**Shiny Application SOP**

**Latest Update: 4/20/16; Taylor Stewart**

**R Best Practices:**

* Open the project file (lebs\_western\_basin\_app.Rproj) first to eliminate working directory issues
* Capitalization, format consistency, and spelling are very important!!
* shinyapps will not upload the app without current, up-to-date packages
* Maintain consistent column names between years/seasons
* Report time in military time; it must have all four digits (i.e. 0700, 1300)
* Report coordinates in decimal degrees
* Make sure missing values are blank in the raw data files, not N/A. An N/A value will be read into R as a character and change the structure of the variable (this is a bad coding practice!). A blank value will get read into R as an N/A, but maintain the integrity of the variable structure.

**R Data Updates:**

1. **Effort**
   1. Open data\_prep/WB\_Effort.xlsx
   2. Open the western basin file for the desired year; either
      1. F:/Western Basin Forage/” year”/”season”/trawl
      2. F:/Western Basin Forage/”year”/”season”/life\_stages
   3. Copy the appropriate columns into the bottom of data\_prep/WB\_Effort.xlsx
   4. Make sure all time values have four digits (convert to text)
   5. Save and close file
2. **Length-Weight:**
   1. Open data\_prep/WB\_LW.xlsx
   2. Open western basin trawl length weight file for the desired year
      1. F:/Western Basin Forage/
   3. Copy the appropriate columns into the bottom of data/WB\_LW.xlsx
   4. Use the Proper() function to capitalize the species names in Excel
   5. Make sure species names are completely spelt out (no shorthand)
   6. Fill in year and season variables
   7. Save and close file
3. **Standardized Catch:**
   1. Open data\_prep/WB\_CatchHA.xlsx
   2. Open western basin life stage file for the desired year
   3. Copy the appropriate columns into the bottom of data\_prep/WB\_CatchHA.xslx
   4. Use the Proper() function to capitalize the species names
   5. Make sure species names are completely spelt out (no shorthand)
   6. Change the life stages so that they are spelt out (a1 = Age\_1, etc)
      1. Use find and replace with match case selected
   7. Save and close catch file
4. **Catch (Counts):**
   1. Open data\_prep/WB\_CatchCounts.xlsx
   2. Open western basin trawl catch file for the desired year
      1. F:/Western Basin Forage/
   3. Copy the appropriate columns into the bottom of data\_prep/WB\_CatchCounts.xlsx
   4. Use the Proper() function to capitalize the species names in Excel
   5. Make sure species names are completely spelt out (no shorthand)
   6. Make sure size classes follow the same format (All Capital Letters)
      1. Use find and replace with match case selected
   7. Save and close file

**R Data Manipulation**

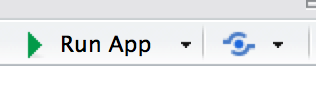
1. **Standardized Catch**
   1. Open data\_prep/shiny\_catch\_lifestages.R
   2. Run code
   3. Change year and season variables (lines 6 & 8)
   4. If no errors occur, the new data will automatically bind to the previous data and be saved as data/WB\_Catch.csv

**NOTE:** If preparing Spring data, zeros for all species/serials need to be entered for Autumn (Paste the data from data\_prep/WB\_CatchHA\_zero\_autumn.xlsx into data/WB\_CatchperHA.csv). The data being copied will work without errors as long as no new species have been added. If preparing Autumn data, delete the zero values pasted during zero prep.

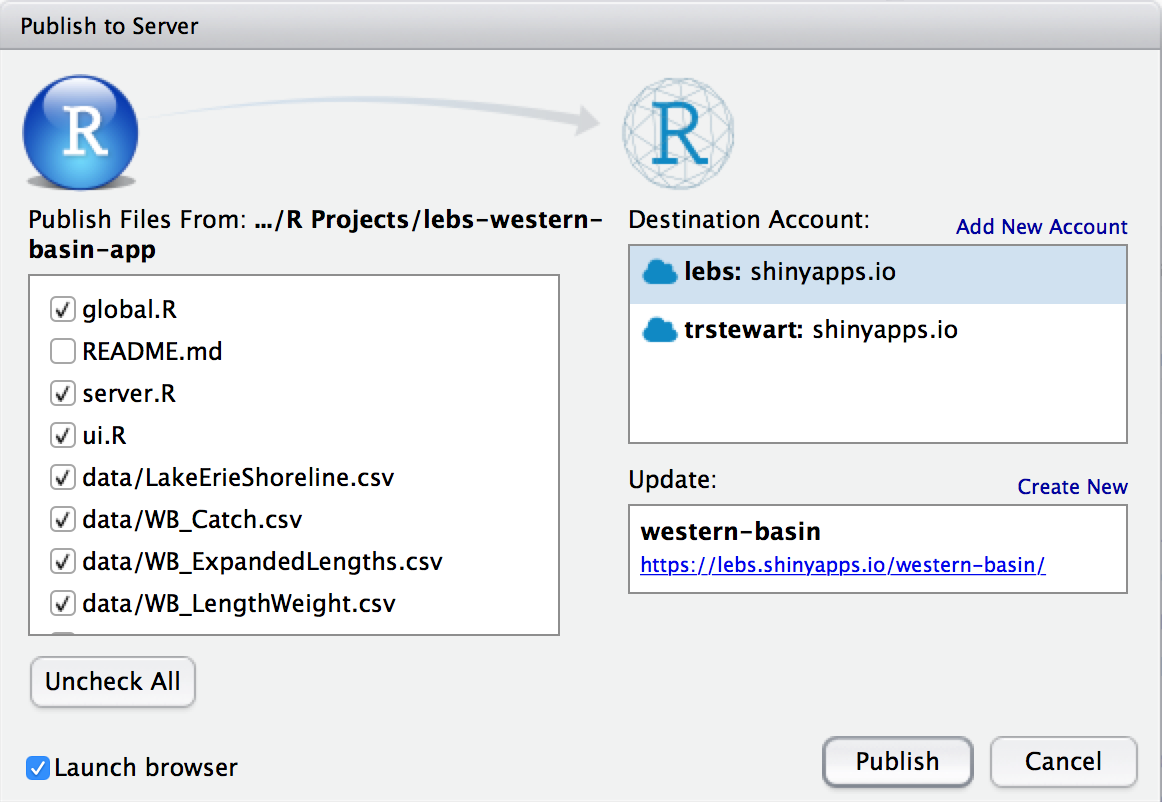
1. **Expanded Length Frequency (Bootstrap):**
   1. Make sure to have the LW and Count data input completed
   2. Begin by running data\_prep/shiny\_lw\_catch\_QAQC.R to check for errors
   3. Proceed only if no errors are found or after all errors are corrected
   4. Open data\_prep/shiny\_lw\_bootstrap.R
   5. Change year and season variables (lines 11 & 12)
   6. Run code
   7. If an error occurs, try traceback() to find out more info
   8. If no errors occur, the new data will automatically bind to the previous data and be saved as data/WB\_ExpandedLengths.csv
2. **Length Weight:**
   1. Open data\_prep/shiny\_lw.R
   2. Run code
   3. Change year and season variables (lines 7 & 8)
   4. If no errors occur, the new data will automatically bind to the previous data and be saved as data/WB\_LengthWeight.csv
3. **Water Quality:**
   1. Make sure to have the exported, raw YSI files (one Excel Files; multiple tabs) in the data\_prep/WQ\_raw folder
   2. Change the file name to be consistent with the other files
   3. Open data\_prep/shiny\_wq.R
   4. Change the inputs for lines 15, 16, 19, 22 & 54 to current year, season, and file paths
   5. Run code
   6. If no errors occur, the new data will automatically bind to the previous data and be saved as data/WB\_WaterQuality.csv

**R Shiny Application Update:**

1. **Shinyapps.io**
   1. Login
      1. UN: [rkraus@usgs.gov](mailto:rkraus@usgs.gov)
      2. PW: Great.Lakes\_
   2. Tokens
      1. Tokens are used to link Rstudio to shniyapps.io
      2. If not already linked, click “+ Add Token” under the Account/Token page
      3. Follow instructions provided
2. **Republish App**
   1. Open Rstudio and the western basin project
   2. Open server.R, ui.R, and global.R
   3. If all application files are open the commands will change to the following

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* 1. Run app and check for errors
  2. Click the blue symbol to the right of the “Run App” button to publish



* 1. Uncheck all files except the three scripts, five data files, and all contents in the www folder.
  2. Click “Publish” to sent to server