

Preparation

Please do this while waiting

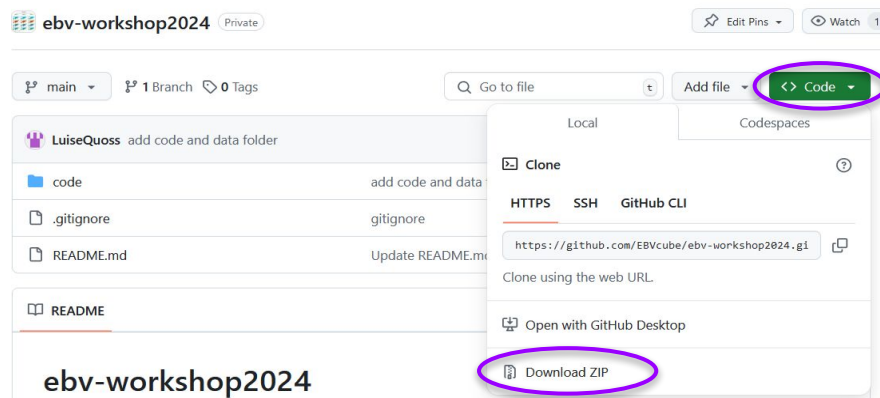
1. If you haven't done yet: download the GitHub repository

- If you have git installed use: git clone <https://github.com/EBVcube/ebv-workshop2024.git>
- Else:
 - a. Go to the GitHub repository: <https://github.com/EBVcube/ebv-workshop2024>
 - b. Download as Zip-file and then unzip

1. Open your RStudio and the the two codes:

- b. 01_explore_dataset.R
- c. 02_create_ebvcube.R

Now you are ready!





BIODIVERSITY
BUILDING
BLOCKS FOR
POLICY



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EBVCube: Enhancing Biodiversity Data Sharing with Interoperable Geospatial Standards

EBV Data Team



iDiv



NATURA
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In collaboration with
NaturaConnect

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EBV Data Portal Workshop
Session 2 / 14.10.2024 / On-line

Workshop

EBVCube: Enhancing Biodiversity Data Sharing with Interoperable Geospatial Standards

Session 1:

Overview of the EBVCube Concept and EBV Data Portal

Date and time: 07-Oct. 2024 from 11:00 to 12:00 am

Session 2:

Hands-on training on the `ebvcube` R package

Date and time: 14-Oct. 2024 from 11:00 to 12:00 am



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Agenda

1. Recap of EBVCube format by Emmanuel (5 min)
1. Module 1: Explore an EBVCube netCDF with R (20 min)
1. Module 2: Create an EBVCube netCDF with R (20 min)

Session 2

By

Emmanuel Ocegüera

Luise Quoss

Lina Estupinan-Suarez

EBV Cube Format

A data format for multidimensional geospatial data of biodiversity

Recap slides

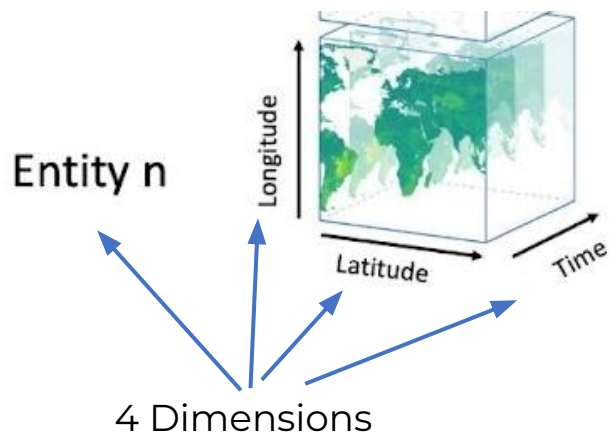


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Hierarchical structure of the EBV Cube Format

A data format for multidimensional
geospatial data of biodiversity

4D Data cube

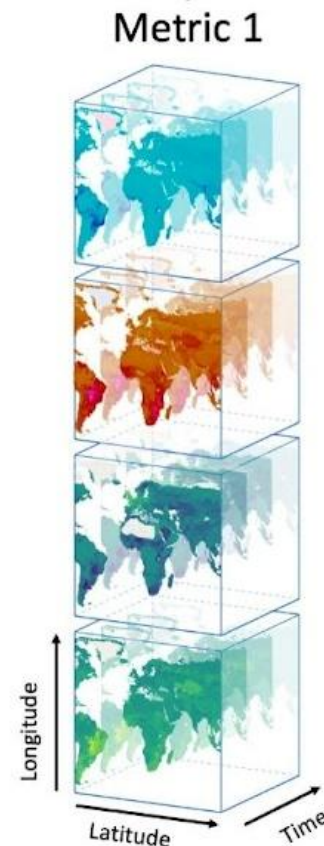


Entity 1

Entity 2

Entity 3

Entity n



How to: https://portal.geobon.org/downloads/pdf/how_to_ebv-portal.pdf

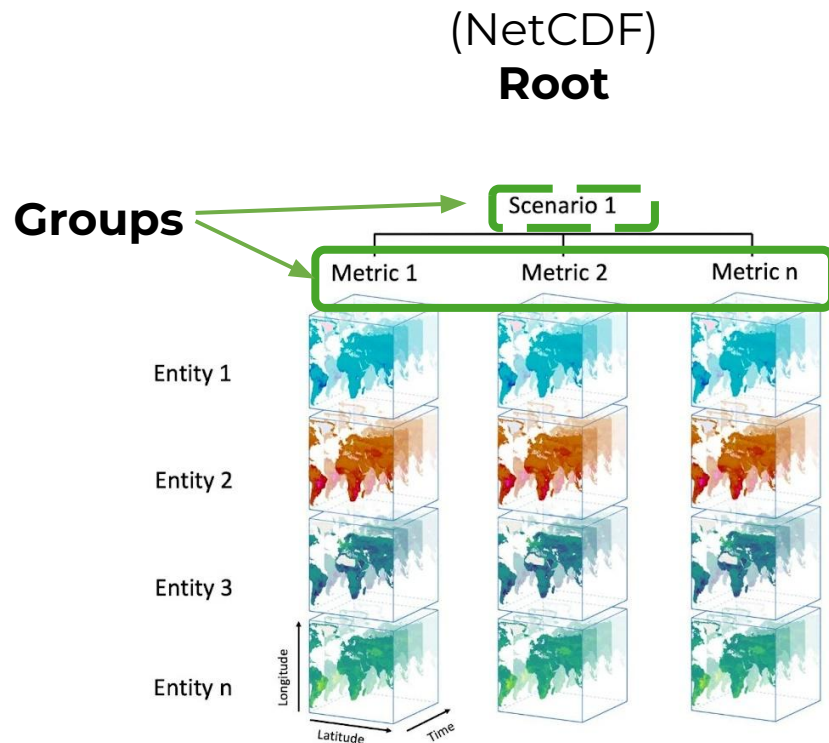
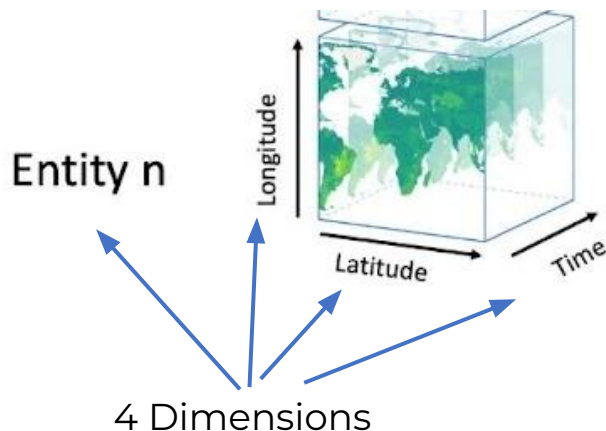


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Hierarchical structure of the EBV Cube Format

A data format for multidimensional
geospatial data of biodiversity

4D Data cube



© Christian Langer/ iDiv
Quoss et al. (in prep)



How to: https://portal.geobon.org/downloads/pdf/how_to_ebv-portal.pdf



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The EBV Cube Module 1

Exploring EBV Cubes



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Module 1 - Plan of action

1. Theoretical exercise: apply one hypothetical data set to the EBVCube netCDF structure (5 min)
2. Coding exercise: explore the structure of an EBVCube data set with the ebvcube R package (15 min)

Useful links:

Repository of the ebvcube R package: <https://github.com/LuiseQuoss/ebvcube>

CRAN repository: <https://CRAN.R-project.org/package=ebvcube>



Theoretical dataset exercise

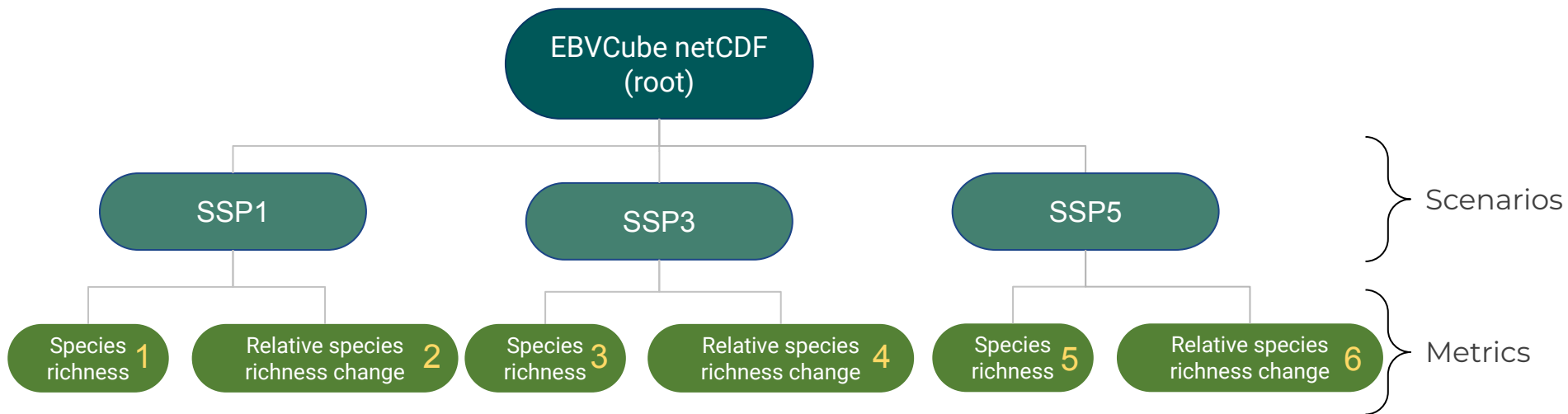
Map the following setup to the EBVCube format

Imagine you modelled the global species richness and the relative species richness change for three different scenarios (e.g. SSP-RCP based) for all taxa. You cover the historic baseline (1900) and one future date (2050).

1. What is the hierarchical structure of the dataset? Draw a quick graph.
2. What are the dimensions of the cubes?
3. How many cubes are in this EBVCube netCDF?
4. Additional: What is changing if you model for different species, e.g. ten bird species?



Solution



Cube dimensions: longitude [360], latitude [180], time [2], entity [1] [10] Amount of entities if ten bird species

Amount of cubes: 6

Similar dataset: [Global trends in biodiversity \(BES-SIM PREDICTS\)](#)



Coding exercise

Switch to your RStudio and get started!

1. Open the 01_explore_dataset.R code that you find in the code folder
2. Go through the code together
3. Have time to explore the functionality by yourselves and ask questions



Module 2

The EBV Cube creation

Defining the netCDF structure and input data



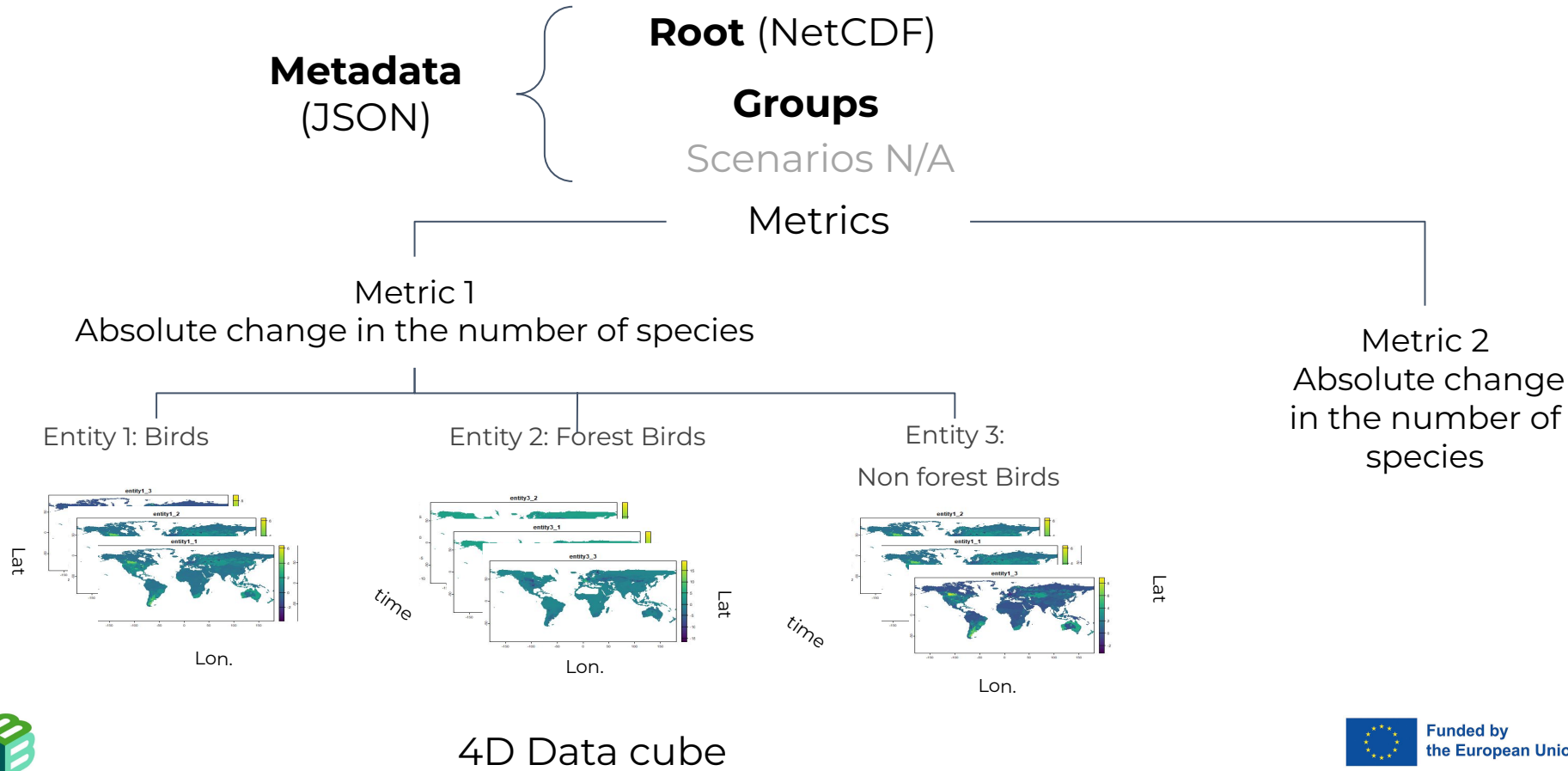
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Module 2 - Plan of action

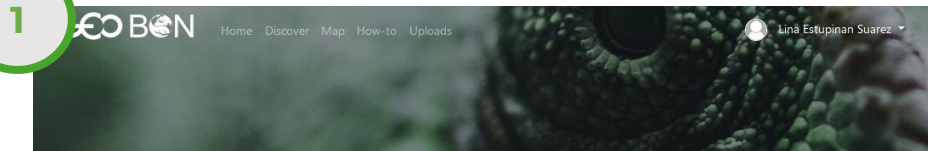
1. Explore metadata from the EBV Data Portal
2. Explore metadata in the repository (or zip file)
3. Coding exercise: create an EBVCube data set with the ebvcube R package for Tiff files
4. Create your own cube (if time allows)



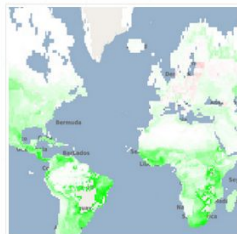
NetCDF structure for the Local bird diversity (cSAR/BES-SIM) data set



First step: Metadata used to create netCDF hierarchical structure



You are viewing the **Initial Version**, the most recent version of this dataset.
Date of publication: February 25, 2022



Local bird diversity (cSAR/BES-SIM)

by Ines Martins

Changes in bird diversity at 1-degree resolution caused by land use, estimated by the cSAR model for 1900-2015 using LUH2.0 historical reconstruction of land use. [\(continue reading\)](#)

Dataset CDF ID: 1000

Metadata: ACDD (JSON) | EML (JSON)

BirdsLUH 2.0 projections PREDICTS land-use

Show on map

General information EBV attributes

ID	Title	Date of creation
1	Local bird diversity (cSAR/BES-SIM)	2018-01-01

Summary

Changes in bird diversity at 1-degree resolution caused by land use, estimated by the cSAR model for 1900-2015 using LUH2.0 historical reconstruction of land-use.

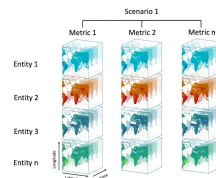
References (Hover over DOI to see details)

<https://doi.org/10.1101/2020.04.14.031716>

2

```
JSON Raw Data Headers
Save Copy Collapse All Expand All Filter JSON
code: 200
message: "List of dataset with the id 1"
data:
  id: "1"
  naming_authority: "The German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig"
  title: "Local bird diversity (cSAR/BES-SIM)"
  date_created: "2018-01-01"
  date_issued: "2022-02-25"
  summary: "Changes in bird diversity at 1-degree resolution caused by land use, estimated by the cSAR model for 1900-2015 using LUH2.0 historical reconstruction of land-use."
  references:
    0: "10.1101/2020.04.14.031716"
  source: "Uses the LUH 2.0 projections for land-use, and PREDICTS based coefficients for bird affinities to land-uses. See more details in associated publication: Pereira et al. 2020, https://doi.org/10.1101/2020.04.14.031716"
  coverage_content_type:
    0: "modelResult"
  project: "BES-SIM"
  project_url: "https://www.idiv.de/en/groups_and_people/core_groups/biodiversity_conservation/projects.html"
  creator:
    creator_name: "Ines Martins"
    creator_email: "istmartins@gmail.com"
    creator_institution: "German Centre for Integrative Biodiversity Research (iDiv)"
    creator_country: "Germany"
  contributor_name:
```

3



Biodiversity Building Blocks for policy



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Explore the provided metadata file (JSON format)

Guiding questions/points:

- How many metrics and scenarios are in the data set?
- What is the geographical extent of the data set?
- What is the temporal span?
- Make slight edits to the names of the metrics



Thank you!



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EBV Data Portal

The EBV Data Portal includes a variety of EBV raster datasets.
You can import these datasets into the map with a single click. You can also upload your own EBV dataset for sharing with others.



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