Dear Human.

If you are using this code to re-calculate ecosystem indicators for the New York Bight, read this first. If you need to my stable email is [Kurtcheim@gmail.com](mailto:Kurtcheim@gmail.com) and I can help if I have time.

In each file folder within the “CalculateIndicators” folder there are two sub folders, each called “Rcode” and “Data”. Navigate to the Rcode folder and there will be either .R scripts or .Rmd files that (1) describe exactly how to gather the data needed to develop indicators and format it then (2) and produce the indicator. The .R or .Rmd files will say for instance, go to this website, download this, etc.. Or it will have contact information for who to get it from, i.e. ask janet for an updated version of “survdat.rda”. Many of them pull data directly from within R using the ERDDAP server (data hosted by NOAA, that can be pulled into an R data frame). Others pull data from USGS server. This should be clear when opening the files.

The necessary data files, that were collected and used to develop the indicators (through 2019 in most cases) are stored in the “Data” folder. By the time you are working on this, those will be outdated, but will be useful to learn how to run the scripts and clarify any data formatting issues (i.e., if its not working with your new dataset, make sure your new dataset matches the format of the corresponding old dataset). Each of the R scripts pulls data from that sub-folder, so just make sure to adjust working directories appropriately. For instance

MidTL\_Inverts\_Forage/Rscripts/TrawlBiomass\_ForageFish.R creates an index of forage fish from NEFSC trawl data. The R script pulls from “MidTL\_Inverts\_Forage/Rscripts/Data/”

The first step in most R scripts is to spatially subset data (i.e., which data points are in the New York Bight?). This whole process (load packages, load shapefiles, spatially subset data, etc.) is wrapped into some functions that are stored in

CalculateIndicators/Rfunctions/LabelPoints.R

You WILL need to adjust the “LabelPoints.R” source code so that it points to the working directory where you have the shapefiles stored. I have them in “NYB Indicators/Datasets/Shapefiles”

Look at “LabelPoints.R” to see what it does. It is pretty nifty.

Each R script calculates indicators and then produces a final time series with the following columns:

**Year**: the year

**Variable**: The name of the indicator

**Val**: Indicator value

**Loc**: Location the indicator represents (usually “NY” but in most I also produce the indicator for Mid-Atlantic Bight, as well as the whole NE shelf ecosystem).

**N**: The raw number of observations used to calculate the indicator in each year. E.g., if there are 200 trawl sampels in Year 1999 that are used in the calculation of the 1999 indicator value, than that’s what N means. Some don’t have N and are just “NA”

Each script writes the indicator to the “Final\_timeseries” folder. So this folder has a big pile of final indicator time seires that are later used for analysis and plotting. They are ALL in the exact same format can so Rbind can be used to add them together.