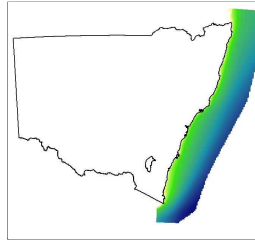


## NSW Wave Power

File Geodatabase Raster Dataset



### Tags

Wave energy flux, wave power, renewable energy, NSW

### Summary

This raster dataset shows the annual mean wave energy flux for up to 250 km off the coast of New South Wales. Wave energy flux, or wave power, indicates potential for development of wave energy resources. The dataset is presented here as a NSW statewide wave power map and was created as part of the NSW Renewable Energy Mapping Project, undertaken by the Geological Survey of NSW. Data source: CSIRO and the Bureau of Meteorology 2013.

### Description

The wave resource data is made available from the jointly funded CSIRO Oceans and Atmosphere and Australian Renewable Energy Agency Australian Wave Energy Atlas Project.

The annual mean wave energy flux is derived from the CAWCR global wave hindcast, using data from the archived hourly 4' Australian grid, using data from 1st January 1980 to 31st December 2010. Wave energy flux, or wave power density,  $C_g E$ , is a measure of the available power in the wave field, calculated as the kilowatts per meter (kW/m) of wave crest width.  $C_g E$  is a spectrally derived time-series. An equation describing its calculation can be found in the atlas report (Hemer et al., submitted\*). For further information on the CAWCR wave hindcast, see Durrant et al (2013)\*\*. See DAP entry <http://dx.doi.org/10.4225/08/523168703DCC5> for 1979-2010 data. Please note that the licensee/user is required to acknowledge the source of this data 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 us for more information.

\*Hemer, M.A., S. Zieger, T. Durrant, J. O'Grady, R.K. Hoeke, K.L. McInnes and U. Rosebrock (submitted) A revised assessment of Australia's national wave energy resource. Renewable Energy

\*\*Durrant, Thomas; Hemer, Mark; Trenham, Claire; Greenslade, Diana (2013): CAWCR Wave Hindcast 1979-2010. v7. CSIRO. Data Collection. <http://doi.org/10.4225/08/523168703DCC5>

### Credits

CSIRO  
Bureau of Meteorology

For raw data metadata details please see: <http://oa-gis.csiro.au/geonetwork/srv/eng/search#!6ecbdc2dfb5ff2b322d9d3786fbaa5b46573ff75>

### Use limitations

Please refer to the 'Resource Constraints' section for limitations of use.

### Extent

**West** 149.533585 **East** 155.533525  
**North** -27.466720 **South** -38.466610

### Scale Range

**Maximum (zoomed in)** 1:5,000  
**Minimum (zoomed out)** 1:150,000,000

### ArcGIS Metadata ►

#### Topics and Keywords ►

THEMES OR CATEGORIES OF THE RESOURCE oceans

\* CONTENT TYPE Downloadable Data  
EXPORT TO FGDC CSDGM XML FORMAT AS RESOURCE DESCRIPTION No

THEME KEYWORDS RENEWABLES-Wave

[Hide Topics and Keywords ▲](#)

#### Citation ►

TITLE NSW Wave Power  
ALTERNATE TITLES Annual Mean Wave Energy Flux  
CREATION DATE 2016-05-22 21:14:49  
PUBLICATION DATE 2016-07-25 00:00:00  
REVISION DATE 2018-11-30 00:00:00

EDITION 1.3  
EDITION DATE 2018-11-30

PRESENTATION FORMATS digital image  
FGDC GEOSPATIAL PRESENTATION FORMAT raster digital data

#### OTHER CITATION DETAILS

It is recommended that this dataset be referred to as:

Wade S.L., Barry C.M., Nelson M.D. & Gambridge L. (compilers) 2018. Renewable energy map of New South Wales, Version 1.3 (Digital Dataset). Geological Survey of New South Wales, Maitland.

Please note the raw data has been sourced from the "CSIRO"

We (the Department) are the Publishers, and the others (CSIRO) are the Custodians.

[Hide Citation ▲](#)

## Citation Contacts ►

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ORGANIZATION'S NAME NSW Resources and Geoscience, Geological Survey of NSW  
CONTACT'S ROLE publisher

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### ONLINE RESOURCE

LOCATION <http://www.resourcesandgeoscience.nsw.gov.au>  
NAME NSW Resources and Geoscience website  
DESCRIPTION The website of the NSW Department of Planning & Environment, Division of Resources and Geoscience  
FUNCTION PERFORMED information

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### RESPONSIBLE PARTY

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ORGANIZATION'S NAME CSIRO Oceans & Atmosphere  
CONTACT'S POSITION Senior Research Scientist  
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[Hide Contact information ▲](#)

[Hide Citation Contacts ▲](#)

## Resource Details ►

DATASET LANGUAGES \* English (AUSTRALIA)  
DATASET CHARACTER SET utf8 - 8 bit UCS Transfer Format

STATUS completed  
SPATIAL REPRESENTATION TYPE \* grid

### SUPPLEMENTAL INFORMATION

The annual mean wave energy flux is derived from the CAWCR global wave hindcast, using data from the archived hourly 4' Australian grid, using data from 1st January 1980 to 31st December 2010. Wave energy flux, or wave power density, CgE, is a measure of the available power in the wave field, calculated as the kilowatts per meter (kW/m) of wave crest width. CgE is a spectrally derived time-series. An equation describing its calculation can be found in the atlas report (Hemer et al., 2016). For further information on the CAWCR wave hindcast, see Durrant et al (2014)\*\*. See DAP entry <http://dx.doi.org/10.4225/08/523168703DCC5> for 1979-2010 data. Please note that the licensee/user is required to acknowledge the source of this data on the following terms: 'Source: Bureau of Meteorology and CSIRO © 2013'.

\* PROCESSING ENVIRONMENT Version 6.2 (Build 9200) ; Esri ArcGIS 10.4.0.5524

### CREDITS

CSIRO  
Bureau of Meteorology

For raw data metadata details please see: <http://oa-gis.csiro.au/geonetwork/srv/eng/search#!6ecbdc2dfb5ff2b322d9d3786fbaa5b46573ff75>

### ARCgis ITEM PROPERTIES

\* NAME NSW\_Wave\_Power  
\* LOCATION file://\Maitfp11\group\Geosurvey\GeoInfo\GeoSpatial\Products\Mapping\State\NSW Renewables\2019\Online data\RenewablesData.gdb  
\* ACCESS PROTOCOL Local Area Network

[Hide Resource Details ▲](#)

## Extents ►

### EXTENT

#### GEOGRAPHIC EXTENT

##### BOUNDING RECTANGLE

EXTENT TYPE Extent used for searching  
\* WEST LONGITUDE 149.533585  
\* EAST LONGITUDE 155.533525  
\* NORTH LATITUDE -27.466720  
\* SOUTH LATITUDE -38.466610  
\* EXTENT CONTAINS THE RESOURCE Yes

EXTENT IN THE ITEM'S COORDINATE SYSTEM

\* WEST LONGITUDE 149.533585  
\* EAST LONGITUDE 155.533525  
\* SOUTH LATITUDE -38.466610  
\* NORTH LATITUDE -27.466720  
\* EXTENT CONTAINS THE RESOURCE Yes

[Hide Extents ▲](#)

## Resource Points of Contact ►

### POINT OF CONTACT

INDIVIDUAL'S NAME Dr Mark Hemer  
ORGANIZATION'S NAME CSIRO Oceans & Atmosphere  
CONTACT'S POSITION Senior Research Scientist  
CONTACT'S ROLE custodian

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CONTACT'S ROLE publisher

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### ONLINE RESOURCE

LOCATION <http://www.resourcesandgeoscience.nsw.gov.au>  
NAME NSW Resources and Geoscience website  
DESCRIPTION The website of the NSW Department of Planning & Environment, Division of Resources and Geoscience  
FUNCTION PERFORMED information

[Hide Contact information ▲](#)

[Hide Resource Points of Contact ▲](#)

## Resource Maintenance ►

### RESOURCE MAINTENANCE

UPDATE FREQUENCY unknown

SCOPE OF THE UPDATES dataset

[Hide Resource Maintenance ▲](#)

## Resource Constraints ►

### LEGAL CONSTRAINTS

#### LIMITATIONS OF USE

THE FOLLOWING LIMITATION APPLIES TO THE DERIVATIVE WORKS AND PLATFORM OF DELIVERY:

<http://www.planning.nsw.gov.au/Copyright-and-Disclaimer>

### LEGAL CONSTRAINTS

#### LIMITATIONS OF USE

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<https://wiki.creativecommons.org/wiki/Australia>

### CONSTRAINTS

#### LIMITATIONS OF USE

Please refer to the 'Resource Constraints' section for limitations of use.

[Hide Resource Constraints ▲](#)

## Spatial Reference ►

### ARCGIS COORDINATE SYSTEM

\* TYPE Geographic  
\* GEOGRAPHIC COORDINATE REFERENCE GCS\_GDA\_1994  
\* COORDINATE REFERENCE DETAILS  
GEOGRAPHIC COORDINATE SYSTEM  
WELL-KNOWN IDENTIFIER 4283  
X ORIGIN -400  
Y ORIGIN -400  
XY SCALE 11258999068426.238  
Z ORIGIN -100000

Z SCALE 10000  
M ORIGIN -100000  
M SCALE 10000  
XY TOLERANCE 8.9831528411952133e-009  
Z TOLERANCE 0.001  
M TOLERANCE 0.001  
HIGH PRECISION true  
LEFT LONGITUDE -180  
LATEST WELL-KNOWN IDENTIFIER 4283  
WELL-KNOWN TEXT GEOGCS["GCS\_GDA\_1994",DATUM["D\_GDA\_1994",SPHEROID["GRS\_1980",6378137.0,298.257222101]],PRIMEM  
["Greenwich",0.0],UNIT["Degree",0.0174532925199433],AUTHORITY["EPSG",4283]]

REFERENCE SYSTEM IDENTIFIER

\* VALUE 4283  
\* CODESPACE EPSG  
\* VERSION 8.3.4(3.0.1)

[Hide Spatial Reference ▲](#)

## Spatial Data Properties ►

GEORECTIFIED GRID ►

\* NUMBER OF DIMENSIONS 2

AXIS DIMENSIONS PROPERTIES

DIMENSION TYPE column (x-axis)  
\* DIMENSION SIZE 90  
\* RESOLUTION 0.066666 Degree

AXIS DIMENSIONS PROPERTIES

DIMENSION TYPE row (y-axis)  
\* DIMENSION SIZE 165  
\* RESOLUTION 0.066666 Degree

\* CELL GEOMETRY area  
\* POINT IN PIXEL center

\* TRANSFORMATION PARAMETERS ARE AVAILABLE Yes

\* CHECK POINTS ARE AVAILABLE No

CORNER POINTS

\* POINT 149.533585 -38.466610  
\* POINT 149.533585 -27.466720  
\* POINT 155.533525 -27.466720  
\* POINT 155.533525 -38.466610

\* CENTER POINT 152.533555 -32.966665

[Hide Georectified Grid ▲](#)

ARCGIS RASTER PROPERTIES ►

GENERAL INFORMATION

\* PIXEL DEPTH 32  
\* COMPRESSION TYPE None  
\* NUMBER OF BANDS 1  
\* RASTER FORMAT AAIGrid  
\* SOURCE TYPE continuous  
\* PIXEL TYPE floating point  
\* NO DATA VALUE -999  
\* HAS COLORMAP No  
\* HAS PYRAMIDS No

[Hide ArcGIS Raster Properties ▲](#)

[Hide Spatial Data Properties ▲](#)

## Data Quality ►

SCOPE OF QUALITY INFORMATION ►

RESOURCE LEVEL dataset

[Hide Scope of quality information ▲](#)

[Hide Data Quality ▲](#)

## Lineage ►

LINEAGE STATEMENT

The wave resource data is made available from the jointly funded CSIRO Oceans and Atmosphere and Australian Renewable Energy Agency Australian Wave Energy Atlas Project.

A model of annual mean wave energy flux was created by CSIRO and Bureau of Meteorology data.

The annual mean wave energy flux is derived from the CAWCR global wave hindcast, using data from the archived hourly 4' Australian grid, using data from 1st January 1980 to 31st December 2010. Wave energy flux, or wave power density, CgE, is a measure of the available power in the wave field, calculated as the kilowatts per meter (kW/m) of wave crest width. CgE is a spectrally derived time-series. An equation describing its calculation can be found in the atlas report (Hemer et al., submitted\*). For further information on the CAWCR wave hindcast, see Durrant et al (2013)\*\*. See DAP entry <http://dx.doi.org/10.4225/08/523168703DCC5> for 1979-2010 data.

A 3 colour stretch was applied to the raster file to better highlight differences in wave energy flux.

For raw data metadata details please see: <http://oa-gis.csiro.au/geonetwork/srv/eng/search#!6ecbdc2dfb5ff2b322d9d3786fbaa5b46573ff75>.

\*Hemer, M.A., S. Zieger, T. Durrant, J. O'Grady, R.K. Hoeke, K.L. McInnes and U. Rosebrock (submitted) A revised assessment of Australia's national wave energy resource. Renewable Energy

\*\*Durrant, Thomas; Hemer, Mark; Trenham, Claire; Greenslade, Diana (2013): CAWCR Wave Hindcast 1979-2010. v7. CSIRO. Data Collection. <http://doi.org/10.4225/08/523168703DCC5>

Note: This dataset has been reviewed as part of the NSW Renewable Energy Mapping Project update (version 1.3, November 2018), with no updates

required.

[Hide Lineage ▲](#)

## Distribution ►

### DISTRIBUTOR ►

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#### ONLINE RESOURCE

LOCATION <http://www.resourcesandgeoscience.nsw.gov.au>  
NAME NSW Resources and Geoscience website  
DESCRIPTION The website of the NSW Department of Planning & Environment, Division of Resources and Geoscience  
FUNCTION PERFORMED information

[Hide Contact information ▲](#)

[Hide Distributor ▲](#)

### DISTRIBUTION FORMAT

\* NAME File Geodatabase Raster Dataset  
VERSION 10.3.1

[Hide Distribution ▲](#)

## References ►

### PORTRAYAL CATALOGUE CITATION ►

TITLE NSW Wave Power  
ALTERNATE TITLES Annual Mean Wave Energy Flux  
PUBLICATION DATE 2016-07-25 00:00:00  
CREATION DATE 2016-05-22 00:00:00  
REVISION DATE 2018-11-30 00:00:00

EDITION 1.3  
EDITION DATE 2018-11-30

PRESENTATION FORMATS digital map  
FGDC GEOSPATIAL PRESENTATION FORMAT raster digital data

#### OTHER CITATION DETAILS

It is recommended that this dataset be referred to as:

Wade S.L., Barry C.M., Nelson M.D. & Gammridge L. (compilers) 2018. Renewable energy map of New South Wales, Version 1.3 (Digital Dataset). Geological Survey of New South Wales, Maitland.

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[Hide Portrayal catalogue citation ▲](#)

[Hide References ▲](#)

## Metadata Details ►

\* METADATA LANGUAGE English (AUSTRALIA)  
\* METADATA CHARACTER SET utf8 - 8 bit UCS Transfer Format

METADATA IDENTIFIER 7AEFDCEB-0F37-4383-8EE4-B4943CEA0222

SCOPE OF THE DATA DESCRIBED BY THE METADATA \* dataset  
SCOPE NAME \* dataset

\* LAST UPDATE 2019-02-11

#### ARCGIS METADATA PROPERTIES

METADATA FORMAT ArcGIS 1.0  
METADATA STYLE ISO 19139 Metadata Implementation Specification  
STANDARD OR PROFILE USED TO EDIT METADATA ISO19139

CREATED IN ARCGIS FOR THE ITEM 2016-06-07 13:01:28  
LAST MODIFIED IN ARCGIS FOR THE ITEM 2019-02-11 15:33:51

#### AUTOMATIC UPDATES

HAVE BEEN PERFORMED Yes  
LAST UPDATE 2019-02-11 15:33:51

#### ITEM LOCATION HISTORY

ITEM COPIED OR MOVED 2016-06-07 13:01:28  
FROM  
G:\Geosurvey\GeoInfo\GeoSpatial\Work\_in\_Progress\Mapping\State\\_NSW\_Renewables\Data\Wave\_CSIRO\ww3.nsw.CgE\_revised\ww3.nsw.CgE\_avg.asc  
TO \\maitlandfp1\groups\$\Geosurvey\GeoInfo\GeoSpatial\Work\_in\_Progress\Mapping\State\\_NSW\_Renewables\Final online

data\Wave\ww3.nsw.CgE\_avg.asc

[Hide Metadata Details ▲](#)

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### ONLINE RESOURCE

LOCATION <http://www.resourcesandgeoscience.nsw.gov.au>  
NAME NSW Resources and Geoscience website  
DESCRIPTION The website of the NSW Department of Planning & Environment, Division of Resources and Geoscience  
FUNCTION PERFORMED information

[Hide Contact information ▲](#)

[Hide Metadata Contacts ▲](#)

## Metadata Maintenance ►

### MAINTENANCE

UPDATE FREQUENCY unknown

[Hide Metadata Maintenance ▲](#)

## Thumbnail and Enclosures ►

### THUMBNAIL

THUMBNAIL TYPE JPG

[Hide Thumbnail and Enclosures ▲](#)

## FGDC Metadata (read-only) ▼