Introduction to the R software for Ecologists

Lesson plan

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Module 1:

* Using R as a calculator
* Storing values in objects
* Querying object characteristics
* Working with dataframes
* Using pre-built functions
* Building and using custom functions
* Using If/Else statements
* Using For Loops

Module 2:

* Loading and cleaning datasets
* Data wrangling and manipulation
* Creating summarized datasets
* Finding patterns in large datasets with custom functions
* Group Activity:
  + Decode and translate the two drought functions and storm function into plain language. See if you can figure out what these functions are doing by breaking them down to their parts
* Group Activity:
  + Find your own patterns or phenomena in the weather dataset
    - “heat waves in June”
    - Last day of snow for each year
    - 95th percentile of rain for each year
    - Etc.
* Outputting your new datasets

Module 3:

* Merging datasets together
* Subseting datasets
* Group Activity:
  + Wrangling, cleaning, and merging your own dataset with MCSE yield data
  + Visit <https://lter.kbs.msu.edu/datatables> and find a datatable from the same plots that you would like to process and merge with the yield dataset.
  + Pull the data onto your computer, clean it, computer your statistic of interest and merge it with the provided yield dataset.