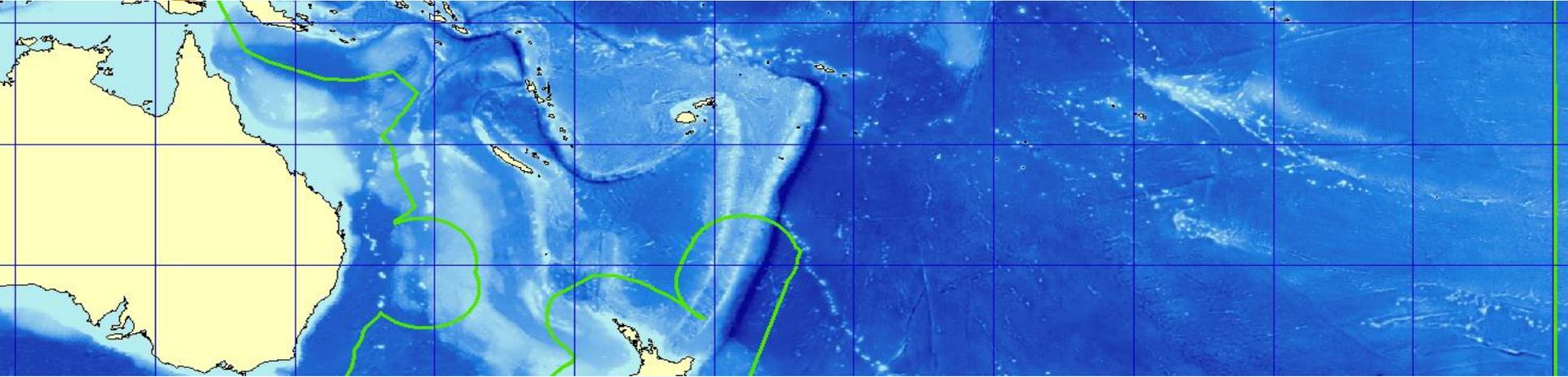




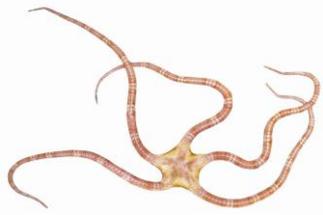
National Environmental  
Research Program

MARINE BIODIVERSITY *hub*



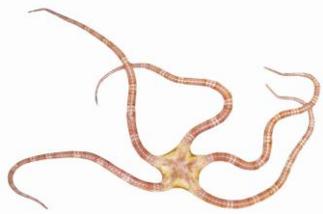
## NERP Marine Hub data delivery

Piers Dunstan and Paul Hedge  
NERP Marine Biodiversity Hub



## Delivering data DSEWPaC needs

- Delivering the data the department has been using.
- Delivering the data the department indicates it needs on values, pressures and assets.
- Delivering future science outputs.
- Informing national and international management decisions.



# Searching for existing data

**AODN** Australian Ocean Data Network Portal Home Map Search Log in or Register eMII AODN Help

**Map Layer Chooser**

- Commonwealth Marine Protected Areas
- Key Ecological Features
  - Coral Sea
  - North Marine Bioregional Planning Region
  - North-west Marine Region
  - South West marine planning region (polygons)
  - SW marine planning region (points)
  - Temperate East Marine Region
- Integrated Marine Observing System (IMOS)
- Marine National Facility (MNF)
- e-Atlas
- Royal Australian Navy (RAN)
- National Institute for Water & Atmospheric Research
- Model Outputs
- Data products
- Satellite Data
- GI by year-GI by year-Line\_peagic\_online
- North Marine Bioregional Planning Region
- North-west Marine Region
- South West marine planning region (polygons)
- RAD\_SW\_invert\_bioregion
- RAD\_North\_bioregion
- RAD\_NW\_bioregion
- Temperate East Marine Region
- SW marine planning region (points)
- Coral Sea
- Commonwealth Marine Protected Areas
- t\_botvals-mean-Australia
- s\_botvals-mean-Australia
- o2\_botvals-mean-Australia
- sand-Australia
- mud-Australia
- EBSARegions\_20111214
- class\_11
- class\_11\_spebsa\_n180p180

Logo	Description	Actions
	<b>Sedimentary Features (carbonate percentage) of the Australian EE</b> The map provides a visual representation of the carbonate content of seabed sediments expressed as a weight percentage. The data are represented from 0 to 100%. The data on which this map is based were compiled from marine sediment database (MARS - <a href="http://www.ga.gov.au/oracle/mars/">http://www.ga.gov.au/oracle/mars/</a> ) of Geoscience Australia. This dataset is a contribution to the CERF Marine ...	
	<b>Sedimentary Features (mud percentage) of the Australian EE</b> The map provides a visual representation of the mud content of seabed sediments expressed as a weight percentage. The data are represented from 0 to 100%. The data on which this map is based were compiled from Geoscience Australia's marine sediment database (MARS - <a href="http://www.ga.gov.au/oracle/mars/">http://www.ga.gov.au/oracle/mars/</a> ). This dataset is a contribution to the CERF Marine ...	
	<b>Sedimentary Features (gravel percentage) of the Australian EE</b> The map provides a visual representation of the gravel content of seabed sediments expressed as a weight percentage. The data are represented from 0 to 100%. The data on which this map is based were compiled from Geoscience Australia's marine sediment database (MARS - <a href="http://www.ga.gov.au/oracle/mars/">http://www.ga.gov.au/oracle/mars/</a> ). This dataset is a contribution to the CERF Marine ...	
	<b>Sedimentary Features (sand percentage) of the Australian EE</b> The map provides a visual representation of the sand content of seabed sediments expressed as a weight percentage. The data are represented from 0 to 100%. The data on which this map is based were compiled from Geoscience Australia's MARine Sediment database (MARS - <a href="http://www.ga.gov.au/oracle/mars/">http://www.ga.gov.au/oracle/mars/</a> ). This dataset is a contribution to the CERF Marine ...	
	<b>Processed multibeam backscatter data of the Lord Howe Rise</b> Geoscience Australia carried out a marine survey on Lord Howe Island shelf (NSW) in 2008 (SS062008) to map seabed bathymetry and characterise benthic environments through colocated sampling of surface sediments and infauna, rock coring, observation of benthic habitats using underwater towed video, and measurement of ocean	

Page 1 of 2 Add all

**Map** My Searches Current Search

Limit search to:

# Percent Sand



Australian Ocean Data Network Portal

Home

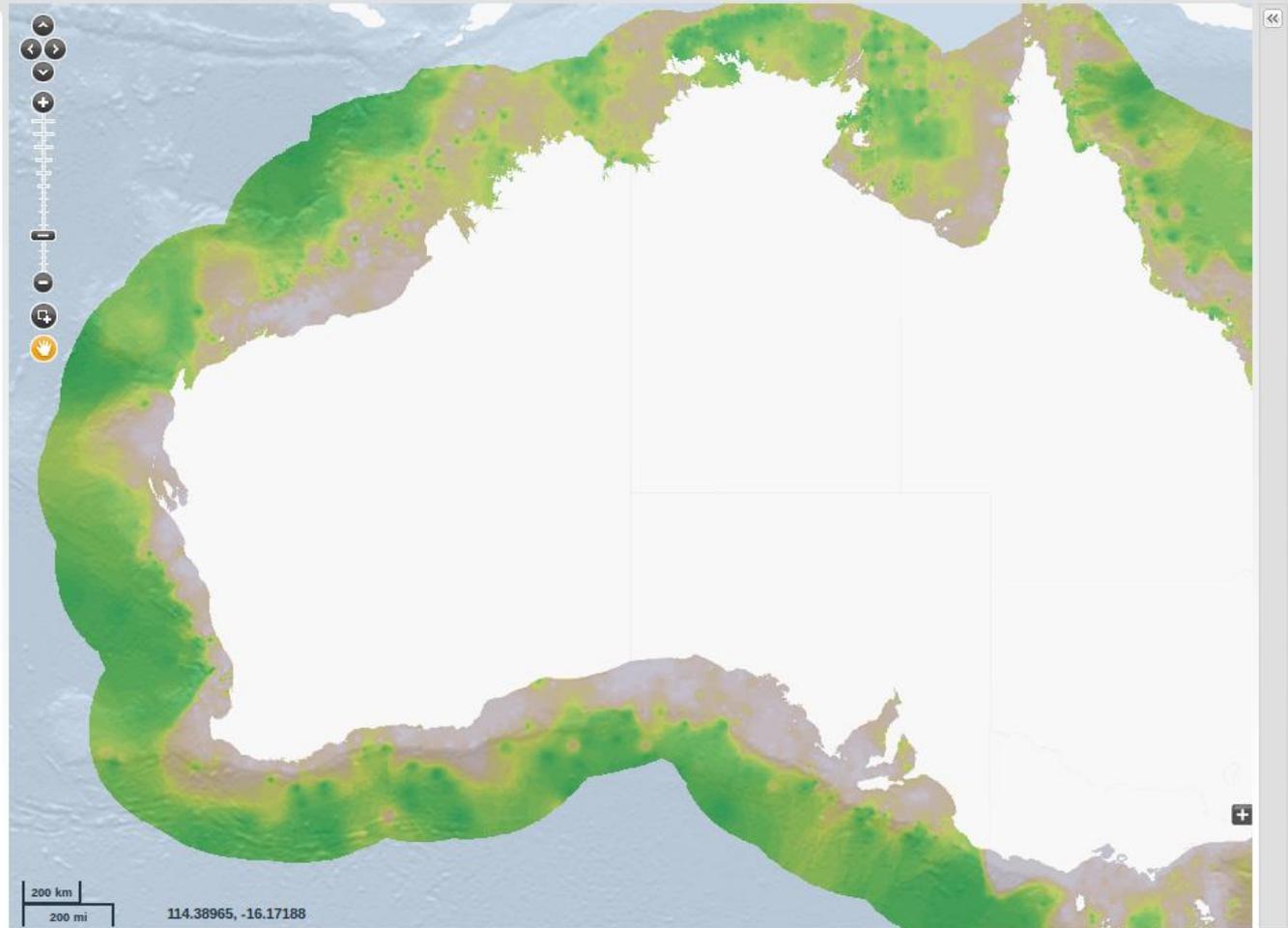
Map

Search

Log in or Register | eMII | AODN | Help

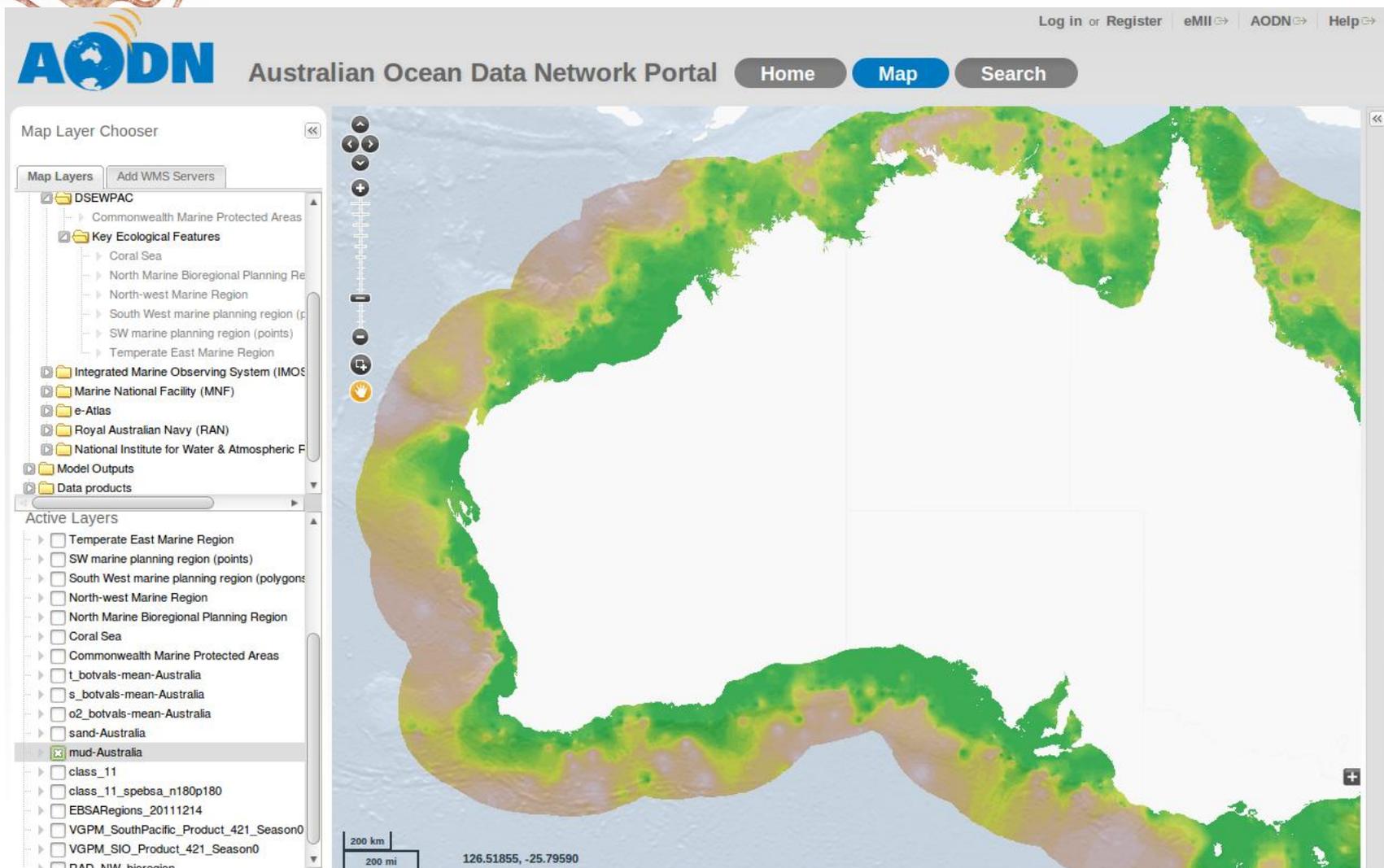
Map Layer Chooser

- Map Layers
- Add WMS Servers
- DSEWPAC
  - Commonwealth Marine Protected Areas
  - Key Ecological Features
    - Coral Sea
    - North Marine Bioregional Planning Region
    - North-west Marine Region
    - South West marine planning region (points)
    - SW marine planning region (polygons)
    - Temperate East Marine Region
  - Integrated Marine Observing System (IMOS)
  - Marine National Facility (MNF)
  - e-Atlas
  - Royal Australian Navy (RAN)
  - National Institute for Water & Atmospheric Research (NIWA)
  - Model Outputs
  - Data products
- Active Layers
  - Temperate East Marine Region
  - SW marine planning region (points)
  - South West marine planning region (polygons)
  - North-west Marine Region
  - North Marine Bioregional Planning Region
  - Coral Sea
  - Commonwealth Marine Protected Areas
  - t\_botvals-mean-Australia
  - s\_botvals-mean-Australia
  - o2\_botvals-mean-Australia
  - sand-Australia
  - mud-Australia
  - class\_11
  - class\_11\_spebsa\_n180p180
  - EBSARRegions\_20111214
  - VGPM\_SouthPacific\_Product\_421\_Season0
  - VGPM\_SIO\_Product\_421\_Season0
  - DAD\_MM\_biospe...



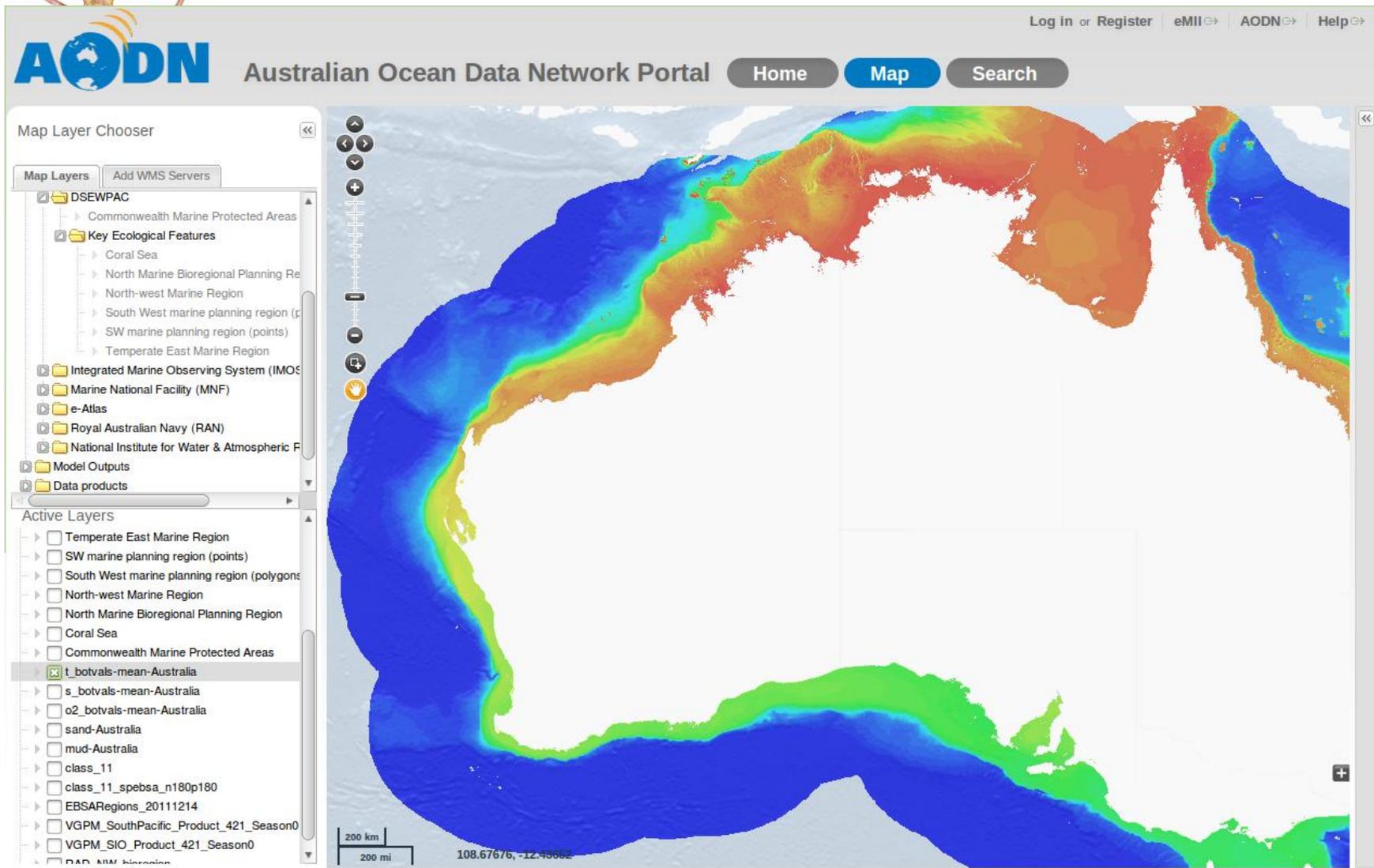


# Percent Mud



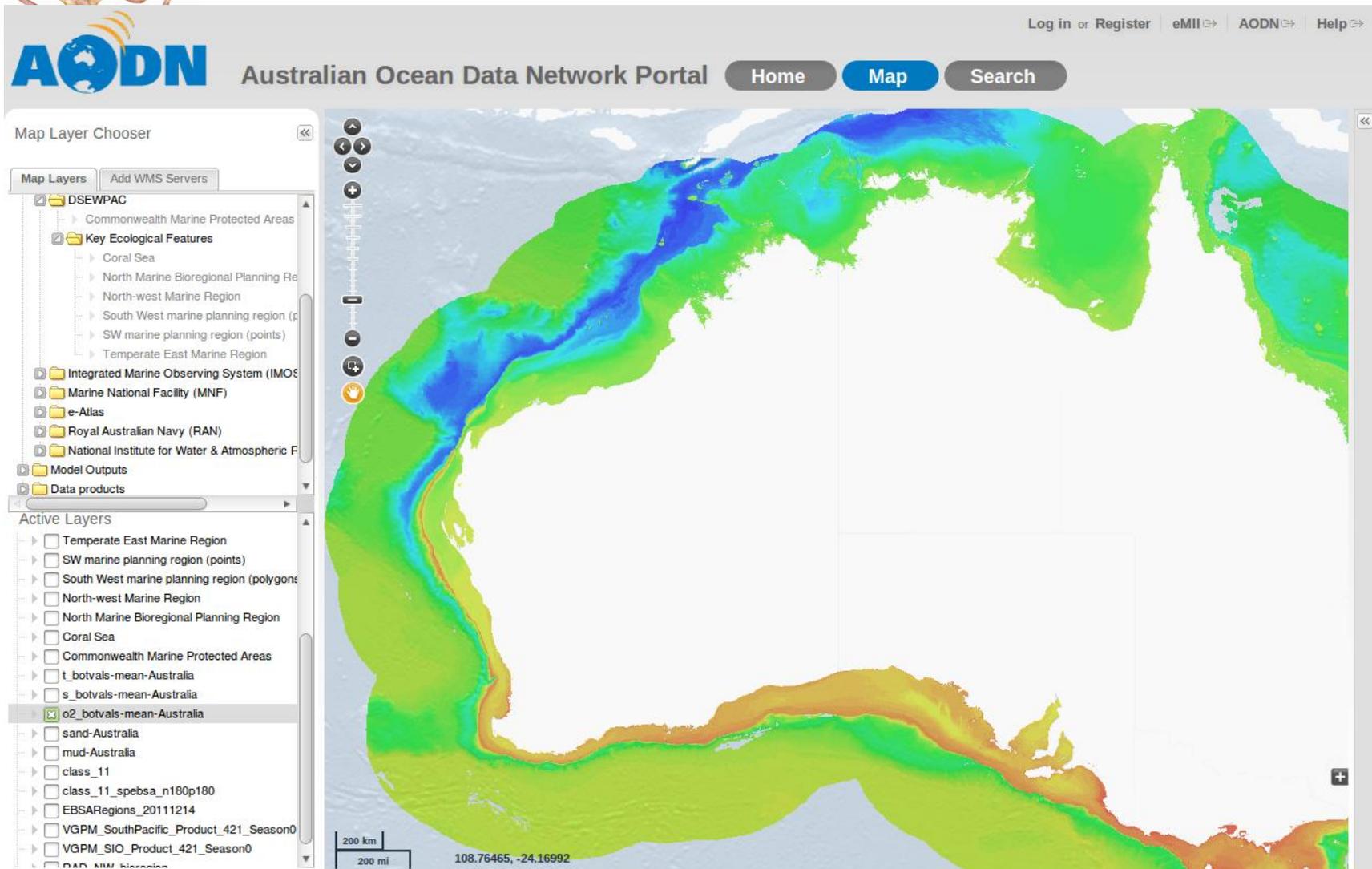


# Seafloor Temperature





# Seafloor Oxygen Concentration



# Predicted Benthic Habitat



Australian Ocean Data Network Portal

Home

Map

Search

Log in or Register eMII AODN Help

## Map Layer Chooser

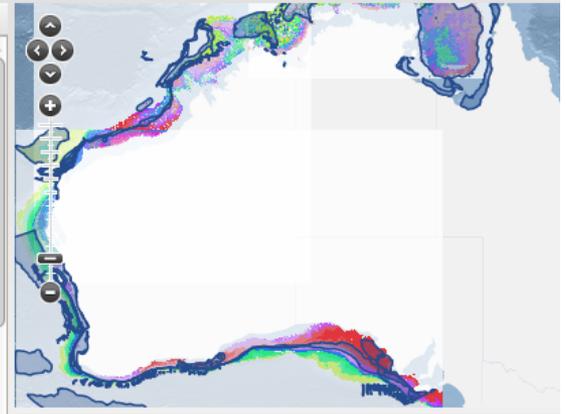
- Map Layers Add WMS Servers
- Commonwealth Marine Protected Areas
    - Key Ecological Features
      - Coral Sea
      - North Marine Bioregional Planning Region
      - North-west Marine Region
      - South West marine planning region (polygons)
      - SW marine planning region (points)
      - Temperate East Marine Region
  - Integrated Marine Observing System (IMOS)
  - Marine National Facility (MNF)
  - e-Atlas
  - Royal Australian Navy (RAN)
  - National Institute for Water & Atmospheric Research
  - Model Outputs
  - Data products
  - Satellite Data

## Active Layers

- GTbyYear-GTbyYear-Line\_pelagic\_longline
- North Marine Bioregional Planning Region
- North-west Marine Region
- South West marine planning region (polygons)
- RAD\_SW\_invert\_bioregion
- RAD\_North\_bioregion
- RAD\_NW\_bioregion
- Temperate East Marine Region
- SW marine planning region (points)
- Coral Sea
- Commonwealth Marine Protected Areas
- t\_botvals-mean-Australia
- s\_botvals-mean-Australia
- o2\_botvals-mean-Australia
- sand-Australia
- mud-Australia
- FRSARRegions\_20111214

Logo	Description	Actions
	<b>Database for benthic habitat prediction in the Southeast Marine Region</b> This product (i.e. an Access database and csv files) contains data (longitude, latitude and physical data) that explains the predicted spatial patterns of benthic habitats for demersal fish and benthic invertebrates in the SEMR. Predicted patterns for habitats represent point data on a 0.01 decimal degree grid covering most of the SEMR (approximat ...	<a href="#">i</a>
	<b>Database for benthic habitat prediction in the Southwest Marine Region</b> This product (i.e. an Access database and csv files) contains data (longitude, latitude and physical data) that explains the predicted spatial patterns of benthic habitats for demersal fish and benthic invertebrates in the SWMR. Predicted patterns for habitats represent point data on a 0.01 decimal degree grid covering most of the SWMR (approximat ...	<a href="#">i</a>
	<b>Database for benthic habitat prediction in the North Marine Region</b> This product (i.e. an Access database and csv files) contains data (longitude, latitude and physical data) that explains the predicted spatial patterns of benthic habitats for demersal fish and benthic invertebrates in the NMR. Predicted patterns for habitats represent point data on a 0.01 decimal degree grid covering most of the NMR (approximatel ...	<a href="#">i</a>
	<b>Database for benthic habitat prediction in the Northwest Marine Region</b> This product (i.e. an Access database and csv files) contains data (longitude, latitude and physical data) that explains the predicted spatial patterns of benthic habitats for demersal fish and benthic invertebrates in the NWMR. Predicted patterns for habitats represent point data on a 0.01 decimal degree grid covering most of the NWMR (approximat ...	<a href="#">i</a>
	<b>Database for benthic habitat prediction in the East Marine Region</b> This product (i.e. an Access database and csv files) contains data (longitude, latitude and physical data) that explains the predicted spatial patterns of benthic habitats for demersal fish and benthic invertebrates in the EMR. Predicted patterns for habitats represent point data on a 0.01 decimal degree grid covering most of the EMR (approximatel ...	<a href="#">i</a>

Page 1 of 1 Add all



My Searches Current Search

benthic habitat prediction

Limit search to:



# Predicted RAD

**AODN** Australian Ocean Data Network Portal [Home](#) [Map](#) [Search](#) [Log in](#) or [Register](#) [eMII](#) [AODN](#) [Help](#)

### Map Layer Chooser

Map Layers | Add WMS Servers

- Commonwealth Marine Protected Areas
- Key Ecological Features
  - Coral Sea
  - North Marine Bioregional Planning Region
  - North-west Marine Region
  - South West marine planning region (polygons)
  - SW marine planning region (points)
  - Temperate East Marine Region
- Integrated Marine Observing System (IMOS)
- Marine National Facility (MNF)
- e-Atlas
- Royal Australian Navy (RAN)
- National Institute for Water & Atmospheric Research
- Model Outputs
- Data products
- Satellite Data

### Active Layers

- GTbyYear-GTbyYear-Line\_pelagic\_longline
- North Marine Bioregional Planning Region
- North-west Marine Region
- South West marine planning region (polygons)
- RAD\_SW\_invert\_bioregion
- RAD\_North\_bioregion
- RAD\_NW\_bioregion
- Temperate East Marine Region
- SW marine planning region (points)
- Coral Sea
- Commonwealth Marine Protected Areas
- t\_botvals-mean-Australia
- s\_botvals-mean-Australia
- o2\_botvals-mean-Australia
- sand-Australia
- mud-Australia
- FRBSARregions\_20111124

Logo	Description	Actions
	Database for Rank Abundance Distribution prediction in the SEMR. This product (i.e. Access data base) contains data (longitudes, latitude and biodiversity attribute variables) that describes the predicted spatial patterns of total species abundance, species richness and species evenness for both benthic invertebrates and demersal fish in the SWMR. The predicted patterns are represent as point data arranged on a ...	
	Database for Rank Abundance Distribution prediction in the NWMR. This product (i.e. Access data base) contains data (longitudes, latitude and biodiversity attribute variables) that describes the predicted spatial patterns of biodiversity categories based on species richness and evenness of demersal fish in the NWMR. This product provides predictions for total species abundance, species richness and species even ...	
	Database for Rank Abundance Distribution prediction in the EMR. This product (i.e. Access data base) contains data (longitudes, latitude and biodiversity attribute variables) that describes the predicted spatial patterns of biodiversity categories based on species richness and evenness of demersal fish in the EMR. This product provides predictions for total species abundance, species richness and species even ...	
	Database for Rank Abundance Distribution prediction in the SEMR. This product represents the predicted spatial patterns of species abundance, species richness and species evenness of demersal fish communities in the SEMR. It provides a description of the structure rather than the composition (i.e. specific species) of these assemblages. Structure equates to total species abundance (the total number of individual ...	
	Database for Rank Abundance Distribution prediction in the NMR. This product (i.e. Access data base) contains data (longitudes, latitude and biodiversity attribute variables) that describes the predicted spatial patterns of biodiversity categories based on species richness and evenness of demersal fish in the NMR. This product provides predictions for total species abundance, species richness and species even ...	

My Searches | Current Search

Limit search to:

Page 1 of 1

# Predicted RAD



Australian Ocean Data Network Portal

Home

Map

Search

Log in or Register | eMII | AODN | Help

Map Layer Chooser

Map Layers Add WMS Servers

'RAD NW bioregion' added to map

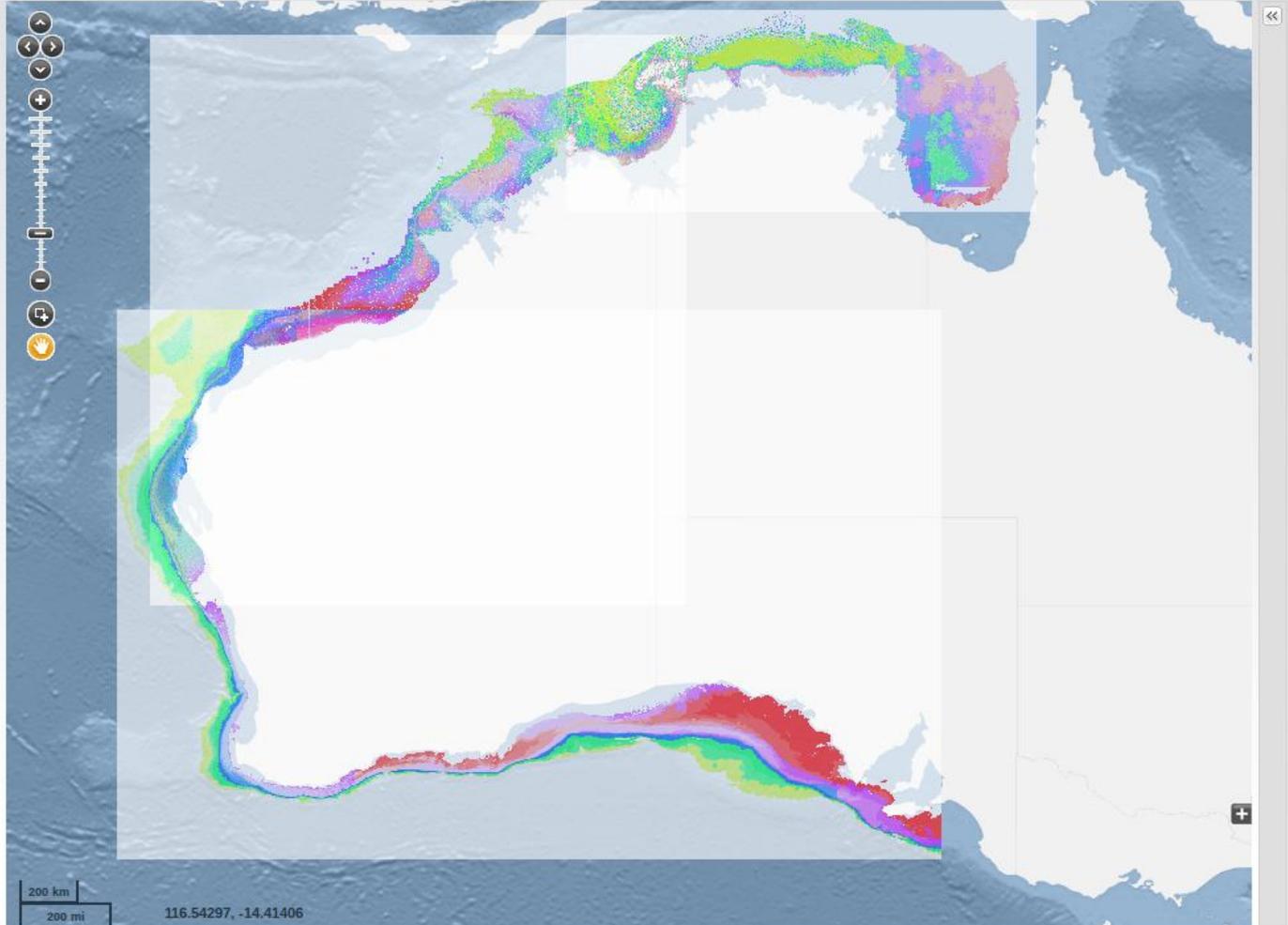
- GeoServer Web Map Service
  - EBSARegions\_20111214
  - GIS\_RASTER.ETOPO1\_BED
  - GTbyYear-GTbyYear-Line\_pelagic\_longline
  - Petroleum-wells\_feb09-nObjects
  - RAD\_NW\_bioregion**
  - RAD\_North\_bioregion
  - RAD\_SW\_invert\_bioregion
  - SESSF\_ZONES
  - VGPM\_SIO\_Product\_421\_Season0
  - VGPM\_SouthPacific\_Product\_421\_Season0
  - class\_11

Remove All Layers Reset map

Bathymetry Baselayer

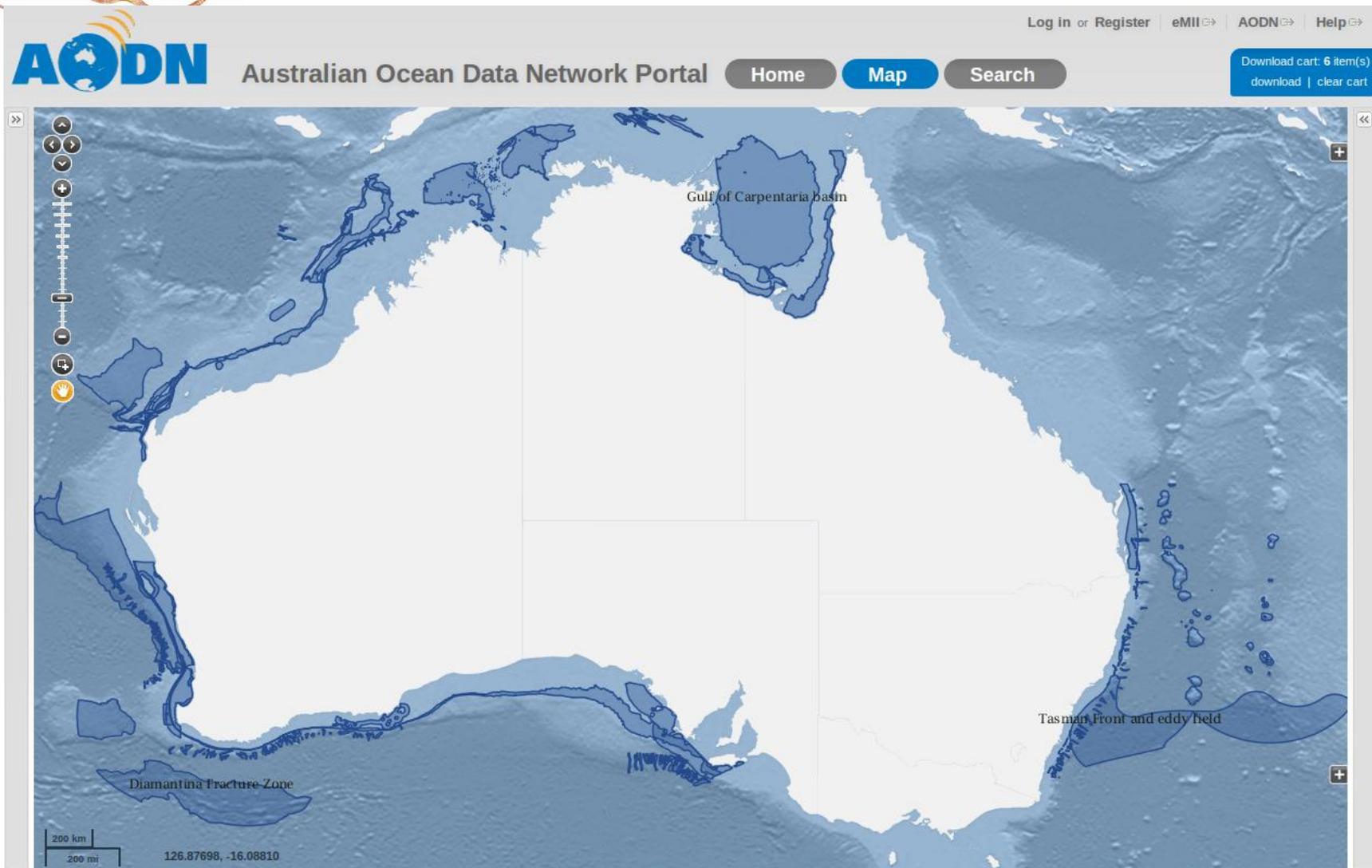
Active Layers

- RAD\_SW\_invert\_bioregion
- RAD\_North\_bioregion
- RAD\_NW\_bioregion
- Temperate East Marine Region
- SW marine planning region (points)
- South West marine planning region (polygons)
- North-west Marine Region
- North Marine Bioregional Planning Region
- Coral Sea
- Commonwealth Marine Protected Areas
- t\_botvals-mean-Australia
- s\_botvals-mean-Australia
- o2\_botvals-mean-Australia
- sand-Australia

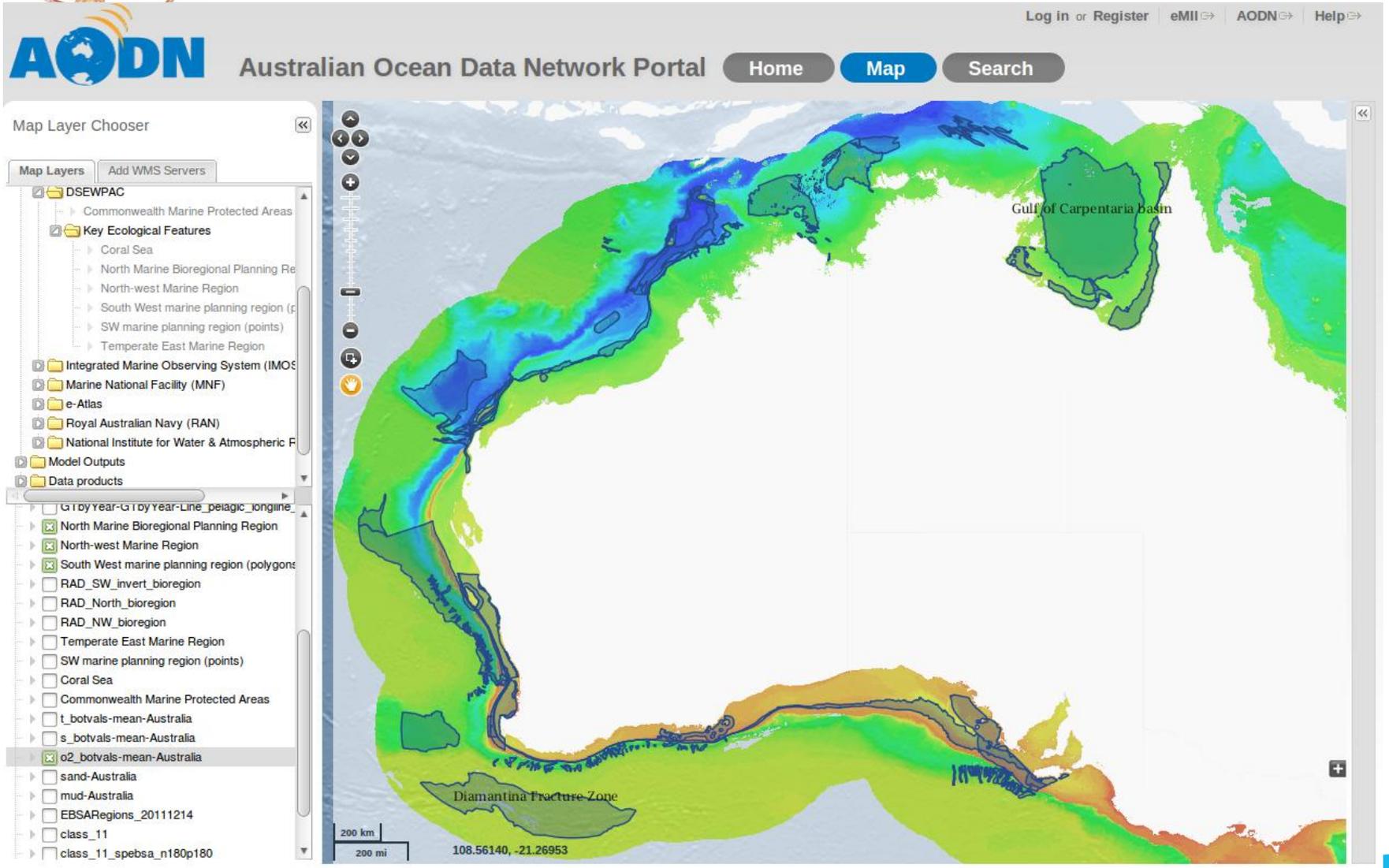




# Key Ecological Features



# Overlays with KEFs





# Overlays with KEFs

**AODN** Australian Ocean Data Network Portal [Home](#) [Map](#) [Search](#) [Log in or Register](#) [eMII](#) [AODN](#) [Help](#)

**Map Layer Chooser**

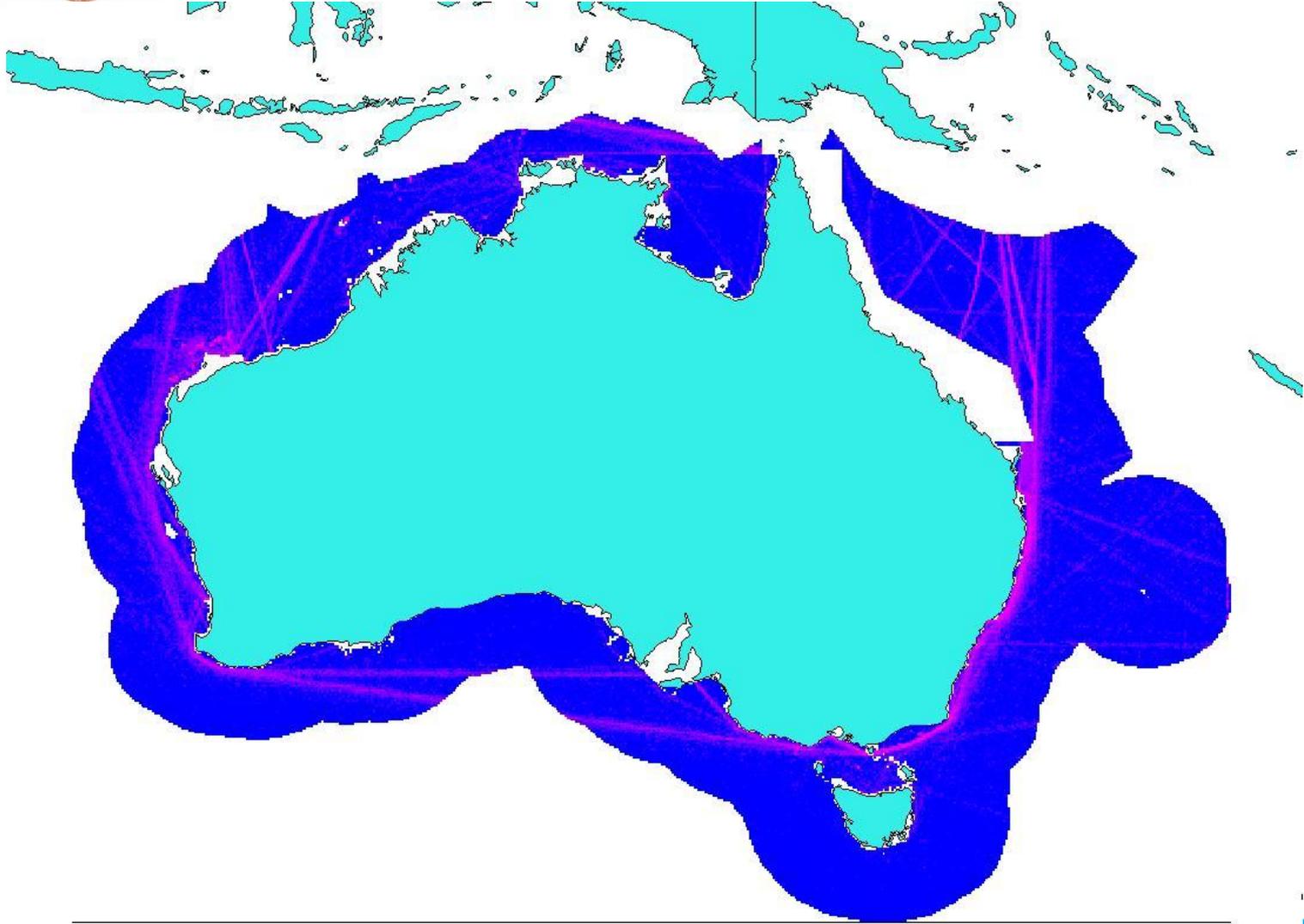
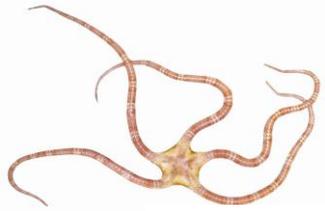
Map Layers | Add WMS Servers

- [-] DSEWPAC
  - [-] Commonwealth Marine Protected Areas
    - [-] Key Ecological Features
      - [-] Coral Sea
      - [-] North Marine Bioregional Planning Region
      - [-] North-west Marine Region
      - [-] South West marine planning region (polygons)
      - [-] SW marine planning region (points)
      - [-] Temperate East Marine Region
  - [-] Integrated Marine Observing System (IMOS)
  - [-] Marine National Facility (MNF)
  - [-] e-Atlas
  - [-] Royal Australian Navy (RAN)
  - [-] National Institute for Water & Atmospheric Research
  - [-] Model Outputs
  - [-] Data products

**Active Layers**

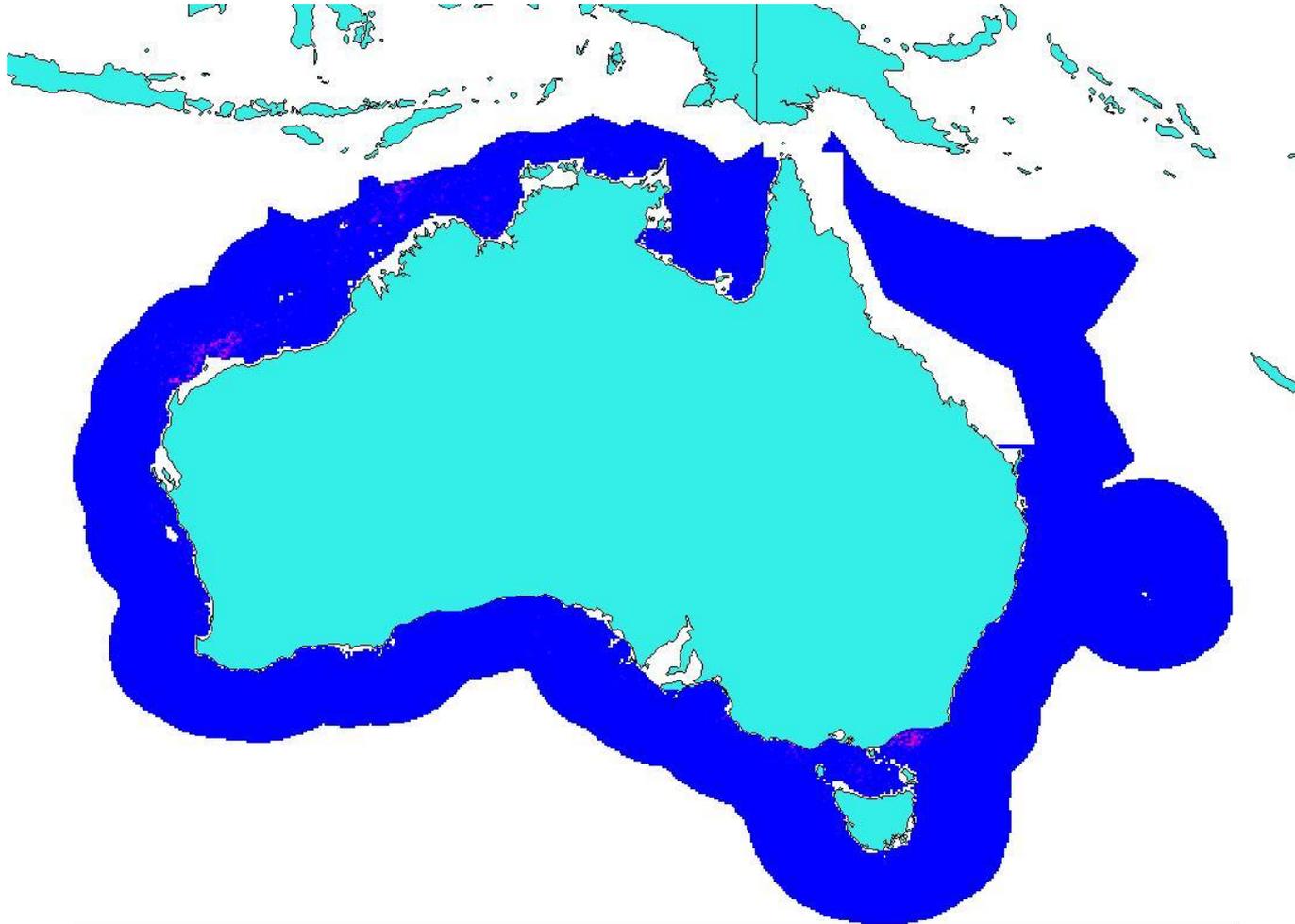
- GTbyYear-GTbyYear-Line\_pelagic\_longline
- North Marine Bioregional Planning Region
- North-west Marine Region
- South West marine planning region (polygons)
- RAD\_SW\_invert\_bioregion
- RAD\_North\_bioregion
- RAD\_NW\_bioregion
- Temperate East Marine Region
- SW marine planning region (points)
- Coral Sea
- Commonwealth Marine Protected Areas
- t\_botvals-mean-Australia
- s\_botvals-mean-Australia
- o2\_botvals-mean-Australia
- sand-Australia
- mud-Australia
- FRSARenions\_20111214

# Data on Pressures - Shipping



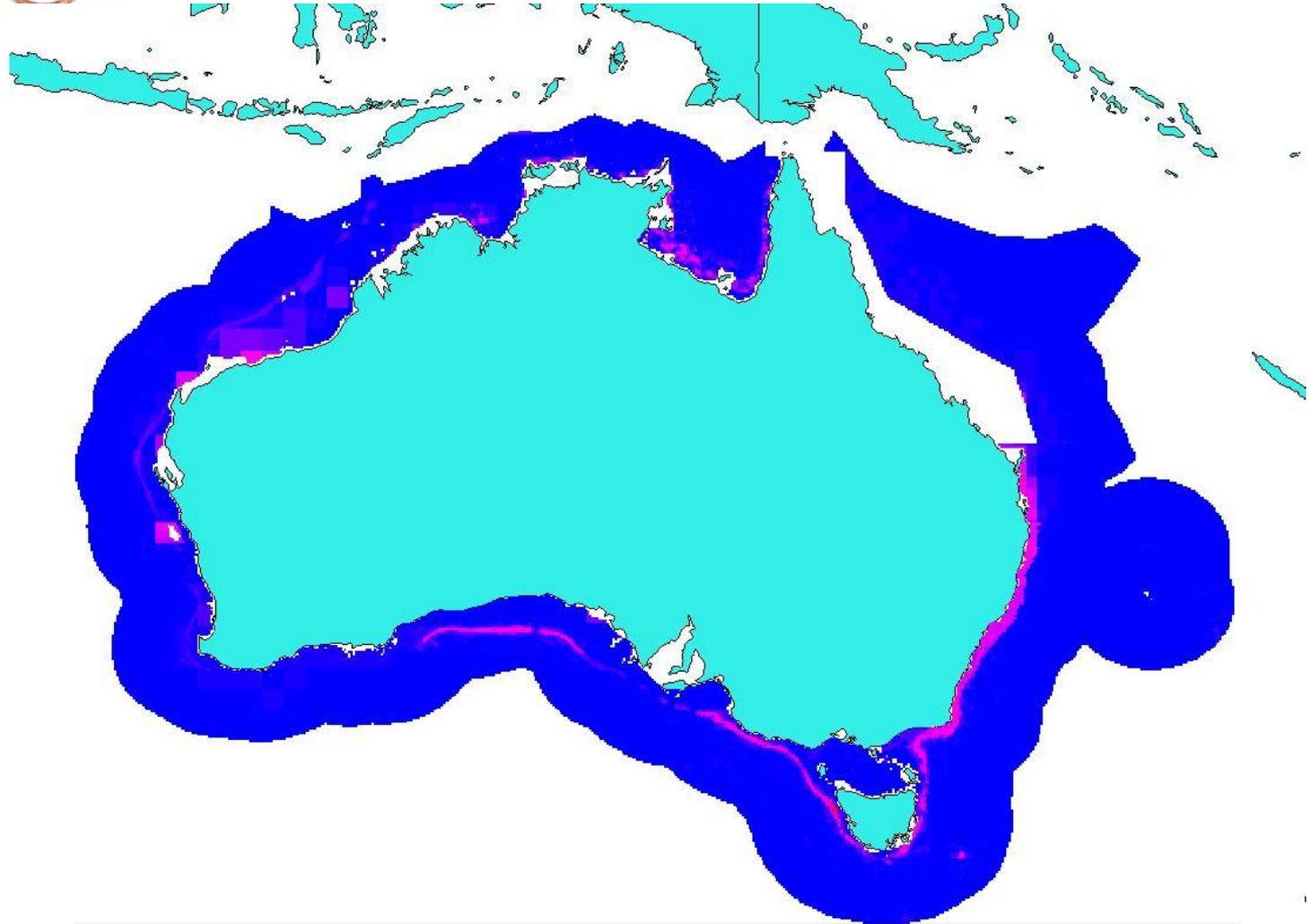


## Data on Pressures – Oil and Gas wells



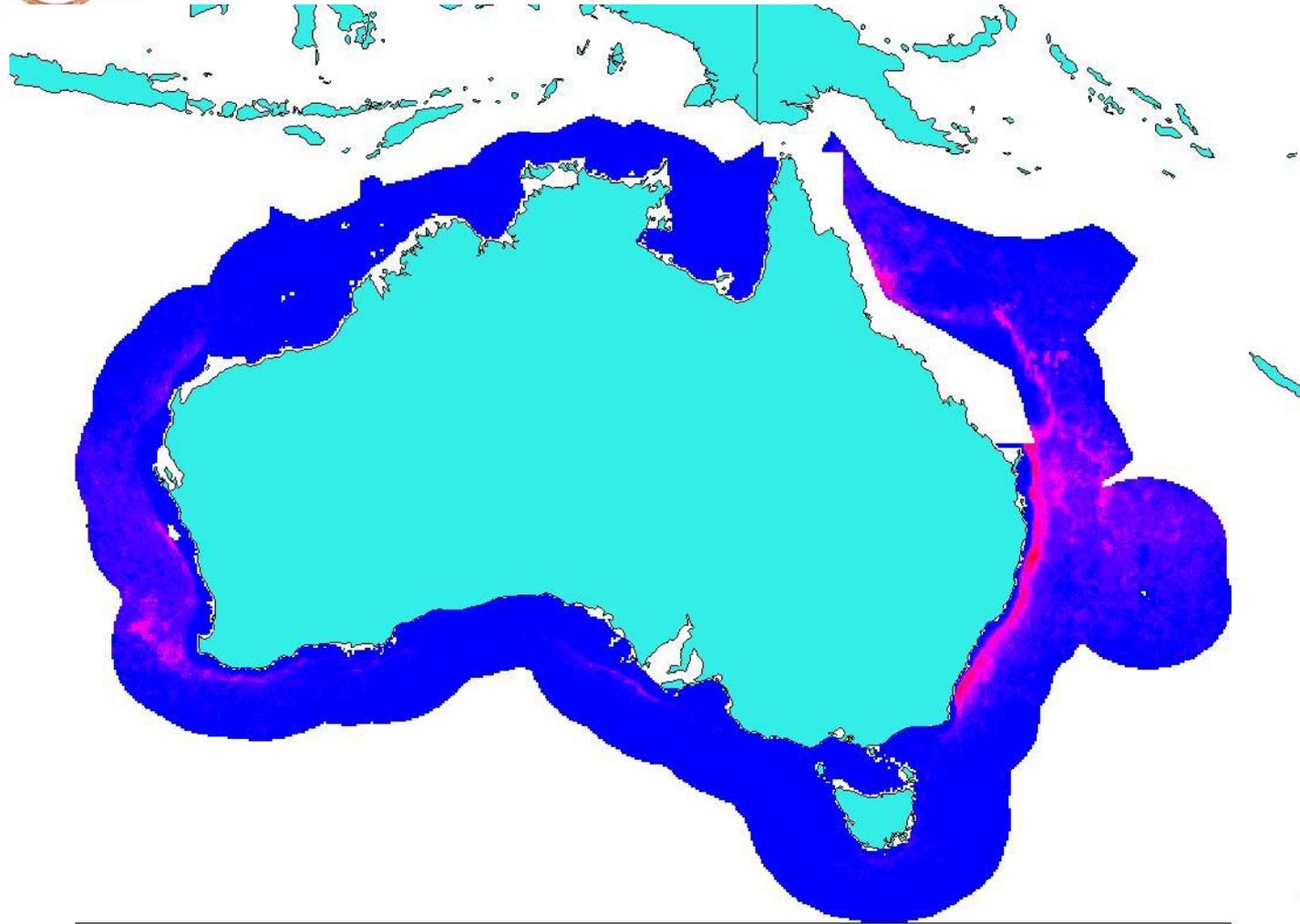


# Data on Pressures – Demersal Trawl





## Data on Pressures – Pelagic Longline



# Monitoring Ecosystem Health



Australian Ocean Data Network Portal

Home

Map

Search

Map Layer Chooser

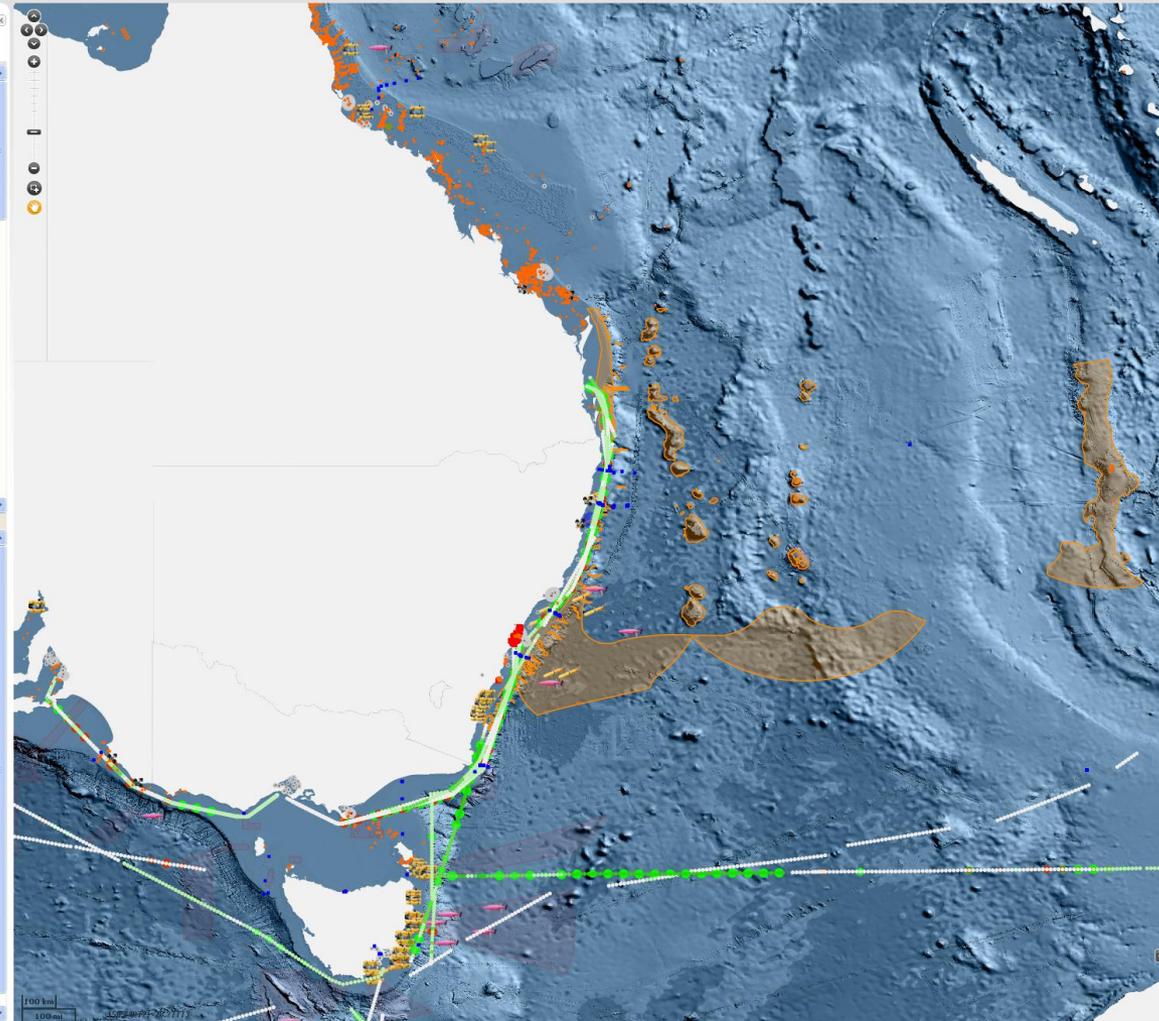
Map Layers Add WMS Servers

- Observation Data
  - Australian Antarctic Division (AAD)
  - Australian Institute of Marine Science (AIMS)
  - Bureau of Meteorology (BOM)
  - Coastal Watch
  - CSIRO Marine and Atmospheric Research
  - DSEWPAC
    - Commonwealth Marine Protected Areas
  - Key Ecological Features
    - Coral Sea
    - North Marine Bioregional Planning Region
    - North-west Marine Region
    - South West marine planning region (polygons)
    - SW marine planning region (goats)
    - Temperate East Marine Region
  - Integrated Marine Observing System (MOS)
    - Animal Tagging and Monitoring (AATAMS)
      - Realtime
        - Latest Satellite-tracked animal CTD tags
        - Satellite-tracked animal CTD tags
      - AATAMS detections
    - Argo Floats
      - Argo Aggregated data
      - Argo Floats
      - Argo Floats Measuring Oxygen
    - Autonomous Underwater Vehicle (AUV)
      - AUV Deployments
    - Deep Water Moorings (ABOS)
      - Air-Sea Flux Stations (ASFS)
      - Argo Floats by ABOS
      - Deep water Arrays
      - Southern Ocean Time Series (SOTS)

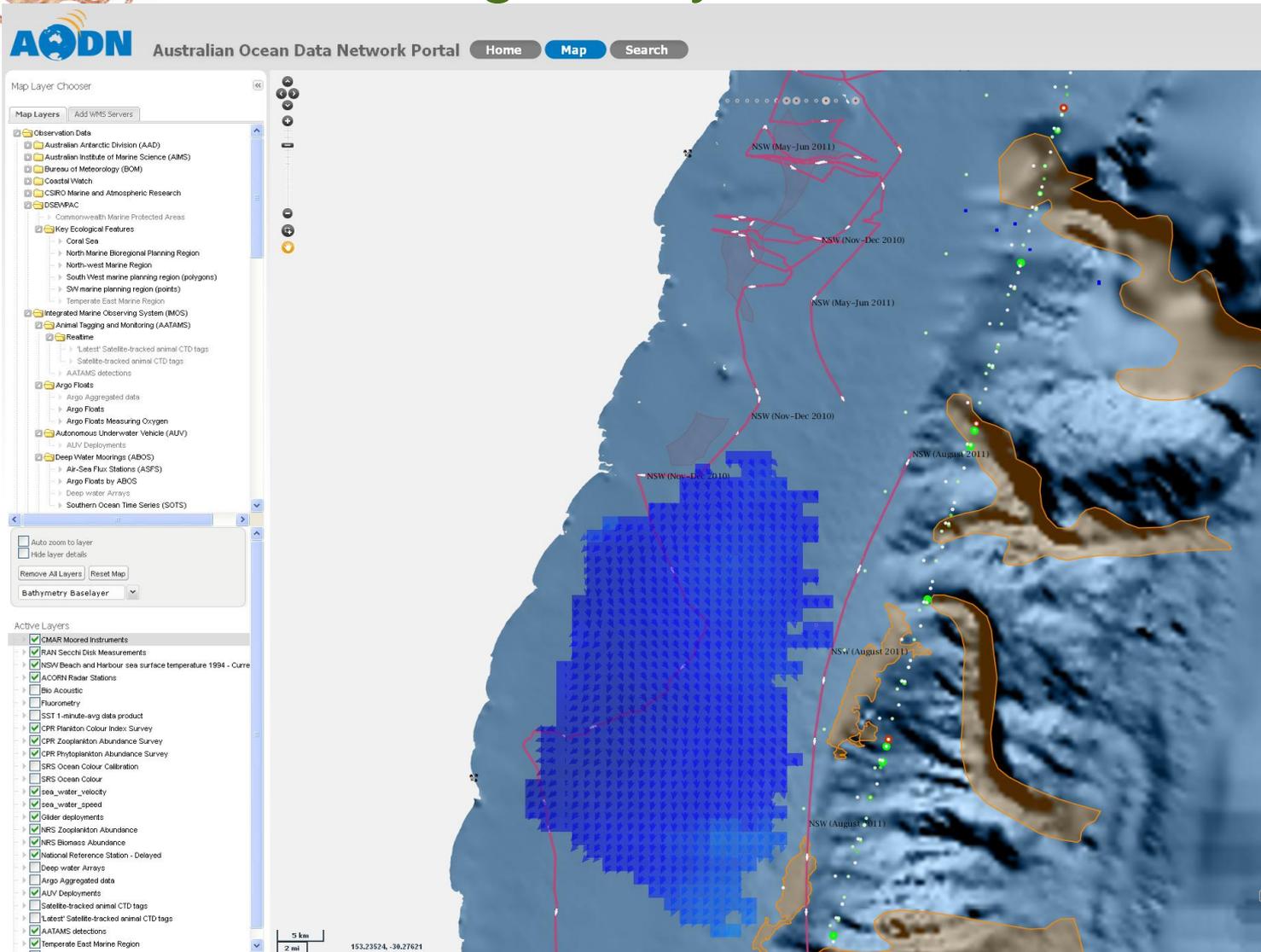
- Auto zoom to layer
- Hide layer details
- Remove All Layers Reset Map
- Bathymetry Baselayer

Active Layers

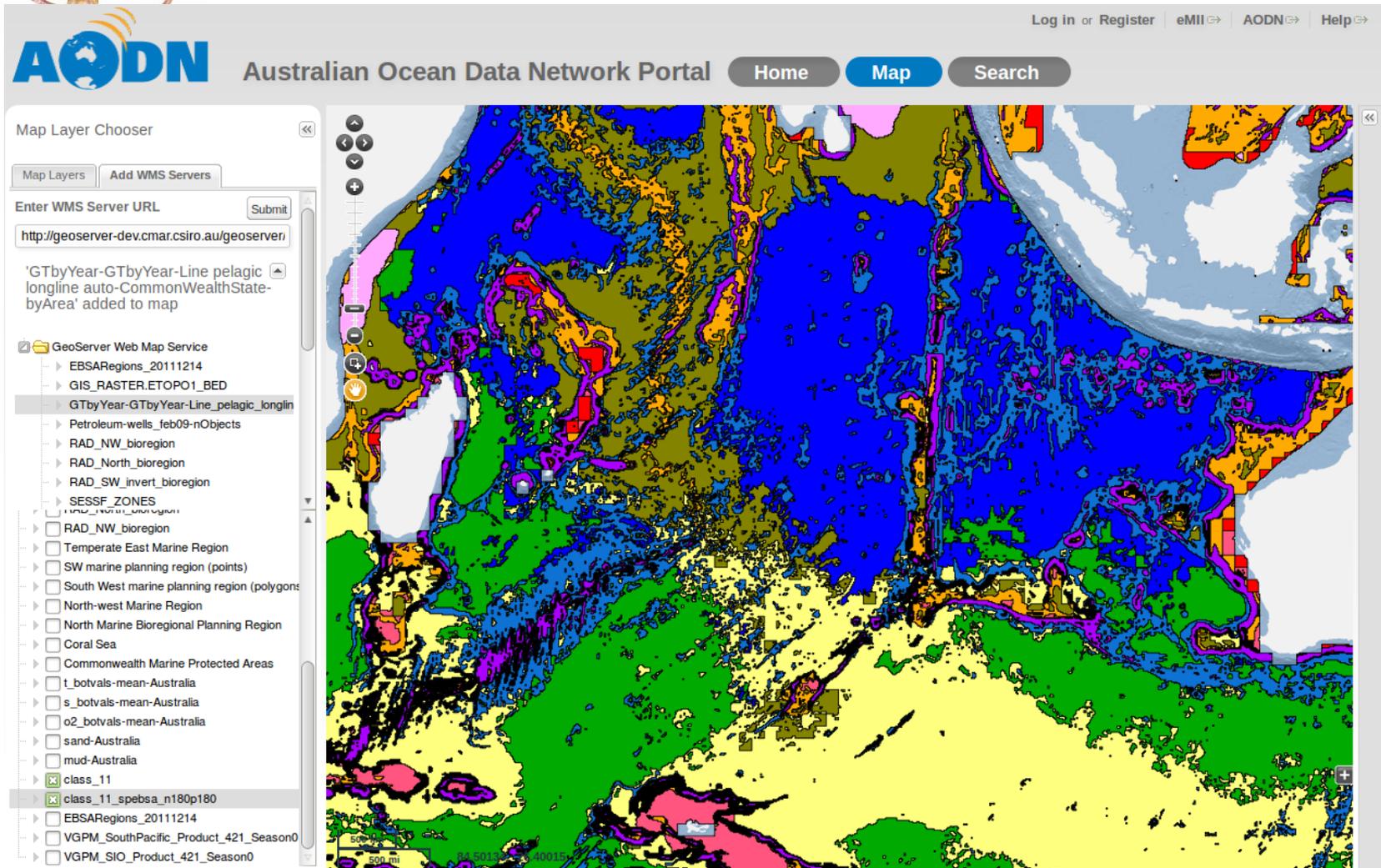
- OMR Moored Instruments
- RAN Secchi Disk Measurements
- NSW Beach and Harbour sea surface temperature 1994 - Current
- AODN Radar Stations
- Bio Acoustic
- Fluorometry
- SST 1-minute-avg data product
- CPR Plankton Colour Index Survey
- CPR Zooplankton Abundance Survey
- CPR Phytoplankton Abundance Survey
- SRS Ocean Colour Calibration
- SRS Ocean Colour
- sea\_water\_velocity
- sea\_water\_speed
- Glider deployments
- NRS Zooplankton Abundance
- NRS Biomass Abundance
- National Reference Station - Delayed
- Deep water Arrays
- Argo Aggregated data
- AUV Deployments
- Satellite-tracked animal CTD tags
- Latest Satellite-tracked animal CTD tags
- AATAMS detections
- Temperate East Marine Region



# Monitoring Ecosystem Health



# International applications - CBD



The screenshot displays the Australian Ocean Data Network Portal (AODN) interface. At the top, the AODN logo is on the left, and navigation links for 'Log in or Register', 'eMII', 'AODN', and 'Help' are on the right. Below the logo, the text 'Australian Ocean Data Network Portal' is followed by buttons for 'Home', 'Map', and 'Search'. The main content area is divided into a 'Map Layer Chooser' on the left and a map view on the right. The 'Map Layer Chooser' includes a 'Map Layers' button, an 'Add WMS Servers' button, and a text input field for 'Enter WMS Server URL' with a 'Submit' button. Below this, a message states: ''GTbyYear-GTbyYear-Line pelagic longline auto-CommonWealthState-byArea' added to map'. A list of layers is shown, with 'class\_11' and 'class\_11\_spebsa\_n180p180' selected. The map view shows a colorful, multi-layered map of Australia and its surrounding waters, with various colors representing different data layers. A scale bar at the bottom left of the map indicates 500 miles.

Map Layer Chooser

Map Layers Add WMS Servers

Enter WMS Server URL Submit

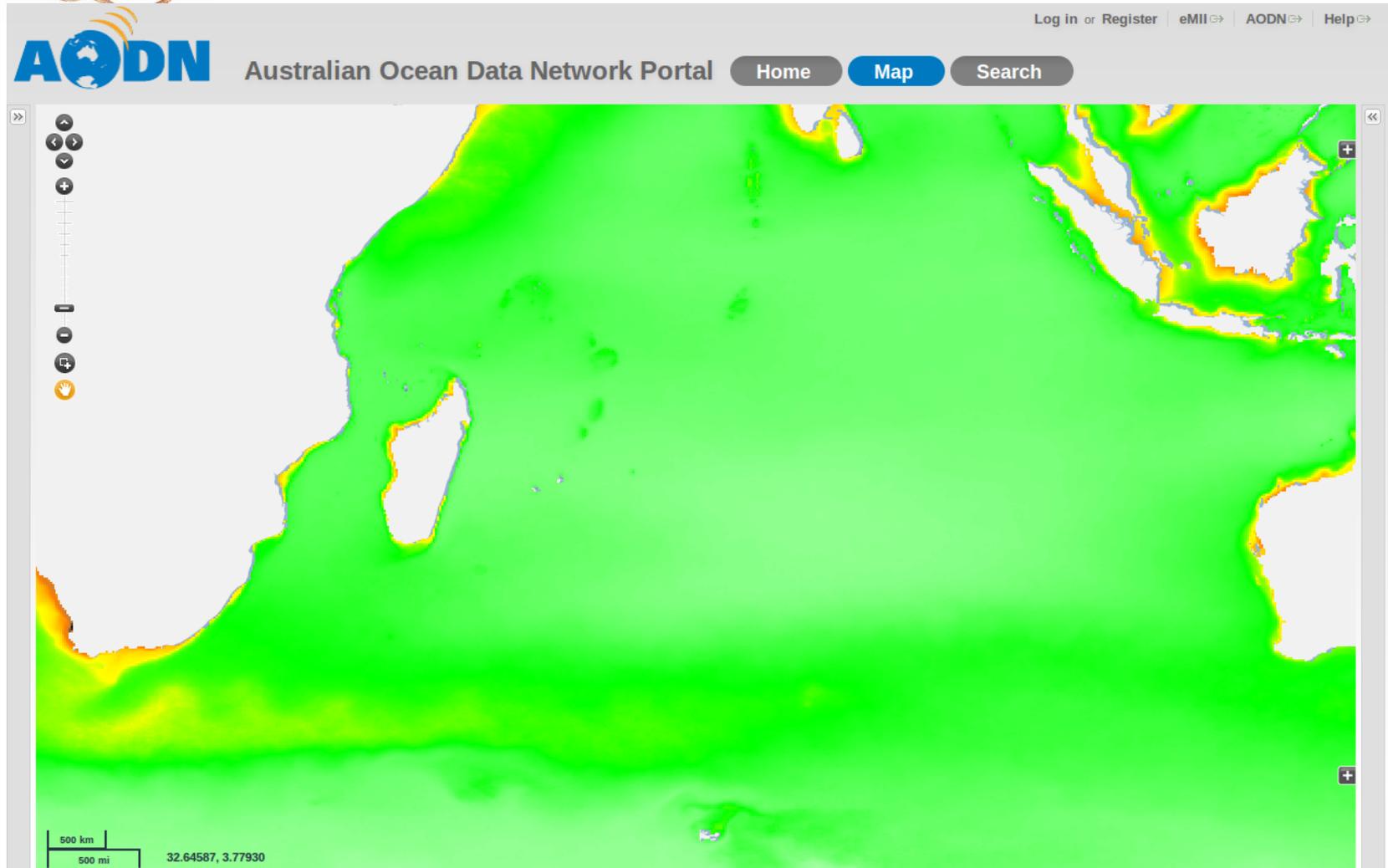
<http://geoserver-dev.cmar.csiro.au/geoserver/>

'GTbyYear-GTbyYear-Line pelagic longline auto-CommonWealthState-byArea' added to map

- GeoServer Web Map Service
  - EBSARegions\_20111214
  - GIS\_RASTER.ETOPO1\_BED
  - GTbyYear-GTbyYear-Line\_pelagic\_longlin**
  - Petroleum-wells\_feb09-nObjects
  - RAD\_NW\_bioregion
  - RAD\_North\_bioregion
  - RAD\_SW\_invert\_bioregion
  - SESSF\_ZONES
  - RAD\_NW\_bioregion
  - Temperate East Marine Region
  - SW marine planning region (points)
  - South West marine planning region (polygons)
  - North-west Marine Region
  - North Marine Bioregional Planning Region
  - Coral Sea
  - Commonwealth Marine Protected Areas
  - t\_botvals-mean-Australia
  - s\_botvals-mean-Australia
  - o2\_botvals-mean-Australia
  - sand-Australia
  - mud-Australia
  - class\_11**
  - class\_11\_spebsa\_n180p180**
  - EBSARegions\_20111214
  - VGPM\_SouthPacific\_Product\_421\_Season0
  - VGPM\_SIO\_Product\_421\_Season0

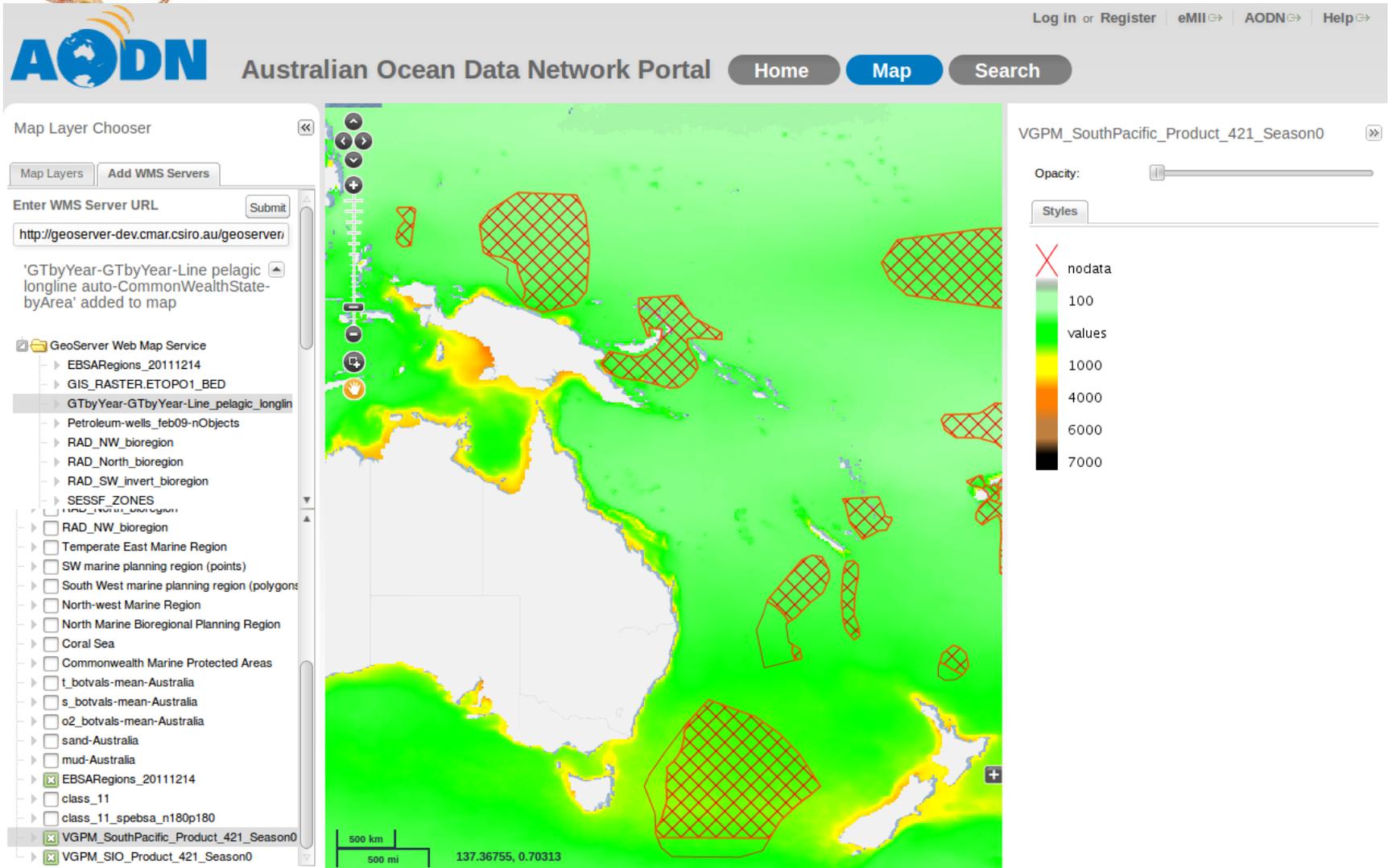


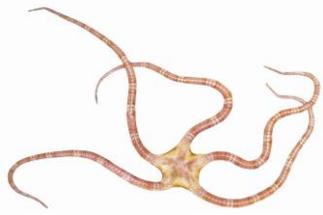
# International applications - CBD





# EBSA identified in the south Pacific





## Delivering data to DSEWPaC

- AODN will be the key data delivery mechanism for the NERP Marine Biodiversity Hub.
- Identification of important data through metadata.
- Data and metadata will be updated as new information becomes available, including time series.
- NERP Marine Hub, CSIRO, IMOS and AODN working to develop standards for use by all scientists.

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bioregional plans

Dr Julian Caley

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J.Caley@aims.gov.au



National Environmental  
Research Program

# MARINE BIODIVERSITY *hub*



Australian Government

Department of Sustainability, Environment,  
Water, Population and Communities



MUSEUM VICTORIA



Australian Government



Australian Government  
Geoscience Australia



THE UNIVERSITY OF  
WESTERN AUSTRALIA  
*Achieving International Excellence*



AUSTRALIAN INSTITUTE  
OF MARINE SCIENCE

[www.nerpmarine.edu.au](http://www.nerpmarine.edu.au)

## Disclaimer

The information in this presentation was generated by the Marine Biodiversity Hub and its partners for the purpose of consultation and collaboration with marine stakeholders in improving the evidence-base for decision making for marine biodiversity management. The Marine Biodiversity Hub is supported through funding from the Australian Government's National Environmental Research Program. The results should not be used or taken as final and are not for circulation outside of this audience without prior permission.

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[Piers.Dunstan@csiro.au](mailto:Piers.Dunstan@csiro.au)