

indicators in stock assessments, including evaluations of uncertainty. ESPs are a commitment to a process, not a static product. As such, consideration should be given to the regularity (and timing) of reviews and revisions. Moreover, **this effort should not stop with ecosystem indicators, but continue until ecosystem information is formally incorporated into SAFEs to achieve the goal of ecosystem-based fisheries management (EBFM).** In that light, the SSC acknowledges the thoughtful consideration that is going into defining the varying needs and uses of socioeconomic data in ESPs, ESRs, and SAFE documents. The SSC is well aware of the challenges involved in trying to close the EBFM loop. Tough decisions lay ahead about how exactly to do this.

C-1 Scallop SAFE

The SSC received a presentation on the 2020 scallop SAFE from Scallop Plan Team (SPT) co-chair Jim Armstrong (NPFMC), scallop biometrician Tyler Jackson (ADF&G), and economist Scott Miller (NMFS-AKRO). No public testimony was provided.

The SSC appreciates the efforts by the SPT and the authors of this year's scallop SAFE report. The report was well written and contains valuable new information on recent fishery independent surveys, fishery performance metrics, and management activities. As requested by the SSC in 2019, the appendix on socioeconomic considerations associated with the fishery (Appendix 2) added context on the development and current state of fleet composition, market drivers, and community engagement. Additional work is needed to: document the current limits of knowledge about crew share changes over time; better document changes in patterns of landings associated with cold storage availability and access to shipping routes; provide information on which taxes are applied to different types of landings or offloads/transfers; clarify what product forms are currently being landed and how the forms have varied over time; and elucidate changes in the frequency of landings over time by community. The SSC acknowledges the challenges associated with data confidentiality constraints inherent in the analysis of the scallop fishery as currently constituted. The SSC recommends, as it did in its April 2019 report, that the analysts explore ways to use qualitative information, potentially in combination with indices of relative change, to portray the sustained participation (or lack thereof) of fishing communities in the fishery. Appropriately-sourced information on historical crew share levels and vessel haulout/repair locations provided in the presentation would also be useful additions to Appendix 2. Appendix 4, which provides a brief history of the fishery, should be merged with Appendix 2, as there is substantial redundancy between the two. References cited in both appendices should also be embedded within the final text.

The SSC supports the SPT's recommendation to set the OFL for the 2020/21 season equal to maximum OY (1.284 million lbs.; 582 t) as defined in the Scallop FMP, which applies a 20% mortality rate to discards. The SSC also supports the Team's recommendation to set the 2020/21 ABC for scallops consistent with the maximum ABC control rule (90% of OFL), which is equal to 1.156 million lbs. (524 t). Despite the status of scallop stocks being "unknown", recent harvest has been less than 20% of the identified OFL based on the best available science, justifying these identified harvest maxima. **In 2018/19, overfishing did not occur. Overfishing has not been assessed for 2019/20 because discard estimates are not yet available.** In the interest of administrative efficiency and maximization of analyst time, **the SSC also endorses the concept of scallop updates occurring as executive summaries in alternate years.**

Given the reliance on fishery CPUE, **the SSC requests further documentation of the methods used to standardize the time series that are used to inform Minimum Performance Standards and to infer relative stock trends.** Consideration should be given to the fraction of the beds actually accessed by the fishery each year, including potential thresholds for when CPUE data may be informative about the

abundance/density on that bed versus simply reflecting fishery conditions and practices in light of current low levels of fishery participation.

Region-specific size and age data seem to tell contradictory stories in 2019 when the survey and fishery data are compared. The SSC requests that the analysts further explore this apparent discrepancy to determine if it is the result of cohort-specific variation in growth, differences in selectivity between fishery and survey gear, or other factors.

The SSC appreciates the responses to previous SSC comments since 2017, but notes that several of these requests remain outstanding and should be addressed in subsequent analyses. As progress on these requests has been hampered by staffing and funding shortfalls, the SSC looks forward to further progress now that the ADF&G biometrician position for scallops has been filled. These specific requests include:

- Provide details for bootstrapping methods used to generate confidence intervals for abundance and biomass.
- Provide details on how the two-stage estimator for calculating meat biomass differs from that used by Williams et al. (2017).
- Add a single summary table to the SAFE showing region-specific survey results next to region-specific harvest totals and long-term averages in the same units (e.g., round weight).

For many years the SSC has been requesting that an age-structured model be produced. However, challenges include validation of scallop aging and the short time series of fishery-independent surveys. The SSC is heartened to hear efforts at age validation continue and that an age-structured model has been developed for Kamishak Bay. The SSC would appreciate having an opportunity to review this model and also looks forward to seeing such models extended to major fishing areas, such as Kodiak and Yakutat.

Additional comments include:

- Calling the current assessment survey “statewide” is a misnomer given that the current plan is to alternate annual surveys between only two of the nine fished regions. In future SAFEs, consider using the term “state” or “ADF&G” survey.
- The SAFE raises the issue of small meats in 2019 and implicates temperature, or possibly pH, as the putative cause. The GOA ecosystem report is mentioned as containing information that might inform this assertion, but no attempt at making a more formal linkage is made. In future SAFEs, the SSC requests the authors explore such linkages and bring forward what data are available to better understand biological variation that affects fishery performance.
- “Clapper” isn’t defined anywhere and is conflated in Table 2-5 with weak meat. This table effectively shows “unharvestable scallops” not just those with weak meat. Please separate these data.
- The SSC supports the initiative to update scallop Essential Fish Habitat (EFH) information, which is overdue, given new available information and improved modeling approaches.
- Patterns of changing abundances and biomass in the survey data from the Yakutat region implies an increase in average size and weight in recent years. However, the length-frequency distribution in the fishery does not show an increase in the size of landed or discarded scallops over the same period. This apparent discrepancy should be explored.