Water Data Boot Camp

Spring 2018

# Unit 1: How has Falls Lake reservoir impacted streamflow?

**What you will learn:**

1. The data analysis process
2. How to find streamflow data
3. Tools and tricks to answer the following questions in excel
   1. How do monthly streamflows compare?
   2. How has the probability of a 100 or 500 year flood changed?
   3. How have minimum streamflows changed? Does the river spend more or less time below the 7Q10 threshold?
   4. How has mean annual streamflow changed over time? Before the reservoir? After the reservoir?
4. A teaser showing the same analysis done in R and python. The final trend analysis will be done for all streams in North Carolina, with results displayed on a map.

**Primary Focus:**

1. Understanding how to find data
2. Basic data management skills and documentation
3. How to manipulate data in excel
   1. Pivot tables
   2. Vlookup
   3. If statements
   4. Sumif, countif, etc.

# Unit 2: Question around water budgets

**What you will learn:**

1. How to work with spatial data on water use
2. How scripts work in R and Python
3. A brief analysis in excel, focusing on R and Python
   1. …

**Primary Focus:**

1. Understanding the basic syntax of coding
2. Basic data management skills and documentation
3. How to manipulate data in both R and Python

# Unit 3: How often is Jordan Lake exceeding water quality limits?

**What you will learn:**

1. How to find and download water quality data
2. How to assess water quality parameters in context with policy thresholds
3. How to build decision support tools with user inputs in excel, R, and python (TABLEAU???)

**Primary Focus:**

1. Building decision-support tools for an end user
2. Communicate results with data visualization tools