

Spatial Portal & Spatial Interfaces

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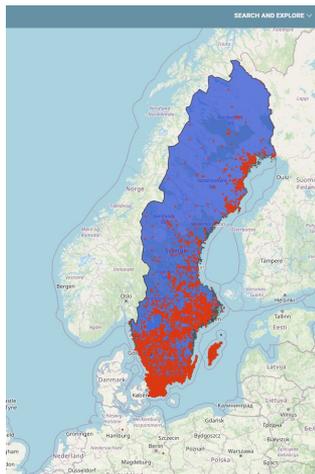
Spatial Portal focuses on where a chosen species is located, what species were found in a defines area and what are the environmental conditions in that area.

Spatial Portal combines three basic data types - species, areas, layers and facets - to provide a suite of powerful visualisation and analysis tools.

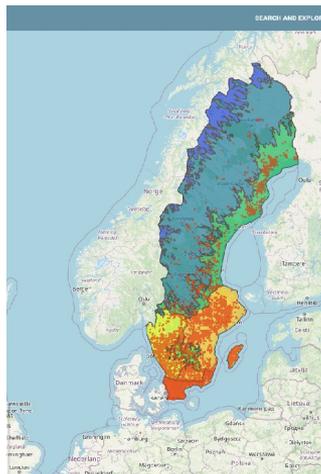


<https://www.archaeologynow.org/blog/hedgehogs>

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The screenshot shows the 'SPECIES AND...' section of the Spatial Portal interface. It includes the following elements:

- 2. Species options:**
 - Include spatially valid records
 - Include spatially suspect records
 - Include spatially unknown records
 - Minimum one spatially related option is required. See this support article for more information.**
 - Include absences
- 3. Select facet:** (Mandatory)
 - Facet: Collection
- Facet begins with (Case sensitive):**
 - Sorted by name
 - Adipoliten - The Swedish Species Observation System 1019470504
 - Swedish Bird Ringing Centre 10194062
 - Biol. Appl. Institute of Population Research National register of survey territories 2849602
 - COI American Insecticide Variants of bulk arthropod samples (and lots) collected with Malaise traps from the Insect Biome Atlas project in Sweden 2175475
 - Phytogenomics: Botanical Collections 14110698
 - Lund University Biological Museum - Botanical collection 1225769
 - Botanical Collection 1141191
 - Swedish Bird Survey - Winter count count routes (Administrative) - Publications 884247
- Page 1 of 10
- 0 classes selected
- CANCEL NEXT

FUNCTIONALITY

- **Defining Areas of Interest:** Draw polygons, search by area, define environmental envelopes.
- **Mapping & Visualization:** Display species occurrences, geographic features, and environmental layers.
- **Data Analysis & Insights:** Generate area reports, classify environmental domains, and sample environmental/contextual data.
- **Predictive & Statistical Tools:** predict species distribution, create scatterplots, and generate gridded data.

The screenshot shows the Atlas of Living Australia Spatial Portal interface. At the top, there is a navigation bar with the logo and 'ala.org.au' on the left, and a 'Save' button on the right. Below this is a menu bar with 'Add to map', 'Tools', 'Import', 'Export', and 'Help' options. A dropdown menu is open under 'Tools', listing various analysis functions such as 'Area Report - interactive', 'Scatterplot - single', 'Tabulate - 1D', 'Taxon Frequency', 'Predict', and 'Classify'. The main area is a map of Australia with a search bar and several map controls (zoom, pan, etc.). A 'Quick links' box is visible in the bottom right of the map area, listing steps like '1. Add occurrences to map' and '2. Add area to map'. Below the map, there is a red navigation bar with 'Add to Map', 'Tools', 'Import', 'Export', and 'Help' buttons. Below this bar is a dark teal bar with 'Map options'. Blue arrows point from text labels at the bottom to these buttons: 'Add an Area, Species or Layer to Map' points to 'Add to Map'; 'Run Analysis Tools' points to 'Tools'; 'Import your own Data or Areas' points to 'Import'; 'Export Points, Samples, & Maps' points to 'Export'; and 'Get Help Instructions' points to 'Help'.



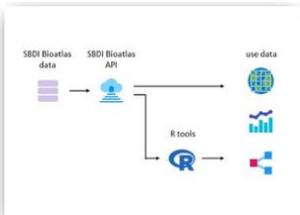
Swedish Biodiversity Data



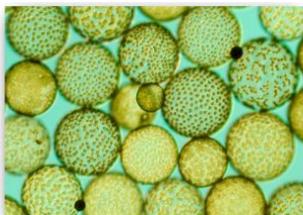
Explore by Location



Searching and Mapping



R Tools and APIs



Molecular Biodiversity Data



Systematic Monitoring and Citizen Science Tools



Marine Data Tools



Biologging Data Tools



Archaeological Biodiversity Data Tools

Spatial portal

SBDI Swedish Biodiversity Data Infrastructure

ADD TO MAP TOOLS IMPORT EXPORT HELP

- Erinaceus
 - Area Report - interactive
 - Scatterplot - single
 - Scatterplot - multiple
 - Taxon Frequency
 - Compare Points
 - Calculate AOO and EOO
 - Predict
 - Restore prior analysis
- Biogeography
- Sweden-C
- Map options

Erinaceus europaeus (World)

Layer name: Erinaceus europaeus (World)

Display as: Density grid Points

Facet: User defined colour

Size: 2

Opacity: 68%

Display spatial uncertainty as a circle

Time series animation:

Quick links

- Download all records for "Erinaceus europaeus"
- Produce scatterplot for "Erinaceus europaeus"
- Generate prediction for "Erinaceus europaeus"
- Produce points to grid for "Erinaceus europaeus"
- Produce GDM using species "Erinaceus europaeus"

FUNCTIONALITY

- Area Report - interactive
- Scatterplot - single
- Scatterplot - multiple
- Taxon Frequency
- Compare points
- Calculate AOO and EOO
- Predict
- Restore prior analysis

Swedish Biodiversity Data Infrastructure

ADD TO MAP ▾ TOOLS ▾ IMPORT ▾ EXPORT ▾ HELP ▾

- Brachysomus echinatus (Sweden)
 - Area Report - interactive
 - Scatterplot - single
 - Scatterplot - multiple
 - Taxon Frequency
 - Compare Points
 - Calculate AOO and EOO
 - Predict
 - Restore prior analysis

Brachysomus echinatus (Sweden)

Layer name: Brachysomus echinatus (Sweden)

Display as: Density grid Points

Facet: User defined colour

Size: 5

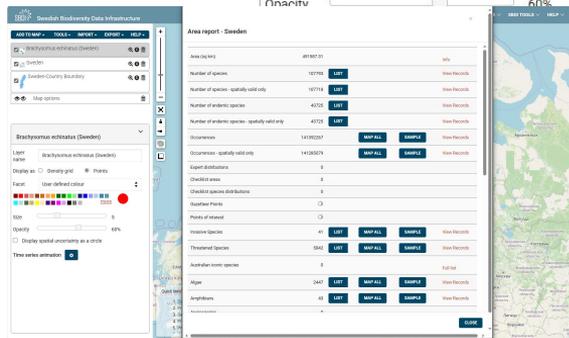
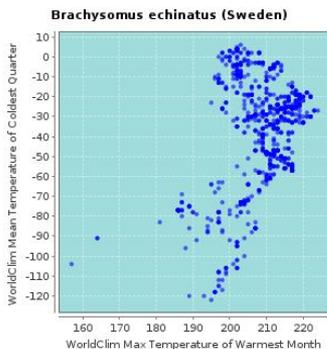
Opacity: 100%

Area report - Sweden

Area (km ²)	Number of species	Number of species - spatially valid only	Number of endemic species	Number of endemic species - spatially valid only
481807.03	10770	10711	4332	4332
14182027	14182027	14182027	14182027	14182027

Quick links:

1. Download all records for "Brachysomus e. in Sweden"
2. Produce scatterplot for "Brachysomus e. in Sweden"
3. Generate prediction for "Brachysomus e. in Sweden"
4. Produce points to grid for "Brachysomus e. in Sweden"
5. Produce GDM using species "Brachysomus e. in Sweden"



Importance of Spatial Portal

- **Key Element in Service Delivery at Country Level**

- Facilitates integration of diverse datasets
- Enhances decision-making for biodiversity and conservation

- **National Species Lists**

- Enables tracking of species across regions
- Supports conservation and monitoring efforts

- **Climate Models**

- Analyzes climate impacts on biodiversity
- Assists in predicting species' distribution changes

Importance of Spatial Portal

- **Land Use Data**

- Links biodiversity with land management and development
- Helps identify habitat changes and threats

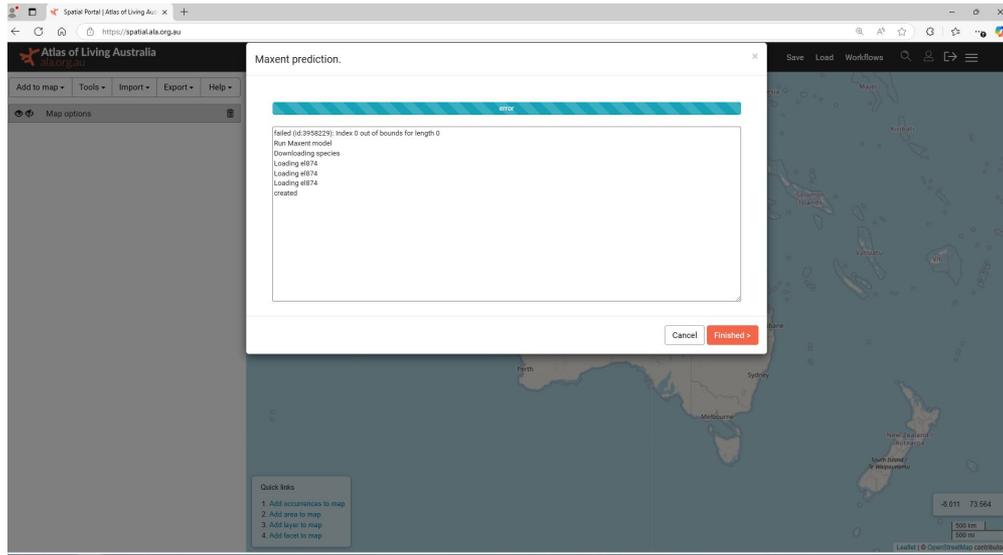
- **Protected Areas**

- Integrates conservation areas into the portal
- Ensures proper management and monitoring

- **Administrative Boundaries**

- Coordinates conservation efforts across regions
- Aligns biodiversity management with local governance

However... EXPORT...



Export menu options

The list of layers in the top left of the Spatial Portal window are layers in the Geographic Information System (GIS) sense. Each layer can be related to either species/assemblage, an area or an environmental/contextual layer. You can export information related to most of these mapped layers:

- Species can be downloaded as **points** in CSV format (but will soon also be available as Shapefiles, KML and WKT).
- Environmental and contextual layers provided by external data providers cannot be downloaded, only sampled by points. The main reason for this is licensing arrangements for the supplied layers.
- Environmental layers produced by analysis as in **MaxEnt** and **Points to grid** (and soon GDM), and contextual layers that are produced by **Classification** are all downloaded as a part of the output.

However... IMPORT SHAPEFILE

The screenshot shows the SBDI web interface with an error dialog box and the 'Add area' form. The error dialog box contains the following text:

An error occurred. Please try again and if the same error occurs, send an email to support@ala.org.au and include the URL to this page, the error message and what steps you performed that triggered this error.

The 'Add area' form includes the following fields and options:

- Area Name: SWE_adm.zip
- Import area file: [OK]
- Only areas can be imported. Points and lines cannot be imported.
- Areas for merging table:

<input checked="" type="checkbox"/>	ENGTYP2_2	ISO	NL_NAME_2	ID_2	NAME_2
<input checked="" type="checkbox"/>	Municipality	SWE	231	Kungsör	
<input checked="" type="checkbox"/>	Municipality	SWE	111	Söderköping	
<input checked="" type="checkbox"/>	Municipality	SWE	232	Norberg	
<input checked="" type="checkbox"/>	Municipality	SWE	112	Vadstena	
<input checked="" type="checkbox"/>	Municipality	SWE	233	Sala	
<input checked="" type="checkbox"/>	Municipality	SWE	113	Valdemarsvil	
<input checked="" type="checkbox"/>	Municipality	SWE	234	Skinnskatteb	
<input checked="" type="checkbox"/>	Municipality	SWE	114	Ydre	
<input checked="" type="checkbox"/>	Municipality	SWE	235	Surahammar	

Preview: [Map of Sweden showing the selected areas highlighted in grey]

Buttons: [CANCEL] [NEXT >]

Quick links:

1. Add occurrences to map
2. Add area to map
3. Add layer to map
4. Add facet to map

However... PREDICT

Swedish Biodiversity Data Infrastructure

ADD TO MAP TOOLS IMPORT EXPORT HELP

Erinaceus europaeus (World)

Sweden-Country Boundary

Map options

Erinaceus europaeus (World)

Layer name: Erinaceus europaeus (World)

Display as: Density grid Points

Facet: User defined colour

Size: 3

Opacity: 60%

Display spatial uncertainty as a circle

Time series animation

Maxent prediction.

error

```
failed (id:3674309): could not execute statement; SQL [n/a]; nested exception is org.hibernate.exception.DataException: could not execute statement
finished (id:3674309)
500: Cannot invoke "org.geoserver.catalog.LayerInfo.getResource()" because "original" is null
400: <!doctype html><html lang="en"><head><title>HTTP Status 400 - Bad Request</title><style type="text/css">body {font-family:Tahoma,Arial,sans-serif;} h1, h2, h3, h4 {color:white;background-color:#525D76;} h1 {font-size:22px;} h2 {font-size:16px;} h3 {font-size:14px;} p {font-size:12px;} a {color:black;} .line {height:1px;background-color:#525D76;border:none;}</style></head><body><h1>HTTP Status 400 - Bad Request</h1><hr class="line" /><p><b>Type</b> Status Report</p><p><b>Message</b> Failed to locate the input file file:&#47;&#47;&#47;data&#47;spatial-data&#47;layer&#47;1741530862953_species.tif</p><p><b>Description</b> The server cannot or will not process the request due to something that is perceived to be a client error (e.g., malformed request syntax, invalid request message framing, or deceptive request routing).</p><hr class="line" /><h3>Apache Tomcat</h3></body></html>
: NOTE: Picked up JDK_JAVA_OPTIONS: --add-opens=java.base/java.lang=ALL-UNNAMED --add-opens=java.base/java.lang.invoke=ALL-UNNAMED --add-opens=java.base/java.lang.reflect=ALL-UNNAMED --add-opens=java.base/java.io=ALL-UNNAMED --add-opens=java.base/java.util=ALL-UNNAMED --add-opens=java.base/java.util.concurrent=ALL-UNNAMED --add-opens=java.rmi/sun.rmi.transport=ALL-UNNAMED
Run Maxent model
Downloading species
```

CANCEL FINISHED >

How active is it?

Who are the users?

What tools are used the most?

Future vision?