

Data for ENMs/SDMs

Two types of data

- ▶ Species' occurrence data
- ▶ Environmental (climate) data

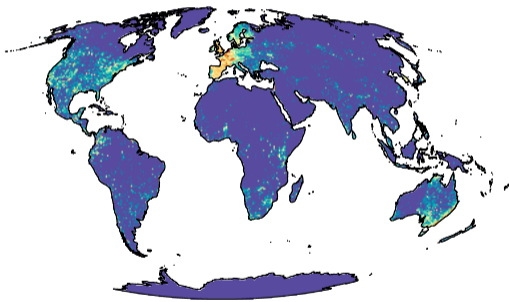
Species' occurrence data

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- ▶ Where the species was observed (1) and where not (0)
 - ▶ Typically, only where the species was observed
1. GBIF: <https://www.gbif.org/>
 2. iNaturalist: <https://www.inaturalist.org/>
 3. eBird: <https://ebird.org/>
 4. ...

Species' occurrence data

Strong geographic and taxonomic biases



Number of mammal records (\log_{10})



- ▶ Mostly animals
- ▶ Mostly vertebrates
- ▶ Mostly birds and mammals

- ▶ Global Biodiversity Information Facility (GBIF)
- ▶ \approx 3.5 billion records
- ▶ Direct upload and pull from other databases

Go to <https://www.gbif.org/> to download data

Climate data

Climate data

1. WorldClim: <https://www.worldclim.org/>
2. CHELSA: <https://chelsa-climate.org/>
3. PRISM: <https://www.prism.oregonstate.edu/>
4. ...

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Every climate data is different and you should use the one that is best for your case.

In this course, we will use WorldClim, which is easy to use, very reliable, and often used in real applications.

Go to <https://www.worldclim.org/> to download bioclimatic variables at 10 arc-minute resolution.

Bioclimatic variables

- ▶ Generated from temperature and precipitation
- ▶ Annual values, averaged over ≈ 30 years
- ▶ Usually, 19 variables, but sometimes more

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For example:

1. Mean annual temperature (BIO01)
2. Maximum temperature of the warmest month (BIO05)
3. Total annual precipitation (BIO12)
4. Precipitation seasonality (BIO15)

