

FY13 Coop Res , Cod progress report (8/20/2013)

Project Title: Investigating the selectivity of the eastern Bering Sea survey bottom trawl for Pacific cod, *Gadus macrocephalus*: Do larger, stronger fish avoid capture?

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Progress report (8/20/2013): Funding in the amount of 49.2k was awarded to conduct a field experiment on cod selectivity by the Alaska Fisheries Science Center's Resource and Assessment and Conservation Engineering Division. Funding covered vessel charter costs, fuel, and salaries for 6 scientists for 2 days. The Division provided a 3rd day of sampling, all sampling equipment, database storage, and support for analyses. Field work was carried out from August 3-5, 2013.

The experiment was conducted aboard the two chartered fishing vessels, FVs *Alaska Knight* and *Aldebaran*, used to carry out the 2013 eastern Bering Sea groundfish survey. Sampling consisted of side-by-side towing (within ¼ nmi of each other) using the standard survey trawl with one vessel towing at the standardized 3.0 knot towing speed and the other vessel towing at a faster 4.0 knot towing speed. Tow duration for the slower vessel was set at the survey standard 30 min (1.5 nmi) from the time the winches are locked until wire retrieval is initiated at the end of the haul. Tow duration for the faster vessel was set at 22.5 min (1.5 nmi) to approximate the same linear distance fished. Vessel and towing speed (3.0 or 4.0 knots) was chosen randomly. Captured Pacific cod were measured to the nearest cm and released live along with the remaining catch.

A total of 24 comparable hauls were made in the vicinity of two EBS survey stations (L-29 and I-22) at approximate depths of 135 and 85 m, respectively. Cod numbers ranged from 7 to 60 individuals per tow which is typical of the densities encountered during the standard survey. The data are currently being analyzed to determine if there is a size-dependent relationship between towing speed and cod catchability.

Deliverables:

- 1) Completion of research aboard the chartered vessels used to conduct the 2013 eastern Bering Sea groundfish survey. COMPLETED
- 2) A report of cooperative research activities with results provided to industry and management by December 2013.
- 3) Presentation of the experiment results at scientific meetings, to the Pacific cod stock assessment authors, and if warranted, to the NPFMC Groundfish Plan Team.
- 4) A draft report of the study to be completed by the end of 2014 for publication in a peer-reviewed science journal.