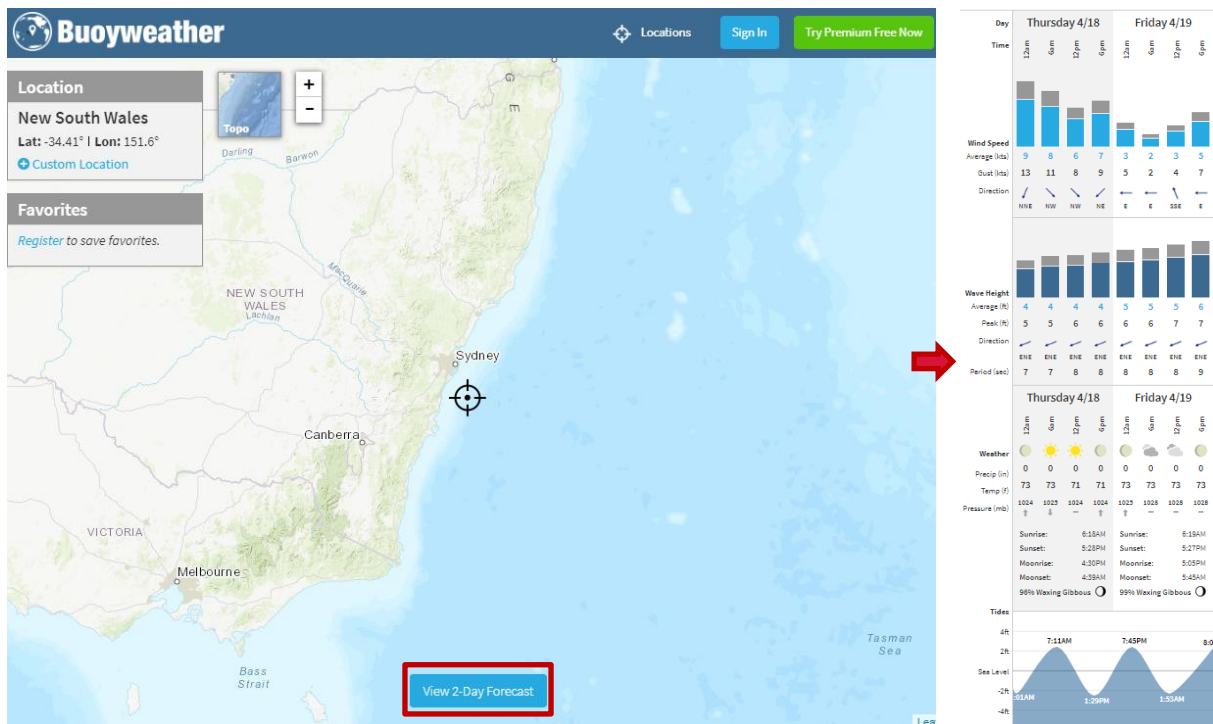
Previous 7 Days START DATE: 7 DAYS FROM 18-04-2019 CHANGE Next 7 Days

Moon Phases
 ● New Moon ◐ First Quarter ○ Full Moon ◑ Last Quarter

1.4.5 Buoyweather – tide forecast

Buoyweather provides marine forecasts for a chosen location or point instead of a general region. It generates high-resolution forecasts by using Global Forecasting System (GFS), Northern American Mesoscale (NAM), and Wavewatch numerical models.

1. Go to <http://www.buoyweather.com/map/new-south-wales>
2. Zoom in on the map and select the area of interest by placing the location marker on your target area.
3. Click on “View 2-Day Forecasts”. The next page will show the wind speed, wave height, weather and tides for the next 2 days.
4. To view 16 days of forecast, a premium account is needed (\$20.99/month or \$143.88/year). With a premium account, you will have access to a full collection of weather charts and long-range forecasts.



1.4.6 Seabreeze – tide forecast

Live and 7-day wave, wind and tide forecasts

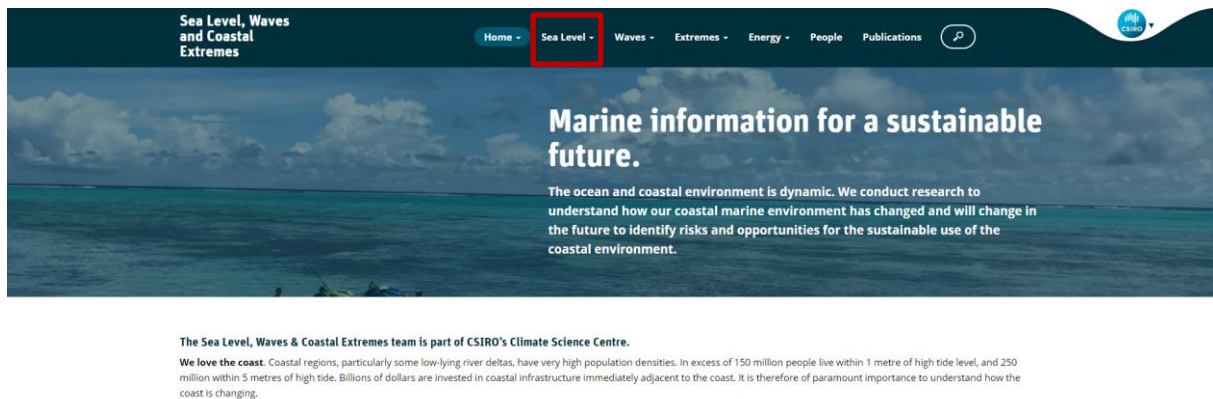
1. Go to <https://www.seabreeze.com.au/weather/wind-forecast/sydney>
2. The live data and 7-day forecasts for wind and wave, wave direction and period and tide are shown.
3. Hover the mouse pointer over the plots to see the detailed data at specific times.
4. You can change the location by selecting on the left-hand side menu.



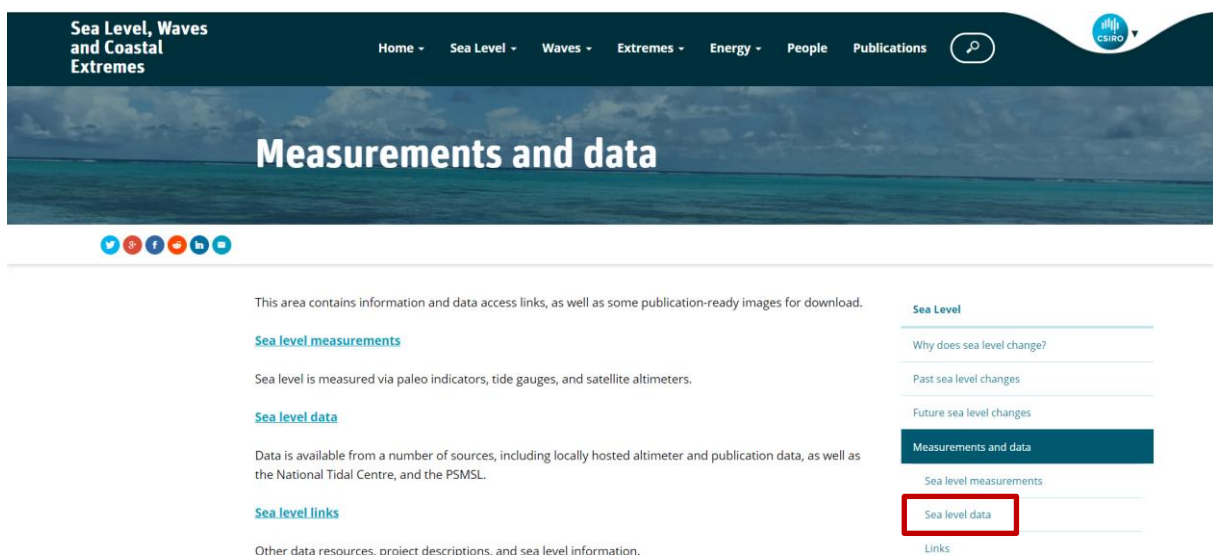
1.4.7 CSIRO Climate Science Centre – sea level

The CSIRO Climate Science Centre has a team that conduct research to understand how the coastal marine environment has changed to identify risks and opportunities for the sustainable use of the coastal environment. Their key areas of research include sea level change, waves, coastal extremes, and ocean energy.

1. Go to <https://research.csiro.au/slrwavescoast/>



2. Under the "Sea Level" tab in the top ribbon, select "Past sea level changes". (<https://research.csiro.au/slrwavescoast/sea-level/sea-level-changes/>)
3. Scroll down the page to the "Last Decades" section. Under this section, the global mean sea level (GMSL) changes are plotted.
4. Click on the "get the data" links for the GMSL measured from TOPEX/Poseidon, Jason-1 and Jason-2 and soon Jason-3 with and without the seasonal signal.



5. Under the "Sea Level" tab in the top ribbon, select "Measurements and data". (<https://research.csiro.au/slrwavescoast/sea-level/measurements-and-data/>)
6. Click on the "Sea Level Data" link.

7. Scroll down the page to see the links to download the following data:

- global mean sea level (GMSL)
- regional sea level
- update of reconstructed GMSL from 1880 to 2013
- history of steric sea level and ocean heat content data sets
- reconstructed GMSL for 1880 to 2009
- reconstructed GMSL for 1870 to 2001
- reconstructed sea-surface heights for 1950 to 2001.

The screenshot shows the website's header with the title 'Sea Level, Waves and Coastal Extremes' and a navigation menu. The main heading is 'Sea level data'. On the left, there is a list of links: 'Our data holding', 'National Tidal Centre', 'PSMSL', and 'GESLA'. On the right, under 'Measurements and data', there is a 'Sea level data' section with a red box around the link 'Sea level and ocean heat content'. Below that is a link for 'Reassessment of estimates of global mean sea level rise'. At the bottom right, there is a red box around the 'Links' section.

8. On the right-hand side menu, select “Sea level and ocean heat content”.

9. Scroll down to see the version history of global mean thermosteric sea level (GThSL) and global ocean heat content (GOHC) timeseries for the upper 700 m.

10. Click on the links available to download the near-global yearly estimates smoothed by a 3-year running mean.

11. On the right-hand side menu, select “Links”.

12. Scroll down the page to find the links of sources for the following data:

- satellite altimeter data
- tide gauge data
- satellite altimeter mission home pages
- sea level analyses
- shoreline monitoring
- tide gauge networks and collocated tide gauge/GPS
- effects of sea level rise
- international programs.

1.4.8 GESLA - extreme sea level

The Global Extreme Sea Level Analysis (GESLA) is a project initially created to understand and learn more about the changes in the frequency and magnitude of extreme sea levels. The present GESLA version 2 contains 1355 records and 39151 station-years.

1. Go to <https://gesla.org/>



GESLA Background

The GESLA (Global Extreme Sea Level Analysis) project grew out of the interests of several people in learning more about the changes in the frequency and magnitude of extreme sea levels. The first formal GESLA data set (denoted GESLA-1) was assembled by Philip Woodworth (National Oceanography Centre Liverpool), Melisa Menendez (University of Cantabria) and John Hunter (University of Tasmania) around 2009 and contained a quasi-global set of 'high frequency' (i.e. hourly or more frequent) measurements of sea level from tide gauges around the world.

2. Zoom in on the map to find the area of interest or use the search box on the upper right corner of the map.
3. Click on the orange dot marker for the summary of data from an individual site.
4. Contact gesla.help@gmail.com with an explanation of the reason for requesting access to the entire GESLA-2 data, which include both the public and private data.

For public data, scroll down the page and click on the first follow "this link" to download a public dataset that has general access.

For private data, a password will be provided if access is granted. Click on the second follow "this link" to download a private dataset and use "gesla_private" as username and the password provided.

How is GESLA data made available?

Data from the various sources mentioned above have been provided to us on the understanding that it can be copied readily to other interested users, or can be copied subject to a firm acknowledgement to the original data owner, or cannot be copied at all.

This means that we cannot at the present time make the entire data set available to everyone as we would like. Any bona fide researcher should contact gesla.help@gmail.com with an explanation of why they would like access to the entire GESLA-2 data (i.e. both the 'public' and 'private' parts). We will then decide if we can accede to the request and we will specify the terms and conditions. In practice, this will depend strongly on whether we know the researcher or know of their previous research, so speculative enquiries will almost certainly be declined.

To download that part of the data set which is public and for which there is no problem with general access, follow [this link](#).

To download that part of the data set which is private, follow [this link](#) (use "gesla_private" as user name, and password which will be provided if access is granted).

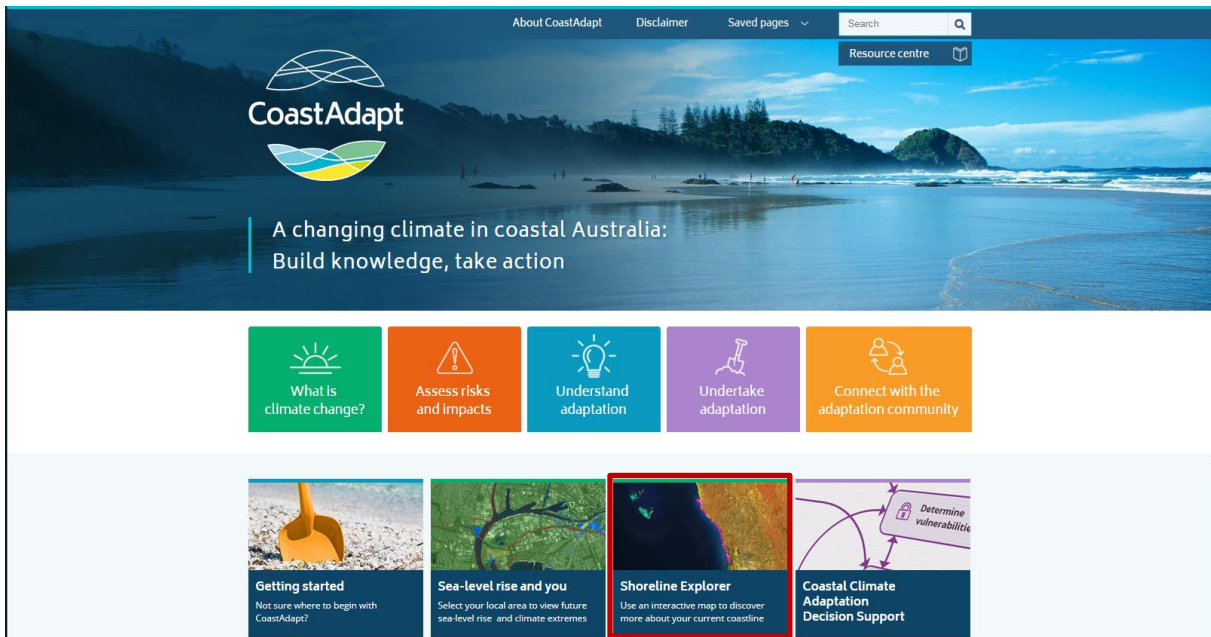
We intend that all the data will eventually be made available via one or more of the international sea level centres.

1.4.9 CoastAdapt – shoreline information

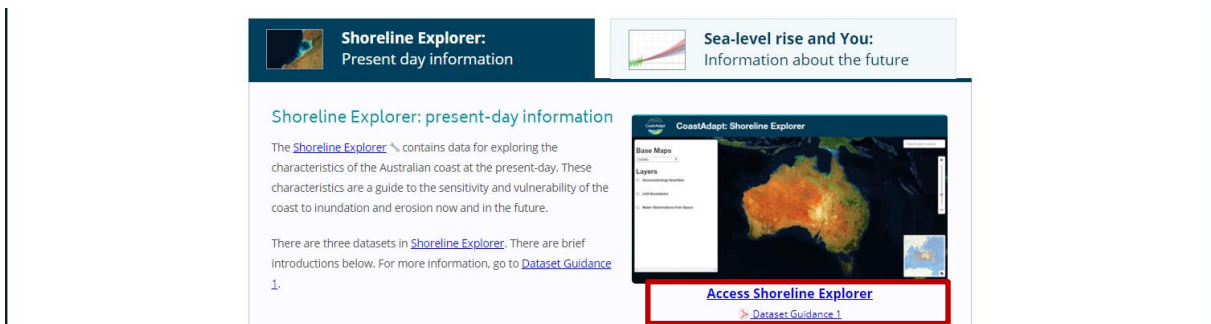
CoastAdapt is an information delivery and decision support framework. It contains and provides information that can help in understanding climate change and the responses available to manage the impacts.

Shoreline Explorer

1. Go to <https://coastadapt.com.au/>
2. Click on the "Shoreline Explorer" thumbnail.



3. On the right side of the page, click on the “Access Shoreline Explorer” link.



There are three datasets: Sediment Compartments and their Characteristics, Smartline, and Water Observation from Space (WOfS).



4. Zoom in on your area of interest and select the layers on the left-hand side pane to

see the information on the map.

5. Read the Dataset Guidance 1 for detailed information about the datasets.
(https://coastadapt.com.au/sites/default/files/factsheets/Datasets_guidance_1_present.pdf)

1.4.10 Port Authority of New South Wales – tide height

The Port Authority of New South Wales (Port Authority) manages the navigation, security and operational safety needs of commercial shipping in Sydney Harbour, Port Botany, Port Kembla and the ports of Newcastle, Eden and Yamba. Port Authority has a webpage which provides wave, wind, tide and current information from monitoring stations within the ports they manage.

Go to <http://wavewindtide.portauthoritiesnsw.com.au/>

Sensor data is available for purchase. Tide plots are presented online for the following locations:

- Botany Bay
 - Tide: Brotherson Emergency Response Jetty
- Sydney Harbour
 - Tide: Fort Denison-Primary (Nth end), Fort Denison-Secondary (Vegapuls64) Tide

The screenshot displays the 'Wave Wind Tide Current' section of the Port Authority of New South Wales website. It features a grid of data cards for different monitoring stations. The cards are organized into two main sections: Botany Bay and Sydney Harbour. Each card includes a location name, a small icon, and key data points such as wave height (HS), maximum wave height (Hmax), wave period (Tp), and wind speed. A 'View Details' link is provided for each card. The website header includes the Port Authority logo and the text 'Wave Wind Tide Current'. A note at the bottom of the header states: 'Present times are expressed in Eastern Daylight Saving Time. Sensor data is available for purchase (Pricing information)'.

Location	Parameter	Value
Botany Bay	Offshore (Directional) Wave	HS: 1.17m Hmax: 2.00m Tp: 9.84s Tz: 5.77s
	Bombora (Directional) Wave	HS: 0.56m Hmax: 1.13m Tp: 9.81s Tz: 5.13s
	Captain Cook Channel (SG) Wave	HS: 0.42m Hmax: 0.70m Tp: 8.54s Tz: 5.35s
	Kumell (SG) Wave	HS: 0.27m Hmax: 0.43m Tp: 8.56s Tz: 5.86s
Sydney Harbour	Molineaux Point Wind	Speed: 2.3knots Gust: 3.4knots Dir: 300deg
	Sydney Airport (Main Runway BOM) Wind	Speed: 3.5knots Gust: 6.0knots Dir: 267deg
	Brotherson Emergency Response Jetty Tide	Measured Height: 1.87m
	Caltex (Directional) Current	Last reading
	Western Wedding Cake Wind	Speed: 5.4knots Gust: 7.0knots Dir: 249deg
	Fort Denison (Sth end BOM) Wind	Speed: 5.5knots Gust: 7.7knots Dir: 299deg

1.4.11 NSW Government (Data.NSW) – various datasets

Data.NSW is the NSW Government's open data catalogue, bringing together datasets and data portals from NSW Government agencies and departments into one searchable website. Each dataset is licenced with a specific licence that describes how the data can be used.

Follow all the steps described in [Section 1.1.9](#) of this document.

1.4.12 OpenGov NSW – various publications

OpenGov is an online repository for NSW Government publications. It contains annual reports, strategic plans, guides, policy documents, and open access information released under the Government Information (Public Access) Act 2009 (GIPA Act), which has been published by NSW Government agencies.

Follow all the steps described in [Section 1.1.14](#) of this document.

1.4.13 DPE Environment and Heritage Group – various publications

DPE is the custodian of a number of surface water, urban water, and meteorological monitoring stations. These stations include the water quality monitoring program run by DPE Beachwatch. This DPE webpage provides reports, research and publications on water and environmental information. The webpage also provides a link to the NSW Government's Sharing and Enabling Environmental Data (SEED) portal.

Follow all the steps described in [Section 1.1.15](#) of this document.

1.4.14 WillyWeather – tide chart

WillyWeather provides meteorological information, tides and swell based on data supplied by the Bureau of Meteorology and other sources such as the National Oceanic and Atmospheric Administration.

1. Go to <https://tides.willyweather.com.au/nsw.html>

The screenshot displays the 'New South Wales Tide Times' page on the WillyWeather website. The page features a navigation bar with tabs for Weather, Wind, Rainfall, Sun, Moon, UV, Tides, Swell, and More. The main heading is 'New South Wales Tide Times' with a subtitle 'Australia / NSW'. A map of NSW shows tide times for various locations: Yamba (11:56 am Low), Coffs Harbour Beach (11:55 am Low), Newcastle (12:00 pm Low), Fort Denison (12:00 pm Low), Port Kembla (11:55 am Low), Ulladulla Boat Harbour (11:55 am Low), and Eden (11:50 am Low). Below the map is a list of regions: Central Coast, Far North Coast, Greater Western Sy..., Hunter, Illawarra, Mid North Coast, South Coast, and Sydney. The 'Eden' location on the map and the 'Central Coast' through 'Sydney' region list are highlighted with red boxes.

2. Select an area by clicking the location pin on the map.
3. If your specific location of interest is not shown on the map, you can search for it by clicking on the region from the list below the map. Then you can scroll down through the alphabetical list of locations or filter the locations by typing the name of the location you are searching for on the "Filter Locations" box. Click on the location name.

South Coast Tide Times

Australia / NSW / South Coast

South Coast [↕](#)

WEDNESDAY Partly cloudy. Areas of morning frost about the coastal ranges. Medium (40%) chance of showers near the Victorian border, near zero chance elsewhere. Winds west to southwesterly 15 to 20 km/h becoming light in the evening then becoming westerly 15 to 20 km/h in the late evening. Daytime maximum temperatures between 12 and 17.

THURSDAY Partly cloudy. High (80%)

Batemans Bay [↕](#)

Bega [↕](#)

Snowy Mountains [↕](#)

Southern Tablelands [↕](#)



All Locations

A-D

E-H

I-L

M-P

Q-T

U-Z

Filter Locations

a

Acheron Ledge

Aragunnu Beach

Armands Bay

Aslings Beach

b

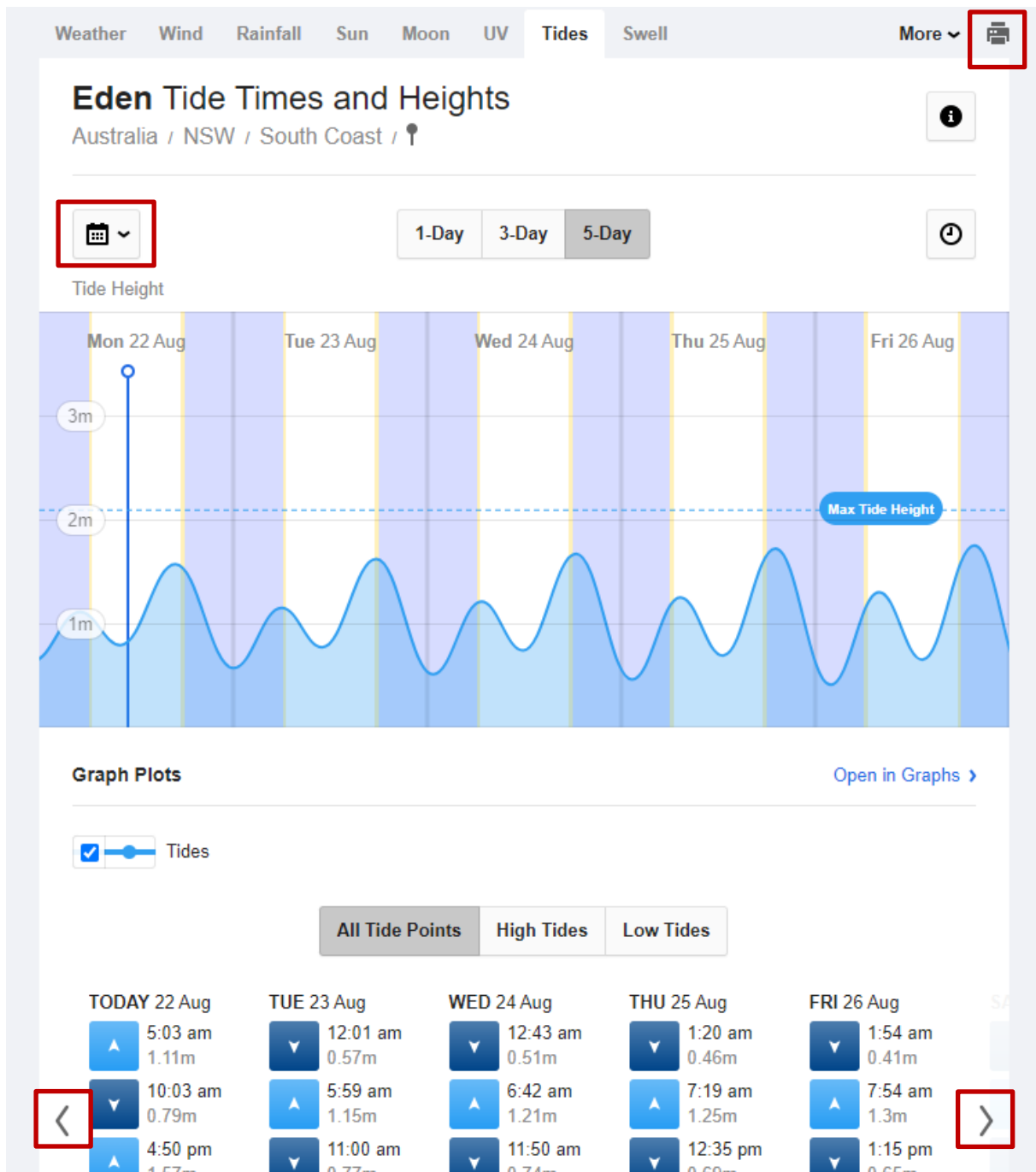
Back Lagoon Entra...

Bar Beach

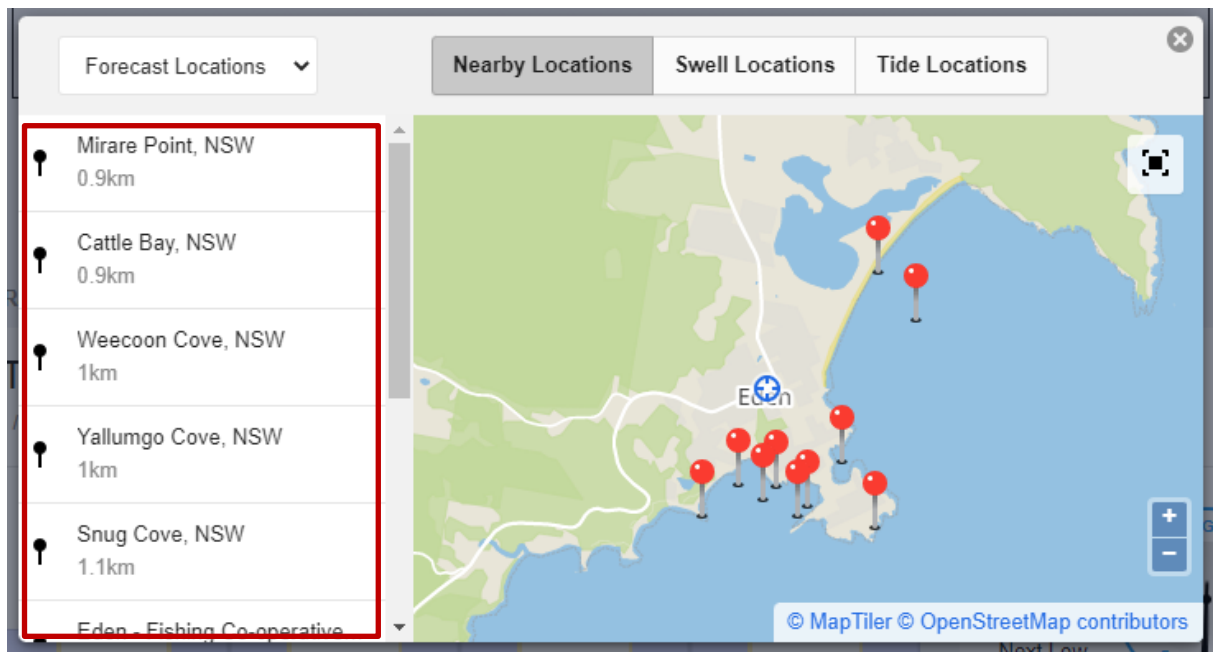
Bar Beach North N...

Baragoot Beach

4. Then in a new page, a 5-Day chart of the selected location's tide times and heights will be shown.
5. You can change the date range by clicking the left or right arrows beside the tide points below the chart. Alternatively, you can jump to the date by clicking the "Jump to Date" button above the chart, enter your desired date and then click the "Confirm" button.



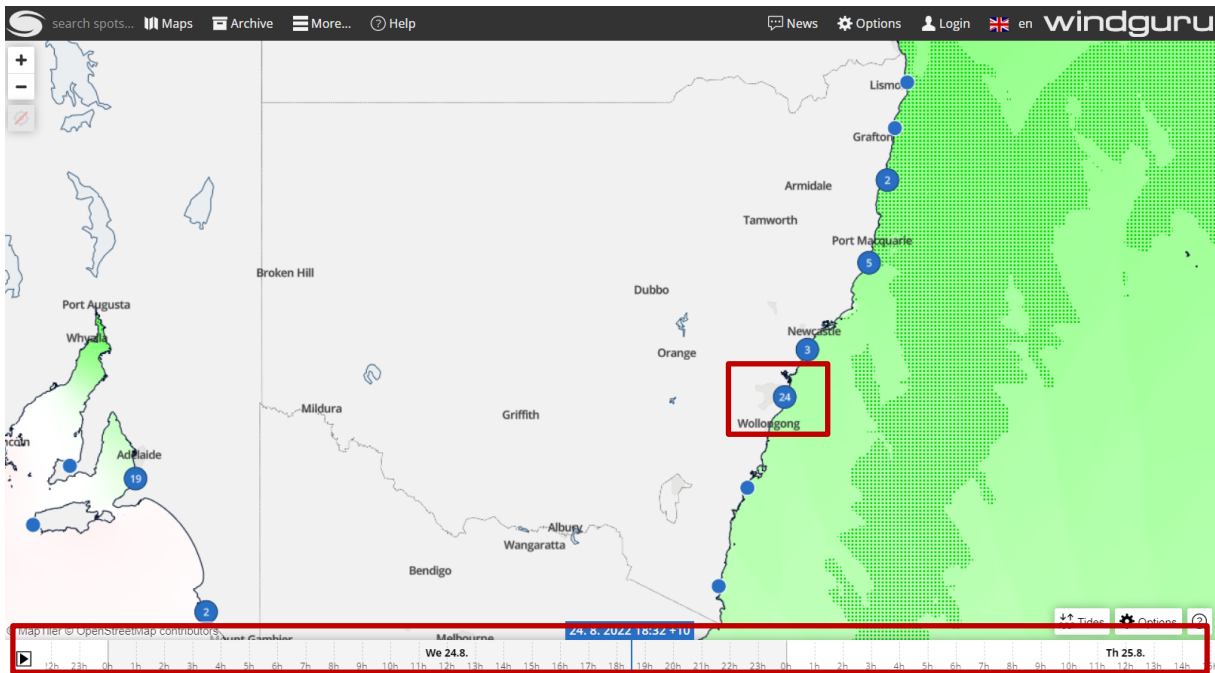
6. Click on the printer icon at the upper-right corner to get a printable overview of the weather, wind, swell, tides, etc., for the current day and the next 4 days.
7. If you want to change the unit settings, scroll to the top of the page, click the “Unit Settings” drop-down arrow, and then select the unit for each measurement.
8. If you want to change the current location to a nearby location, click the “View Locations Map” icon at the top-left corner of the page. Then select a new location by clicking on a specific pin on the map or clicking on the location name on the left.



1.4.15 Windguru – tide chart

Tides are based on a global ocean tide model FES2014, produced by NOVELTIS, LEGOS, CLS Space Oceanography Division and CNES.

1. Go to <https://www.windguru.cz/map/tide/?lat=-33&lon=150&zoom=5.5>
2. Click the play button to start the map animation of the tide situation or scroll the timeline below the map. Green-coloured areas indicate higher sea levels while red-coloured areas indicate lower sea levels. The small green or red dots indicate areas that reached high tide or low tide, respectively.
3. Click on one of the blue circles on the map to see a detailed tide graph and table for a specific location.



4. You can scroll through the tide graph or scroll through the tide table below to see the low tide and high tide levels and times.
5. Click the “Date” button at the top-left corner to jump to a different date.



1.5 Sea surface temperature and sea currents

1.5.1 Bureau of Meteorology – sea surface temperature and currents

BoM has a webpage which displays Australian regional sea surface temperature and ocean current forecast charts including the Tasman Sea and NSW coast.

1. Go to <http://www.bom.gov.au/oceanography/forecasts/>
2. Click on a study area on the map or select an area listed in the table below the map.

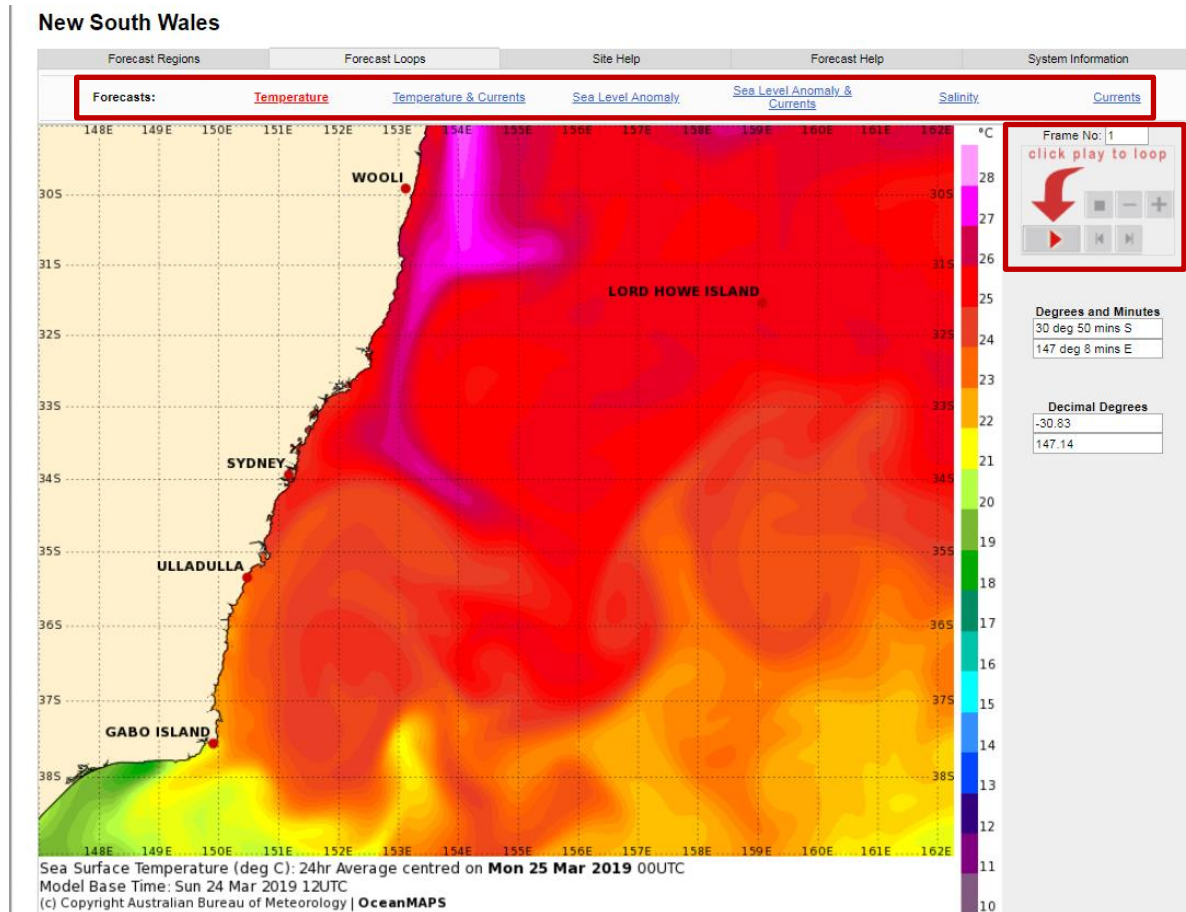
The screenshot shows the Bureau of Meteorology website interface. At the top, there is a navigation bar with links for HOME, ABOUT, MEDIA, CONTACTS, and a search bar. Below this, the page title is 'Sea temperatures and currents'. A navigation menu includes 'Forecast Regions', 'Forecast Loops', 'Site Help', 'Forecast Help', and 'System Information'. The main content area contains a map of Australia with various forecast regions labeled, such as MWWA, NEWA, HT, HWOLD, NEQLD, SEQLD, SWWA, SEWA, SA, NSW, VIC/TAS, and ETAS. A red box highlights the NSW region. To the right of the map is a sidebar titled 'Sea Temperature Analysis' with a description: 'Links to ocean temperature maps for the Sea Surface and Subsurface. Daily, weekly and monthly periods covering Australia, nearby regions and the globe.'

A map for temperature forecast will then be shown in a colour scheme based on the temperature legend on the right of the map.

3. Above the forecast map, click on the “Currents” link to view the sea current forecast or go to <http://www.bom.gov.au/oceanography/forecasts/idyoc300.shtml?region=NSW&forecast=Current> (for NSW)
4. To view the temperature and currents forecast in one map, click on the “Temperature & Currents” link or go to <http://www.bom.gov.au/oceanography/forecasts/idyoc300.shtml?region=NSW&forecast=SSTCur> (for NSW)
5. Beside the upper-right corner of the map, click on the play button to see an automated presentation of the forecast through the time series or click on the

next/back buttons.

6. To access the forecast data sets, subscribe and become a registered user of Bureau services.



1.5.2 Integrated Marine Observing System (IMOS) – sea surface temperature, currents and ocean colour (chlorophyll-a)

The IMOS displays historical Australian regional sea surface temperature and ocean current charts including the Tasman Sea and NSW coast.

1. Go to <http://oceancurrent.imos.org.au/>
2. Click on “Maps” tab and then select “Snapshot SST”.
3. In the popup map, select the study area based on region or state region.

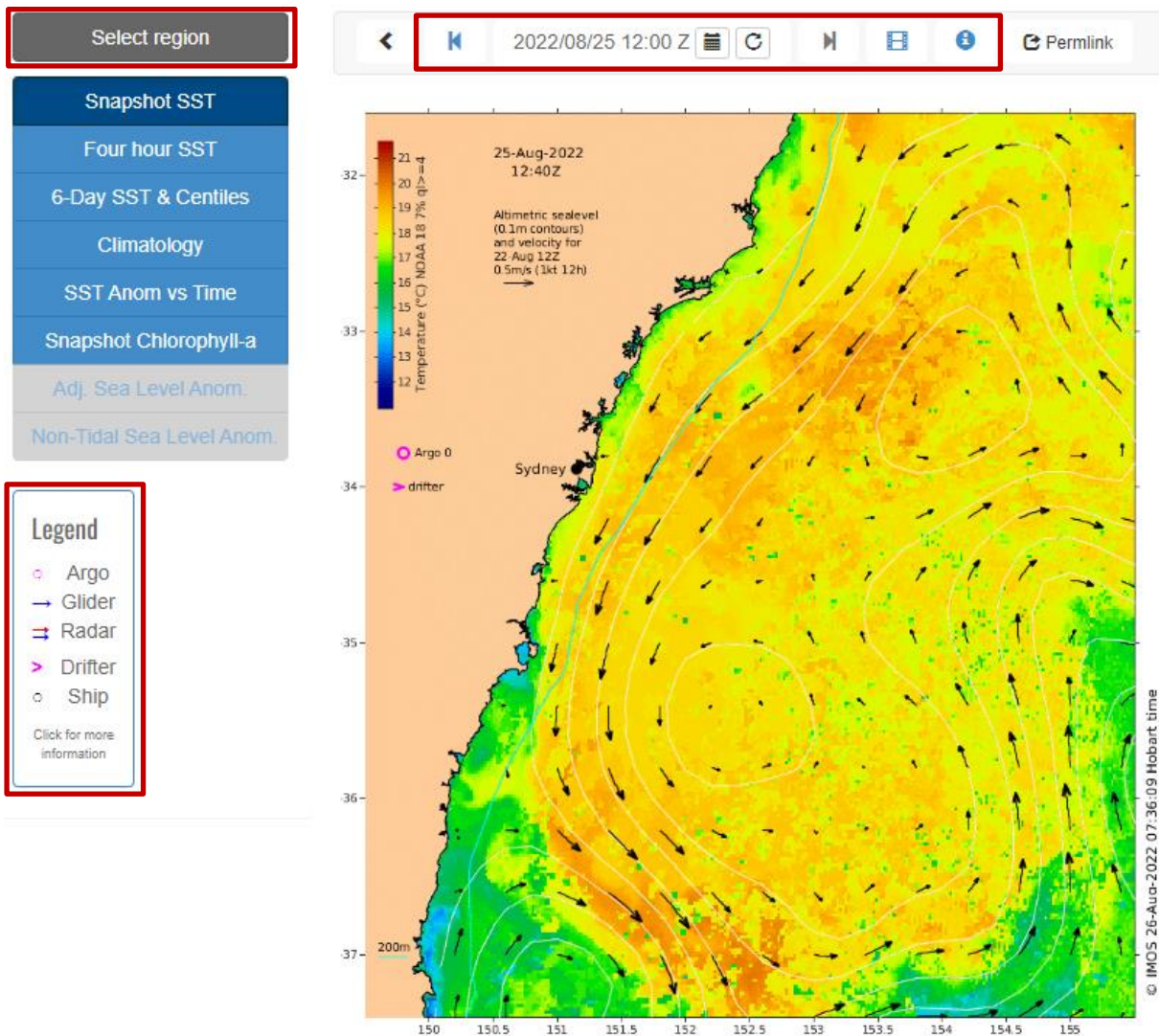
4. The next image shown is a temperature and current chart that is coloured based on the sea surface temperature with arrows indicating the direction of the currents. You can change the selected region by clicking on “Select region” on the left-hand side menu.
5. To see the temperature and currents on a specific date, click on the calendar icon above the map.

To go back to the current date, click on the reset icon.

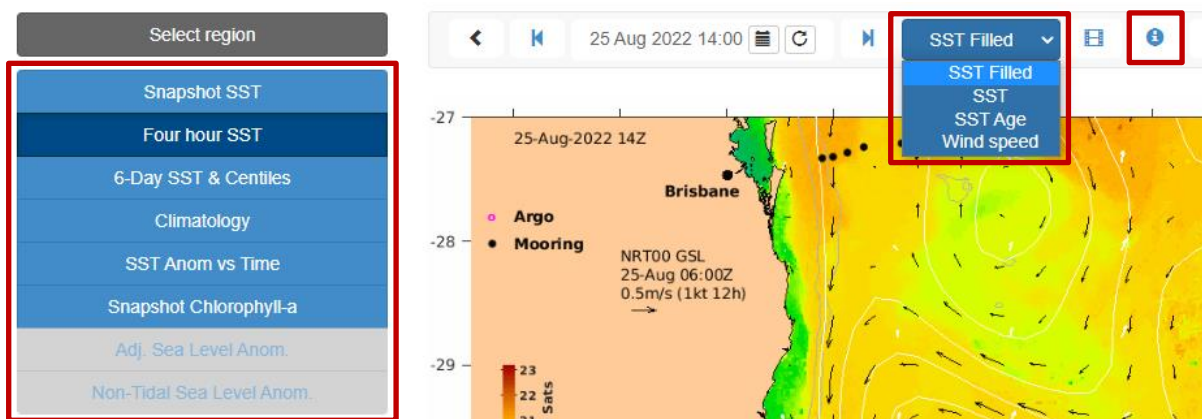
To browse the charts, click on the next/back buttons or click on the movie icon to see an automated presentation of the charts for the month of the selected date.

To see the general information about the images, click on the information icon.

To read about the meaning of the different marks and arrows in the image, click on the “Legend” box.



6. Click on the other options on the left-hand side menu to see images containing various information about the sea surface temperature. Then click on the drop-down arrow on the menu above the map to see the different images available.



7. Click on the information icon to see the definition of each option. The options include:

- Four hour SST – SST Filled, SST, SST Age, Wind Speed;

- 6-Day SST & Centiles – SST, SST Anomaly, Percentiles;
- Climatology – SST, Data Count;
- SST Anomaly vs Time
- Snapshot Chlorophyll-a
- Adjusted Sea Level Anomaly
- Non-Tidal Sea Level Anomaly

1.5.3 Manly Hydraulics Laboratory – sea surface temperature

MHL displays some of the coastal and environmental data collected on behalf of the NSW Government. This includes rivers, creeks, streams, estuaries and coastal water, ocean tide, sea surface temperature, and NSW wave data.

1. Go to <https://www.mhl.nsw.gov.au/Data-Wave>
2. The page will show a graph with sea temperature plots of 7 stations for the last 7 days. Hover the mouse pointer over the graph to see the temperature measurements at every 1-hour time interval.
3. Select a station under the “Station Data Pages” or by using the map below the graph. Click on the station marker and then click on the station name to view the plot for that station alone.
4. In the specific station page, see more information about the station under “Station Documents”.



5. To request the data in .csv format for a specific period, select “Data Request” from

the top ribbon and fill out the web form.

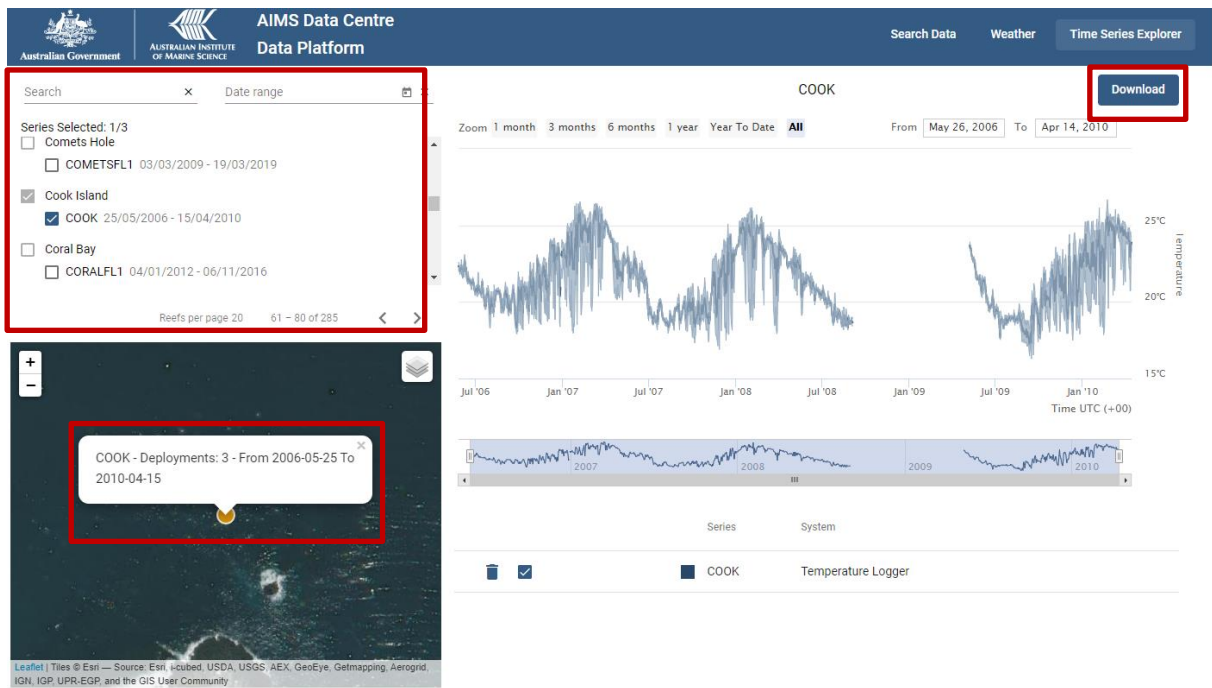
1.5.4 Australian Institute of Marine Science – sea surface temperature

This data centre provides access to data from different sea temperature monitoring programs conducted in tropical and subtropical coral reef environments around Australia. In-situ data loggers were deployed on the reef to instantaneously record sea temperatures. For NSW, these locations are focussed around known locations of shallow water corals such as Fish Rock, Solitary Islands and Lord Howe Island.

1. Go to <https://www.aims.gov.au/docs/data/data.html>
2. Select “Temperature Loggers” and this will lead to a map of the available temperature loggers in Australia.
3. Select an area within the map to zoom in on the station of interest.

The screenshot displays the AIMS Data Centre Data Platform interface. At the top, there are logos for the Australian Government and the Australian Institute of Marine Science. Below the logos, there is a search bar and a date range selector. The main content area shows a list of temperature loggers, including 100th Site, Ningaloo Reef (with sub-stations 14MLELGER, BUNDEGLBR, CORALBAY_2, ELLES_MA, TANTABIDDL3, TANTABIDDL3L1, WINDERABANDI), and 19-131 Reef. A map of Australia is shown below the list, with yellow markers indicating the locations of the loggers. The map is zoomed in on the eastern coast of Australia, showing markers for 10, 49, 66, 25, 42, 348, 13, and 34. The interface also includes a zoom selector (1 month, 3 months, 6 months, 1 year, Year To Date, All) and a 'Please choose a site' prompt.

4. Click the Temperature Logger marker. Alternatively, search for the station in the search field or select the station name within the station list.



5. The water temperature plot of the selected station will be shown. Select the options above the graph to set the data period.

To overplot the data of another station onto the graph, select another station in the station list or map.

6. Click “Download” and select the file format to download the data shown on the graph.

1.5.5 Australian Ocean Data Network – historical sea surface temperature

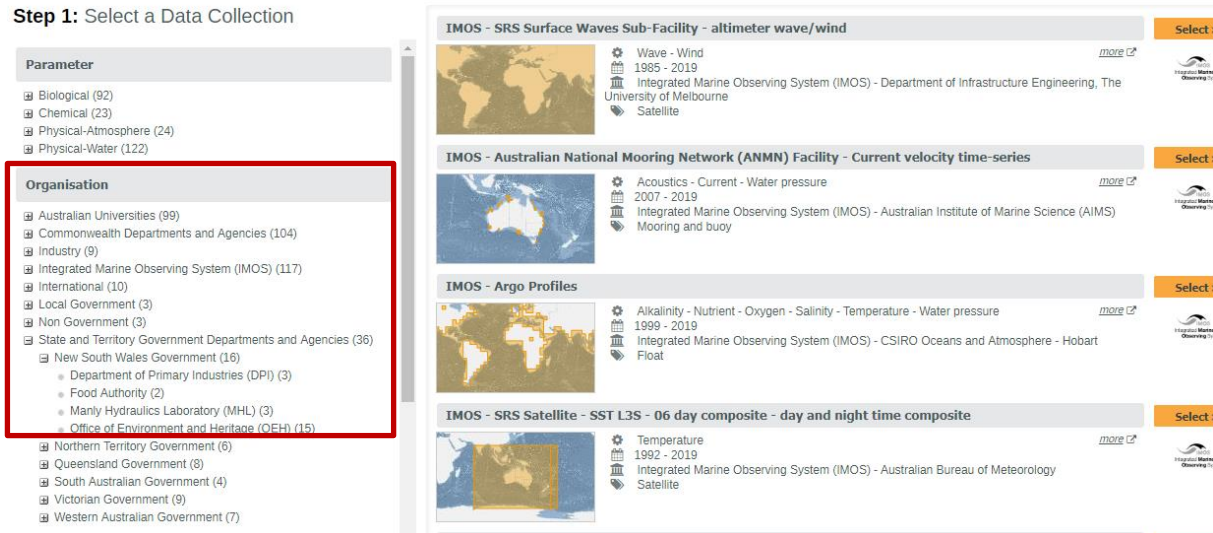
The AODN Portal provides access to all available Australian marine and climate science data including DPE / MHL historical offshore Waverider buoy data.

1. Go to <https://portal.aodn.org.au/>
2. Press “Get Ocean Data Now”



3. From the “Organisation” tab on the left-hand side, find the Manly Hydraulics Laboratory and select it.

Step 1: Select a Data Collection



Parameter

- Biological (92)
- Chemical (23)
- Physical-Atmosphere (24)
- Physical-Water (122)

Organisation

- Australian Universities (99)
- Commonwealth Departments and Agencies (104)
- Industry (9)
- Integrated Marine Observing System (IMOS) (117)
- International (10)
- Local Government (3)
- Non Government (3)
- State and Territory Government Departments and Agencies (36)
 - New South Wales Government (16)
 - Department of Primary Industries (DPI) (3)
 - Food Authority (2)
 - Manly Hydraulics Laboratory (MHL) (3)
 - Office of Environment and Heritage (OEH) (15)
 - Northern Territory Government (6)
 - Queensland Government (8)
 - South Australian Government (4)
 - Victorian Government (9)
 - Western Australian Government (7)

IMOS - SRS Surface Waves Sub-Facility - altimeter wave/wind **Select >>**

- Wave - Wind
- 1985 - 2019
- Integrated Marine Observing System (IMOS) - Department of Infrastructure Engineering, The University of Melbourne
- Satellite

IMOS - Australian National Mooring Network (ANMN) Facility - Current velocity time-series **Select >>**

- Acoustics - Current - Water pressure
- 2007 - 2019
- Integrated Marine Observing System (IMOS) - Australian Institute of Marine Science (AIMS)
- Mooring and buoy

IMOS - Argo Profiles **Select >>**

- Alkalinity - Nutrient - Oxygen - Salinity - Temperature - Water pressure
- 1999 - 2019
- Integrated Marine Observing System (IMOS) - CSIRO Oceans and Atmosphere - Hobart
- Floa

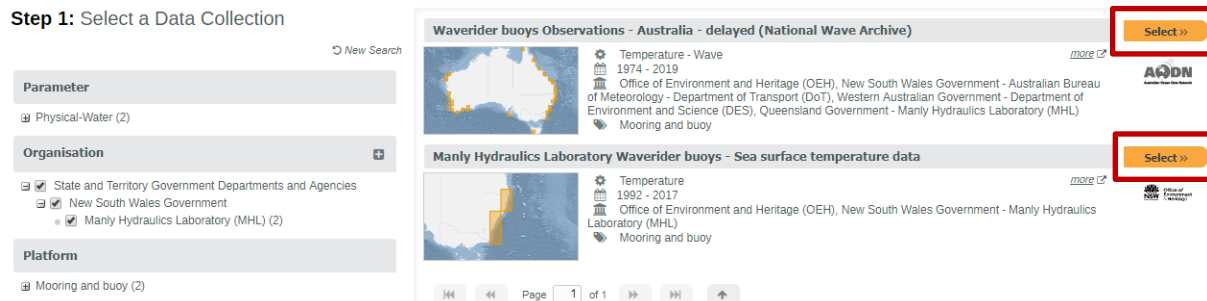
IMOS - SRS Satellite - SST L3S - 06 day composite - day and night time composite **Select >>**

- Temperature
- 1992 - 2019
- Integrated Marine Observing System (IMOS) - Australian Bureau of Meteorology
- Satellite

4. Look for Waverider buoys sea surface temperature data and then press "Select>>".

You can also select the Waverider buoys observations for data which also contains sea water temperature data.

Step 1: Select a Data Collection



Parameter

- Physical-Water (2)

Organisation

- State and Territory Government Departments and Agencies
 - New South Wales Government
 - Manly Hydraulics Laboratory (MHL) (2)

Platform

- Mooring and buoy (2)


Waverider buoys Observations - Australia - delayed (National Wave Archive) **Select >>**

- Temperature - Wave
- 1974 - 2019
- Office of Environment and Heritage (OEH), New South Wales Government - Australian Bureau of Meteorology - Department of Transport (DoT), Western Australian Government - Department of Environment and Science (DES), Queensland Government - Manly Hydraulics Laboratory (MHL)
- Mooring and buoy

Manly Hydraulics Laboratory Waverider buoys - Sea surface temperature data **Select >>**

- Temperature
- 1992 - 2017
- Office of Environment and Heritage (OEH), New South Wales Government - Manly Hydraulics Laboratory (MHL)
- Mooring and buoy

Page 1 of 1

5. Zoom in and use the subset icon  at the left side of the map to select the survey area of interest. Filters can be applied to show available data based on the filtering options on the left-hand side.

1 Select a Data Collection 2 Create a Subset **3 Download**

Step 2: Create a Subset

Spatial
 Bounding Box W 153.7 E 153.75
 N -28.81
 S -28.84
 Reset

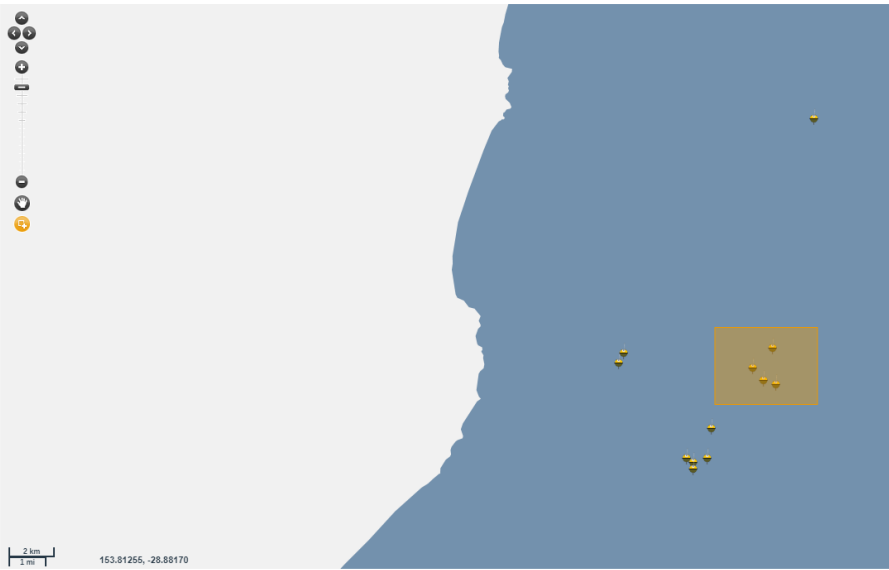
Manly Hydraulics Laboratory Waverider buoys - Sea surface temperature data

Subset Info Layer

Temporal
 From Min 3 Reset
 To Max 3 Reset

Others
 Platform code All

Clear Subsets



Previous **Next >>**

- Click on the “Next >>” button below or the “3 Download” tab at the top and select “Download as”.
- You are prompted to agree to the terms of use and then all the data within the box can be downloaded in different formats (CSV, Python, NetCDF, URL).

1 Select a Data Collection 2 Create a Subset **3 Download**

Step 3: Download

Manly Hydraulics Laboratory Waverider buoys - Sea surface temperature data

Spatial: From Lat/Lon -28.845, 153.703 to Lat/Lon -28.813, 153.746
[View metadata record](#)

Clear and Reset

Download as...

- CSV
- Python
- Un-subsetted NetCDFs
- List of URLs

To see other water information available such as physical parameter mooring data, physical and biogeochemistry data, glider deployment data, climatology data and biological datasets, click on “Keyword” on the left-hand side menu, type in your keyword and then press enter.

Step 1: Select a Data Collection

Parameter

Organisation

Platform

Date (UTC)

Geographic Boundary

Keyword

Type keyword, press enter

1.5.6 Port Authority of New South Wales – current

The Port Authority of New South Wales (Port Authority) manages the navigation, security and operational safety needs of commercial shipping in Sydney Harbour, Port Botany, Port Kembla and the ports of Newcastle, Eden and Yamba. Port Authority has a webpage which provides wave, wind, tide and current information from monitoring stations within the ports they manage.

Go to <http://wavewindtide.portauthoritiesnsw.com.au/>

Sensor data is available for purchase. Current plots are presented online for the following locations:

- Botany Bay
 - Current: Caltex (Directional)
- Sydney Harbour
 - Current: Circular Quay ADCP, Balls Head

The screenshot displays the 'Wave Wind Tide Current' section of the Port Authority of New South Wales website. It is organized into two main sections: Botany Bay and Sydney Harbour. Each section contains a grid of data cards for various monitoring stations. Each card includes a station name, a small icon, a 'View Details' link, and a 'Map' link. The data cards for Botany Bay include: Offshore (Directional) Wave, Bombora (Directional) Wave, Captain Cook Channel (SG) Wave, Kurnell (SG) Wave, Molineaux Point Wind, Sydney Airport (Main Runway BOM) Wind, Brotherson Emergency Response Jetty Tide, and Caltex (Directional) Current. The data cards for Sydney Harbour include: Western Wedding Cake Wind and Fort Denison (Sth end BOM) Wind. The website header features the Port Authority logo and the text 'Wave Wind Tide Current'. A note at the bottom of the header states: 'Present times are expressed in Eastern Daylight Saving Time. Sensor data is available for purchase (Pricing information)'.

1.5.7 NSW Government (Data.NSW) – various datasets

Data.NSW is the NSW Government's open data catalogue, bringing together datasets and data portals from NSW Government agencies and departments into one searchable website. Each dataset is licenced with a specific licence that describes how the data can be used.

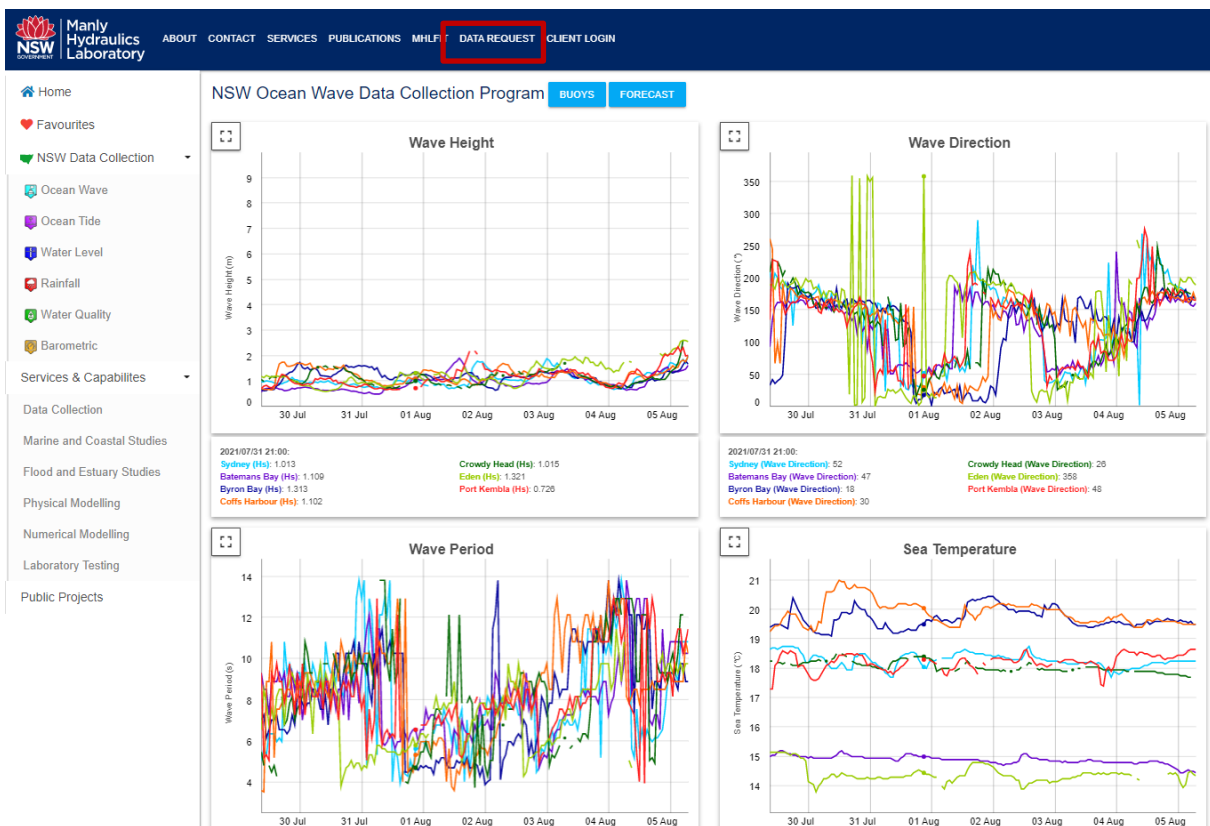
Follow all the steps described in [Section 1.1.9](#) of this document.

1.6 Wave

1.6.1 Manly Hydraulics Laboratory – wave

MHL displays some of the coastal and environmental data collected on behalf of the NSW Government. This includes rivers, creeks, streams, estuaries and coastal water, ocean tide, sea surface temperature, and NSW wave data.

1. Go to <https://www.mhl.nsw.gov.au/Data-Wave>
2. The page will show the graphs for wave height, wave direction and wave period of 7 stations for the last 7 days. Hover the mouse pointer over the graphs to see the measurements at every 1-hour time interval.



3. Select a station using the map below the graph. Click on the station marker and then click on the station name to view the plots and directional spectrum for that station alone. Alternatively, select the station name under the “Station Data Pages” section.
4. In the specific station page, see more information about the station under “Station Documents”.
5. To request the data in .csv format for a specific period, select “Data Request” from the top ribbon and fill out the web form.

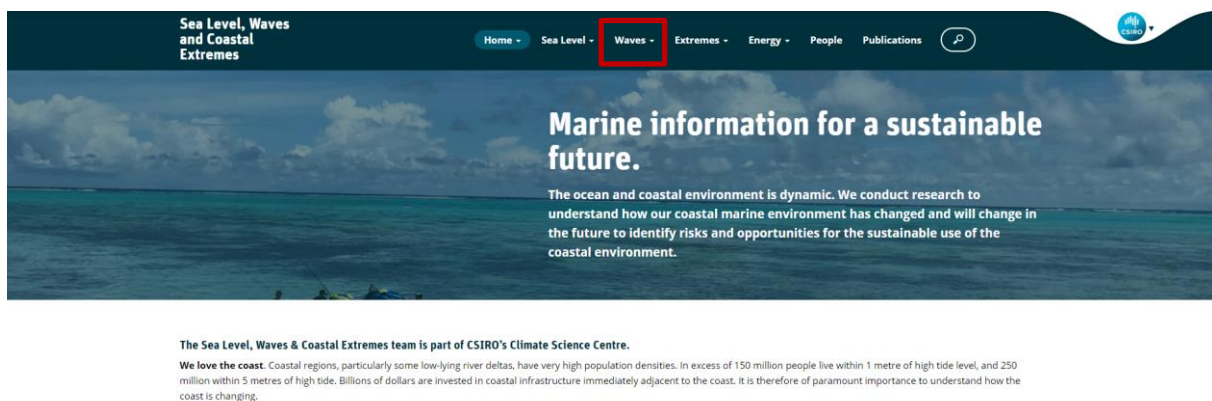
Station documents include wave height exceedance, wave period occurrence, seasonal direction roses, wave direction occurrence, location history and storm history tables.

Annual historical time series plots of wave height (Hsig) from the Byron Bay, Coffs Harbour, Crowdy Head, Sydney, Port Kembla, Batemans Bay and Eden Waverider buoys are included in the NSW Wave Climate Annual Summaries. The documents can be downloaded at: <https://www.mhl.nsw.gov.au/Publications/>

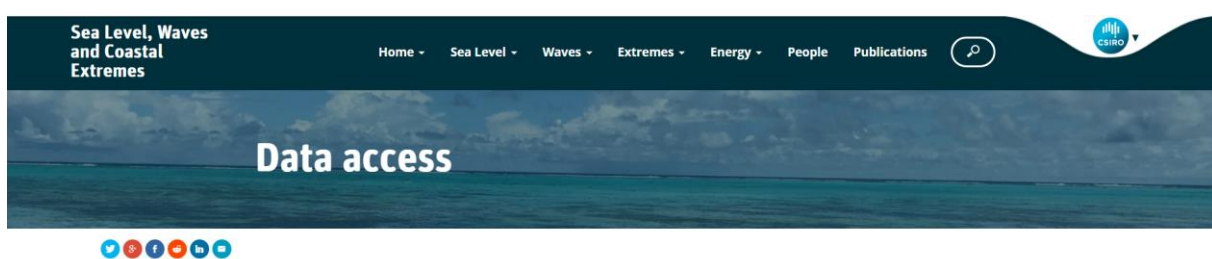
1.6.2 CSIRO Climate Science Centre – wave

The CSIRO Climate Science Centre has a team that conduct research to understand how the coastal marine environment has changed and will change in the future to identify risks and opportunities for the sustainable use of the coastal environment. Their key areas of research include sea level change, waves, coastal extremes, and ocean energy.

1. Go to <https://research.csiro.au/slrwavescoast/>
2. Under the "Waves" tab in the top ribbon, select "Data Access". (<https://research.csiro.au/slrwavescoast/sea-level/sea-level-changes/>)



3. Click on the links to find datasets on wave hindcast and wave projections. The data are served via THREDDS, and are accessible via OPeNDAP (remote access), HTTP download, WMS/WCS web services and the NetCDF Subset Service.



Published datasets

We have published a number of datasets generated with WaveWatch III through [CSIRO's Data Access Portal](#). These datasets contribute to a range of research and projects including the Australian Wave Energy Atlas (see [Energy](#) section), and [COWCLIP](#).

Available datasets are:

- [Wave hindcast](#)
 - initial hindcast [1979-2010](#),
 - extension [2011-2013](#)
 - extension [2013-2014](#).
- [21st Century wave projections](#).

Waves

The Coordinated Ocean Wave Climate Project (COWCLIP)

[Data access](#)

4. Scroll down the page to the “Supporting Files” section. Click on the HTML link for the THREDDS server.
5. Click on the “CSIRO-hosted THREDDS server” link to view the dataset.

CAWCR Wave Hindcast 1979-2010

Data access via THREDDS Server

The NetCDF data files for [this collection](#) are available via a [CSIRO-hosted THREDDS server](#).

The dataset is licenced under the Creative Commons Attribution-ShareAlike Licence.

It is also required that the source of this data be acknowledged on the following terms: ‘Source: Bureau of Meteorology and CSIRO © 2013’.
Apart from dealings under the Copyright Act 1968, the licensee shall not reproduce (electronically or otherwise), modify or supply (by sale or otherwise) this data without written permission.

Please contact [CSIRO](#) or [BoM](#) for more information.

Creative Commons Attribution-ShareAlike Licence



1.6.3 Buoyweather – wave forecast

Buoyweather provides marine forecasts for a chosen location or point instead of a general region. It generates high-resolution forecasts by using Global Forecasting System (GFS), Northern American Mesoscale (NAM), and Wavewatch numerical models.

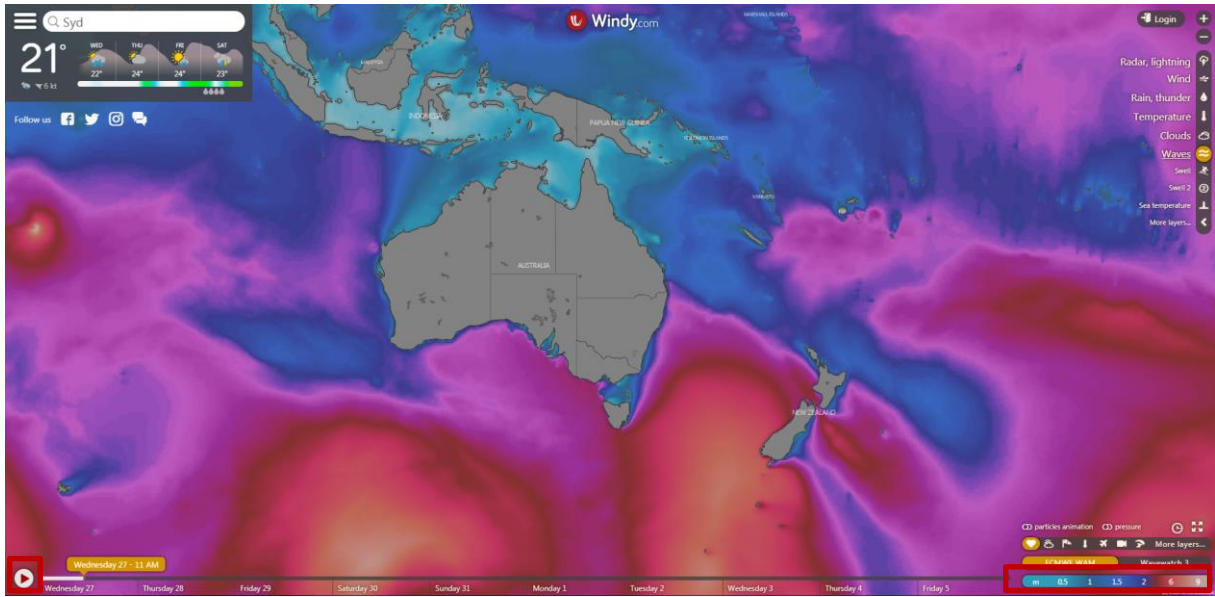
Wave forecasts based on NOAA Wavewatch III[®] Model.

Follow all the steps described in [Section 1.4.5](#) of this document.

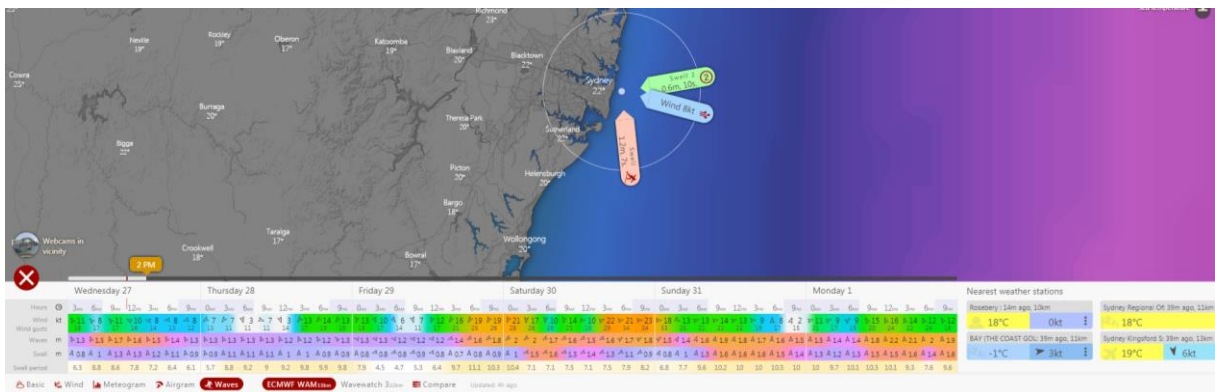
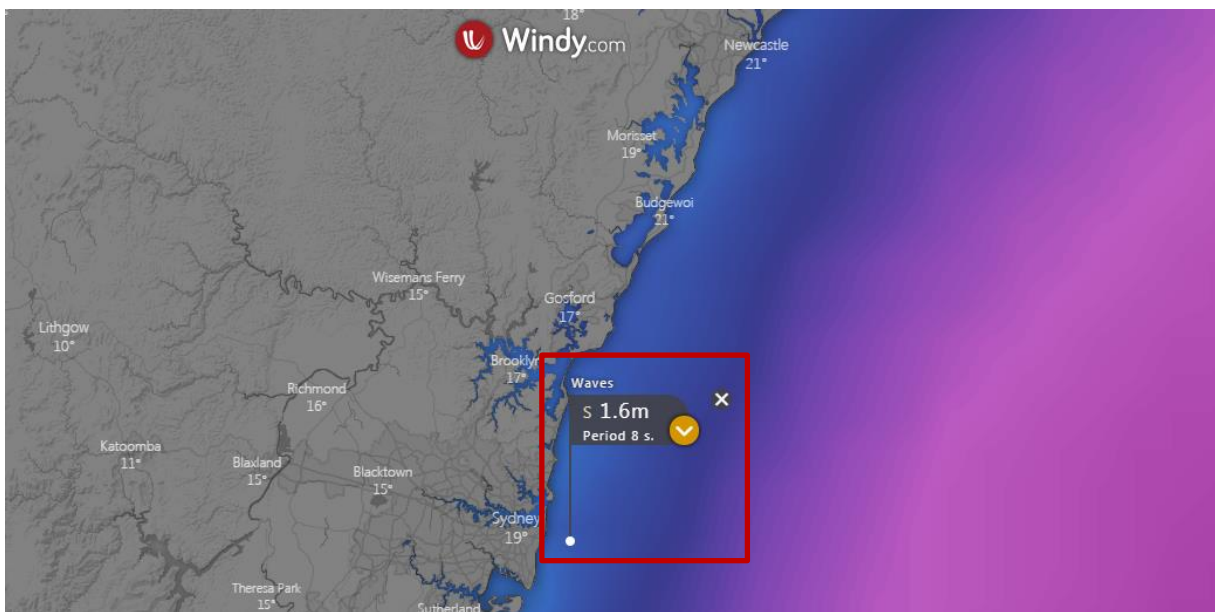
1.6.4 Windy.com – wave forecast

Windy.com provides wave, wind and weather forecasts based on the European Centre for Medium-Range Weather Forecasts (ECMWF), GFS provided by the National Oceanic and Atmospheric Administration (NOAA), and the NOAA Environment Modelling System (NEMS).
Wave forecasts based on NOAA Wavewatch III[®] Model.

1. Go to <https://www.windy.com/-Waves-waves?waves,-33.859,151.200,5>
2. A map shows a wave chart that is coloured based on the wave height (legend on the lower-right corner).
3. To see how the forecast for the next 10 days looks like on the map, click on the dates at the bottom of the map or click on the play button on the lower-left corner to see an automated presentation of the forecast.



- Zoom in on the map and click on a specific location. Then click on the yellow down arrow button. This will show a detailed forecast for wind, waves, swell and swell period.



- On the upper right-hand side menu, “Swell”, “Swell 2” and “Sea temperature” can be selected to reflect their forecast on the map.

Then click on the dates at the bottom of the map or click on the play button to see an automated presentation of the forecasts.

1.6.5 Seabreeze – wave forecast

Live and 7-day wave, wind and tide forecasts (utilising Bureau of Meteorology data)

Follow all the steps described in [Section 1.4.6](#) of this document.

1.6.6 Port Authority of New South Wales – wave

The Port Authority of New South Wales (Port Authority) manages the navigation, security and operational safety needs of commercial shipping in Sydney Harbour, Port Botany, Port Kembla and the ports of Newcastle, Eden and Yamba. Port Authority has a webpage which provides wave, wind, tide and current information from monitoring stations within the ports they manage.

Go to <http://wavewindtide.portauthoritiesnsw.com.au/>

Sensor data is available for purchase. Wave plots are presented online for the following locations:

- Botany Bay
 - Wave: Offshore Botany Bay, In Botany Bay – Captain Cook Channel, Bombora and Kurnell
- Eden
 - Wave: Twofold Bay - Munganno Point

The screenshot displays the 'Wave Wind Tide Current' section of the Port Authority of New South Wales website. It features a grid of forecast cards for various locations. The 'Botany Bay' section includes forecasts for Offshore (Directional) Wave, Bombora (Directional) Wave, Captain Cook Channel (SG) Wave, Kurnell (SG) Wave, Molineaux Point Wind, Sydney Airport (Main Runway BOM) Wind, Brotherson Emergency Response Jetty Tide, and Caltex (Directional) Current. The 'Sydney Harbour' section includes forecasts for Western Wedding Cake Wind and Fort Denison (Sth end BOM) Wind. Each card shows a small icon, a title, coordinates, and a summary of the forecast data (e.g., HS, Hmax, Tp, Tz, Dir, Speed, Gust, Dir). A 'View Details' link is provided for each card. A 'Map' button is located at the top right of each section.

1.6.7 Queensland Government – wave (Tweed Heads)

The Queensland Government maintains a network of wave monitoring sites to measure the height and direction of waves along the Queensland coast. One of the wave monitoring sites is Tweed Heads.

1. Go to <https://www.qld.gov.au/environment/coasts-waterways/beach/monitoring/waves-sites/tweed-heads>

Queensland Government Contact us Search website

For Queenslanders Business and Industry Government employees

Queensland Government home > For Queenslanders > Environment, land and water > Coasts, waterways and marine > Beaches, tides and waves > Wave monitoring > Wave monitoring sites > Tweed Heads wave monitoring

Wave monitoring sites

- > Glossary
- > Wave monitoring sites
- > About wave monitoring
- > Frequently asked questions

Tweed Heads wave monitoring

Print

Wave height

Tweed Heads - Significant Wave Height (m), Maximum Wave Height (m)

Height (m)

Significant Wave Height (m)
Maximum Wave Height (m)

Updated 2019-03-22 08:30:00 Australian Eastern Standard Time

http://www.qld.gov.au/waves

Wave direction

Tweed Heads - Peak Energy Period (s), Zero Crossing Period (s)

Period (s)

Peak Energy Period (s)
Zero Crossing Period (s)

Map

Map data ©2019 Google

Site details

Date of installation
13 January 1995

Current location

2. Under the “Site details” section, click on “Download data” for the Tweed Heads wave monitoring site.
3. Click on the link of the desired data period under the “Data and resources” section.

Queensland Government data Search for data

Home Data Events Strategies Case studies For developers Contact

Data

- > Datasets
- > Categories
- > Organisations
- > Tags
- > Maps and geospatial
- > Other data types

Dataset
Activity stream

Coastal Data System - Waves (Tweed Heads) Print

Measured/Calculated wave parameters. Measured and derived wave data from data collected by oceanographic wave measuring buoys anchored at Tweed Heads. This site is jointly operated by the Department of Science, Information Technology, and Innovation and the [Tweed River Entrance Sand Bypass Project](#). For more information please refer to www.qld.gov.au/waves.

Field names are;

- Hs** - Significant wave height, an average of the highest third of the waves in a record (26.6 minute recording period).
- Hmax** - The maximum wave height in the record.
- Tz** - The zero upcrossing wave period.
- Tp** - The peak energy wave period.
- Dir_Tp TRUE** - Direction (related to true north) from which the peak period waves are coming from.
- SST** - Approximation of sea surface temperature.

Data and resources

Wave data - 2019

2019 wave data from the Tweed Heads site (January 1 - February 28)

0 recent views 0 total views

Wave data - 2018

2018 wave data from the Tweed Heads site (January 1 - December 31)

2 recent views 4 total views

Dataset custodian

Environment and Science

[View all datasets](#)

Feedback

[Contact Us](#)

Followers

0

Data attribution

Environment and Science, Queensland Government, [Coastal Data System - Waves \(Tweed Heads\)](#), licensed under [Creative Commons Attribution 4.0](#) sourced on 22 March 2019

4. Click on “Download” to save a CSV file of the data.

Coastal Data System - Waves (Tweed Heads)

- > Wave data - 2019
- > Wave data - 2018
- > Wave data Mk4 - 2018
- > Wave data - 2017
- > Wave data Mk4 - 2017
- > Wave data - 2016
- > Wave data - 2015
- > Wave data - 2014
- > Wave data - 2013
- > Wave data - 2012
- > Wave data - 1995 to 2011
- > Tweed Heads WR Metadata 2018
- > Tweed Heads WR Metadata 2017

Wave data - 2019 Print

2019 wave data from the Tweed Heads site (January 1 - February 28)

Download (156.2 KiB)

Visualisation Preview

Data API

Additional information

Field	Value
Last updated	05/03/2019
Created	20/02/2019
Next review	31/03/2019
Format	CSV
Mime type	text/csv
Size	156.2 KiB
Licence	Creative Commons Attribution 4.0
Show more	

Help opening .csv file?

Read about the [.csv file format](#) on Wikipedia.

Feedback

[Contact Us](#)

Data attribution

Environment and Science, Queensland Government, [Wave data - 2019 API](#), licensed under [Creative Commons Attribution 4.0](#) sourced on 22 March 2019

Disclaimer

Our data is published as an information source only, please read our [disclaimer](#).

1.6.8 Australian Ocean Data Network – historical wave

The AODN Portal provides access to all available Australian marine and climate science data including DPE / MHL historical offshore Waverider buoy data.

1. Go to <https://portal.aodn.org.au/>
2. Press “Get Ocean Data Now”



- From the “Organisation” tab on the left-hand side, find the Manly Hydraulics Laboratory and select it.

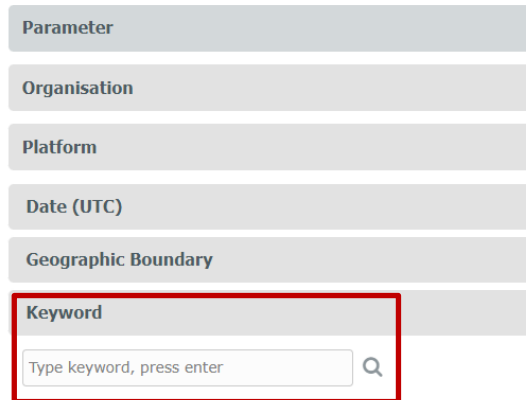
- Look for Waverider buoys observations data and then press “Select>>”.

- Follow steps 5-7 described in [Section 1.5.5](#) of this document.

To see other water information available such as physical parameter mooring data, physical

and biogeochemistry data, glider deployment data, climatology data and biological datasets, click on “Keyword” on the left-hand side menu, type in your keyword and then press enter.

Step 1: Select a Data Collection



The image shows a vertical list of six grey rectangular buttons with white text. From top to bottom, the buttons are labeled: "Parameter", "Organisation", "Platform", "Date (UTC)", "Geographic Boundary", and "Keyword". The "Keyword" button is highlighted with a red rectangular border. Below the "Keyword" button is a white search input field with the placeholder text "Type keyword, press enter" and a magnifying glass icon on the right side.

1.6.9 NSW Nearshore Wave Forecast – nearshore wave forecast

The NSW Nearshore Wave Forecast tool (NSWaves) allows users to visualise wave conditions along the NSW coast within a rolling time window, combining recent offshore wave observations from the NSW Waverider buoy network with the NOAA Wavewatch III[®] ocean wave forecast. The tool transfers the observed and forecast offshore wave conditions to nearshore locations along the NSW coast.

1. Go to <http://nearshore.waves.nsw.gov.au>

The page will show a map and plots of the forecast and measured wave height, wave direction and wave period for NSW nearshore.

Wave Data + Forecast

16 Mar	17 Mar	18 Mar
19 Mar	20 Mar	21 Mar
22 Mar	23 Mar	24 Mar
25 Mar	26 Mar	27 Mar

Time: 11:00

Contour: 10m & 30m contour

REFRESH

Location values :
Hs: 0.9m Tp: 8s Dir: 108°Nth

The NSW Nearshore Wave Forecast tool provides transformed wave data based on offshore wave conditions from the NSW Waverider buoy network and NOAA WAVEWATCH III model. Data generation is automated and we do not guarantee the timeliness or accuracy of these results. The OEH, MHL and Baird Australia accept no responsibility or liability for the use or misuse of data or results presented on this website.

Baird AUSTRALIA
NSW Office of Environment & Heritage
Manly Hydraulics Laboratory

2. Select the dates on the left-hand side to see the wave data or forecast on the map. The time and wave height contour can also be set.
3. Use the map to navigate along the NSW coast and visualise nearshore wave conditions within the rolling time window along the 10 m and 30 m water depth contours. Coloured arrows indicate the direction and height (colour) of waves at each location.
4. Click on an arrow to see the wave height (Hsig), period (TP1) and direction at that location for the specified day and time.

Wave Data + Forecast

16 Mar	17 Mar	18 Mar
19 Mar	20 Mar	21 Mar
22 Mar	23 Mar	24 Mar
25 Mar	26 Mar	27 Mar

Time: 11:00

Contour: 10m & 30m contour

REFRESH

Location values :
Hs: 1m Tp: 8s Dir: 99°Nth

The NSW Nearshore Wave Forecast tool provides transformed wave data based on offshore wave conditions from the NSW Waverider buoy network and NOAA WAVEWATCH III model. Data generation is automated and we do not guarantee the timeliness or accuracy of these results. The OEH, MHL and Baird Australia accept no responsibility or liability for the use or misuse of data or results presented on this website.

5. Click on “Plot Data >>” to plot the time series of wave conditions for the selected location. The page will refresh to generate the plots.
6. Scroll down the page to see the time series plots. These compare the wave height, direction and period for recent days based on offshore Waverider buoy observations, with wave height, direction and period for recent and coming days based on the offshore wave forecast.

1.6.10 Bureau of Meteorology – offshore wave forecast

Wave forecasts utilising the Bureau of Meteorology AUSWAVE ® wave model.

1. Go to <http://www.bom.gov.au/australia/charts/viewer/index.shtml?domain=combinedW&type=sigWaveHgt>
2. Under “Map Selection”, click on the drop-down arrow next to “Show” and then select the forecast type. The forecast selection includes total wave height, primary swell, secondary swell, wind wave, and wave period.

Australian Government
Bureau of Meteorology

HOME | ABOUT | MEDIA | CONTACTS | Enter search terms | Search

NSW | VIC | QLD | WA | SA | TAS | ACT | NT | AUSTRALIA | GLOBAL | ANTARCTICA

[Bureau Home](#) > [Australia](#) > [Weather Maps](#) > Interactive Weather and Wave Forecast Maps

Interactive Weather and Wave Forecast Maps

Map Viewer Help | Glossary | Recent Weather Maps | Feedback

Map Selection

These forecast maps are produced from computer models and are used by forecasters to develop the official forecast maps on [MetEye](#).

Show: Total Wave Height Area: South Eastern Australia
Timezone: Australian Eastern (South) Period: Combined 7 Days

Refresh View

3. Put the map view to NSW by setting “Area” to “South Eastern Australia” and “Timezone” to “Australian Eastern (South)”.
4. The “Period” can be set as one of the following options: 3 Days (3-hour intervals for the next 3 days); 7 Days (6-hour intervals for the next 7 days); or Combined 7 Days (3-hour intervals for the next 3 days and then 6-hour intervals for the succeeding 4 days).
5. Click on the “Refresh View” button.
6. Above the map, select the date and time of the desired forecast or click on the play button to see an automated presentation of the forecast through the time series.

Bureau Home > Australia > Weather Maps > Interactive Weather and Wave Forecast Maps

Interactive Weather and Wave Forecast Maps

Map Viewer Help | Glossary | Recent Weather Maps | Feedback

Map Selection

These forecast maps are produced from computer models and are used by forecasters to develop the official forecast maps on [MetEye](#).

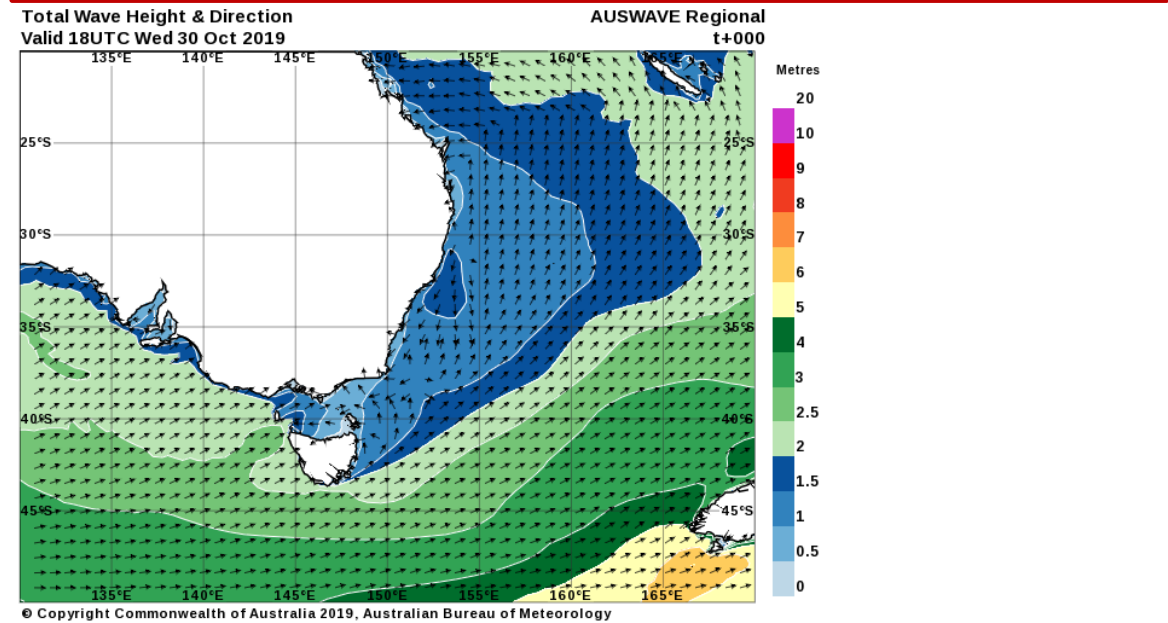
Show: Timezone:

Area: Period:

Animate

Select a day or time to see its map

THURSDAY					FRIDAY					SATURDAY					SUNDAY				MONDAY				TUESDAY				WEDNESDAY												
05	08	11	14	17	20	23	02	05	08	11	14	17	20	23	02	05	08	11	14	17	20	23	02	05	11	17	23	05	11	17	23	05	11	17	23	05	11	17	23



Forecast for 05:00 AEDT on Thursday 31 October 2019

1.6.11 NSW Government (Data.NSW) – various datasets

Data.NSW is the NSW Government's open data catalogue, bringing together datasets and data portals from NSW Government agencies and departments into one searchable website. Each dataset is licenced with a specific licence that describes how the data can be used.

Follow all the steps described in [Section 1.1.9](#) of this document.

1.6.12 DPE Environment and Heritage Group – various publications

DPE is the custodian of a number of surface water, urban water, and meteorological monitoring stations. These stations include the water quality monitoring program run by DPE Beachwatch. This DPE webpage provides reports, research and publications on water and environmental information. The webpage also provides a link to the NSW Government's Sharing and Enabling Environmental Data (SEED) portal.

Follow all the steps described in [Section 1.1.15](#) of this document.

1.6.13 DPE Environment and Heritage Group – live nearshore wave data

DPE is the custodian of a number of surface water, urban water, and meteorological monitoring stations. DPE deployed temporary wave buoys in shallow coastal waters to measure live nearshore wave data.

1. Go to <https://www.environment.nsw.gov.au/topics/water/coasts/research/ocean-and-coastal-waves>
2. Click the “Nearshore wave buoy data page” link which will open a SEED webpage.

The screenshot shows the NSW Department of Planning and Environment website. The page title is "Ocean and coastal waves". The breadcrumb trail is "Topics > Water > Coasts > Research > Ocean and coastal waves". The page content includes a description of coastal wave conditions and hazards, and a section titled "Coastal buoys" which contains a link to the "Nearshore wave buoy data page". The link is highlighted with a red box. The page also features a "Contact us" sidebar with the phone number 1300 381 967 and an email link.

3. Watch the video tutorial about how to view and download the live wave data.
4. Click the “real-time data from active wave buoy deployments” link which will open a new SEED webpage.



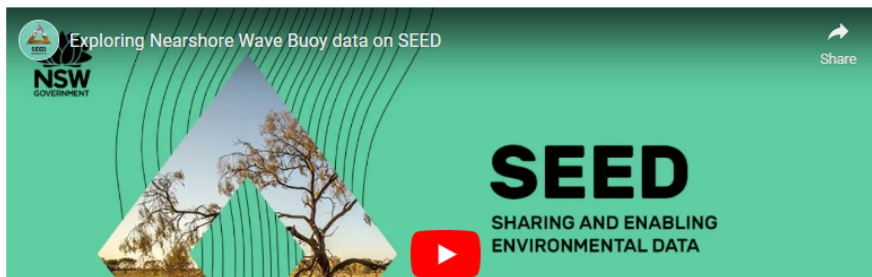
Home > [Nearshore wave buoy data on SEED](#)

Nearshore wave buoy data on SEED

Wave buoy data describing the local wave conditions at NSW beaches can be viewed and downloaded from SEED.

You can view a rolling 7-day window of **real-time data from active wave buoy deployments**. You can download data packages containing processed wave parameter time series data from past deployments, as well as summary plots and tables describing the measured wave conditions.

Watch the video tutorial below to learn how to view and download wave buoy data using SEED.



5. Click the “Show on SEED Map” button which will open the SEED Map with the NSW nearshore wave buoy data already loaded.

Home > Dataset > Organisations > Department of Planning and... > NSW nearshore wave buoy...

Dataset
Department of Planning and Environment
Subscribe

NSW nearshore wave buoy parameter time series data (active deployments)

In-situ ocean wave measurements have been collected at nearshore locations in shallow waters along the NSW coast. Wave data are collected by Sofar Spotter wave buoys (<https://www.sofaroccean.com/products/spotter>) that are deployed by NSW DPE scientists in shallow coastal waters (10-30 m depths) adjacent to beaches or rocky shores. The buoys are tethered to moorings at deployment locations and float on the water surface, measuring the height, period and direction of passing waves by tracking the motion of the buoy through time using GPS. The deployments are temporary, and the duration of each wave buoy deployment varies with operational needs ranging from months to years. The deployment locations are chosen to support scientific research carried by NSW DPE and partners on coastal dynamics along the NSW coastline and to develop nearshore wave modelling tools and data. The research and tools support the development of Coastal Management Programs (CMPs) under the Coastal Management Act (2016).

The real-time wave data from live buoy deployments includes time-series charts of key parameters describing wave height, period and direction over a rolling seven-day window. The parameters are derived on board the buoy using wave spectra analysis and include significant wave height (Hm0), mean wave period (Tm01), peak wave period (TP), mean

Save to Shortlist

Export metadata -

Planning & Environment

Contact Data Broker

Datasets

Activity Stream

About

Show on SEED Map

SEED
The Central Resource for
Sharing and Enabling Environmental Data in NSW

Dataset catalogue Dashboards Need help?

Legend

Filter Swatches...

- buoy
 - NSW nearshore wave buoy data
 - Sig. wave height less than 2.5m
 - Sig. wave height greater than 2.5m

I want to...

Deeban

Description Details Charts WAVE_BUOY WIND_BUOY TEMP_BUOY

Summary

6. Follow the instructions in the video tutorial to view charts and export data.

1.6.14 WillyWeather – swell

WillyWeather provides meteorological information, tides and swell based on data supplied by the Bureau of Meteorology and other sources such as the National Oceanic and Atmospheric Administration.

1. Go to <https://swell.willyweather.com.au/nsw.html>



2. Select an area by clicking the location pin on the map.
3. If your specific location of interest is not shown on the map, you can search for it by clicking on the region from the list below the map. Then you can scroll down through the alphabetical list of locations or filter the locations by typing the name of the location you are searching for on the "Filter Locations" box. Click on the location name.

South Coast Swell Forecast

Australia / NSW / South Coast

South Coast ^

WEDNESDAY Partly cloudy. Areas of morning frost about the coastal ranges. Medium (40%) chance of showers near the Victorian border, near zero chance elsewhere. Winds west to southwesterly 15 to 20 km/h becoming light in the evening then becoming westerly 15 to 20 km/h in the late evening. Daytime maximum temperatures between 12 and 17.

THURSDAY Partly cloudy. High (90%)

Batemans Bay v

Bega v

Snowy Mountains v

Southern Tablelands v



All Locations

A-D

E-H

I-L

M-P

Q-T

U-Z

Filter Locations

a

Acheron Ledge

Aragunnu Beach

Armands Bay

Aslings Beach

b

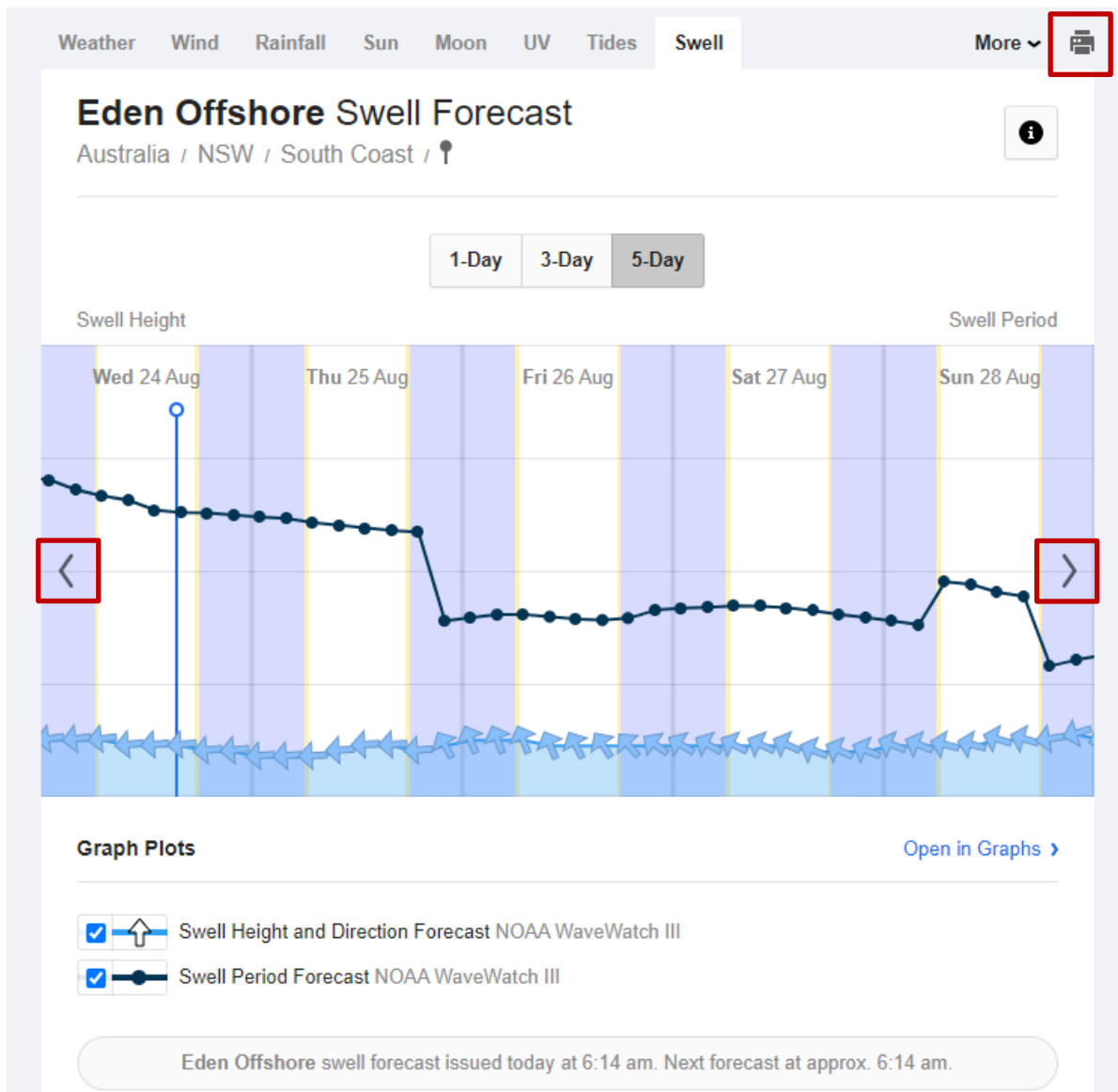
Back Lagoon Entra...

Bar Beach North N...

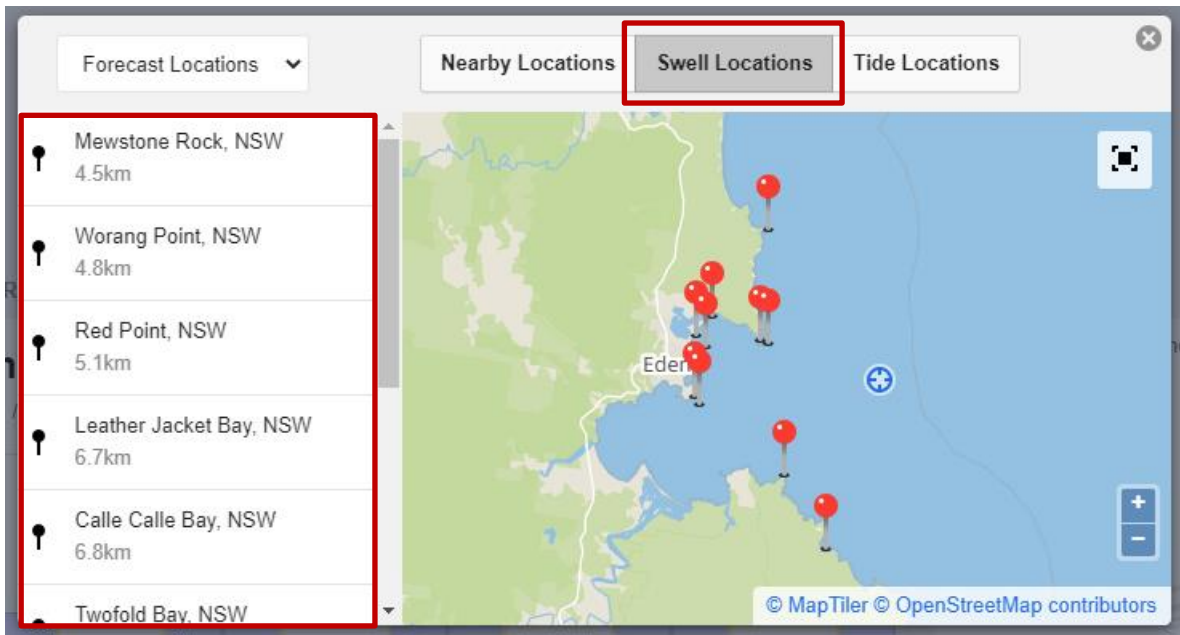
Baragoot Beach

Baragoot Lake Entr...

4. Then in a new page, a 5-Day chart of the selected location's swell forecast will be shown.
5. You can change the date range on the chart by hovering over the chart and then clicking the left or right arrows that appear. You will be able to see from 2 days before the current day up to the next 15 days.



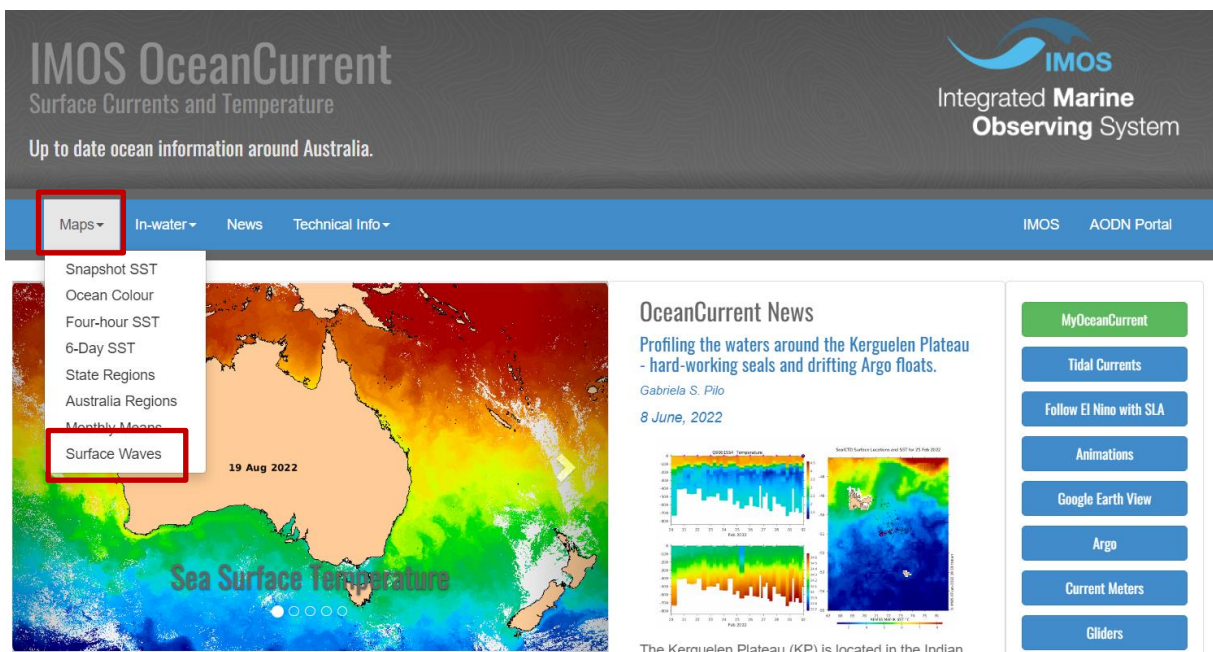
6. Click on the printer icon at the upper-right corner to get a printable overview of the weather, wind, swell, tides, etc., for the current day and the next 4 days.
7. If you want to change the unit settings, scroll to the top of the page, click the “Unit Settings” drop-down arrow, and then select the unit for each measurement.
8. If you want to change the current location to a nearby location, click the “View Locations Map” icon at the top-left corner of the page. Click on the “Swell Locations” button. Then select a new location by clicking on a specific pin on the map or clicking on the location name on the left.



1.6.15 Integrated Marine Observing System (IMOS) – surface waves

The IMOS displays historical Australian regional sea surface temperature and ocean current charts including the Tasman Sea and NSW coast.

1. Go to <http://oceancurrent.imos.org.au/>
2. Click on “Maps” tab and then select “Surface Waves”.
3. The next image is a map showing a snapshot of surface wave conditions around Australia.



4. Click on the circle pins surrounding the Australian coast to see wave information at

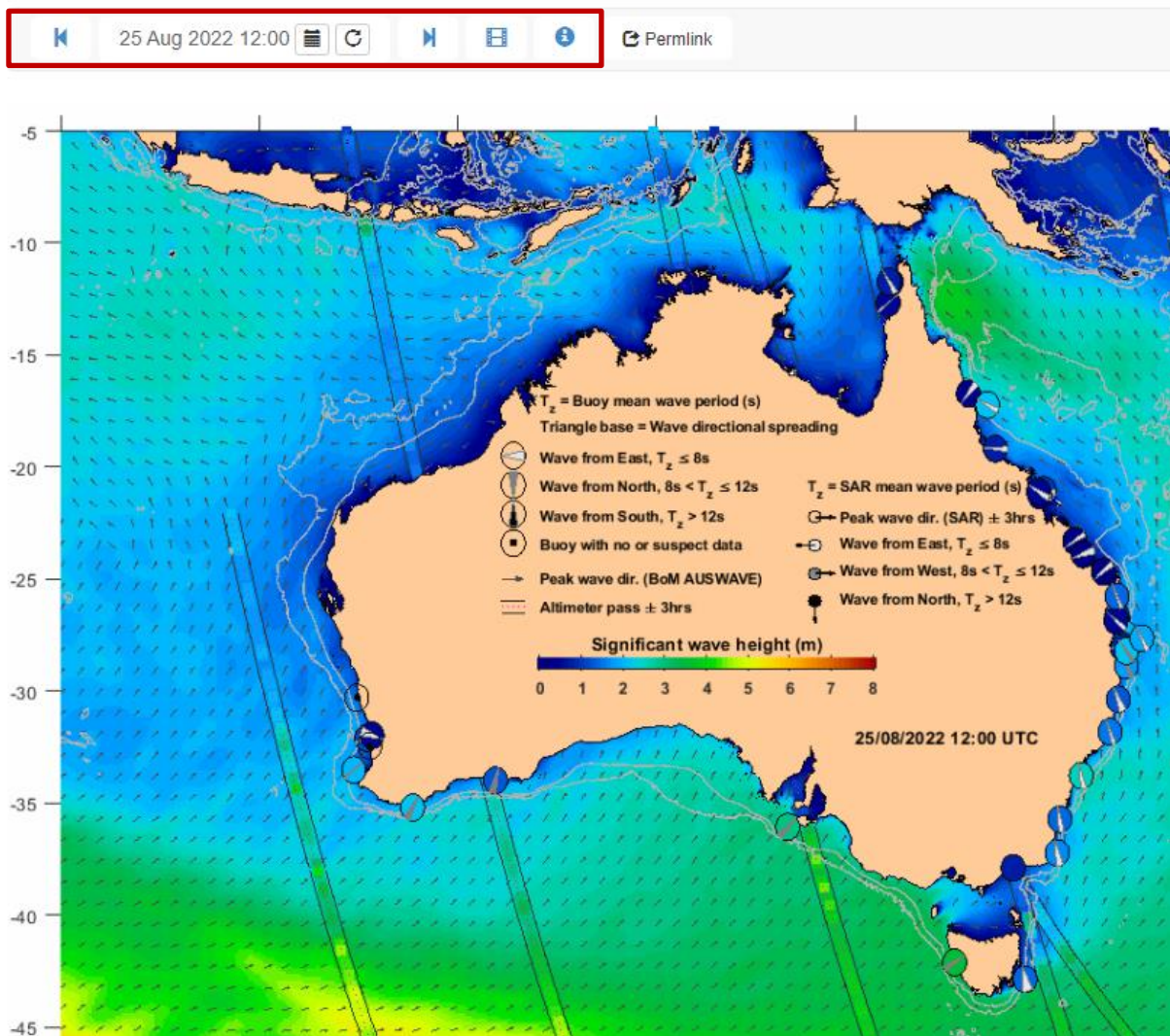
different locations.

5. To see the snapshot of surface wave conditions on a specific date, click on the calendar icon above the map.

To go back to the current date, click on the reset icon.

To browse the images, click on the next/back buttons or click on the movie icon to see an automated presentation of the images for the month of the selected date.

To see the information about the images, legend and data sources, click on the information icon.



1.7 Storages

1.7.1 Bureau of Meteorology – water storage dashboard

The Bureau of Meteorology's Water Storage dashboard lets you compare water levels and volumes for more than 300 publicly-owned lakes, reservoirs and weirs in different States and Territories, and see how much water is available over the entire country.

Water management authorities in each State and Territory send water storage information to the Bureau of Meteorology (the Bureau) for processing and publication. The Bureau converts the data into a standardised form for easy comparison across different regions. Information about water storage levels and volumes is generated at different scales, such as by State, city, drainage division and water system.

<http://www.bom.gov.au/water/dashboards/#/water-storages/summary/state>

1.7.2 Bureau of Meteorology – storage level and volume

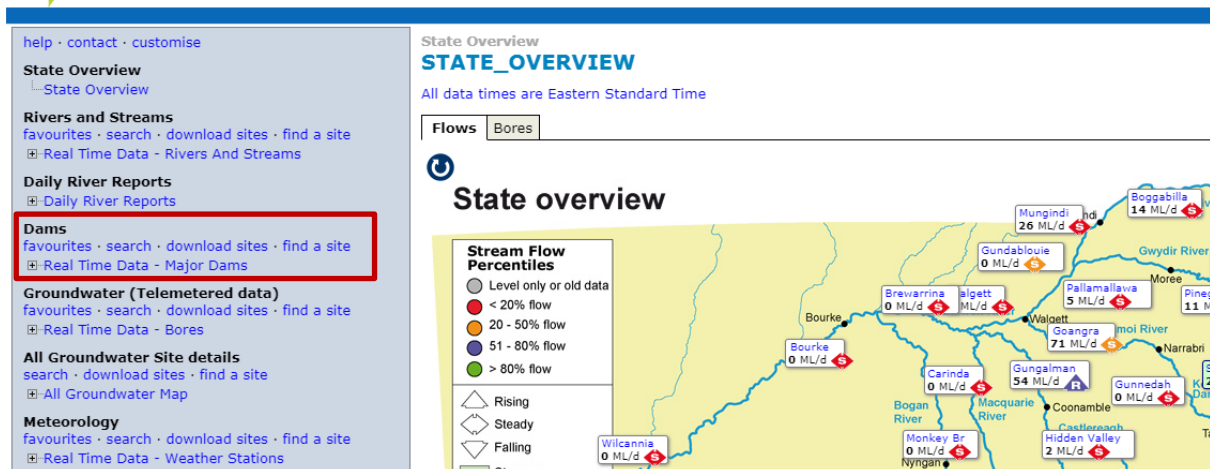
Water Data Online provides a centralised database for all water storage stations (level and volume) managed by multiple agencies across NSW.

Follow all the steps described in [Section 1.1.6](#) of this document.

1.7.3 WaterNSW – water storage level

WaterNSW is the custodian of a large network of stations monitoring surface water, groundwater, storage, meteorological, water use, and other water information stations. The other water information includes monitoring of other environmental information.

1. Go to <https://realtimedata.watnsw.com.au/>
2. Expand “Real Time Data – Major Dams” from the left-hand side pane.



3. Follow steps 3-4 described in [Section 1.1.5](#) of this document.

1.7.4 Murray-Darling Basin Authority – water storage level

The Murray-Darling Basin Authority (MDBA) website provides information on the water storage level of the catchments within the basin.

1. Go to <https://www.mdba.gov.au/managing-water/water-storage>
2. Scroll down the page to see the water storage levels within the catchments.

Water in storages
As at 03 Apr 2019

The information on water in storage in the Murray-Darling Basin is updated fortnightly.

Whole of Basin total	29% (6,676 of 22,746 GL)
Northern Basin total	11% (564 of 5,198 GL)
Border rivers catchment	9% (59 of 635 GL)

Pindari Lake
Total Capacity: 312 GL Current volume: 19 GL Full: 6% Active storage: 19 GL
Dead storage: 0 GL

3. Scroll up to the bottom of the page. Click on “Download Basin storage report” to download an overview of the water storage levels within the basin.
4. Click on “Archived Basin storage report” on the left pane to access historical reports.

Lake Buffalo Total Capacity: 24 GL Current volume: 12 GL Full: 52% Active storage: 7 GL Dead storage: 5 GL	
Upper Murray catchment	44% (3,028 of 6,861 GL)
Lake Hume Total Capacity: 3,005 GL Current volume: 583 GL Full: 19% Active storage: 560 GL Dead storage: 23 GL	
Lake Dartmouth Total Capacity: 3,856 GL Current volume: 2,446 GL Full: 63% Active storage: 2,375 GL Dead storage: 71 GL	

Archived Basin storage report

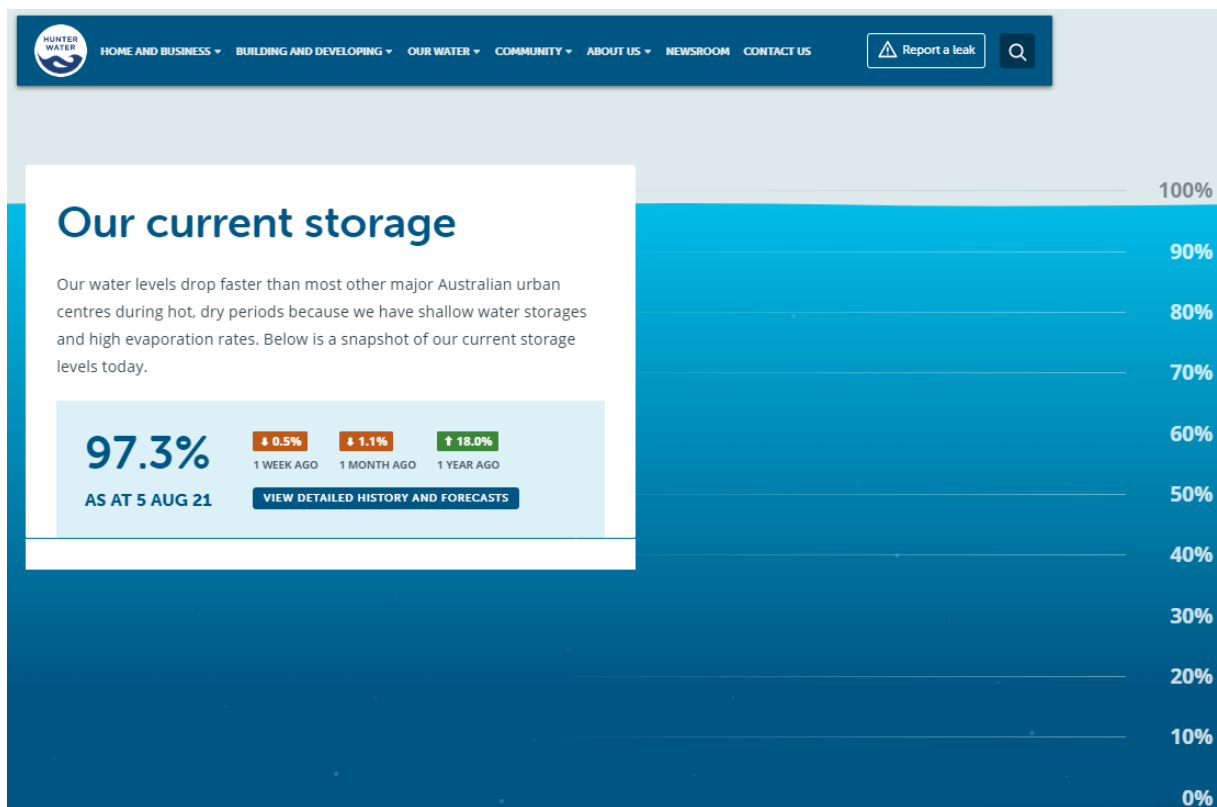
Download Basin storage report - 03 Apr 2019

The MDBA website also gives access to weekly reports that provide updates on operations within and current conditions of the basin. Under the “River Murray system” tab on the top ribbon, select “Weekly reports” and then click on the weekly report link to view or download the document. Other reports are available under the “Publications” tab.

1.7.5 Hunter Water – water storage level

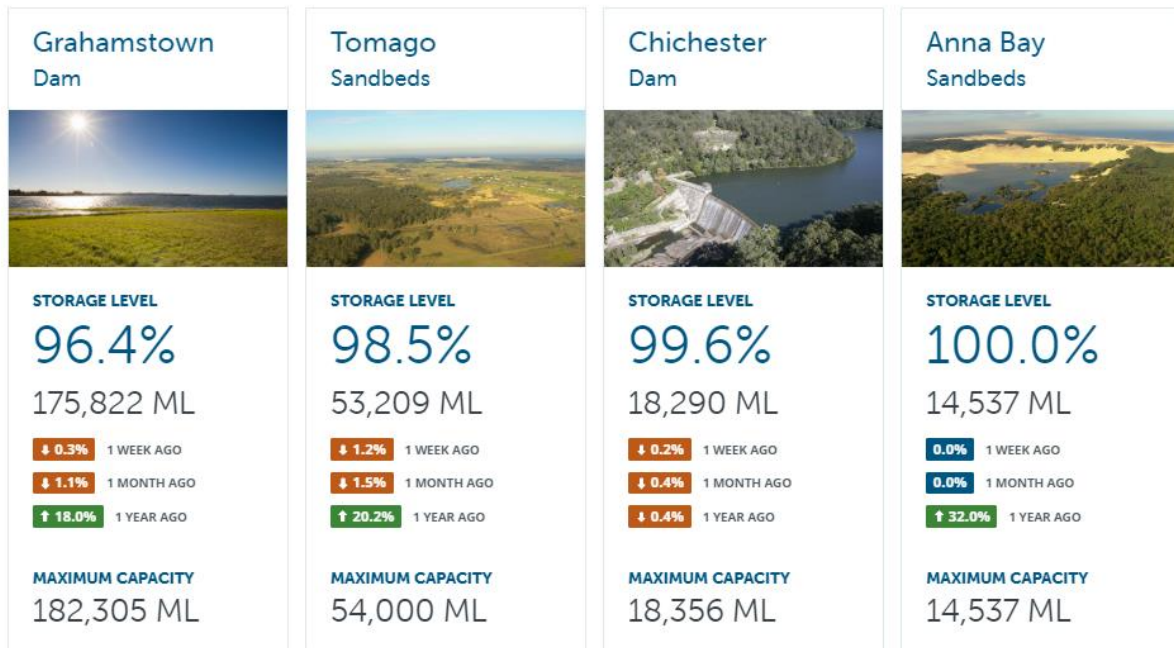
The Hunter Water website includes information on the water storage levels of the Grahamstown Dam, Chichester Dam, Tomago Sandbeds, and Anna Bay Sandbeds.

1. Go to <https://waterstorage.hunterwater.com.au/>
2. Scroll down the page to see an overview of the water storage levels of the different surface storages and groundwater resources. A forecast of the water storage levels is presented in a graph.



Individual water storage sources

AS AT 5 AUGUST 2021



1.7.6 Sharing and Enabling Environmental Data – various datasets

The Sharing and Enabling Environmental Data (SEED) website is a portal that has been developed with and for the community of NSW. SEED provides publicly accessible data or links on environmental data within NSW. Currently, it incorporates 2,400-plus land, water and air datasets from agencies responsible for environment, planning, resources and energy, primary industries, industry, water and spatial services. Open data from SEED automatically uploads to Data.NSW.

1. Go to <https://www.seed.nsw.gov.au/>
2. Search for a dataset by typing a topic in the search box and then click the search icon. Once dataset results are found, you can apply filters based on the filtering options on the left-hand side to narrow down the selection of data records.
3. Follow steps 4-6 described in [Section 1.1.8](#) of this document.

1.7.7 NSW Government (Data.NSW) – various datasets

Data.NSW is the NSW Government's open data catalogue, bringing together datasets and data portals from NSW Government agencies and departments into one searchable website. Each dataset is licenced with a specific licence that describes how the data can be used.

Follow all the steps described in [Section 1.1.0](#) of this document.

1.7.8 Australian Water Resources Information System – online information system

The Australian Water Resources Information System (AWRIS) is an online information system made by the Bureau of Meteorology that can receive, collate, store, quality check, standardise, organise, analyse and interpret water data supplied by different organisations to deliver high quality water information.

Follow the steps described in [Section 1.1.11](#) of this document.

1.7.9 Australian Hydrological Geospatial Fabric (Geofabric) – spatial dataset

Geofabric is a specialised Geographic Information System (GIS) that is a project by the Bureau of Meteorology. It provides access to a digital database of surface and groundwater features and it can show the spatial relationship between various hydrological features (e.g. rivers, water bodies, aquifers and monitoring points).

Follow all the steps described in [Section 1.1.12](#) of this document.

1.7.10 Foundation Spatial Data Framework – spatial datasets

The Foundation Spatial Data Framework provides a common reference for the assembly and maintenance of Australian and New Zealand foundation level spatial data in order to serve the widest possible variety of users. It delivers open, accessible, affordable and usable national coverage foundation spatial data.

Follow all the steps described in [Section 1.1.13](#) of this document.

1.7.11 OpenGov NSW – various publications

OpenGov is an online repository for NSW Government publications. It contains annual reports, strategic plans, guides, policy documents, and open access information released under the Government Information (Public Access) Act 2009 (GIPA Act), which has been published by NSW Government agencies.

Follow all the steps described in [Section 1.1.14](#) of this document.

1.7.12 Bureau of Meteorology – Australian Water Data Service

The Australian Water Data Service (AWDS) is a website created by BoM that provides access to spatial water data, APIs and maps that contain water information that are published on the BoM website. It also provides links to the various water related web applications that are owned by BoM.

Follow all the steps described in [Section 1.1.19](#) of this document.

2. Ground water

2.1 WaterNSW – groundwater data

WaterNSW has real time (telemetered) groundwater data and non-telemetered groundwater data where the station can be interrogated via a map.

1. Go to <https://realtimedata.waternsw.com.au/>
2. Expand “Real Time Data – Bores” or “All Groundwater Map” from the left-hand side pane.



The screenshot shows the WaterNSW website interface. On the left, a navigation pane is visible with several sections: 'State Overview', 'Rivers and Streams', 'Daily River Reports', 'Dams', 'Groundwater (Telemetered data)', 'All Groundwater Site details', and 'Meteorology'. The 'Groundwater (Telemetered data)' section is expanded, showing a list of river basins including the Richmond River Basin. The 'All Groundwater Site details' section is also expanded, showing a list of sites. The main content area displays a map of the Richmond River Basin with various groundwater stations marked. The map includes labels for towns like Karara, Warwick, Killamey, and others, as well as national parks like Lamington National Park and Border Ranges National Park. The map also shows major roads and the South Pacific Ocean.

3. Locate the station of interest by expanding the list on the left-hand side pane or search for the station on the map. Click on the station name and then select the “Custom Outputs” tab.
4. Select the parameters and period of record required and then press “Get Output” to download a zipped CSV to your PC.

State Overview
 State Overview

Rivers and Streams
 favourites · search · download sites · find a site
 Real Time Data - Rivers And Streams

Daily River Reports
 Daily River Reports

Dams
 favourites · search · download sites · find a site
 Real Time Data - Major Dams

Groundwater (Telemetered data)
 favourites · search · download sites · find a site
 Real Time Data - Bores

- Richmond River Basin
 - GW036701.2.2 Wollongbar Research C...**
 - GW039102.1.1 Bruxner Highway Casino (E...
 - GW039114.1.1 Summerland Way, Casino
 - GW039117.1.1 Stratheden Road (North) Pri...
 - GW081005.1.1 Alstonville North - Maguires...
- Bellinger River Basin
- Macleay River Basin
- Manning River Basin
- Hunter River Basin
- Hawkesbury River Basin
- Bega River Basin
- Murrumbidgee River Basin

Wollongbar Research Centre
 All data times are Eastern Standard Time

Latest Values | Details | **Custom Outputs**

Bore Water Level below Measuring Pt (Metres) (110.00-110.00) 16/01/1990 to 30/01/2019

Groundwater Level - AHD (METRES) (110.00-115.00) 16/01/1990 to 30/01/2019

Water Temperature (Degrees Celsius) (2080.00-2080.00) 17/01/2006 to 30/01/2019

Period: Custom | Output: Plot

start date: 00:00_01/07/2018
 hh:mm_dd/mm/yyyy

end date: 00:00_01/09/2018
 hh:mm_dd/mm/yyyy

Get Output

2.2 Bureau of Meteorology – Australian Groundwater Explorer

The Australian Groundwater Explorer displays groundwater information within an area of interest on a map. It provides access to a wide range of groundwater data, including bore locations, bore logs, groundwater levels, salinity, groundwater management areas and landscape characteristics.

1. Go to <http://www.bom.gov.au/water/groundwater/explorer/map.shtml>
2. Navigate via the map to find your area of interest.
3. To download all bore data for an area including bore details, bore logs and water level and salinity measurements, go to “Download” on the left-hand side pane.

Bureau Home > Water Information > Groundwater Information > Australian Groundwater Explorer

Australian Groundwater Explorer

About FAQ Feedback

Search bore ID, road or place

Layers Legend Search **Download**

Selectable layer: All bores

Download all bore data for an area including bore details, bore logs and water level and salinity measurements.

1. Select Region
State/Territory

Or
River region

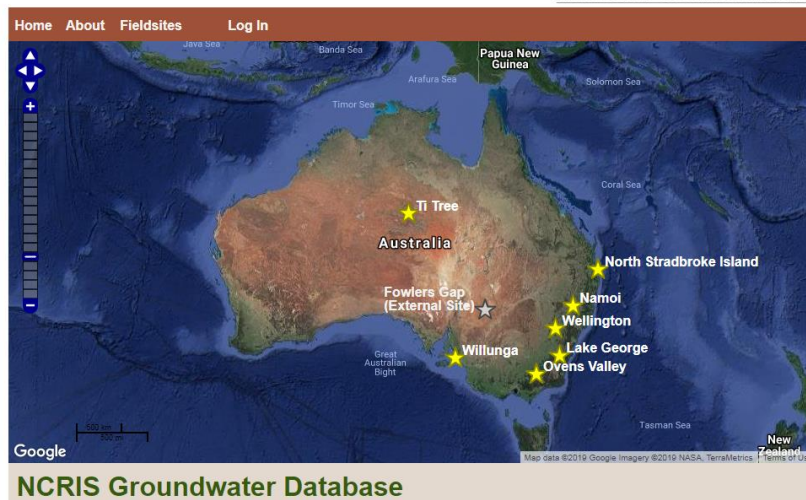
2. Select format

4. Select a state/territory or river region and then select the format. The options for format include shapefile, KML or File Geodatabase.
5. Click the “Download” button and a .zip file will be downloaded to your PC.

2.3 NCRIS – groundwater database

The National Collaborative Research Infrastructure Strategy (NCRIS) is an initiative of the Australian Government. Led by UNSW, with collaboration of expertise from Flinders University, Australian National University, and University of Queensland.

1. Go to <http://groundwater.anu.edu.au/>



2. Click on the station of interest on the map (it may require two clicks to zoom in to the bore level) and then select the “Data” tab.

The screenshot shows a detailed view of a field site. The map displays several monitoring stations marked with colored circles. A 'Map Controls' panel on the right allows users to toggle overlays (Fieldsites, Sensors) and monitoring stations (Groundwater Bore, Weather Station, Eddy Covariance Station, Multiple Sensor Types). Below the map, there are tabs for 'Information', 'Data', and 'Stations'. The 'Data' tab is active, showing filter options for Station Type, Station, and Phenomenon. A table below the filters lists the data series for various stations.

Station	Data Series	Phenomenon	Unit	More Info
Baldry Forest We...	AirTC_Avg	Air Temperature	°C	Info
Baldry Pasture W...	AirTC_Avg	Air Temperature	°C	Info
Baldry Forest We...	albedo_Avg	Albedo	W/m ²	Info
Baldry Pasture W...	albedo_Avg	Albedo	W/m ²	Info
Baldry Forest We...	cnr4_T_C_Avg	Air Temperature	°C	Info
Baldry Pasture W...	cnr4_T_C_Avg	Air Temperature	°C	Info
Baldry Forest We...	cnr4_T_K_Avg	Air Temperature	K	Info
Baldry Pasture W...	cnr4_T_K_Avg	Air Temperature	K	Info
Pasture EC	Diag_CSAT	TBA		Info
BH12 Deep	Groundwater Level	Groundwater Elevati...	m	Info
BH8 Shallow	Groundwater Level	Groundwater Elevati...	m	Info
BH4 Shallow	Groundwater Level	Groundwater Elevati...	m	Info
BH9 Deep	Groundwater Level	Groundwater Elevati...	m	Info
BH6 Deep	Groundwater Level	Groundwater Elevati...	m	Info
BH1 Shallow	Groundwater Level	Groundwater Elevati...	m	Info

3. Select the stations of interest using the tick boxes and then click “Draw Charts”.
4. Select the data range using the plot and then press “Download Selected Range”. A CSV file of groundwater level readings will be downloaded to your PC.

The screenshot shows a web interface for environmental data. At the top, there is a table of stations with checkboxes. The 'BH8 Shallow' station is selected. Below the table, there are buttons for 'Clear Filters', 'Select All', 'Clear Selection', and 'Draw Charts' (highlighted with a red box). The main part of the interface is a line chart titled 'Groundwater Level - BH8 Shallow (Groundwater Bore)'. The y-axis is 'Groundwater Elevation - AHD (metres AHD)' ranging from 454 to 459. The x-axis shows the year 2010. A datum line is at 459.804. Below the chart, there are zoom controls (Day, Week, Month, Year) and instructions: 'Click and drag graph window to move selected range', 'Use range bars to change range of graph', and 'Range selection may change graph resolution'. At the bottom, there is a table with a 'Download Selected Range' button highlighted in a red box. The table has columns for Series Name, Station, Collation, Time, Value, and Flag.

Series Name	Station	Collation	Time	Value	Flag
Groundwater Level	BH8 Shallow	Average	2016-05-01	454.223	

2.4 Sharing and Enabling Environmental Data – various datasets

The Sharing and Enabling Environmental Data (SEED) website is a portal that has been developed with and for the community of NSW. SEED provides publicly accessible data or links on environmental data within NSW. Currently, it incorporates 2,400-plus land, water and air datasets from agencies responsible for environment, planning, resources and energy, primary industries, industry, water and spatial services. Open data from SEED automatically uploads to Data.NSW.

1. Go to <https://www.seed.nsw.gov.au/>
2. Search for a dataset by typing a topic in the search box and then click the search

icon. Once dataset results are found, you can apply filters based on the filtering options on the left-hand side to narrow down the selection of data records.

3. Follow steps 4-6 described in [Section 1.1.8](#) of this document.

2.5 NSW Government (Data.NSW) – various datasets

Data.NSW is the NSW Government's open data catalogue, bringing together datasets and data portals from NSW Government agencies and departments into one searchable website. Each dataset is licenced with a specific licence that describes how the data can be used.

Follow all the steps described in [Section 1.1.9](#) of this document.

2.6 Australian Water Resources Information System – online information system

The Australian Water Resources Information System (AWRIS) is an online information system made by the Bureau of Meteorology that can receive, collate, store, quality check, standardise, organise, analyse and interpret water data supplied by different organisations to deliver high quality water information.

Follow the steps described in [Section 1.1.11](#) of this document.

2.7 Australian Hydrological Geospatial Fabric (Geofabric) – spatial dataset

Geofabric is a specialised Geographic Information System (GIS) that is a project by the Bureau of Meteorology. It provides access to a digital database of surface and groundwater features and it can show the spatial relationship between various hydrological features (e.g. rivers, water bodies, aquifers and monitoring points).

Follow all the steps described in [Section 1.1.12](#) of this document.

2.8 Foundation Spatial Data Framework – spatial datasets

The Foundation Spatial Data Framework provides a common reference for the assembly and maintenance of Australian and New Zealand foundation level spatial data in order to serve the widest possible variety of users. It delivers open, accessible, affordable and usable national coverage foundation spatial data.

Follow all the steps described in [Section 1.1.13](#) of this document.

2.9 OpenGov NSW – various publications

OpenGov is an online repository for NSW Government publications. It contains annual reports, strategic plans, guides, policy documents, and open access information released under the Government Information (Public Access) Act 2009 (GIPA Act), which has been published by NSW Government agencies.

Follow all the steps described in [Section 1.1.14](#) of this document.

2.10 DPE Environment and Heritage Group – various publications

DPE is the custodian of a number of surface water, urban water, and meteorological monitoring stations. These stations include the water quality monitoring program run by DPE Beachwatch. This DPE webpage provides reports, research and publications on water and environmental information. The webpage also provides a link to the NSW Government's Sharing and Enabling Environmental Data (SEED) portal.

Follow all the steps described in [Section 1.1.15](#) of this document.

2.11 Bureau of Meteorology – Australian Water Data Service

The Australian Water Data Service (AWDS) is a website created by BoM that provides access to spatial water data, APIs and maps that contain water information that are published on the BoM website. It also provides links to the various water related web applications that are owned by BoM.

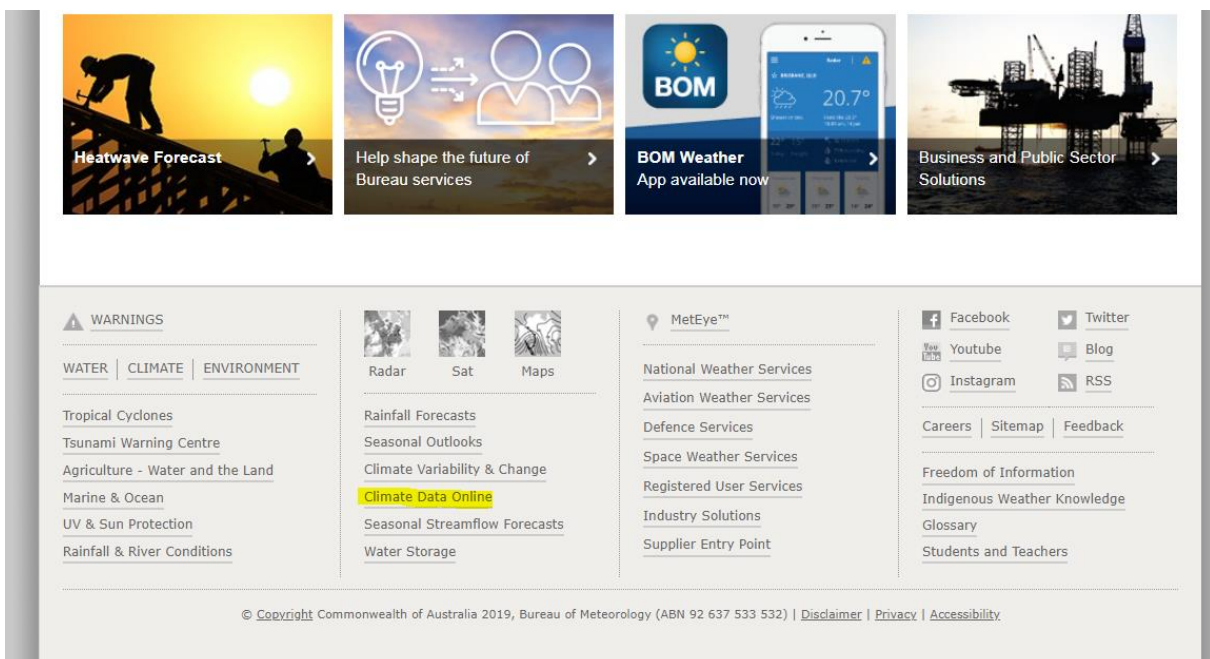
Follow all the steps described in [Section 1.1.19](#) of this document.

3. Meteorological

3.1 Bureau of Meteorology – weather and climate, rainfall, temperature and solar exposure

The BoM Climate Data Online provides free access to information on statistics, recent weather observations and climate data from the Australian Data Archive for Meteorology. The information includes weather and climate, rainfall, temperature and solar exposure.

1. Go to <http://www.bom.gov.au/>
2. Scroll to the bottom the pages and select Climate Data Online



The screenshot shows the footer of the Bureau of Meteorology website. It features four main navigation sections:

- WARNINGS:** Includes links for WATER, CLIMATE, and ENVIRONMENT. Under CLIMATE, there are links for Tropical Cyclones, Tsunami Warning Centre, Agriculture - Water and the Land, Marine & Ocean, UV & Sun Protection, and Rainfall & River Conditions.
- Tools:** Includes Radar, Sat, and Maps. Under Sat, there are links for Rainfall Forecasts, Seasonal Outlooks, Climate Variability & Change (with 'Climate Data Online' highlighted), Seasonal Streamflow Forecasts, and Water Storage.
- MetEye™:** Includes links for National Weather Services, Aviation Weather Services, Defence Services, Space Weather Services, Registered User Services, Industry Solutions, and Supplier Entry Point.
- Social Media:** Includes links for Facebook, Twitter, YouTube, Blog, and Instagram. It also has links for Careers, Sitemap, and Feedback.

At the bottom, there is a copyright notice: © Copyright Commonwealth of Australia 2019, Bureau of Meteorology (ABN 92 637 533 532) | [Disclaimer](#) | [Privacy](#) | [Accessibility](#).

3. There is the option of weather and climate, rainfall, temperature and solar exposure. Select your area of interest and press “Get Data”.

Select using Text | Select using Map

1: Selected: **Daily rainfall**

Data about: Rainfall

Type of data: Observations Statistics

Daily Monthly Daily Monthly

Daily rainfall data and graphs for a selected year. Data download for one or all years.

2: Select a weather station in the area of interest

Cessnock Find

Matching towns (click one to select it)

- Cessnock, NSW, 32.83°S, 151.35°E
- Cessnock, NSW, 32.83°S, 151.36°E
- Village Of Cessnock, NSW, 32.83°S, 151.35°E

Nearest Bureau stations (click one to select it)

Only show open stations (may no longer report all data types)

- 061295 Nulkaba (O'Connors Road) NSW (2.3km away)
- 061329 Pokolbin (Jacksons Hill) NSW (3.9km away)
- 061238 Pokolbin (Somerset) NSW (4.7km away)
- 061260 Cessnock Airport AWS NSW (4.7km away)
- 061298 Pokolbin (Bellevue) NSW (6.6km away)

Data available for the selected station

Select year: 2018

3: Get the data

Station number: 061295 **Get Data** Opens in new window

[Don't clear this number](#) Note, most stations do not collect all data types. Searching will ensure relevant stations.

4. If you select “1 year of data” it will download the year of data in view to a CSV file in .zip format.

Australian Government Bureau of Meteorology

HOME | ABOUT | MEDIA | CONTACTS Enter search terms Search

NSW VIC QLD WA SA TAS ACT NT AUSTRALIA GLOBAL ANTARCTICA

Bureau Home > Climate > Climate Data Online > Daily Rainfall

Daily rainfall

Nulkaba (O'Connors Road)

[About this page](#) **1 year of data** All years of data PDF

Observations of Daily rainfall are nominally made at 9 am local clock time and record the total for the previous 24 hours. Rainfall includes all forms of precipitation that reach the ground, such as rain, drizzle, hail and snow. [About rainfall data](#)

Station: Nulkaba (O'Connors Road) Number: 61295 Opened: 1970 Now: Open
 Lat.: 32.81° S Lon.: 151.34° E Elevation: 80_m Details

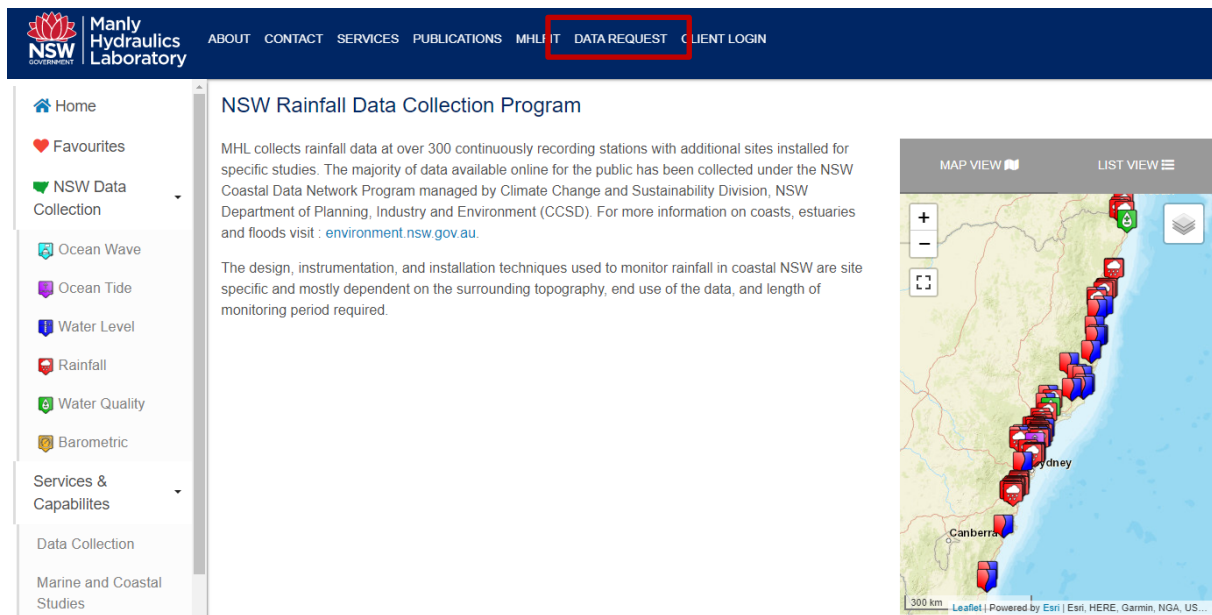
Show in table... Key: Units = mm 12.3 = Not quality controlled. ↓ = Part of accumulated total
 28 Q Move mouse over rainfall total to view the period of accumulation.

2018	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Graph												
1st	0	0	0	0	0	0	0	0	3.8	0	0	6.0
2nd	0	0	0	0	0	0	0.6	0	0	0	0	0
3rd	4.0	0.8	0	0	0	5.2	1.6	0	0	0	0	0
4th	0	0	0	0	0	0	1.0	0	13.0	1.2	0.2	0
5th	0	0	7.4	0	0	1.6	0	0	5.0	19.0	0	0
6th	0	0	0	0	0	11.0	0	1.0	0.4	10.0	0	0
7th	0	0	1.6	0	0	3.2	0	5.0	8.4	0.4	0	0
8th	0	0	0	0	0	0.2	0	0	2.0	0.4	15.0	0
9th	13.0	0	0	0	0	2.0	0	0	0.2	0.6	0	0
10th	1.2	0.4	0	0	0	2.2	0	0	0	0	0	0
11th	0	0	0	0	0	5.6	0	0	0	28.0	0	4.0
12th	0	1.2	0	0	0	0.4	0	0	0	0	0	4.8
13th	0	9.0	0	0	0.8	0	0	0	0	4.0	0	3.0
14th	0	0	0	0	0.6	0	0	0	0	3.0	0	37.0
15th	0	0	0	0	0	0	0	0	0	0	0	24.0
16th	0	0	0	0	0	0	0	0	0	0	4.8	17.6
17th	0	0	0	0	0	0	0	0	0	0	0	3.6
18th	0	0	0	0	0	1.2	0	0	0	8.4	0	0
19th	0	0	0	0	0	0	0	0	0	4.0	0	0
20th	0	28.0	0	6.4	0	24.4	0	0	0	0	0	4.0

3.2 Manly Hydraulics Laboratory – rainfall

MHL display rainfall data collected from over 300 continuously recording stations with additional sites installed for specific studies. The majority of data available online for the public has been collected under the NSW Coastal Data Network Program managed by DPE BCD.

1. Go to <https://www.mhl.nsw.gov.au/Data-Rain>
2. Select a rainfall station using the map and click “Go to site page >>”.



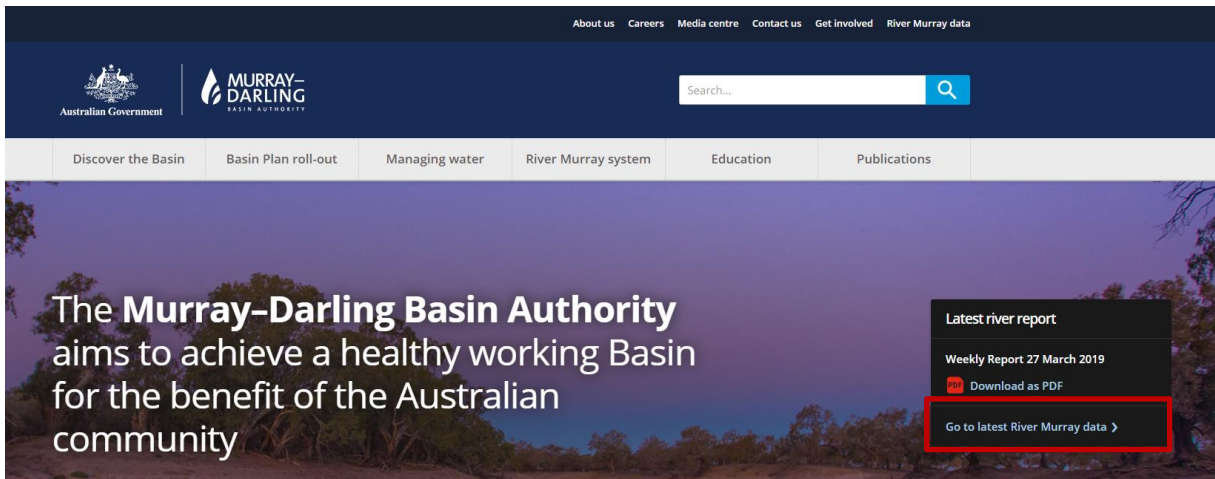
The screenshot shows the Manly Hydraulics Laboratory website. The top navigation bar includes links for ABOUT, CONTACT, SERVICES, PUBLICATIONS, MHL IT, DATA REQUEST (highlighted with a red box), and CLIENT LOGIN. The main content area is titled "NSW Rainfall Data Collection Program" and contains text describing the program and a link to "environment.nsw.gov.au". A map of the NSW coast is displayed on the right, showing various rainfall stations marked with icons. The left sidebar contains a navigation menu with categories like Home, Favourites, NSW Data Collection, Ocean Wave, Ocean Tide, Water Level, Rainfall, Water Quality, Barometric, Services & Capabilities, Data Collection, and Marine and Coastal Studies.

3. The last seven days of data is displayed on a plot. If you would like to request longer periods and certain measurement intervals, then click on the “Data Request” link in the top ribbon and fill out the data request form.

3.3 Murray-Darling Basin Authority – rainfall

The Murray-Darling Basin Authority website provides recorded rainfall measurements at a number of monitoring sites within the river system.

1. Go to <https://www.mdba.gov.au/>
2. Click on the “Go to latest River Murray data >”



- Click on a site name within the chart to view detailed information and historical data of the selected site.

System view List view Map view About the data Help

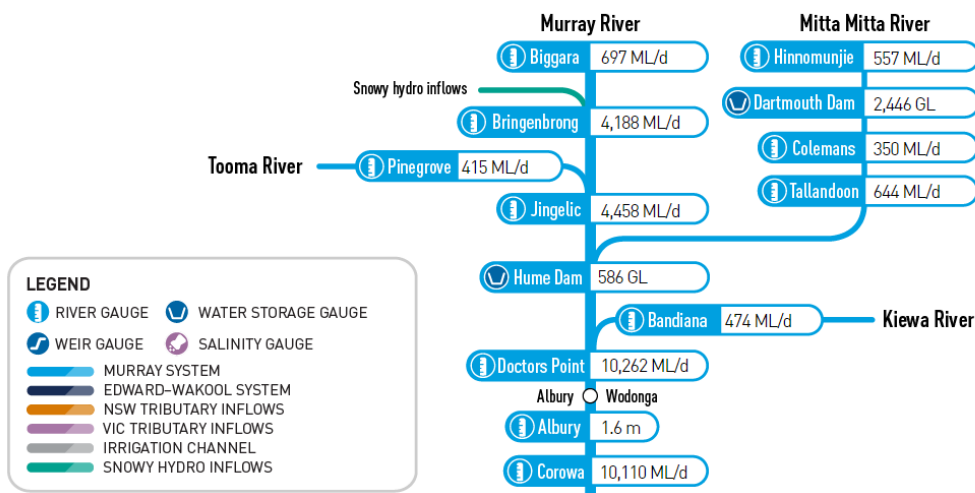
The River Murray system

System view provides a simple overview of water flow rates, release rates and river heights across the River Murray system and its tributaries. In this view we have nominated the most relevant data that is available to show water moving through the system.

Weekly forecasts are available for some sites for storage levels, flows and salinity of the River Murray. Forecasts are updated weekly usually on Wednesdays.

See the [list view](#) for detailed information, including any alerts.

Click on a site name to view detailed information and historical data.



- Alternatively, click on the “List View” tab on the top ribbon to see a list of all the sites and a summary of the data available per site. Select a station with rainfall data and then click on the site name under the “Location” column or the “Full data” button at the end of the row.

Forecasts are only available for sites displaying the forecast 🌤️ symbol.

Some water levels are actually in metres AHD (Australian Height Datum), click individual sites for more details.

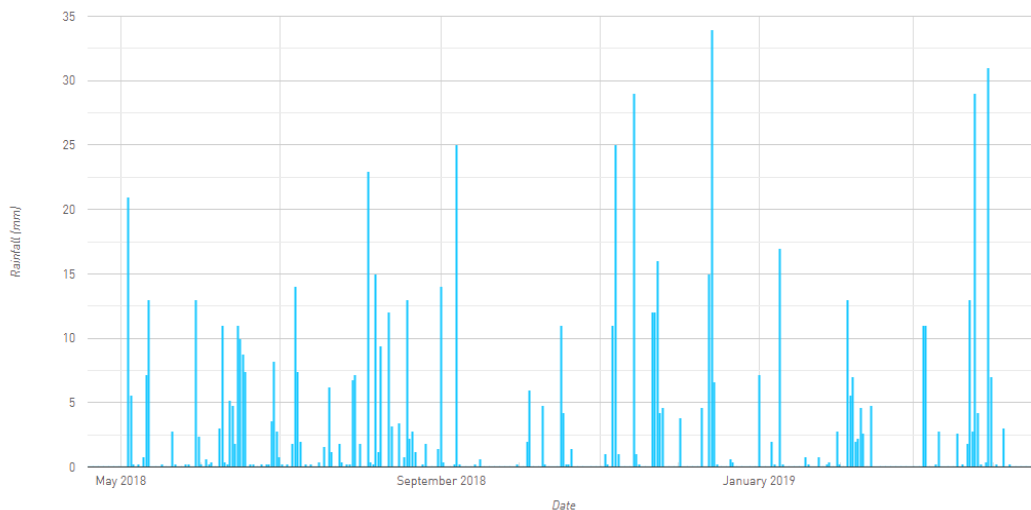
River gauges, storages, and weirs in the Murray–Darling Basin

Type	Location	River	Water level	Flow	Volume	Release	Water temp	Salinity	Rainfall	
📍	Albury (Union Bridge)	Murray	1.7 m 17/04/2019 9:00	Not measured	Not measured	Not measured	17.9°C 17/04/2019 9:00	58.9 µS/cm 17/04/2019 9:00	Not measured	Full data
📍	Balranald	🌤️ Murrumbidgee	0.44 m 17/04/2019 8:45	186 ML/Day 17/04/2019 8:45	Not measured	Not measured	18.4°C 17/04/2019 8:45	160.2 µS/cm 17/04/2019 8:45	Not measured	Full data
📍	Bandiana	Kiewa	0.79 m 17/04/2019 8:45	241 ML/Day 17/04/2019 8:45	Not measured	Not measured	15.9°C 17/04/2019 8:45	26.7 µS/cm 17/04/2019 8:45	Not measured	Full data
📍	Bermah Choke	🌤️ Murray	2.27 m 17/04/2019 8:45	6268 ML/Day 17/04/2019 8:45	Not measured	Not measured	Not measured	Not measured	Not measured	Full data
📍	Biggara	Murray	0.27 m 17/04/2019 9:00	210 ML/Day 17/04/2019 9:00	Not measured	Not measured	13.1°C 17/04/2019 9:00	50.0 µS/cm 17/04/2019 9:00	0.0 mm 17/04/2019 9:00	Full data

- Click the “Rainfall” tab above the graph to view the plot.
- Click on the “Download historical data” and “Download chart data” buttons below the graph to download the available data.

Biggara Murray

Water level: 0.27 m (18/04/2019 13:00)
Flow: 218 ML/Day (18/04/2019 13:00)
Rainfall: 0.0 mm (18/04/2019 09:00)
Water temp: 14.2 °C (18/04/2019 13:00)
Salinity: 50.1 µS/cm (18/04/2019 13:00)



[Download historical data \(CSV - 1206KB\)](#)
[Download chart data \(CSV - 31KB\)](#)

3.4 Manly Hydraulics Laboratory – barometric

MHL records barometric pressure at 8 locations along the New South Wales coast. The 8

locations are Tweed Heads, Yamba, Port Macquarie, Newcastle, Sydney, Jervis Bay, Tuross Heads and Eden.

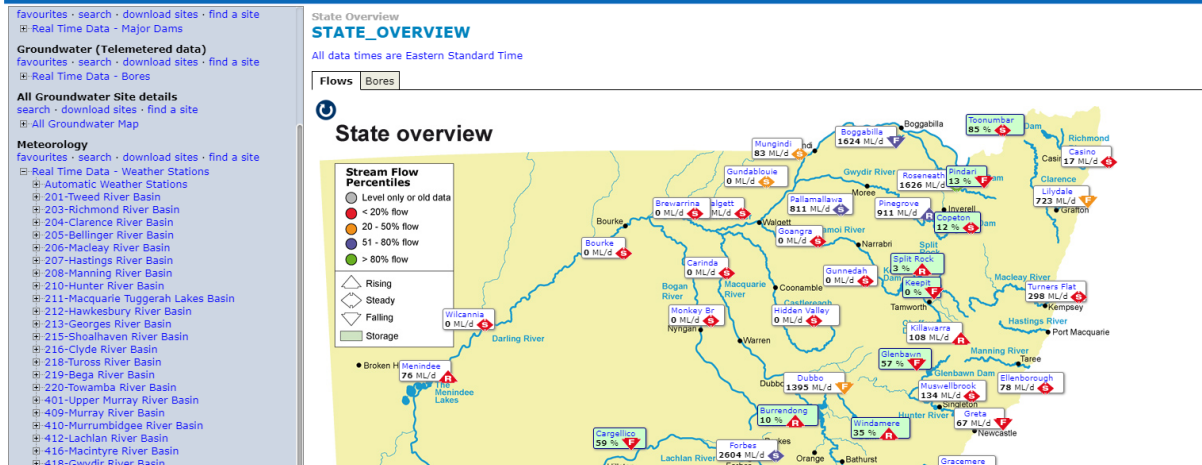
1. Go to <https://www.mhl.nsw.gov.au/Data-Baro>
2. Locate a station using the map. Select the station marker and then click on “Go to site page >>”.
3. A plot of a water quality parameter for the last 7 days will be shown. If available, other parameters monitored for that station will be shown.
4. To request the data in .csv format for a specific period, select “Data Request” from the top ribbon and fill out the web form.

The screenshot displays the 'NSW Barometric Pressure Data Collection' website. The top navigation bar includes 'DATA REQUEST' highlighted in a red box. The left sidebar lists various data collection categories, with 'Barometric' selected. The main content area features a line graph titled 'Barometric Pressure' showing data from July 30 to August 5. The y-axis represents pressure in millibars (1.005K to 1.02K). A legend identifies six stations: Kingscliff, Lake Wooloweyah, Stockton Bridge, Tuross Head, Currarong Creek, and Wombon Lake. Below the graph, 'Barometric Information' states that MHL records pressure at 8 locations along the NSW coast. 'Instrument Data' notes that data is sampled every 15 minutes and is accurate to ±0.2 HPa. A map view on the right shows the location of the stations along the coast.

3.5 WaterNSW – weather stations

WaterNSW is the custodian of a large network of stations monitoring surface water, groundwater, storage, meteorological, water use, and other water information stations. The other water information includes monitoring of other environmental information.

1. Go to <https://realtimedata.waternsw.com.au/>
2. Expand the “Real Time Data – Weather Stations” under Meteorology.



3. Follow steps 3-4 described in [Section 1.1.5](#) of this document.

3.6 Bureau of Meteorology – wind and weather forecast

Wind and weather forecasts utilising the Bureau of Meteorology ACCESS® weather model.

1. Go to <http://www.bom.gov.au/australia/charts/viewer/index.shtml?domain=combinedW&type=sigWaveHgt>
2. Under “Map Selection”, click on the drop-down arrow next to “Show” and then select the forecast type. The forecast selection includes surface pressure and rainfall, surface winds, MSLP & thickness, wind speed and direction, geopotential height, temperature relative humidity, and dew point.
3. Follow steps 3-6 described in [Section 1.6.10](#) of this document.

3.7 Buoyweather – wind and weather forecast

Buoyweather provides marine forecasts for a chosen location or point instead of a general region. It generates high-resolution forecasts by using Global Forecasting System (GFS), Northern American Mesoscale (NAM), and Wavewatch numerical models.

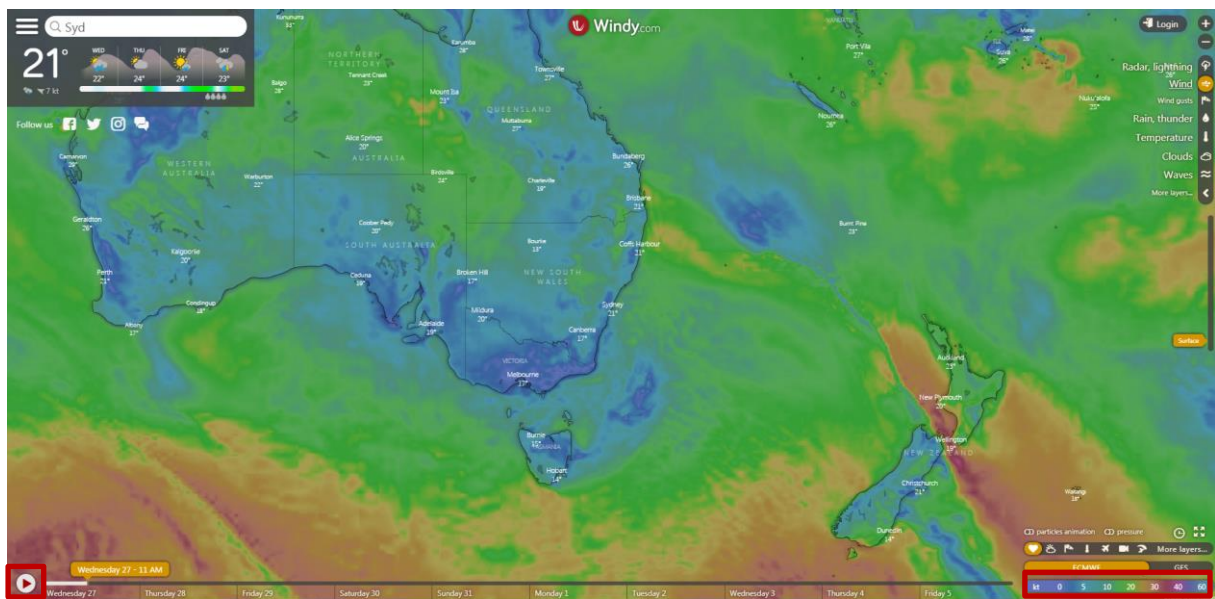
Follow all the steps described in [Section 1.4.5](#) of this document.

3.8 Windy.com – wind and weather forecast

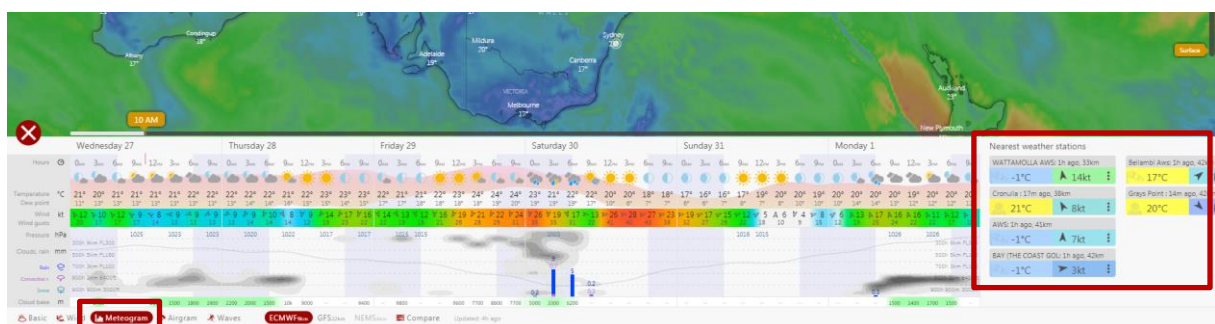
Windy.com provides wave, wind and weather forecasts based on the European Centre for Medium-Range Weather Forecasts (ECMWF), GFS provided by the National Oceanic and Atmospheric Administration (NOAA), and the NOAA Environment Modelling System (NEMS).

1. Go to <https://www.windy.com>
2. A map shows a wind chart that is coloured based on the wind speed (legend on the lower-right corner).
3. To see the how the forecast for the next 10 days looks like on the map, click on the dates at the bottom of the map or click on the play button on the lower-left corner to see an automated presentation of the forecast.

On the upper right-hand side menu, “Radar, lightning”, “Rain, thunder”, “Temperature” and “Clouds” can be selected to reflect their forecast on the map.



4. Zoom in on the map and click on a specific location. Then click on the yellow down arrow button. This will show the forecast for wind, temperature and rain.
5. Select “Metogram” at the bottom of the map to view the detailed forecast for the next 6 days.

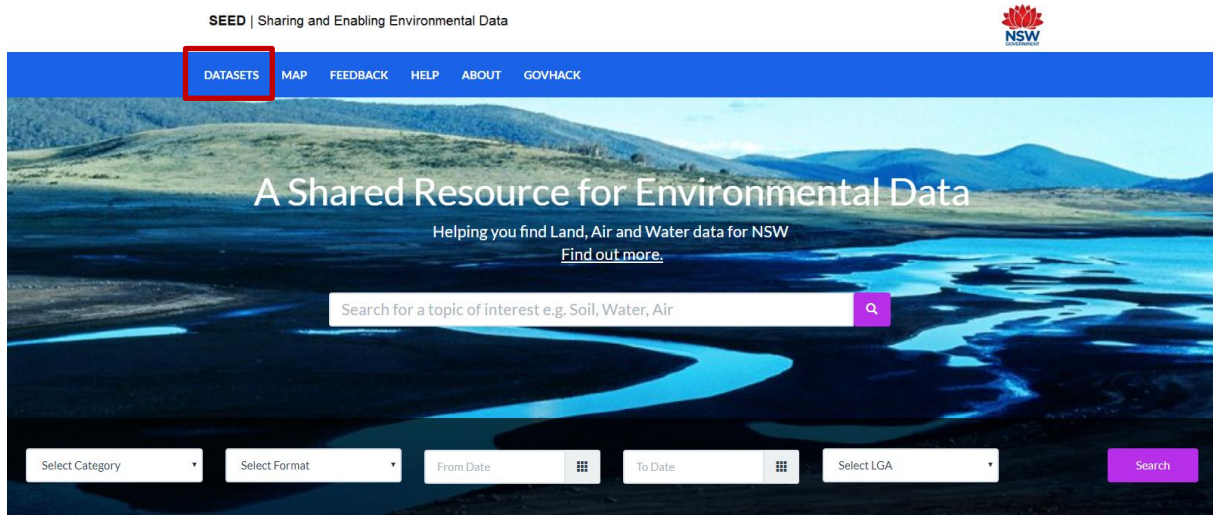


6. For near shore locations, the nearest weather stations are shown on the lower-right corner. Click on one of the weather stations. Observations for temperature, dew point, humidity, wind direction, wind and pressure on that weather station for the last 7 days are provided.

3.9 Sharing and Enabling Environmental Data – various datasets

The Sharing and Enabling Environmental Data (SEED) website is a portal that has been developed with and for the community of NSW. SEED provides publicly accessible data or links on environmental data within NSW. Currently, it incorporates 2,400-plus land, water and air datasets from agencies responsible for environment, planning, resources and energy, primary industries, industry, water and spatial services. Open data from SEED automatically uploads to Data.NSW.

1. Go to <https://www.seed.nsw.gov.au/>
2. Select the “Datasets” tab on the top ribbon.



3. Click the drop-down arrow on the “Select Category”, choose “Climatology Meteorology Atmosphere” and then click the search button or icon. Alternatively, select “Climatology Meteorology Atmosphere” under “Categories” on the left-hand side pane.

The screenshot shows the SEED search interface. At the top, there is a search bar with the placeholder text "Search for a topic of interest e.g. Soil, Water, Air" and a search icon. Below the search bar, there are several filter options: "Climatology Meteorol" (highlighted with a red box), "Select Format", "From Date", "To Date", and "Select LGA". Below these filters, it says "1 dataset found". On the right, there is a button "0 datasets in selection" and buttons for "View on Map", "Show all", and "Hide all". On the left, there is a "Filters" sidebar with categories like "Categories", "Organisations", "Formats", and "Tags". The "Categories" section is expanded, showing "Climatology Meteorology Atmosphere (1)". The main content area shows a dataset titled "NSW Climate Data Portal CDP" with a description: "The climate of New South Wales is changing. Average temperatures have been steadily rising since the 1960s. The decade from 2001 to 2010 was the hottest on record, while 2014..." and a "View Data" button.

4. Click on the dataset title or the “View Data” button.
5. Under “Data and Resources”, click on the “Explore” button on the item of your desired file format to download the dataset or be redirected to a URL.
6. You can click on the “View on Map” button to see the dataset on SEED’s built-in map. Different types of data can be viewed on SEED’s map to have a better look at the environmental conditions in a location.

To search for more datasets, type in a topic in the search box instead of selecting a category. Click the search icon and wait for the results before applying any filters.

3.10 NSW Government (Data.NSW) – various datasets

Data.NSW is the NSW Government's open data catalogue, bringing together datasets and data portals from NSW Government agencies and departments into one searchable website. Each dataset is licenced with a specific licence that describes how the data can be used.

Follow all the steps described in [Section 1.1.9](#) of this document.

3.11 OpenGov NSW – various publications

OpenGov is an online repository for NSW Government publications. It contains annual reports, strategic plans, guides, policy documents, and open access information released under the Government Information (Public Access) Act 2009 (GIPA Act), which has been published by NSW Government agencies.

Follow all the steps described in [Section 1.1.14](#) of this document.

3.12 DPE Environment and Heritage Group – various publications

DPE is the custodian of a number of surface water, urban water and meteorological monitoring stations. These stations include the water quality monitoring program run by DPE Beachwatch. This DPE webpage provides reports, research and publications on water and environmental information. The webpage also provides a link to the NSW Government's Sharing and Enabling Environmental Data (SEED) portal.

Follow all the steps described in [Section 1.1.15](#) of this document.

3.13 WillyWeather – weather, wind, rainfall and UV index

WillyWeather provides meteorological information, tides and swell based on data supplied by the Bureau of Meteorology and other sources such as the National Oceanic and Atmospheric Administration.

1. Go to <https://tides.willyweather.com.au/nsw.html>

Weather Wind Rainfall Sun Moon UV Tides Swell More ▾

New South Wales Weather Forecast

Australia / NSW

Central Coast	Central Tablelands	Central West	Far North Coast
Far West	Greater Western Sy...	Hunter	Illawarra
Mid North Coast	New England and N...	Riverina-Murray	Snowy Mountains
South Coast	Southern Tablelands	Sydney	

2. Select an area by clicking the location pin on the map.
3. If your specific location of interest is not shown on the map, you can search for it by clicking on the region from the list below the map. Then you can scroll down through the alphabetical list of locations or filter the locations by typing the name of the location you are searching for on the "Filter Locations" box. Click on the location name.

South Coast Weather Forecast

Australia / NSW / South Coast

South Coast ^

WEDNESDAY Partly cloudy. Areas of morning frost about the coastal ranges. Medium (40%) chance of showers near the Victorian border, near zero chance elsewhere. Winds west to southwesterly 15 to 20 km/h becoming light in the evening then becoming westerly 15 to 20 km/h in the late evening. Daytime maximum temperatures between 12 and 17.

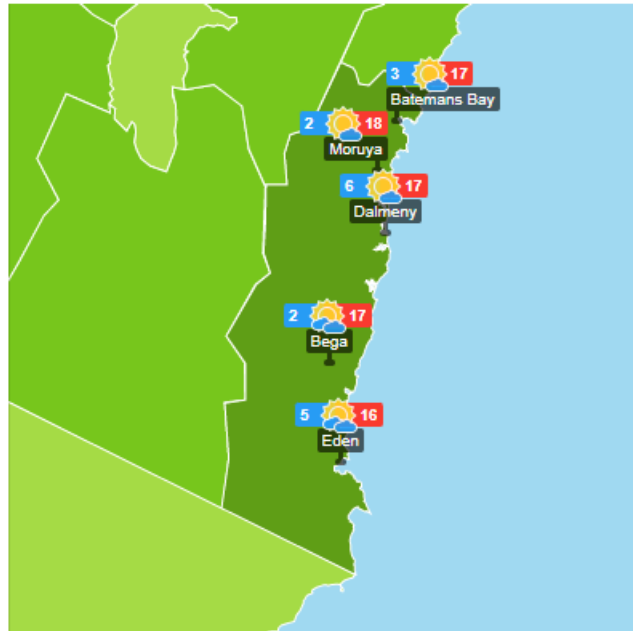
THURSDAY Partly cloudy. High (90%)

Batemans Bay v

Bega v

Snowy Mountains v

Southern Tablelands v



All Locations

A-D

E-H

I-L

M-P

Q-T

U-Z

Filter Locations

a

Acheron Ledge

Akolele

Alexanders Hut

Angledale


Aragunnu Beach

Araluen


Armands Bay






Aslings Beach

4. Then in a new page, the selected location's weather forecast will be shown. Click on the right arrow to see 7 days of the weather forecast.
5. Below the weather forecast is a chart of the temperature forecast and real time temperature. You can change the date range on the chart by hovering over the chart and then clicking the left or right arrows that appear. You will be able to see from 2 days before the current day up to the next 8 days.









Weather Wind Rainfall Sun Moon UV Tides Swell More 

Eden Offshore Weather Forecast

Australia / NSW / South Coast / 

TODAY 24 Aug	THU 25 Aug	FRI 26 Aug	SAT 27 Aug	SUN 28 Aug
				
5 16	9 16	7 17	7 17	7 19
Cloudy	Possible shower	Shower or two	Shower or two	Partly cloudy

Today 24 Aug






1 am	4 am	7 am	10 am	1 pm	4 pm	7 pm	10 pm
							

Today 24 Aug South Coast

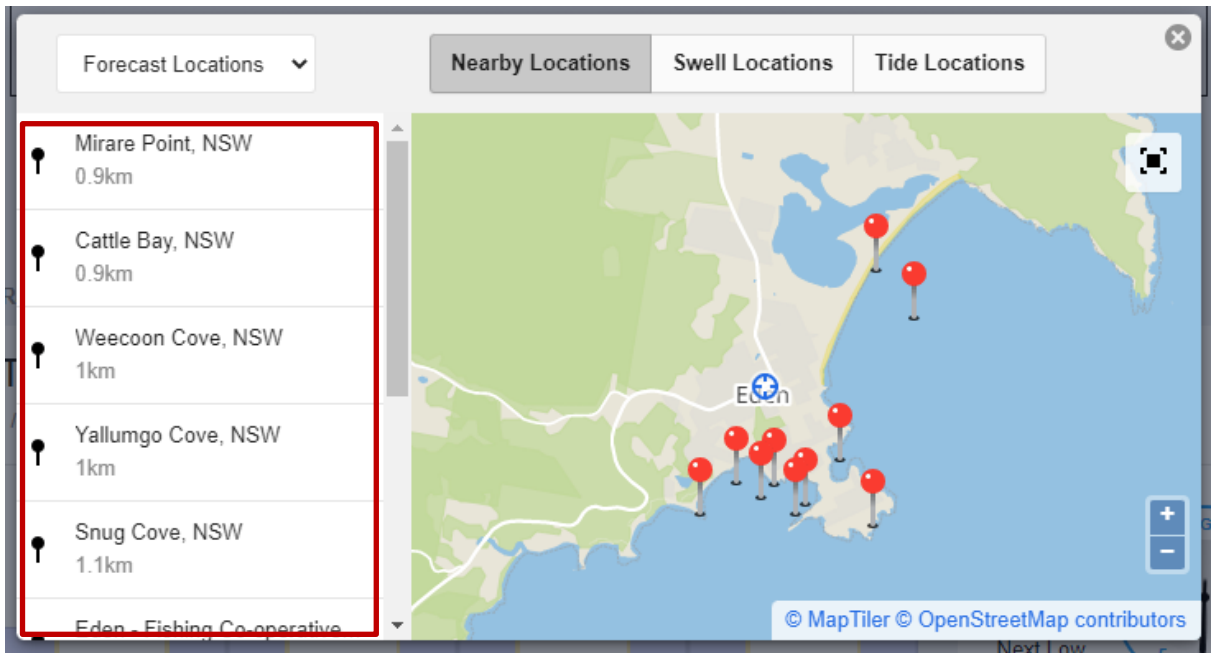
Partly cloudy. Light winds becoming westerly 15 to 20 km/h in the late evening..

1-Day 3-Day 5-Day

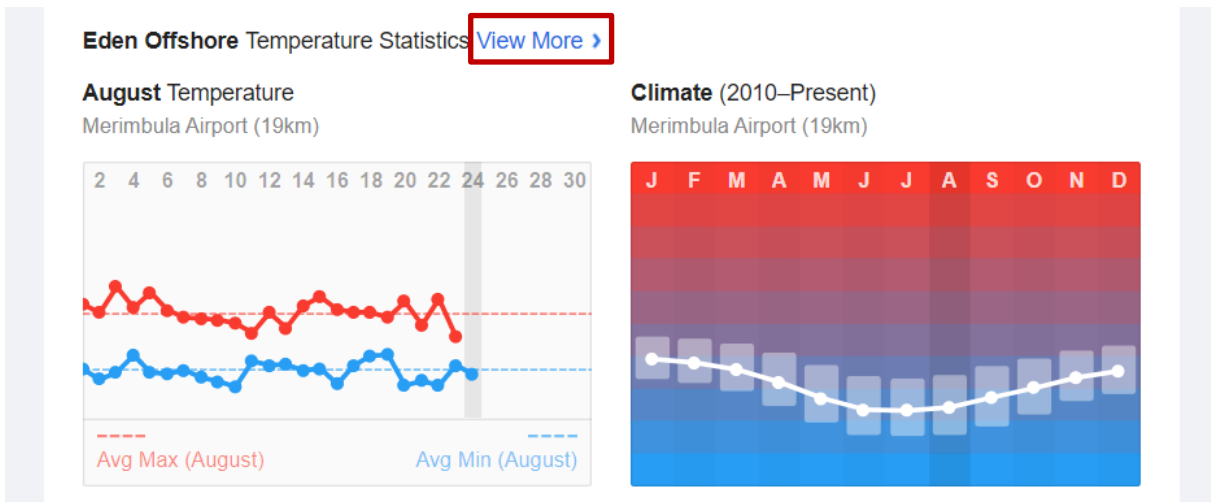
Temperature

Wed 24 Aug	Thu 25 Aug	Fri 26 Aug	Sat 27 Aug	Sun 28 Aug
				

- Click on the printer icon at the upper-right corner to get a printable overview of the weather, wind, swell, tides, etc., for the current day and the next 4 days.
- If you want to change the unit settings, scroll to the top of the page, click the “Unit Settings” drop-down arrow, and then select the unit for each measurement.
- If you want to change the current location to a nearby location, click the “View Locations Map” icon at the top-left corner of the page. Then select a new location by clicking on a specific pin on the map or clicking on the location name on the left.



- If you want to see more weather information based on the nearest weather station, scroll down the page to the “Temperature Statistics” section and click the “View More >” link.



The weather station page presents various weather information including temperature, wind gust, rainfall, pressure, relative humidity, delta T, dew point, cloud cover, climate records and wind rose. It also shows an interactive graph where you can add or remove plots and change the date range.



16.9 °C Now ▲
Feels Like 12.3 °C



22.2km/h SSW ▲
29.6km/h Wind Gust



0.2mm Today

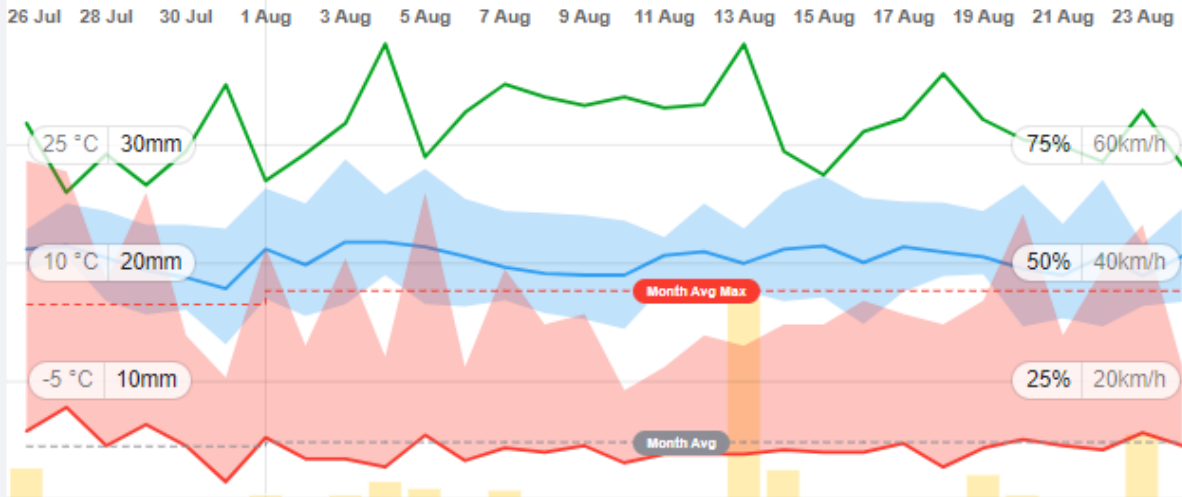
Pressure 1022.3 hPa ▲ Dew Point 8.3 °C ▲
Relative Humidity 57% ▼ Cloud 2 oktas ▼
Delta T 4.4 °C ▲

26 Jul 2022 - 24 Aug 2022 ▼

Daily Values ▼

Temperature | Rain Amount

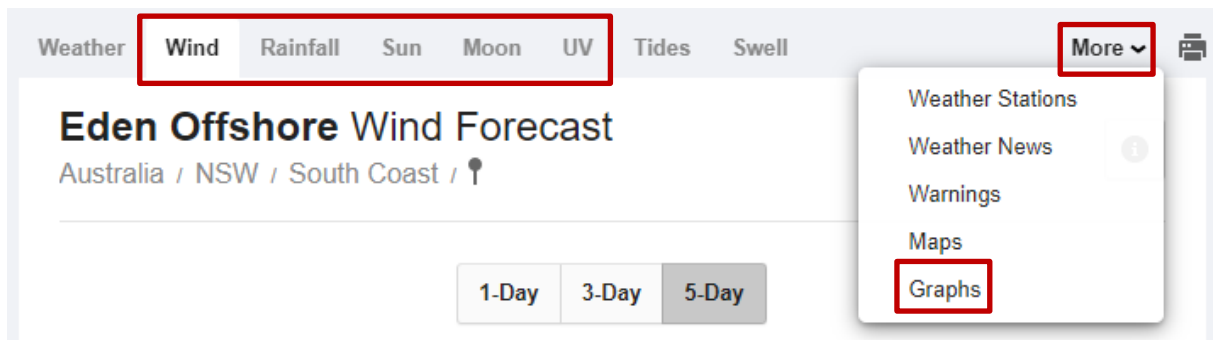
Humidity | undefined



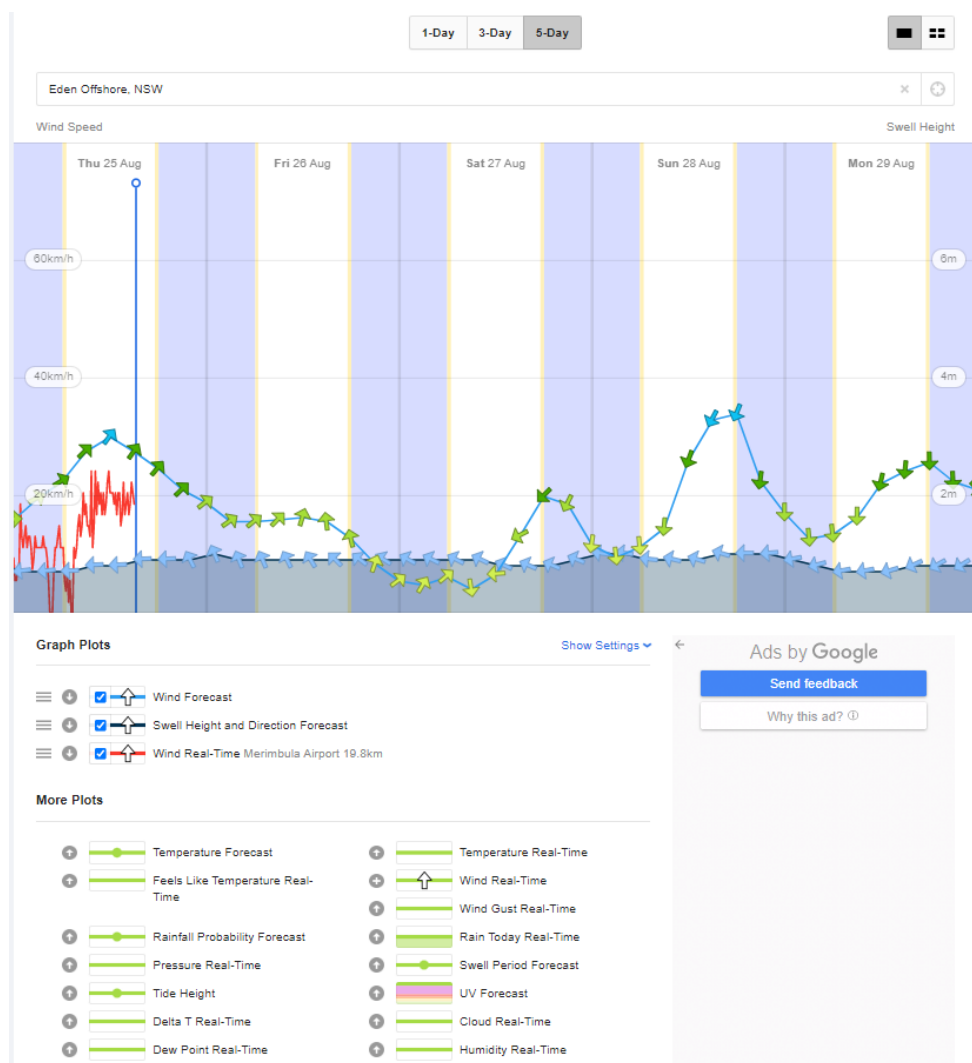
Graph Plots

- Temperature Data Availability
- Apparent Temperature Data Availability
- Wind Speed Data Availability
- Wind Gust Data Availability
- Rainfall Data Availability
- Rainfall Accumulative Data Availability
- Pressure Data Availability
- Humidity Data Availability
- Dew Point Data Availability
- Delta T Data Availability
- Cloud Data Availability

You can see the forecast on wind, rainfall, sunrise & sunset times, moon phases and UV index of your selected location by clicking on the corresponding tab above the location name. Then repeat steps 4-9 described in this section.



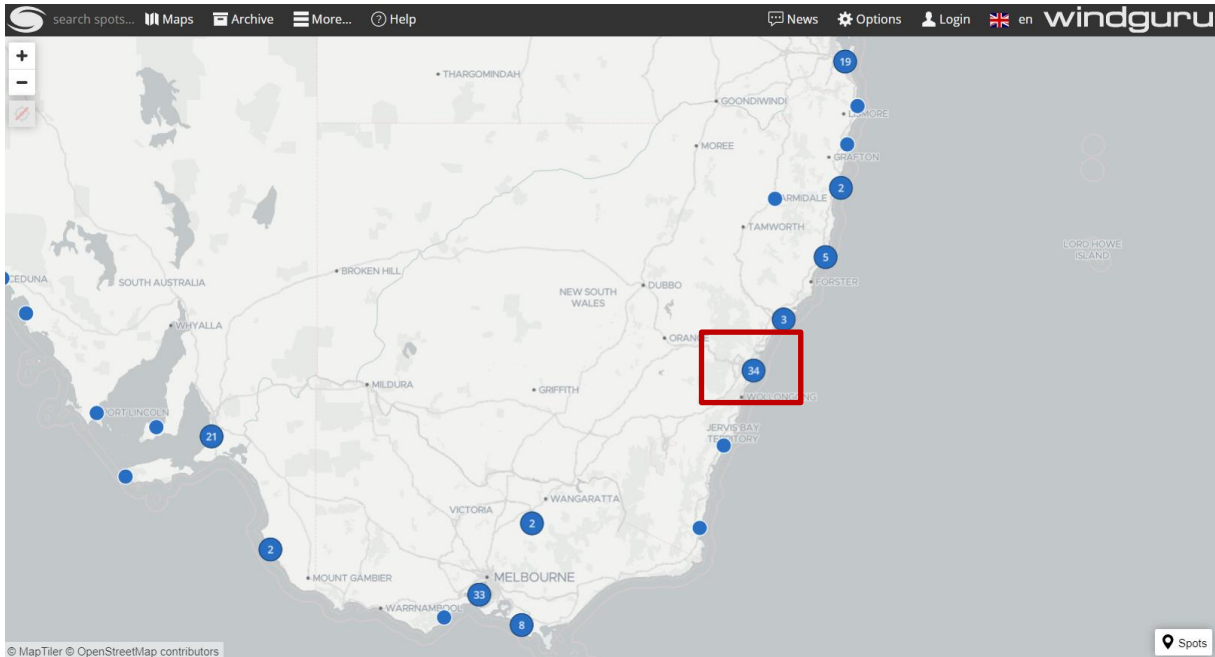
You can also see the interactive graph for your selected location by clicking the “More” drop-down arrow and selecting “Graphs”. You can overplot different weather parameters or view them in separate graphs.



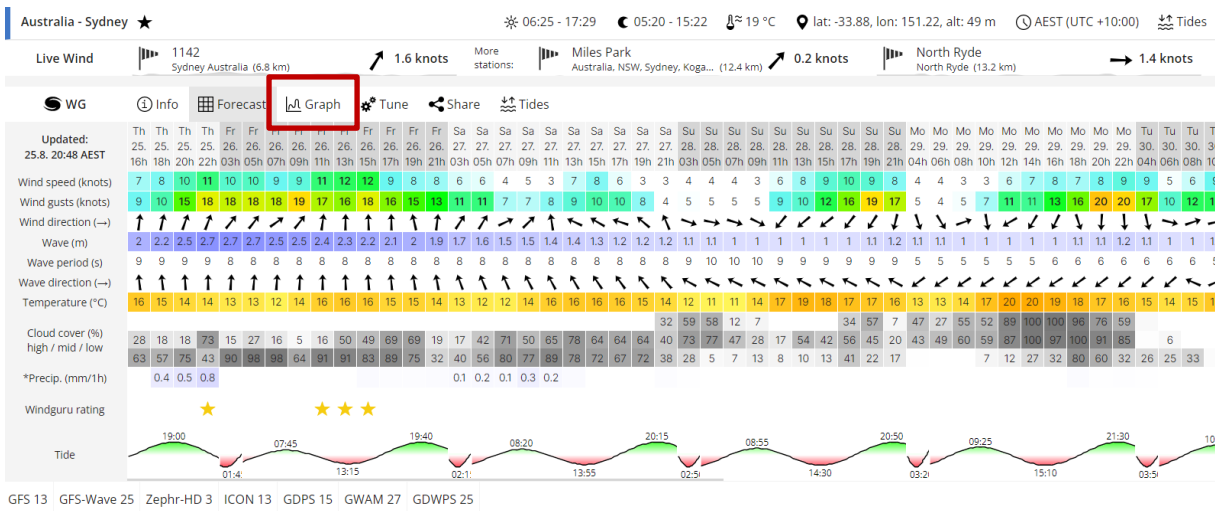
3.14 Windguru – weather forecast

Tides are based on a global ocean tide model FES2014, produced by NOVELTIS, LEGOS, CLS Space Oceanography Division and CNES.

1. Go to <https://www.windguru.cz/map/spot/?lat=-33&lon=150&zoom=5.5>
2. Click on one of the blue circles on the map to see the weather forecast for a specific location.



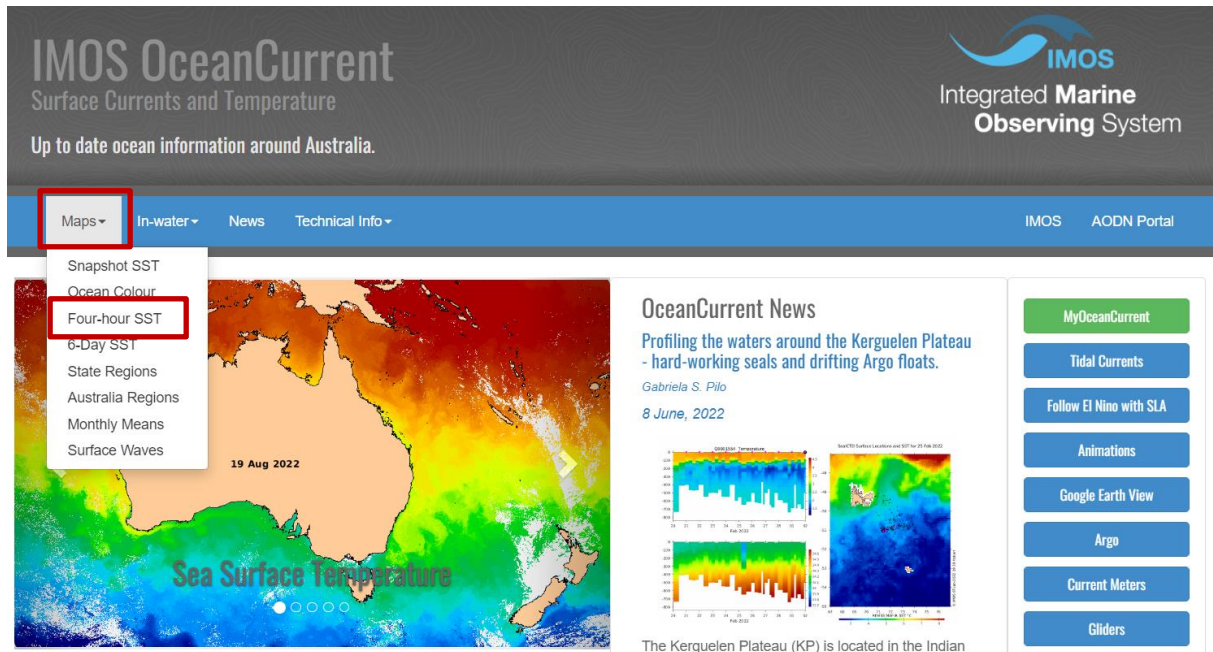
3. Click the “Graph” button above the table to see the charts for the various weather parameters. Then click the “?” icon at the upper-left corner of the page to see the legend for the charts.
4. You can scroll through the table or graph to see the forecast for future dates.



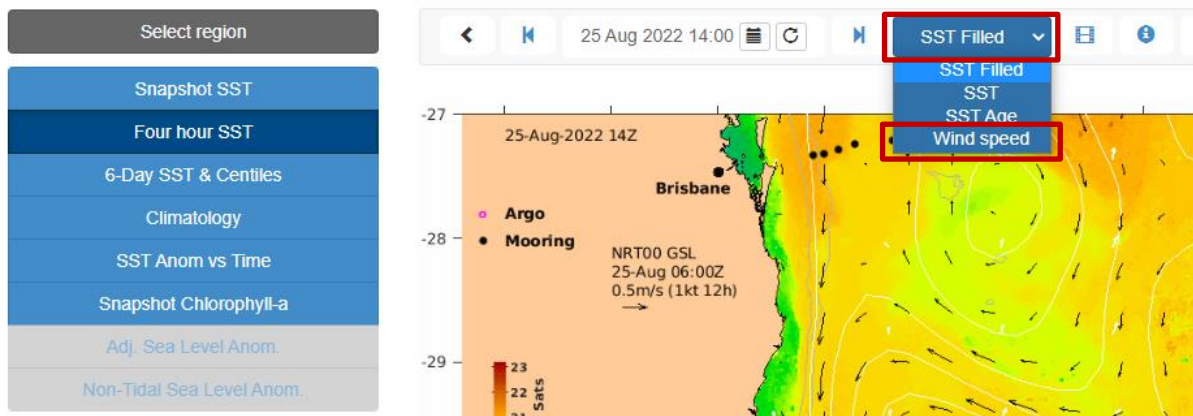
3.15 Integrated Marine Observing System (IMOS) – wind speed

The IMOS displays historical Australian regional sea surface temperature and ocean current charts including the Tasman Sea and NSW coast.

1. Go to <http://oceancurrent.imos.org.au/>
2. Click on “Maps” tab and then select “Four hour SST”.
3. In the popup map, select the study area based on region or state region.



4. Click on the drop-down arrow on the menu above the map and select “Wind Speed” to see an image of 3hr average wind speed and direction for the analysis time from BoM.



4. Coastal topography

4.1 Australian Ocean Data Network – bathymetry and coastal topography

The AODN Portal provides access to Australian marine and climate science data and provides the primary access to the Integrated Marine Observing System (IMOS) data including access to the IMOS metadata. This data portal works best with Chrome or Firefox. Internet explorer is not as effective.

1. Go to <https://portal.aodn.org.au/>
2. Press “Get Ocean Data Now”



3. From the “Organisation” tab on the left-hand side, find the Office of Environment and Heritage and select it.

Step 1: Select a Data Collection

Parameter

- Biological (92)
- Chemical (23)
- Physical-Atmosphere (24)
- Physical-Water (122)

Organisation

- Australian Universities (99)
- Commonwealth Departments and Agencies (104)
- Industry (9)
- Integrated Marine Observing System (IMOS) (117)
- International (10)
- Local Government (3)
- Non Government (3)
- State and Territory Government Departments and Agencies (36)
 - New South Wales Government (16)
 - Department of Primary Industries (DPI) (3)
 - Food Authority (2)
 - Manly Hydraulics Laboratory (MHL) (3)
 - Office of Environment and Heritage (OEHL) (15)
 - Northern Territory Government (6)
 - Queensland Government (8)
 - South Australian Government (4)
 - Victorian Government (9)
 - Western Australian Government (7)

IMOS - SRS Surface Waves Sub-Facility - altimeter wave/wind Select >

- Wave - Wind
- 1985 - 2019
- Integrated Marine Observing System (IMOS) - Department of Infrastructure Engineering, The University of Melbourne
- Satellite

IMOS - Australian National Mooring Network (ANMN) Facility - Current velocity time-series Select >

- Acoustics - Current - Water pressure
- 2007 - 2019
- Integrated Marine Observing System (IMOS) - Australian Institute of Marine Science (AIMS)
- Mooring and buoy

IMOS - Argo Profiles Select >

- Alkalinity - Nutrient - Oxygen - Salinity - Temperature - Water pressure
- 1999 - 2019
- Integrated Marine Observing System (IMOS) - CSIRO Oceans and Atmosphere - Hobart
- Float

IMOS - SRS Satellite - SST L3S - 06 day composite - day and night time composite Select >

- Temperature
- 1992 - 2019
- Integrated Marine Observing System (IMOS) - Australian Bureau of Meteorology
- Satellite

4. Look for single beam bathymetry and coastal surveys and then press “Select>>”.

You can also select the multi-beam bathymetry surveys which also contains bathymetry data.

Step 1: Select a Data Collection

Parameter

- Biological (4)
- Physical-Water (6)

Organisation

- State and Territory Government Departments and Agencies
 - New South Wales Government
 - Office of Environment and Heritage (OEHL) (15)

Platform

- Aircraft (2)
- Mooring and buoy (4)
- Vessel (7)

Date (UTC)

Geographic Boundary

Keyword

Type keyword, press enter

NSW Office of Environment and Heritage (OEHL) Single-beam Bathymetry and Coastal Topography Surveys Select >>

- Bathymetry
- 2004 - 2019
- Office of Environment and Heritage (OEHL), New South Wales Government
- Vessel

Waverider buoys Observations - Australia - delayed (National Wave Archive) Select >>

- Temperature - Wave
- 1974 - 2019
- Office of Environment and Heritage (OEHL), New South Wales Government - Australian Bureau of Meteorology - Department of Transport (DOT), Western Australian Government - Department of Environment and Science (DES), Queensland Government - Manly Hydraulics Laboratory (MHL)
- Mooring and buoy

NSW Office of Environment and Heritage (OEHL) Multi-beam Bathymetry Surveys Select >>

- Bathymetry
- 2004 - 2019
- Office of Environment and Heritage (OEHL), New South Wales Government
- Vessel

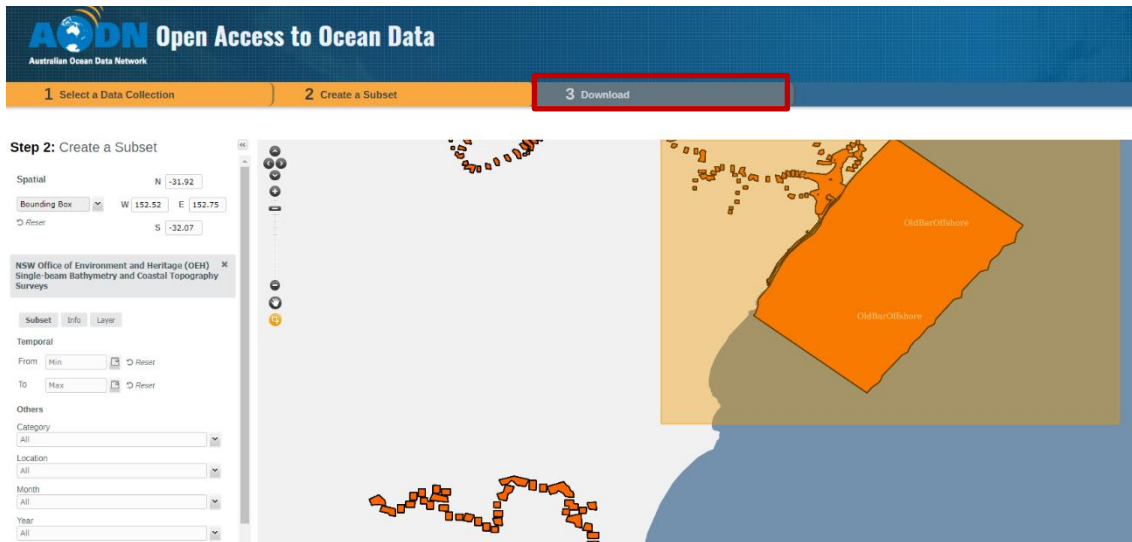
Manly Hydraulics Laboratory Waverider buoys Select >>

- Wave
- 1974 - 2017
- Office of Environment and Heritage (OEHL), New South Wales Government - Manly Hydraulics Laboratory (MHL)
- Mooring and buoy

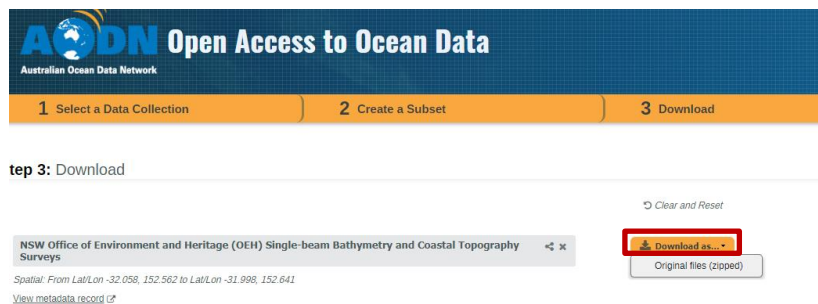
NSW Ocean Ecosystems 2002 Select >>

- Bathymetry

5. Zoom in and use the subset icon at the right side of the map to select the survey area of interest. Filters can be applied to show available data based on the filtering options on the left-hand side.



- Click on the “Next >>” button below or the “3 Download” tab at the top and select “Download as”.



- You are prompted to agree to the terms of use and then all the surveys within the box will be downloaded as zip files containing .pdf, .kmz and ArcGIS files.

To see other water information available such as physical parameter mooring data, physical and biogeochemistry data, glider deployment data, climatology data and biological datasets, click on “Keyword” on the left-hand side menu, type in your keyword and then press enter.

Step 1: Select a Data Collection

Parameter

Organisation

Platform

Date (UTC)

Geographic Boundary

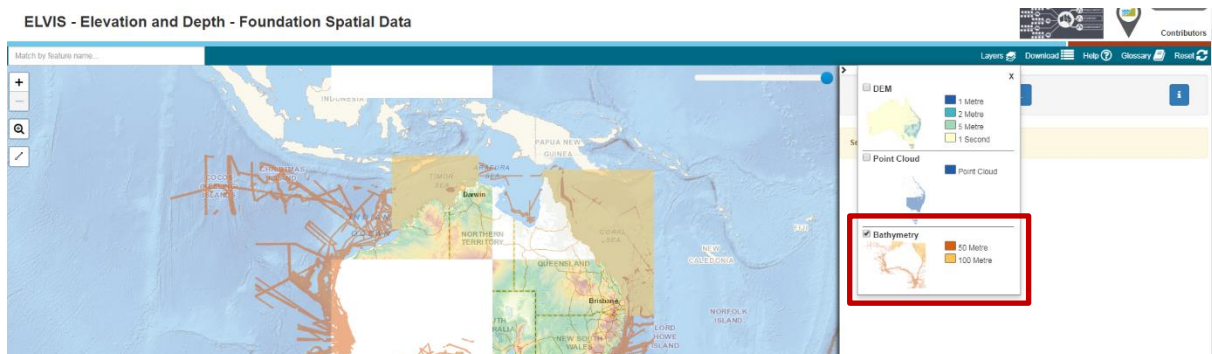
Keyword

Type keyword, press enter

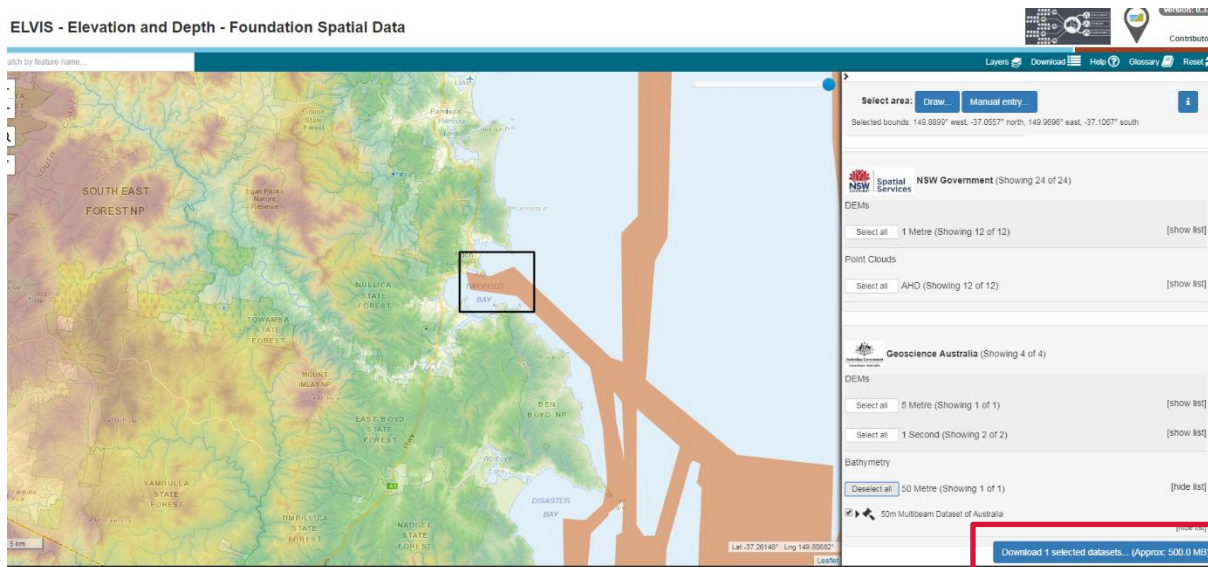
4.2 ELVIS – elevation and depth

ELVIS is a data portal for downloading point cloud and elevation datasets sourced from jurisdictions. It provides access to Geoscience Australia elevation data describing Australia's landforms and sea bed. The webpage is a map that displays the availability of datasets for a specific location.

1. Go to <http://elevation.fsdf.org.au/>
2. Click layers and untick DEM and Point Cloud and leave Bathymetry selected



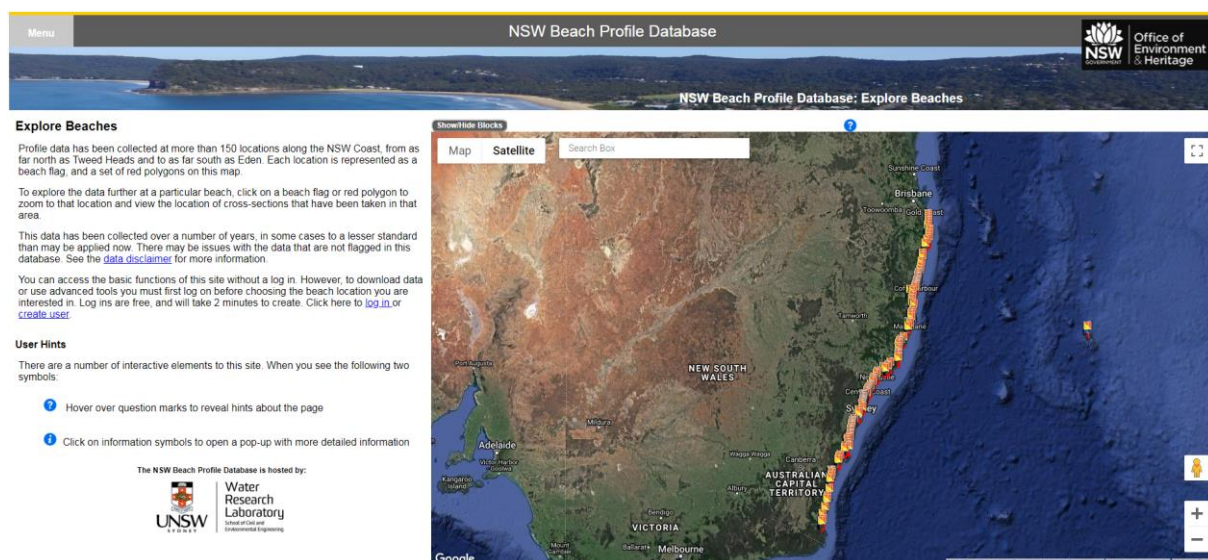
3. Use the draw function to select the area of interest, which show a listing of the available data.
4. Select the bathymetry data. Enter the email address where the data will be sent to and then click the "Order dataset" button.
5. An email will be sent with a link that will download a zip file containing the data in .jpg and .xyz files.



4.3 NSW Beach Profile Database – beach profile / cross-section survey

This database provides access to profile data that has been collected at more than 150 locations along the NSW Coast. You can access the basic functions of this site without a log in. However, to download data or use advanced tools you must first log on before choosing the beach location you are interested in.

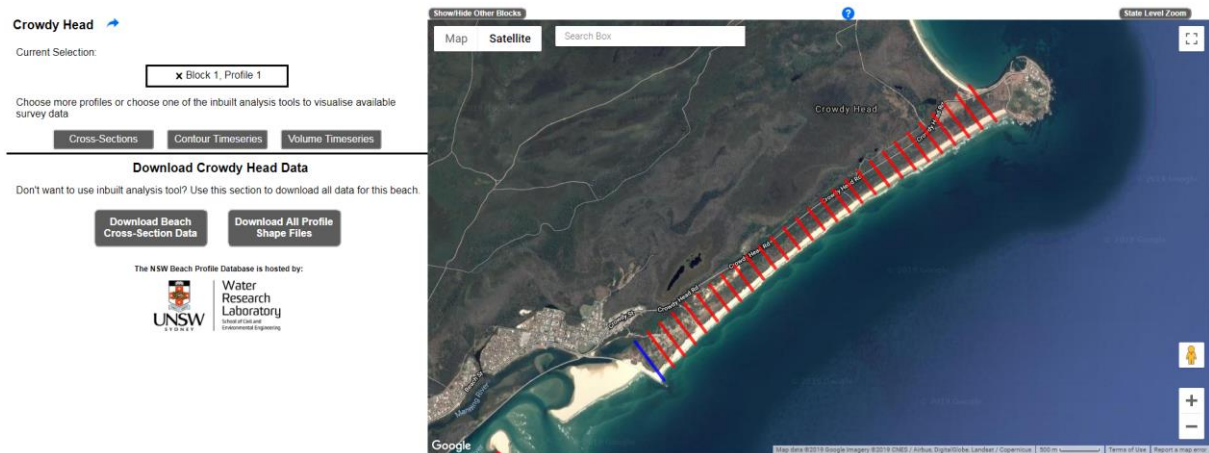
1. If you only wish to view the data online, go to <http://www.nswbpd.wrl.unsw.edu.au/photogrammetry/nsw/>. If you intend to download data, go to <http://www.nswbpd.wrl.unsw.edu.au/photogrammetry/login/> and create a new user account, which is free of charge.
2. Zoom in to the study area of interest on the map and then click on the beach flag marker or the red polygon to explore the data at that location.



- To download all the data for the study area, click on “Download Beach Cross-Section Data” and/or “Download All Profile Shape Files” for a CSV file and a Shape file, respectively.

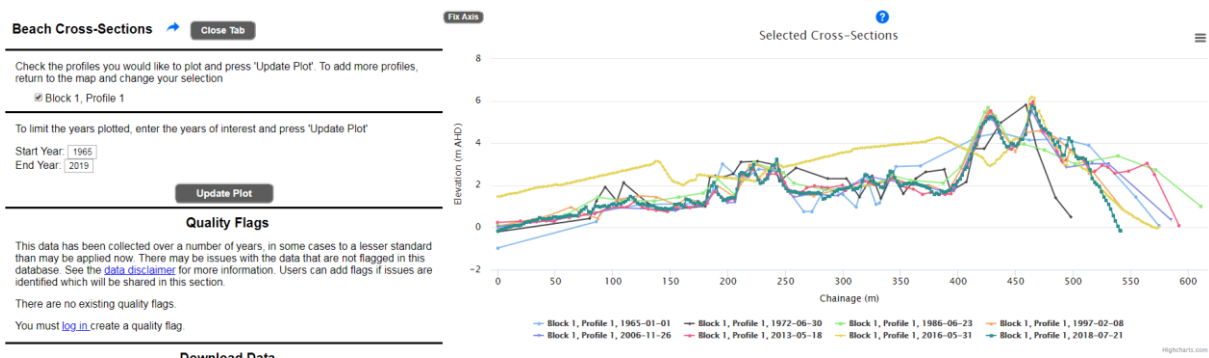
To download only a selected profile, click on the desired profile/s (it will turn blue when selected).

- Select the inbuilt analysis tool: “Cross Section”, “Contour Timeseries” and/or “Volume Timeseries”. For explanation on the tools, go to <http://www.nswbpd.wrl.unsw.edu.au/photogrammetry/tools/>.



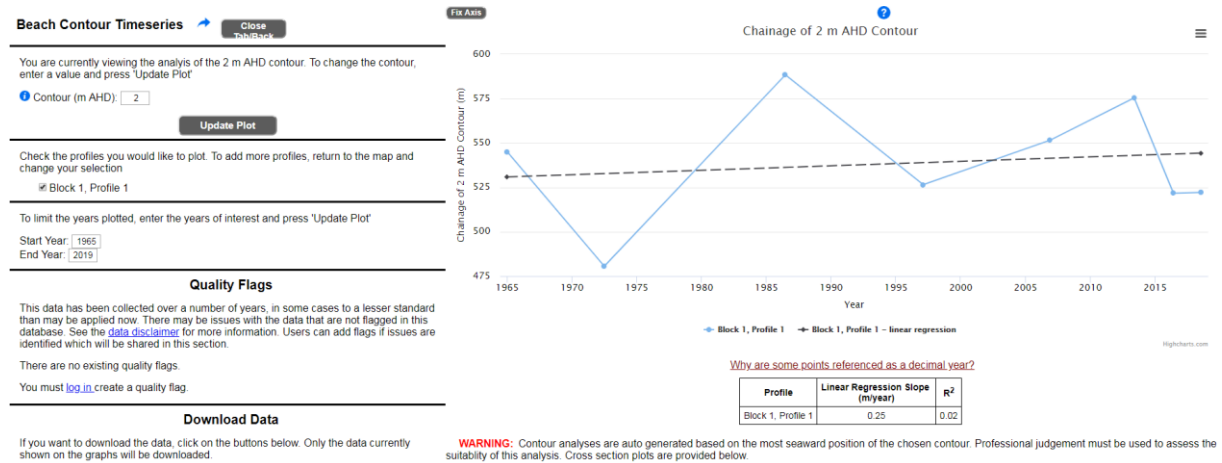
- On the left-hand side pane, tick the profiles you would like to plot and press “Update Plot”. To add more profiles, return to the map and change your selection.
- To limit the years plotted, enter the years of interest on the left pane and press “Update Plot”.
- Download the data for the selected profile(s) by clicking on “Download Selected Data” / “Download Selected Contour Data” / “Download Selected Cross Section Data” / “Download Shape Files” / “Download Volume Data”.

Cross-Section tool simply plots the profile data with the elevation in Australian Height Datum on the y-axis and chainage on the x-axis. This tool helps visualize the data and shows the profile changes over time.



Contour Timeseries tool provides an analysis of the location or chainage (y-axis) of a chosen

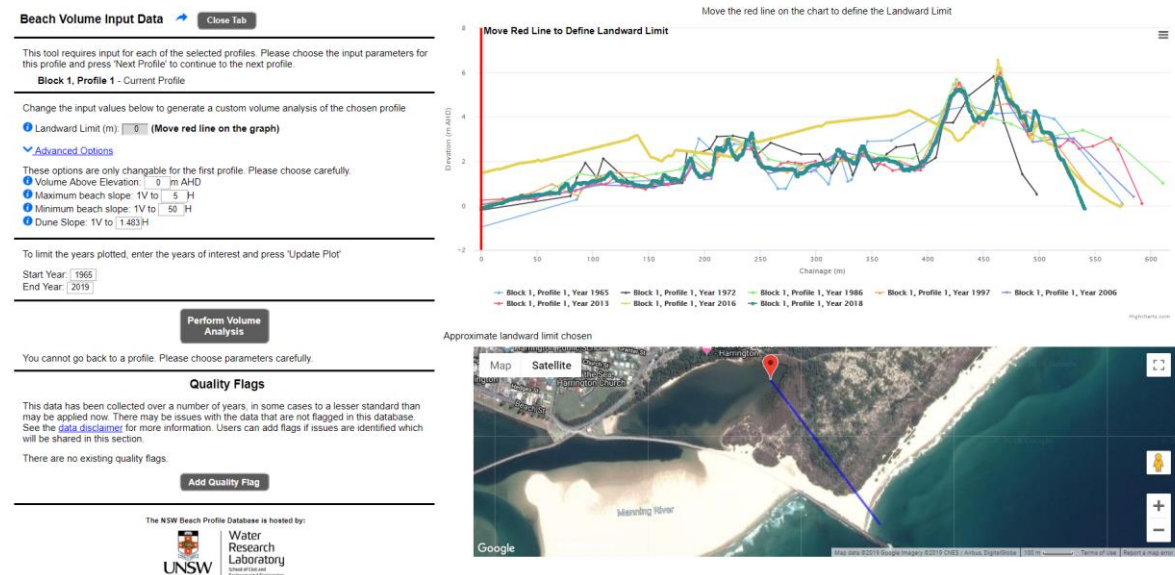
elevation contour on a profile throughout time. The year of the survey is on the x-axis.



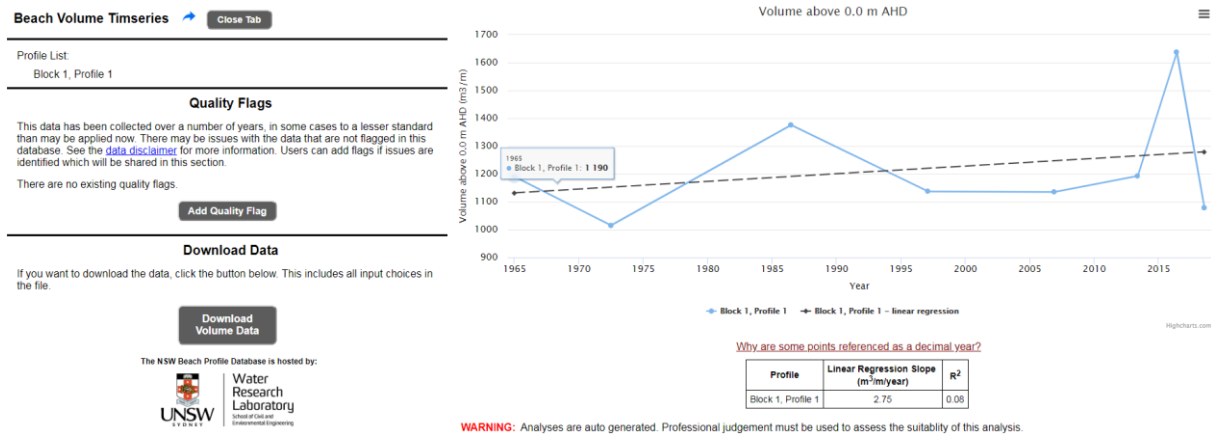
1. For the Contour Timeseries, set the height of the contour (default is 2 m AHD) on the left pane and then click “Update Plot”.

Volume Timeseries tool calculates and displays the volume of material above a chosen elevation at a given location. This tool requires four parameters that can be modified or left on default.

1. For the Volume Timeseries, select between “Quick Analysis Tool” and “Batch Analysis Tool”.
2. Set the parameter on the left pane. The parameters are the following:
 - landward limit
 - volume above elevation
 - maximum beach slope
 - minimum beach slope
 - dune slope



Then press “Update Plot” (for Quick Analysis) or “Perform Volume Analysis” (for Batch Analysis).



4.4 Sharing and Enabling Environmental Data – various datasets

The Sharing and Enabling Environmental Data (SEED) website is a portal that has been developed with and for the community of NSW. SEED provides publicly accessible data or links on environmental data within NSW. Currently, it incorporates 2,400-plus land, water and air datasets from agencies responsible for environment, planning, resources and energy, primary industries, industry, water and spatial services. Open data from SEED automatically uploads to Data.NSW.

1. Go to <https://www.seed.nsw.gov.au/>
2. Search for a dataset by typing a topic in the search box and then click the search icon. Once dataset results are found, you can apply filters based on the filtering options on the left-hand side to narrow down the selection of data records.
3. Follow steps 4-6 described in [Section 1.1.8](#) of this document.

4.5 Sharing and Enabling Environmental Data – Seabed NSW

Within the SEED portal, the Seabed NSW web viewer can be accessed. The SeaBed NSW program provides data on the structure and composition of the seabed adjacent to our beaches.

1. Go to <https://datasets.seed.nsw.gov.au/dataset/seabed-nsw>
2. Scroll down to see all the datasets related to the Seabed NSW program. The datasets issued are the following:
 - NSW Marine LiDAR Topo-Bathy 2018 Geotif
 - NSW seabed landforms derived from marine lidar data 2022
 - Shellharbour seabed landforms derived from multibeam echosounder data 2022

- Wollongong seabed landforms derived from multibeam echosounder data 2022
 - HABMAP Multi-beam Survey Coverage Areas
 - Single Beam Bathymetry & Coastal Topography Survey Coverage Areas - Coastal Marine Unit
 - NSW Environment Multi Beam Echo Sounder Gridded Data
 - NESP Biodiversity Hub Hunter Marine Park Multi Beam Echo Sounder Surveys
3. Click on one of the dataset links.
 4. Follow steps 4-6 described in [Section 1.1.8](#) of this document.
 5. On the new page, you can click the “Show on SEED Map” button which will open the SEED Map with the dataset already loaded. Zoom in the map to see the dataset and legend.

4.6 NSW Government (Data.NSW) – various datasets

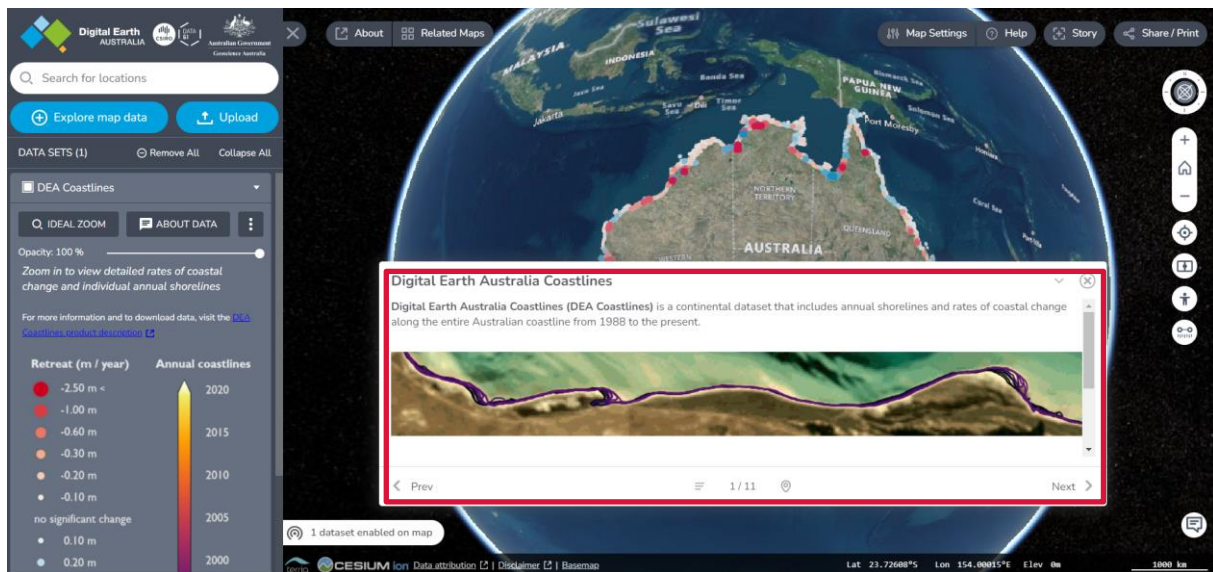
Data.NSW is the NSW Government's open data catalogue, bringing together datasets and data portals from NSW Government agencies and departments into one searchable website. Each dataset is licenced with a specific licence that describes how the data can be used.

Follow all the steps described in [Section 1.1.9](#) of this document.

4.7 Digital Earth Australia – coastlines

Digital Earth Australia (DEA) Map is a tool, developed for Geoscience Australia, that allows users to access DEA's map-based products. Through the DEA Map, a dataset called “DEA Coastlines” can be accessed. This dataset contains annual shorelines and rates of coastal change along the entire Australian coastline from 1988 to the present.

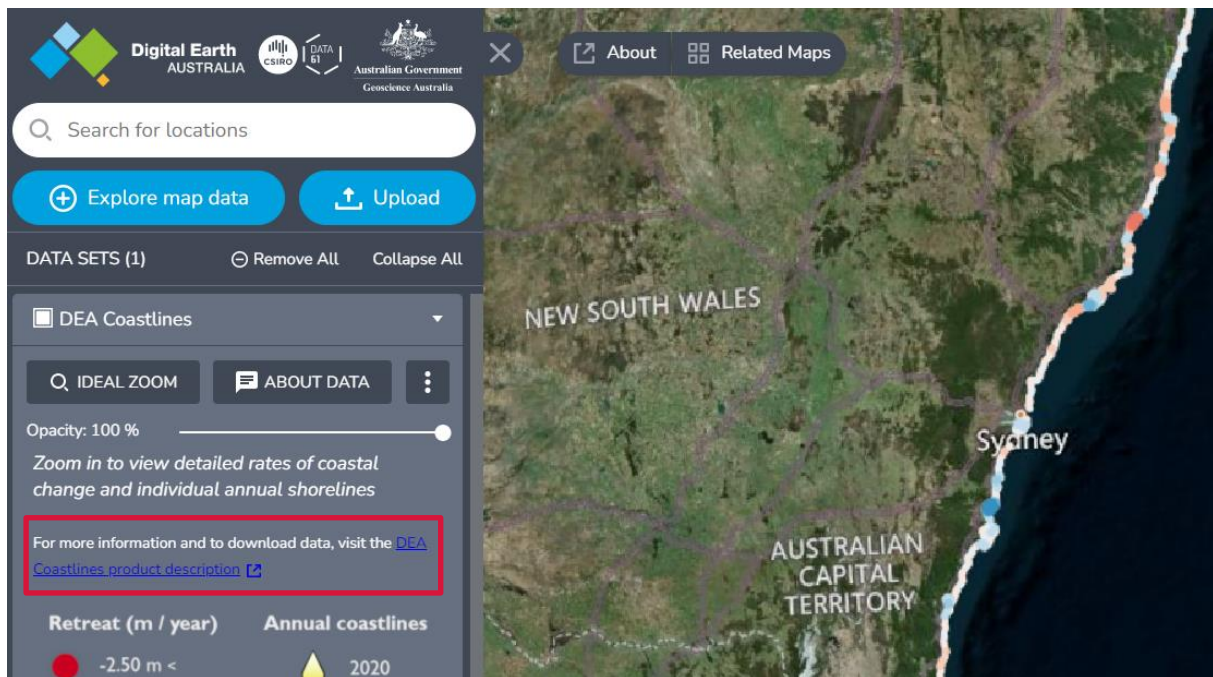
1. Go to <https://maps.dea.ga.gov.au/#share=s-DEACoastlines&playStory=1>
2. Read through the introduction window and click “Next >” to go to the next page. This will give a brief overview about the DEA Coastlines dataset and how to use the map.



3. Click on any labelled point to see detailed information at that specific area. A “Feature Information” window will pop up which will show a summary and time series chart about the coastal change at that location.
4. Click on the “Expand” button next to the time series chart to present a larger version below the map.



5. To download the data for that specific location, click the “Show Raw Data” button. Scroll down and then click on “Download this Table”. Select CSV or JSON depending on the file format you would like to download.
6. To download the data for the entire Australian coastline, click the “DEA Coastlines product description” link which will open a new window.



7. Click the “Access” tab and then scroll down to the “Access notes” section. Follow the instructions to download the whole dataset for the Australian coastline.

