Willapa Bay Salmon Advisory Group Meeting

Montesano District Office

August 22, 2018

6pm – 8pm

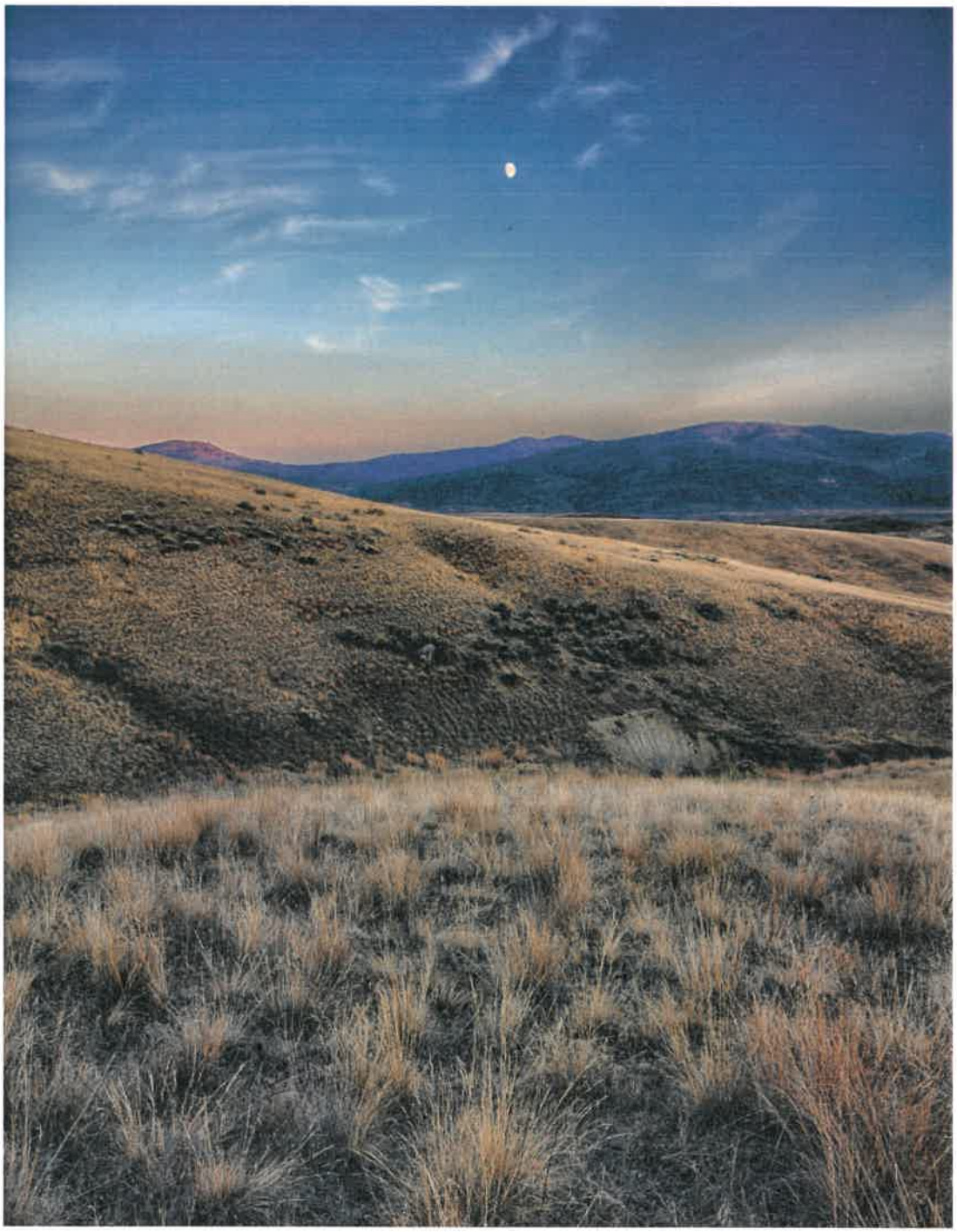
6:00	Introductions Roles and Responsibilities
6:20	Statewide Agency Issues Budget Southern Resident Killer Whales Hatchery Reform Policy (C-3619)
6:45	In-season Management – Recreational and Commercial Process Catch Estimate
7:00	Willapa Bay Salmon Management Policy Review (C-3622) Process Feedback
8:00	Public Input

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

Advisory Group Handbook

WDFW Mission

To preserve, protect and perpetuate fish, wildlife and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities.



Welcome and introduction

Thank you for your willingness to serve on one of the advisory groups that helps the Washington Department of Fish and Wildlife (WDFW) fulfill its mission and legal responsibilities as state government's principal steward of fish and wildlife resources. Washington residents can choose to contribute their time and energy to many worthy groups and causes, so we are honored that you have volunteered to assist WDFW.

This booklet explains the role of advisory groups and the responsibilities of the individual members. It also contains information about two state laws that pertain to advisory groups, the Open Meetings Act and the Public Records Act.

Now that you've been appointed to an advisory group, you will be asked to register with the department as a volunteer at http://wdfw.wa.gov/about/volunteer/.

Overview – WDFW advisory groups

State government advisory groups are created by the Governor, the Legislature, or individual agencies and commissions. They offer Washington residents an opportunity to have significant impact on the state's actions and policies. Advisory committee members dedicate their time, share their knowledge and experience, and communicate the public's opinions and priorities.

About 30 advisory groups provide recommendations to WDFW on many topics, including game management, habitat restoration, law enforcement, fisheries management, wildlife conservation, and hunter education. In addition, the state Fish and Wildlife Commission has an Americans with Disabilities Act Advisory Committee to provide advice on improving services for people with disabilities.

WDFW typically selects members to advisory committees who represent a broad range of perspectives and who reflect the state's geographic and demographic diversity. Committee members who represent an advocacy or special interest organization can also play a valuable role by informing their group's members about emerging issues, policy alternatives, and related activities.

Advisory group members' terms of service usually do not exceed three years, and members may be reappointed or removed at the department's discretion. When they accept an advisory group appointment, members assume certain responsibilities that are summarized in the following pages. Some responsibilities are common to all advisory committees; others reflect the specific focus of the individual group.

Unless specifically authorized, advisory groups do not have the authority to create rules or adopt policies, but WDFW seriously considers their recommendations when making decisions.

How do advisory committees operate?

WDFW personnel support and coordinate advisory committees' activities, and each committee has a designated point-of-contact with a specific staff person. Each committee also has a charter that spells out the group's responsibilities and method of operation. Most advisory groups contain fewer than 20 members.

In some cases, state law or WDFW will direct an advisory group to elect one of the members to serve as the chairperson. In those cases, committee meetings and discussions are governed by Roberts Rules of Order. Other committees operate less formally, with WDFW staff members coordinating the discussions.

Most WDFW advisory group meetings are open to the public, and the department's website has a section that includes advisory group membership rosters, schedules and agendas, and meeting-related documents: http://wdfw.wa.gov/about/advisory/.

Some, but not all, advisory committees permit a member to be represented by an alternate if he or she cannot attend a meeting. Arrangements for an alternate should be coordinated in advance with WDFW staff.

Generally, advisors are responsible for their own travel and meal expenses, but members may be reimbursed in some cases, such as when overnight accommodations are required.

What are the characteristics of an effective advisory group member?

Individual advisory committee members have the opportunity to influence the actions and recommendations of their committee and the decisions of WDFW. Each member should stay informed about key issues, legislative activity, and the state laws and administrative rules that relate to their advisory responsibilities.

In a nutshell, effective members:

- Strive to attend all meetings.
- Prepare in advance for meetings and other activities, to ensure they effectively present their perspectives and those of the organizations they represent.
- Fully participate in meetings, group discussions, and work group activities.
- Recognize that the group must operate openly and transparently.
- Respect and carefully consider the views of others.
- Examine all available evidence before making a judgment.
- Understand that the authority to advise the department is granted to the advisory group as a whole, not to individual members.
- Recognize that individual members often will have to compromise to enable the advisory group to reach a recommendation.

In helping to develop recommendations, effective members consider potential impacts on:

- The conservation of fish and wildlife resources.
- Local communities and their economies.
- Constituent groups and their priorities for fish and wildlife management.
- User groups that sometimes have strongly opposing views.
- The department's ability to effectively enforce state natural resource laws.

How can advisory groups maximize their effectiveness?

Advisory groups whose members fulfill their roles as described above are often able to develop recommendations that provide lasting benefits to the State of Washington. Such groups:

- Include discussion of alternate viewpoints with their recommendations.
- Express ideas and recommendations in clear, concise, language that is understandable to non-experts. WDFW staff members help advisory groups develop the written record.
- Propose recommendations that are both feasible and cost-effective.
- Establish clear procedures for how advisors and advisory groups interact with the public and other organizations. When expressing personal opinions or perspectives, members should clarify that they are not speaking for the entire group.

How does the department support advisory groups?

WDFW does everything possible to assist its advisory groups. For example, the department will:

- Clearly define the advisory group's role in an official charter or other document.
- Designate a staff person to schedule, organize, and help to conduct meetings.
- Work with the committee members to develop meeting agendas.
- Facilitate meetings and conference calls as needed.
- Provide relevant background and other briefing material.
- Provide timely opportunities for the group to advise the agency and provide timely communication on emerging issues.
- Respect all views and perspectives represented by advisory group members.
- Communicate advisors' recommendations and perspectives to agency leaders in time to influence their decisions.

WDFW staff members play an additional, equally important role. Just as certain actions and commitments can help advisory groups and their members succeed, some behaviors can have the opposite effect. WDFW personnel will work with the committee and its members to identify and avoid actions that might undermine their group's effectiveness.

Two important state laws affect the operation of WDFW advisory committees

Many laws guide state government operations, but the following statutes are especially important to WDFW advisory groups.

Open Public Meetings Act (RCW 42.30)

The Open Public Meetings Act (http://app.leg.wa.gov/RCW/default.aspx?cite=42.30) applies to almost all state boards and commissions. Generally, the law requires the board to (a) notify the public of a proposed meeting, and (b) allow interested persons to attend. However, the Open Meetings Act does not guarantee the public a right to speak or actively participate in the meeting.

WDFW staff will help each advisory group understand the effect of the law on its specific responsibilities. In all cases, the department encourages advisory groups to conduct their business in an open, transparent manner, consistent with the intent of the act.

Public Records Act (RCW 42.56)

The Public Records Act (http://app.leg.wa.gov/RCW/default.aspx?cite=42.56) ensures access to most public records created by state and local governments, unless a specific law applies for exempting the public record (in whole or part). "Public records" include written information relating to the conduct of government or the performance of any governmental or proprietary function prepared, owned, used or retained by any state agency. The public may inspect or obtain copies of most public records by filing a public disclosure request with the agency.

WDFW takes the position that advisory group records are public, and therefore subject to disclosure. The department's public disclosure specialists will respond to all requests for the records of its advisory groups. To ensure that all relevant records are available for disclosure, individual members should include their WDFW staff point-of-contact in any communication related to the business of the advisory group.

Reasonable accommodation for persons with disabilities

WDFW welcomes the participation of persons with disabilities in all of its programs and related outdoor activities, including membership in advisory groups.

If you or someone you know needs to receive this information in an alternative format or needs reasonable accommodations to participate in WDFW-sponsored public meetings or other activities, please contact Dolores Noyes by phone (360-902-2349), TTY (360-902-2207), or email (dolores.noyes@dfw.wa.gov).

More information is available on the WDFW website at: http://wdfw.wa.gov/accessibility/.

The Washington Department of Fish and Wildlife (WDFW) receives federal assistance from the U.S. Fish and Wildlife Service and provides equal access to its programs, services, activities, and facilities under Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and the Architectural Barriers Act of 1968.

The U.S. Department of the Interior and WDFW prohibit discrimination on the bases of race, color, religion, national origin, sex, age, mental or physical disability, reprisal, sexual orientation, status as a parent, and genetic information. If you believe you have been discriminated against, please contact the WDFW ADA Program Manager, PO Box 43139, Olympia, WA 98504 within 45 calendar days of the alleged incident before filing a formal complaint, or write to: Chief, Public Civil Rights Division, Department of the Interior, 1849 C Street NW, Washington DC 20240.

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FISH AND WILDLIFE COMMISSION
POLICY DECISION

POLICY TITLE: Willapa Bay Salmon Management **POLICY NUMBER: C-3622**

Cancels or
Supersedes: NA

Effective Date: June 13, 2015
Termination Date: December 31, 2023

See Also: Policies C-3608, C-3619

Approved June 13, 2015 by:

Chair
Washington Fish and Wildlife Commission

Purpose
The objective of this policy is to achieve the conservation and restoration of wild salmon in Willapa Bay and avoid ESA designation of any salmon species. Where consistent with this conservation objective, the policy also seeks to maintain or enhance the economic well-being and stability of the commercial and recreational fishing industry in the state, provide the public with outdoor recreational experiences, and an appropriate distribution of fishing opportunities throughout the Willapa Bay Basin. Enhanced transparency, information sharing, and improved technical rigor of fishery management are needed to restore and maintain public trust and support for management of Willapa Bay salmon fisheries.

Definition and Goal
This policy sets a general management direction and provides guidance for Washington Department of Fish and Wildlife (Department) management of all Pacific salmon returning to the Willapa Bay Basin. The Willapa Bay Basin is defined as Willapa Bay and its freshwater tributaries.

General Policy Statement
This policy provides a cohesive set of principles and guidance to promote the conservation of wild salmon and steelhead and improve the Department's management of salmon in the Willapa Bay Basin. The Washington Fish and Wildlife Commission (Commission) recognizes that management decisions must be informed by fishery monitoring (biological and economic), and that innovation and adaptive management will be necessary to achieve the stated purpose of this policy. By improving communication, information sharing, and transparency, the Department shall promote improved public support for management of Willapa Bay salmon fisheries.

State commercial and recreational fisheries will need to increasingly focus on the harvest of abundant hatchery fish. Mark-selective fisheries are a tool that permits the harvest of abundant hatchery fish while reducing impacts on wild stocks needing protection. As a general policy, the Department shall implement mark-selective salmon fisheries, unless the

wild populations substantially affected by the fishery are meeting spawner (e.g., escapement goal) and broodstock management objectives. In addition, the Department may consider avoidance, alternative gears, or other selective fishing concepts along with other management approaches provided they are as or more effective than a mark-selective fishery in achieving spawner and broodstock management objectives.

Fishery and hatchery management measures should be implemented as part of an "all-H" strategy that integrates hatchery, harvest, and habitat systems. Although the policy focuses on fishery management, this policy in no way diminishes the significance of habitat protection and restoration.

Guiding Principles
The Department shall apply the following principles in the management of salmon in the Willapa Bay Basin:

1) Prioritize the restoration and conservation of wild salmon through a comprehensive, cohesive, and progressive series of fishery, hatchery, and habitat actions.

2) Work with our partners (including Regional Fishery Enhancement Groups, nonprofit organizations, the public and Lead Entities) to protect and restore habitat productivity.

3) Implement improved broodstock management (including selective removal of hatchery fish) to reduce the genetic and ecological impacts of hatchery fish and improve the fitness and viability of salmon produced from Willapa Bay rivers (see Hatchery and Fishery Reform Policy C-3619). Achieve Hatchery Scientific Review Group (HSRG) broodstock management standards for Coho and Chum salmon by 2015, and work toward a goal of achieving standards for Chinook salmon by 2020.

4) Investigate and promote the development and implementation of alternative selective gear. The development of alternative selective gear may provide an opportunity to target fishery harvests on abundant hatchery fish stocks, reduce the number of hatchery-origin fish in natural spawning areas, limit mortalities on non-target species and stocks, and provide commercial fishing opportunities.

5) Work through the Pacific Salmon Commission to promote the conservation of Willapa Bay salmon and, in a manner consistent with the provisions of the Pacific Salmon Treaty, pursue the implementation of fishery management actions necessary to achieve agreed conservation objectives.

6) Within the Pacific Fishery Management Council (Council) process, support management measures that promote the attainment of Willapa Bay conservation objectives consistent with the Council's Salmon Fishery Management Plan.

7) Monitoring, sampling, and enforcement programs will adequately account for species and population impacts (landed catch and incidental fishing mortality) of all recreational

and commercial fisheries and ensure compliance with state regulations. Develop and implement enhanced enforcement strategies to improve compliance with fishing regulations and ensure orderly fisheries.

8) If it becomes apparent that a scheduled fishery will exceed the aggregated pre-season natural-origin Chinook mortality (impact) expectation, the Department shall implement in-season management actions in an effort to avoid cumulative mortalities of natural-origin Chinook in excess of the aggregated pre-season projection.

9) Salmon management and catch accounting will be timely, well documented, transparent, well-communicated, and accountable. The Department shall strive to make ongoing improvements in the transparency of fishery management and for effective public involvement in planning Willapa Bay salmon fisheries, including rule-making processes. These shall include: a) clearly describing management objectives in a document available to the public prior to the initiation of the preseason planning process; b) enhancing opportunities for public engagement during the preseason fishery planning process; c) communicating in-season information and management actions to advisors and the public; and d) striving to improve communication with the public regarding co-management issues that are under discussion.

10) Seek to improve fishery management and technical tools through improved fishery monitoring, the development of new tools, and rigorous assessment of fishery models and parameters.

11) When a mark-selective fishery occurs, the mark-selective fishery shall be implemented, monitored, and enforced in a manner designed to achieve the anticipated conservation benefits.

Fishery and Species-Specific Guidance
Subject to the provisions of the Adaptive Management section, the following fishery-and species-specific sections describe the presumptive path for achieving conservation objectives and an appropriate distribution of fishing opportunities.

Fall Chinook Salmon
Subject to the adaptive management provisions of this policy, the Department will manage fall Chinook salmon fisheries and hatchery programs consistent with the Guiding Principles and the following additional guidance:

1) The Department shall initiate a two-phase rebuilding program to conserve and restore wild Chinook salmon in Willapa Bay. The progressive series of actions is intended to result in achieving broodstock management standards by 2020 and spawner goals by years 16-21. Within the conservation constraints of the rebuilding program, Chinook salmon will be managed to provide for a full recreational fishing season with increased

participation and/or catch anticipated in future years.

2) Rebuilding Program - Phase 1 (Years 1-4). The objectives of Phase 1 shall be to increase the number of natural-origin spawners and implement hatchery program modifications designed to meet broodstock management standards in the subsequent cycle.

    a. Implement hatchery broodstock management actions to promote re-adaptation to the natural environment and enhance productivity of natural-origin Chinook salmon in the North/Smith, Willapa, and Naselle rivers:

        - North/Smith – Manage as Wild Salmon Management Zone with no hatchery releases of Chinook salmon.

        - Willapa – Implement an integrated program with hatchery broodstock management strategies designed to achieve broodstock management standards consistent with a Primary designation in the subsequent cycle.

        - Naselle – Implement hatchery broodstock strategies designed to achieve broodstock management standards consistent with a Contributing designation in the subsequent cycle.

    b. Pursue implementation of additional mark-selective commercial fishing gear to enhance conservation and provide harvest opportunities. The Department shall provide to the Commission by January 2017 a status report and by January 2018 an assessment of options to implement additional mark-selective commercial fishing gear in Willapa Bay. The assessment shall identify the likely release mortality rates for each gear type, the benefits to rebuilding naturally spawning populations, and the benefits and impacts to the commercial fishery.

3) Rebuilding Program - Phase 2 (Years 5 – 21). The combination of fishery and harvest management actions is projected to result on average in the achievement of spawner goals for the North, Naselle, and Willapa populations in the years 16-21. Additional fishery and hatchery management actions will be considered during this time period if the progress toward the spawner objectives is inconsistent with expectations.

4) Fishery Management Objectives. The fishery management objectives for fall Chinook salmon, in priority order, are to:

    a. Achieve spawner goals for the North, Naselle, and Willapa stocks of natural-origin Chinook and hatchery reform broodstock objectives through the two phase rebuilding program described above.

    b. Provide for an enhanced recreational fishing season. The impact rate of the recreational fishery is anticipated to be ~3.2% during the initial years of the

policy, but may increase in subsequent years to provide for an enhanced recreational season as described below:

- Manage Chinook salmon for an enhanced recreational fishing season to increase participation and/or catch including consideration of increased daily limits, earlier openings, multiple rods, and other measures.

- Conservation actions, as necessary, shall be shared equally between marine and freshwater fisheries.

c. Provide opportunities for commercial fisheries within the remaining available fishery impacts.

5) Fishery Management in 2015-2018. To facilitate a transition to the Willapa River as the primary Chinook salmon population, fisheries during the transition period will be managed with the following goal:

a. The impact rate on Willapa and Naselle river natural-origin fall Chinook in Willapa Bay fisheries shall not exceed 20%. Within this impact rate cap, the priority shall be to maintain a full season of recreational fisheries for Chinook salmon in the Willapa Bay Basin.

b. To promote the catch of hatchery-origin Chinook salmon and increase the number of natural-origin spawners, within the 20% impact rate cap the following impact rates shall be set-aside for mark-selective commercial fishing gear types with an anticipated release mortality rate of less than 35%:

Fishing Year	Mark-Selective Commercial Fishing Gear Set-Aside
2015	1%
2016	2%
2017	6%
2018	6%

The Commission may consider adjustments to the set-asides for 2017 and 2018 based upon the Department's reports to the Commission on commercial mark-selective fishing gear (paragraph 2(b)) or other adaptive management considerations.

c. No commercial Chinook fisheries shall occur in areas 2T and 2U prior to September 16.

d. No commercial Chinook fisheries shall occur in areas 2M, 2N, 2P and 2R until after Labor Day.

6) Fishery Management After 2018. Fisheries in the Willapa Bay Basin will be managed with the goal of:

   a. Limiting the fishery impact rate on Willapa and Naselle river natural-origin fall Chinook salmon to no more than 14%.

   b. No commercial fisheries shall occur within areas 2T and 2U prior to September 16.

   c. No commercial Chinook fisheries shall occur in areas 2M, 2N, 2P and 2R until after September 7.

7) Maintaining Rebuilding Trajectory. If the postseason estimate (as presented at the annual Commission review) of aggregated natural-origin Chinook salmon mortality (impacts) exceeds the preseason projection, the Department staff shall make a recommendation to the Commission regarding an adjustment to the allowable impacts for the subsequent year. The recommendation shall be based upon the percentage by which the postseason estimate of impacts exceeded the preseason projection, but may consider other factors such as the predicted abundance or other relevant factors.

8) Hatchery Production. Within budgetary constraints, and at the earliest feasible date, the Department shall seek to implement the following hatchery production of fall Chinook salmon:

   - 0.80 million at Naselle Hatchery
   - 3.30 million at Nemah Hatchery
   - 0.35 million at Forks Creek Hatchery

Coho Salmon

Subject to the adaptive management provisions of this policy, the Department will manage Coho salmon fisheries and hatchery programs consistent with the Guiding Principles and the following objectives:

1) Broodstock Management Strategies. Manage Coho salmon with the following designations and broodstock management strategies:

	North/Smith	Willapa	Naselle
Designation	Primary	Primary	Stabilizing
Broodstock Strategy	No Hatchery Program	Integrated	Integrated

Coho salmon returning to all other watersheds will be managed consistent with a Contributing designation.

2) Fishery Management Objectives. The fishery management objectives for Coho salmon, in priority order, are to:

   a. Manage fisheries with the goal of achieving the aggregate spawner goal for Willapa Bay natural-origin Coho salmon. When the pre-season forecast of natural-origin adult Coho is less than the aggregate goal, or less than 10% higher than the aggregate goal, fisheries in the Willapa Bay Basin will be scheduled to result in an impact of no more than 10% of the adult return;

   b. Prioritize commercial fishing opportunities during the Coho fishery management period (September 16 through October 14); and

   c. Provide recreational fishing opportunities.

Chum Salmon

Subject to the adaptive management provisions of this policy, the Department will manage Chum salmon fisheries and hatchery programs consistent with the Guiding Principles and the following objectives:

1) Broodstock Management Strategies. Manage Chum salmon with the following designations and broodstock management strategies:

	North/Smith	Palix	Bear
Designation	Primary	Contributing	Primary
Broodstock Strategy	No Hatchery Program	No Hatchery Program	No Hatchery Program

   Chum salmon returning to all other watersheds will be managed consistent with a Contributing designation.

2) Fishery Management Objectives. The fishery management objectives for Chum salmon, in priority order, are to:

   a. Achieve the aggregate goal for naturally spawning Chum salmon and meet hatchery reform broodstock objectives (see bullet 3);

   b. Provide commercial fishing opportunities during the Chum salmon fishery management period (October 15 through October 31); and

   c. Provide recreational fishing opportunities. Recreational fisheries will be allowed to retain Chum salmon.

3) Fisheries will be managed with the goal of achieving the aggregate goal for Willapa Bay

naturally spawning Chum salmon. Until the spawner goal is achieved 2 consecutive years, the maximum fishery impact shall not exceed a 10% impact rate and no commercial fisheries will occur in the period from October 15-31. If the number of natural-origin spawners was less than the goal in 3 out of the last 5 years, the Department shall implement the following measures:

a. The predicted fishery impact for Chum in Willapa Bay Basin will be scheduled to result in an impact of no more than 10% of the adult return.

b. When the Chum pre-season forecast is 85% or less of the escapement goal, the predicted fishery impact for Chum in Willapa Bay Basin will be scheduled to result in an impact of no more than 5% of the adult return.

4) The Department shall evaluate opportunities to increase hatchery production of Chum salmon. If Chum salmon hatchery production is enhanced, beginning as early as 2018, fisheries in the Willapa Bay Basin may be implemented with a fishery impact limit of no more than 33% of the natural-origin Chum salmon return.

Adaptive Management

The Commission recognizes that adaptive management will be essential to achieve the purpose of this policy. Department staff may implement actions to manage adaptively to achieve the objectives of this policy and will coordinate with the Commission, as needed, in order to implement corrective actions.

The Commission will also track implementation and results of the fishery management actions and artificial production programs in the transition period, with annual reviews beginning in 2016 and a comprehensive review at the end of the transition period (e.g., 2019). Fisheries pursuant to this Policy will be adaptive and adjustments may be made. Department staff may implement actions necessary to manage adaptively to achieve the objectives of this policy and shall coordinate with the Commission, as needed, in order to implement corrective actions.

Components of the adaptive management will be shared with the public through the agency web site and will include the following elements:

1) Conduct Annual Fishery Management Review. The Department shall annually evaluate fishery management tools and parameters, and identify improvements as necessary to accurately predict fishery performance and escapement.

2) Improve In-season Management. The Department shall develop, evaluate, and implement fishery management models, procedures, and management measures that are projected to enhance the effectiveness of fishery management relative to management based on preseason predictions.

3) Review Spawner Goals. The Department shall review spawner goals to ensure that they reflect the current productivity of salmon within the following timelines:

   a. Chum: September 1, 2016
   b. Coho: January 1, 2016
   c. Chinook: January 1, 2020

4) Comprehensive Hatchery Assessment. The Department shall complete a comprehensive review of the hatchery programs in the Willapa Bay region by June 2016. The review shall identify the capital funding necessary to maintain or enhance current hatchery programs, identify changes in release locations or species that would enhance recreational and commercial fishing opportunities, identify improvements or new weirs to increase compliance with broodstock management, and the use of re-use water systems, water temperature manipulation to increase production hatchery capacity.

5) Ocean Ranching Opportunities. The Department shall complete by January 2016 a comprehensive review of opportunities and constraints to implement ocean ranching of salmon in Willapa Bay.

Delegation of Authority
The Commission delegates the authority to the Director, through the North of Falcon stakeholder consultation 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.

This guidance establishes a number of important conservation and allocation principles for the Director and agency staff to apply when managing the fishery resources of Willapa Bay. While this policy establishes a clear presumptive path forward with regard to many of the identified objectives, those principles and concrete objectives are intended to guide decision-making and are not intended to foreclose adaptive management based upon new information. Nor does this guidance preclude the need to gather and consider additional information during the annual process of developing fishery plans and the associated rule-making processes that open fisheries in Willapa Bay. The Commission fully expects that the Director and agency staff will continue to communicate with the public, and the Commission, to consider new information, evaluate alternate means for carrying out policy objectives, and consider instances in which it may make sense to deviate from the presumptive path forward. That is the nature of both adaptive management, and policy implementation, when faced with a dynamic natural environment.

Commission Guidance on Implementation of Policy C-3622 in 2018

General Guidance

Policy implementation in 2018 to achieve priorities or goals for one fishing sector should not result in eliminating the opportunity of any fishing sector.

Chinook Fishery Management

Willapa Bay chinook fisheries should be actively managed to not exceed the 20% cap in 2018.

Recreational Fishery

- In achieving a priority for the recreational fishery for chinook salmon, design the 2018 fishery
  - after exploring a reduction in the 4 adult salmon bag limit;
  - to curtail high catch periods in June, July and early August if necessary to conform to this guidance;
  - to focus on mark selective fishing where ever practical;
  - to not exceed 20% impacts after accounting for incidental impacts needed in commercial fisheries (see below); and
  - to include active monitoring of the bay fishery prior to September 30 and active management of the bay fishery if the total fisheries impact ceiling of 20% on natural origin fish is in reasonable jeopardy of being exceeded.

Commercial Fishery

- The natural origin chinook salmon 6% impact "set-aside" for commercial fishing with alternative gear, together with 3% impacts relating to historic impacts, shall be used in pre-season planning to cover chinook incidental impacts in all commercial fisheries-- targeting coho, chum, or hatchery chinook salmon. Active management is expected in-season, and it may be that more or less than the 9% level ultimately occurs--within the constraint of the 20% impact rate cap and the provisions of this guidance.

Status of Policy C-3622

- Policy C-3622 is to remain in effect in 2018, except as clarified or modified by this guidance; this guidance applies only to 2018.

FISH AND WILDLIFE COMMISSION
POLICY DECISION

POLICY TITLE: Washington Department of Fish and Wildlife Hatchery and Fishery Reform **POLICY NUMBER: C-3619**

Effective Date: November 6, 2009

Supersedes: N/A

See Also:

Approved by: Miranda Wecker, Chair
Washington Fish and Wildlife Commission

Purpose

The purpose of this Washington Department of Fish and Wildlife policy is to advance the conservation and recovery of wild salmon and steelhead by promoting and guiding the implementation of hatchery reform.

Definition and Intent

Hatchery reform is the scientific and systematic redesign of hatchery programs to help recover wild salmon and steelhead and support sustainable fisheries. The intent of hatchery reform is to improve hatchery effectiveness, ensure compatibility between hatchery production and salmon recovery plans and rebuilding programs, and support sustainable fisheries.

General Policy Statement

The Washington Department of Fish and Wildlife (Department) shall promote the conservation and recovery of wild salmon and steelhead and provide fishery-related benefits by establishing clear goals for each state hatchery, conducting scientifically defensible-operations, and using informed decision making to improve management. Furthermore, it is recognized that many state operated hatcheries are subject to provisions under U.S. v. Washington and U.S. v. Oregon and that hatchery reform actions must be done in close coordination with tribal co-managers.

Artificial production programs will be designated as one of the following:

- Conservation Programs. Artificial production programs implemented with a conservation objective shall have a net aggregate benefit for the diversity, spatial structure, productivity, and abundance of the target wild population.

- Harvest Programs. Artificial production programs implemented to enhance harvest opportunities shall provide fishery benefits while allowing watershed-specific goals for the diversity, spatial structure, productivity, and abundance of wild populations to be met.

State commercial and recreational fisheries will need to increasingly focus on the

harvest of abundant hatchery fish. As a general policy, the Department shall implement mark-selective salmon and steelhead fisheries, unless the wild populations substantially affected by the fishery are meeting spawner and broodstock management objectives.

In addition, the Department may consider other management approaches provided they are as or more effective than a mark selective fishery in achieving spawner and broodstock management objectives.

Hatchery reform should be implemented as part of an "all-H" strategy that integrates hatchery, harvest, and habitat actions. Although this policy focuses on hatchery and harvest reform, in no way does it diminish the significance of habitat protection and restoration.

In implementing the policy guidelines the Department shall work with the tribes in a manner that is consistent with U.S. v. Washington and U.S. v. Oregon and other applicable state laws and agreements or federal laws and agreements.

Policy Guidelines

1. Use the principles, standards, and recommendations of the Hatchery Scientific Review Group (HSRG) to guide the management of hatcheries operated by the Department. In particular, promote the achievement of hatchery goals through adaptive management based on a structured monitoring, evaluation, and research program.

2. The Department will prioritize and implement improved broodstock management (including selective removal of hatchery fish) to reduce the genetic and ecological impacts of hatchery fish and improve the fitness and viability of natural production working toward a goal of achieving the HSRG broodstock standards for 100% of the hatchery programs by 2015.

3. Develop watershed-specific action plans that systematically implement-hatchery reform as part of a comprehensive, integrated (All-H) strategy for meeting conservation and harvest goals at the watershed and Evolutionarily Significant Unit (ESU)/Distinct Population Segment (DPS) levels. Action Plans will include development of stock (watershed) specific population designations and application of HSRG broodstock management standards. In addition, plans will include a time-line for implementation, strategies for funding, estimated costs including updates to cost figures each biennium.

4. Externally mark all Chinook, coho and steelhead artificial production that is intended to be used for harvest except as modified by state-tribal agreements or for conservation or research needs.

5. Secure necessary funding to ensure that Department-operated hatchery facilities comply with environmental regulations for passage facilities, water intake screening, and pollutant control systems.

6. Implement hatchery reform actions on a schedule that meets or exceeds the benchmarks identified in the 21st Century Salmon and Steelhead Framework.
7. Provide an annual report to the Fish and Wildlife Commission on progress of implementation.

8. Develop, promote and implement alternative fishing gear to maximize catch of hatchery-origin fish with minimal mortality to native salmon and steelhead.

9. Seek funding from all potential sources to implement hatchery reform and selective fisheries.

10. Define "full implementation" of state-managed mark selective recreational and commercial fisheries and develop an implementation schedule.

11. Work with tribal co-managers to establish network of Wild Salmonid Management Zones (WSMZ)1 across the state where wild stocks are largely protected from the effects of same species hatchery programs. The Department will have a goal of establishing at least one WSMZ for each species in each major population group (bio-geographical region, strata) in each ESU/DPS. Each stock selected for inclusion in the WSMZ must be sufficiently abundant and productive to be self-sustaining in the future. Fisheries can be conducted in WSMZ if wild stock management objectives are met as well as any necessary federal ESA determinations are received.

1 Wild Salmonid Management Zone is equal in meaning and application to the term of 'Wild Stock Gene Bank' as used and defined in the Statewide Steelhead Management Plan.

Commission Guidance on Policy 3619 (Policy) Implementation Effective June 15, 2018

Based on the foregoing information on the record under this agenda item, the Director is tasked to initiate a review of all sections and aspects of the Policy with an expectation that the results of the review be presented to the Commission, with a target of 6 months to a year. The review should include examining performance results since the Policy was adopted, updating appropriate policy language and scientific elements, changing language tone about the positive value of hatchery programs, and providing alternatives for possible Policy revisions including at least

- **adding a categorical designation for mitigation hatcheries,**
- **accommodation of Southern Resident Killer Whale prey initiatives, and**
- **different levels of hatchery-wild interactions that take into account the evolving science on risks to the salmon genetic resources of the State.**

While the review is underway and until the Commission adopts any revisions or refinements to the Policy, the Policy shall remain in effect except that Policy Guidelines 1, 2, and 3 shall be suspended for salmon species other than steelhead. Any language in the Policy that could be viewed as being inconsistent with the described suspension of these paragraphs shall be interpreted as being similarly suspended from Policy implementation. The purpose of suspending Policy Guidelines 1, 2, and 3 for salmon species other than steelhead is to allow for full consideration of the maintenance or enhancement of hatchery programs for chinook, coho, and chum salmon that would otherwise be inconsistent with these three guidelines, while still providing adequate protection of genuine native genetic resources.

Naselle Hatchery Chinook Rack Returns

PRELIMINARY/DRAFT

Year	2015						2016						2017						2018					
Origin	Hatchery			Natural			Hatchery			Natural			Hatchery			Natural			Hatchery			Natural		
Stat Week	Daily Total	Cumulative	% Run Timing	Daily Total	Cumulative	% Run Timing	Daily Total	Cumulative	% Run Timing	Daily Total	Cumulative	% Run Timing	Daily Total	Cumulative	% Run Timing	Daily Total	Cumulative	% Run Timing	Daily Total	Cumulative	% Run Timing	Daily Total	Cumulative	% Run Timing
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1		-	-	-
32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6		-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-	13	13	0.4%	2	2	0.3%	11	17		2	2	
34	-	-	-	-	-	-	-	-	-	-	-	-	23	36	1.1%	5	7	0.9%	5	22		3	5	
35	-	-	-	-	-	-	-	-	-	-	-	-	26	62	1.9%	6	13	1.6%						
36	205	205	4.2%	24	24	2.7%	0	0	0.0%	1	1	0.2%	63	125	3.8%	11	24	3.0%						
37	30	235	4.9%	0	24	2.7%	199	199	9.9%	32	33	6.6%	133	258	7.9%	33	57	7.1%						
38	2,016	2,251	46.5%	155	179	20.4%	25	224	11.1%	9	42	8.4%	1,179	1,437	43.8%	148	205	25.7%						
39	1,449	3,700	76.4%	134	313	35.7%	801	1,025	50.8%	143	185	36.9%	128	1,565	47.7%	17	222	27.8%						
40	481	4,181	86.3%	269	582	66.4%	229	1,254	62.1%	68	253	50.5%	304	1,869	57.0%	117	339	42.4%						
41	281	4,462	92.1%	217	799	91.2%	665	1,919	95.1%	54	307	61.3%	1,103	2,972	90.6%	321	660	82.6%						
42	278	4,740	97.9%	67	866	98.9%	86	2,005	99.4%	182	489	97.6%	184	3,156	96.2%	113	773	96.7%						
43	25	4,765	98.4%	1	867	99.0%	0	2,005	99.4%	9	498	99.4%	88	3,244	98.9%	21	794	99.4%						
44	37	4,802	99.1%	6	873	99.7%	0	2,005	99.4%	3	501	100.0%	16	3,260	99.4%	2	796	99.6%						
45	20	4,822	99.5%	3	876	100.0%	2	2,007	99.5%	0	501	100.0%	6	3,266	99.5%	0	796	99.6%						
46	11	4,833	99.8%	0	876	100.0%	6	2,013	99.8%	0	501	100.0%	14	3,280	100.0%	2	798	99.9%						
47	8	4,841	99.9%	0	876	100.0%	4	2,017	100.0%	0	501	100.0%	0	3,280	100.0%	1	799	100.0%						
48	-	4,841	99.9%	-	876	100.0%	1	2,018	100.0%	0	501	100.0%	0	3,280	100.0%	0	799	100.0%						
49	-	4,841	99.9%	-	876	100.0%	-	-	-	-			0	3,280	100.0%	0	799	100.0%						
50	3	4,844	100.0%	0	876	100.0%	-	-	-	-			0	3,280	100.0%	0	799	100.0%						
51													1	3,281	100.0%	0	799	100.0%						
Total	**4,844**			**876**			**2,018**			**501**			**3,281**			**799**			**22**			**5**		

Willapa Bay Natural Fall Chinook Spawner Escapement - does not include Rack counts

These data are from the files: Willapa River Chinook esc 2010-13, Naselle River Chinook esc 2010-13, Willapa Bay Presentation Materials - Complete these files first

Blue = Draft / Preliminary

NOR and HOR calculated using CWT recovery data 1988-91

NOR and HOR calculated using that years carcass recovery data from Spawning ground survey index data

Includes Forks Creek Hatchery rack returns passed upstream

	Willapa Bay Basin			NorthRiver/Smith Creek			Willapa River			Palix River			Nemah River			Naselle River			Bear River			
Management Designation	BASIN TOTAL			Primary			Primary			Stabilizing			Not Applicable			Contributing			Stabilizing			
Natural Spawner Estimated Capacity	4,353			991			1,181			104			224			1,547			306			Goal
Year	NOS	HOS	Total Adult Spawners	NOS	HOS	Total Adult Spawners	NOS	HOS	Total Adult Spawners	NOS	HOS	Total Adult Spawners	NOS	HOS	Total Adult Spawners	NOS	HOS	Total Adult Spawners	NOS	HOS	Total Adult Spawners	
2000	2,302	5,892	8,194	497	0	497	570	1,091	1,661	0	0	0	24	50	74	899	4,751	5,650	312	0	312	4353
2001	2,162	3,308	5,470	848	0	848	862	1,796	2,658	0	0	0	1	193	194	366	1,319	1,685	85	0	85	4353
2002	1,729	4,791	6,520	480	0	480	579	1,739	2,318	6	0	6	10	520	530	546	2,532	3,078	108	0	108	4353
2003	2,731	7,019	9,750	618	0	618	1,071	2,152	3,223	6	0	6	47	378	425	949	4,489	5,438	40	0	40	4353
2004	2,838	13,334	16,172	288	0	288	1,038	4,900	5,938	16	0	16	150	1,825	1,975	1,316	6,609	7,925	30	0	30	4353
2005	1,978	8,107	10,085	245	0	245	1,014	3,805	4,819	36	0	36	28	479	507	627	3,823	4,450	28	0	28	4353
2006	3,739	13,485	17,224	140	0	140	1,707	3,709	5,416	121	0	121	325	1,934	2,259	1,303	7,842	9,145	143	0	143	4353
2007	1,907	6,586	8,493	215	0	215	1,069	3,141	4,210	36	0	36	53	238	291	526	3,207	3,733	8	0	8	4353
2008	1,544	7,248	8,792	183	0	183	535	2,548	3,083	19	0	19	43	466	509	681	4,234	4,915	83	0	83	4353
2009	2,345	11,319	13,664	193	0	193	1,052	3,591	4,643	38	0	38	103	2,222	2,325	939	5,506	6,445	20	0	20	4353
2010	4,418	14,083	18,501	315	0	315	1,873	4,077	5,950	71	0	71	168	1,230	1,398	1,971	8,776	10,747	20	0	20	4353
2011	3,331	13,998	17,329	298	0	298	1,473	3,494	4,967	23	0	23	97	1,264	1,361	1,415	9,240	10,655	25	0	25	4353
2012	2,057	9,035	11,092	168	0	168	1,191	2,319	3,510	11	0	11	91	422	513	581	6,294	6,875	15	0	15	4353
2013	1,669	6,530	8,199	113	0	113	481	1,621	2,102	23	0	23	225	1,519	1,744	767	3,390	4,157	60	0	60	4353
2014	1,936	8,107	10,043	99	89	188	784	2,196	2,980	29	0	29	19	1,672	1,691	975	4,150	5,125	30	0	30	4353
2015	2,043	5,488	7,531	173	0	173	1,064	2,476	3,540	77	144	221	35	1,820	1,855	483	1,048	1,531	211	0	211	4353
2016	1,580	4,592	6,172	194	0	194	575	2,420	2,995	17	16	33	166	370	536	597	1,786	2,383	31	0	31	4353
2017	2,995	6,276	9,271	206	0	206	1,219	3,746	4,965	29	0	29	249	2,127	2,376	1,172	403	1,575	120	0	120	4353

Willapa Bay Coho Escapement

For this original file see WB coho run reconstruction 1-2-15.xlsx

blue = DRAFT/ preliminary

pink = average

	TOTAL ESCAPEMENTS													
	NOR includes rack							HOR includes rack						Total Escapement
	North/Smith	Willapa	Palix	Nemah	Naselle	Bear	Total NOR	North/Smith	Willapa	Palix	Nemah	Naselle	Bear	Total HOR	
1996	8,831	3,779	125	431	2,118	427	15,711	0	8,771	0	22,309	17,682	0	48,762	64,473
1997	1,622	908	419	533	1,210	242	4,934	0	2,951	0	2,451	1,202	0	6,604	11,538
1998	7,658	2,627	570	1,432	1,392	125	13,804	0	2,381	0	3,355	1,168	0	6,904	20,708
1999	7,183	65	351	642	1,176	211	9,628	0	12,726	0	5,189	4,760	0	22,675	32,303
2000	12,210	6,278	333	1,187	2,761	265	23,034	0	17,001	0	8,845	2,019	0	27,865	50,899
2001	23,018	9,372	1,308	4,598	9,694	424	48,414	0	19,442	0	24,288	9,817	0	53,547	101,961
2002	24,329	15,714	546	1,322	8,951	1,874	52,736	0	18,027	0	14,399	22,368	0	54,794	107,530
2003	21,498	13,206	418	1,269	9,237	1,076	46,704	0	20,378	0	19,273	29,111	0	68,762	115,466
2004	16,072	8,709	1,274	2,828	6,615	1,176	36,674	0	7,639	0	9,758	3,774	0	21,171	57,845
2005	9,523	4,066	96	1,490	2,570	1,827	19,572	59	24,525	96	16,002	6,900	0	47,582	67,154
2006	6,198	2,281	374	1,670	1,743	653	12,918	144	3,997	0	2,737	558	0	7,437	20,355
2007	6,765	2,866	268	849	3,456	562	14,766	423	5,481	0	4,358	83	0	10,345	25,111
2008	7,282	3,507	132	2,463	3,026	102	16,512	0	4,276	198	5,807	551	0	10,832	27,344
2009	26,530	9,594	364	1,975	6,564	1,372	46,398	134	8,525	0	10,922	2,177	0	21,759	68,157
2010	37,678	10,954	1,514	10,207	11,688	1,944	73,985	292	15,209	0	11,803	7,083	0	34,387	108,372
2011	12,826	6,936	237	2,765	3,753	791	27,308	96	8,143	237	851	12,696	0	22,022	49,330
2012	8,223	4,689	304	2,326	2,830	508	18,880	88	3,181	0	0	11,340	0	14,609	33,489
2013	10,710	4,542	392	2,248	4,091	655	22,638	0	4,380	0	749	8,557	0	13,686	36,324
2014	24,254	6,874	888	6,787	6,867	1,484	47,154	0	29,952	0	0	53,107	0	83,059	130,213
2015	4,392	2,617	256	2,204	928	393	10,790	732	7,628	0	0	12,936	1	21,297	32,087
2016	10,839	5,326	844	3,693	3,676	912	25,290	0	7,588	0	19	14,259	2	21,868	47,158
2017	5,178	1,173	242	1,594	549	350	9,753	0	4,901	0	0	4,075	3	12,525	22,278

Willapa Bay Chum Escapement

	Escapement				
	NOR			HOR	Goal 35,400 **Total Escapement**
	NOB	NOS	Total NOR		
2000		40,030		251	40,281
2001		29,389		581	29,970
2002		59,243		1,539	60,782
2003		47,347		450	47,797
2004		84,021		905	84,926
2005		11,924		59	11,983
2006		14,717		533	15,250
2007		17,085		307	17,392
2008		9,008		503	9,511
2009		12,629		114	12,743
2010	401	24,546	24,947	257	25,204
2011	1,051	65,764	66,815	56	66,871
2012	824	25,519	26,343	297	26,640
2013	874	23,642	24,516	463	24,979
2014	770	25,612	26,382	126	26,508
2015	813	44,147	44,960	365	45,325
2016	1,559	78,725	80,284	647	80,931
2017*	1,558	20,191	21,749	239	21,988

* Preliminary

2018 Willapa Bay Marine Area Recreational Catch Estimate

PRELIMINARY/DRAFT

CHK = Chinook
AD = Adipose clipped (hatchery origin)
UM = Unmarked

CPUE = Catch per unit effort
Effort = An individual angler trip

July (Ocean 2 Rules

Stat Week	Anglers	Estimated Total Chinook Kept	Total Chinook CPUE	Estimated Total AD Chinook Kept	**Willapa Origin Chinook AD Impacts**	Estimated Total UM Chinook Kept	**Willapa Origin Chinook UM Impacts**	Estimated Total Coho Kept	Estimated Total AD Coho Kept	Estimated Total UM Coho Kept	Coho CPUE
26	72	1	0.014	1	**0**	0	**0**	0	0	0	0.000
27	206	27	0.130	26	**8**	1	**0**	1	1	0	0.005
28	202	19	0.096	16	**5**	3	**1**	0	0	0	0.000
29	202	14	0.071	10	**3**	4	**1**	0	0	0	0.000
30	255	31	0.123	24	**7**	7	**2**	1	1	0	0.004
31	102	8	0.078	6	**2**	2	**1**	0	0	0	0.000
Season Total	1,038	101	0.097	83	**25**	18	**5**	2	2	0	0.002

August

Stat Week	Dates	Strata	Strata Description	# Boats Sampled	# Boats Not Sampled	# Total Boats	Expanded # Total Boats	Sample Rate	# Anglers Sampled	# Anglers per boat	Expanded # Total Anglers	# CHK AD Kept	# CHK UM Kept	CHK AD CPUE	Expanded # CHK AD Kept	**# WB Origin CHK AD Impacts**	# CHK UM Released	CHK UM CPUE	Estimated CHK UM Encounters	Estimated Total CHK UM Impacts	**# WB Origin CHK UM Impacts**	# Coho AD Kept	# Coho UM Kept	Total Coho CPUE (AD+UM)
31	8/1 - 8/2	1	Wed-Thur	11	0	11	24	45%	23	2.09	51	0	0	0.000	0	**0**	0	0.000	0	0	**0**	0	0	0.000
31	8/3 - 8/5	2	Fri-Sun	150	10	160	177	85%	362	2.41	426	17	0	0.047	20	**13**	7	0.019	8	1	**1**	2	0	0.006
32	8/6 - 8/9	1	Mon-Thur	84	2	86	190	44%	174	2.07	394	18	0	0.103	41	**27**	6	0.034	14	2	**1**	3	0	0.017
32	8/10 - 8/12	2	Fri-Sun	120	2	122	202	59%	271	2.26	456	45	0	0.166	76	**49**	5	0.018	8	1	**1**	2	1	0.011
33	8/13 - 8/16	1	Mon-Thur	110	9	119	263	42%	245	2.23	585	36	0	0.147	86	**56**	8	0.033	19	3	**2**	2	1	0.012
33	8/17 - 8/19	2	Fri-Sun	249	16	265	439	57%	662	2.66	1,167	106	0	0.160	187	**122**	25	0.038	44	6	**4**	11	6	0.026
				724	39	763	1,295	56%	1,737	2.40	3,080	222	0	0.128	409	**267**	51	0.029	93	13	**9**	20	8	0.016

Willapa Bay Origin PreSeason Recreational Data

Stat Wk	Date	Willapa Bay Natural Origin Fall Chinook					Willapa Bay Hatchery Origin Fall Chinook				
		Harvest Rate Proportions	Preseason Prediction		In-season Estimate		Harvest Rate Proportions	Preseason Prediction		In-season Estimate	
			NOR	Cumulative Total	WB Origin	Cumulative Total		HOR	Cumulative Total	WB Origin	Cumulative Total
27	7/1 - 7/8	0.0044	1	1	0	0	0.0024	10	10	8	8
28	7/9 - 7/15	0.0013	0	2	1	1	0.0034	13	23	5	13
29	7/16 - 7/22	0.0044	1	3	1	2	0.0106	42	65	3	16
30	7/23 - 7/29	0.0014	0	3	2	5	0.0178	70	135	7	23
31	7/29 - 8/5	0.0100	3	6	1	6	0.0269	106	241	15	38
32	8/6 -8/12	0.0896	26	32	2	8	0.0805	317	558	76	113
33	8/13 - 8/19	0.1528	44	75	6	14	0.1478	583	1,141	178	291
34	8/20 - 8/26	0.2354	67	142			0.2238	882	2,023		
35	8/27 - 9/2	0.2892	82	225			0.2834	1,117	3,140		
36	9/3 - 9/9	0.1016	29	254			0.1013	399	3,540		
37	9/10 - 9/16	0.0806	23	277			0.0792	312	3,852		
38	9/17 - 9/23	0.0196	6	282			0.0186	73	3,925		
39	9/24 - 9/30	0.0064	2	284			0.0021	8	3,934		
40	10/1 - 10/7	0.0030	1	285			0.0012	5	3,939		
41	10/8 - 10/14	0.0000	0	285			0.0000	0	3,939		
42	10/15 - 10/21	0.0004	0	285			0.0009	3	3,942		
43	10/22 - 10/28	0.0000	0	285			0.0000	0	3,942		
44	10/29 - 11/4	0.0000	0	285			0.0000	0	3,942		
				285					3,942		

2018 Willapa Bay Salmon Fishery Planning Model

Updated 2018 North of Falcon

PFMC # coho FRAM # 1830 Final

Name of model: Filed with CR-103

Marine Area Rec: Chinook MSF Aug 1, 3 fish bag,1 coho
Freshwater: 4 fish bag, 1 wild coho
Commercial:

Commercial Chinook Drop out	0.03	Sport hook & line drop off	0.05
Commercial Coho Drop out	0.02	Marine Hooking Mortality	0.14
Small mesh gear mortality	0.56	Freshwater Hooking Mortality	0.10
Tangle net mortality	0.31		

0.75 25% Savings for 12 hr fishery using 24 hr rate

Based on 12-Hr rates

	Chinook					Coho					Chum
	Total Hatchery	Willapa North	Nemah Palix	Naselle Bear	Total Natural	Willapa North	Nemah Palix	Naselle Bear	Total Hatchery	Willapa North	Nemah Palix	Naselle Bear	Total Natural	Willapa North	Nemah Palix	Naselle Bear	Total
Pre-Season Runsize	**40,257**	**16,055**	**19,580**	**4,622**	**3,838**	**2,195**	**490**	**1,153**	34,993	**6,893**	**0**	**28,100**	18,994	**10,691**	**2,734**	**5,568**	**39,932**
Escapement Goal	3,525	200	1,950	1,375	4,353	2,172	328	1,853	2,500	1,000	0	1,500	13,600	9,679	1,294	2,628	35,400
Harvestable	**36,732**	**15,855**	**17,630**	**3,247**	**-515**	**23**	**162**	**-700**	**32,493**	**5,893**	**0**	**26,600**	**5,394**	**1,012**	**1,441**	**2,940**	**4,532**

Stat Week	2017 Dates	Days Fished T	U	N	R	M	MSF T	U	N	R	M	Chinook Catch Natural T	U	N	R	M	Hatchery Chinook Total Hatchery	Total WB Origin	Willapa North	Nemah Palix	Naselle Bear	Natural Chinook Total Natural	Total WB Origin	Willapa North	Nemah Palix	Naselle Bear	Hatchery Coho Total Hatchery	Willapa North	Nemah Palix	Naselle Bear	Natural Coho Total Natural	Willapa North	Nemah Palix	Naselle Bear	CHUM MSF	Chum Catch T	U	N	R	M	Total Chum
32	Aug 5 - Aug 11	0.0	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0
33	Aug 12 - 18	0.0	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0
34	Aug 19 - 25	0.0	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0
35	Aug. 26 - Sept 1	0.0	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0
36	Sept. 2 - 8	0.0	0.0	**2.0**	0.0	**1.0**	1.00	1.00	0.31	1.00	0.31	0	0	26	0	39	1,603	1,603	225	1,083	295	80	65	11	15	39	41	0	0	41	25	4	14	7	1.00	0	0	1	0	1	3
37	Sept. 9 - 15	0.0	0.0	**3.0**	0.0	**1.0**	1.00	1.00	0.31	1.00	0.31	0	0	39	0	39	2,026	2,026	327	1,331	368	99	78	16	17	45	234	1	0	233	37	6	21	11	1.00	0	0	2	0	1	3
38	Sept 16 - 22	**3.0**	**3.0**	**5.0**	0.0	**5.0**	0.56	0.31	0.56	1.00	0.56	15	39	18	0	34	1,800	1800	1,140	483	177	126	106	57	12	36	1,114	356	0	759	198	150	35	13	1.00	2	4	2	0	5	13
39	Sept. 23 - 29	**3.0**	**3.0**	**5.0**	0.0	**4.0**	0.56	0.31	0.56	1.00	0.56	19	5	5	0	23	457	457	236	166	56	64	52	24	7	21	783	129	0	654	146	78	48	20	1.00	18	4	2	0	29	53
40	Sept 30 - Oct 6	**4.0**	**3.0**	**4.0**	0.0	**4.0**	0.56	0.31	0.56	1.00	0.56	11	13	1	0	8	305	305	228	53	24	39	32	22	2	8	1,588	273	0	1316	484	325	116	44	1.00	172	4	37	0	179	392
41	Oct. 7 - 13	**1.0**	**4.0**	0.0	0.0	0.0	0.56	0.31	1.00	1.00	1.00	4	3	0	0	0	70	70	63	3	4	10	8	7	0	1	131	58	0	73	187	163	16	8	1.00	265	47	0	0	0	312
42	Oct. 14 - 20	0.0	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0
43	Oct. 21 - 27	0.0	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0
44	Oct. 28 - Nov 3	0.0	**2.0**	0.0	0.0	0.0	1.00	0.56	1.00	1.00	1.00	0	1	0	0	0	9	9	9	0	0	1	1	1	0	0	79	51	0	27	287	273	13	0	0.56	0	116	0	0	0	116
45	Nov. 4 - 10	**5.0**	**5.0**	**5.0**	0.0	**5.0**	0.56	0.56	0.56	1.00	0.56	2	2	0	0	0	24	24	18	4	2	4	3	3	0	1	350	201	0	149	805	737	61	7	0.56	158	386	151	0	950	1,645
46	Nov. 11 - 17	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**	0.56	0.56	0.56	0.56	0.56	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	30	19	0	10	53	50	2	0	0.56	15	111	57	42	244	469
47	Nov. 18 - 24	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**	0.56	0.56	0.56	0.56	0.56	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	120	76	0	44	220	203	15	1	0.56	2	20	57	42	13	134
48	Nov. 25 - Dec 1	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**	0.56	0.56	0.56	0.56	0.56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	7	0	4	27	25	2	0	0.56	2	1	57	0	13	72
49		0.0	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0
Commercial Catch Totals		**31**	**35**	**39**	**15**	**35**						**50**	**63**	**90**	**0**	**142**	6,299	6,299	2,251	3,124	925	423	345	141	54	150	4,482	1,172	0	3,310	2,468	2,014	344	111	16	634	692	367	85	1,435	3,213
Commercial Harvest Rate																		0.156	0.140	0.160	0.200		0.090	0.064	0.110	0.130	0.128	0.170		0.118	0.130	0.188	0.126	0.020							0.080

	Willapa R Natural Chinook Mortality Rate		Naselle Natural Chinook Mortality Rate		Chum Mortality Rate	
	Projected	Cap	Projected	Cap	Projected	Cap
Harvest Rate	**18.9%**	20%	**16.8%**	20%	**9.0%**	###

2018 Chinook Policy Guidance: Natural Chinook HR for Willapa Bay

Commercial	**9.00%** 9%
Rec Marine	**7.4%**
Rec Freshwater	**1.4%**

Coho Natural Escapement	Projected	Goal
	15,243	13,600

	Hatchery Chinook					Natural Chinook					Hatchery Coho				Natural Coho					Chum Catch					Total Chum
	Total Hatchery	Total WB Origin	Willapa North	Nemah Palix	Naselle Bear	Total Natural	Total WB Origin	Willapa North	Nemah Palix	Naselle Bear	Total Hatchery	Willapa North	Nemah Palix	Naselle Bear	Total Natural	Willapa North	Nemah Palix	Naselle Bear		T	U	N	R	M	
Recreational Marine Catch	3,942	3,550	171	221		285	254	2	29		1,879	400		1,479	959	767	118	73							**148**
Harvest Rate	0.098	0.221	0.009	0.048		0.074	0.116	0.005	0.025		0.054	0.058		0.053	0.050	0.072	0.043	0.013							0.004
Recreational Freshwater Catch	8,033	906	6,639	488		55	19	22	14		1,911	282		1,629	324	178	2	145							**218**
Harvest Rate	0.200	0.056	0.339	0.106		0.014	0.009	0.044	0.012		0.055	0.041		0.058	0.017	0.017	0.001	0.026							0.005
Total Recreational Catch	11,975	4,456	6,810	710		340	273	24	43		3,790	682		3,108	1,283	945	121	218							**367**
Harvest Rate	0.297	0.278	0.348	0.154		0.089	0.124	0.049	0.037		0.108	0.099		0.111	0.068	0.088	0.044	0.039							0.009
Expected Escapement	21,982	9,349	9,646	2,987		3,153	1,781	412	959	26,721					**15,243**										**36,352**
															Goal 13,600										Goal 35,400
Total Harvest Rates	0.454	0.418	0.507	0.354		0.178	**18.9%**	0.158	**16.8%**	0.236					0.198										**9.0%**

Run Reconstruction by System

Blue = Draft / Preliminary

2017 Preliminary

	Commercial Impacts		Marine Rec Impacts		FW Rec Impacts **		Hatchery Escapement		Pre-Spawn Morts		Spawner Escapement		Runsize		Harvest Rate	
	NOR	HOR	NOR	HOR	NOR	HOR	NOR	HOR	NOR	HOR	NOS	HOS	NOR	HOR	NOR	HOR
North	-	-	-	-	0	5	-	-	-	-	206	0	206	5		
Willapa	184	1,792	138	2,221	50	1,470	4	7,063	4	0	1,219	3,746	1,599	16,292	23.3%	33.7%
Palix	-	-	-	-	0	0	-	-	-	-	29	0	29	0		
Nemah	23	1,047	2	111	41	3,282	28	3,095	2	0	249	2,127	345	9,662	19.1%	46.0%
Naselle	88	279	25	125	42	880	38	3,266	37	5	1,172	403	1,402	4,958	11.1%	25.9%
Bear	-	-	-	-	0	0	-	-	-	-	120	0	120	0		
Total	295	3,119	165	2,457	134	5,636	70	13,424	43	5	2,995	6,276	3,701	30,917	16.0%	36.3%

Alternative Gear Evaluation

Tangle Net Use

	2U	2N	2R	2M	
Total	136	13	1	68	# Local NOR Impacts
135	126	5	0	4	Willapa Probability
65	9	6	1	49	Naselle Probability
	8.4%			4.66%	
	Willapa			Naselle	

PNI= PNOB /(PNOB + PHOS)

Needs to be ≥ 0.67 for Primary and ≥ 0.5 for Contributing

pHOS

0.754 Forks Creek

0.256 Naselle

PNI

2016

	Commercial Impacts		Marine Rec Impacts		FW Rec Impacts **		Hatchery Escapement		Pre-Spawn Morts		Spawner Escapement		Runsize		Harvest Rate	
	NOR	HOR	NOR	HOR	NOR	HOR	NOR	HOR	NOR	HOR	NOS	HOS	NOR	HOR	NOR	HOR
North	-	-	-	-	0	0	-	-	-	-	194	0	194	0	-	-
Willapa	97	1,484	146	2,635	12	1,160	226	4,490	0	0	575	2,420	1,055	12,189	**24.1%**	43.3%
Palix	-	-	-	-	0	0	-	-	-	-	17	16	17	16	-	-
Nemah	27	1,406	1	110	10	2,640	7	1,814	0	0	166	370	211	6,340	18.2%	65.6%
Naselle	173	425	32	144	20	1,097	74	2,002	22	4	597	1,786	919	5,458	**24.6%**	30.5%
Bear	-	-	-	-	0	0	-	-	-	-	31	0	31	0	-	-
Total	**298**	**3,315**	**179**	**2,889**	**42**	**4,897**	**307**	**8,306**	**22**	**4**	**1,580**	**4,592**	**2,428**	**24,003**	**21.4%**	**46.2%**

Alternative Gear Evaluation

Tangle Net Use

	2U	2N	2R	2M	
Total	27	4	0	25	# Local NOR Impacts
27	25	1	0	1	Willapa Probability
25	2	2	0	20	Naselle Probability
	2.60%			**2.69%**	
	Willapa			Naselle	

pHOS

0.81 Forks Creek

0.749 Naselle

2015

	Commercial Impacts		Marine Rec Impacts		FW Rec Impacts **		Hatchery Escapement		Pre-Spawn Morts		Spawner Escapement		Runsize		Harvest Rate	
	NOR	HOR	NOR	HOR	NOR	HOR	NOR	HOR	NOR	HOR	NOS	HOS	NOR	HOR	NOR	HOR
North	-	-	-	-	0	36	-	-	-	-	173	0	173	36	-	-
Willapa	122	1,684	161	4,669	81	1,780	183	14,137	6	31	1,064	2,476	1,617	24,777	**22.5%**	32.8%
Palix	-	-	-	-	0	0	-	-	-	-	77	144	77	144	-	-
Nemah	79	2,240	5	288	67	3,923	41	2,117	4	345	35	1,820	231	10,732	65.4%	60.1%
Naselle	314	1,002	88	554	45	661	557	4,842	532	1,865	483	1,048	2,019	9,972	**22.2%**	22.2%
Bear	-	-	-	-	0	0	-	-	-	-	211	0	211	0	-	-
Total	**515**	**4,926**	**255**	**5,511**	**193**	**6,400**	**781**	**21,096**	**542**	**2,241**	**2,043**	**5,488**	**4,329**	**45,662**	**22.2%**	**36.9%**

pHOS

0.699 Forks Creek

0.685 Naselle

2014

	Commercial Impacts		Marine Rec Impacts		FW Rec Impacts **		Hatchery Escapement		Pre-Spawn Morts		Spawner Escapement		Runsize		Harvest Rate	
	NOR	HOR	NOR	HOR	NOR	HOR	NOR	HOR	NOR	HOR	NOS	HOS	NOR	HOR	NOR	HOR
North	-	-	-	-	0	0	-	-			99	89	99	89	-	-
Willapa	1,399	6,630	88	2,353	131	812	67	4,292			784	2,196	2,469	16,283	65.5%	60.2%
Palix	-	-	-	-	0	0	-	-			29	0	29	0	-	-
Nemah	33	2,206	0	147	10	2,609	6	3,346			19	1,672	68	9,979	63.4%	49.7%
Naselle	1,050	3,072	44	714	20	527	66	2,622			975	4,150	2,154	11,085	51.7%	38.9%
Bear	-	-	-	-	0	0	-	-			30	0	30	0	-	-
Total	**2,481**	**11,908**	**132**	**3,213**	**161**	**3,948**	**139**	**10,260**			**1,936**	**8,107**	**4,850**	**37,436**	**57.2%**	**50.9%**

pHOS

0.737 Forks Creek

0.810 Naselle

**The hard entered value in the Freshwater Rec Impacts columns are the NOR Impacts + 2% Drop off value calculated on the Catch page for each system. The value is not connected here because it creates a circular reference with the runsize.