**NPP\_QAQC README:**

KMH

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This document explains how the NPP\_QAQC project has been set up to be used. It will be helpful for the user to read this document before trying to open the project and run the scripts.

**As of 20180417, I still need to build a Rmd script that will help to check data once the data for an entire site has been collected. At this point, this project only looks at data at the end of the collection day.**

I am distributing the NPP\_QAQC work as an “R Project.” This seems to be a useful way to distribute R related scripts and documents around. An R Project sets the working directory when the project is open, thereby making it unnecessary to set the working directory in a strict manner. The instructions may look complicated at first, but are pretty simple after you get the hang of it.

Instructions:

1. Open the NPP\_QAQC directory for the entire project.
2. At the end of the field day, place your daily Excel files (.xlsx format) into the *data 🡪 data\_daily 🡪 xlsx\_format* directory. This directory should be empty prior to placing your files there. If there are files in this directory from a previous day, they should be moved to *data 🡪 data\_daily\_archive 🡪 xlsx\_format* directory. Also make sure that the *data 🡪 data\_daily 🡪 csv* folder is empty. If not, move the files to the *data 🡪 data\_daily\_archive 🡪 csv* directory.
3. Open NPP\_QAQC.Rproj – this opens the R Project. Look for the “Files” tab (located next to the Plots, Packages, and Help tabs – for my layout, they are in the lower left pane), and navigate to *NPP\_QAQC 🡪 r\_programs*. Click on the NPP\_QAQC\_Daily.Rmd file to open the R Markdown script for checking the daily data.
   * NOTE: The first time you run the QAQC\_Daily.Rmd program, you may need to adjust the paths to the various file directories in the program. The program notes where things may need to be changed by the USER. However, using an R Project should help make this unnecessary, I think. I’d welcome feedback about how things work.
   * NOTE: The first time you run the QAQC\_Daily.Rmd program, you may want to run each chunk of code inline (using the green play button for each code chunk) to look for errors. A ‘code chunk’ is designated by ```{r} *some code here…*```. Once your code is free of errors, you should be able to just knit the report in the future.
4. After your libraries are updated and your file paths are correct, you can click the icon at the top of the screen that has yarn and a needle, and says “Knit.” This will run the whole NPP\_QAQC.Rmd program, and, assuming there are no errors in the code, you will get a pop-up report after it has completed running. This document will show you potential errors in the daily data. The errors should be corrected in the *filled\_raw\_dataYYYY-MM-DD.csv* file mentioned in the next paragraph. Do not rerun the NPP\_QAQC.Rmd program after correcting the csv file because it will overwrite your corrections. The current version of the report will be saved at *NPP\_QAQC 🡪 r\_programs 🡪 NPP\_QAQC\_Daily.html*.

The Rmd program not only produces the report, but also reads in the individual daily xlsx files, converts them to csv files, combines those files and writes the combined file to *NPP\_QAQC 🡪 output 🡪 output\_daily 🡪 filled\_raw\_dataYYYY-MM-DD.csv*.

The Rmd program also reads in AJ\_AllQuads.csv (updated in 2016?) and SevilletaSpeciesList\_AJH.csv. These files should be located in *NPP\_QAQC 🡪 data 🡪 data\_other*.

* + NOTE: Each time you knit the report, the previous version will be overwritten unless you save the previous version. I explain how to save a report below.

1. Optional: You can save your report. To do so, click at the top of the report on “Open in Browser”. This will open the report in a web browser. Right click on the document, select “Save page as…” Save the document to the *NPP\_QAQC 🡪 ouput 🡪 report\_archive* folder. Be sure to add a date to the file name before exporting! The Format can be “Page Source” for this document because there are no figures in the document.
2. Once corrections have been made to filled\_raw\_dataYYYY-MM-DD.csv, save the file and close it. You can now open NPP\_QAQC\_Daliy\_Second\_Pass.Rmd from the Files tab in R Studio or from *NPP\_QAQC 🡪 r\_programs*.

This will load the filled\_raw\_dataYYYY-MM-DD.csv file, and run another report so you can make sure that your changes were made successfully. If you need to make further changes, you can make them in the csv file, and rerun this report. Once you are satisfied, you can save this second pass report just like the first report in Step 5.

1. Once you are finished with your corrections, move files from *NPP\_QAQC 🡪 data 🡪 data\_daily 🡪 xlsx* and *NPP\_QAQC 🡪 data 🡪 data\_daily 🡪 csv* to *NPP\_QAQC 🡪 data 🡪 data\_daily\_archive 🡪 xlsx* and *NPP\_QAQC 🡪 data 🡪 data\_daily\_archive 🡪 csv*, respectively.
2. In R Studio, at the top menu bar, select File 🡪 Close Project. You’re done for the day!