Introduction to R for Ecologists

Links to study materials

Collection of links to some useful learning materials, websites etc.

Books

- Getting started with R: An introduction for biologists (Beckerman & Petchey)
    - a book focused on an introduction to R for biologists (import data, inspect data and plot data)
    - available online from NTU library (only in NTU campus)
    - website R4All (http://www.r4all.org/) with scripts, datasets etc.
- R for Data Science, 2nd edition (Wickham, Çetinkaya-Rundel & Grolemund)
    - a book focused on introducing `tidyverse` package, data wrangling, plotting and analysis
    - https://r4ds.hadley.nz/ for the second edition of the book

Short introductory materials

- Cookbook for R - website by Winston Chang, with handy advices how to do thinks from data management, simple analysis to plotting graphs. If you google some question "how to do something in R", you often land in this website.
- Quick R - accessing the power of R (Rob Kabacoff) - relatively new website, focused on the R beginners (generally usefull, although it focuses on previous users of SPSS and SAS)
- Getting started in R (S.A. Bashir) - short English introduction
- R for beginners (Emmanuel Paradis) - longer English introduction
- Simple R - using R for introductory statistics (John Verzani) - the most comprehensive English introduction
- fasteR: Fast Lane to Learning R! (Norm Matloff) - Learn R in non-tidyverse way!

More advanced materials - still introduction, but focused on statistics

- Learning statistics with R: A tutorial for psychology students and other beginners (Danielle Navarro) (book website here)
- The new statistics with R: An introduction for biologist (Andy Hector) (NTU has online version in library)

Handouts - Short materials worth to be printed and kept handy

- R Reference Card v 2.0 (Tom Short, Matt Baggott, Emmanuel Paradis) - simple handout with all important R commands and their explanation - keep it handy!
- R Reference Card for graphs - plotting commands
- List of graphical parameters - from R Graphics (P. Murrell)
- Cheat sheets for popular R packages, e.g. stringr for work with strings, tidyr for reshaping data (e.g. wide-to-long format) and dplyr for manipulating (potentially huge) tables. All packages are from tidyverse.

Other materials which may come handy

- Manipulating big data in R for vegetation scientists (Viktoria Wagner)
    - contains useful examples of working with strings (library `stringr`) and manipulating tables (`dplyr`).
- A Guide to Reproducible Code in Ecology and Evolution (British Ecological Society)
    - focused on the use of R (and Python) for documenting scientific studies (when you want to publish your data). Contains several useful tricks for better organising the workflow in R.
- R Inferno (Patric Burns) - if you start to feel as being in R hell...