Welcome the world of Predictive Ecology

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INSTRUCTIONS FOR THE PREDICTIVE ECOLOGY COURSE

1. PAPERS

For the first part of the course, I would like you to divide the group in two, and each group should chose one of the following two papers to read:

PERFICT: A Re-imagined foundation for predictive ecology
(https://onlinelibrary.wiley.com/doi/full/10.1111/ele.13994)

OR

Empowering ecological modellers with a PERFICT workflow: Seamlessly linking data, parameterisation, prediction, validation and visualisation
(https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/2041-210X.14034)

Please take notes on what you find most important about the papers and we will discuss it in class.

Now you will find the instructions necessary to navigate the practical part of the course on Predictive Ecology.

2. GROUPS

First, you will need to divide the whole class into 3 groups. These will be known at first as the TREE group, the BIRDS group and the TURTLE group. Each group will have to bring one (AND ONLY ONE) computer to the course.

3. NEEDED SOFTWARE

The 3 computers should be preferably Windows based. They will have to have the following installed: 2.1. Excel (preferably) or OpenOffice Calc. 2.2. R 2.3. RStudio (Desktop, not Server)

To install the last two, please use the following useful illustrated guide: https://techvidvan.com/tutorials/install-r/#:~:text=Step%20%E2%80%93%201%3A%20Go%20to%20CRAN,the%20latest%20version%20of%20R.

Alternatively, watch this YouTube Video: https://www.youtube.com/watch?v=9-RrkJQQYqY with the accompanying link: https://rpubs.com/MohammadShadan/installrrstudio

Or you can even skip all that, and download the software directly here!
R: https://cran.r-project.org/bin/windows/base/R-4.5.1-win.exe RStudio: https://download1.rstudio.org/electron/windows/RStudio-2025.05.1-513.exe
Download and click on the .exe and follow instructions. Use all defaults.

4. INSTALL LIBRARIES

Once you have managed to install the needed software, you should install the libraries we will need for the exercise. It is important to do this BEFORE the course. Libraries can take time to download and install and we don't want to waste time doing it during the course. Ideally, install each new library (in other words, run each line below) after restarting your R session (shortcut is Ctrl + Shift + F10). This will help prevent errors (which can anyway still happen!).

Once you have installed R, you can open it and run the code between the lines below, one at a time.

```
if (!require("Require")) {install.packages("Require"); require("Require")}
Require::Require("sf")
Require::Require("data.table")
Require::Require("terra")
Require::Require("reproducible")
Require::Require("ggplot2")
Require::Require("gridExtra")
```

5. DON'T PANIC

I know it might be scary at the beginning, especially if something doesn't work. But we will go very slowly with the hands-on exercise, and I will guide you through it. There is no need to panic. Even if you were not successful installing the libraries, the important thing is to try! If you have any errors during library installation, please send me an email at `tati.micheletti@gmail.com` with *a print screen or a copy of the error* and I will help you.

6. OBJECTIVES

The main objective of the practical part of this course is to answer the following scientific question (with made up data, of course):

Are birds good umbrellas for turtles now and in the future?

in other words

Do we have a positive relationship between bird abundance and turtle habitat suitability?

See you soon!

Tati