

Trends and Analysis

Level B – Advanced

Go to:

www.analysisportal.se

In the top right corner you can find the "Log in". If you do not already have an account you can easily get one. (Please note: If you already have an account for Artportalen (the Swedish Species Observation System) you can use the same log-in for the Analysis Portal). You don't have to log in, but one advantage is that your latest settings will be saved. It is up to you how you wish to access the Analysis Portal. In order to upload local shape- or GeoJSON-files, you have to log in.

1. Trends and species observations

A) Spatial filters

Search for species that have the same distribution area as the grass *Koeleria glauca*: Download the grid based map for the species (species richness grid map) as GeoJSON file to your computer. Reset the search criteria and use the GeoJSON file as spatial filter.

How many polygons show the species?

Add now a filter with the ant species *Camponotus herculeanus*.

How many observations do you get? In which polygon(s)?

B) Temporal filters

Analyse trends in butterfly distribution in Sweden between 1993 - 2015.

Add all species records of Papilionoidea (butterflies) as search criterion.

Choose at least five species (max 10), inclusive *Erebia ligea* (Arran Brown) and *Nymphalis xanthomelas* (Yellow-legged Tortoiseshell).

Limit your search by choosing the time period for the observation date 1993-03-31 to 2016-01-31. Time steps should be years! This you set up under 'Settings – Time series'. Show the diagram on numbers of species observations per year.

In which year exist the most observations of the species you have chosen?

Compare Arran Brown and Scarce Tortoiseshell focusing on the changes in abundance over time (year).

How do the species differ?

Hint: Under 'Results - Reports – Setting report' you can always find your selections and settings, which you can download together with your maps, tables, diagrams etc.

Have also a look at 'Summary Statistics' and 'Species observation provenance' to see which information is available.

2. Use species observations together with environmental data and map layers

A) Combine climate data from a map layer with species observations

Quite a lot of climate data unfortunately are not accessible for the public today, but SMHI (Swedish Meteorological and Hydrological Institute) offers some map layers which are open data.

Search for species observations of the dark bush-cricket (*Pholidoptera griseoptera*). *Have a look how the observations are spread over the country.*

Can you change the species observation map to the County map from ArtDatabanken?

Add now a map layer (WMS-format) as background map.

We want to know if the first frost of the year has some meaning for the dispersal of dark bush-crickets. Use the map layer called "första_hostfrost_yta" which is provided by the map service 'Frost- och isstatistik (SMHI Öppna Data)'. Choose the species observation map in combination with this layer.

Do you see some differences between the climate data and species observations?

Do you want to know more about the chosen map layer and its colour? Go to opendata-catalog.smhi.se/explore/ and search for the map layer in the free text search with the search phrase 'frost'.

Do you know what the colours are symbolising now?

B) List taxa in a protected area

Try to list all taxa that are observed in Fladen and download the list as an Excel-file. Fladen is a marine protection area of the HELCOM (Helsinki Commission, Baltic Marine Environment Protection Commission).

Search for the data layer (Data – Environmental data & maps (vector format)) provided by the 'Swedish Agency for Marine and Water management' as WFS service that is called 'Skyddade marina områden i Sverige enligt HELCOM'.

Use the map layer as a filter and limit the search to the Fladen area only by clicking the map layer to edit the selected layer. Add a filter for NAME like 'Fladen'. Using 'Filter – Spatial – Map layer polygons' you can now choose the layer which only contains one single polygon 'Fladen') and add it to your spatial filter.

List the taxa that have been observed in the Fladen area and download the results as Excel-file.

C) Compare the spatial pattern of all species observations with the distribution of human beings living in Sweden

Limit the species observations to Artportalen (Swedish Species Observation System) only.

Add the map layer 'GPW v3: Population Count Future Estimates 2015' that is available as a global map layer called 'Global data on human impact'.

Do you know where the map layer comes from?

Show the result as a frequency map with number of observations (10 x 10 km grid).

Which part of Sweden has the highest frequency of species observations?

Compare the result with the available background map of population count of human beings.

Try to activate and deactivate the full screen view. *Do you see any connection?*

Adjust the colour scale and transparency of the layer with grid statistics so that it is easier to make comparisons.

Click on some grid cells to control particular observations.

Try to activate and deactivate the layer. Use the full screen view if you want.

Hint:

Remember that you always have to save your selections by clicking "Add ..." when you have selected a search result or by clicking "Change ..." when you want to save new settings.

You can also delete your selection with the "Remove ..." button.

On the right-hand side of the screen you always get an overview about your current selections. Here you can click directly on each of the selections to make further changes.

God luck with the exercise!

You are welcome to ask questions!

Responsible:

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