

ECOSYSTEM WORKGROUP REPORT ON THE FISHERY ECOSYSTEM PLAN INITIATIVE 4 – PROGRESS REVIEW

1. Recommendations

The Ecosystem Workgroup (EWG) recommends the Council take the next steps for Initiative 4, including:

1. Further explore the application of risk tables for groundfish using selected pathways described by the Scientific and Statistical Committee Ecosystem-Based Management and Groundfish Subcommittees (SSC-EBM/GFSC);
2. Broaden the application of risk tables to fishery management plans (FMPs) other than groundfish;
3. Request that NMFS Science Centers draft a pilot risk table for additional species, guilds or suites of species, including data-poor species if possible, in keeping with an SSC recommendation.

2. Progress on the Initiative

The Council began the Ecosystem and Climate Information Initiative (Initiative 4) in September 2022. Building on ideas generated under the Climate and Communities Initiative (CCI, Initiative 3), this initiative was developed to:

1. Review the incorporation of ecosystem and climate information into the Council's harvest-setting and fisheries management processes (completed September 2023, Agenda Item F.1.a, [EWG Report 1](#) at Section 3);
2. Determine the need and appropriate timing for additional FMP-specific ecosystem and climate information (drafted in prior EWG reports and completed in figures herein, see Appendix); and,
3. Develop clear pathways for needed ecosystem and climate information to be used in the setting of scientific uncertainty and harvest policy (remaining process for completion in Section 3, Next Steps).

The EWG last reported to the Council on Initiative 4 in September 2023. The SSC's EBM-GFSC discussed Initiative 4 at their [meeting on September 21, 2023](#), with a [report out to the full SSC in November](#). Per Council guidance from the September 2023 meeting, the EWG met with the Groundfish Management Team (GMT) and Advisory Subpanel (GAP), and with the Coastal Pelagic Species Management Team (CPSMT) and Advisory Subpanel (CPSAS). In addition, the EWG met independently on December 4, 2023, to further discuss and develop the initiative. To promote additional Council discussion this report is being made available on the Council's website before the [February 27, 2024 EWG webinar](#), which will provide a briefing for other AB members and the public.

September 2023 Council Discussion and Direction

During the Council's September discussion of Initiative 4, the Council expressed interest in expanding the risk tables to include a metric of fishing pressure, similar to the use of catch per unit of effort (CPUE) in the North Pacific Fishery Management Council's risk tables (Agenda Item F.1.a, EWG Report 1, September 2023, Appendix A). Additionally, the Council touched on the need for a more detailed explanation of what the full process to include information from the pilot species risk tables (petrale sole and sablefish) would look like in the groundfish harvest setting process before broadening the scope of the Initiative to other species and FMPs. The Council also asked that the EWG put on hold further development of species selection criteria and investigation into mechanisms other than risk tables for including ecosystem and climate information into the harvest setting process within and outside of the groundfish FMP.

September-November SSC and SSC Subcommittees

In response to the concerns raised by the Council, the application of the pilot risk tables were reviewed as part of the SSC's EBM-GFSC meeting on September 21, 2023 ([SSC's Ecosystem-Based Management and Groundfish Subcommittees Report](#)). The EBM-GFSC identified four pathways (management on-ramps) for how and when risk tables could be used by the Council in setting harvest levels:

The four pathways identified for informing ABC specification were 1) informing the choice of scientific uncertainty (σ) when an assessment is adopted, 2) informing the policy choice of risk tolerance (P^) when an assessment is adopted, 3) informing how σ and/or P^* might vary over the course of a projection interval between assessments, and 4) direct specification of the ABC.*

At the November Council meeting, the SSC reviewed and discussed the EBM-GFSC report and endorsed the EWG's preliminary work on the risk table approach and the use of the sablefish risk table in the 2025-2026 harvest specifications cycle to inform Council decision on P^* alternative, and recommended the development of additional risk tables to examine their potential utility for data-poor stocks ([Agenda Item E.5.a Supplemental SSC Report 1](#)):

Potential implementation pathways that were outlined in the EBM-GFSC report involved using risk categories to prioritize stock assessments, adjust the extent of scientific uncertainty (σ) or management risk tolerance (P^), modify time penalties that account for the age of an assessment, and make in-season adjustments. The SSC subcommittees identified a need to tailor risk tables for their intended use and develop a process that prevents multiple concurrent uses (i.e., "double-counting" uncertainty). For the 2025-2026 harvest specifications cycle, the information in the risk table for sablefish could be used by the GMT or Council to inform their decision on P^* alternatives. The SSC endorses the EBM-GFSC report and EWG's preliminary work on a risk table approach, and recommends operational testing to explore the various implementation pathways presented. The SSC also recommends development of additional risk tables to examine their potential utility for data-poor stocks.*

Using the SSC EBM-GFSC's numbering system for the four potential pathways for informing ABC specification, the EWG sees Pathways 1 and 3 as the most immediately do-able and useful:

- SSC EBM-GFSC Pathway 1 – Informing the choice of scientific uncertainty (sigma) when an assessment is adopted;
- SSC EBM-GFSC Pathway 3 – Informing how sigma and/or P* might vary over the course of a projection interval between assessments.

Pathway 1 would add ecosystem and climate information to the consideration of scientific uncertainty when assessments are first adopted, which would ultimately help develop a larger and more regular science process for considering whether ecosystem and climate information can and should be used in the assessments for particular species or groups of species. Pathway 3 could be particularly useful to this Council for managing species that have not been recently assessed by allowing upward or downward adjustments in existing buffers for stock assessment staleness penalties. As we have learned from years of receiving the California Current ESR, our ecosystem is highly variable and Pathway 3 would give the Council more opportunities to take that variability into account.

While the EWG appreciates the SSC EBM-GFSC developing four pathways for risk table use, Pathway 2 on adjusting P* would add burden to the Council process without allowing sufficient flexibility to harvest level adjustments to merit the burden added. Pathway 4 is interesting and promising, but would require significantly more scientific support and discussion to develop and implement at this time. By choosing either Pathway 1, Pathway 3, or both, the Council and NMSF scientists could build towards Pathway 4 over time.

October 2023 Groundfish and January 2024 CPS Advisory Body Meetings

Timelines and pathways for climate/ecosystem information inclusion in the harvest setting process were revisited with the GMT/GAP and CPSMT/CPSAS at their respective FMP joint meetings with the EWG (see Appendix).

The GMT/GAP provided additional feedback during the joint meeting in relation to the EBM-GFSC report, as well as a recommendation to use the risk tables to inform the stock assessment prioritization process, in addition to previously identified pathways. Through these meetings and discussions, the EWG has addressed the initiative task to outline the implementation process for the risk tables in the pilot species' management process (see Appendix at Figure 1).

To further explore adapting the risk table approach for other FMPs, the EWG held a joint meeting with the CPSMT and CPSAS on January 22, 2024. The CPS advisory bodies improved and updated the figure illustrating the CPS harvest setting process that highlights the timing and potential on-ramps for ecosystem and climate information (see Appendix at Figure 2). The EWG also learned that there are two main pathways that the CPSMT/CPSAS use to include climate and ecosystem information in the harvest setting process:

- CPSMT and CPSAS evaluate CPS-related trends in the annual California Current Ecosystem Status Report when providing the Council rationale for selecting harvest setting alternatives ([June 2022 CSNA report](#)). Using a risk table with this process could provide

participants with an additional SSC-reviewed methodology for incorporating ecosystem indicators into CPSMT and CPSAS recommendations to the Council.

- CPS Stock Assessment and Fishery Evaluation (SAFE) report includes an Ecosystem Considerations chapter that is updated annually with a summary of ecosystem trends and indicators. Updating the contents and direction of the Ecosystem Considerations chapter through a coordinated process between the EWG, CPS advisory bodies and appropriate additional Council and NMFS staff could improve the utility of this chapter to the CPS management process.

To use the process developed for the pilot groundfish species as a template, NMFS Centers could provide the Council and SSC with a draft risk table using a pilot CPS species or group to help illustrate the timing and applicability of this method in the CPS harvest setting cycle.

Ecosystem and Climate Considerations in Salmon Management Process

Initiative 4 was initially intended to address the CPS, Groundfish, and Salmon FMPs. However, the EWG was not directed to work with the salmon advisory bodies during the September 2023 through March 2024 period. Beyond the Council process, work on salmon stoplight tables continues and ecosystem and climate information in support of salmon management is provided in the 2024 California Current ESR. In March 2023, Long Live the Kings made a [presentation to the Council](#) on the Pacific Salmon Initiative, a project that continues into 2024 and which includes government and private entities that regularly coordinate with the Council. In November 2023, NMFS provided the Council with [Supplemental Report D.1.b](#), a summary report on a July 2023 salmon ecosystem indicators workshop. NMFS indicated in that report that it was developing a summary of findings from the July 2023 workshop. The EWG is interested in seeing how these processes evolve before recommending further steps for the Salmon FMP under Initiative 4.

3. Next Steps

For March 2024 and beyond, work on this initiative could proceed as follows, and will likely evolve depending on decisions made at this and subsequent Council meetings:

- EWG would revise the ecosystem and climate information on-ramp processes illustrated in Figures 1 and 2, based on direction received at this March 2024 meeting.
- EWG would work with NMFS Science Centers to draft a risk table for a pilot CPS species or group to help illustrate the timing and applicability of this method in the CPS harvest setting cycle. Per EWG Recommendation #3 in Section 1, this work may be combined with a request from the Council that NMFS Science Centers draft a pilot risk table for additional species, guilds or suites of species, including data-poor species if possible, in keeping with an SSC recommendation.
- EWG would work with Science Center ecosystem and assessment scientists to develop a methodological framework for populating a risk table to illustrate how a risk table might be used to inform the choice of scientific uncertainty (sigma) when a groundfish assessment is adopted (SSC EBM-GFSC Pathway 1).
- Once the above framework has been drafted, the EWG would share that framework with the GMT, GAP, and then SSC for their initial review and comment.

If the framework is ready for the Council's final review in September 2024, the Council could adopt the framework for groundfish in September and provide further guidance on CPS management, or recommend adopting a similar framework for CPS.

Appendix: Groundfish and CPS harvest-setting process figures

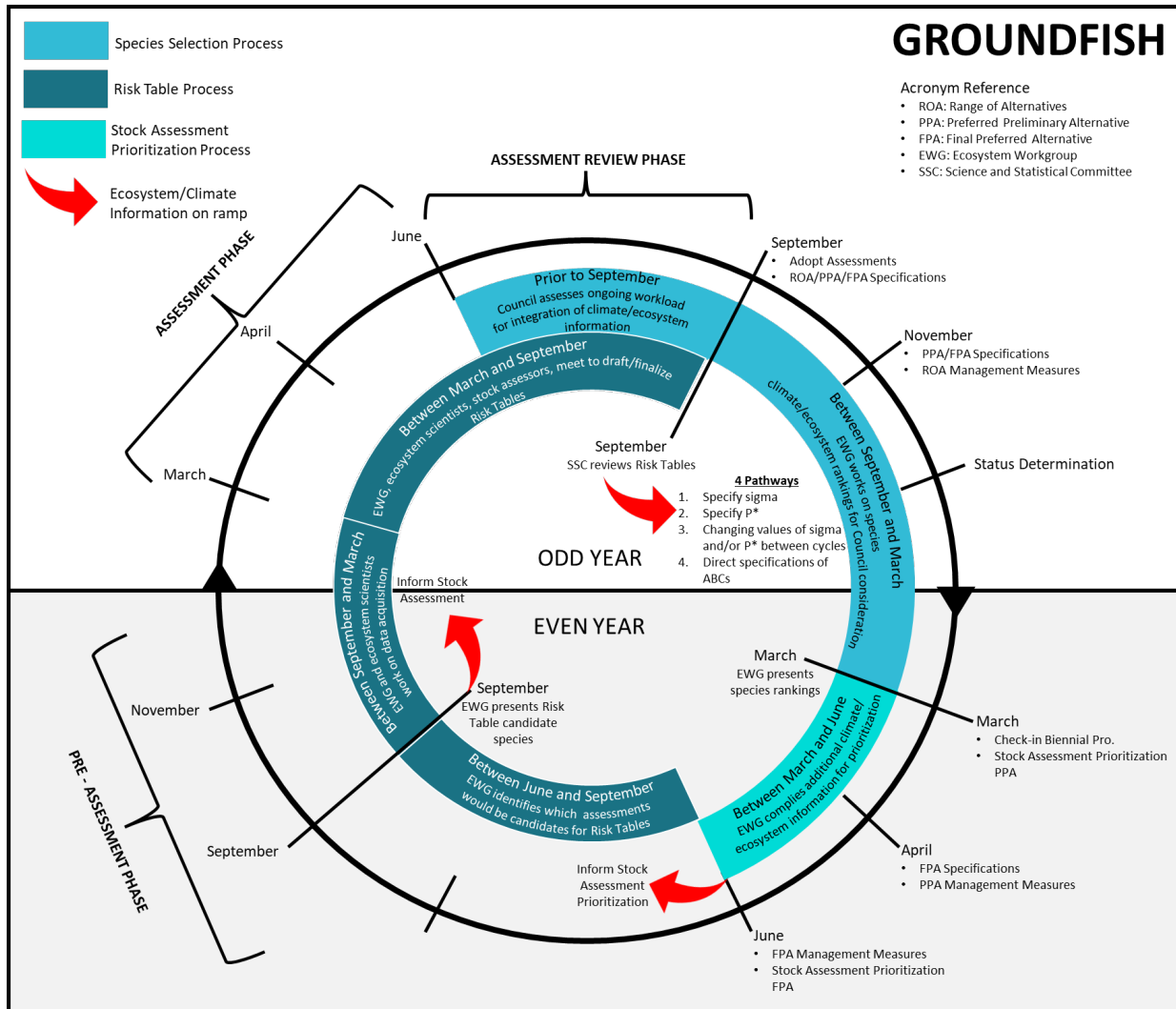


Figure 1: Groundfish harvest setting process highlighting the timing and potential on-ramps for ecosystem and climate information.

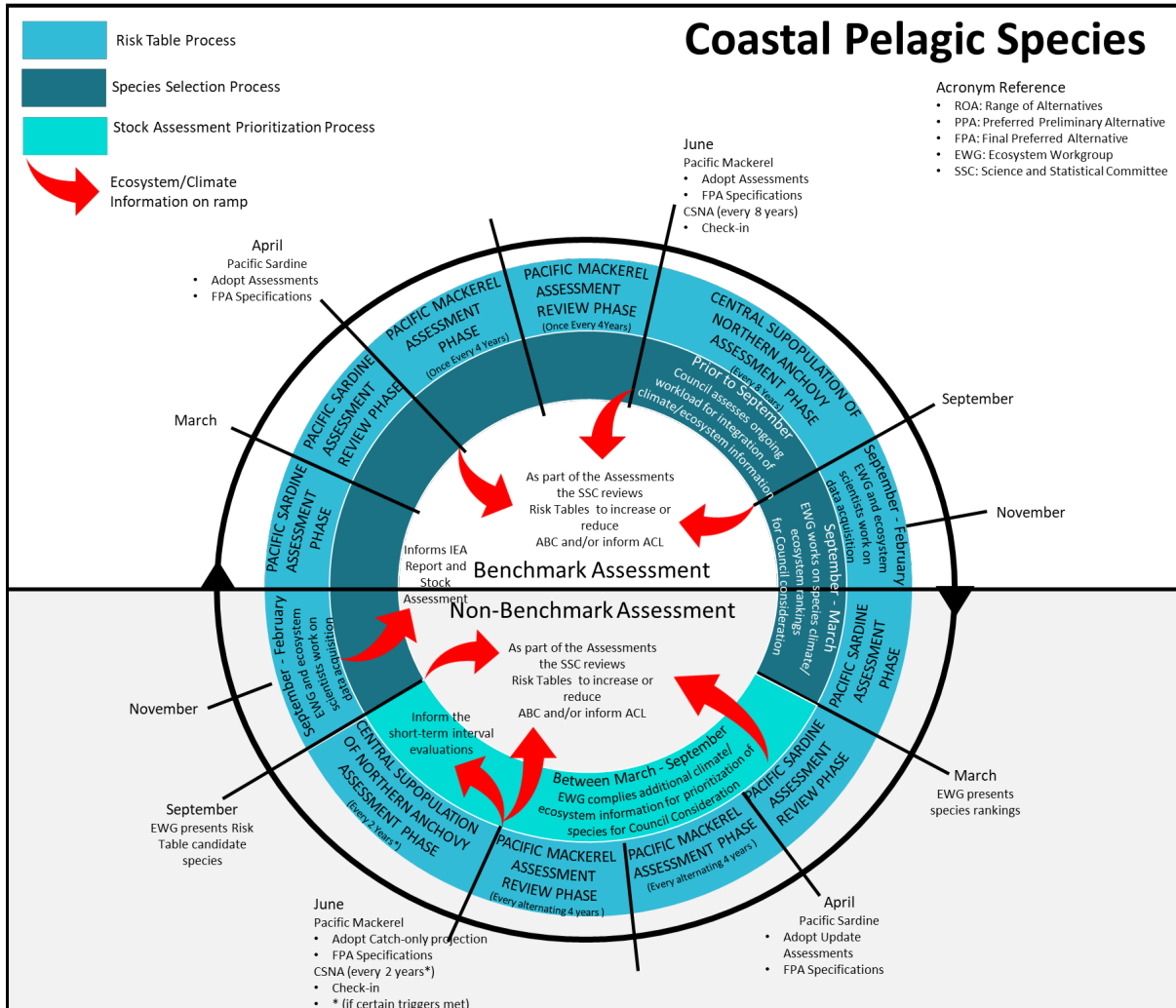


Figure 2: CPS harvest setting process highlighting the timing and potential on-ramps for ecosystem and climate information.

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