**Modifications to the GOA trawl survey data (Ole updated 6/23/2015)**

“Process all trawl data.r” creates the files that can be read in to the spatio-temporal models.

**Inputs:**

**“goa\_data.csv”** – Downloaded the Alaska Fisheries Science Center trawl data from an online portal (downloaded February 2015 by E. Ward)

<http://oceanadapt.rutgers.edu/download/>

We selected all years of data from the Gulf of Alaska (the “Raw Data” option). In this raw data file each row corresponds to the catch of a single species (or species group) in a standardized trawl tow. The location of the center of the tow is noted in latitude and longitude and other identifiers are provided (Station number, etc) as well as directly observed covariates (temperature, bottom depth, etc.). Note that because each line is the catch for a single species, a single tow will be noted on multiple rows of the data set.

**“size\_data\_goa.csv”** – the observed length distribution from sampled individuals during the trawl survey. This only includes data from 6 of the species (Pacific cod, Walleye Pollock, Arrowtooth, Sablefish, Pacific Ocean Perch, Pacific Halibut). This data includes all of the length data available for each species in the gulf of Alaska and was taken from the AFSC database and downloaded by Wayne Paulson in May 2015. Data from 1984 to 2013 is included.

**“size\_breaks\_6\_sp.csv”** – This file defines the size breaks used to divide each of the 6 species into large and small categories. This also has a allometric scaling coefficient for length to weight transformations derived from FishBase: Weight (g) = a\*Length(cm)^b. I used to across study values for a and b in the equation.

**“final species list.csv”** – This is the list of species that is used to collect

**Outputs:**

**“goa\_trawl\_final\_albers+temp.csv"** – has the three species complexes (described below) summed and the total CPUE for all species and the total CPUE for the species included in individual columns. has predicted temperature covariates for each year based on the smoothed temperature surface developed for each year using a GAM and added the projection for the albers projection (UTMs). This is the file that should be used in most of the analyses for groundfish.

**"goa\_trawl\_final\_size\_albers+temp.csv" –** This is the same basic info as above but with only data for 6 spcies with size information (labeled as “small” and “large” respectively). Additionally, this data only includes information for which there is sampling information. So if there were no measured lengths for a particular tow, the biomass for each size category is listed as missing (-9999). The length of fish converted to biomass by using a length-weight relationship from FishBase and encoded in the size\_breaks file.

**"goa\_projection\_points+temp.csv"** – projected points on a 2x2 grid. Location, depth, and bottom temperature for each predicted point. Smoothed temperature surface developed for each year using a GAM. Also have the projection for the albers projection (UTMs).

**#### Species Complexes.**

I also looked at the species with ***no*** scientific names, and these are the only three that looked likely to be useful for the fish community and needed to be converted into species complexes.

The rock sole complex:

Lepidopsettasp. ( occurs in the early years)

Lepidopsettapolyxystra (northern rocksole)

Lepidopsettabilineata (southern rocksole)

The Dusky and Dark Rockfish complex:

“duskyanddarkrockfishesunid” “”

“duskyrockfish” “Sebastesvariabilis”

“darkrockfish” “Sebastesciliatus”

The rougheye and Blackspotted rockfish complex.

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| --- | --- |
| rougheyeandblackspottedrockfishunid. |  |
| Rougheyerockfish | Sebastesaleutianus |
| Blackspottedrockfish | Sebastesmelanostictus |
| rougheye rockfish | Sebastes aleutianus |
| blackspotted rockfish | Sebastes melanostictus |

I included all of these species in the species list and then summed them into a single column in each file “Lepidosettasp”, “DuskyandDarkRockfish”, and “RougheyeandBlackspottedRockfish”