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THE CCLME ALIEN SPECIES DATABASE AS A LAYER OR AS A TOOL?: DISCUSSING POSSIBILITIES AND DECISION-MAKING

WORKSHOP ON “THE CCLME ALIEN SPECIES DATABASE: HOW TO PRESENT THE DATA GATHERED IN THE CCLME ECO-GIS VIEWER”

Organized within the project

*Invasive alien species and other ocean stressors: Furthering the scientific knowledge and capacity basis
in the Canary Current Large Marine Ecosystem*

20 November 2023 – On-line

Discussion

The CCLME Alien Species Database as a layer



CCLME ECO-GIS VIEWER

Tools ▾ Selection Panel Clear Legend About Contact

Home Page

Bathymetric mapping and transects

CCLME Upwelling index

Precipitation and river discharges

Sea level time series

Argo Profiles

SST and Chl data and differences analysis

Spatio-temporal data viewer

Oceanographic transects

Biological data

Using my own data

Useful links

Biological data

38.772° W, 32.269° N

400km

Select samples

Source
Select a source ▾

OBIS
Kingdom
Select a kingdc ▾ Species
Select a specie ▾

Advanced Search

IEO
Survey
Select a survey ▾ Species
Select a specie ▾

FAO
Species distributions
Select a species distribution ▾

CSV Example

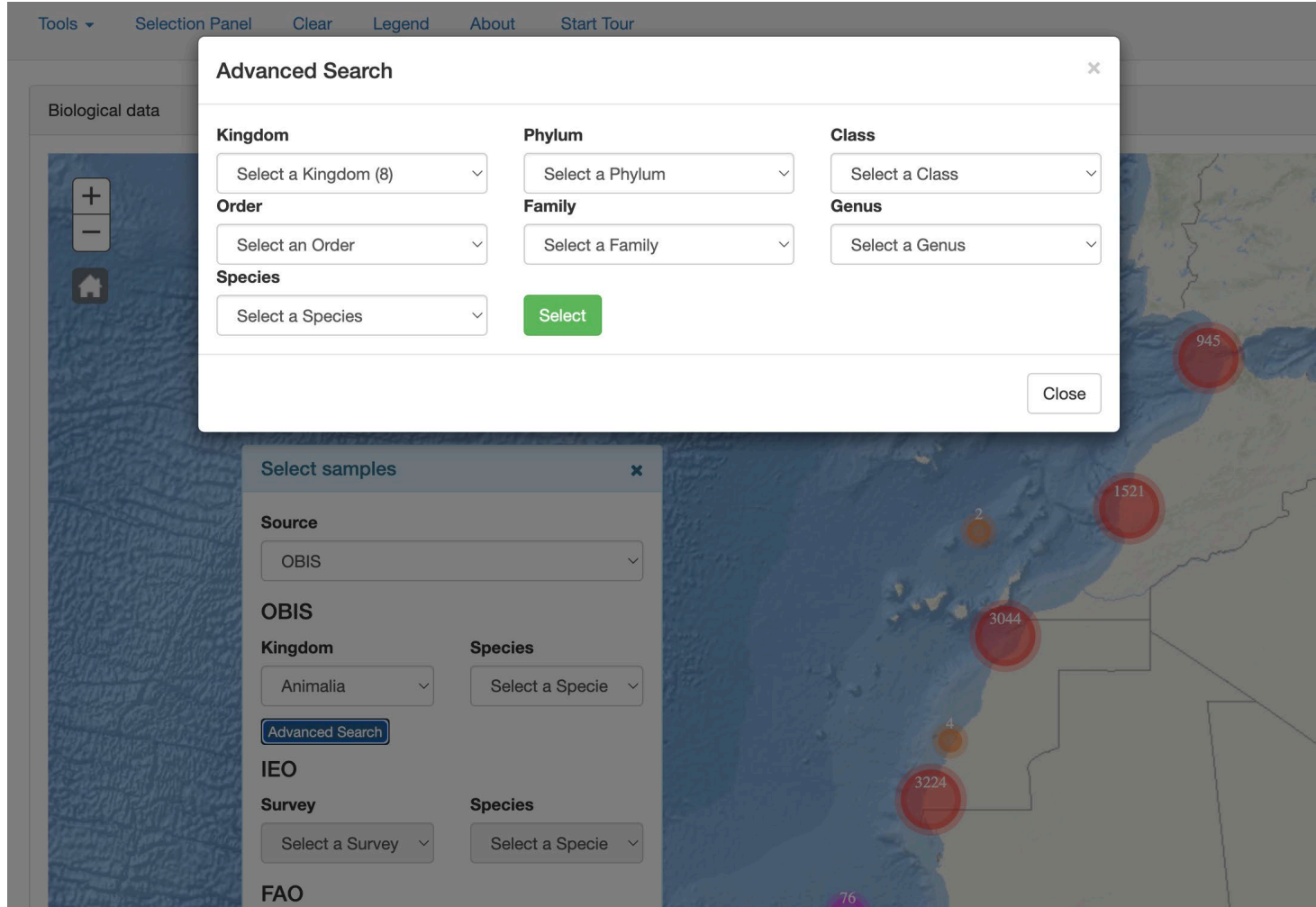
View results By polygon By buffer

Suggestion:
Presenting the data
in “Biological data”
Tool.
This would allow
comparison of data
from different
sources.

Additional layer:
IOC
(CCLME Alien
Species database)

Discussion

How to search the data



The screenshot displays the CCLME Eco-GIS Viewer interface. At the top, there is a navigation bar with 'Tools', 'Selection Panel', 'Clear', 'Legend', 'About', and 'Start Tour'. The main area shows a map of the Mediterranean Sea with several red circular markers labeled with numbers (945, 1521, 3044, 3224, 76). An 'Advanced Search' dialog box is open in the center, featuring dropdown menus for Kingdom, Phylum, Class, Order, Family, Genus, and Species, along with a green 'Select' button and a 'Close' button. On the left side, there is a 'Biological data' panel with a home icon and zoom controls. Below the map, a 'Select samples' panel is visible, showing options for Source (OBIS), Kingdom (Animalia), and Species, with an 'Advanced Search' button highlighted.

The CCLME Eco-GIS Viewer is a tool aimed at making meaningful data analysis.

- What would be the most helpful way to search the database data?
- Would an advanced search (like the one present on the left image) be a suitable option?

If so, what terms shall be used?

- **taxonomy** (Phylum, Class, etc)
- **establishmentMeans**
- **degreeOfEstablishment**
- **pathway**
- **eventDate**
- other...

Alien species database for the CCLME – Data Model

Terms - Database fields (page 1)

Suggested terms	Some clarifications
Database ID	Number given within the database to facilitate exchanges within experts engaged in the database and the assessment
scientificName	Scientific name of the species
scientificNameID	Worms identifier
higherClassification	Taxa
taxonRank	The taxonomic rank of the most specific name in the scientificName.
kingdom	The full scientific name of the kingdom in which the taxon is classified.
phylum	The full scientific name of the phylum or division in which the taxon is classified.
class	The full scientific name of the class in which the taxon is classified.
order	The full scientific name of the order in which the taxon is classified.
family	The full scientific name of the family in which the taxon is classified.
organismQuantity	A number or enumeration value for the quantity of organisms
organismQuantityType	The type of quantification system used for the quantity of organisms
establishmentMeans	Introduced to a given place and time through the direct or indirect activity of modern humans; e.g native, introduced, etc.
degreeOfEstablishment	The degree to which an Organism survives, reproduces, and expands its range at the given place and time; e.g. native, invasive, etc. https://www.highcharts.com/products/highcharts/
habitat	A category or description of the habitat in which the Event occurred, e.g. estuarine, marine; and coral reef, rocky reef, sand, etc.
Impact	It could be either positive or negative, e.g. economic, ecologic, ecosystem services, etc. Free text.
Impact Classification	If deleterious impact, to be described using: (i) Environmental Impact Classification for Alien Taxa, e.g. Cryptogenic (CG), Data Deficient (DD), Minimal Concern (MC), Minor (MN), Moderate (MO), Major (MR), Massive (MV), No Alien Population (NA), Not Evaluated (NE); or (ii) Socio-Economic Impact Classification of Alien Taxa (SEICAT) according to observed changes in people's activities, e.g. Minimal concern (MC), Minor (MN), Moderate (MO), Major (MR), Massive (MV), Data deficient (DD).

Alien species database for the CCLME – Data Model

Terms - Database fields (page 2)

Suggested terms

Some clarifications

pathway

The process by which an Organism came to be in a given place at a given time; e.g. parasiteOnAnimals, ballastWater, hullFouling, etc.

eventDate

Date-time when the event was recorded; e.g. year-month-day, year-month, year, year/year, etc.

associatedReferences

A list of identifiers of literature associated with the Occurrence; e.g. bibliographic citation

decimalLongitude

The geographic longitude in decimal degrees

decimalLatitude

The geographic latitude in decimal degrees

minimumDepthInMeters

The lesser depth of a range of depth below the local surface, in meters.

maximumDepthInMeters

The greater depth of a range of depth below the local surface, in meters.

verbatimDepth

The original description of the depth below the local surface; e.g. 100-200 m

coordinateUncertaintyInMeters

The horizontal distance (in m) from from the given decimalLatitude and decimalLongitude describing the smallest circle containing the whole of the Location

country

The name of the country in which the Location occurs.

islandGroup

The name of the island group in which the Location occurs. Proposed in what regards the Canary Islands, as it is the only Spanish region for which data will be gathered

georeferenceRemarks

Comments about the spatial description determination, explaining assumptions made, i.e. in case the exact geographical location is not provided in the article, and we use an approximate point (e.g. a geographical position within a port)

occurrenceRemarks

Comments or notes about the Occurrence; i.e. additional information deemed important, such as as associated environmental condition (salinity, temperature, and its intensity)

Criteria

Criteria (to be agreed) met

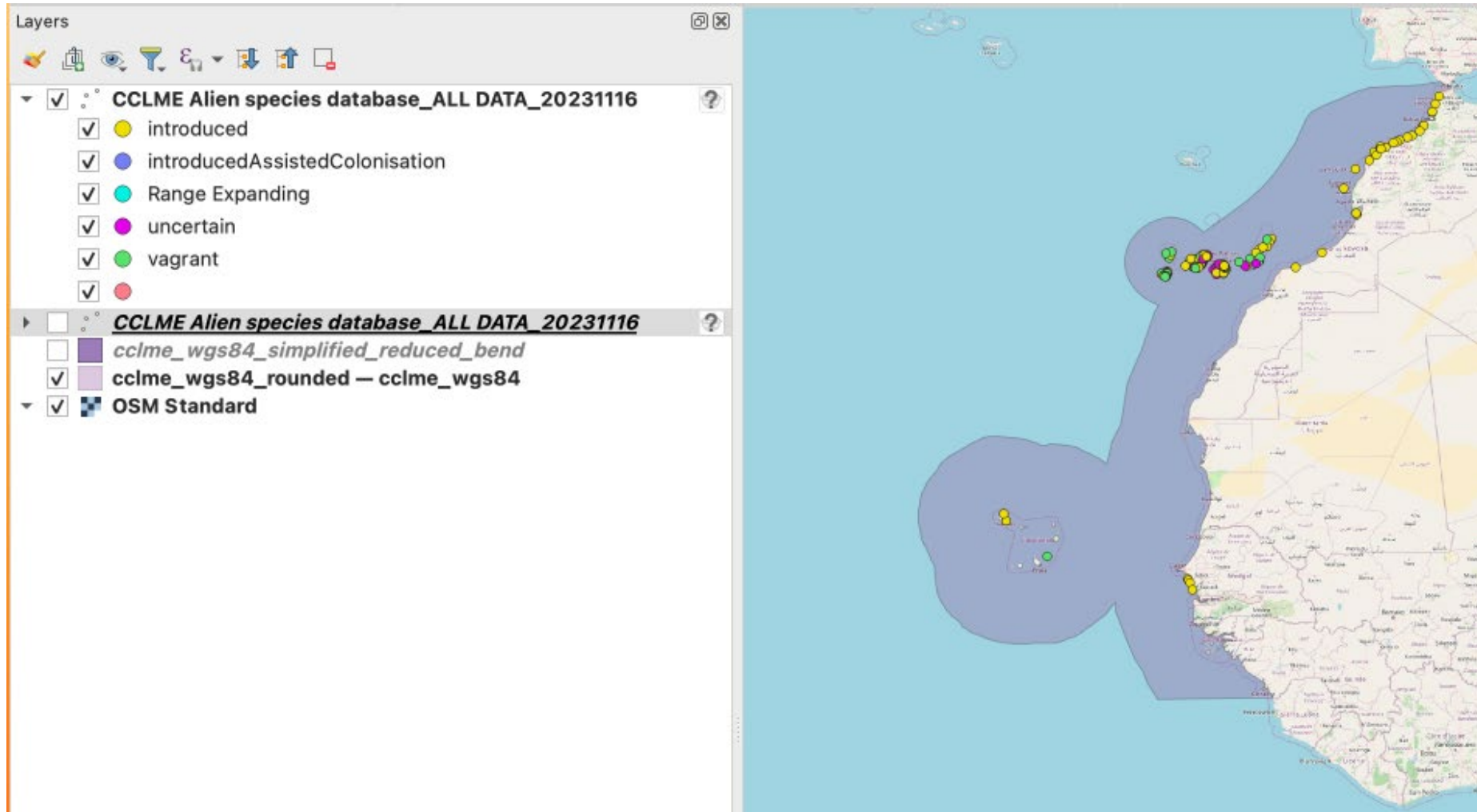
Presence in the analysis

Species validated considered in the assessment (1) or not (0)



Discussion

How to present the data - establishmentMeans



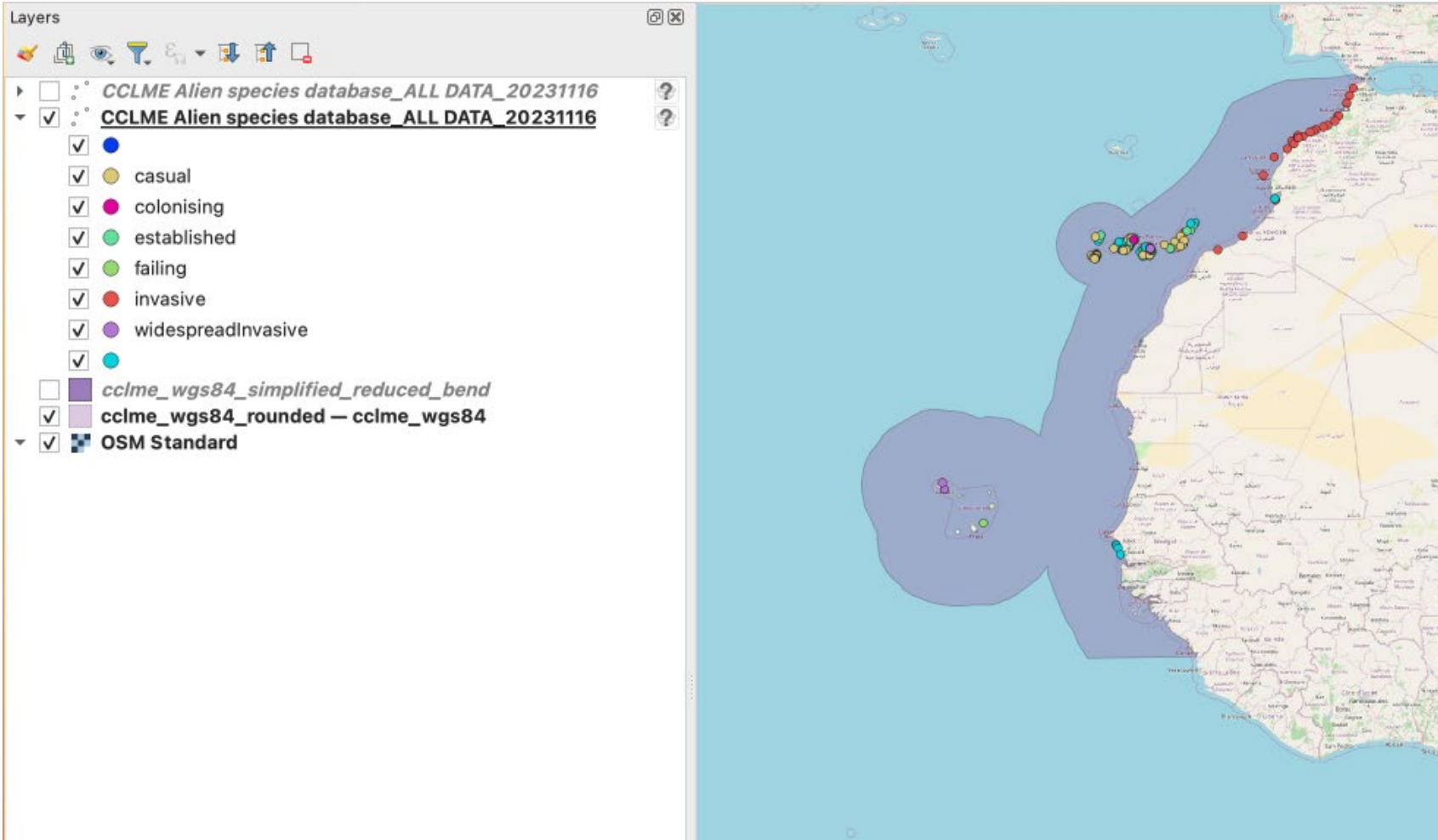
The CCLME Eco-GIS Viewer is also a tool aimed at presenting meaningful analysis results.

Option: Present the Database records as **points**

The example at the left depicts the database records with different colour for the term **establishmentMeans**

Discussion

How to present the data - degreeOfEstablishment



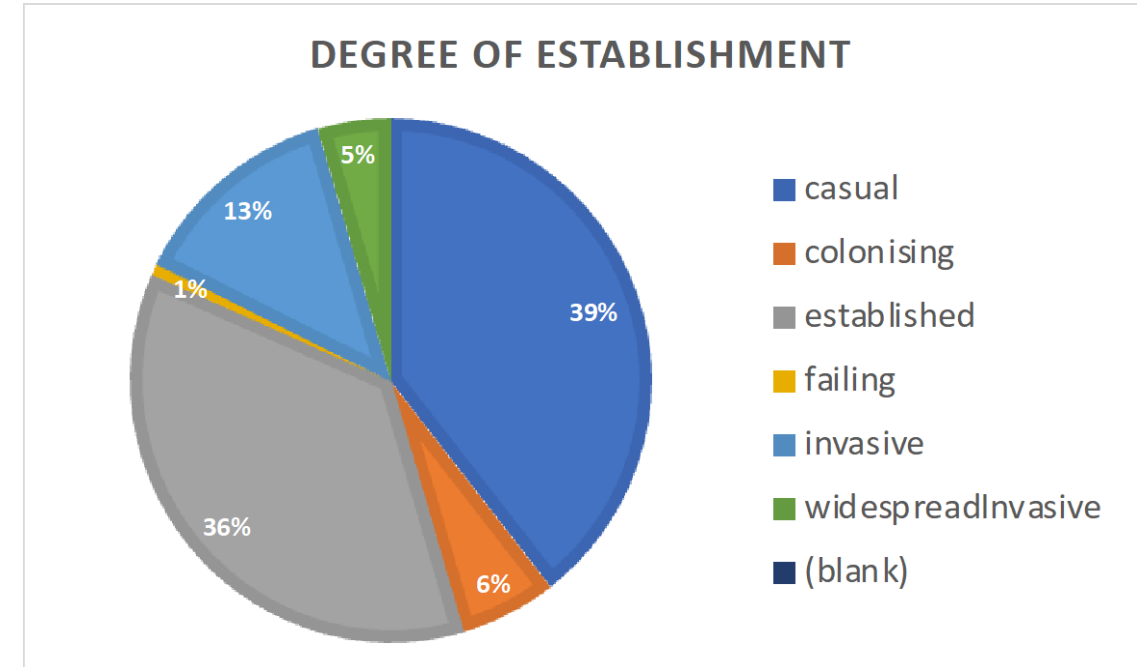
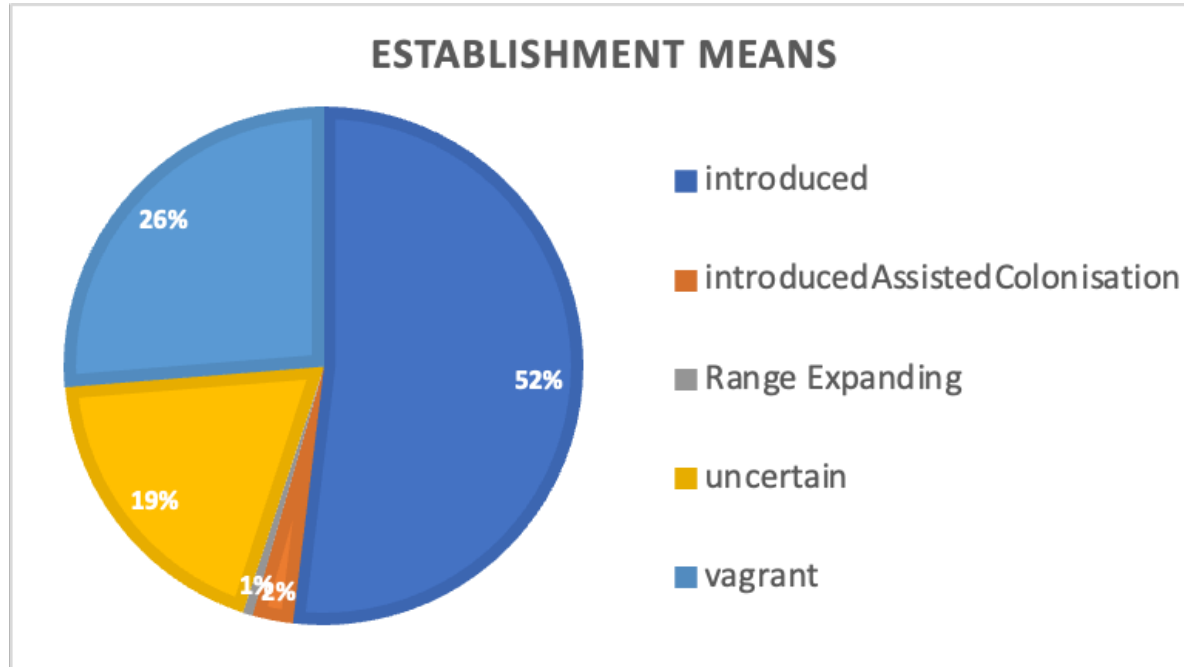
The example at the left depicts the database records with different colour for the term **degreeOfEstablishment**

We need to define the color code i.e. **invasive** in **red**, **established** in **green** etc.

Would it be useful to have the data presented using a colour code for any other of the fields?

Discussion

How to search the data



The terms **establishmentMeans** and **degreeOfEstablishment** are populated properly in the database

Discussion

How to present the data




Option for consideration: Present the Database records with **colored symbols**

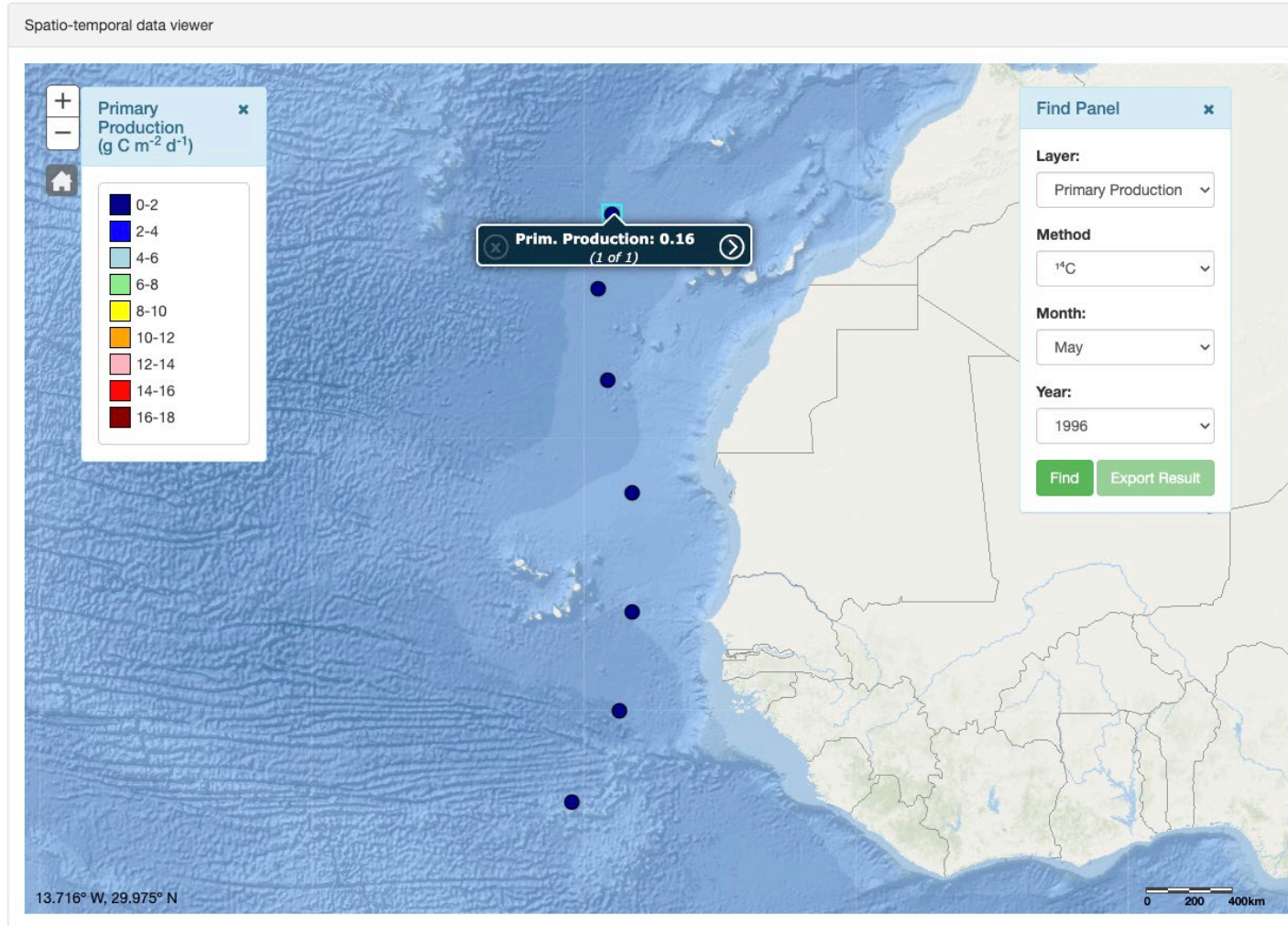
one term (e.g. **establishmentMeans**), can be depicted with different **color**

and the other (**degreeOfEstablishment**) with different **shape**

or vice versa...

If agreed, need to define which color and which shape for the respective values e.g. **red** for **invasive** and  for **introduced**, etc.

Present the Database with time filtering capabilities



Question: Do we need time filtering capabilities on the **eventDate** (Date-time when the event was recorded; e.g. year and/or month)?

The example on the left is from the **Primary Production** database.



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THANK YOU

