

WPFMC Social Science Planning Committee (SSPC)
SEEM Review Working Group
Report and Recommendations
Executive Summary

The May 2024 WPFMC SSPC meeting resulted in the following recommendation to establish the SSPC SEEM Review Working Group (SSPC-WG):

The SSPC forms a working group to review the SEEM process (Hospital, Ayers, Severance) and will report out at the 2025 SSPC meeting.

SSPC SEEM Review Working Group Member affiliations

- Justin Hospital (NOAA Fisheries, Pacific Islands Fisheries Science Center)
- Adam Ayers (Cooperative Institute for Marine and Atmospheric Research)
- Craig Severance (Chair, WPFMC SSPC)

Process:

The SSPC-WG met on three occasions

- February 12, 2025: SSPC-WG and Council staff discussed WPFMC perspectives and objectives for the SEEM Process.
- February 26, 2025: SSPC-WG discussed pros/cons of the current SEEM process and explored objectives for a revised SEEM Process.
- April 2, 2025: SSPC-WG discussed format and plan for working group report

Key Highlights of SSPC-WG SEEM Review:

1. The SSPC-WG identified numerous *benefits* to the existing WPFMC SEEM Process including its ability to identify issues of concern, promote dialogue, build trust, and allow the fishing community to have a voice in the ACL-setting process.
2. The SSPC-WG identified *issues* that complicate the existing WPFMC SEEM Process including concerns of potential overlap with the P* process (accounting for scientific uncertainty), utility and effectiveness of the current scoring methodology, varying community representativeness across SEEM applications, and acknowledgment of the time commitment required for the community to participate.
3. The SSPC-WG offers a menu of options for SEEM process revisions that we hope will sustain the benefits of the SEEM while minimizing current issues.

Key Recommendations

1. Solicit input from the SSPC to improve upon SSPC-WG-suggested options
2. Solicit input from the WPFMC Advisory Panels to determine fisher perspectives and preferences towards options presented in the SSPC-WG SEEM Review report, specifically as it relates to the
 - a. Desired SEEM outcomes
 - b. SEEM implementation process
 - c. SEEM trigger process
 - d. SEEM participation strategies

**WPRFMC Social Science Planning Committee (SSPC)
SEEM Review Working Group Report**

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SEEM Motivation, History, Current Considerations

The omnibus amendment to the Fishery Ecosystem Plans for the Western Pacific Region (WPRFMC, 2011b) established the process for specifying annual catch limits (ACL). The specification process included a qualitative method for determining P* ([acceptable] probability-of-overfishing) as part of the acceptable biological catch (ABC) control rule, and a similar qualitative construct for setting ACLs. The dimensions used for the ACL qualitative construct includes the following factors: (1) Social; (2) Economic; (3) Ecological; and (4) Management Uncertainty (SEEM). The amendment did not specify the criteria or scoring values within the dimensions under the recognition that SEEM analyses will be unique for each fishery.

The first SEEM analysis was conducted for the 2011 Main Hawaiian Islands (MHI) Bottomfish stock assessment processes through a committee established at the 150th Council meeting in March 2011 (WPRFMC, 2011a). This committee established the original methodology for the SEEM analysis. Since then, SEEM analyses have been conducted in conjunction with P* processes for stock assessments in the region. SEEM working groups were implemented for the following assessments; 2011 MHI Deep 7 bottomfish, 2014 Reef fisheries for Hawai'i, the Marianas, and Guam; 2015 Territorial bottomfish (American Samoa, CNMI, Guam); and 2018 MHI Deep 7 bottomfish fishery. To address variability in the implementation of the SEEM, an effort to improve standardization was completed in 2019, resulting in the SEEM* framework (Hospital et al., 2019). The SEEM* has been applied for the 2019 MHI Kona Crab, 2020 MHI uku, 2023 American Samoa BMUS, and 2024 MHI Deep 7 bottomfish assessments.

Procedurally, community input in the stock assessment process has increased significantly since the 2011 omnibus amendment established the P* and SEEM constructs within the ACL specification process. Stock assessment scientists now conduct local, in-person data workshops with fishing communities as part of their regular assessment workflow (Yau and Oram, 2016; Iwane et al., 2023). These workshops allow fishing communities to voice concerns with and provide insights into the data used in stock assessment models and share observations on fishery conditions that can improve assessment models. Stock assessment scientists take these concerns into account and provide feedback to communities in-person on how they addressed previous community issues and concerns. These meetings highlight some of the issues related to the scientific uncertainty underlying stock assessment models (covered under the P* process), but also allow the fishing community to get their perspective and on-the-water observations heard by scientists and managers. Additionally, a fisher-led initiative in 2020 to

solicit and synthesize fisher observations have become operationalized in recent years (WPRFMC, 2021; Ayers et al., 2022). Fisher observations have become a standing agenda item at quarterly advisory panel meetings and an annual summit is held to review fishing conditions from a community perspective. The fisher observations have been structured to address Social, Economic, Ecological, and Management considerations and directly feed into future SEEM* discussions. Fisher observations are published as PIFSC data reports and narrative summaries are now routinely included in Council's Annual SAFE Reports. The information exchanges facilitated by data workshops and fisher observations were one of the primary reasons the SEEM process was conceived, to provide a mechanism for community input in the stock assessment process.

SSPC SEEM Review WG Process

The SSPC SEEM Review WG (SSPC-WG) was composed of 3 members: Justin Hospital (PIFSC/ESD, SSPC member), Craig Severance (SSPC Chair), and Adam Ayers (CIMAR, PIFSC/ESD). The SSPC-WG was charged with reviewing SEEM objectives and developing a strategy to consider revising the SEEM process. The SSPC-WG met virtually 3 times (twice in February and once in April), in order to discuss issues and derive recommendations among the group. Key discussion topics discussed during the meetings are listed below organized across some broad themes:

- **Importance of including fishing community perspectives** (to what extent is this already being captured in stock assessment data workshops and fisher observations?; SEEM as an opportunity to prioritize/reprioritize research topics/fishery data gaps; feedback on fishery data, models, etc.; 'issue-spotting' for scientists and managers;)
- **Technical considerations:**
 - *Issues with scoring during the SEEM process* (fishing community reluctance, at times, to provide scores; potential double-counting with the the P* in the 'Ecological' dimension; concept of discounting may not be considered; perhaps the scoring construct does not need numbers; potential for negative scoring due to importance of SEEM categories to the community to counteract P* reductions); varying levels of preparation of WG members;
 - *Time commitment of serving on a SEEM WG* (currently an afternoon/half-day, perhaps a full day if WG members travel from a neighboring island in Hawai'i or when joint P* and SEEM meetings are held; unsure what travel commitments might be in other jurisdictions);
 - *Importance of setting aside enough time for discussion during a SEEM WG;*
 - *Editing SEEM questions* (to address scoring, discounting, double-counting, etc.);
- **Triggers for a SEEM process** (benchmark stock assessment; upon receiving a stock assessment, AP triggers a SEEM based upon fishing community concerns, etc.);
- **Improving community participation/representation** (including representatives and voices from different fishery sectors; including ecological/ecosystem expertise that SEEM processes may lack; even developing representative panels with rotating service terms);

Based upon these themes, the SSPC-WG devised 4 key issues and developed a suite of process options that could improve future SEEM applications. These process options up for consideration include:

- Defining SEEM outcomes
- SEEM implementation
- Process to trigger a SEEM
- Representative community and expert participation

Process Options Identified by the SSPC SEEM Review Working Group

SEEM Outcomes: What are the most meaningful/preferred outcomes from the SEEM process?

In considering potential revisions to the WPRFMC SEEM process, the SSPC-WG recognized the need to first determine the outcomes desired from the process. The objective of the SEEM WG is to deliver information on each of the SEEM dimensions for the qualitative construct for setting annual catch limits (ACLs). Council staff and SSPC-WG members agreed that a significant value of the SEEM process is to ensure the fishing community is able to get their perspectives considered in the management process.

The current SEEM* process (Hospital, et al. 2019) is structured to motivate discussion among SEEM working group (WG) members around fishery conditions in the context of Social, Economic, Ecological factors, as well as the topic of Management Uncertainty. There are example trigger questions provided in the framework, but the process is designed to be flexible and responsive to concerns relevant to the group convened. As an example, in the 2020 uku SEEM WG meeting draft report, WG members highlighted several state-federal management issues that complicate allocative management options, including variability in non-commercial data collected, the lack of non-commercial management, how sector-based allocation might create conflict, and other potential impacts (WPRFMC, 2020). The 2024 MHI Deep 7 bottomfish SEEM WG also included an important discussion with several comments by the fishing community regarding skepticism over use of non-commercial data in assessments, potential of underreporting by commercial participants, the impact of shark depredation on assessments and other issues. In general however, there was a consensus that management had improved since the previous SEEM WG meeting in 2018 (WPRFMC, 2024). Thus insights from the SEEM WGs provide important context about potential management changes, community feedback on SEEM issues, and shifts in perspectives over time, which are critical inputs to the Council process. While the existing fisher observations process (Ayers, et al. 2022) facilitates community input towards SEEM considerations, the SEEM* structures stock-specific community input in the context of stock assessment outcomes.

The current framework also affords a scoring rubric that allows the group to arrive at consensus scores that translate to a recommended percentage reduction in the probability of overfishing, if any, in the ACL-setting process on account of social, economic, or ecological (SEE) factors affecting the fishery. In considering management uncertainty (M*) the working group considers

this criteria in two parts: management and monitoring. Based on the results on the SEEM analysis, the Council may apply a percentage reduction in the probability of overfishing through the establishment of an annual catch target (ACT) in situations where in-season monitoring is feasible and fishery management agencies have the ability to close the fishery, when needed.

Some concerns regarding the current framework include questions about potential overlap between the ecological element of the SEEM and the P* process, which focuses on scientific uncertainty, and whether this could create a situation of double-counting. Similarly, given the nature of the P* and SEEM process, the fishing community has expressed concerns about the strictly additive nature of these parallel processes that can only result in reductions in the acceptable probability of overfishing, with no way for SEEM to counteract P* reductions. There have also been concerns expressed at recent SSC meetings questioning the need for the P* [and SEEM process] either due to the fact most regional fisheries are not facing pressure of exceeding the annual catch limits, and noting that some factors outlined in the P* [and SEEM process] may not be applicable to all fisheries or may overlap across processes.

Therefore, the SSPC-WG proposes additional outcomes that could be pursued through a SEEM working group that would ensure the fishing community is able to get their perspectives considered in the management process, while minimizing the need to arrive at a consensus score that can only serve to further reduce the acceptable probability of overfishing in the ACL-setting process. However, this scoring procedure can still be utilized in situations where the SEEM working group deems necessary.

Status Quo	Process Addition Options
<p>Community observations and feedback on SEEM considerations</p> <p>Consensus decision on a score that translates to either</p> <p>a) proposed percentage reduction, if necessary, in the probability of overfishing risk (in addition to P* reduction), based on "SEE" considerations for ACL-setting decisions.</p> <p>b) proposed percentage reduction, if necessary, in probability of overfishing risk (in addition to P* reduction), based on "M*" considerations for the establishment of an annual catch target (ACT), where feasible.</p>	<p>A. Define community-based fishery management objectives, priorities, and/or define metrics to measure success of fishery management alternatives using a SEEM perspective.</p> <p>B. Develop a list of priority research questions and/or management strategy topics that can inform the stock assessment process and fishery management</p>

SEEM Implementation: What is the most appropriate process to implement a SEEM?

Implementation procedures are intrinsically linked to the desired outcomes of the SEEM process, as described above. Potential SEEM implementation strategies for the SEEM outcome options are presented below.

The current SEEM* framework involves a discussion of SEEM considerations, followed by a scoring process based on the rubric outlined in the methods document (Hospital et al., 2019). The current process results in a WG report that outlines key SEEM considerations important to the fishing community and an associated recommended score for the “SEE” components and/or the “M*” component. Different outcomes will result in different implementation strategies. However, elements of the existing SEEM* framework can always be employed, as desired by the working group convened.

Outcome Option	Implementation Strategies
Status Quo	The SEEM* WG currently implements the SEEM according to existing methods (Hospital et al, 2019)
Option A. <i>Community-based Fishery Objectives</i>	<p>The SEEM WG could prioritize existing Fishery Ecosystem Plan (FEP) objectives to highlight which are most important for the fishery under evaluation.</p> <p>In addition to, or alternatively, SEEM WG could define their own objectives and associated metrics to allow Council to evaluate fishery management alternatives through the ACL-setting process giving consideration to these community-defined priorities.</p>
Option B. <i>Research and Management Priorities</i>	Utilizing a SEEM perspective and/or building off the trigger questions outlined in the existing methods, the SEEM WG could list and prioritize research questions or management strategies they feel are necessary for improved stock assessment process outcomes and fishery management.

SEEM Trigger: What is the most appropriate process to initiate a SEEM?

Another discussion point tackled by the SSPC-WG related to the process necessary to initiate the SEEM process, as the omnibus amendment does not specify when or how to initiate the SEEM process. As previously stated, given that the probability of overfishing associated with current exploitation levels in regional fisheries are currently low, the SSC has inquired into whether the efficiency of the current process can be improved, perhaps by evaluating the need for the SEEM [and P*] prior to initiating the working group. The SSPC-WG also reflected on the time commitment required by the community to actively participate in the SEEM process, and have provided the following process options available to further define when a SEEM is necessary to implement.

Trigger Option	Process Option
Status Quo	A SEEM is initiated by Council recommendation upon the approval of each stock assessment by the SSC.
Option A. <i>Discretion of Council / Advisory Committee</i>	<p>Upon receiving a draft stock assessment, the relevant Advisory Panel and/or SSC and/or Council may consider if they have any “SEEM” related concerns based on the model, results, or ACL risk table outcomes.</p> <ul style="list-style-type: none"> - Council and/or Council advisory group(s) may request a SEEM to address “SEEM” considerations - Alternatively, if Council and/or Council advisory groups are comfortable with the stock assessment model, results, and ACL risk table options. <u>No SEEM may be required.</u>
Option B. <i>Fixed schedule</i>	<ul style="list-style-type: none"> a. A SEEM may be initiated after each benchmark stock assessment to outline “SEEM” considerations from the community perspective to inform the update stock assessment. b. A SEEM may be required after each update stock assessment to outline “SEEM” considerations from the community perspective to inform the next benchmark assessment.

Participation: What is the best way to ensure the diversity of the fishing community is adequately represented in SEEM implementation?

A final issue addressed by the SSPC-WG related to ensuring representative participation from the fishing community and individuals with relevant expertise in the SEEM process. Upon reflection of past SEEM applications, representation from the fishing community, managing agencies, and scientific expertise has varied considerably.

For example, the composition for select SEEM meetings is described below.

- 2015 Territorial Bottomfish SEEM WG included 6 individuals; including 3 from PIFSC, 2 from PIRO, 1 SSC member, and did not include any representatives from the territories.
- 2020 uku SEEM WG included 9 individuals, including 3 from the State of Hawai'i Division of Aquatic Resources (HDAR); 3 from the uku fishing community; with 1 person each from PIFSC/Ecosystem Sciences Division, PIRO/Sustainable Fisheries Division, and 1 from the SSC.
- 2024 MHI Deep 7 bottomfish SEEM WG included 15 participants and was composed of 3 individuals from HDAR; 2 from PIFSC; 1 from PIRO, 1 from the SSC; and 8 from the fishing community. Notably, the 2024 MHI Deep 7 meeting included a much larger contingent from the fishing community, but both recent meetings had 3 members from HDAR, including the chair of both groups.

In recognition of the diverse motivations and expertise within regional fishing communities, the SSPC-WG would welcome opportunities for future SEEM groups to ensure that they are reflective of the community and encourage steps that can promote active participation from multiple perspectives.

	Participation Process Option
Status Quo	Collection of fishing community members (AP members, other Council committee members, local fishers) and agency representatives, based on expertise and availability, as coordinated by Council staff.
Option A. <i>Define relevant community perspectives / fishery sectors</i>	Relevant Advisory Panel (AP) to define expertise and/or fishery sectors that are necessary to ensure a representative SEEM process. This would provide the AP with initial input into the voices they feel are relevant for the SEEM WG panel.
Option B. <i>Community partnerships</i>	Council could formally partner with local organizations (PIFG, HFACT, Conservation International-Hawaii, Boat Clubs, popular press, social media, etc.) to recruit diverse fishery participants that align with fishery sectors and/or perspectives who agree to regularly participate in SEEM meetings.

Conclusion and Next Steps

This report offers a summary of SSPC-WG deliberations and suggested process alternative options that we hope will sustain the benefits of the SEEM process while minimizing perceived issues with the current SEEM*. The SSPC-WG welcomes feedback on the proposed alternatives from Council staff, the SSPC, and WPFMC Advisory Panels. The SSPC-WG can further refine this document, as needed, to improve the SEEM* and ensure fishing community perspectives inform and improve the ACL-setting process for fisheries across the Pacific Islands Region.

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