**Common data manipulation tasks**

1. Reading in data
   1. Read.csv
   2. Readxl()
2. Install packages
   1. Ipak function
3. Look at data
   1. Structure
   2. Plotting data
4. Standardizing data
   1. Changing case
      1. tolower()
   2. Changing class
      1. As.factor
      2. or my recent function
      3. Or when read in data
   3. Remove spaces
      1. trimws()
   4. Dates
      1. Lubridate
   5. Coordinates
      1. Plot it
5. Re-naming things
   1. Columns
   2. Levels of a factor
   3. Re-leveling
   4. Drop levels (get rid of ghost levels)
6. Manipulating dataframes
   1. Add columns
   2. Subtract columns
   3. Combine columns
   4. Divide columns
   5. tidyr (gather & spread)
      1. Wide to long
      2. Long to wide
7. Advanced manipulation
   1. Merging dataframes (adding new columns)
   2. Concatenating dataframes (adding new rows)
   3. Subsetting
      1. Filter
   4. Summarizing data
   5. Calibrations
      1. Raw output

Dplyr -

| **dplyr verbs** | **Description** |
| --- | --- |
| select() | select columns |
| filter() | filter rows |
| arrange() | re-order or arrange rows |
| mutate() | create new columns |
| summarise() | summarise values |
| group\_by() | allows for group operations in the “split-apply-combine” concept |