

**PROPOSED PROCESS FOR UPDATING SACRAMENTO RIVER FALL CHINOOK
REFERENCE POINTS, CONSERVATION OBJECTIVE,
AND HARVEST CONTROL RULE**

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I. Introduction

In April 2025, the Council preliminarily selected two of three topics proposed by the Sacramento River fall Chinook Workgroup (SRWG) for the 2025 Salmon Methodology Review ([SRWG 2025a](#)). These were (1) *Derivation of natural-area S_{MSY} for Sacramento River fall Chinook* and (2) *Methods for deriving a total (natural areas plus hatchery) escapement objective based on consideration of natural production and hatchery needs*.

The Council also directed Council staff to develop a document that outlines the appropriate steps and sequence for a comprehensive review of the SRWG’s recommendations for evaluating the Sacramento River fall Chinook (SRFC) reference points, the conservation objective, and the harvest control rule (hereafter collectively referred to as the management framework).

While there has been broad support of the ongoing work by the SRWG, some concerns have been raised regarding the process to date. The Council discussed a need for greater clarity and transparency in how and when updates to the management framework will be implemented, and that it may be more appropriate to defer implementation of any further changes until a complete suite of alternatives for the SRFC management framework and a thorough comparison of tradeoffs are available for Council consideration, rather than proceeding incrementally. Additionally, due to the highly technical nature of the work conducted thus far, members of the public have found it challenging to engage meaningfully and provide informed feedback. There was a recognized need to improve opportunities for public involvement and input on potential updates to the management framework without compromising scientific integrity.

In response to these concerns, Council staff discussed the process and progress to date and how further updates could be implemented with members of the SRWG and the Salmon Technical Team (STT) and staff at the National Marine Fisheries Service (NMFS) and the National Oceanic and Atmospheric Administration General Council (NOAA GC) to help inform the development of this document.

Additional background on Council discussions to date, including a summary of relevant reports and prior actions related to the SRFC management framework prior to April 2025, is provided in [Appendix A](#). A description of the SRFC management framework, including the current values used in management and specific concerns raised to date (where applicable), is provided in [Appendix B](#). The specific Salmon Fishery Management Plan (FMP) and Council Operating Procedure (COP) requirements for modifying different elements of the SRFC management framework are outlined in [Appendix C](#).

II. Problem

While the Council has demonstrated interest in reviewing the existing management framework and considering alternatives through the formation of the SRWG, it has not yet issued a formal problem statement or specifically articulated the need for an update. To date, the Council has received multiple reports and technical analyses outlining current issues, which have included: the conservation objective was originally established in the 1980s using data from the 1950s through the 1980s, and it has since proven difficult to reproduce and has been flagged for review and potential revision; the S_{MSY} value established in 1984 was intended to be updated once fish passage issues at Red Bluff Diversion Dam (RBDD) were resolved, and gates on RBDD have now been open since 2011; changes in S_{MSY} may necessitate a revision of the harvest control rule, status determination criteria, and forecasting methods; and productivity and carrying capacity in the ecosystem that supports SRFC may have declined since the establishment of the current spawner escapement target (see [Appendix A](#) for more details).

The Council must consider whether and how best to update the SRFC management framework and recommend an appropriate path forward to implement any changes. Updating some elements of the management framework will require an FMP amendment while others do not necessarily (see [Appendix B](#)), and the Council must decide which elements should be addressed through that formal process and which, if any, it wishes to address through other Council processes (such as Salmon Methodology Reviews).

Additionally, the Council should address how to respond to public concerns that the process for implementing these updates has been unclear and confusing, particularly regarding how and when stakeholders can meaningfully engage and provide input.

III. Proposed Pathway to Address the Problem

If the Council intends to revise the full management framework for the SRFC, an FMP amendment will be required. The FMP and Council Operating Procedures (COPs) outline which types of changes necessitate an FMP amendment, and which may be done through alternative Council review processes such as Salmon Methodology Reviews. This section provides a summary of these requirements. Additional excerpts from the FMP and COPs can be found in [Appendix B](#).

Reference points may be updated within an FMP amendment or through another Council review process. The FMP and COP 10 specify that *conservation objectives* and the *shape of harvest control rules* should be updated through an FMP amendment. COP 15 states that proposed methodologies for conservation

objectives may be evaluated through the Salmon Methodology Review process and FMP Section 3.3.3 notes that the SSC may revisit ABC control rules during Salmon Methodology Review.

Methodology Reviews occur on a shorter time scale, typically during the interim period between salmon preseason planning cycles. These reviews are designed “*to provide peer review of the technical estimation and modeling procedures, to ensure the best and most objective technical analyses possible, to minimize confusion during the preseason option development process, and to resolve disputes over methodology*” (COP 15). **These reviews are most appropriate for evaluating technical tools or model updates that do not involve broader policy trade-offs.**

Outcomes of methodology reviews may result in new determinations by the SSC of what meets the guidelines for best scientific information available (BSIA). Per National Standard 2 ([50 CFR 600.315](#)), “*conservation and management measures shall be based upon the best scientific information available.*” The STT provides comments on the technical merits of methods subject to review and any implementation considerations the Council should take into account if and when they adopt any new methodologies. COP 15 states “*During the November meeting, the Council will adopt all proposed changes to be implemented in the coming season or will provide directions for handling any unresolved methodology problems.*” Although in the past the Council has held off on immediately implementing outcomes of methodology reviews, it must also ensure it is adhering to NS2 guidelines.

FMP Amendments are intended for decisions involving **longer-term policy considerations, trade-off analysis among alternatives, and broader stakeholder engagement**. Amendments allow for structured input from Council management and advisory bodies, as well as public comment. **FMPs and amendments must also rely upon BSIA** (see National Standard 2, [50 CFRs 600.315\(e\)](#)) and BSIA determinations from the SSC, but also include broader considerations of objectives, risks, tradeoffs, and other non-objective criteria. The structured process to amend an FMP as outlined in [COP 11](#) could help address concerns about unclear participation opportunities and confusion surrounding implementation.

At the outset of the FMP amendment process, the Council would adopt a clear problem statement. This would differ from the current approach, where the Council has directed the SRWG to evaluate the current management framework and provide new management measures and but has not formally developed a problem statement, as noted in [Section II](#).

The Council would also establish a tentative amendment timeline early in the process. While opportunities for input from advisory bodies such as the STT, SSC, and Salmon Advisory Subpanel (SAS), and the public would continue, the amendment schedule would provide a clearer structure. Unlike the current process—where SRWG updates are noticed as “progress report” and Council guidance and any actions taken are largely dependent on interim work—the FMP schedule outlines specific outcomes planned for each Council meeting which would enhance transparency and better inform the public about when any new adoption of measures is occurring.

Finally, the analytical documents supporting the FMP amendment would provide a comprehensive view of proposed changes to the SRFC management framework and an analysis of their impacts. This contrasts with the current incremental approach, where updates—such as the [2024 adoption](#) of a new F_{MSY} proxy value for 2025—are adopted as they become available. As the Council noted in April 2025, reviewing the full framework would offer a more holistic understanding of the broader implications of any changes.

In summary, an FMP amendment will be necessary to revise the harvest control rule structure or alter the conservation objective, and the steps to analyze alternatives and update the FMP may help address some concerns with the current approach. While some elements like reference points or changes to the harvest control rule that do not alter its shape may be revised outside of the FMP amendment process—provided there is adequate review and scientific justification—they may also be updated through an amendment if deemed more appropriate.

IV. Overview of Guiding Questions for Council Consideration

The following overarching questions are intended to guide the Council’s deliberations as it evaluates the need and approach for updating the SRFC reference points, the conservation objective, and the harvest control rule. Proactively addressing these questions will help establish clear expectations, promote transparency, and strengthen public engagement and support. Additionally, it will ensure that Council members, advisory and management bodies, and stakeholders share a common understanding of the objectives, process, roles, and opportunities for engagement throughout the development and implementation of any proposed changes. The timeline in [Section V](#) includes further details and when these questions may be most appropriately addressed.

Need for revisions: Does the Council find it necessary to revise the SRFC reference points, conservation objective, and harvest control rule?

Sequence of decisions: How does the Council wish to sequence decisions on reference points, the harvest control rule, and the conservation objective?

Process for updating: As described in [Section III](#), some updates to the SRFC management framework require an FMP amendment while others elements or processes may be adopted and implemented outside of or prior to the FMP amendment (i.e. via a Salmon Methodology Review). Does the Council wish to adopt specific components of the SRFC management framework—such as reference points or adjustments to the harvest control rule that do not alter its shape—prior to initiating an FMP amendment, or should all elements be addressed within the amendment process?

Role of Council and management and advisory bodies: What role should the Council and its management and advisory bodies play in updating the SRFC management framework?

- The **SRWG** has been tasked with evaluating the current management framework and developing options for updating reference points, the conservation objective, and the harvest control rule, including consideration of environmental variables (see [SRWG Terms of Reference \(TORs\)](#)). If the Council is to initiate an FMP amendment process: (1) Should SRWG membership be expanded to ensure the necessary expertise for completing the FMP amendment and analysis is represented? (2) Should the SRWG TORs be updated?
- The **SSC, STT, and SAS** will provide input through the Council’s standard processes (reports submitted to the Council when there is an agenda item relating to these updates, additional reviews as tasked, etc.). Should these bodies have additional responsibilities in the development of an FMP amendment? How does the Council wish to seek targeted input from these bodies on scientific, technical, or implementation aspects during the development of potential alternatives to the management framework?

- **The Council** should consider how it wishes to provide policy guidance throughout the development of any management alternatives. One option is to delegate the development of a full suite of options and alternatives to the group (current SRWG or expanded FMP Project Team) working to update the management framework, with the Council reviewing the complete package upon completion. Alternatively, the Council may choose to provide incremental direction on specific components that will ultimately inform the full set of options and alternatives (similar to the process to date). In April 2025, the Council indicated a preference for the former.

Stakeholder engagement: How will the Council ensure stakeholder involvement and buy-in throughout the process?

- Should public workshops, hearings, or other additional public outreach options be held to solicit feedback on a range of alternatives?

V. Milestones, Deliverables, and Decision Points

This section integrates the *Guiding Questions* into a tentative timeline that includes anticipated milestones, deliverables, and decision points. Since the approach to updating the SRFC management framework depends on the outcome of the two currently proposed Salmon Methodology Review topics, the structure includes two possible paths that precede the FMP amendment process.

PATH 1a outlines the decision points following the Council moving the preliminarily selected SRWG 2025 Salmon Methodology Review Topics forward for review in September and subsequently adopting one or both methods in November 2025.

PATH 1b outlines the decision points following the Council not adopting/implementing the methods currently proposed by the SRWG for methodology review topics either because they were not determined suitable for use in management at the review or they were not selected as final topics for review (but rather put on hold while other alternatives and aspects of the management framework are developed).

PATH 2 outlines the development of an FMP amendment and would be pursued following either **PATH 1a** or **PATH 1b** given that updating the conservation objective and harvest control rule requires an FMP amendment. However, the scope of the FMP amendment would differ depending on the path taken beforehand—whether utilizing the methods adopted through the Methodology Review (PATH 1a) or through exploring additional methods for updating the S_{MSY} and conservation objective during the FMP amendment process (PATH 1b).

Table 1 outlines the paths, milestones, and key questions for the Council to consider in updating the SRFC management framework. Additional details and considerations are provided in the text following the table.

Table 1. Summary table of the potential pathway for updating the SRFC management framework

Milestone 0. In September 2025, the Council selects the final topics for the 2025 Salmon Methodology Review and receives the SRFC Management Update Proposed Process staff report (this report). • Does the SRFC management framework require updating? • What updates to the management framework are only scientific questions and what have policy implications and would be better implemented simultaneously? • Does the Council move forward the SRWG methodology review items during final topic selection and are the methods determined to be BSIA and valid for use in management? ○ If yes, follow steps under PATH 1a. ○ Alternatively, if topics are not selected for review (and instead are put on hold pending development of the full framework) or go through the review but are not determined to be BSIA or valid for use in management, follow steps under PATH 1b. Note that the methods proposed for review and supporting analysis developed by the SRWG could still be beneficial to the development of FMP amendment alternatives (in other words, this does not necessarily indicate the Council does not wish to consider the methods further).	
PATH 1a. Milestone 1a. In November 2025, the Council receives the next SRWG progress report. The Council also receives reports from the 2025 Salmon Methodology Review <i>and adopts</i> the methods and results for use in management. • How does the Council want to incorporate any new methodologies and BSIA determinations into the 2026 salmon preseason process? • How does the Council wish to proceed with further updating the SRFC management framework? ○ The Council could provide the SRWG with additional guidance and continue in a manner like that to date. ○ Alternatively, the Council could begin the process of analyzing alternatives through the FMP amendment process and begin PATH 2. • Does the Council identify a need for additional public engagement or outreach opportunities beyond Council and workgroup meetings?	PATH 1b. Milestone 1b. In November 2025, the Council receives the next SRWG progress report. The Council <i>does not</i> adopt or implement the methods and outcomes of the SRWG’s proposed topics either because they were not determined suitable for use in management or they were not moved forward as final methodology review topics (and instead were put on pause). • If no new methods or reference point values are adopted via the salmon methodology review process, how does the Council wish to proceed? ○ The Council could provide the SRWG with additional guidance, which could include direction on whether the proposed methodology review topics should be further developed and any additional considerations to consider in further developing updates to the management framework. The Council would continue to receive periodic updates from the SRWG on their progress. ○ Alternatively, the Council could begin the process of analyzing alternatives through the FMP amendment process and begin PATH 2. • Does the Council identify a need for additional public engagement or outreach opportunities beyond Council and workgroup meetings?
PATH 2. Milestone 2. Council begins the process of amending the FMP by scoping alternatives. • What does the Council identify as the purpose and need for the FMP amendment? • Is the current composition of the SRWG appropriate for developing an FMP amendment? • Are any adjustments to the roster or TORs needed to have an appropriate FMP Project Team?	

Milestone 3. Council receives scoping report from FMP Project Team. • What additional guidance does the Council have for the SRWG/FMP Project Team? • Can the Council formally adopt a range of alternatives at this time? • Has sufficient opportunity for public engagement been provided to date?
Milestone 4. Council receives initial draft amendment package, which includes alternatives for all components of the management framework and an initial analysis of impacts. • Based on the analysis to date and advisory body and public comments, does the Council have any refinements to make to the current suite of alternatives? • Can the Council adopt a preliminary preferred alternative (PPA)? • Has the analysis provided to date sufficiently addressed the Council's objectives and concerns? If not, what specifically does the Council want the SRWG/FMP Project Team to further analyze?
Milestone 5. If a need was previously identified, additional public engagement opportunities are held.
Milestone 6. Council receives updated draft amendment package and, if applicable, any reports from Council hosted public engagement opportunities. If a PPA was selected previously: • Does the Council identify a final preferred alternative (FPA)? If a PPA was not previously selected: • Based on the additional analysis now available, is the Council prepared to identify a PPA? • What further refinements or guidance does the Council wish to provide to the SRWG/FMP Project Team regarding the range of alternatives? If necessary, additional Council meetings may be held until the Council identifies their FPA.
Milestone 7. NMFS reviews Council recommendations and issues a proposed rule and implementing regulations.
Milestone 8. Updated SRFC management framework is used in the development of ocean salmon fishery management measures.

Milestone 0 (September 2025):

Deliverables:

Proposed Process for Updating the SRFC Management Framework Document: The Council will have received this document in September under informational reports. This document is intended to outline potential pathways forward and will serve as a strategic reference as the Council considers both the 2025 Salmon Methodology Review topics and results and reports and the SRWG progress update in November.

Anticipated decision points:

Does the Council determine the current SRFC management framework needs updating?

As outlined under *Key Questions for the Council to Address*, it is important the Council explicitly states if a problem exists. A clear statement recognizing the need for change will help establish a solid foundation for subsequent work, including development and evaluation of specific management options. If the Council determines the current framework remains sufficient and no updates are needed, further work is not necessary.

Is the Council prepared to adopt the outcomes of topics identified under final topic selection for the 2025 Salmon Methodology Review, or is there a desire to pause pending development of the full framework?

- In April 2025, the Council preliminarily selected two topics presented by the SRWG for the 2025 Salmon Methodology Review ([SRWG 2025a](#)) - (1) *Derivation of natural-area S_{MSY} for Sacramento River fall Chinook* and (2) *Methods for deriving a total (natural areas plus hatchery) escapement objective based on consideration of natural production and hatchery needs*.
- By identifying topics for final selection, the Council signals its readiness to adopt the outcomes of the review should the SSC and STT determine the methods valid and appropriate for use in management. If this is not the case, advancing topics for review is an inefficient use of time and resources—particularly given the diminishing capacity of those engaged in the methodology review process.
- The Council should determine which updates are suitable to be addressed through the Salmon Methodology Review and which would be more appropriately considered through the process associated with amending the FMP.
- Topic 1, *Derivation of natural-area S_{MSY} for Sacramento River fall Chinook*, is a review of the SRWG's preferred method for deriving a natural area S_{MSY} , with a description of other potential approaches considered but not recommended by the SRWG at this time.
 - If the SSC determines that the proposed method for estimating S_{MSY} —and the resulting natural-area S_{MSY} value—constitutes BSIA, continued management of the fishery using the current value of 122,000 would conflict with National Standard 2. This value would no longer reflect the best available science.
 - The STT will provide input on the technical merits and implementation implications of the proposed methods and results. Should the Council adopt the updated S_{MSY} derivation method and resulting value, it will need to decide how this revised S_{MSY} should be applied in the development of salmon management measures and status determinations. In [SRWG 2024c](#), the SRWG acknowledged the updated S_{MSY} value could be incorporated into the existing harvest control rule (HCR). However, they noted doing so would introduce inconsistencies, as the new S_{MSY} would be expressed in different units than those currently used in forecasting

and harvest modeling tools. As an alternative, the SRWG recommended re-parameterizing the HCR using the conservation objective, or target escapement goal, rather than directly substituting the new natural-area specific S_{MSY} value. Although this approach would preserve the general form of the current HCR and therefore not explicitly require an FMP amendment, it would require adjusting the positions of the breakpoints and the configuration of the curved and sloped sections of the rule to realign harvest responses to abundance levels appropriately which would require additional analysis and technical efforts (see [Appendix C](#) for details on technical and policy implications).

- The Council should determine if updating the S_{MSY} is a scientific determination that must be implemented once an updated value is determined to be BSIA or if there are policy and implementation questions to be addressed first that warrant a delay in implementation.
- *Topic 2, Methods for deriving a total (natural areas plus hatchery) escapement objective based on consideration of natural production and hatchery needs*, outlines a method for establishing a total escapement objective (conservation objective) that integrates both the S_{MSY} for natural-area spawners and hatchery escapement needs, while incorporating a Council-specified level of risk tolerance.
 - COP 15 identifies the development of methodologies for determining conservation objectives as a topic appropriate for methodology review.
 - **The proposed method is consistent with Council guidance to date, which has been that S_{MSY} should be defined based on natural-area spawners, and that the conservation objective should reflect both natural and hatchery escapement requirements.**
 - In addition to identifying an escapement goal based on natural and hatchery escapement, an additional key component of this methodology review topic is the incorporation of a risk tolerance—specifically, the probability that both natural-area and hatchery escapement goals are met—into the conservation objective. **The methodology review would look at the merits of the proposed approach for determining the conservation objective, and discussions on the specific Council risk tolerance for achieving this objective would occur after/if the topic is deemed to be a valid approach. As noted previously, methodology review topics are meant for objective technical analysis whereas FMP amendments consider risks and tradeoffs. The Council has not explicitly stated a desire to incorporate risk tolerance into the conservation objective and should consider if a method that includes incorporating a risk tolerance into the conservation objective is appropriate for a methodology review.**

Does the Council anticipate it may initiate an FMP amendment process (begin scoping of alternatives) in November 2025?

An FMP amendment will ultimately be necessary to update the SRFC management framework. If, following review of this document and September discussions, the Council anticipates the potential initiation of an amendment in November, this should be raised during the September Workload Planning discussion to ensure appropriate public notice for the November meeting. Noticing the November meeting in this way does not commit the Council to initiating the amendment at that meeting; the Council may still decide to not do so if, after reviewing additional materials in November, it determines that more time or information is needed.

The Council's final selection of topics and the outcomes of the 2025 Salmon Methodology Review will determine the subsequent pathway (**PATH 1a or PATH 1b**).

PATH 1a. In November 2025, Council reviews and adopts the SRWG Salmon Methodology Review items.

Milestone 1a (November 2025):

Deliverables:

2025 Salmon Methodology Review: The Council will receive the findings and recommendations from the 2025 Salmon Methodology Review, including the two topics preliminarily selected for review this year that were brought forward by the SRWG and pertain to updating the SRFC management framework.

SRWG Progress Report: The Council will be presented with the third progress report from the SRWG.

Anticipated decision points:

How will newly adopted methods be integrated into the 2026 ocean salmon management measures and how will they inform broader updates to the management framework?

The Council should consider any new methodologies and BSIA determinations as well as reports on feasibility of implementation on how it wishes to proceed with incorporating these updates into the 2026 salmon preseason process.

As described [above](#), the Council would need to consider how an S_{MSY} value expressed solely in terms of natural-area spawners—different from the current value, which reflects the lower bound of the

PATH 1b. In November 2025, Council receives the next SRWG progress report and *does not* adopt or implement the methods and outcomes of the SRWG’s proposed topics either because they were not determined suitable for use in management or they were not moved forward as final methodology review topics. If not selected for review in 2025, topics and supporting analysis could still be used in developing FMP amendment alternatives and analysis.

Milestone 1b (November 2025):

Deliverables:

2025 Salmon Methodology Review, if applicable: If the currently preliminary SRWG methodology review topics are reviewed at the Salmon Methodology Review, the Council will receive the findings and recommendations from the review ([SRWG 2025a](#)).

SRWG Progress Report: The Council will be presented with the third progress update from the SRWG.

Anticipated decision points:

How does the Council wish to proceed with updating SRFC management reference points, the conservation objective, and the harvest control rule?

The Council could either:

1. **Provide additional guidance to the SRWG** based on their most recent report and in light of the fact that none of the previously proposed approaches for deriving the S_{MSY} or conservation objective were adopted. The Council would need to provide clear guidance on how the SRWG should continue to develop options for updating the SRFC management framework and if further

conservation objective and includes both natural-area and hatchery-origin spawners—should be integrated into the harvest control rule, used for status determination, and integrated into forecast methods in 2026.

How does the Council wish to proceed, now that there is an updated S_{MSY} value and method for deriving a conservation objective?

The Council could proceed in one of two ways:

1. **Provide additional guidance to the SRWG** based on the adopted methodology review topics and the contents of the SRWG report. The SRWG would then develop a follow-up report, consistent with the iterative process used to date; or
2. **Initiate an FMP amendment process** (PATH 2) using the newly adopted methodologies as the foundation for developing management alternatives.

development of the previously proposed methodology review topics should be considered when doing so. The SRWG would then develop a follow-up report, consistent with the iterative process used to date; or

2. **Initiate an FMP amendment process** (PATH 2) that includes a comprehensive range of management alternatives that are not necessarily only based on the methodologies preliminarily selected for methodology review, but could include them as a part of the development of management alternatives. As described in [Section III](#), an FMP amendment is required for certain updates to the SRFC management framework and provides for a transparent and structured approach to doing so. Initiating this amendment process may align with the Council’s previously stated preference for evaluating updates to the SRFC management framework as part of a holistic and integrated package.

Based on the SRWG’s report, what additional guidance does the Council wish to provide them?

Much of the SRWG’s progress is contingent upon the Council’s decision to review and adopt the methods proposed for the 2025 Salmon Methodology Review. As noted previously, if the Council chooses not to review or adopt these methods, it will be important to provide the SRWG with clear guidance on how to proceed.

If the Council decides to initiate an FMP amendment at this time, the Council could consider reviewing and updating the SRWG TORs and membership to ensure there is clear guidance on expected deliverables and to confirm that the group includes the necessary expertise to develop the alternatives and analysis of impacts.

PATH 2. FMP Amendment initiated.

Milestone 2 (tentatively November 2025):

If the Council determines that updates to the conservation objective and harvest control rule are needed, an amendment would be required regardless of methodology review outcomes, though the alternatives would depend on whether the proposed methods are reviewed and adopted or not.

COP 11 provides a guide and general three-meeting schedule for conducting FMP amendments, summarized below.

- First Meeting: The Council formally identifies pertinent amendment issues based on input from advisory entities and the public. All major issues should be identified at this time.
- Second Meeting: The Council reviews input from advisory entities and the public on the draft amendment, selects preferred alternatives, adopts a draft for public review, and may repeat earlier steps if further analysis or alternatives are needed.
- Third Meeting: The Council reviews final comments from advisory entities and the public, adopts the final amendment for implementation, and may authorize release of a draft Environmental Impact Statement for public comment if required.

Anticipated decision points:

- What does the Council identify as the purpose and need for the FMP amendment?
- Is the current composition of the SRWG appropriate for developing an FMP amendment, or are any adjustments to the roster or TORs needed to have an appropriate FMP Project Team?
 - The current SRWG consists of representatives from the NMFS Regional Office, NMFS Southwest Fisheries Science Center, the California Department of Fish and Wildlife (CDFW), and the Oregon Department of Fish and Wildlife (ODFW), and have primarily provided expert scientific input to the Council. Recently, the SRWG lost two members—representatives from the U.S. Fish and Wildlife Service and the NMFS Northwest Fisheries Science Center. The Council should evaluate whether additional expertise or broader representation is needed to adequately assess the social, economic, and environmental tradeoffs of management alternatives.
 - The Council adopted TORs for the SRWG in June 2023. These TORs tasked the group with reviewing the current management framework and recommending updates to management measures, forecast methods, and harvest strategies, as appropriate. The TORs also define specific milestones and a general timeline. The Council may wish to assess whether the currently stated purpose of the SRWG aligns with the intended goals of the FMP Project Team. If the Council seeks to expand the focus of the SRWG/FMP Project Team to include evaluation of social and economic tradeoffs, revisions to the TORs may be warranted to address this shift to a more interdisciplinary advisory capacity.
- Does the Council want to consider additional public input or peer review?
 - As noted previously, the Council should assess whether Council and SRWG, Council, and advisory body meetings offer appropriate and sufficient opportunities for public input. If additional engagement is deemed necessary, the Council should identify appropriate

avenues—such as public workshops, hearings, or other outreach strategies. Reaching this decision early in the process is critical to ensure effective planning and coordination.

Milestone 3 (tentatively September 2026, assuming FMP initiation occurs in November 2025):

Milestone 3 serves as the first meeting in the FMP Amendment process (as described in [COP 11](#)).

Deliverable: The SRWG/FMP Project Team will scope a preliminary set of alternative management measures for the SRFC management framework. These alternatives will either focus specifically on the conservation objective and harvest control rule—based on the S_{MSY} value adopted and methods approved through the 2025 methodology review process (PATH 1a)—or reflect a broader range of SRFC management framework options developed by the Project Team if the currently proposed methodology review topics are not reviewed or adopted (PATH 1b).

As part of this effort, the SRWG/FMP Project Team will provide a proposed plan and timeline for developing the FMP amendment, including analysis of social, economic, and environmental impacts, and any preliminary analysis completed. The SRWG/FMP Project Team may offer initial recommendations on alternatives, along with any preliminary comments, scientific or policy concerns, or requests for clarification from the Council.

Anticipated decision points: Decision points will primarily depend on the alternatives developed and areas where further guidance is needed. However, some anticipated decision points at this stage may include:

- Does the Council want to specify a review timeline or specific conditions that would trigger a review of the reference points, conservation objective, and/or harvest control rule (reminder: the F_{MSY} is scheduled for review in 2028)?
- Does the Council have additional guidance regarding the development of the conservation objective?
- Are there any additional harvest control rule alternatives that the Council would like the FMP Project Team to evaluate?
- Are there any alternatives that the Council can eliminate?
- Can the Council formally adopt a range of alternatives at this time?
- Has sufficient opportunity for public engagement been provided to date?

Milestone 4 (tentatively November 2026):

Milestone 4 serves as the second meeting in the FMP Amendment process (as described in [COP 11](#)).

Deliverable: The SRWG/FMP Project Team will prepare an initial draft amendment package for Council review. This document will incorporate all input received from the Council to date. As previously, the FMP Project Team may also provide initial recommendations, comments, or requests for Council clarification.

Anticipated decision points:

- Based on the analysis to date and advisory body and public comments, does the Council have any refinements to make to the current suite of alternatives?
- Can the Council adopt a preliminary preferred alternative (PPA)?

- Has the analysis provided to date sufficiently addressed the Council’s objectives and concerns? If not, what specifically does the Council want the SRWG/FMP Project Team to further analyze?

Milestone 5 (tentatively summer 2027):

If the Council determines that additional peer review or public outreach is warranted (such as a Center for Independent Experts (CIE) peer review panel or public hearings on alternatives), this is potentially when it would occur.

Milestone 6 (tentatively September 2027):

Milestone 6 serves as the third meeting in the FMP Amendment process (as described in [COP 11](#)).

Deliverables: The Council would be provided with an updated range of alternatives and impacts analysis, draft FMP amendment language, and reports from management and advisory bodies and the public. If applicable, any summaries of additional peer reviews or public engagement activities conducted over the summer would also be provided.

Anticipated decision points:

If a PPA was selected previously:

- Following review of the updated analysis, and any additional peer review or public input, if applicable, does the Council adopt a final preferred alternative (FPA) and the final amendment for implementation by the Secretary of Commerce?

If a PPA was not previously selected:

- Based on the additional analysis now available, is the Council prepared to identify a PPA?
- What further refinements or guidance does the Council wish to provide to the FMP Project Team regarding the range of alternatives?

Milestone 7 (tentatively early 2028, assuming FPA was selected):

NMFS reviews the Council recommendation and issues proposed rule and implementing regulations. Subsequently, NMFS reviews public comment and issues a final rule. Throughout the comment and rulemaking process, NMFS provides periodic updates to the Council as appropriate.

The Council is scheduled to review the F_{MSY} adopted in November 2024 (see [Appendix C](#) for more background).

Milestone 8 (tentatively 2029 ocean salmon management season):

The full updated SRFC management framework is used when developing ocean salmon fishery management measures.

Appendix A. Background

In 2018, Sacramento River Fall Chinook (SRFC) were declared overfish and subsequently determined to be rebuilt in 2021. Included in the rebuild plan was a recommendation to reconsider the conservation objective ([PFMC 2019](#)).

In April 2022, a review of the basis behind the SRFC conservation objective was included as a topic for the salmon methodology review conducted in October 2022 ([Satterthwaite 2022](#)). The review detailed the origins of the current SRFC conservation objective, which was established in the 1980s using data from the 1950s through the 1980s. The review found that the conservation objective was difficult to reproduce using historical documents and available data.

At the November 2022 Council meeting, the Salmon Technical Team (STT) [report](#) and the Scientific and Statistical Committee (SSC) [report](#) indicated support for elevating and prioritizing work toward developing a new conservation objective for SRFC, given the conservation concerns and importance of this stock to salmon fisheries south of Cape Falcon. Additional components of SRFC management were also discussed, such as development of cohort reconstruction models that incorporate age structure.

In April 2023, the Council requested that the National Marine Fisheries Service (NMFS), California Department of Fish and Wildlife (CDFW), and Council staff develop a scoping report outlining the potential pathways forward on a reevaluation of Sacramento fall Chinook conservation objectives¹. The scoping report was presented to the Council in June 2023 ([PFMC, NMFS, & CDFW 2023](#)). Based on the information provided in the report, the Council formed the ad-hoc Sacramento River Fall Chinook workgroup (SRWG), adopted draft [Terms of Reference](#), and tasked the SRWG to (1) provide a summary report no later than the spring of 2024 to describe scoping of a revised SRFC conservation objective and related harvest control rule and reference point alternatives, and (2) update the Council on the recommended next steps, timeline, and process to evaluate the conservation objective and related management measures ([June 2023 Decision Summary Document](#)).

In June 2024, the SRWG provided their first report to the Council ([SRWG 2024a](#)). The report included an evaluation of the current reference points (F_{MSY} , S_{MSY} , $MSST$), conservation objective, and harvest control rule as well as a preliminary identification of potential management measure alternatives to each of those.

In September 2024, the Council selected two topics proposed by the SRWG for the 2024 Salmon Methodology Review ([SRWG 2024b](#)) – (1) *Derivation of proxy S_{MSY}/S_{MSP} ratio and F_{MSY} value suitable for use for SRFC* ([Satterthwaite 2024](#)) and (2) *Sacramento River Fall Chinook cohort reconstruction (CR) and comparison to the Sacramento Index (SI)* ([Chen et al., 2024](#)).

At the November 2024 Council meeting, the results of the Salmon Methodology Review were presented to the Council. Both the SSC ([SSC 2024a](#)) and STT ([STT 2024a](#)) reports supported updating the F_{MSY} proxy for Sacramento River Fall Chinook to 0.58, the result of the first SRWG methodology review topic. The SSC and STT also both supported the new cohort reconstruction. The STT noted it differed from current practices and would require changes in data inputs and modeling before it could be fully implemented.

¹ The paper also includes an outline of coordinated effort surrounding Klamath River salmon recovery following dam removal.

The SRWG also provided their second report to the Council at the November 2024 meeting ([SRWG 2024c](#)) which included, among other items, additional discussion on the methodology review topics, issues the Council should consider when developing an updated conservation objective, and a recommendation to reparametrize the harvest control rule in terms of the conservation objective rather than S_{MSY} .

At the November 2024 meeting, The Council adopted a new F_{MSY} proxy value of 0.58 for Sacramento River Fall Chinook, replacing the older 0.78 value, with a planned review in 2028. It also approved the use of the cohort reconstruction method for stock assessments, allowing phased implementation starting in 2025, with full integration expected no earlier than 2026. The Council also provided additional guidance to the SRWG as they continued work on updated reference points, the conservation objective, and the harvest control rule.

In April 2025, the Council moved forward two of the topics proposed by the SRWG ([SRWG 2025a](#)) as preliminary topics for the 2025 Salmon Methodology Review – (1) *Derivation of natural-area S_{MSY} for SRFC* and (2) *Methods for deriving total (natural areas plus hatchery) escapement objective based on consideration of natural production and hatchery needs* and directed Council staff to develop a document outlining the appropriate steps and sequence for a comprehensive review of the SRWG’s recommendations for evaluating the SRFC management framework.

Appendix B. COP and FMP Requirements for Amendments

(Underline emphasis in excerpts added for purposes of this document.)

Modifying reference points does not necessarily require a Salmon Fishery Management Plan (FMP) amendment:

- **FMP Section 3.1.7:** ...if a comprehensive technical review of the best scientific information available provides evidence that, in the view of the STT, SSC, and the Council, justifies a modification of the estimated values of these reference points, changes to the values may be made without a plan amendment.
- **FMP Section 3.3.7:** ...the reference point values that define a particular control rule (e.g., S_{MSY}) may be periodically updated. Changes to these reference point values, or specification of reference points for stocks where estimates are currently lacking, may be made through a regulatory process without plan amendment if a comprehensive technical review of the best scientific information available provides evidence that, in the view of the STT, SSC, and the Council, justifies a modification.

Modifying the conservation objective likely would require an FMP amendment. Although the salmon FMP provides some flexibility to update the conservation objective outside of an FMP amendment process, COP 10 specifies it should only be updated by plan amendment:

- **FMP Section 3.2.2:** Changes or additions to conservation objectives may be made either through a plan amendment or notice and comment rulemaking if a comprehensive technical review of the best scientific information available provides evidence that, in the view of the STT, SSC, and the Council, justifies a modification.
- **COP 10:** Some measures, like most conservation objectives and allocation schemes, are deliberately fixed in the plan and can be changed only by amendment or temporarily modified by emergency regulation.
- **COP 15:** The review of current and proposed methodologies for abundance and harvest projection, exempted fishing permits (EFPs), and conservation objectives is intended to help clarify the technical basis for the Council's management actions. ... Examples of issues that could merit a full review include new model algorithms, methods for incorporating base data into models, forecasting methods for major PFMC stocks, experimental design of proposed experimental fisheries, and technical changes to stock complexes or conservation objectives.

Modifying the form of the harvest control rule must be done via an FMP Amendment, although current control rules can be reviewed through the salmon methodology review process:

- **FMP Section 3.3.7:** The form of a control rule should only be changed by plan amendment, or as necessary to rebuild overfished stocks.
- **FMP Section 3.3.3:** The SSC will have an ongoing role in evaluating ABCs through their annual review of stock abundance forecasts and their prerogative to initiate re-evaluation of the ABC control rule. Abundance forecast methods are periodically revised and these revisions are evaluated by the SSC through the salmon methodology review process. The SSC could revisit the ABC control rule as needed during the salmon methodology review.

Appendix C. Current SRFC management reference points, conservation objective, and harvest control rule and, where applicable, a brief summary of issues noted to date

The **Conservation Objective** (*122,000 – 180,000 adult (age-3+) spawners in natural areas and hatcheries combined, throughout the Sacramento basin, regardless of origin*) was established in the 1980s using data from the 1950s through the 1980s.

- The 2022 literature review ([Satterthwaite 2022](#)) found that the conservation objective for Sacramento River fall Chinook (SRFC) was difficult to reproduce using historical documents and available data. Past Scientific and Statistical Committee (SSC), Salmon Technical Team (STT), and Salmon Advisory Subpanel (SAS) reports have voiced support for reviewing and updating the conservation objective ([SSC 2022](#), [STT 2022](#), [SAS 2022](#)).

The **S_{MSY} proxy value** (*122,000 total adult spawners*) is the lower bound of the conservation objective set in 1984 and was meant to be an ‘interim’ goal.

- This is directly linked to the conservation objective (which, as noted above, has been difficult to reproduce). This value was meant to be updated when issues associated with passage problems at Red Bluff Diversion Dam (RBDD) were fixed. Gates on RBDD have been fully opened since 2011.
- Since the S_{MSY} value is based on the conservation objective, it is in units of total (hatchery and natural-area) spawning escapement.
- The S_{MSY} value is included when determining breakpoints in the current structure of the HCR. Both the SSC and STT have noted that since the current control rules and harvest planning models are based around total (natural plus hatchery) escapement for SRFC, moving to natural-area spawners would pose challenges for preseason planning models and may require altering preseason planning tools ([SSC 2024b](#); [STT 2024b](#)).

The **MSST** (*91,500 total adult spawners*) is directly derived from the S_{MSY} ($0.75 \times S_{MSY}$) so any revision to the S_{MSY} proxy will automatically lead to an update of the MSST.

- At present, there appears to be no compelling justification for revisiting this calculation. A change to the way MSST is defined—such as using $0.5 \times S_{MSY}$ as is used for many salmon stocks—would represent a policy shift (see FMP Section 3.1.7). A MSST calculation of $0.75 \times S_{MSY}$ was selected as the most appropriate for SRFC during the development of Amendment 16 since the stock is an aggregate with more vulnerable sub-stocks ([PFMC 2011](#), Section 2.2.11.2).

The **Harvest Control Rule** (HCR) is structured around key biological reference points: F_{ABC}, MSST, S_{MSY}, and two defined levels of *de minimis* exploitation rates. The rule uses the pre-fishery ocean abundance, expressed in spawner-equivalent units (N), to determine an allowable exploitation rate. The HCR includes five distinct breakpoints. Between these breakpoints, the method for calculating the allowable exploitation rate changes depending on if abundance is high or moderate, or only *de minimis* fishing is allowed. These breakpoints are determined based on the current reference values for F_{ABC} (0.52), MSST (*91,500 total adult spawners*), and S_{MSY} (*122,000 total adult spawners*). The breakpoints mark a shift in how the harvest rate is calculated, ensuring that exploitation rates are adjusted according to the abundance of the stock.

- As noted above, changing from a total escapement S_{MSY} to one based on natural-area adult spawners would have reverberating effects throughout the SRFC assessment regime, including but not limited to require updating the HCR. The shape of the curve which sets the exploitation rate at moderate abundances utilizes S_{MSY} in the calculation, and the sloped portions utilize MSST. A change in S_{MSY} units (and therefore also the MSST units) would require adjusting the configuration of the curved section of the rule and the positions of the breakpoints and to ensure harvest levels are appropriately set at different abundance levels and change to the harvest model.

The **F_{MSY} proxy value** (0.58) was updated from 0.78 in November 2024 for use in 2025. The updated value is based on the mean of F_{MSY} estimates for Klamath River fall Chinook (KRFC) and Rogue River fall Chinook.

- In November 2024, the Council acknowledged that, with the current shape of the harvest control rule, the updated F_{MSY} would not be constraining to ocean harvest at low levels of abundance, but it may become constraining at higher abundances. The Council also noted that the KRFC F_{MSY} value may be updated soon. Therefore, the Council recommended the F_{MSY} proxy value be reviewed in 2028 to ensure it is still appropriate for management.

The **F_{ABC}** (0.52) is a direct reduction of F_{MSY} ($0.90 * F_{MSY}$ for stocks that have a proxy value), so any updates to F_{MSY} inherently result an update to F_{ABC} .

Reference Documents and Citations

- Chen, E., Satterthwaite, W.H., O'Farrell, M.R., Carlson, S.M. 2024. *Cohort Reconstruction for Sacramento River Fall Chinook salmon and Comparison with the Sacramento Index*. Prepared for the Pacific Fishery Management Council's Salmon Methodology Review. Available at: <https://www.pcouncil.org/documents/2024/10/f-2-attachment-1-cohort-reconstruction-for-sacramento-river-fall-chinook-salmon-and-comparison-with-the-sacramento-index-electronic-only.pdf/>
- PFMC. 2011. *Final Environmental Assessment and Initial Regulatory Impact Review for Pacific Coast Salmon Plan Amendment 16*. Pacific Fishery Management Council, 7700 NE Ambassador Place, Suite 101, Portland, Oregon 97220-1384. Available at: [pcouncil.org/documents/2011/12/salmon-fmp-amendment-16-environmental-assessment-and-regulatory-impact-review.pdf/](https://www.pcouncil.org/documents/2011/12/salmon-fmp-amendment-16-environmental-assessment-and-regulatory-impact-review.pdf/)
- PFMC. 2019. *Salmon Rebuilding Plan for Sacramento River Fall Chinook*. Pacific Fishery Management Council, 7700 NE Ambassador Place, Suite 101, Portland, Oregon 97220-1384. Available at: [pcouncil.org/documents/2019/07/sacramento-river-fall-chinook-salmon-rebuilding-plan-regulatory-identifier-number-0648-bi04-july-2019.pdf/](https://www.pcouncil.org/documents/2019/07/sacramento-river-fall-chinook-salmon-rebuilding-plan-regulatory-identifier-number-0648-bi04-july-2019.pdf/)
- PFMC, NMFS, & CDFW. 2023. *Sacramento River Fall Chinook and Klamath River Fall Chinook Conservation Objective – Scoping Report*. June 2023 PFMC Meeting Agenda Item I.1. Available at: <https://www.pcouncil.org/documents/2023/05/i-1-a-attachment-1-sacramento-river-fall-chinook-and-klamath-river-fall-chinook-conservation-objectives-scoping-report.pdf/>
- SAS. 2022. *Salmon Advisory Subpanel Report on the Final Methodology Review*. November 2022 PFMC Meeting Agenda Item D.2.a. Available at: [pcouncil.org/documents/2022/11/d-2-a-supplemental-sas-report-1.pdf/](https://www.pcouncil.org/documents/2022/11/d-2-a-supplemental-sas-report-1.pdf/)
- Satterthwaite, W.H. 2022. *Literature Review for Sacramento River Fall Chinook Conservation Objective and Associated S_{MSY} Reference Point*. Prepared for the Pacific Fishery Management Council's Salmon Methodology Review. Available at: <https://www.pcouncil.org/documents/2022/10/d-2-attachment-1-methodology-review-materials-electronic-only.pdf/>
- Satterthwaite, W.H. 2024. *Derivation of proxy S_{MSY}/S_{MSP} ratio and F_{MSY} value suitable for use for SRFC*. Prepared for the Pacific Fishery Management Council's Salmon Methodology Review. Available at: <https://www.pcouncil.org/documents/2024/10/f-2-attachment-2-updated-fmsy-proxy-and-smsy-smp-ratio.pdf/>
- SRWG. 2024a. *Sacramento River Fall Chinook Ad-hoc Workgroup Report – May 2024*. June 2024 PFMC Meeting Agenda Item E.1.a. Available at: <https://www.pcouncil.org/documents/2024/05/e-1-a-srwg-report-1.pdf/>
- SRWG. 2024b. *Sacramento River Fall Chinook Ad-hoc Workgroup Report on Methodology Review – Final Topic Selection*. September 2024 PFMC Meeting Agenda Item E.2.a. Available at: [pcouncil.org/documents/2024/08/e-2-a-srwg-report-1-srwg-report-on-methodology-review-final-topic-selection.pdf/](https://www.pcouncil.org/documents/2024/08/e-2-a-srwg-report-1-srwg-report-on-methodology-review-final-topic-selection.pdf/)
- SRWG. 2024c. *Sacramento River Fall Chinook Ad Hoc Workgroup Progress Report*. November 2024 PFMC Meeting Agenda Item F.6.a. Available at: [pcouncil.org/documents/2024/10/f-6-a-srwg-report-1-sacramento-fall-chinook-ad-hoc-workgroup-progress-report.pdf/](https://www.pcouncil.org/documents/2024/10/f-6-a-srwg-report-1-sacramento-fall-chinook-ad-hoc-workgroup-progress-report.pdf/)
- SRWG. 2025a. *Sacramento River Fall Chinook Workgroup Report on Methodology Review Preliminary Topic Selection*. April 2025 PFMC Meeting Agenda Item D.4.a. Available at: [pcouncil.org/documents/2025/03/d-4-a-srwg-report-1-sacramento-river-fall-chinook-workgroup-report-on-methodology-review-preliminary-topic-selection.pdf/](https://www.pcouncil.org/documents/2025/03/d-4-a-srwg-report-1-sacramento-river-fall-chinook-workgroup-report-on-methodology-review-preliminary-topic-selection.pdf/)

- SSC. 2022. *Scientific and Statistical Committee Report on Final Methodology Review*. November 2022 PFMC Meeting Agenda Item D.2.a. Available at: pcouncil.org/documents/2022/11/d-2-a-supplemental-ssc-report-1-4.pdf
- SSC. 2024a. *Scientific and Statistical Committee Report on Final Methodology Review*. November 2024 PFMC Meeting Agenda Item F.2.a. Available at: pcouncil.org/documents/2024/11/f-2-a-supplemental-ssc-report-1-ssc-report-on-final-methodology-review-results.pdf
- SSC. 2024b. *Scientific and Statistical Committee Report on Sacramento River Fall Chinook Workgroup Progress Report and Recommendations*. November 2024 PFMC Meeting Agenda Item F.6.b. Available at: pcouncil.org/documents/2024/11/f-6-b-supplemental-ssc-report-1-scientific-and-statistical-committee-report-on-sacramento-river-fall-chinook-workgroup-progress-report-and-recommendations.pdf
- STT. 2022. *Salmon Technical Team Report on Methodology Review*. November 2022 PFMC Meeting Agenda Item D.2.a. Available at: pcouncil.org/documents/2022/11/d-2-a-supplemental-stt-report-1-2.pdf
- STT. 2024a. *Salmon Technical Team Report on 2024 Salmon Methodology Review*. November 2024 PFMC Meeting Agenda Item F.2.a. Available at: <https://www.pcouncil.org/documents/2024/11/f-2-a-supplemental-stt-report-1-stt-report-on-2025-salmon-methodology-review.pdf>
- STT. 2024b. *Salmon Technical Team Report on Sacramento River Fall Chinook Workgroup Progress Report and Recommendations*. November 2024 PFMC Meeting Agenda Item F.6.a. Available at: pcouncil.org/documents/2024/11/f-6-b-supplemental-stt-report-1-stt-report-on-sacramento-river-fall-chinook-workgroup-progress-report-and-recommendations.pdf