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Status of 2020 Gulf of Mexico Shrimp Effort and Landings Estimates

NOAA Fisheries
Southeast Fisheries Science Center

Shrimp Advisory Panel Meeting
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Bottom Line Up Front: 2020 Gulf of Mexico Shrimp Effort and Landings Estimates Are Not Yet Available

BiOP does require them but it only specifies 'annually' so we shall still produce them

Challenges

- In the last several years, multiple changes have limited the capabilities of the SEFSC shrimp data enterprise
 - Routine updates require attention of expert programmers. e.g. there are no simple updates
 - Loss of vessels, declining chip return rates mean effort may be less representative of the fleet
 - Recently hired an excellent assessment scientist (Lew Coggins) and we are in the process of hiring a dedicated statistician for shrimp effort and bycatch

Technical Issues with existing code

- Code requires extensive updating each year
- Raw data is initially processed via several disjoint R scripts, Bash scripts, and Java programs.
- Following initial data processing, a collection of R scripts and bash scripts must be run in sequence to compute effort.
- Order of operations and code complexity result in a low probability of isolating and correcting coding or data errors or irregularities.

Technical Issues

- Data Issues
 - Trip ticket data differ from port sampling data because they do not have depth data and this causes these problems
 - Code is not able to derive depth information otherwise
 - Need the 10-30 fathom zone in subareas 10-21 to calculate the reduction in effort.
 - No depth zones and sparse area data from trip tickets also affect the landings estimates.

Interim steps

- Rebuild computer code
- Single R script that takes cELB data and estimates effort data on individual vessel trips.
- R code currently estimates annual effort data from all cELB units.
- Next steps will involve dividing these estimates into strata and scaling them up based on landings to estimate total effort.

Future

- NMFS must (and will) produce annual estimates of effort to meet BiOP requirements
- Longer term prognosis for the existing system is not great due to unknown representativeness of the original random sample of vessels and the decreasing return rates of chips.
- Solution is:
 - an improved system of effort data collection ensuring representative and equitable surveying of vessels
 - more efficient, robust, and automated code