

**Willapa Bay Salmon Management Policy (C-3622)**  
**Comprehensive Review (Briefing/Public Comment/Decision)**

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## Summary Sheet

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<b>Meeting dates:</b>	February 7, 2020
<b>Agenda item:</b>	Willapa Bay Salmon Management Policy (C-3622) Comprehensive Review
<b>Presenter(s):</b>	Chad Herring, South Coast Fishery Policy Analyst

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### **Background summary:**

In the fall of 2014, the Washington Fish and Wildlife Commission (FWC), supported by Department staff, initiated a process in order to develop a salmon management policy for Willapa Bay. The intent of the policy is to provide Department staff with general guidance and management objectives for salmon management in Willapa Bay.

To advise in the development of this policy, a Willapa Bay Advisory Group was formed. The group consisted of stakeholders representing recreational and commercial fishers. Public engagement in the development of Policy C-3622 included four meetings with the Willapa Bay Advisory group, four public workshops, and one workshop with the Pacific County Commissioners. These meetings took place in fall 2014 through spring 2015.

In June 2015, the policy was adopted by the FWC as the Willapa Bay Salmon Management Policy – C-3622. The objectives of the 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.” Policy also provides fishery management objective for fall Chinook to achieve spawning escapement goals and to provide for an enhanced recreational fishing season. The policy recognizes uncertainty in implementation, depends on continued economic and biological analysis, and relies on an adaptive management approach.

The implementing structure of the policy consisted of two phases; Phase I included years 1 through 4 post-adoption (covering the 2015 through 2018 fisheries) and Phase II included years 5 through 21 (July 2019 through June 2035). In 2019, the FWC provided staff with additional guidance for management of salmon fisheries prosecuted in Willapa Bay applicable to the 2019 season only. In the adaptive management section of Policy C-3622, the Commission requested a comprehensive and thorough review of the implementation and performance of the Policy upon completion of Phase I as well as annual briefings on the performance and implementation of the policy guidance.

This presentation will provide a preview of fishery and stock assessment data relating to the performance of Policy C-3622 in Phase I (2015 through 2018 fisheries) that is currently being developed for the comprehensive review document. Also, staff will provide preliminary fishery and stock performance data for 2019 fisheries. Lastly, staff will seek Commission guidance on conservation and management objectives to be utilized in pre-season planning for 2020 fisheries and for the 2019 brood year fall Chinook hatchery releases for Willapa Bay facilities.

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### **Staff recommendation:**

Staff continues to work on the comprehensive review of this Willapa Bay policy but seeks guidance on policy provisions needed for the 2020 pre-season planning process.

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**Policy issue(s) and expected outcome:**

Policy guidance to the Department for defining conservation and fishery management objectives for the 2020 salmon fishing season in Willapa Bay for commercial and recreational fishing opportunity and for the 2019 brood year fall Chinook hatchery production within Willapa Bay.

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**Fiscal impacts of agency implementation:**

Fishery management options to be considered by the Commission would not result in the need for any additional resources. Fishery monitoring and evaluation programs are currently in place.

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**Public involvement process used and what you learned:**

Public involvement in the review is included throughout the review process. To-date, Department staff have sought public input through public meetings as well as at the conclusion of each meeting of the Willapa Bay Salmon Advisory Group leading up to the January meeting of the Fish and Wildlife Commission. Additional meetings of the Willapa Bay Salmon Advisory Group have been conducted through September of 2019; these too offered an opportunity for public input.

It is anticipated this review process will conclude in the form of a final presentation to the FWC summarizing information from a detailed report intending to provide answers to specific questions regarding the implementation and performance of Policy C-3622. Questions that are to be developed with commissioner, advisory, and public involvement.

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**Action requested and/or proposed next steps:**

Consider adoption of guidance to be utilized in the 2020 North of Falcon process regarding 2020 Willapa Bay salmon fishing season and for the 2019 brood year fall Chinook hatchery production within Willapa Bay.

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**Draft motion language:**

Not applicable.

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**Post decision communications plan:**

Once guidance is adopted, the guidance will be posted on website and communicated to constituents and advisory groups at meetings during the North of Falcon process.

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# FISH AND WILDLIFE COMMISSION

## POLICY DECISION

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**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

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### **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.

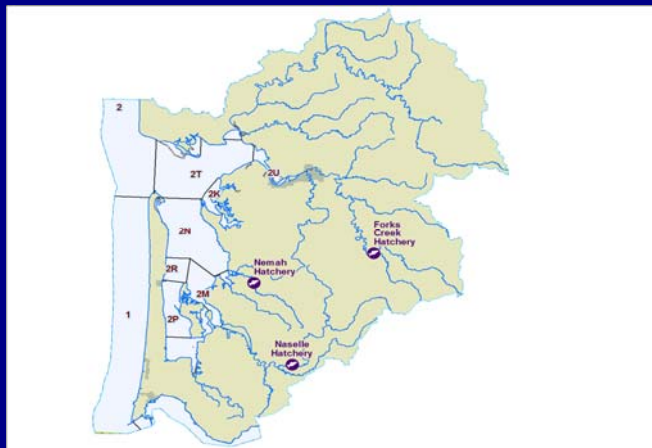
### **Delegation of Authority**

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.



## Willapa Bay Salmon Management Policy 2019 Season Review



Chad Herring – Fish Program  
Washington Fish and Wildlife Commission Meeting  
February 7, 2020

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## Presentation Outline

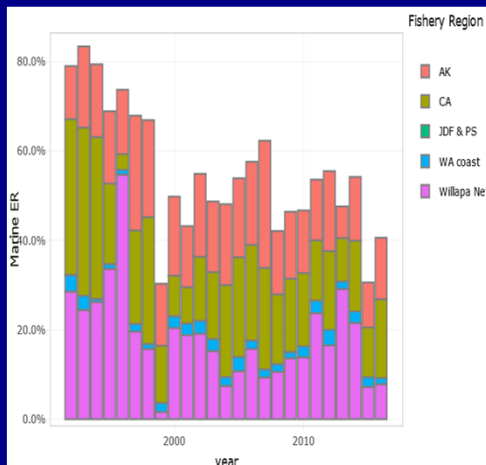
- Review Performance of Policy C-3622 in Phase One, 2015-2018
  - Preliminary 2019 data – denoted by \*
- Review Willapa Bay Hatchery Production
  - Background
  - 2019 egg takes
- Seek Guidance from Commission
  - 2020 management objectives
  - 2019 brood year fall Chinook hatchery releases

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## Policy C-3622 Performance

### Chinook Exploitation Rates



- CWT analysis generated using FRAM
- Years 1992-2016
- Declining exploitation rate
- New PST annex in 2019
- Does not include recreational harvest data
  - No active monitoring programs

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## Policy C-3622 Performance

### Willapa Bay Wild Chinook

Year	Runsize		Impact Rate		Spawning Escapement	
	Forecast	Actual	Predicted	Actual	Predicted	Actual
2015	3,835	4,329	19.2%	22.3%	3,100	2,043
2016	3,258	2,433	20.0%	21.5%	2,610	1,580
2017	4,131	3,736	19.3%	15.8%	3,333	3,008
2018	3,840	3,188	17.8%	8.2%	3,153	2,821
2019*	4,309	3,418	15.4%	14.7%	3,647	2,636
<b>Avg</b>	<b>3,875</b>	<b>3,421</b>	<b>18.3%</b>	<b>16.5%</b>	<b>3,169</b>	<b>2,418</b>

- Actual performance affected by in-season management actions
- Management objectives
  - Wild impact rate = 20%
  - Spawning Escapement = 4,353 wild spawners

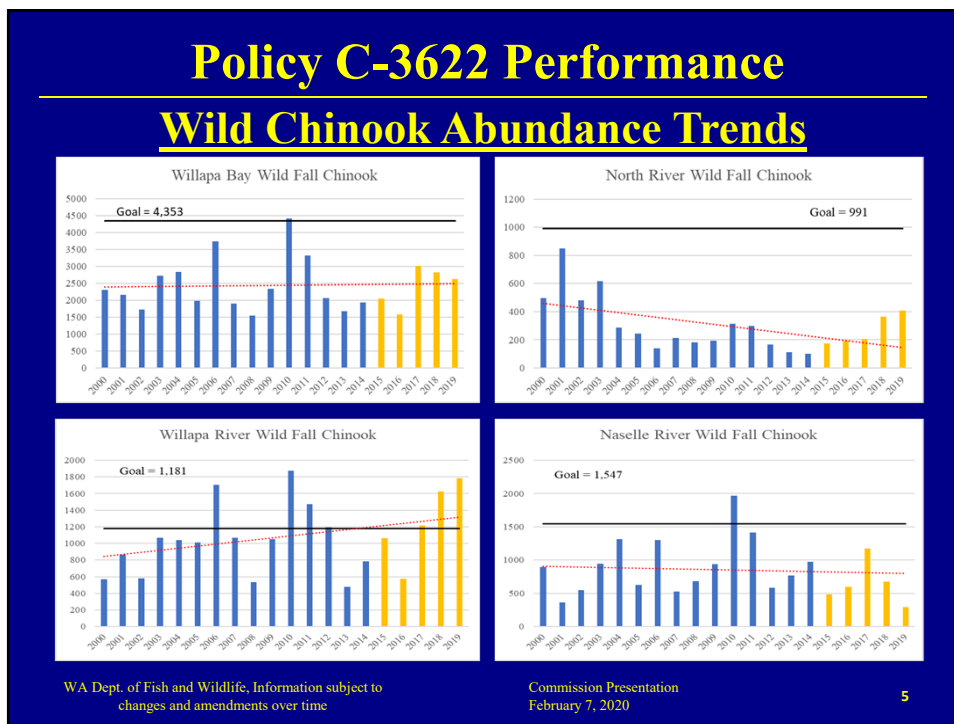
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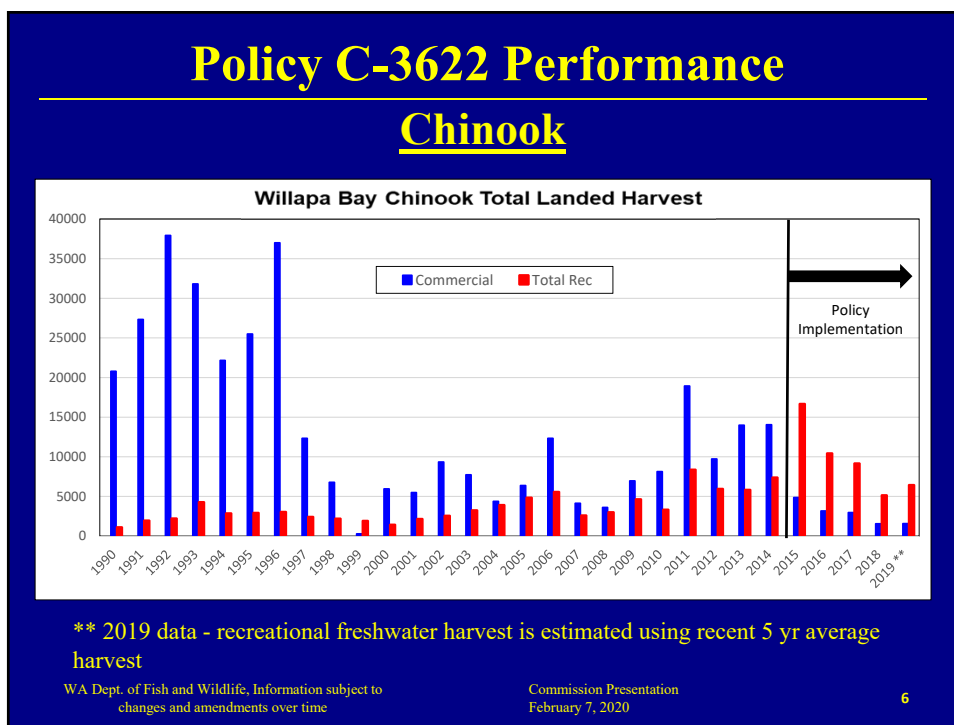
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## Policy C-3622 Performance

### Willapa Bay Chum

Year	Runsize		Impact Rate		Spawning Escapement	
	Forecast	Actual	Predicted	Actual	Predicted	Actual
2015	39,994	48,631	10.0%	6.8%	35,986	44,147
2016	47,555	86,679	9.9%	6.6%	42,855	78,725
2017	57,726	22,602	10.0%	2.8%	51,932	20,191
2018	39,932	44,182	9.0%	6.2%	36,352	38,582
2019*	52,205	44,171	9.9%	0.7%	47,012	40,907
<b>Avg</b>	<b>47,482</b>	<b>49,253</b>	<b>9.8%</b>	<b>4.6%</b>	<b>42,827</b>	<b>44,510</b>

- Actual performance affected by in-season management actions
- Management objectives
  - Impact rate = 10%
  - Spawning escapement = 35,400 spawners

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## Policy C-3622 Performance

### Willapa Bay Wild Coho

Year	Runsize		Impact Rate		Spawning Escapement	
	Forecast	Actual	Predicted	Actual	Predicted	Actual
2015	38,505	14,480	30.4%	25.5%	26,795	10,366
2016	37,069	32,920	29.8%	23.2%	26,012	24,950
2017	34,425	13,601	39.8%	33.2%	20,719	8,750
2018	18,994	16,209	19.8%	28.4%	15,243	11,408
2019*	56,366	-	27.6%	-%	40,819	~13,000
<b>Avg</b>	<b>37,072</b>	<b>19,303</b>	<b>29.5%</b>	<b>27.6%</b>	<b>25,918</b>	<b>13,860</b>

- Actual performance affected by in-season management actions
- 2019 run reconstruction unavailable at this time
- Management objectives
  - Spawning escapement = 13,600 wild spawners

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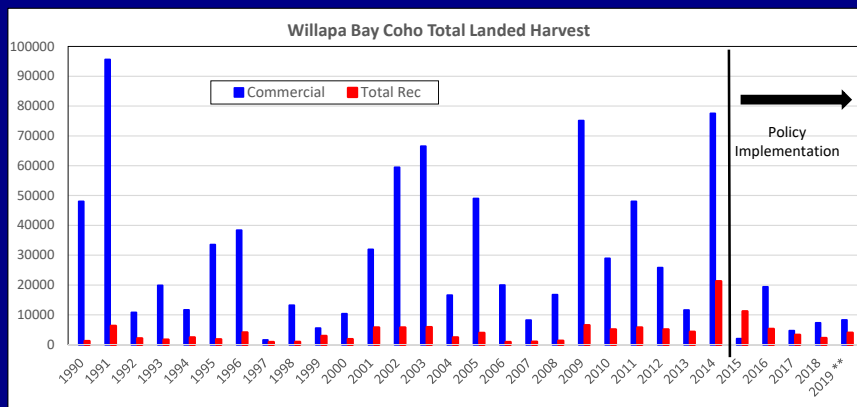
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# Policy C-3622 Performance

## Coho



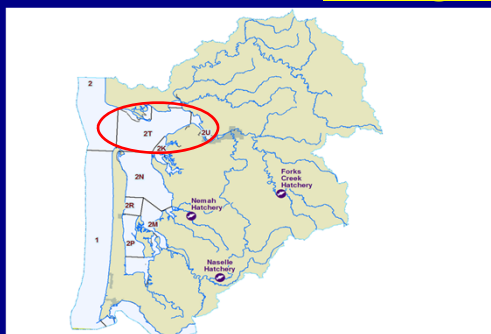
\*\* 2019 data - recreational freshwater harvest is estimated using recent 5 yr average harvest

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February 7, 2020

# Willapa Bay Hatchery Production

## Background



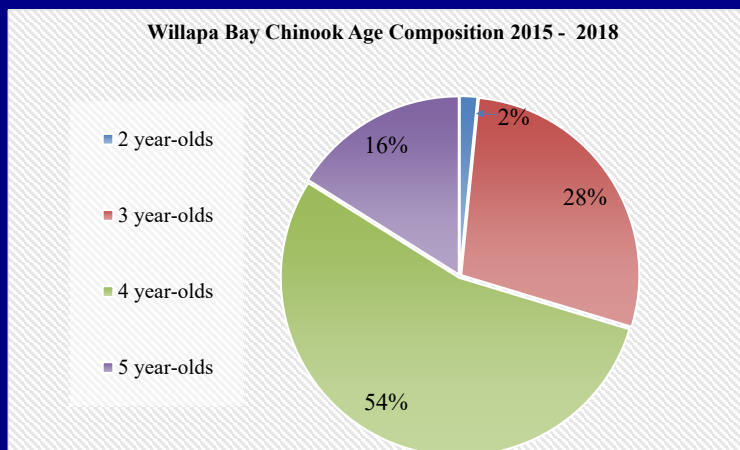
- MA 2-1 occurs in north bay
- Probability of recovery tool
  - CWT analysis
  - Developed in 2015
  - Commercial fishery recoveries
  - 2010 to 2017
  - Updated every year
- Willapa River Chinook important to north bay harvest

Commercial Catch Areas	Probability of recovery/release standardized by runsize			Probability of recovery/release standardized by runsize		
	HOR			NOR		
	FORKS CREEK	NEMAH	NASELLE	FORKS CREEK	NEMAH	NASELLE
WILLAPA BAY AREA 2M	0.021	0.020	0.960	0.082	0.004	0.914
WILLAPA BAY AREA 2N	0.155	0.015	0.830	0.436	0.002	0.562
WILLAPA BAY AREA 2R	0.055	0.017	0.928	0.198	0.003	0.799
WILLAPA BAY AREA 2T	<b>0.601</b>	<b>0.002</b>	<b>0.398</b>	<b>0.862</b>	<b>0.000</b>	<b>0.138</b>
WILLAPA BAY AREA 2U	<b>0.793</b>	<b>0.001</b>	<b>0.206</b>	<b>0.941</b>	<b>0.000</b>	<b>0.059</b>

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February 7, 2020

## Willapa Bay Hatchery Production Background



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## Willapa Bay Hatchery Production Background

Facility and Brood Year	Smolts Released	Return Year						
		2016	2017	2018	2019	2020	2021	2022
<b>Forks Creek</b>								
2014	3,221,073	2 yo	3 yo	4 yo	5 yo			
2015	379,192		2 yo	3 yo	4 yo	5 yo		
2016	368,537			2 yo	3 yo	4 yo	5 yo	
2017	365,864				2 yo	3 yo	4 yo	5 yo
<b>Naselle</b>								
2014	749,265	2 yo	3 yo	4 yo	5 yo			
2015	788,229		2 yo	3 yo	4 yo	5 yo		
2016	2,499,279			2 yo	3 yo	4 yo	5 yo	
2017	2,531,859				2 yo	3 yo	4 yo	5 yo
<b>Nemah</b>								
2014	3,264,062	2 yo	3 yo	4 yo	5 yo			
2015	3,259,623		2 yo	3 yo	4 yo	5 yo		
2016	3,185,438			2 yo	3 yo	4 yo	5 yo	
2017	3,358,383				2 yo	3 yo	4 yo	5 yo

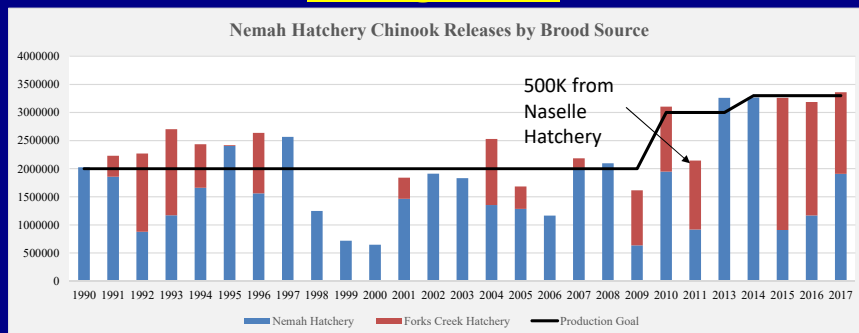
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## Willapa Bay Hatchery Production Background



Facility	Forks Creek	Nemah	Naselle
<b>Brood Years</b>	2003-2011	2003-2006	2003-2006, 2009-2011
<b>Smolt-Adult Survival Rate (SAR)</b>	0.43%	0.28%	0.43%

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## Willapa Bay Hatchery Production 2019 BY Egg Takes

Species	Eggtakes	Forks Creek Hatchery	Nemah Hatchery	Naselle Hatchery	Total
Chinook	On-hand	2.59M	1.22M	2.11M	5.92M
	Goal	0.4M	3.3M	5.0M	8.7M
Coho	On-hand	1.7M	-	2.1M	3.8M
	Goal	0.6M	-	1.7M	2.3M
Chum	On-hand	0.6M	1.4M	0.7M	2.7M
	Goal	0.5M	1.5M	0.5M	2.5M

- Goals for on-station releases
  - Includes increased production for SRKW/Enhance fisheries
    - 2.55M Chinook, 300K coho, and 1M chum
- Co-op production
  - 1.4M Coho; 200K chum

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## 2020 Fishery Planning

### 2020 Considerations

- Predicted continuation of poor marine and freshwater environmental conditions
- Chinook
  - Hatchery production shift, North to South
  - Difficulty achieving hatchery broodstock
- Coho
  - 2015 through 2018, only 2016 made escapement
  - 2019 is still too early to report
- Chum
  - 2017 only year since policy not meeting escapement goals

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## 2020 Fishery Planning

### 2020 Guidance Options

Species	Management Objectives	Policy C-3622	2019 FWC Guidance
Chinook	Harvest control rule	14% impact rate cap on UM Chinook	20% impact rate cap on UM Chinook
	Recreational Fisheries	Prioritize and enhance Chinook harvest	Staff flexibility in determining bag limits
	Commercial Fisheries	No fishery before Sept. 7 in south and Sept. 16 in north	No restrictions on time and area
Coho	Harvest control rule	Meet aggregate escapement goals	Meet aggregate escapement goals
Chum	Harvest control rule	Meet aggregate escapement goals	10% impact rate
	Commercial Fisheries	No restrictions	No commercial fisheries between Oct 15-31
	Recreational Fisheries	Allow retention	Allow retention

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## 2020 Fishery Planning Staff Recommendations

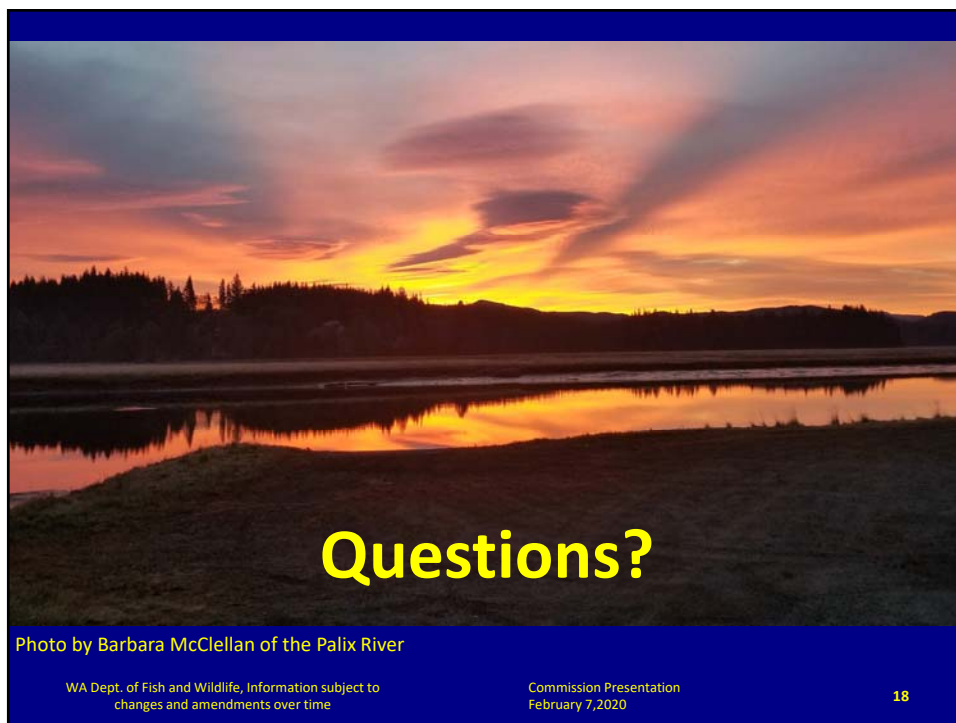
- 2020 management objectives
  - Continuation of 2019 FWC guidance
- 2019 brood year fall Chinook releases
  - Release Chinook in their current abundances
  - No backfilling

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