

## C4 Trawl Electronic Monitoring

The SSC received a presentation from Anna Henry (NPFMC) and Darrell Brannan (Brannan & Associates) on the Initial Review draft of an EA/RIR for using electronic monitoring (EM) to verify logbook records of discard events to support shifting human observer sampling shoreside for pelagic trawl vessels. Oral public testimony was provided by Julie Bonney (Alaska Groundfish Data Bank) and Brent Paine (United Catcher Boats).

The SSC thanks the analysts for a clear exposition of the mechanics of the EM program, how the data this program might produce would differ from the data generated by human observers, and the costs to individual vessels (in the BSAI) and the observer fee fleet (in the GOA). The SSC appreciates the process that has generated the information in this analysis; namely, using a sequence of pilot studies and an EFP to collect data and test processes within an adaptive management approach that allowed rapid refinement toward the Council's objectives. This facilitated fishery participants' understanding of the costs and benefits of EM and provided high quality data and information that the Council can use to select among the alternatives. The analysts have been responsive to SSC comments throughout the process and have produced an informative and clear document.

The analysis covers a comparison of the program-level costs of the human observer program with the costs of the proposed EM program using ranges based on experience during the EFP, and evaluates the biological data collected under the EM protocol. While there is variability and uncertainty in costs, the analysis presents the overall program-level costs and shows savings on the order of 25%, reflecting savings in both the GOA and the BSAI that are likely to be robust to identifiable sources of variation. Due to the differing structures of the observer programs for pollock vessels in the two regions, savings in the BSAI are likely to accrue to individual vessels, while in the Gulf, savings will allow observer funds to be allocated to other activities. The statistical properties of data collected by shoreside plant observers, as opposed to onboard observers, for gathering information under the paradigm of full compliance as confirmed by EM monitoring appears more than adequate in terms of coverage and will result in estimates of PSC that are reasonable, reliable, and likely to be unbiased. While there is some loss in haul-by-haul information relative to human observers, the increase in resolution and coverage of other information suggests the EM protocol will not negatively affect the pollock stock assessment and enhances data on bycatch and non-target groundfish species. However, some data on marine mammals and seabirds will likely be lost.

**The SSC finds the analysis sufficient to advance to final action, following some minor revisions.**

The SSC suggests the following changes to improve the content and clarity of the analysis:

- There is considerable variation in how, or if, participants would be impacted by joining this program and it would be helpful to have a more comprehensive exploration of this decision, potentially in a separate section. **First, there is heterogeneity in how the program-level cost savings is experienced by different participants, and the SSC recommends these distributional effects be elucidated.** The mechanism for savings affects incentives for and barriers to participation, and thus it would be useful to discuss more explicitly how different regional subfleets will be impacted. In particular, BSAI vessels see savings directly, while vessels in the GOA do not. The SSC suggests characterizing vessels that have and have not chosen to participate in the EFP, building on the current discussion that includes community and regulation information, and also considering participation rates by the portfolio of fisheries in which they participate (composition of catch), vessel size by group (e.g. BS, WGOA, other GOA), and any other characteristics the analysts think would be relevant. **Second, there are other economic and non-economic benefits or costs that may influence the choice to join**, such as not needing to host an

observer on a small vessel or waiting for an observer to go out and social pressure. **Identifying and describing these factors qualitatively could also help provide a fuller understanding of the choice to join and in the longer run provide a better understanding of how to increase EM participation.**

- Include tender vessels in the estimates of costs and attribution of vessels to communities.
- **Include a qualitative discussion of communities or regions where potential loss of employment or business income related to a decrease in demand for at-sea observer services would likely be experienced and the potential for the increase in demand for shoreside observers to be met from local community labor pools.**
- List the communities included in the “Other AK” category in Tables 5-3, 5-13, and 5-19.
- The analysis presents differences in data collected by human observers and through the EM protocol, discussing them with the presumption that EM data are adequate for management purposes. This is based on previous comparisons of human observer and EM data contained in the pilot program reports. **It would be useful to summarize these analyses in this document, to provide an empirical basis within this final analysis that EM data will continue to support stock assessment and management.**
- The analysis has a lengthy discussion of the loss of haul-by-haul information relative to human observers, likely in response to past SSC questions. It would be useful to review the tone of this discussion to clarify that this information loss is manageable within the stock assessment process.

As the EM program operates, the SSC suggests considering the following aspects for refinement:

- Being conscientious about the time it takes to process the video data and the information collected by shoreside plant observers so that the information arrives in a timely manner for analysts to use in their assessments and for management actions. The SSC recognizes that the number of samples collected will be larger and notes the difference in the potential time needed for the transfer of information to data users.
- Continue development of methods to provide spatially explicit information on incidental harvest.
- Continue to work on processes to allow collection of biological information from bycatch that is not retained and forwarded to the plant. This may include noninvasive methods, such as genetic sampling or photographs, and do not necessarily require transporting an entire organism (e.g., shark) back to the plant.