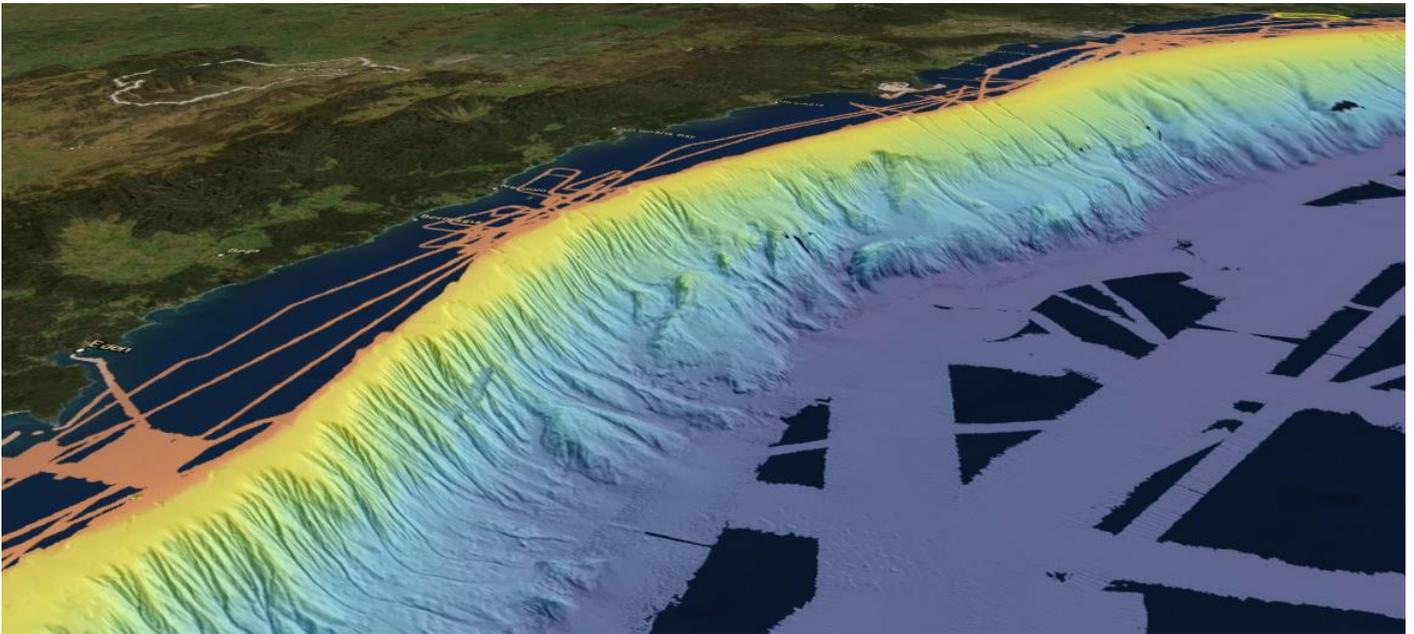




**AUS  
SEABED**



## **AusSeabed Marine Data Portal User Guide**

[ausseabed.gov.au](http://ausseabed.gov.au)

# Document Control

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# 1 Introduction

The [AusSeabed Marine Data Portal](#) (the Portal) is managed by Geoscience Australia and provides access to publicly available seabed-related datasets, such as bathymetry, backscatter, side scan sonar data and other marine-related or derived products (e.g. geomorphology), as well as a suite of analytical assessment tools to maximise the value of the data. The Portal allows users to explore and interrogate seafloor mapping products across Australia's marine jurisdiction prior to downloading. For more information about the program, please visit the [AusSeabed website](#). *The Portal is under active development, which means that datasets and functionality may change over time.*

## A.1 Purpose

This document will provide users with information on commonly used functions in the AusSeabed Marine Data Portal and is structured in three sections:

- **Visualise** datasets held by Geoscience Australia and the broader AusSeabed community using 2D or 3D views
- **Download** datasets as a whole or for a specific area of interest in multiple data formats using *Clip, Zip and Ship* tool) or a *database search* tool. Currently, the database search tool is specific to data associated with the search for missing flight MH370.
- **Analyse** various datasets characteristics and relationships using analytical tools (e.g. seabed substrate characteristics from the MARine Sediments ([MARS](#)) database)

The AusSeabed Marine Data Portal is a subset, or persona, of the overall Geoscience Australia Portal (<https://portal.ga.gov.au>), which has access to all layers, analytical tools and functionalities delivered by Geoscience Australia. Personas are a way of reconfiguring the Portal to make it easier for different stakeholders to use.

## A.2 Audience

This Portal is designed for a range of audiences, from the expert marine science community (mapping marine parks, conducting biological and ecological research surveys, habitat mapping), to the industry sector (e.g. resource exploration), and the non-experts relying on seabed mapping data for decision-making (e.g. marine estate manager and policy-maker) to the general public wishing to explore the seabed within the Australian Marine Jurisdiction.

All datasets within the Portal are licensed under a Creative Commons Attribution 4.0 International licence (CC BY 4.0). Additionally:

1. **The data sets are not suitable for use in marine navigation or in the creation of navigational products or any other purpose involving safety at sea.**
2. **Much of this data is published 'as supplied' and may include artefacts or unprocessed portions that may not necessarily reflect the seafloor environment.**

## A.3 Browser Requirements

We recommend using the AusSeabed Marine Data Portal with an up-to-date modern web browser (e.g. Safari, Chrome, Microsoft Edge or Firefox). **Microsoft Explorer is not currently supported.**

To ensure that you are working with the latest version of the Portal, it is recommended that you **clear your cache** before you start your session. On Chrome, you can either press Ctrl+F5 to clear your cache when you open your browser, or click on [https://portal.ga.gov.au/persona/marine/\\_recache](https://portal.ga.gov.au/persona/marine/_recache)

To ensure that all the functionality is present on the Portal, the browser screen must be at a minimum of 925x925 pixels.

## A.4 Overview of the Portal

The Portal contains many tools that allow a user to add data onto the map and search for publications (1), interrogate, download and analyse datasets (2), and explore and compare different datasets (3).

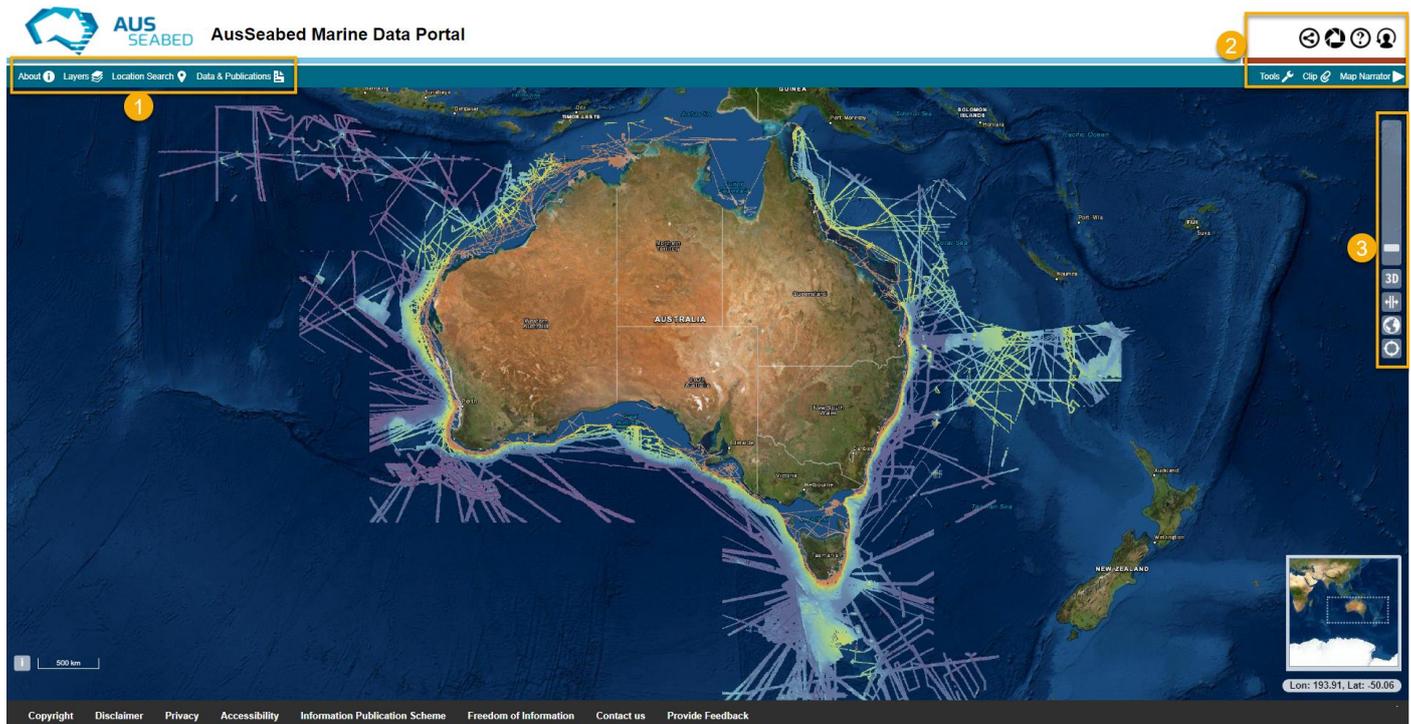


Figure 1. The Portal tools and operations are summarised above, where; 1) About, Layers, Location Search, Reports; 2) Tools, Clip, Story Map, Share URL, Help, Person; and 3) Zoom toolbar, 3D tool, Splitter Tool and Reset Map Position. For more information about the tools and operations, please see Table 1.

**Table 1. Tools and Operations on the AusSeabed Marine Data Portal (summarized in Figure 2)**

Tool	Function
	The 'About' tool allows users to show and hide information about the portal.
	The 'Layers' tool allows users to show and hide the layers selection window.
	The 'Location Search' tool allows users to search for particular locations and zoom to them in the main map.
	The 'Data and Publications' tool allows users to search and download reports, books or videos held by Geoscience Australia.
	The 'Share URL' tool allows users to share a URL of the current map extent and selected active layers.
	The 'Autosave application state' is triggered on browser/tab close or refresh, and automatically saves the layers, and zoom levels that were last selected.
	The 'Help' button provides information about how to use the Portal.
	The 'Persona' button allows users to select from multiple personas, which contain tools and data layers relevant to that discipline.
	<p>The 'Tools' button provides a selection of tools to interrogate and query data:</p> <ul style="list-style-type: none"> <li>- <b>Elevation profile:</b> creates a cross-section of bathymetry along a user defined transect.</li> <li>- <b>Inspection Tool:</b> Allows users to view feature information and pixel values of active layers.</li> <li>- <b>Measurement Tool:</b> Allows users to measure the distance between two or more points or the area of a polygon on the map.</li> <li>- <b>Marine Sediments:</b> An interactive data analytical tool for querying, downloading and plotting marine sediment data.</li> <li>- <b>MH370 Database Search:</b> An interactive analytical tool for spatially querying and downloading the full collection of MH370 Phase 2 data stored on the NCI.</li> <li>- <b>Petroleum Source Rock:</b> An interactive data analytical tool for querying, downloading and plotting organic geochemistry and petroleum source rock data.</li> </ul>
	The 'Clip' tool allows users to download a specified extent of data in multiple formats and projections.

	<p>The 'Map Narrator' tool allows users to create a narrative using the map layers present in the Portal, add other multimedia content, and share this with other users.</p>
	<p>The '3D' tool enables 3D view of the map and selected layers. Please note that only a small subsection of bathymetry point cloud data are available to be used in this tool at this point in time.</p>
	<p>The 'Splitter' tool enables side-by-side comparison of two datasets.</p>
	<p>The 'Reset Map Position' button resets the position of the map to the default setting.</p>
	<p>The 'Centre map on current location' button requires access to your current location, and centres the map based on your location.</p>

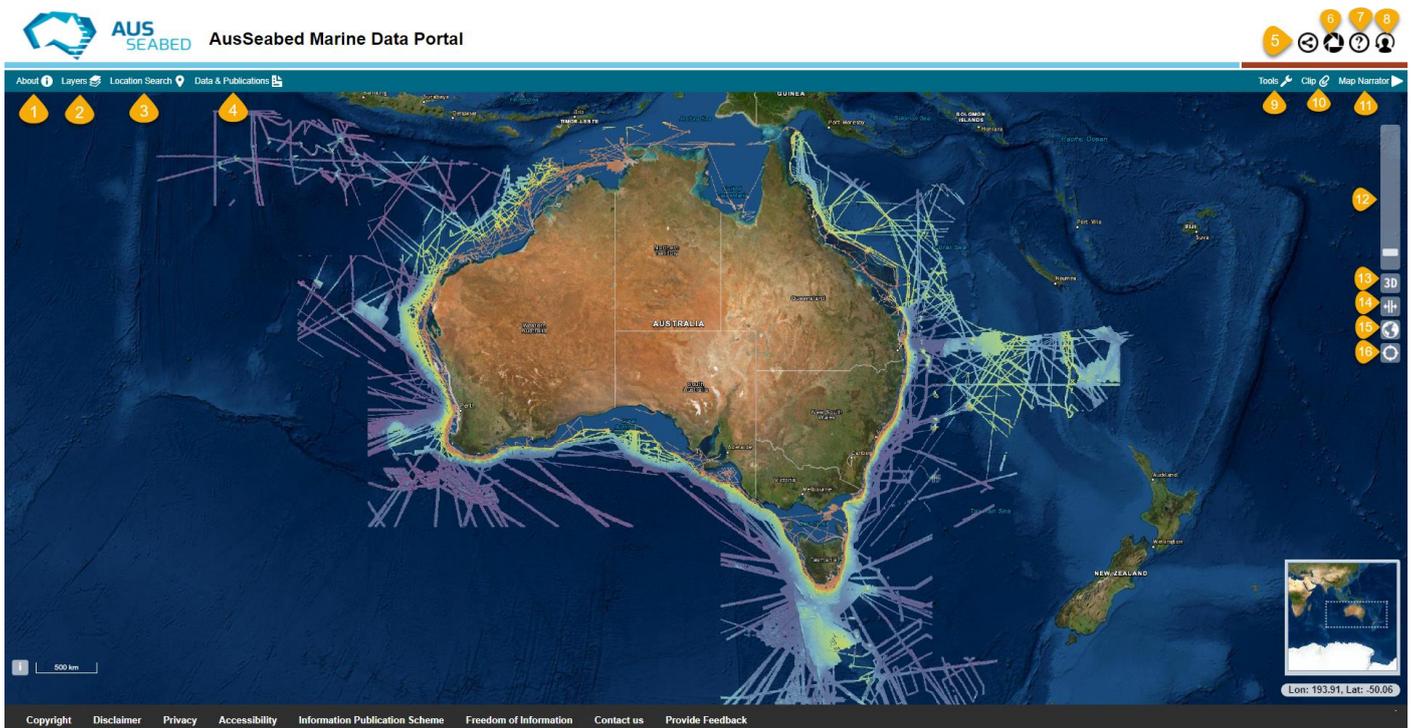


Figure 2. Detailed location for Tools and functions of the AusSeabed Marine Portal in Table 1.

## 2 How to

### A.1 Visualise Data

AUS SEABED AusSeabed Marine Data Portal

Layers

Base Layers

All Layers

AusSeabed Coordination

National priorities

Upcoming Surveys (beta)

About Legend Filter Fit Extent Add to Map

Elevation and Depth

Framework

Geomorphology

Geophysics

Geophysical Archive Data Delivery System (GADDs)

Sedimentology

Tidal

Water

Multibeam Dataset of Australia 2018 50m

About Legend Filter Fit Extent Add to Map

This dataset contains all multibeam bathymetry data held by Geoscience Australia as of June 2018. It was compiled from data holdings lying within the offshore area of Australia, including international waters, and gridded at 50m. Source information can be found in the associated vector product, AusSeabed Bathymetry Holdings (<http://pid.geoscience.gov.au/dataset/ga/116321>). This dataset is accessible via clip, zip & ship enabled web mapping service on Geoscience Australia's Marine data portal <https://portal.ga.gov.au/personal/marine> <http://pid.geoscience.gov.au/dataset/ga/124063>

Copy WMS link to clipboard

#### How do I add existing layers onto the portal?

Layers that are visible on the Portal are highlighted in red (as seen at points 2 and 3 in the image below).

To add layers to the Portal, click on **Layers** (1), the **primary theme** you are interested in (2), the **layer** you wish to add (3) and **Add to Map** (4).

Clicking **Fit Extent** will zoom to the data extent in the main map.

Clicking **About** provides a short summary of the dataset, with a link to the metadata record at the bottom of the summary. You are also able to copy the WMS link associated with the layer.

AusSeabed Coordination

National priorities

About Legend Filter (off) Fit Extent Add to Map

This dataset comprises an amalgamation of State, Territory and Commonwealth priorities in terms of Seabed mapping as of February 2017. Data that were identified as important for: safe navigation, environmental baseline assessment, resource competition and baseline data, and urgently required to support policy and government decisions were given priority. Agencies then ranked their priority areas 1 – very high/high (red), 2 – moderate (blue), and 3 – low (green), based on the need for the data and the impact of the data. These priority sets were compiled by Geoscience Australia and submitted to the Australian Hydrographic Office (AHO) for consideration as supplementary material for their "Hydro scheme" acquisition plan. <http://pid.geoscience.gov.au/dataset/ga/123104>

Copy WMS link to clipboard

Download

CSV

JSON

KML

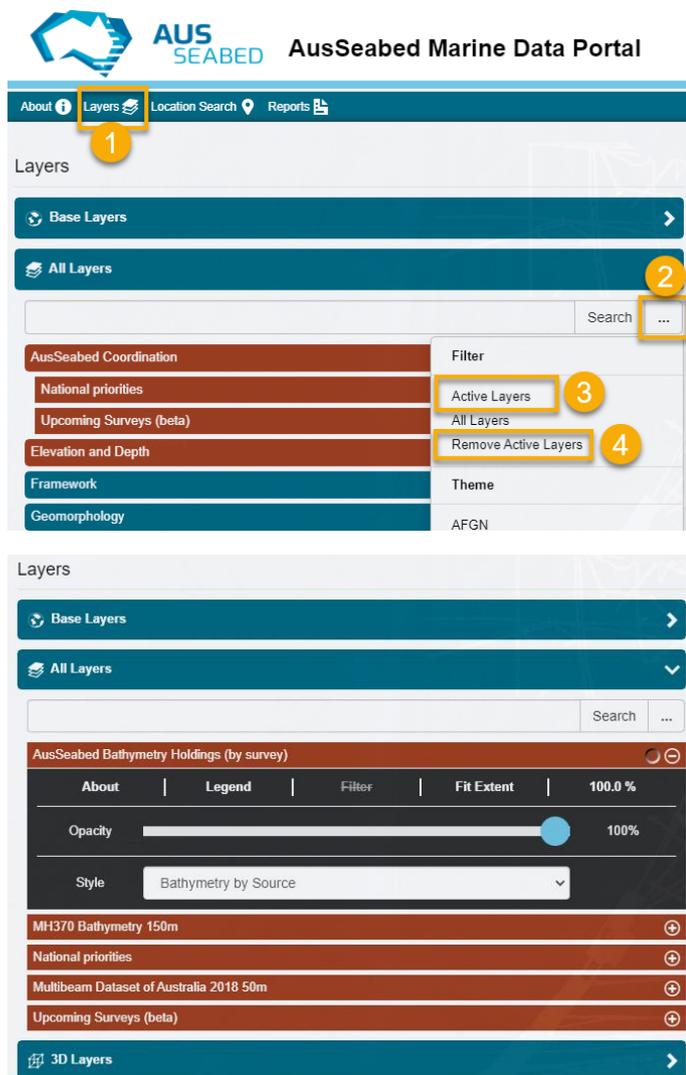
Shapefile

If the dataset is a polygon, you will be able to download it in 4 formats (CSV, JSON, KML or Shapefile).

\*If you have used the **Filter** tool on the dataset, then the **Download** will only include the filtered results.

## How do I remove and reorder the layers to suit my preferences?

To toggle the order of the active layers on your screen, make sure you have added the layers you are interested in seeing to the map.

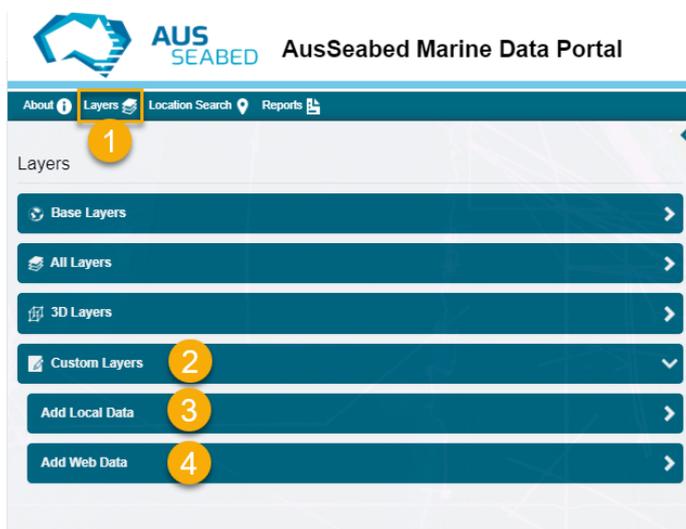


Click on **Layers (1)**, **More (2)**, and **Active Layers (3)**.

You are also able to **Remove all Active layers (4)**

Once you have selected **Active Layers**, you are able to drag the layers by clicking on the layer name and reordering to suit your preference.

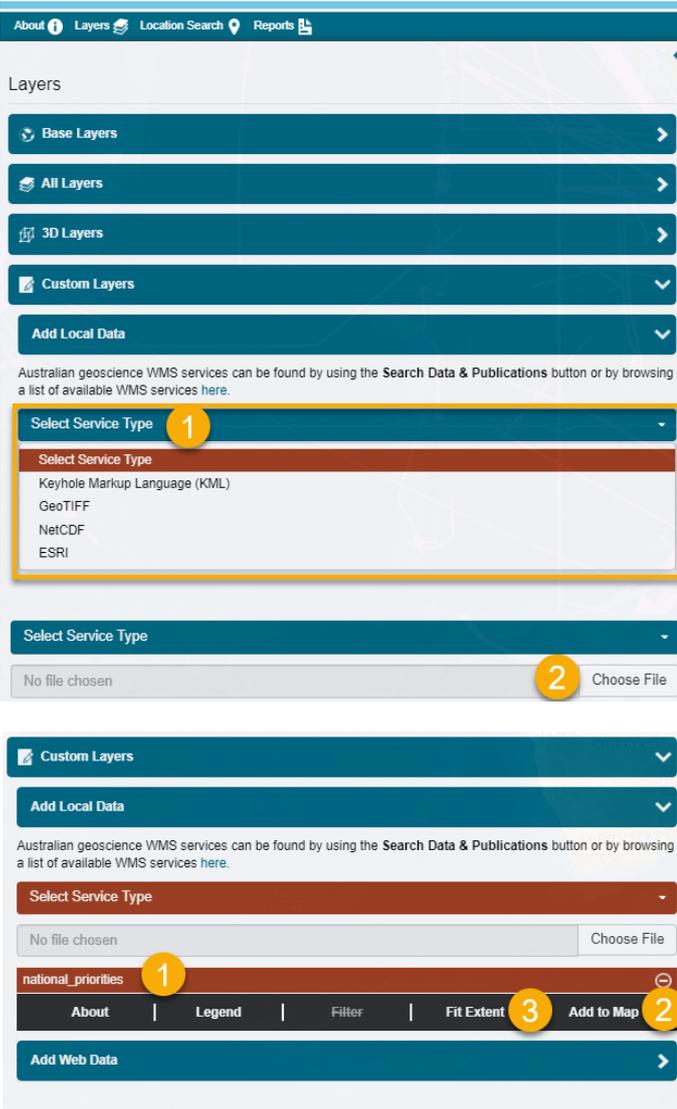
## How do I add my own data to the Portal?



You are able to add datasets found locally on your computer, or web-based datasets.

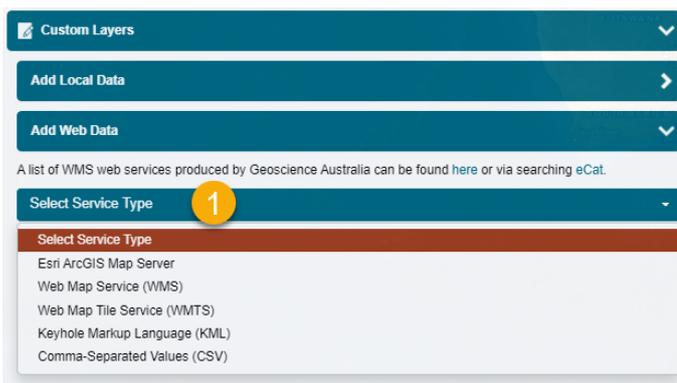
Click on **Layers (1)** tab on the left hand side of the screen, and **Custom Layers (2)**.

Click on **Add Local Data (3)** to add datasets found on your computer, or **Add Web Data (4)** for web services, Keyhole Markup Language (KML) or Comma-Separated Values (CSV).



You are able to add datasets if they are within the following formats (KML, GeoTIFF, NetCDF or ESRI formats). At the moment, we only support zipped ESRI shapefiles. Once you **Select Service Type (1)**, click on **Choose File (2)** and navigate to the file on your local drives.

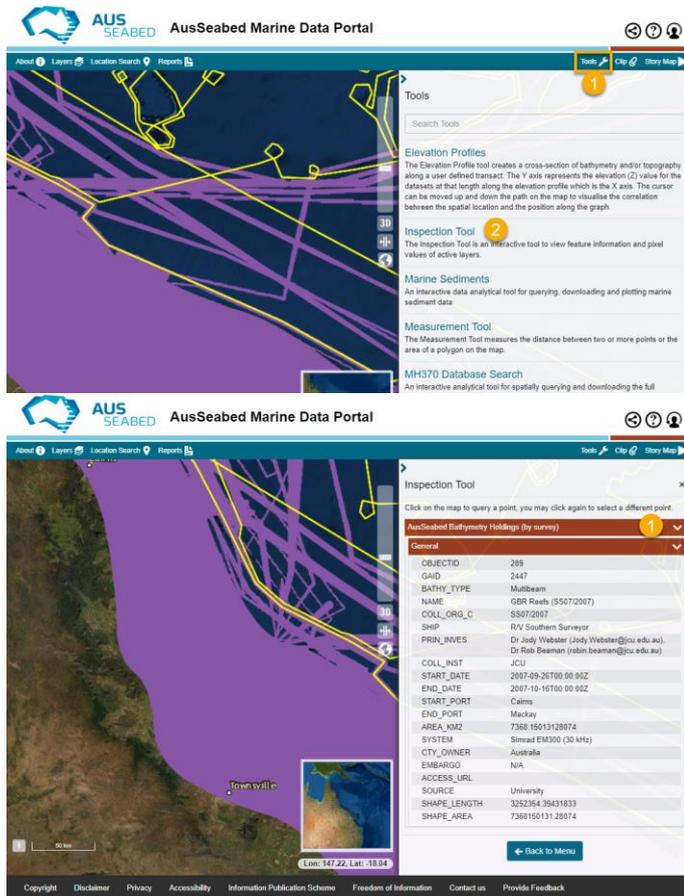
Your file **(1)** will then be able to be **Added to the Map (2)**. To zoom to the layer, click on **Fit Extent (3)**.



For web-based datasets, you are only able to add Web Map Services (WMS), Web Map Tile Services (WMTS), KMLs or CSV's.

## How do I interrogate data and what information can I access?

The Inspection tool is an interactive tool that allows you to view feature information and query pixel values of all active layers. To activate the tool, click anywhere on the map, or select **Tools (1)** and **Inspection Tool (2)**.

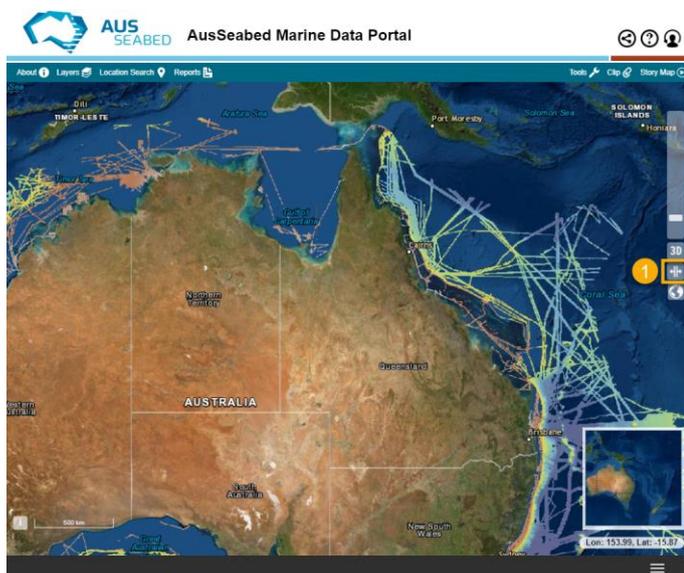


Click on the map with active layers to query a point. This will bring up pixel values under the point, or feature information if available.

The AusSeabed Bathymetry Holdings (by survey) contains survey information, multibeam system and a URL for access to the dataset (if available). To minimise the information about the active layer, click on the layer title (1).

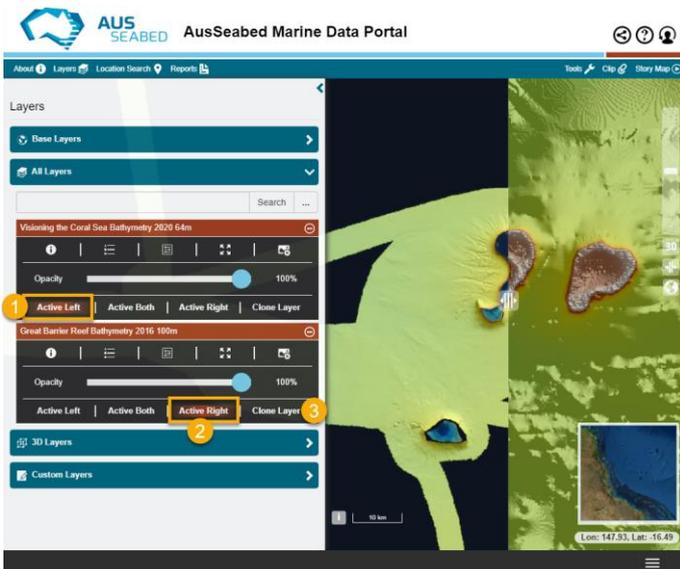
## How do I compare datasets side by side?

The Splitter tool enables you to compare your active layers side by side.



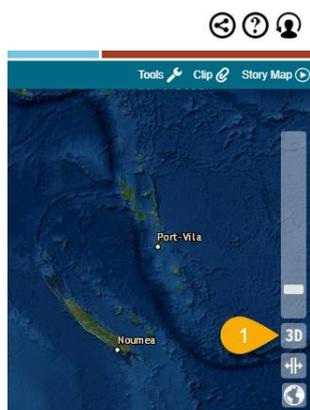
Click on the **Splitter Tool (1)**. This will open up the Layers panel and show you what layers you have added to the map.

This tool works with two or more layers that you have added to the map.



By default, the tool will display all active layers as **Active Both**. You will need to select either **Active Left (1)** or **Active Right (2)** for each layer. If you want to make a copy of the layer, select **Clone Layer (3)**. You can then use the splitter tool to compare between two different datasets.

### How do I use the 3D tool?



You are able to view the active layers in 3D via the **3D button (1)**. You are then able to pan around by clicking and dragging the mouse.

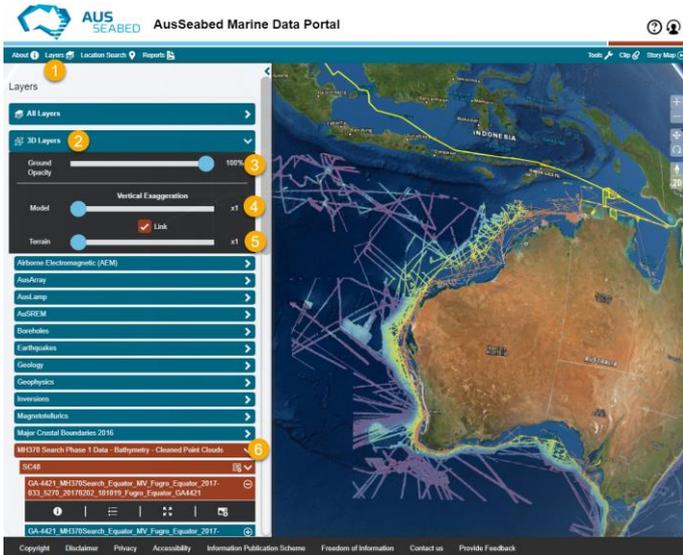
You are also able to visualise 3D point clouds through the 3D Layers tab. Currently, we only have the **MH370 bathymetry point clouds** available for display, but more datasets will be available over time.



To zoom in (+) or out (-) of the screen, click on the + or - buttons (1). You are also able to zoom in and out by using the scroll wheel on your mouse.

To toggle or pan around in the main map, click on (2). By clicking and dragging the mouse up or down, you can alter the field of view.

To rotate around in the main map, click on (3). To reset the compass orientation, click on (4).



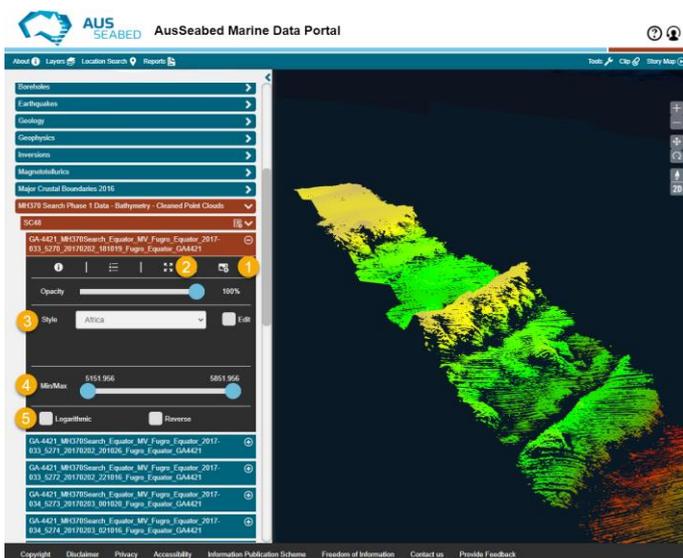
To access the 3D layers, select **Layers (1)**.

Click on **3D Layers (2)** to display all available layers.

You are also able to select the **Ground Opacity (3)** as a percentage by moving the slider left or right.

To change the vertical exaggeration of the dataset, change the slider value of the **Model (4)**. This is automatically linked with the **Terrain model (5)** and will emphasize the surroundings as well as the selected 3D layer. Unclick the Link button if you do not want this to happen.

The bathymetry datasets that are available, can be found at **(6) MH370 Search Phase 1 Bathymetry – Cleaned Point Clouds**.



Once you choose a layer you want to add to the map, select **Add to Map (1)**.

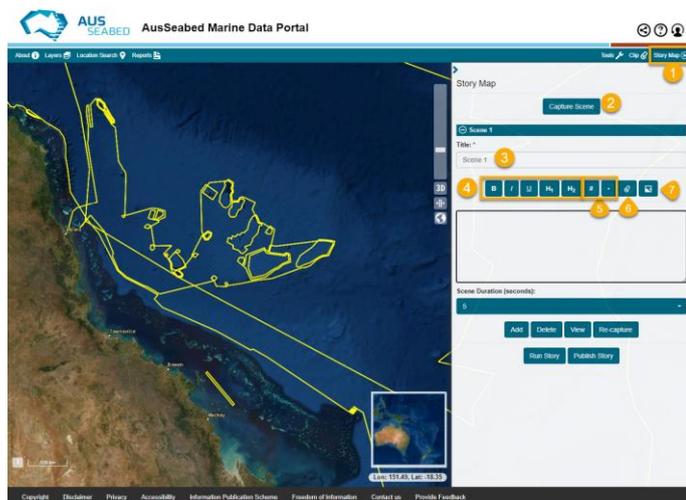
To zoom to the active layer, select **Fit Extent (2)**.

You can then choose between different **Styles (3)** and **data ranges (4)** to display.

You can also choose a **Logarithmic scale** or **Reverse (5)** the colour scheme for the active layer.

## How do I create a story using Map Narrator?

The 'Map Narrator' tool allows users to create a narrative using the map layers present in the Portal, add other imagery or URLs, and share this with other users.



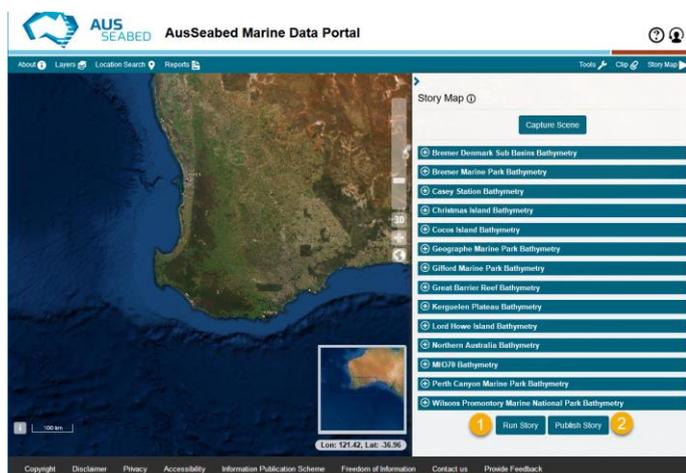
Click on '**Map Narrator**' (1) and **Capture Scene** (2) to begin. Make sure you have the layer you want to appear in your story map turned on and zoomed in to the preferred extent.

Enter a **Title** (3) for your Story Map.

You can edit the text (4), or choose to create a numbered or un-numbered **Bulleted list** (5).

You can add a **URL link** (6) to the text box.

You can also add an **Image** (7) if you have the URL link for it.



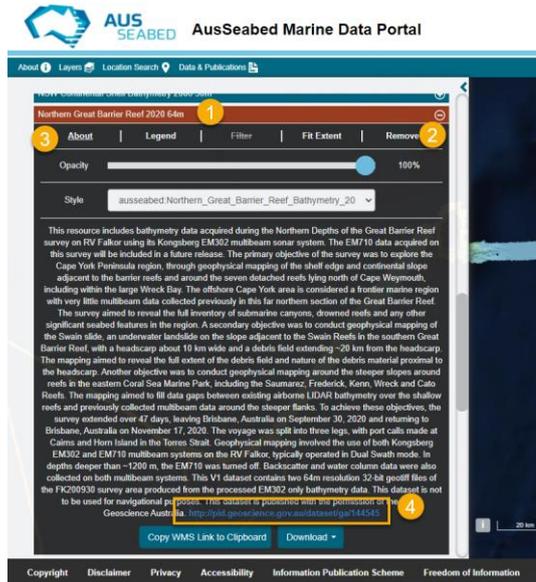
You can preview the story map by selecting **Run Story** (1).

To Share the story map, click on **Publish Story** (2) to generate a shareable URL.

## A.2 Download Data

### How do I download a dataset?

There are multiple ways for users to download raster data of a particular layer which are highlighted below. Users are able to download bathymetry datasets via the About section of the Layer. This method only works with datasets under **Elevation and Depth → Bathymetry – Compilations**, and **Bathymetry – Survey**.

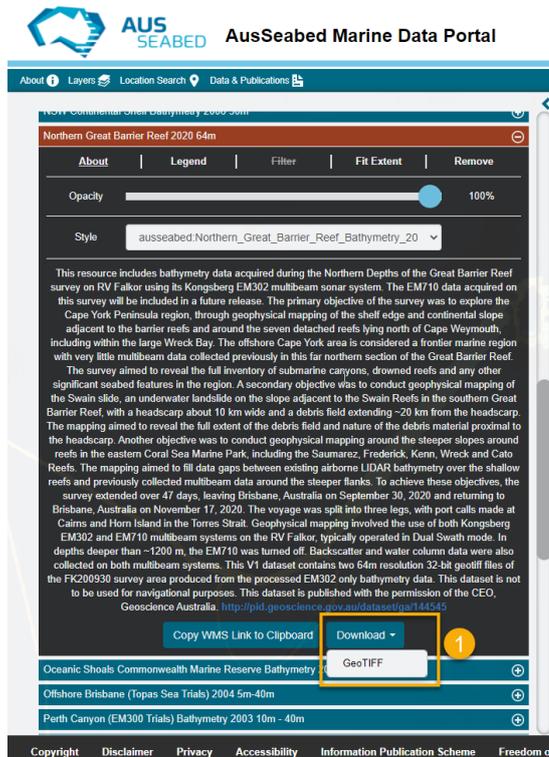


Click on the **Layer (1)**.

**Add (2)** the Layer to the map panel.

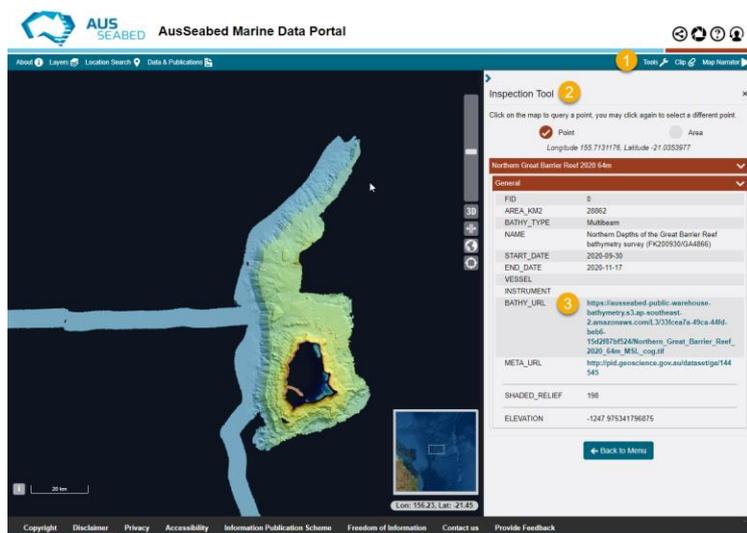
Click on the **About (3)** section of the layer.

The About section of the layer will be populated with the abstract of the data, as well as a **Link (4)** to the metadata record on eCat (Geoscience Australia's metadata system).



The layer is also available to download as a GeoTIFF by clicking on **Download (1)**. The time it takes to download these layers may vary depending on your computer connection. Your browser may block pop-ups, so please ensure that you enable pop-ups to occur.

You are also able to download data via the Inspection Tool, however, you need to keep in mind that if the data spans multiple UTM zones, that only the layer within that UTM zone will be selected. Additionally, you need to ensure that the layer is added to the map for this tool to select the layer



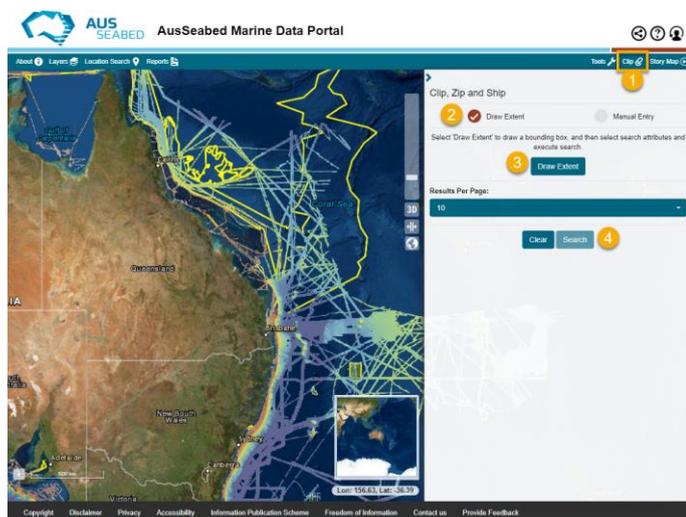
Click on **Tools (1)**.

Select **Inspection Tool (2)**.

The Inspection tool will show the link to download the layer as a GeoTIFF **(3)**.

## How do I use the Clip, Zip and Ship function?

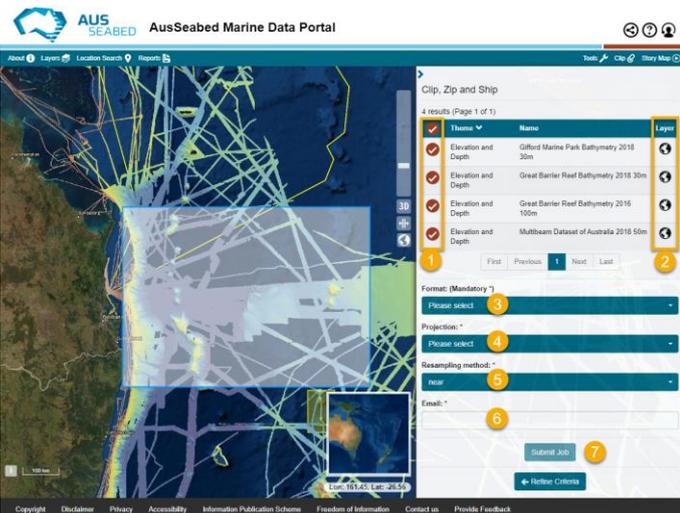
The Clip, Zip and Ship functionality allows users to obtain raster data for a region of interest in their preferred format and projection. This tool only works with datasets under **Elevation and Depth** → **Bathymetry – Compilations**, and **Bathymetry – Survey**.



Click on the **Clip (1)** tool.

Select **Draw Extent** to draw a bounding box around your Area of Interest or **manually** enter coordinates, and click on **Draw Extent (3)**.

Select **Search (4)** to bring up all the datasets available to clip.



Select the datasets you want to clip **(1)**.

**(2)** Visualise the dataset in the map (optional).

Select the preferred file **Format (3)** from the drop down menu.

Select the preferred **Projection (4)\*** from the drop down menu.

Select the preferred **Resampling Method (5)\*** from the drop down menu.

Your **Email (6)** is required to receive the data.

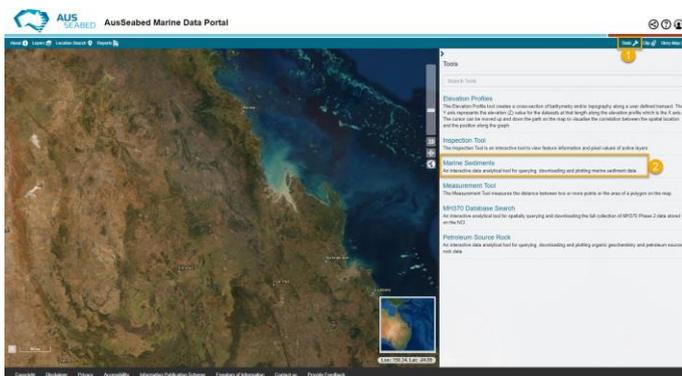
Click **Submit Job (7)**.

Once the Clip tool is successful, you will be sent an email with a zip file to download; data must be downloaded within 48 hours of the request. You will also be sent an email if issues were encountered. If you prefer to download the entire dataset in its original projection and format, it is recommended that you do this via Geoscience Australia's system (dataset URLs are also located in the **About** section of each layer). If you have received an email with no data returned, please check that your Area of Interest contains data to clip.

\*The methods used to resample and project the data can be found [here](#)

## A.3 Analyse Data

### How do I use the Marine Sediments tool?

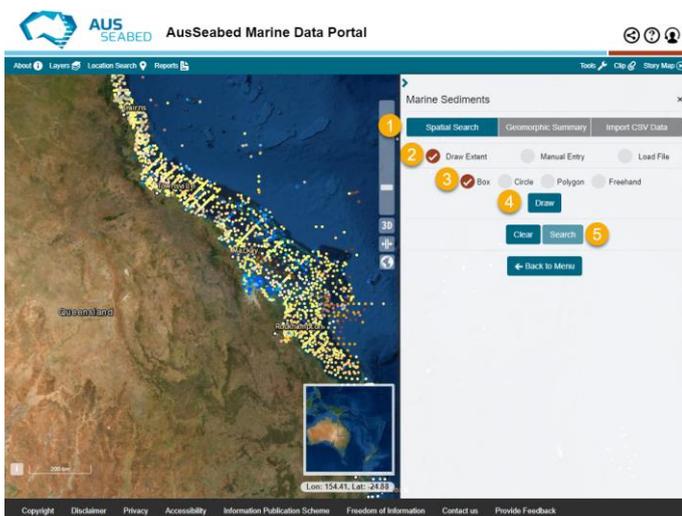


The Marine Sediments tool is an interactive data analytical tool for querying, downloading and plotting marine sediment data available through the AusSeabed Marine Data Portal.

Click on the **Tools (1)** button.

Select the **Marine Sediments (2)** tool.

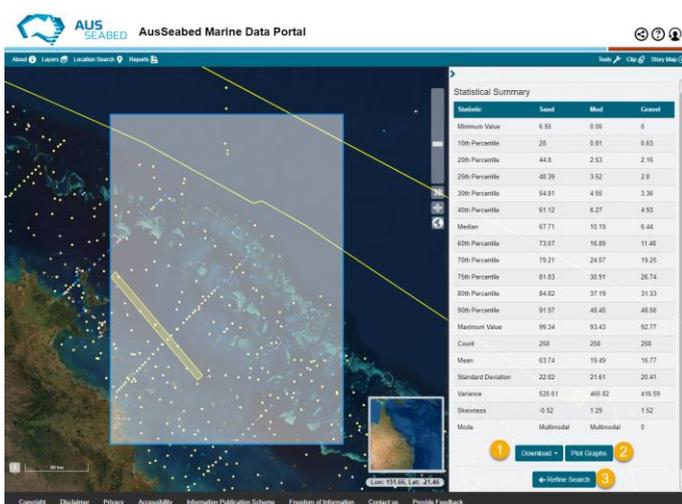
The tool will bring up all the sediment samples that are available for analysis in the main map.



You are able to explore sediment data by a **Spatial Search (1)** using the **Draw Extent (2)**, where you can choose to draw a **Box, Circle, Polygon or Freehand (3)** on the main map for an area of interest.

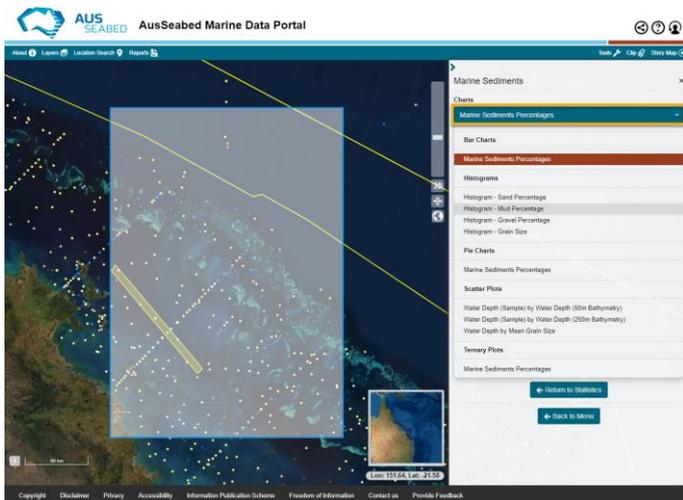
Click on **Draw (4)** and navigate to the main map to draw an area of interest. You can also select **Download Polygon** (as a JSON file) for input to future searches once you click Draw.

Click on **Search (5)** to run the tool or **Clear (5)** if you have made a mistake.

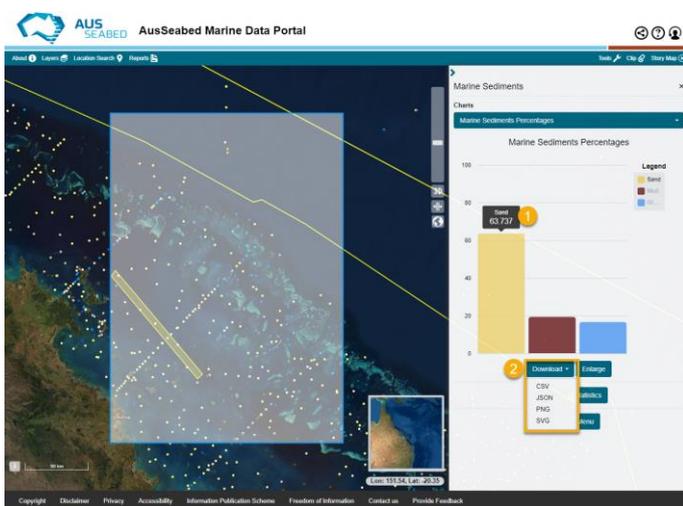


A statistical summary of the points that you have selected will be shown, and you can either **Download (1)** this information, and **Plot Graphs (2)**.

If you would like to change your search area, click on **Refine Search (3)**.



If you've clicked on **Plot Graphs** from the step above, you are able to select from a range of different charts available to display the data in your area of interest.



The charts are interactive, so if you **click on the chart (1)**, it will show the value of the selection from the area of interest. You are also able to **Download (2)** the data and image in various formats (CSV, JSON, PNG, SVG).

## 3 Contact Us

### Who can I contact if I have other questions?

If you have questions that are not answered by this user guide, or would like to provide feedback on the Portal, please contact [client.services@ga.gov.au](mailto:client.services@ga.gov.au) and please include the AusSeabed Marine Data Portal Feedback in your subject line.

## 4 List of Acronyms

CSV	Comma-separated Values
ESRI	ESRI Geographic Information System company;
GA	Geoscience Australia
GeoTIFF	Geographic Tagged Image File Format
JSON	JavaScript Object Notation
KML	Keyhole Markup Language
MARS database	Geoscience Australia's Marine Sediments Database
NCI	National Computing Infrastructure
NetCDF	Network Common Data Form
PNG	Portable Network Graphics
SVG	Scalable Vector Graphics
URL	Uniform Resource Locator (web address)
WMTS	Web Map Tile Service
WMS	Web Mapping Service
WFS	Web Feature Service