Spatial Analysis in R
An introduction to accessing spatial biodiversity data and spatial analysis in R

2th-6th November 2020

Gothenburg Global Biodiversity Center

Description: During this five-day workshop you will learn how to work with spatial biodiversity data in R, starting with the very basics and ending in slightly more complex analyses similar to methods frequently used in scientific papers. The course is split into five days. You will be introduced to the basic R syntax for dealing with the most common spatial data types as well as specific R-packages to perform basic spatial analysis. You will also learn to mine large biological data sets from big data platforms such as IUCN and GBIF. We will then apply these data, which mostly consist of species occurrences and distribution maps, for downstream analyses and will be displaying the data in different types of plots before we delve more deeply into statistical analyses involving spatial data, including dealing with spatial auto-correlation and the logic behind and purposes of different map projections. Following this we will give a brief introduction to mixed models in a Bayesian framework using the MCMCglmm package in R. We will start from the basics on how to specify the model, followed by some exercises on how to modify our models to include random effects or change the prior expectations. Finally, we will see how to add special types of random effects that are often used in comparative analysis involving several species. The final day will try to combine some of the tools learned from the four different days along with a few new analytical tools and the students will be tasked with working on their own to figure out how to generate and analyze spatial datasets.

At the end of this workshop you will be equipped with the knowledge and tools to produce publication quality spatial analyses and figures for presenting spatial biodiversity data in your research. We encourage you to bring your own data and problems, which we can help you tackle during the course.

Apply for the course here

Course teachers: Soren Faurby, Ferran Sayol and James Hagan
Recommended background: Basic knowledge and experience in R or other programming languages
Course level: PhD level (motivated Master's students welcome)
Fee: No fee
Location: Online course
Sign up deadline: October 5th
Contact: Heléne Aronsson, project coordinator at the GGBC (helene.aronsson@bioenv.gu.se)