

Title

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

Abstract

In-situ ocean wave measurements have been collected at nearshore locations along the NSW coast. Wave data are collected using GPS wave buoys that are deployed by NSW DCCEEW scientists on moorings in shallow coastal waters (< 35 m water depth) adjacent to beaches or rocky shores. The program currently uses Sofar Spotter wave buoys (<https://www.sofaroccean.com/products/spotter>). During 2016-2017, Datawell DWR-G4 wave buoys (<https://www.datawell.nl/Products/Buoys.aspx>) were used, while in 2018 and 2019 both Datawell and Spotter wave buoys were used. A buoy comparison experiment was carried out in 2018, which found that wave data measured by Datawell and Spotter buoys at the same location could be considered equivalent.

The wave 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 several months to years. Deployment locations are chosen to support scientific research carried by NSW DCCEEW and partners on coastal dynamics along the NSW coastline and to develop nearshore wave modelling tools and data. Wave data and research support the development of Coastal Management Programs (CMPs) under the Coastal Management Act (2016).

The processed wave data from completed buoy deployments include a comma-separated value (CSV) table of widely used spectral and time-domain parameters describing wave height, period and direction, derived from spectral and zero-crossing analysis techniques. Data are provided at half-hourly temporal resolution with timestamps corresponding to the end of the half-hour buoy displacement measurement period in Australian Eastern Standard Time (AEST). Timestamps are included for each half-hour from the beginning to the end of each deployment, including when data was not recorded or when the buoy was temporarily removed from the water during mooring servicing. The time-series data have been quality controlled using standard diagnostic tests to identify suspect data points. Quality control fields (Qflag, Qcode, Percent, Dof) describe the provenance, completeness and quality of each data point. Sea surface temperature data are also provided for locations where buoys with water temperature sensors were deployed.

For more information on wave buoy data collection and processing, please see:

Kinsela, M.A., Morris, B.D., Ingleton, T.C., Doyle, T. B. et al. (2024) Nearshore wave buoy data from southeastern Australia for coastal research and management. Scientific Data. <https://doi.org/10.1038/s41597-023-02865-x>

Wave buoy equipment and deployments have been primarily funded by NSW DCCEEW with equipment grant funding from the NSW Office of the Chief Scientist and Engineer's Research Attraction and Acceleration Program (RAAP) awarded to the NSW Node of the Integrated Marine Observing System (IMOS) and administered by the Sydney Institute of Marine Science (SIMS). The Water Research Laboratory (UNSW Sydney) also provided wave buoys used in the program.

Real-time data from active nearshore wave buoy deployments is also available on SEED:

<https://datasets.seed.nsw.gov.au/dataset/nsw-nearshore-wave-buoy-parameter-time-series-data-active-deployments>

For more information on the NSW Nearshore Wave Data program please visit:

<https://www.environment.nsw.gov.au/research-and-publications/our-science-and-research/our-research/water/ocean-and-coastal-waves>

Data are provided as a ZIP file for each deployment under

Resource locator

[Data Quality Statement](#)

Name: Data Quality Statement

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Data quality statement for NSW nearshore wave buoy parameter time series data (completed deployments)

Function: download

[NSWENV_NearshoreWaveBuoy_Locations](#)

Name: NSWENV_NearshoreWaveBuoy_Locations

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

ArcGIS shapefile showing locations of Nearshore Wave Buoy Deployments as at 11-October-2023

Function: download

[NSWENV_NearshoreWaveBuoy_Code](#)

Name: NSWENV_NearshoreWaveBuoy_Code

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Matlab code used to process Nearshore Wave Buoy Deployment data

Function: download

[NSWENV_20160302-20160517_12m_Narrabeen_WAVE](#)

Name: NSWENV_20160302-20160517_12m_Narrabeen_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Narrabeen: 20160302-20160517. For more information see Readme txt file in data package.

Function: download

[NSWENV_20160302-20160517_13m_Collaroy_WAVE](#)

Name: NSWENV_20160302-20160517_13m_Collaroy_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Collaroy: 20160302-20160517. For more information see Readme txt file in data package.

Function: download

[NSWENV_20160603-20160703_13m_Collaroy2_WAVE](#)

Name: NSWENV_20160603-20160703_13m_Collaroy2_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Collaroy2: 20160603-20160703. For more information see Readme txt file in data package.

Function: download

[NSWENV_20160811-20161017_14m_Bronte_WAVE](#)

Name: NSWENV_20160811-20161017_14m_Bronte_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Bronte: 20160811-20161017. For more information see Readme txt file in data package.

Function: download

[NSWENV_20160811-20161026_14m_Maroubra_WAVE](#)

Name: NSWENV_20160811-20161026_14m_Maroubra_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Maroubra: 20160811-20161026. For more information see Readme txt file in data package.

Function: download

[NSWENV_20161206-20171211_30m_Figure8Pools_WAVE](#)

Name: NSWENV_20161206-20171211_30m_Figure8Pools_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Figure8Pools: 20161206-20171211. For more information see Readme txt file in data package.

Function: download

[NSWENV_20170605-20171030_14m_Woonona_WAVE](#)

Name: NSWENV_20170605-20171030_14m_Woonona_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Woonona: 20170605-20171030. For more information see Readme txt file in data package.

Function: download

[NSWENV_20170605-20171030_15m_FairyMeadow_WAVE](#)

Name: NSWENV_20170605-20171030_15m_FairyMeadow_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from FairyMeadow: 20170605-20171030. For more information see Readme txt file in data package.

Function: download

[NSWENV_20180613-20180722_31m_Gerroa_WAVE](#)

Name: NSWENV_20180613-20180722_31m_Gerroa_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Gerroa: 20180613-20180722. For more information see Readme txt file in data package.

Function: download

[NSWENV_20180816-20181203_13m_OldBarA_WAVE](#)

Name: NSWENV_20180816-20181203_13m_OldBarA_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from OldBarA: 20180816-20181203. For more information see Readme txt file in data package.

Function: download

[NSWENV_20180816-20190312_12m_Farquhar_WAVE](#)

Name: NSWENV_20180816-20190312_12m_Farquhar_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Farquhar: 20180816-20190312. For more information see Readme txt file in data package.

Function: download

[NSWENV_20181003-20190311_13m_OldBarB_WAVE](#)

Name: NSWENV_20181003-20190311_13m_OldBarB_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from OldBarB: 20181003-20190311. For more information see Readme txt file in data package.

Function: download

[NSWENV_20190321-20190604_11m_BoomerangA_WAVE](#)

Name: NSWENV_20190321-20190604_11m_BoomerangA_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from BoomerangA: 20190321-20190604. For more information see Readme txt file in data package.

Function: download

[NSWENV_20190321-20190618_33m_BoomerangB_WAVE](#)

Name: NSWENV_20190321-20190618_33m_BoomerangB_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from BoomerangB: 20190321-20190618. For more information see Readme txt file in data package.

Function: download

[NSWENV_20190724-20200113_33m_BoomerangB2_WAVE](#)

Name: NSWENV_20190724-20200113_33m_BoomerangB2_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from BoomerangB2: 20190724-20200113. For more information see Readme txt file in data package.

Function: download

[NSWENV_20190724-20200520_13m_BoomerangA2_WAVE](#)

Name: NSWENV_20190724-20200520_13m_BoomerangA2_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from BoomerangA2: 20190724-20200520. For more information see Readme txt file in data package.

Function: download

[NSWENV_20191021-20200209_14m_Collaroy3_WAVE](#)

Name: NSWENV_20191021-20200209_14m_Collaroy3_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Collaroy3: 20191021-20200209. For more information see Readme txt file in data package.

Function: download

[NSWENV_20191206-20200225_14m_Worimi_WAVE](#)

Name: NSWENV_20191206-20200225_14m_Worimi_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Worimi: 20191206-20200225. For more information see Readme txt file in data package.

Function: download

[NSWENV_20191206-20210409_13m_Stockton_WAVE](#)

Name: NSWENV_20191206-20210409_13m_Stockton_WAVE
Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Stockton: 20191206-20210409. For more information see Readme txt file in data package.

Function: download

[NSWENV_20200331-20211102_15m_Collaroy4_WAVE](#)

Name: NSWENV_20200331-20211102_15m_Collaroy4_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Collaroy4: 20200331-20211102. For more information see Readme txt file in data package.

Function: download

[NSWENV_20201110-20210824_13m_Broulee_WAVE](#)

Name: NSWENV_20201110-20210824_13m_Broulee_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Broulee: 20201110-20210824. For more information see Readme txt file in data package.

Function: download

[NSWENV_20201110-20230609_13m_Bengello_WAVE](#)

Name: NSWENV_20201110-20230609_13m_Bengello_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Bengello: 20201110-20230609. For more information see Readme txt file in data package.

Function: download

[NSWENV_20201116-20210402_13m_Merimbula_WAVE](#)

Name: NSWENV_20201116-20210402_13m_Merimbula_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Merimbula: 20201116-20210402. For more information see Readme txt file in data package.

Function: download

[NSWENV_20210510-20221123_13m_Merimbula2_WAVE](#)

Name: NSWENV_20210510-20221123_13m_Merimbula2_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Merimbula2: 20210510-20221123. For more information see Readme txt file in data package.

Function: download

[NSWENV_20210630-20211207_06m_Deegan_WAVE](#)

Name: NSWENV_20210630-20211207_06m_Deegan_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Deegan: 20210630-20211207. For more information see Readme txt file in data package.

Function: download

[NSWENV_20211119-20221124_13m_Broulee2_WAVE](#)

Name: NSWENV_20211119-20221124_13m_Broulee2_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Broulee2: 20211119-20221124. For more information see Readme txt file in data package.

Function: download

[NSWENV_20211221-20230830_15m_Collaroy5_WAVE](#)

Name: NSWENV_20211221-20230830_15m_Collaroy5_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Collaroy5: 20211221-20230830. For more information see Readme txt file in data package.

Function: download

[NSWENV_20220301-20221116_06m_Deeban2_WAVE](#)

Name: NSWENV_20220301-20221116_06m_Deeban2_WAVE

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Nearshore wave data from Deeban2: 20220301-20221116. For more information see Readme txt file in data package.

Function: download

Unique resource identifier

Code eb752d3a-ef07-4cd1-9b9e-7916236d7c94

Presentation form Diagram digital

Edition 1

Dataset language English

Metadata standard

Name ISO 19115

Edition 2016

Dataset URI <https://datasets.seed.nsw.gov.au/dataset/eb752d3a-ef07-4cd1-9b9e-7916236d7c94>

Purpose Coastal Hazard Management

Status On going

Spatial representation type None

Spatial reference system

Code identifying the spatial reference system 4283

Topic category

Keyword set	
keyword value	OCEANOGRAPHY-Physical MARINE-Coasts
Originating controlled vocabulary	
Title	ANZLIC Search Words
Reference date	2008-05-16
Geographic location	
West bounding longitude	149.501953
East bounding longitude	153.984375
North bounding latitude	-37.746396
South bounding latitude	-27.870161
Vertical extent information	
Minimum value	-100
Maximum value	2228
Coordinate reference system	
Authority code	urn:ogc:def:cs:EPSG::
Code identifying the coordinate reference system	5711
Temporal extent	
Begin position	2021-02-12
End position	N/A
Dataset reference date	
Resource maintenance	
Maintenance and update frequency	Continual
Contact info	
Contact position	Data Broker
Organisation name	NSW Department of Climate Change, Energy, the Environment and Water
Telephone number	131555
Email address	data.broker@environment.nsw.gov.au
Web address	https://www.nsw.gov.au/departments-and-agencies/dcceew
Responsible party role	pointOfContact
Limitations on public access	

Responsible party

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Metadata date 2024-09-17T00:08:53.688659

Metadata language