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**NOAA
FISHERIES**

National Marine Fisheries Service
Alaska Fisheries Science Center

**2021 AFSC
Seminar Series**

Matthew Kemp, AFSC FMA

Tuesday, March 30th @ 10 am Pacific

Can technology augment the role of observer sampling? Designing sampling methods for fisheries observers in the age of electronic monitoring.

Early forms of Electronic Monitoring (EM) Systems and their application in fisheries management have significantly aided the speed and accuracy of catch reporting and compliance monitoring. EM allows for the quantification of total catch weight by haul, monitoring of sensitive species accounting, and provided a means to share fishing effort information in real-time. However, technology has failed to fully augment the need for human involvement in the process of collecting the data necessary to appropriately manage such a complex resource. EM technologies cannot yet account for total catch nor meet biological data collection requirements. All data collections requiring observer involvement will have to be offset to assigned observers at the receiving shoreside processing plant. The implications of the suspected loss of spatial and temporal resolution within the data collected is of great concern to stock assessors and other end users. So, is it possible for technology to aid in the collection of data while not hindering the resulting data collected?

In order to determine the efficacy of this process, EM systems will be deployed on Bering Sea and Gulf of Alaska Pollock Catcher Vessels in lieu of human observers and will monitor regulatory compliance concerns while the vessel is at sea. Upon its return to a processing facility, each vessel will be sampled to mitigate data lost by the displacement of an observer. These data will include biological specimens (e.g. otoliths, sex, length frequencies etc.) and a census of select prohibited species such as salmon at a minimum. To ensure these data are representative, a rigorous sampling methodology will be designed and implemented by plant observers assigned to participating shoreside plants in January 2020. Each data collection will pose unique challenges for the observer; plant diagrams will need to be consulted to evaluate access and guarantee the feasibility of the collection given each applicable method and its expected outcome. In order to minimize any negative effects of altering the point of collection, multiple random designs will be considered, options will be evaluated with the anticipated outcome in mind to ensure end data quality and that the amounts meet the needs of each end user. Ultimately, the end product should allow for the collection of representative data, work to ensure that methods are repeatable, and all resulting data is defensible for the purposes of management.

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