Sources of Data for the Togiak Herring Stock Assessment

**Data Sources:**

*refer to excel sheet for source links*

1. weight-at-age used for biomass forecast

a) uses forecast weights at age that were based on the most recent two-year average weights at age from the commercial purse seine fishery

2018 forecast: 2018ASAForecast v10 age12+ INPUT DATA FINAL gb 12-5-17 (excel)

observed weight at age for purse seine and total run

2019 forecast: 2017 purse seine gillnet WAA from greg 10-16-17 or access database

2. total purse seine annual catch

2018 forecast: TogHerrTables2017 (Table3 sheet)-convert to metric tons

2019 forecast: TogHerrTables2018 (Table3 sheet)-convert to metric tons)

2019 forecast: 1980\_2018\_harvest\_email to Greg v2

3. total annual observed aerial survey biomass (metric tons)

2019 forecast: TogHerrTables2018 Table2 (excel) or Herring survey evaluation 2019 (rankings sheet-'biomass estimate-model input' converted to metric tons)

4. total annual observed aerial survey biomass (metric tons-tuned to model)

2019 forecast: Herring survey evaluation 2018 (rankings sheet); 'included in assessment' column; if the value is a 1, then the actual biomass estimate is used (metric tons)

5. obs\_caa (millions); obs\_catch\_naa gillnet

2018 forecast: 2017Biomass\_final\_USED FOR 2018 FORECAST sheet 'Gillnet Biomass' column Z

2019 forecast: 2018Biomass\_SEM\_10\_23\_2018 sheet 'Gillnet Biomass' column Z

6. commercial catch weight-at-age (obs\_c\_waa) matrix (purse seine)

2018 forecast: 2017purse seine gillnet WAA from greg 10-16-17

2019 forecast: 2018Biomass\_SEM\_10\_23\_2018 sheet 'PurseSeine Biomass' column V

7. seine composition matrix

2018 forecast: 2017Biomass\_final\_USED FOR 2018 FORECAST sheet 'PurseSeine Biomass' column AS

2019 forecast: 2018Biomass\_SEM\_10\_23\_2018 sheet 'PurseSeine Biomass' column AS

8. mature composition matrix

2018 forecast: : 2017Biomass\_final\_USED FOR 2018 FORECAST sheet (totalrunbiomass) column Y

2019 forecast: 2018Biomass\_SEM\_10\_23\_2018 sheet (totalrunbiomass) column Y

- peak survey on 5/2/2018

- pre-peak harvest PS through 5/1 used age comps of groups 1-5

- post season suvey used age comp of PS group 6 (on 5/2)

- peak survey used PS age cmps of groups 1-5 (through 5/1)

9. total gillnet annual catch (metric tons)

2018 forecast: TogHerrTables2017 (Table3 sheet)-convert to metric tons

2019 forecast: TogHerrTables2018 (Table3 sheet)-convert to metric tons)

2019 forecast: 1980\_2018\_harvest\_email to Greg v2

10. Rules for catch

-catch on peak and after peak never included in aerial survey biomass estimate

-it is assumed that the catch was observed in the peak or post survey peak (i.e the same fish)

Notes: Survival (linear regression) versus Survival constant; to make survival the same for all ages and years, change (j<=5) to (j<=9)

*2009, 2015-2018 Biomass spreadsheets updated (labeled with sem and date) so percent by no. was calculated based on weighting by biomass and not by sample size for gillnet, purse seine, and total run biomass; only really needed to update total run percent by no for these years*

Recommendations:

1. collect at least 500 samples from each sample group (i.e. gillnet only had x number of samples which is only a confidence of y)

2. cross-validation study to determine when can't run model anymore with lack of aerial survey esitmates (jackknife)

3. control rule based on function of error bars on biomass estimate

4. not a market for gillnet catch so quota is not being fully harvested; therefore realized exploitation rate less than exploitation rate given (20%) every year; reallocation request from gillnet to PS in Togiak and then in Dutch Harbor from PS to gillnet; reallocation would increase realized exploitation rate

5. Nov. 28-Dec. 3 BOF

2020 forecast tasks:

1. include forecasted weight at age, for\_mat\_weighted, for\_seine\_weighted at the top of the report file.