Draft for Fish Committee Discussion
July 29, 2022

Willapa Bay Salmon Management Policy Review

Alternative 2: Manage for a Combination of Wild and Hatchery Fish

Note: Revisions from the April 15, 2022 version of Alternative 2 are yellow-highlighted and shown by strikeout for deleted or changed language and red font for new language

FISH AND WILDLIFE COMMISSION
POLICY DECISION

POLICY TITLE: Willapa Bay Salmon Management **POLICY NUMBER: C-3632**

Cancels or
Supersedes: Policy C-3622

See Also: Policy C-3622

Effective Date: TBD
Termination Date: TBD

Approved {Date} by:

Chair
Washington Fish and Wildlife Commission

Purpose
The over-arching purpose of this Policy is to guide management of wild and hatchery salmon populations in Willapa Bay in a manner that achieves stated spawning escapement conservation goals; significantly enhances and improves both recreational and commercial sustainable fishing in comparison to those that would be provided for by predecessor Policy C-3622; and promotes orderly fisheries.

Authority Definition and Intent
This Policy is established by the Washington State Fish and Wildlife Commission (Commission) and is applicable to the management by the Washington State Department of Fish and Wildlife (Department) of chinook, coho, and chum salmon (salmon) in Willapa Bay and its freshwater tributaries as the Commission's interpretation of the Commission and Department mandate described in RCW 77.04.112.

The intent of this Policy to is to provide specific policy values, direction, positions, goals, objectives and actions to the Department to achieve the stated purpose of the Policy.

Further, the intent of this Policy is to be responsive to the Department's comprehensive review of Policy C-3622 completed and updated in October, 2020 and to many of the concerns expressed by the public prior to and during the comprehensive review process. While many of the provisions of this policy document are similar to policy provisions in Policy C-3622 adopted by the Commission in 2015, the provisions described in this policy document deliberately and fully supersede the policy directives of the 2015-adopted policy and are intended to be complied with in accordance with Commission adopted Rules of Procedure.

General Policy Statement

This Policy provides the Department with a cohesive set of guiding principles, strategies and actions designed to increase the combined abundance of wild and hatchery produced salmon in the Willapa Bay basin and improve the associated recreational and commercial fisheries in a sustainable manner. Although this Policy focuses primarily on fishery management and hatchery production, this Policy in no way is meant to diminish the significance of fish habitat protection and restoration. Rather, this Policy explicitly supports protection and restoration of fish habitat throughout the Willapa Bay basin.

It is acknowledged there is uncertainty in how and when the strategies and measures described in this Policy will achieve the stated purposes, such as securing funding for enhanced weir infrastructure and research capabilities. It is also recognized that there are likely to be unpredictable factors that affect Policy implementation success, such as changes in the environmental conditions that affect salmon abundance, the effectiveness of habitat protection and restoration, and the results of scientific research. Consequently, management decisions must be informed by fishery and stock status monitoring and should be adaptively modified as necessary to meet the stated purposes of this Policy.

Guiding Principles

The Department will apply the following principles and policy positions as directives and guides toward achieving the purposes of the Policy.

1) Policy implementation shall proceed under the recognition that there are not any fish species in the Willapa Bay basin currently listed under the federal Endangered Species Act (Act) and there are not currently any Tribal fisheries operating under federally recognized treaty-reserved fishing rights in the Willapa Bay basin. In the event that this changes during the implementation of this Policy, the Department shall make adjustments as necessary to achieve the purpose of this Policy consistent with the provisions of the Adaptive Management section of this Policy.

2) The Department shall work to protect current habitat and restore damaged habitat as a productivity foundation for Willapa Bay salmon populations, in coordination with federal and state agencies, regional Fishery Enhancement Groups, the Willapa Bay Lead Entity nonprofit organizations, and the public.

3) The Department shall seek funding for engineering and construction of state-of the art enhanced weirs in the Willapa and Naselle Rivers designed to enhance the ability to sort and manage hatchery and natural origin spawning fall chinook salmon. The Department shall plan to take advantage of research opportunities made available by the installation of advanced weir designs, including specifically targeting an improved understanding of different levels of hatchery ~~wild~~ natural parentage on the productivity of Willapa Bay fall chinook salmon.

4) The Department shall strive to mark all juvenile hatchery origin chinook and coho by adipose fin removal and chum salmon by internal bone marking or other methods.

5) Management of natural spawning and hatchery populations shall strive to achieve significantly higher aggregate abundance and sustainable catch in fisheries than that which would have been produced by full implementation of Policy C-3622, adopted in 2015.

6) In addition to serving the purpose of improving sustainable fisheries in comparison to those that would be provided by the 2015 Policy, goals of hatchery production are to
   a) mitigate the effects of lost or long-term impaired habitat until such habitat loss is reversed and to
   b) provide additional prey for the Southern Resident Orca population.

7) The Department shall work within Pacific Salmon Commission and Pacific Fishery Management Council processes to insure that the status of Willapa Bay wild and hatchery stocks and the purpose of this Policy are fully considered in marine fishery season setting and management.

8) The Department shall plan fisheries pre-season and manage fisheries in-season in a manner that achieves the stated spawning escapement conservation goals in this Policy. When pre-season run-size forecasts indicate there are insufficient fish of a particular species to achieve a stated ~~wild~~ natural or hatchery origin spawning escapement conservation goal, an incidental ~~take~~ fishery impact limit of no more than 10% of the depressed species run segment[1] shall be allowed for the incidental catch in fisheries targeting healthy stocks, in accordance with the Species Specific Provisions section of this Policy.

9) Recreational fisheries shall be mark-selective unless the abundance of natural-origin stocks is sufficiently high to not require their release in achieving spawning escapement conservation goals and optimizing aggregate fishery yield. The Department shall work with commercial fishery participants under an approach that encourages innovation in

1 An impact limit is an adult salmon mortality rate in fisheries in Willapa Bay and its tributaries, to include retained fish and the estimated mortality on released fish. A run segment is defined for Willapa Bay fisheries as the aggregate wild spawning conservation goal or the aggregate hatchery spawning escapement goal; for Willapa Bay tributary fisheries, a run segment is defined as the wild spawning conservation goal or the hatchery spawning conservation goal of the tributary in question.

optimizing the use of alternative commercial fishing gear and traditional gillnet fishing gear, including the use of incentives for alternative commercial fishing gear such as special time or area season openings.

10) As an in-season fishery management measure for each of the salmon species, the Department shall explore the utility of test fisheries and the interpretation of public fishery catch rates as updates to pre-season forecasts, with a precautionary application and interpretation approach relative to risks to achieving spawning escapement conservation goals.

11) The Department shall seek the funding necessary to conduct the monitoring, sampling, and evaluations in both fisheries and spawning escapement areas needed to achieve the provisions of this Policy.

Species-Specific Provisions
Subject to the adaptive management provisions of this policy, the Department will manage salmon ~~wild~~ natural origin populations, hatchery programs and target fisheries consistent with the Guiding Principles and the following additional policy guidance.

Fall Chinook Salmon

1) Natural Production

ESU context
Wild Natural origin fall chinook salmon are to be managed with the recognition that Willapa Bay populations are a component of the coastal chinook evolutionarily significant unit under the federal ESA, are currently not listed under the ESA, and that federal listing decision-making will be based on the status of the full ESU.

Spawning Conservation Goals

Note: The following revision from the April 15, 2022 draft is in response to the recent information in the policy review process that the aggregate natural spawning goals in Alternatives 1, 2, and 3 are problematic, in that neither the estimate shown in the 2020 Comprehensive Review[2] (1,700) nor the estimate used in Policy C-3622 (4,353) are recognized as scientifically defensible natural-origin aggregate spawning escapement goals. The revisions below describe a fishery impact rate limitation approach for the immediate future and a call for a scientifically defensible spawner-recruit analysis to develop a natural spawning fall chinook conservation goal.

Mixed stock fisheries will be managed ~~on the basis of achieving an aggregate wild spawning~~

2 Comprehensive Evaluation of the Willapa Bay Salmon Management Policy C-3624, 2015-2018, (https://wdfw.wa.gov/publications/02157)

~~escapement conservation goal of {insert new MSY S_{msy} value (1,700)}[3] and the aggregate hatchery escapement conservation goal of {insert adult fish #}. This aggregate wild spawning escapement conservation goal is comprised of the following conservations goals for natural origin adult fish on the spawning grounds, which will be used to manage respective tributary fisheries:~~

~~a. Willapa and North Rivers: {new S_{msy} value (950)} natural origin spawners.~~
~~b. Naselle and Bear Rivers: {new S_{msy} value (650)} natural origin spawners.~~
~~c. Nemah and Palix Rivers: {new S_{msy} value (100)} natural origin spawners.~~

Willapa Bay mixed-stock fisheries will be managed to achieve an aggregate number of natural origin spawners based on the following range of fishery impact rates[4], until such time as the analysis in the Adaptive Management section is completed and changes are adopted. The fishery impact rate shall not exceed 10% when the pre-season projections are extremely low, shall range between 10% and 20% when run sizes are forecasted to be at an intermediate level, and may exceed 20% when forecasted abundance is high. The threshold when fishery impact rates may exceed 10% is when forecasted abundance is sufficient achieve 1,700 natural-origin spawners after a 10% impact and the threshold for when the fishery impact rate may exceed 20% is when forecasted abundance exceeds 4,353 natural-origin spawners after a 20% impact; in the latter situation, fisheries shall be managed to a fishery impact rate that achieves 4,353 natural origin spawners. Intermediate fishery impact rates shall range to not exceed 20% when run size forecasts are between 2,125 and the number that will achieve 4,353 natural origin spawners.

The natural-origin spawning escapement conservation goals for individual tributaries shall be commensurate with the above approach and the range of values between the estimates in the 2020 Comprehensive Review and Policy C-3622.

Rivers with No Hatchery Releases

There shall be no direct release of hatchery fish into the North River, the Bear River, the Palix River and the Nemah River unless approved by the Commission as a conservation or experimental program in accordance with the Adaptive Management section of this Policy.

Enhanced Weir Operations

Current and enhanced weir operations shall be managed to annually minimize the proportion of hatchery-origin spawners allowed to spawn with natural-origin spawners when the river specific wild spawning escapement conservation goal is achieved or exceeded, and to utilize the number of hatchery-origin spawners necessary to achieve the wild spawning escapement conservation goal when the return of natural-origin spawners is less than the wild spawning escapement conservation goal. In an instance where both the natural-origin abundance is less

[3] ~~See graphs of spawner and subsequent production for natural-origin fall chinook following the Adaptive Management section of this document.~~

[4] Fishery impact rates in this instance are intended to be for Willapa Bay natural-origin fall chinook, in both bay and tributary fisheries, but not in ocean fisheries nor to include the catch of Columbia River origin "dip-in" fish in Willapa Bay fisheries.

than the wild spawning escapement conservation goal and the hatchery-origin abundance is less than the hatchery spawning escapement conservation goal, hatchery-origin fish shall be prioritized for use in the hatchery program.

Experimental and Evaluative Research Opportunities

In recognition of the scarcity of scientific information for ocean-type, early-entry fall chinook on the effects of differences in generational productivity due to differential ~~wild/~~ natural and hatchery origin parentage, the Department shall explore conducting experimental or other evaluative research that takes advantage of the opportunities presented by the enhanced weir operations in the Willapa and Naselle rivers and adjacent rivers without hatchery releases.

2) Hatchery Programs

Spawning Escapement and Smolt Production ~~Numerical~~ Goals

Consistent with Guiding Principle 6 and the purpose of this Policy, mixed stock fisheries will be managed on the basis of achieving an aggregate hatchery spawning escapement conservation goal corresponding to the number of adult fish needed to produce the following smolt release objectives:

Forks Creek Hatchery: 3.5+ M smolts
Naselle Hatchery: 5+ M smolts
Nemah Hatchery: ~~TBD~~ 0 M smolts

Additional hatchery production may occur at Forks Creek and Naselle hatcheries to achieve the purpose and provisions of this Policy, based on the results of enhanced weir operations and hatchery production infrastructure options.

Hatchery Broodstock Genetics

It is recognized that there is a wide-spread history of transfers of genetic strains from areas outside Willapa Bay and an extensive history of transferring fertilized eggs and juvenile fish between hatcheries on different tributaries of Willapa Bay, and that such practices have likely compromised the original genetic strains native to Willapa Bay tributaries. Nevertheless, genetic practices shall now strive to allow for local adaptation and neither transfers of out of basin stocks nor transfers between Willapa Bay hatchery facilities shall occur after the adoption of this Policy, subject to the adaptive management provisions of this Policy.

When hatchery returns are in excess of the adult spawning conservation goal, retention of adult fish for spawning and eggs taken shall strive to replicate the historic run timing and age profiles. When river specific wild spawning escapement conservation goals are exceeded, natural origin spawners are to be incorporated into the hatchery broodstock for that annual cycle, ~~up to an amount of {TBD}~~ as appropriate towards optimizing genetic diversity and ecological adaptability.

3) Fishery Management

Recreational and commercial fishery priorities

Fall chinook fisheries shall be managed to achieve a general priority for recreational fisheries, but to provide for meaningful fishing opportunity for both recreational and commercial fisheries. This general priority shall be accomplished with a management intent to provide the first opportunity for fall chinook target fishing to the mixed stock recreational fishery in Willapa Bay as well as an opportunity for recreational fisheries in Willapa Bay tributaries. The Willapa Bay recreational fishery will be managed to the extent that it does not preclude Willapa Bay commercial fishing opportunity or tributary recreational fishing opportunity. Commercial fall chinook target fisheries shall be managed in Willapa Bay areas to achieve aggregate spawning escapement conservation goals for both natural and hatchery origin fall chinook and a meaningful recreational opportunity for tributary fall chinook fishing, and shall not begin prior to September 8. Tributary recreational fisheries shall be managed to achieve tributary spawning escapement goals and provide meaningful opportunity prior to spawning area closures in a manner consistent with law enforcement concerns and low water situations.

Planning for Willapa Bay basin fall chinook target fisheries shall take into account incidental impacts in fisheries targeting coho salmon. The Director shall use his discretion in prioritizing the amount of incidental impacts allocated to coho target fisheries, with a goal of optimizing the socio-economic benefits for both commercial and recreational fisheries.

Coho Salmon

1) Natural Production

ESU context
Wild coho salmon are to be managed with the recognition that Willapa Bay populations are a component of the coastal coho evolutionarily significant unit under the federal ESA, are currently not listed under the ESA, and that federal listing decision-making will be based on the status of the full ESU.

Conservation Goals
Mixed stock fisheries will be managed on the basis of achieving an aggregate ~~wild~~ natural-origin spawning escapement conservation goal of 13,090. The aggregate ~~wild~~ natural-origin spawning escapement conservation goal is comprised of the following individual spawning escapement conservation objectives for natural origin adult fish on the spawning grounds, which will be used to manage respective tributary fisheries:

a. Willapa River: 4,030
b. Naselle River: 2,091
c. North River and Smith Creek: 5,286
d. Nemah River: 994
e. Bear River: 438
f. Palix River: 258

~~Enhanced Wier Operations~~
~~To the extent practicable, the enhanced weir shall be operated for coho salmon in a similar manner and for a similar purpose as described above for fall chook salmon.~~

Rivers with No Hatchery Releases

There shall be no direct release of hatchery produced coho salmon into the North River or Smith Creek, unless approved by the Commission as a conservation or experimental program in accordance with the Adaptive Management section of this Policy.

2) Hatchery Programs

Consistent with Guiding Principle 6 and the purpose of this Policy, mixed stock fisheries will be managed on the basis of achieving an aggregate hatchery spawning escapement conservation goal of adult fish necessary to produce the following smolt release objectives:

Forks Creek Hatchery: 0.3 M+ smolts
Nemah Hatchery: ~~TBD~~ 0 M smolts
Naselle Hatchery: 1.4 M+ smolts

Additional hatchery production may occur at Forks Creek and Naselle hatcheries to achieve the purpose and provisions of this Policy~~., based on the results of enhanced weir operations and hatchery production infrastructure options.~~

When hatchery returns are in excess of the adult spawning escapement conservation goal, retention of adult fish for spawning or eggs taken shall strive to replicate the historic run timing and age profiles. When river specific wild spawning escapement conservation goals are exceeded, natural origin spawners are to be incorporated into the hatchery broodstock for that annual cycle ~~up to an amount of {TBD}~~ as appropriate towards optimizing genetic diversity and ecological adaptability.

3) Fishery Management

Recreational and commercial fishery priorities

Coho salmon fisheries shall be managed to achieve a general priority for commercial fisheries, but to provide for meaningful fishing opportunity for both recreational and commercial fisheries. The Willapa Bay commercial fishery will be managed to the extent that it does not preclude Willapa Bay recreational fishing opportunity or tributary recreational fishing opportunity. This shall be accomplished by providing the first opportunity for coho target fishing to the mixed stock recreational fishery in Willapa Bay prior to priority commercial fishery, and after the priority commercial fishery in Willapa Bay, providing an opportunity for recreational fisheries in Willapa Bay tributaries. Commercial coho target fisheries shall be managed in Willapa Bay

areas to achieve the aggregate spawning escapement conservation goals for both natural and hatchery origin coho and recreational opportunity for tributary recreational coho fishing. Tributary recreational fisheries for coho salmon shall be managed to achieve tributary spawning conservation goals and provide meaningful opportunity prior to spawning area closures and in a manner consistent with law enforcement concerns and low water situations.

Planning for Willapa Bay basin coho target fisheries shall take into account incidental impacts in fisheries targeting chinook and chum salmon. The Director shall use his discretion in prioritizing the amount of incidental impacts allocated to fall chinook and chum target fisheries, with a goal of optimizing the socio-economic benefits for both commercial and recreational fisheries.

Chum Salmon

1) Natural Production

ESU context
Wild chum salmon are to be managed with the recognition that Willapa Bay populations are a component of the coastal chum evolutionarily significant unit under the federal Endangered Species Act (ESA), are currently not listed under the ESA, and that federal listing decision-making will be based on the status of the full ESU.

Conservation Goals
Mixed stock fisheries will be managed on the basis of achieving an aggregate ~~wild~~ natural-origin spawning escapement conservation goal of 35,400.

Rivers with No Hatchery Releases
There shall be no direct release of hatchery fish into the North River and Smith Creek, the Palix River and Bear River unless approved by the Commission as a conservation or experimental program in accordance with the Adaptive Management section of this Policy.

2) Hatchery Programs

Consistent with Guiding Principle 6 and the purpose of this Policy, hatchery programs shall produce the following smolt release objectives:

Forks Creek Hatchery: ~~zero or TBD M smolts~~ none
Nemah Hatchery: 2 M smolts
Naselle Hatchery: ~~zero or TBD M smolts~~ none

When hatchery returns are in excess of the adult spawning conservation goal, retention of adult fish for spawning or eggs taken shall strive to replicate the historic run timing and age profiles. Natural origin spawners are to be incorporated into the hatchery broodstock for that annual cycle, ~~up to an amount of {TBD}~~ as appropriate towards optimizing genetic diversity and ecological adaptability.

3) Fishery Management

Recreational and commercial fishery priorities

Chum salmon fisheries shall be managed to achieve a general priority for commercial fisheries, but to provide for meaningful fishing opportunity for both recreational and commercial fisheries when run sizes are sufficient to support fisheries. Commercial and recreational chum salmon target fisheries shall be managed to achieve the aggregate spawning escapement conservation goal for natural origin chum salmon. The commercial fishery priority shall be accomplished by providing the first opportunity for chum target fishing to the mixed stock commercial fishery in Willapa Bay, with sufficient escapement to provide a secondary opportunity for recreational fisheries in Willapa Bay tributaries.

Planning for Willapa Bay basin chum target fisheries shall take into account incidental impacts in fisheries targeting coho salmon and steelhead. The Director shall use his discretion in prioritizing the amount of incidental impacts allocated to coho salmon and steelhead target fisheries, with a goal of optimizing the socio-economic benefits for both commercial and recreational fisheries.

Adaptive Management

This Policy establishes a number of important conservation, production, and allocation provisions for the Director and agency staff to apply when managing the salmon fishery resources of Willapa Bay. While this policy establishes a clear presumptive path forward, the identified principles, goals, objectives, and actions are intended to guide decision-making and are not intended to foreclose adaptive management based upon new information. On the contrary, an intent of this Policy is to encourage gathering and consider additional information during the implementation process in efforts to more successfully achieve the stated purpose of this Policy. The Commission fully expects that the Director and agency staff will continue to consider new information, evaluate alternate means to carry out policy provisions, and consider instances in which it may make sense to deviate from the presumptive path forward when such changes improve achievement of the stated purpose of this Policy. The Commission expects that significant deviations from the presumptive path forward will be communicated to the Commission and the public, and that substantial questions of policy interpretation will be brought to the Commission for resolution.

Towards a change in the management of natural origin fall chinook, the staff shall conduct an analysis to develop a target spawning conservation goal to replace the fishing impact rate approach described in this Policy. This analysis should focus on population dynamics data of parent spawners and subsequent adult progeny recruits, but may also include other information as appropriate. Once a scientifically defensible natural origin spawner conservation goal is developed, and fishery control rules based on that goal and the achievement of the purpose and objectives of this Policy are drafted, the Commission Shall consider adopting them in an open, transparent, public process.

The Commission will track implementation of this Policy by receiving Department reviews every three years beginning three years after adoption and a comprehensive review after ten years of implementation. As part of the six-year report, the Department presentation shall include a briefing on research results and ongoing studies related to enhanced weir operations. As part of the comprehensive review, the Department shall review wild spawning conservation goals for fall chinook, coho, and chum salmon to ensure that they reflect a current understanding of productivity dynamics.

Delegation of Authority

The Commission delegates the authority to the Director, through the North of Falcon season setting process, to set seasons for recreational and commercial fisheries in the Willapa Bay Basin, and to adopt permanent and emergency regulations to implement these fisheries in accordance with the provisions of this Policy. In the event of a rare situation where the mix of the run size abundance of species or species stock segments is such that management in accordance with the incidental take or other provisions of this Policy will result in an extreme shortfall from a stated conservation goal or foregoing a substantial socio-economic fishery benefit, the Director is delegated the authority to adaptively manage fisheries towards the most optimal result possible.