Lake_Water_Quality_Analysis

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```
library(tidyverse) #tidy packcages
```

```
## -- Attaching packages ---------------------------------------------------------------------------
```

```
## v ggplot2 3.2.1     v purrr   0.3.3
## v tibble  2.1.3     v dplyr   0.8.3
## v tidyr   1.0.0     v stringr 1.4.0
## v readr   1.3.1     v forcats 0.4.0
```

```
## -- Conflicts ------------------------------------------------------------------------------------ 
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(sf) # Package that can read and create shapefiles
```

```
## Linking to GEOS 3.6.1, GDAL 2.2.3, PROJ 4.9.3
```

```
library(mapview) # Interactive maps
library(LAGOSNE) # lots of clean datasets
library(USAboundaries) # Package that conyains the USA Boundary Data
```

LAGOS Analysis

Loading in data

First download and then specifically grab the locus (or site lat lon)

```
# download script
lagosne_get(dest_folder = LAGOSNE:::lagos_path())
```

```
## Warning in lagosne_get(dest_folder = LAGOSNE:::lagos_path()): LAGOSNE data for this version already 
##   Re-download if neccessary using the 'overwrite` argument.'
```

```
#Load lagos data
lagos <- lagosne_load()
```

```
## Warning in `_f`(version = version, fpath = fpath): LAGOSNE version unspecified,
## loading version: 1.087.3
```

```
# lagos dataset is list of lists and check what lists of data are in the lagos
names(lagos)
```

```
##  [1] "county"              "county.chag"         "county.conn"
##  [4] "county.lulc"         "edu"                 "edu.chag"
##  [7] "edu.conn"            "edu.lulc"            "hu4"
## [10] "hu4.chag"            "hu4.conn"            "hu4.lulc"
## [13] "hu8"                 "hu8.chag"            "hu8.conn"
## [16] "hu8.lulc"            "hu12"                "hu12.chag"
## [19] "hu12.conn"           "hu12.lulc"           "iws"
## [22] "iws.conn"            "iws.lulc"            "state"
## [25] "state.chag"          "state.conn"          "state.lulc"
```

```
## [28] "buffer100m"           "buffer100m.lulc"      "buffer500m"
## [31] "buffer500m.conn"      "buffer500m.lulc"      "lakes.geo"
## [34] "epi_nutr"             "lakes_limno"          "lagos_source_program"
## [37] "locus"
```

```
# Garb the lake center information
lake_centers <- lagos$locus
```