

# **Introduction to the R Software for Ecologists**

## **Workshop Syllabus**

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### **Workshop Description:**

In this series of 3 workshops attendees will be introduced to the R computing software. The goal of the workshop is to get early career scientists to be comfortable with carrying out their data management and analysis needs through reproducible and efficient code. Attendees will learn enough of the basics of the R software, from organizing a working directory, to installing packages, and manipulating data to be able to write their own scripts for their research needs. Furthermore, attendees will receive instruction in analyzing and visualizing their data. This workshop is designed for those that have no previous coding or R experience.

### **Workshop Learning Objectives:**

- Attendees will learn how to independently navigate the R software environment as well as online community support resources to address their unique research needs.
- Attendees will learn best practices for writing efficient and reproducible R scripts that can streamline their data management and analysis pipelines.

### **Topics Covered:**

- Installing and maintaining the R software and packages.
- Organizing and managing working directories, datasets, and file input/output
- Importing, cleaning and manipulating data in a way that preserves raw data, documents changes and automates tasks previously done by hand.
- Basic statistical model creation and evaluation.
- Producing interpretable figures for publication.
- Organizing scripts and working directories for sharing reproducible workflows.
- Using online community support resources to answer coding questions and find solutions to common coding problems.

### **Workshop Format:**

Workshops will be in-person only. Each of the 3 workshops will be 3 hours in length and will require each attendee to have a computer connected to the internet and loaded with the R and R studio software. The 1<sup>st</sup> half of each workshop will be a tutorial on the topic given by the instructor. The 2<sup>nd</sup> half of each workshop will be a hands-on coding challenge where the instructor and facilitators will help attendees through open-ended coding exercises. Necessary scripts, data and other resources will be provided.