



**153rd Meeting of the Scientific and Statistical Committee
September 11-13, 2024
Council Office, Honolulu HI**

FINAL REPORT

4. Pacific Islands Fisheries Science Center Director Report

T. Todd Jones presented the Pacific Islands Fisheries Science Center (PIFSC) Director's report on behalf of Director Charles Littnan. He highlighted the Western Pacific Stock Assessment Review (WPSAR) data review for the Guam bottomfish management unit species (BMUS), which was conducted in July 2024, as well as the Bycatch Graphical User Interface (GUI). PIFSC is preparing to launch a public version of the Bycatch GUI, which will include bycatch estimates for three Western Pacific longline fisheries through a single interface, significantly increasing access to recent and historical bycatch estimates.

SSC members suggested adding disclaimers to the Bycatch GUI noting that historical estimates may be updated in the outyears, and any updates to estimation models in the time series.

In response to an SSC member inquiry regarding the status of the Bottomfish Fishery Independent Survey in Hawaii (BFISH) data collection changes, Jones reported that PIFSC is planning to hold stakeholder engagement meetings in October and November, and will work with the fishing community, State of Hawaii Division of Aquatic Resources (HDAR), and the Council on improvements for moving forward.

5. Island Fisheries

A. Non-commercial Fisheries Data

1. MRIP Improvements for Hawaii Survey

Katherine Papacostas and Sarah Lazo from the Marine Recreational Information Program (MRIP) presented the changes being made to MRIP to improve the survey design. They also provided an update on where NMFS is heading nationally on re-envisioning recreational and non-commercial data collection partnerships.

Currently, a revised fishing effort survey (FES) design is being tested throughout 2024 that switches 2- and 12-month activity questions and is distributed monthly, as opposed to every 2 months. Initial feedback indicates this revised FES has greatly reduced reporting errors. A public study report and peer review of the FES design is planned for summer 2025.

There is also a joint federal-state initiative to re-envision the recreational fishing data partnership. Objectives of this initiative include clearly defining partner roles, responsibilities and lines of communication, improved data precision, accuracy, and timeliness, better data handling and storage, and enhanced partner and angler collaboration. A timeline was presented that detailed the planned activities leading to the transition to the re-envisioned partnership by early 2026. As part of those activities, listening sessions are being held to get feedback on priorities for non-commercial data collection, changes in fisher behavior that could affect survey performance, recommendations for improving surveys/data and management strategies, and suggestions to improve the relationship among key partners.

The SSC discussed the role of the FES in the scaling of non-commercial catch estimates used in Hawaii BMUS assessments. There was concern regarding the lack of cross-validation on the magnitude of the catch. SSC members also noted the general audience of the FES survey in Hawaii. Previous attempts to create a non-commercial fishing registry have not been successful, but the SSC reiterated the importance of continued efforts to improve understanding of the non-commercial fishing universe. Given the general audience for FES in Hawaii, the SSC voiced concerns about response rate and non-response bias. Papacostas noted that response rates in Hawaii are about 30%, sampling effort is relatively high compared to areas with focused survey domains, and that FES accounts for non-response bias via post-stratification which includes demographic information. An SSC member noted the challenge of estimating fishing effort from questionnaires and asked about more direct approaches to estimating effort (e.g., boat-ramp cameras and offshore aerial surveys of fishers). Papacostas explained that exploring alternative approaches for estimating effort is a high interest for the agency and described several initiatives.

The SSC also discussed the angler-intercept survey through the Hawaii Marine Recreational Fishing Survey (HMRFS). SSC members suggested reviewing existing data according to specific data objectives which may differ between stakeholders. Papacostas asked about the availability of information that could be used to help increase angler intercepts. The SSC suggested flexible survey designs could incorporate factors known to affect fisher behavior such as weather, seasonal events (spawning aggregations) or cultural events/holidays. The SSC also expressed concern on the absence of invertebrates in data collected by HMRFS and pointed out their importance in non-commercial fisheries.

The SSC thanked Papacostas and Lazo for the informative presentation.

2. HMRFS Fishermen’s Workshop

Council staff presented on a meeting held between fishers, managers, and scientists to discuss non-commercial data collection in Hawaii. Managers and scientists were able to explain the data collection from HMRFS and how the data is currently being used. Fishers provided their concerns on the use of the data and the need for better data. The staff presentation highlighted the challenge of balancing the understanding of the overall fishing universe with tracking fishing effort. The SSC was asked to consider how the Council should treat HMRFS data, whether the data are “best available” or just “available”, what other improvements are needed, and how to overcome the apathy from the community.

There was discussion on the need to collect accurate size data while ensuring the confidentiality of fishers' information. The SSC discussed integrating these issues into the next regional implementation plan and proposed a review being added to the December 2024 agenda.

3. Hawaii Non-commercial Fishery Modules

[No presentation on this item; Review of the Hawaii non-commercial fishery modules for the annual SAFE report was postponed to a future meeting.]

4. SSC Discussion on Non-commercial Fisheries Data

During the SSC discussion, members emphasized the importance of balancing national data collection efforts with regional approaches. Concerns were raised about the differentiation between catch and effort, particularly for species like Deep 7 bottomfish, with members highlighting the need to better understand the dynamics of the fishery and targeting to apply data for stock assessments. SSC members questioned why the bottomfish vessel registry (BFVR), which is required to possess Deep 7 bottomfish in Hawaii, has not been considered in evaluations of non-commercial catch expansions for this species complex. Cross-validation of catch rates was also discussed, emphasizing the need for methods tailored to specific fisheries. An SSC member volunteered to explore how annual non-commercial BFVRs could inform non-commercial Deep 7 catch estimates and provide a report back at its December meeting. **The SSC recommends this subject be added to the December agenda for further discussion.**

Other members discussed the importance of fisher involvement in data collection and stressed that targeted surveys and sampling methods are necessary to accurately reflect the specific conditions of different fisheries. For example, the SSC discussed the decline in the number of nighttime fishing participants for opakapaka, and noted that the current universe of opakapaka fishers in the Hawaii bottomfish fishery was unclear. The need to build trust between fishers and scientists was underscored, with suggestions for more outreach and engagement to ensure fishers understand how their data is being used.

In the chair's recap, key priorities were identified: finding a balance between tracking fishing effort and understanding the fishing universe, improving the collection of size data, and maintaining confidentiality. SSC members were encouraged to provide input into the regional implementation plan, and further discussions were planned for future meetings. The overall conversation highlighted the need for collaboration between fishers, managers, and scientists to improve data collection and ensure effective fisheries management.

B. Modifying the Guam Bottomfish Rebuilding Plan (Action Item)

Council staff presented options for modifying the Guam BMUS rebuilding plan. The options took into consideration catch projections that were provided by PIFSC to rebuild the BMUS stock by 2031 and a guidance memo from PIRO to modify the rebuilding plan. The options presented were: 1) No action - continue the rebuilding plan with 31,000 lb catch limit with in-season monitoring utilizing the creel survey and a higher performance standard if the fishery exceeds the annual catch limit (ACL) in fishing year, then fishery closure in federal waters until 2031; 2a) Modify the rebuilding plan by retaining the current ACL of 31,000 lb to rebuild the BMUS stock by 2028; 2b) Modify the rebuilding plan and specify an ACL of 34,500 lb to rebuild by 2031; and 2c) Modify the rebuilding plan and establish a fishing moratorium in federal waters to rebuild the stock by 2026. As accountability measures (AM) options under 2a and 2b, the SSC may weigh in on whether to continue in-season monitoring through the creel survey and post-season AMs (e.g., the higher performance standard or a post-season overage adjustment based on a three year average).

SSC members discussed the various AMs and noted that an in-season AM is less practical, given that catch estimates would likely be unavailable until at least 6 months into a fishing season due to data collection and processing limitations. Regarding a three-year average post-season overage adjustment as an AM, this approach is feasible and would need to be implemented to avoid overfishing and maintain a maximum rebuilding target of $T_{\max}=2031$. SSC members also noted that all ACL options (i.e., 31,000 lbs, 34,500 lbs, 0 lbs) would all lead to the stock being rebuilt by 2031.

SSC members further discussed the complexity of adjusting catch limits and AMs. One SSC member pointed out the difficulty of coordinating management with the government of Guam and whether it would require new legislation, while another emphasized the importance of local agency commitment to monitoring. Some members noted that while these fisheries are primarily for food production, it is essential to fulfill legal requirements while maximizing catch. They also raised concerns about the potential negative impacts of a fishing moratorium, as it might drive fishers out of the industry permanently.

In terms of scientific monitoring, SSC members discussed how the current in-season monitoring is dependent on the number of creel survey intercepts. SSC members concluded that in-season monitoring was not practical, and a post-season overage adjustment would be a better approach. The new catch limit of 34,500 lbs would allow for more fishing while adhering to the rebuilding plan's goals, and a three-year running average overage adjustment would help prevent overfishing without closing the fishery prematurely.

The SSC reached a consensus on supporting Option 2b with a three-year post-season overage adjustment as the most feasible option for rebuilding the stock while allowing for continued fishing opportunities. The SSC also emphasized the importance of ensuring that the overage adjustment would maintain the rebuilding timeline by 2031.

The SSC recommends that the Council take initial action on Option 2b, which modifies the rebuilding plan by setting an ACL of 34,500 lbs to maximize fishing opportunities while ensuring the stock is rebuilt. For accountability measures (AM), the SSC recommends discontinuing the in-season monitoring AM. Instead, implement a post-season overage adjustment based on a three-year rolling average to prevent overfishing while achieving the

stock rebuilding target by 2031.

C. Guam Bottomfish Data for Future Assessments

1. Guam Bottomfish Data for the Next Stock Assessment

Erin Bohaboy, Toby Matthews and Felipe Carvalho, PIFSC, provided a summary of data on Guam BMUS, reviewed by the WPSAR process in July 2024. There are thirteen species of which adequate data is provided for eleven species. PIFSC will review catch series, catch-per-unit-effort data, length composition data, and life history data. These data can inform single species assessments like what was conducted in American Samoa in 2023. They may also support assessing aggregated species. Data sources, filtering rationale, and steps were provided, along with caveats and benefits.

The SSC Chair deferred discussion to the Guam Bottomfish Data WPSAR agenda item.

2. Chair's Report on Guam Bottomfish Data WPSAR

Milani Chaloupka, Chair of the July 2024 WPSAR on Guam BMUS, delivered the consensus report from the review panel and how it pertains to the Terms of Reference provided. The panel found that all data were adequately presented and made recommendations on how they may be sufficient for stock assessments.

SSC members discussed the environmental covariates that were retained by the models, as well as spatial differences in effort and catch characteristics for certain stocks, between nearshore areas and the offshore banks. The latter issue was highlighted by fishermen in Guam. SSC members commented that the documentation of the sources and quality of the data was good, as well as the documentation of the data filtering workflow.

The SSC endorses the conclusions of the Guam BMUS data WPSAR and recommends the data would be appropriated to be used in the next benchmark stock assessment for Guam BMUS.

3. SSC Discussion on Guam Bottomfish Data and Future Assessments

Felipe Carvalho, PIFSC, provided an overview of potential next steps for the Guam Bottomfish Benchmark Assessment. In February 2024, PIFSC provided the Council the results of the 2024 assessment update that provided fishery managers with catch projections to 2028. Following this assessment, PIFSC Stock Assessment Program will work on addressing the panel recommendations from the Guam data WPSAR and data collection systems. In light of the new fishery information, they suggested holding off the next benchmark assessment following the kickoff of the Guam Bottomfish Independent Survey, where they did 30 test camera deployments and 65 fishing girds, where they caught 82 fish. The other research program is the biosampling program that is focused on BMUS to inform future stock assessments. Based on the findings of the WPSAR, PIFSC asked for guidance on future assessments for Guam bottomfish.

In the discussion, various members expressed concerns and sought clarifications about the timing and methodology of upcoming stock assessments and the integration of new data into these assessments. An SSC member asked about the timing of assessments and whether projections were included up to 2028, suggesting the next assessment be in 2026 to update and include new models. It was confirmed that under the WPSAR schedule, a benchmark assessment is expected no later than 2027, with a plan to include all available data (e.g., biosampling and creel survey),

though decisions on incorporating new data streams will be made inclusively with the fishing community of Guam (i.e., BFISH). Other SSC members discussed the implications of moving from a species complex to individual species assessments, such as in the American Samoa bottomfish fishery, with concerns about how this could impact fishery management. They emphasized the need for careful consideration of the data and the potential outcomes of such decisions. The overall sentiment was one of caution and the need for clear planning, with an emphasis on ensuring that any changes to assessment strategies do not inadvertently harm the fishery.

The SSC thanked Carvalho for his presentation.

D. Public Comment

There was no public comment.

6. Program Planning and Research

A. Report of the National SSC Meeting (SCS8)

Jason Helyer provided a report of the Eighth Scientific Coordination Subcommittee national workshop (SCS8), hosted by the New England Council in Boston, August 26-28, 2024. The SCS8 theme was “Applying Acceptable Biological Catch (ABC) Control Rules in a Changing Environment”. The three sub-themes were 1) advances in ecosystem science and assessment to inform ABC control rules in a dynamic environment; application of social science to achieve management goals under dynamic conditions; adaptation of reference points, control rules, and rebuilding plans to changing environment. SSC Members Craig Severance, Justin Hospital, Erik Franklin, and Helyer represented the Western Pacific Council at the meeting.

Common but Council-specific challenges highlighted included volatility of catch advice, paucity of data in recreational fisheries, fish redistribution with climate change, and the need for flexibility in assessments and management advice. The Western Pacific delegation highlighted challenges associated with the disproportionate burden of large scale no-take marine protected areas (MPAs). Helyer provided highlights of case studies and noted that seafood production is an important performance indicator in one of the Councils. Gaps included a question of at what stage a decision is made that decisions are not being effective for conservation, as well as the need for getting involved in Magnuson-Stevens Act (MSA) reauthorization.

WP delegation noted that while the more data-rich regions are considering incorporating climate information into ABC control rules and reference points, data-limited regions are nowhere near ready to do so. WP Council’s SEEM was highlighted as a unique WP process. A common thread was the emphasis of NS1 over NS8, and the WP delegation discussed the idea of developing a “Kobe plot” for NS8 objects for providing sustained participation in fishery and minimizing economic impacts.

Severance highlighted similarities between the Western Pacific Council and the Caribbean Council, and noted WP is lucky to have indigenous representation and social scientists on the SSC with the recognition that we manage people not fish.

SSC inquired whether there was discussion on alternative frameworks to ABC control rules. Similar to the Western Pacific, several of the data-limited Councils’ representatives mentioned that the ABC control rules are not working for them, so there was discussion about making progress on identifying alternatives as a next step and for informing MSA reauthorizations. An SSC member stated that there are other ways to manage fisheries than ABC control rules, and urged elevating this discussion to a higher level.

The SSC recommends the Council explore a range of sustainable alternatives to existing ABC Control rules along with a focus on finding flexibility within the existing MSA.

B. SSC Working Group Review of Annual Prioritization of MSRA Research Priorities

The 2025-2029 MSRA Research Priorities was endorsed by the Council at the June 2024 meeting. An SSC working group comprising of Itano, Ochovillo, Kobayashi, Camacho, Chaloupka, and Severance was tasked to identify research priorities for potential ranking for 2025, based on a preliminary list of 2 to 3 priorities identified by staff among each program area. The working group identified priorities based urgency for 2025, whether or not they are already

being addressed, and if there are negative consequences if not addressed. These selected priorities will then be provided to staff to work with PIFSC and PIRO for them to rank in order to inform agency research activities for 2025. The Council may revise the five year priorities at any time, but may continue to request annual prioritization.

The SSC noted there was significant recent discussion on seafood import challenges (e.g. dumping). There is a need to develop criteria for identifying priorities and need to avoid overlap with PIFSC priorities.

Executive Director Kitty Simonds inquired about the status of PIFSC strategic planning. Jones replied that there is a draft and it has gone under review with publication in October.

The SSC endorses the working group prioritization for 2025 (see Appendix A). The SSC recommends that the Council identify the following as the two highest priorities for NMFS and other agencies to address in 2025:

- **Improved pelagic false killer whale assessments on the high seas with a focus of delineating full stock range based on robust biological data (PS2.2.1). Inclusion of other available data, including tagging and acoustic data to fulfill the above priority to better discern information beyond the EEZ and among the range of the species where it overlaps with U.S. fisheries**
- **Mitigation of depredation and development of deterrents to reduce incidental interactions in U.S. Pacific Island fisheries (PF5). The above recommendations should be addressed between Council staff and NMFS staff to add specificity for tenable projects in 2025 conducted by NMFS and external entities.**

C. PIFSC Ongoing Research Updates

1. Climate and Ecosystems Fisheries Initiative

Ryan Rykaczewski, PIFSC Ecosystems Sciences Division, provided an overview of the Climate, Ecosystems, and Fisheries Initiative (CEFI). CEFI is a cross-NOAA effort to build the nationwide, operational ocean modeling and decision support system needed to reduce impacts, increase resilience, and help adapt to changing ocean conditions. The system will provide decision makers with the actionable information and capacity they need to prepare for and respond to changing conditions today, next year, and for decades to come. The system addresses four core requirements for climate-ready decision-making for marine resources: (1) Robust forecasts and projections of ocean and Great Lakes conditions for use in developing climate-informed advice, (2) Operational capability to assess risks, evaluate options, and provide robust advice on adapting to changing conditions, (3) Decision-maker capability to use climate-informed advice to reduce risks and increase the resilience of resources and the people that depend on them, and (4) Continuous validation and innovation through observations and research.

CEFI is a nationally-coordinated effort to downscale climate data and models that are useful for fisheries management. Its goal is to develop an end-to-end decision support system based on climate models and model access to support climate-informed advice and action. The approach is end-to-end: region ocean model, species distributions and trophic interactions, socio-economic models and social outcomes. One significant challenge is the mismatch between ocean models and communities and for the Western Pacific region, its large area jurisdiction and the high number of species. There is a need to initially hone on demonstration projects e.g. Hawaii.

An SSC member noted the need to incorporate protected species interaction to the models, similar to Turtle Watch, so that projections can help reduce interactions in the future. It would also be helpful to get input on scale/frequency of those projections. SSC members emphasized that given the enormous amount of uncertainty, there is a need to develop a range and a few contrasting scenarios e.g. species distributions, to inform management decisions.

An SSC member noted tuna distribution models are very specific in long term temporal forecasts in relation to climate change but very unreliable in the short term. Executive Director Simonds emphasized the need to determine the impact of large MPAs on fishing.

The SSC thanked Rykaczewski for the presentation.

2. Deep Sea Corals Workshop and Makapu'u Survey Update

Beth Lumsden, PIFSC, presented on the deep sea coral research and sponge research program returning to the Western Pacific region. NMFS is required to map and conduct research on deep sea coral habitat and has been working with partners to determine the priorities for the region. Prior to the program work, an opportunity was available to conduct a survey of the Makapuu precious coral bed. The purpose of the survey was to collect data to allow recalculating MSY for the bed and any other proxies calculated off of that bed. The next steps are to analyze the data collected to determine if the data is sufficient and if not what is required to achieve that data collection. Lumsden showed a video of the dive and noted the high current flow is one of the reasons why the bed exists. Due to strong currents, forward movement on the ROV was impossible and the dive was unable to collect adequate data.

The SSC thanked Lumsden for the presentation and noted a full report will be presented to the SSC in the future.

D. Review of Recent Publication on Stock Assessment Models Overstating Sustainability

Ray Hilborn, SSC, provided a brief review of a recent publication by G. Edgar and colleagues in Science entitled “Stock Assessment Models Overstate Sustainability of the World’s Fisheries”. The paper states that 85 percent more fish stocks have likely collapsed than has been reported and that assessment bias was strongest in the last year for each assessment and for those species with low biomass. B/B_{max} becomes more uncertain in terminal years in stock assessments. SSC member Hilborn re-analyzed a median ratio of B/B_{MSY} from old assessments with same years in more recent assessments. Hilborn contends that the authors should be observing geometric means in ratio values instead of medians, which analytically biases results. In addition, retrospective bias is already acknowledged formally, using metrics such as Mohn’s rho in analyses.

The paper does assume that the most contemporaneous stock assessment has little to no error when calculating bias, yet contends the current assessments are just as flawed as historical assessments. Hilborn contends that the most common causes of overfished stocks are not a result of biased assessments and rather from regime shifts that cause drops in recruitment survival and from overfishing unrelated to assessment advice.

An SSC member mentioned that Food and Agriculture Organization (FAO) states that 35 percent

of stocks are in trouble in contrast to the paper's results and stated that FAO uses a different metric. Hilborn stated that the critical question is the nature of the harvest control management rather than the reliability of individual assessments.

E. Public Comment

There was no public comment.

7. Protected Species

A. SSSL Tori Line EFP Project Report

Milani Chaloupka presented the report of a pilot study conducted under an Experimental Fishery Permit (EFP) to evaluate alternative methods of discouraging seabird interactions while providing operational flexibility during setting in the Hawaii shallow-set longline fishery. The study evaluated seabird bycatch risk in fishing sets that used paired tori-lines with setting prior to local sunset (1-2 hours earlier than the existing night-setting requirement) that were then compared to sets deployed with night-setting with blue-dyed bait. The results indicated that albatrosses were significantly more likely to interact with longline gear on paired tori lines deployed partially during the day compared to night sets with blue-dyed bait. It was further noted that the use of blue-dyed bait appears to be unnecessary for night sets, but would require additional experimental trials to evaluate. Hook pods with LEDs were also mentioned as a potential mitigation tool. It should be noted that the permit did not allow elimination of blue-dyed bait for this study, but did allow for no strategic offal discharge.

An SSC member asked about the efficacy of blue-dyed bait in general. Chaloupka responded that blue-dyed bait is ineffective at mitigation and cumbersome to the fishermen, and that it should be eliminated even without experimental trials. The SSC member also commented on the process complexity to eliminate the blue-dyed bait requirement.

An SSC member asked whether the electronic monitoring (EM) on the vessel was useful for evaluating results from the study. Chaloupka responded that the EM was not useful for the experiment, in contrast to the observer capture data for example. Council staff added that EM worked well with the deep-set daytime operations for previous study with tori lines. However, even for the partial daytime work on this shallow-set study, the low light levels and mostly nighttime work severely impacted video quality, review, and usefulness of the EM data. Eric Gilman, project member, commented that for EM there was only one stern-facing camera intentionally positioned to verify tori lines remaining in place for the duration of the fishing operation and attempt to observe bird approaches. Council staff noted that industry had inquired about using tori lines with partial daytime operations (starting set earlier), hence the experimental design used here.

An SSC member asked about the design of the short streamer tori lines used in this study because they would not qualify as approved tori lines in New Zealand. Another SSC member also noted that the tori line streamers were not long enough to pose a physical barrier like a curtain. Gilman also noted that even with different tori line streamers the manner of setting by the vessel exposed the baited hooks to birds and that no tori line design could solve this particular issue, and was unsure whether other vessels do the same maneuvering. Council staff also noted that the lightweight tori lines used here were effective in the deep-set experiments.

Chaloupka noted a paper (Gilman, Chaloupka, et al.) in-press which examined all mitigation measures in a meta-analysis and found that hook pods with LEDs were a promising mitigation measure, and that this should be the focus of any future experimental trials.

The SSC recommends that the light-weight short-streamer tori line, as used in the experiment, not be included as an approved mitigation measure for the Hawaii shallow-set longline fishery. The SSC further recommends the Council consider an experiment evaluating night setting with and without blue-dyed bait. The SSC also recommends the

Council consider an experiment to evaluate the efficacy of hook-shielding devices to enable partial daytime setting.

The SSC thanked Chaloupka for the presentation.

B. False Killer Whale Foreign Fleet Impacts Analysis

Rob Ahrens, PIFSC, presented on an analysis to estimate foreign fleet impacts on false killer whales within the pelagic stock management area that overlaps with the fishing area of the Hawaii deep-set longline fishery. The analysis used Global Fishing Watch fishing hours data to determine the proportion of effort inside the assessment area, Western and Central Pacific Fisheries Commission (WCPFC) and Inter-American Tropical Tuna Commission (IATTC) reported effort to determine the proportion of tuna targeted in each area, and the Hawaii longline and WCPFC Regional Observer Program data to estimate false killer whale interaction rates and associated uncertainties.

An SSC member asked about the large gaps in foreign longline effort to the southeast of the Hawaiian archipelago. Ahrens responded that these are poor fishing grounds and difficult to fish, perhaps due to oceanography.

SSC members asked about the interaction rates applied to foreign fishing effort and how the mortality and serious injury (MSI) could be better determined for foreign fishing effort. Ahrens clarified on what steps were taken, pointed out that much of the effort is outside of the false killer whale management area, and that the onboard practices useful for examining MSI are not known for these fleets.

An SSC member noted that this exercise was initially about the relationship between non-US fishing effort and the recovery factor used in the calculation of the potential biological removal (PBR), and asked if the outcome of this analysis will help with the re-evaluation of the recovery factor. Erin Oleson, PIFSC, responded that the draft in preparation will be provided to the Pacific Scientific Review Group (PSRG) for their review in November, and the PSRG will be providing input on how the information will be incorporated into the Stock Assessment Report. An SSC member inquired about the expertise of the PSRG group and any familiarity with Regional Fisheries Management Organization (RFMO) level fisheries data. Oleson responded that there is diverse expertise on the PSRG but not necessarily RFMO data, but those with RFMO expertise would be involved in the draft report review. Oleson noted that the primary question the PSRG will consider is the level of uncertainty and/or biases in the finding, further noting that additional expertise could be brought forward at that time.

There will be additional internal review in October and subsequent opportunity for SSC to consider next steps. The SSC subgroup was queried for their thoughts and there were no concerns at this point in time.

The SSC notes that SSC members (Harley, Hilborn, Itano, Pilling) who participated on the ad-hoc PIFSC working group will have the opportunity to review the draft manuscript in October. The SSC plans to schedule a full discussion on the uncertainties associated with the RFMO data and implication of this analysis on the PBR recovery factor at its December 2024 meeting, informed by the inter-sessional review of the draft manuscript by a subset of SSC members.

The SSC thanked Ahrens and Oleson for their presentation and comments.

C. Public Comment

There was no public comment.

8. Pelagic and International Fisheries

A. Longline Fishery Mid-year Reports

1. Hawaii Longline Fishery Report

Russel Ito, PIFSC, provided a report on the fishery performance (catch and effort) of the Hawaii deep-set and shallow set longline fisheries through the first half of 2024. Data will be presented on trips, effort (in hooks), catch of targeted species (bigeye tuna for the deep-set and swordfish for the shallow-set) and other pelagic management unit species.

Bigeye tuna catch and catch rates in the Hawaii deep-set longline fishery have been on a long-term decline over the past decade — most effort continues to be outside the US EEZ. Similar declines were apparent for swordfish in both the Hawaii deep-set and shallow-set longline fisheries although large swordfish were more common in recent catches. Overall, bigeye tuna, yellowfin tuna and blue sharks were the top three most frequently caught species.

An SSC member noted the reporting of fish per number of hooks, as previously requested by the SSC, helps improve the ability to discern and diagnose long-term trends in the catch.

An SSC member asked about the large decline in opah catch relative to 2023, highlighted the lack of stock assessment for this species, and questioned whether this was part of a larger trend. Ito referenced the Council's SAFE report which describes declines for many miscellaneous pelagic management unit species over the past 10 years. Jones confirmed that multi-year funding has been secured by PIFSC to fund a contractor to develop a research track assessment for unassessed pelagic management species such as mahi mahi, ono, opah and monchong.

An SSC member noted increases in striped marlin as well as mahi mahi and ono in Hawaii non-longline fisheries that may correspond with increases in longline fisheries.

The SSC recommends the Council request prioritization of further catch per unit effort analyses of bigeye tuna accounting for variable effort (such per-hook or per set basis) to help diagnose possible causes for the apparent declining trend in nominal catch rates.

The SSC thanked Ito for the informative presentation.

2. American Samoa Longline Fishery Report

Jenny Stahl, PIFSC, presented on the fishery performance (catch and effort) of the American Samoa longline fishery through the first half of 2024. Data on trips, effort (in hooks), catch of targeted albacore and other pelagic management unit species.

American Samoa longline fishing effort has continued to decline since 2008 although CPUE has been generally constant since around 2011. Electronic reporting is increasingly being used in this fishery. Fishery participation has declined,

An SSC member questioned whether the fishery is performing well and another SSC member said that the fishery was not doing well.

SSC thanked Stahl for the informative presentation.

B. Electronic Monitoring Regulatory Development Update

Council staff provided an update on regulatory considerations needed for implementation of EM to supplement human observer coverage. This is a follow-up to a Council recommendation at its 199th Meeting. Considerations include (but not limited to) review of how EM is related to human observers, logbooks, and existing monitoring mechanisms. Staff provided a state of EM and estimated timelines provided by the Electronic Technologies Steering Committee.

Important to note that observer coverage of the Hawaii deep-set longline fishery is declining mainly due to cost considerations and has fallen to about 13% for the deep-set fishery; maintaining 100% observer coverage for the Hawaii shallow-set fishery. And hence the increasing imperative to adopt effective electronic monitoring procedures and use of electronic logbooks. The main focus is for protected species monitoring and for monitoring of non-target species. The EM program will be implemented in a phased approach as not all onboard monitoring tasks can be done with EM systems.

SSC thanked Council staff for the informative presentation.

C. Review of Striped Marlin Rebuilding Plan Analyses

Michelle Sculley, PIFSC, provided an overview of stock projection analyses from the latest 2023 stock assessment for the Western and Central North Pacific striped marlin stock. Projection scenarios provided are those that satisfy the WCPFC rebuilding plan guidelines of rebuilding the stock to 20% unfished biomass levels by 2034 with a probability of 60% achieving that objective. Scenarios are based on fishing mortality levels, recent catch levels, and phased catch levels (either two or three phases) to incrementally reduce catch during the rebuilding horizon. Projections were conducted using the AGEPRO software.

Importantly, fishing mortality at status quo $F_{\text{status quo}}$ and fishing mortality at MSY F_{msy} scenarios did not meet the rebuilding plan requirements.

An SSC member expressed concerns about discards when post-hooking mortality is unknown and questioned the quality of data from international fleets. Sculley recognized these concerns but emphasized that the peer review has been completed and offered optimism for improvements in future assessments, specifically for growth parameters as a large biosampling program is working to inform this.

SSC thanked Sculley for the informative presentation.

D. International Fisheries

1. WCPFC Science Committee Report

Keith Bigelow, PIFSC, reported on the outcomes of the WCPFC Scientific Committee 20, held August 14-21, 2024 in Manila. New stock assessments on South Pacific albacore, Pacific bluefin tuna, silky shark, North Pacific shortfin mako, and southwest Pacific striped marlin will be provided. Most discussion of interest for the Council will be on the South Pacific albacore stock and any analyses to inform a management procedure to be adopted in 2024. Additional discussions of interest include seabird measure revisions and analyses for target reference points for tropical tunas.

All assessments were accepted except for Southwest Pacific striped marlin that will be revised

for review by SC21. Importantly, none of the 4 assessed stocks (Pacific bluefin, South Pacific albacore, silky shark, North Pacific shortfin mako) were overfished nor experiencing overfishing.

SSC thanked Bigelow for the informative presentation.

2. IATTC Science Advisory Committee

Council staff provided an overview of recommendations by the U.S. Science Advisory Subcommittee (SAS) and the General Advisory Committee (GAC) held July 22 and 23, 2024. A new stock assessment for eastern Pacific (EPO) bigeye tuna was provided in 2024. The Inter-American Tropical Tuna Commission convened September 2 to 5, 2024 in Panama. Outcomes of the meeting included adoptions of minimum standards for EM and a rollover of the tropical tuna measure.

Importantly, there is a new EPO bigeye tuna stock assessment that is more optimistic than previous assessments, but an ongoing decline in Japan fleet longline effort was noted that has implications for stock assessment. Interestingly, there was a SAS/GAC recommendation for adoption of biodegradable fish aggregating devices (FADs). SAS/GAC also recommended that discards for bluefin tuna be counted in limits, without exemptions. Notably, minimum standards for EM were adopted by the IATTC for consideration where EM might be applicable.

SSC thanked Council staff for the informative presentation.

E. Public Comment

Eric Kingma (HLA) commented on the striped marlin ISC rebuilding program and was supportive of phased modeling scenarios presented earlier and was not supportive of scenarios that focused on the take of small fish (<120 cm EFL). He encouraged the management burden to reflect relative impacts of fleets, noting that the Hawaii longline represents less than 10% of total catch.



**SSC Working Group on
Annual Prioritization of 2025-2029 MSRA Research Priorities
FINAL REPORT**

**Adopted by the SSC at its 153rd SSC Meeting
September 11-13, 2024**

SSC members Itano, Ochovillo, Kobayashi, Camacho, Chaloupka, and Severance comprised the working group tasked with selecting annual research priorities for 2025. Clay Tam and Eric Kingma participated, representing the Advisory Panels and Fishing Industry Advisory Committee, respectively. The research priorities were selected among the five-year MSRA research priorities recommended by the 152nd SSC and 199th Council Meeting. Priorities by program area (pelagic fisheries, island fisheries, protected species, and human communities) are identified below. Furthermore, the working group identified two priorities that are most important to be addressed in 2025, these are highlighted in bold. All priorities are linked to the five year priorities document adopted in the previous meeting cycle, enumerated in parentheses.

Pelagic Fisheries

- (1) Understanding the effects of spatial closures and large-scale marine protected areas on fisheries, island communities, and population dynamics on target and non-target species (PF2)

This priority addresses the need to evaluate proposed sanctuaries in Western Pacific Region and existing marine national monuments. It also informs how these closures affect fishery performance and efficiency of Western Pacific fisheries and to optimally utilize resources. It fulfills the lack of threat or risk assessments of commercial fishing in proposed sanctuary areas.

- (2) Mitigation of depredation and development of deterrents to reduce incidental interactions in U.S. Pacific Island fisheries (PF5)**

This priority goes towards reducing interactions with non-target species, especially sharks and false killer whales. This priority also addresses a need expressed by every council advisory group, where longline and non-longline fisheries have deep concerns over shark and false killer whale depredation events, alike. SSC members noted the recent WPSARs for bottomfish MUS included consistent complaints of shark depredation by fishermen.

Island Fisheries

- (1) Perform resource assessments including growth and recruitment, estimates of unreported catch, etc. to determine life history, population dynamics and connectivity information on MUS (IF2.1.2)

This research priority addresses the need for improving life history information for upcoming insular stock assessments.

Protected Species

- (1) Improved pelagic false killer whale assessments on the high seas with a focus of delineating full stock range based on robust biological data (PS2.2.1); and**
- (2) Development of tagging and other innovative approaches for improving species-specific post-release mortality estimate for false killer whales that interact with the Hawaii longline fishery (PS2.2.6)

False killer whale interactions in the Hawaii deep-set longline fishery continues to be a high management priority, and development of robust abundance estimates and risk assessments for managing false killer whale interactions are needed. Both of these research priorities would also add realism to assessment assumptions.

- (3) Develop and test mitigation methods to reduce post-release mortality of oceanic whitetip shark and false killer whale interactions in small-boat fisheries (PS4.1.1); noting the urgency with oceanic whitetip sharks especially.

Incidental interactions with small-boat fisheries are thought to be rare but have the potential to significantly impact fishing communities through ESA and MMPA actions. Development of best practices to release oceanic whitetip sharks, false killer whales and other protected species in the event of accidental interactions would provide a proactive approach to conservation while balancing the needs of fishing communities.

Human Communities

- (1) Characterizing non-commercial vessels, participants, motivations, catch and effort (HC 1.1.2.); and
- (2) Improving estimations of the relative proportionality of commercial and noncommercial catch and effort (HC1.1.3)

Better understanding of fishery participation of commercial and non-commercial sectors continues to be a high priority for the region and is cross-cutting with important island fisheries management priorities. Improvement of non-commercial data collection (and interpretation) in Hawaii, Marianas, and American Samoa bottomfish fisheries is an immediate need, noting the recent changes in stock assessments for bottomfish. Further, the SSC noted the need for improvement of Marine Recreational Information Program (MRIP) to discern non-commercial and recreational catch.

- (3) Understand product flow, price determination, demand structure, consumer preferences and non-market channels of fish distributions relationships with formal markets (HC 1.1.4), including origin of products

Unfair trade practices diminishing U.S. domestic fisheries in the Western Pacific Region have been noted by the Council in recent meetings. The Council has highlighted the need to improve product labeling, traceability in the market, and to investigate influences of potential ‘dumping’ in U.S. market.

- (4) Assess the human dimensions of US Pacific Marine managed areas (such as area closures or MPAs) regarding procedural and distributive justice, transferred economic, social and ecological effects and safety. (HC 3.1.2)

This priority addresses monuments and sanctuaries, with a focus on a proposed sanctuary in the Pacific Remote Island Areas, disproportionately affecting American Samoa. The disproportionate burden faced by American Samoa has been noted by the Council as an Equity and Environmental Justice (EEJ) issue. It also compliments a Pelagic Fisheries research priority identified above.

The SSC working group recommends that the Council identify the following as the two highest priorities for NMFS and other agencies to address in 2025:

- **Improved pelagic false killer whale assessments on the high seas with a focus of delineating full stock range based on robust biological data (PS2.2.1)**
- **Inclusion of other available data, including tagging and acoustic data to fulfill the above priority to better discern information beyond the EEZ and among the range of the species where it overlaps with U.S. fisheries**
- **Mitigation of depredation and development of deterrents to reduce incidental interactions in U.S. Pacific Island fisheries (PF5)**
- **The above recommendations should be addressed between Council staff and NMFS staff to add specificity for tenable projects in 2025 conducted by NMFS and external entities.**