

Puget Sound Chinook

Harvest Management Plan



Presentation Overview

- Background on the Puget Sound Chinook ESA listing and past ESA authorizations for Puget Sound fisheries
- US v Washington mediation
- Overview of past Puget Sound Chinook Harvest Plans
- Challenges with ESA plan for 2018 and beyond
- Summary of long-term plan submitted to NOAA last month
 - Details on Stillaguamish management objectives
- Next steps

Puget Sound Chinook ESA listing

- March 1999 – Puget Sound Chinook were listed for protection under the Endangered Species Act (ESA), along with several other evolutionarily significant units (ESU) of Pacific salmon
- July 2000 – NMFS issued the salmon ESA 4(d) rule, establishing take prohibitions for the Puget Sound Chinook ESU (and 13 others)

Puget Sound Chinook ESA coverage

- July 2000 – NMFS issued the salmon ESA 4(d) rule, establishing take prohibitions for the Puget Sound Chinook ESU (and 13 others)
 - The rule provided ‘limits’ on the application of take prohibitions on plans and activities that meet the rule’s criteria, including:
 - Section 10 permits
 - Rescue and salvage actions
 - Fishery management activities covered by an approved Fisheries Management and Evaluation Plan
 - Artificial propagation (Hatchery and Genetic Management Plans)
 - Joint tribal/state plans developed under US v. WA or US v. OR processes
 - Scientific research w/ approval
 - Habitat restoration as part of Habitat Conservation Plan
 - Water diversion screening, routine road maintenance, integrated pest management, forest management that comply with specified conditions

Puget Sound Chinook ESA coverage

- July 2000 – NMFS issued the salmon ESA 4(d) rule, establishing take prohibitions for the Puget Sound Chinook ESU (and 13 others)
 - Limit 6 of the rule applies to joint tribal-state resource management plans under the jurisdiction of US v Washington or US v Oregon
 - The Puget Sound Treaty Indian Tribes and WDFW have submitted a series of jointly developed fishery management plans under Limit 6 of the 4d Rule to NMFS, including long term plans submitted in 2004 and 2010

Puget Sound Chinook ESA coverage

- Comanager plan submitted in 2010 was originally a 5-year plan, to cover fisheries through 2014
- In response to concerns raised by NOAA related to Southern Resident Killer Whales (SRKW), the comanagers modified the duration of the plan, to only cover fisheries through 2013
- In 2014, the Bureau of Indian Affairs (BIA) requested Section 7 consultation to cover 2014 fisheries. BIA funding of tribal fishery management activities was used as the nexus for the consultation. The management plan for 2014 was essentially an extension of the 2010 plan, with some modifications.
- A similar extension occurred for 2015 fisheries

Puget Sound Chinook ESA coverage

- In 2016, the state and tribes planned to seek another 1- year extension. Because the comanagers did not reach agreement on fisheries during the normal North of Falcon process, coverage for Puget Sound fisheries was delayed almost two months. Some tribal fisheries moved forward during that time, but WDFW could not find a nexus for Section 7 ESA consultation until agreement was reached with tribes.
- In October 2016 the United States and 16 tribes requested a meet and confer under the provisions of US v Washington regarding a request for determination to develop a court-approved Regional Salmon Management Plan. State and tribes agreed to mediation in lieu of litigation.

US v. Washington - Mediation Regional Salmon Management Plan(s)

- What prompted the mediation?
 - The turmoil associated with 2016 NOF – failure to develop mutually agreed fisheries and resulting chaos in ESA coverage.
- Who requested mediation?
 - An October 2016 “Meet and Confer” request from the majority of Puget Sound Treaty Tribes, and USDOJ...
 - “The purpose of this Meet and Confer is to consider a Request for Determination to be filed by the Requesting Parties to develop a court approved RSMP that will include but not be limited to: (1) establishing a court-ordered process for Puget Sound and Washington Coastal co-managers to develop legally enforceable annual fisheries plans in regions agreed to by the parties; (2) integrating that process with other salmon management processes through the “North of Falcon” process; and (3) updating and/or establishing long-term management plans for salmon fisheries in accordance with this case. This Meet and Confer and the proposed Request for Determination do not seek to allocate fisheries or address other issues relating to salmon fisheries, but rather seek to establish an enforceable process for addressing and resolving such issues on either a long-term or annual basis.”

US v. Washington - Mediation

Regional Salmon Management Plan(s)

- A “meet and confer” is a court-ordered process in *U.S. v. WA* to resolve disputes prior to formal litigation.
- The meeting produced consensus that it would be wise to jointly revise existing agreements/court orders such as:
 - Puget Sound Salmon Management Plan
 - Hood Canal Salmon Management Plan
 - Stipulation on Co-Management
- Some of the key issues to be addressed are:
 - Conservation constraints for fisheries – particularly departure from PSSMP based constraints in light of the need to manage consistent with ESA requirements.
 - NOF negotiating protocols
 - Whether the NOF List of Agreed Fisheries (LOAF) is the only basis upon which to open salmon fisheries (the “enforceable LOAF” concept).
- Chinook conservation constraints, and the desire for a long-term ESA harvest plan approved by NOAA, was the first priority.

US v. Washington - Mediation Regional Salmon Management Plan(s)

- At the conclusion of the “meet and confer,” DOJ and the Treaty-Tribes requested that the State (WDFW) continue work on Plan components utilizing court-facilitated mediation.
- Mediation is generally voluntary, not mandatory, but the court’s order on continuing jurisdiction in *US v. WA* provides strong direction to cooperate on efforts to resolve disputes without formal court involvement. Accordingly, WDFW agreed to pursue mediation.
- DOJ and the Tribes then moved federal Judge Martinez for an order referring the matter to a mediation Judge. This was granted and the matter was assigned to Judge Pechman

US v. Washington - Mediation Regional Salmon Management Plan(s)

- Mediation has some benefits:
 - Encourages candid sharing of information
 - Is a structured process that can ensure timely resolution of disputes.
 - Allows parties to manage litigation risk over issues associated with the mediation.
- One of the features of mediation that assists in achieving these objectives is confidentiality.
 - Under federal court rules, mediation communications are confidential unless *all* parties agree to relax or dispense with confidentiality.
 - Confidentiality was very important to the Tribes participating in the mediation.
 - Confidentiality was relaxed only for those matters relating to communications with NOAA over the development of an ESA harvest plan for Chinook. NOAA is obliged to make a decision on a public record of its deliberations.

US v. Washington - Mediation Regional Salmon Management Plan(s)

- Mediation confidentiality presents challenges for WDFW in terms of transparency.
 - On the one hand, the State's Public Records Act provides an express recognition of the value of mediation confidentiality, and exempts mediation communications from public disclosure. RCW 42.56.600 / RCW Chapter 7.07
 - On the other hand, mediation confidentiality means that certain aspects of matters negotiated in mediation cannot be publicly shared. That means it is harder, but not impossible, to meet agency transparency objectives.
 - The Commission is also generally obliged to make decisions in open public session, but that is quite difficult in the context of direct participation in mediation negotiations.
 - Delegation of decision-making is the typical solution in that context.

US v. Washington - Mediation Regional Salmon Management Plan(s)

- Authority for delegated decision-making on agreements...
 - Under RCW 77.04.055(4): “The commission shall have final approval authority for tribal, interstate, international, and any other department agreements relating to fish and wildlife.”
 - But in addition, under RCW 77.04.020: “The commission may delegate to the director any of the powers and duties vested in the commission.”
- The Commission’s August 5, 2017 Delegation Order addresses development of co-manager plans/agreements...
 - The Director shall have the authority to enter into co-management agreements with recognized treaty or executive order Indian tribes, including any such agreements required under U.S. v. Washington and U.S. v. Oregon. The Director shall annually report to the Commission on issues associated with co-management agreements.

US v. Washington - Mediation Regional Salmon Management Plan(s)

- Mediation confidentiality and the Commission...
 - Mediation confidentiality bars sharing mediation communications (written/oral) obtained by WDFW during mediation.
 - The Commission is not barred from obtaining information relating to mediations, including negotiations on a Chinook Plan, but any Commission action in this regard must generally be undertaken in an open public meeting.
 - As noted above, very careful thought would need to be given to the substance of public briefings to avoid violating court orders on mediation confidentiality.
 - This is where the cross-walk with delegated decision-making to the Director and staff requires careful thought.
 - The Commission was briefed periodically through the Director's Report on the general status of the mediation and Chinook RMP development.
 - But substantive briefings on resource management decisions the Commission wishes to take action upon should be conducted in open public meetings (unless an Executive Session exemption applies; e.g. managing litigation risk).

US v. Washington - Mediation Regional Salmon Management Plan(s)

- Continuing mediation efforts...
 - The Chinook RMP is not yet “sufficient” from NOAA’s perspective.
 - This means the co-managers will need to work together to make adjustments. And there will be continuing dialogue with NOAA.
 - The Tribes have expressed a desire to continue the mediation process for negotiating further revisions.
 - Communications with NOAA will continue to be undertaken outside of any mediation confidentiality.
 - The Director and staff are presently operating under the Commission's current delegation order.

Puget Sound Chinook ESA coverage

- Early in 2017, co-managers completed multi-year process of updating of our Chinook fishery model (FRAM) – This needed to be completed prior to new long-term plan so that conservation objectives (exploitation rate limits) would be consistent through the life of the plan
- BIA Section 7 consultation was used to obtain another single year of coverage for 2017 fisheries
- Development of the new multi-year Resource Management Plan was included as part of the mediation process

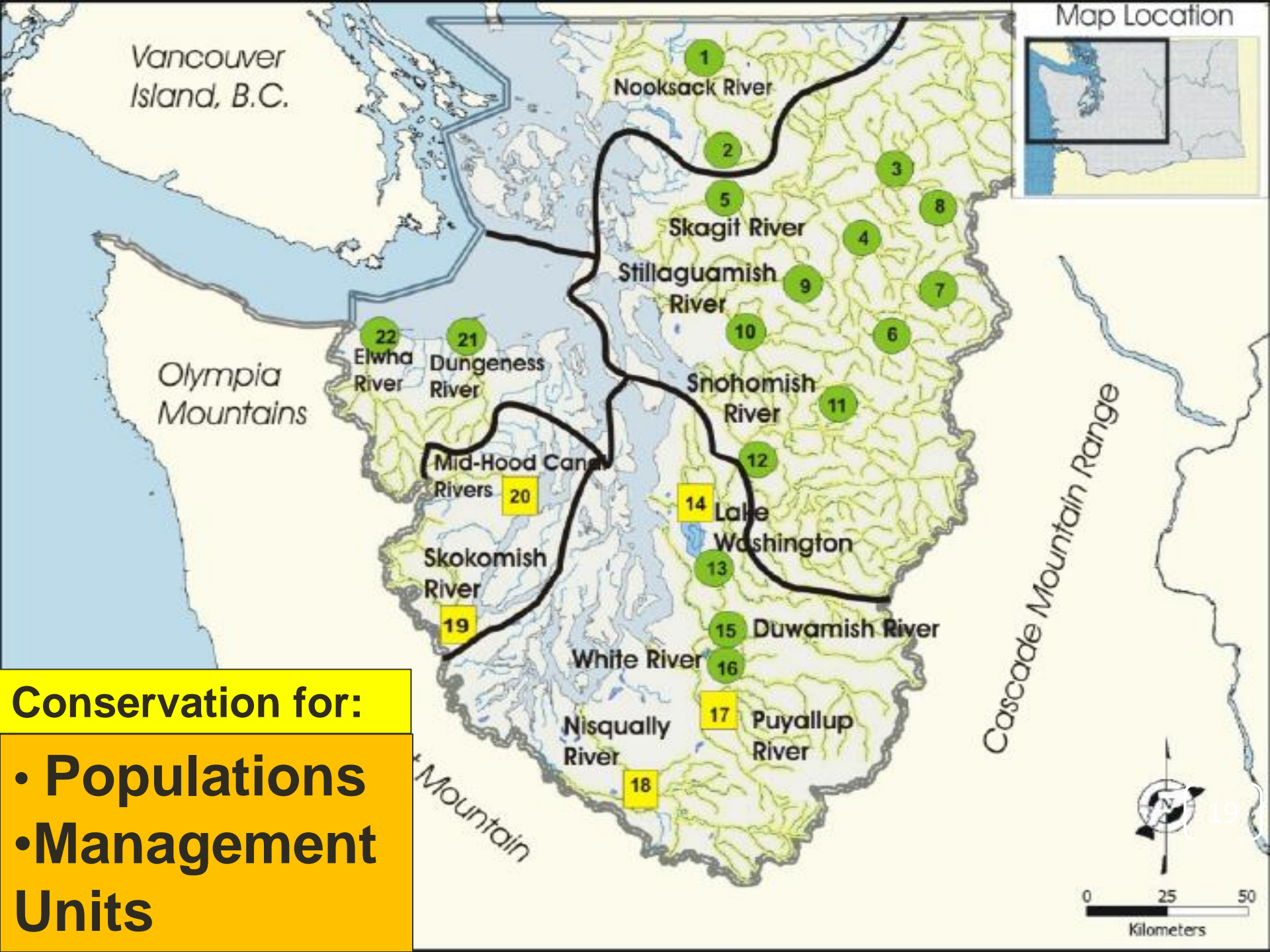
Puget Sound Chinook ESA coverage

- The focus of mediation in 2017 was completion of a new multi-year plan by December 1. The NOAA evaluation/administrative process is expected to take ~18 months, so meeting the December 1 deadline was expected to result in the new long-term plan going into effect in May 2019.
- Coverage for 2018 fisheries was planned to be through another one-year Section 7 consultation with BIA, presumably with the same objectives developed for the 10-year plan.

Puget Sound Chinook ESA coverage

- The goal of past multi-year plans, and the Plan recently submitted to NOAA, is to:

“Ensure that fishery-related mortality will not impede rebuilding of natural Puget Sound Chinook salmon populations, consistent with the capacity of properly functioning habitat, to levels that will sustain fisheries, enable ecological functions, and are consistent with treaty-reserved fishing rights.”



Map Location



Vancouver Island, B.C.

Olympia Mountains

Cascade Mountain Range

Conservation for:

- Populations
- Management Units

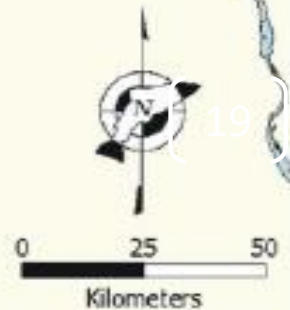


Table 1. 2010 RMP Puget Sound Chinook Harvest Management Objectives.

Management Unit	Exploitation Rate Ceiling	CERC	Upper Management Threshold	Low Abundance Threshold
Nooksack			4,000	
North Fork		7%/9% SUS ²	2,000	1,000 ¹
South Fork			2,000	1,000 ¹
Skagit summer / fall	50%	15% SUS even-years; 17% SUS odd-years	14,500	4,800
Upper Skagit summer				2,200
Sauk summer				400
Lower Skagit fall				900
Skagit spring	38%	18% SUS	2,000	576
Upper Sauk				130
Cascade				170
Suiattle				170
Stillaguamish	25%	15% SUS	900	650 ¹
North Fork summer			600	500 ¹
South Fork & MS fall			300	
Snohomish	21%	15% SUS	4,600	2000 ¹
Skykomish			3,600	1745 ¹
Snoqualmie			1,000	521 ¹
Lake Washington	20% SUS	10% PTSUS		
Cedar River			1,650	200 ¹
Green	15% PTSUS	12% PTSUS	5,800	1,800
White River spring	20%	15% PTSUS	1,000	200
Puyallup fall	50%	12% PTSUS		500
South Prairie Creek			500	
Nisqually	65% / 56% / 47% ³		1,200	
Skokomish	50%	12% PTSUS	3,650 aggregate; 1,650 natural	1,300 aggregate; 800 natural
Mid-Hood Canal	15% PTSUS	12% PTSUS	750	400
Dungeness	10% SUS	6% SUS	925	500
Elwha	10% SUS	6% SUS	2,900	1,000
Western SJDF	10% SUS	6% SUS	850	500

1. Natural-origin spawners.

2. Expected SUS will not exceed 7% in 4 out of 5 years.

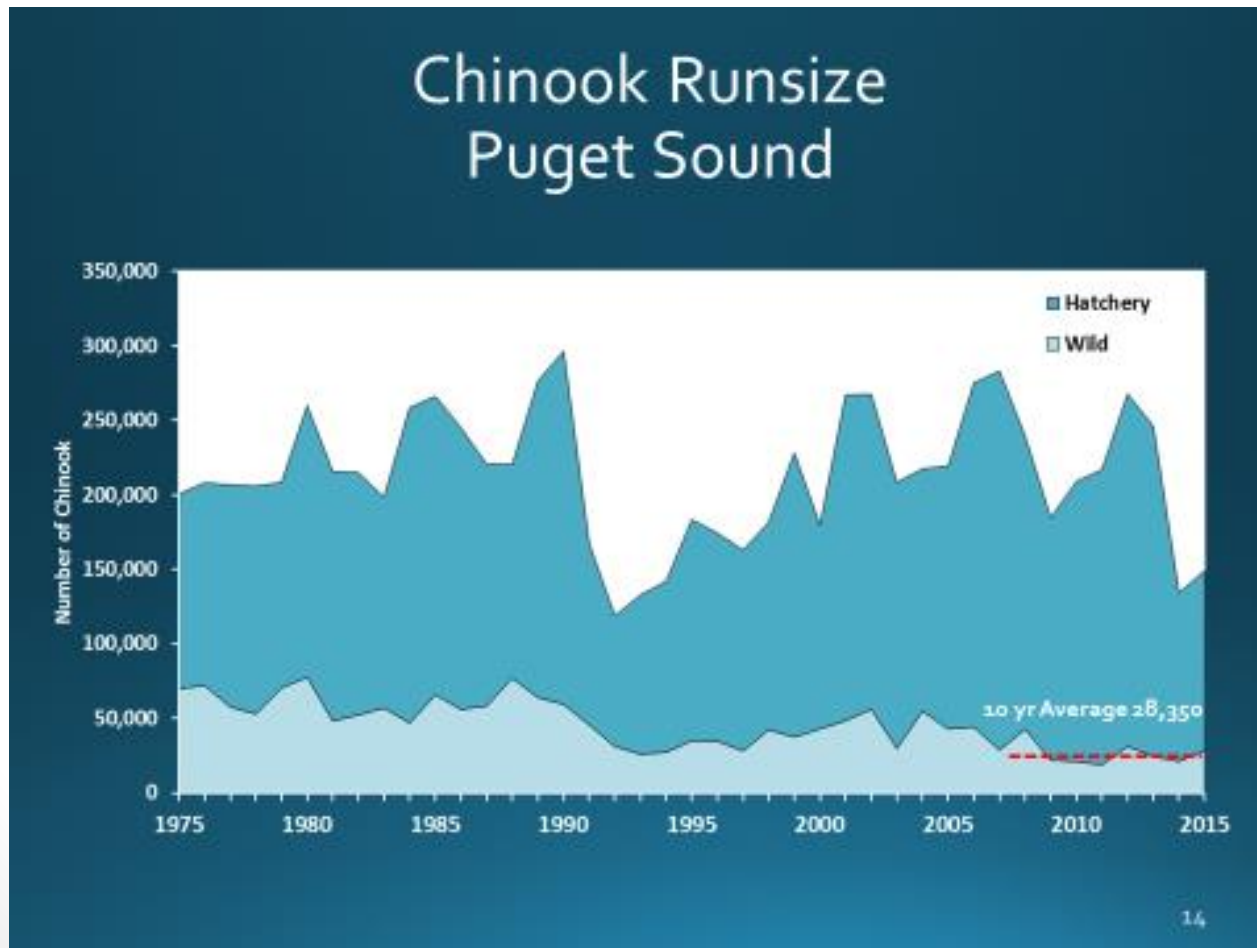
3. Transition exploitation rate ceilings: 2010-2011 = 65%. 2012-2013 = 56%. 2014 = 47%.

Puget Sound Chinook ESA coverage

- Fisheries are planned each year through the North of Falcon process so that the total impact of fisheries does not exceed the exploitation rate (ER) ceilings for each Management Unit, at their expected abundances, as defined in the Resource Management Plan
- Fishery planning model (FRAM) uses coded-wire tag recovery data to estimate impacts of each fishery on each stock
- Impact of fisheries on each Management Unit varies by fishery type, location and time of year

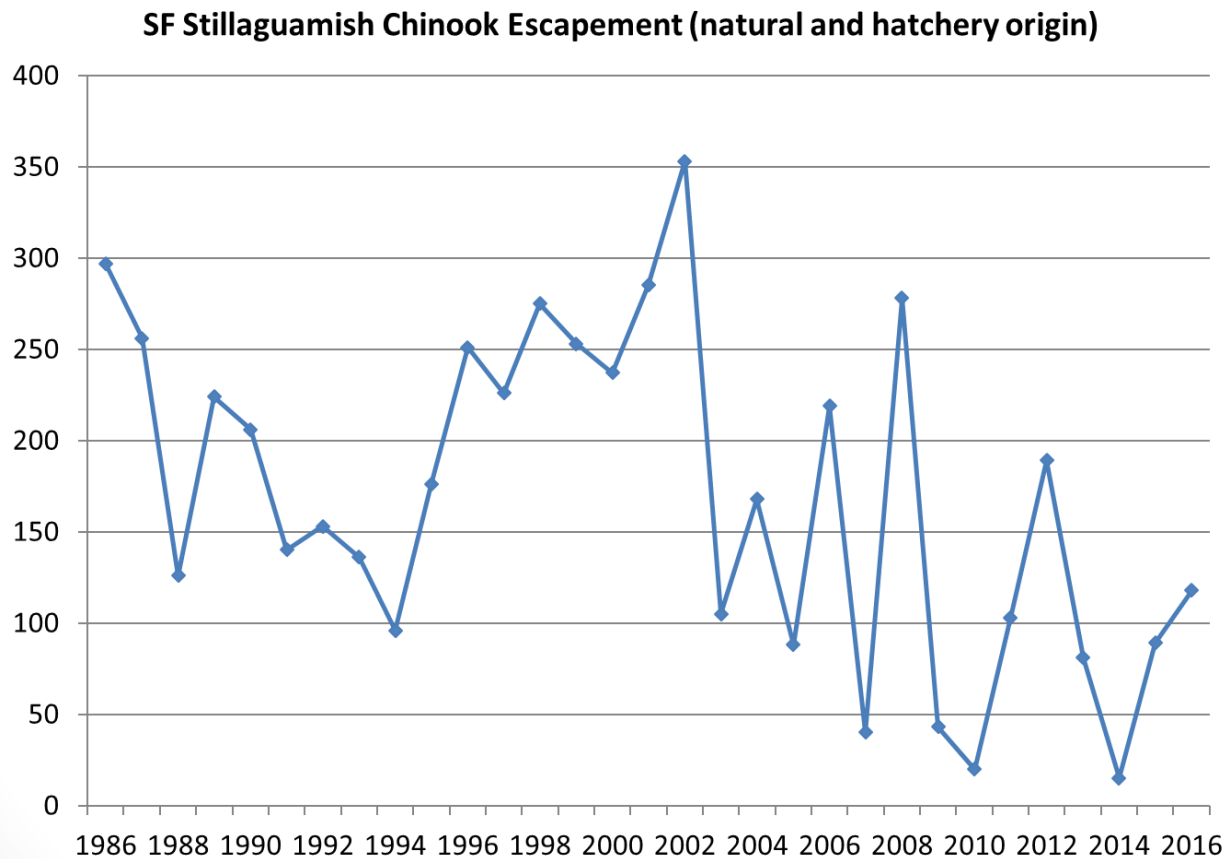
Conservation concerns with 2018+ plan

- Chinook abundance has not improved since ESA listing



Conservation concerns with 2018+ plan

- Chinook abundance has not improved since ESA listing



Conservation concerns with 2018+ plan

- Chinook have been identified as a primary food source for Southern Resident Killer Whales (SRKW)
- Abundance of SRKW has declined in recent years, increasing scrutiny on activities that affect prey abundance
- NOAA recently updated their analyses of the maximum rates at which individual stocks can be impacted without negatively impacting their likelihood of recovery (Rebuilding Exploitation Rate, or RER), with decreases to estimated maximum rates for several stocks
- Exploitation rates in Northern fisheries exceed NOAA's RER for some stocks (e.g. Nooksack), meaning that risk to those populations will be high

Challenges with 2018+ plan

- Additional constraints on fisheries are likely needed in the new plan given decline in abundances and lower RER values. This is a hard message to accept given that majority of Puget Sound recreational fisheries are mark-selective for Chinook, and that many of the impacts on Puget Sound stocks occur in fisheries north of Washington
- Completion of a comanager plan required reaching agreement with 17 tribes on management objectives for 15 Management Units and 22 populations
- Needed to meet December 1 submission deadline if long-term was coverage to be in place for 2019 fisheries

Challenges with 2018+ plan

- Co-managers completed the Plan through the mediation process and submitted it to NOAA on December 1, but negotiations were on-going through November 29th, leaving one day to complete & submit plan
- NOAA expressed concern during development of the Plan that they needed to review pieces of the plan as they were completed, so that they could evaluate & comment on sufficiency prior to submission
- Ultimately, the pace of negotiations did not provide an opportunity for NOAA to conduct its sufficiency review prior to submission of the Plan
- NOAA's initial comments indicate that they need more information to evaluate whether the Plan represents an acceptable level of risk for Puget Sound Chinook

MU	Population (Tier)	Status	2010-2014 NOR /2005-2009 NOR	NMFS RER (total)	CM ER (total expected)
Nooksack	NF Nooksack (1) SF Nooksack (1)	critical	-44/-64%	4%	10-16% SUS (41-47%)
Skagit sp	Suiattle (1)	above	+38%	25%	38%
	U. Sauk (1)	above	+68%	19%	38%
	Cascade (1)	above	+1%	25%	38%
Skagit S/F	Upper Skagit (1)	above	-31%	40%	47%
	L. Sauk (1)	above	-24%	39%	47%
	L. Skagit (1)	between	-34%	23%	47%
Snohomish	Skykomish (2)	above	-29%	14%	21%
	Snoqualmie (3)	above	-32%	19%	21%
Stillaguamish	NF Stilly (2)	above	+4%	24%	24%
	SF Stilly (2)	critical	-30%	18%	24%
Green	Green (2)	between	-33%	18%	18% SUS (27%)
L. WA	Sammamish (3)	critical	-45%	19% ^a	18% SUS (27%)
	Cedar (3)	between	-16%	19% ^a	18% SUS (27%)
Puyallup	Puyallup (3)	above	-25%	30% ^b	30% SUS (43%)
White	White (1)	between	-59%		22% SUS (26%)
Nisqually	Nisqually (1)	between	+19%	30% ^b	47%
Skokomish	Skokomish (1)	critical	-49%	30%	50%
MHC	MHC (1)	critical	+60%	4% ^c	12-15% SUS (24-29%)
Elwha	Elwha (1)	critical	-15%	4% ^c	6-10% SUS (19-23%)
Dungeness	Dungeness (1)	critical	-27%	4% ^c	6-10% SUS (19-23%)

Summary of 2018+ Plan

- Plan submitted to cover fisheries from 2019 through 2028
- Structure of plan similar to past plans
 - Body of plan includes chapters on:
 - Fisheries and Jurisdictions
 - Population structure & aggregation for management
 - Management objectives
 - Implementation
 - Conservative management
 - Monitoring and Assessment
 - Appendices includes 'Management Unit Profiles'
 - Watershed by watershed overview of habitat issues, hatchery production, stock data and status, and description of management objectives

Summary of 2018+ Plan

- Notable changes in the Plan
 - Points of instability identified for several stocks
 - Total ER ceilings implemented for Snohomish and Stillaguamish
 - Escapement goals rather than maximum ER ceilings identified for Puyallup, White, Green and Lake Washington
 - SUS ER ceilings that vary by abundance identified for Stillaguamish natural-origin and hatchery-origin Chinook

Management Unit	Upper Exploitation Rate Ceiling	Upper Management Threshold	Exploitation Rate Ceiling/Moderate Management Exploitation Rate	Low Abundance Threshold	Critical Exploitation Rate Ceiling	Point of Instability
Nooksack River North/Middle Fork South Fork		2,000 1,000	16% SUS ER	800 400	10.5% SUS ER, 13.5% SUS ER	
Skagit Summer/Fall Upper Skagit summer-run Sauk summer-run Lower Skagit fall-run		14,500	47%	6,500 2,200 400 900	15% SUS even- years/ 17% SUS odd- years	1,677
Skagit spring-run Upper Sauk Upper Cascade Suiattle		2,000	38%	690 ³ 130 ³ 170 ³ 170 ³	18% SUS	215
Stillaguamish River		1,500	24%	1,200	see MUP	900
Snohomish River Skykomish summer-run Snoqualmie fall-run		4,900 3,600 1,300	21%	3,375 2,092 1,066	15% SUS	1,745 700
Lake Washington – Cedar River fall-run	12%-13% PT SUS	500	18% SUS	200	12% SUS	
Green River fall-run	12%-13% PT SUS ⁵	3,800	18% SUS	805	12% SUS	
White River spring-run		1,000	22% SUS	400	15% SUS	
Puyallup fall-run	12%-13% PT SUS ⁵	1,300	30% SUS	319	15% SUS	
Nisqually			47%	7,000	see MUP	
Skokomish fall-run		3,650	50%	1,300	12% PT SUS	
Skokomish River spring-run						
Mid-Hood Canal		750	15% PT SUS	400	12% PT SUS	
Dungeness		925	10% SUS	500	6% SUS	
Elwha		2,900	10% SUS	1,500	6% SUS	1,000
Western Strait of Juan de Fuca – Hoko River		1,050	10% SUS	500	6% SUS	

Status of Stillaguamish Chinook

- Two populations within the watershed – Summer (or North Fork) population and Fall (or South Fork) population
- NOAA analysis shows:
 - South Fork population natural origin escapement has declined over last 10 years, is in critical status, averaging ~100 spawners
 - North Fork population showed stable natural origin escapement over last 10 years, is above its rebuilding threshold on average
 - RERs of 24% for the North Fork population and 18% for the South Fork population
- Lower summer river flows, high winter river flows and sediment load are negatively affecting productivity of population
- There are conflicting views on the productivity of the populations, and the benefit of increasing escapement at lower abundances to decrease risk to the populations.

Status of Stillaguamish Chinook – Supplementation Programs

- Harvey Creek / Whitehorse Ponds – summer Chinook program
 - Operated since mid-1980's
 - Target release of 220,000 sub-yearling per year
 - Conservation program to boost numbers of the stock and reduce risk of extinction
 - Releases are adipose clipped and coded-wire tagged as a Pacific Salmon Commission (PSC) indicator stock, allowing monitoring of harvest distribution
- Brenner Creek Hatchery – fall Chinook program
 - Operated since 2007
 - Captive brood program – juveniles collected from the wild & raised to adults for spawning
 - 200,000 sub-yearling release goal – program growing, averaging 35,000 release
 - Releases are adipose clipped and coded-wire tagged for development as a PSC indicator stock – currently modeling assumes same harvest distribution for summer and fall Chinook

Stillaguamish exploitation limits

- Stillaguamish is likely to be one of the most constraining stocks under the plan
- Level of fishery constraint depends on abundance. At lower abundances, the constraints are tighter
- The lower tier exploitation rate ceiling is 8% in Southern US fisheries on natural-origin Stillaguamish Chinook, and 12% on hatchery-origin Stillaguamish Chinook
- Allowable SUS ER's increase to 13% on natural-origin, and no limit on hatchery-origin at higher abundances
- Limit to hatchery-origin impact is reflective of the importance of the hatchery conservation program to spawning escapement, particularly at low abundances
- There may be options for increasing hatchery production and altering marking to increase escapement and limit the effect of the hatchery-origin ER limit

Stillaguamish exploitation limits

- The low abundance ER limit of 8% is slightly above the most recent post-season estimates of exploitation rates on natural-origin Stillaguamish Chinook
- Recent annual pre-season fishery plans have had expected rates on Stillaguamish Chinook ranging from 10-15%
- Fisheries plans are developed annually through North of Falcon process to meet objectives preseason – modeling accurate predictions for all fishery impacts will be key.

Stillaguamish exploitation limits

- Tables 1 & 2 show distribution of harvest of unmarked and marked Stillaguamish Chinook based on fisheries as planned pre-season from 2013 through 2017
- Table 3 shows abundance thresholds and corresponding allowable exploitation rates for Stillaguamish Chinook

Table 1. Pre-season predicted exploitation rates on unmarked Stillaguamish Chinook by fishery in Southern US fisheries using new FRAM base period from 2013-2017.

Fishery Name	Time Step	Average	2017	2016	2015	2014	2013
Freshwater Net	July-Sept	3.6%	4.3%	2.6%	4.7%	2.5%	3.7%
Tr 3:4 Trl	Oct-Apr	1.7%	1.4%	2.9%	1.1%	1.2%	2.0%
Ar 7 Sport	July-Sept	1.2%	0.8%	2.5%	0.9%	0.9%	0.9%
Ar 7 Sport	Oct-Apr	0.9%	0.4%	0.9%	0.9%	0.4%	1.8%
Tr 3:4 Trl	May-June	0.8%	0.5%	0.7%	1.0%	0.8%	0.9%
Tr TulaNet	July-Sept	0.6%	0.6%	0.5%	0.5%	0.6%	0.6%
Ar 8-1 Spt	Oct-Apr	0.5%	0.4%	0.7%	0.6%	0.6%	0.2%
Ar 9 Sport	Oct-Apr	0.4%	0.4%	0.6%	0.3%	0.3%	0.6%
A 11 Sport	Oct-Apr	0.4%	0.1%	0.2%	0.1%	0.1%	1.6%
FW Sport	July-Sept	0.4%	0.5%	0.1%	0.6%	0.4%	0.2%
Ar 6 Sport	Oct-Apr	0.3%	0.2%	0.6%	0.2%	0.3%	0.4%
Tr StSnNet	July-Sept	0.3%	0.0%	0.1%	0.7%	0.1%	0.3%
Ar 9 Sport	July-Sept	0.3%	0.2%	0.3%	0.2%	0.2%	0.3%
Ar 5 Sport	Oct-Apr	0.2%	0.2%	0.1%	0.3%	0.2%	0.4%
Ar 5 Sport	July-Sept	0.2%	0.3%	0.3%	0.2%	0.2%	0.1%
Ar 3:4 Spt	July-Sept	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%

Table 2. Pre-season predicted exploitation rates on marked Stillaguamish Chinook by fishery in Southern US fisheries using new FRAM base period from 2013-2017.

Fishery Name	Time Step	Average	2017	2016	2015	2014	2013
Freshwater Net	July-Sept	3.3%	3.3%	2.4%	4.1%	2.4%	4.0%
Ar 7 Sport	Oct-Apr	3.2%	3.3%	3.7%	5.4%	2.5%	1.2%
Tr 3:4 Trl	Oct-Apr	1.9%	2.6%	2.8%	1.3%	1.3%	1.2%
Ar 7 Sport	July-Sept	1.4%	2.2%	2.2%	1.1%	1.0%	0.5%
Ar 8-1 Spt	Oct-Apr	1.3%	1.5%	1.3%	1.2%	1.2%	1.0%
Ar 9 Sport	Oct-Apr	1.0%	1.8%	1.0%	0.6%	0.6%	0.8%
Ar 6 Sport	Oct-Apr	0.8%	0.8%	1.2%	0.9%	0.7%	0.5%
Tr 3:4 Trl	May-June	0.8%	0.8%	0.7%	1.2%	0.8%	0.5%
Ar 5 Sport	July-Sept	0.6%	0.9%	0.8%	0.6%	0.5%	0.3%
Ar 9 Sport	July-Sept	0.6%	1.1%	0.7%	0.5%	0.4%	0.3%
Tr TulaNet	July-Sept	0.5%	0.6%	0.5%	0.4%	0.6%	0.6%
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Ar 5 Sport	Oct-Apr	0.4%	0.5%	0.3%	0.5%	0.4%	0.2%
A 11 Sport	Oct-Apr	0.3%	0.5%	0.2%	0.3%	0.3%	0.5%
FW Sport	July-Sept	0.3%	0.4%	0.1%	0.5%	0.4%	0.3%
Tr StSnNet	July-Sept	0.3%	0.1%	0.1%	0.8%	0.1%	0.2%
Ar 3:4 Spt	July-Sept	0.2%	0.3%	0.2%	0.3%	0.2%	0.1%
Ar 6 Sport	July-Sept	0.2%	0.4%	0.3%	0.2%	0.2%	0.0%
A 10 Sport	July-Sept	0.2%	0.4%	0.2%	0.1%	0.1%	0.1%

Stillaguamish exploitation limits

- Future abundances of Stillaguamish Chinook are unknown; the corresponding management responses will depend on the forecast in a given year
- Modeling work has been done exploring what changes to fisheries planned in recent years would be necessary at various abundance forecasts, but it is impossible to know what changes actually would have been negotiated through the North of Falcon process in each scenario
- Changes that would have been required range from no changes at higher abundance, to significant reductions in treaty and non-treaty fisheries at low abundance.

Stillaguamish exploitation limits

- **2017 at Pre-Season Abundance and New Management Objectives:**

- Original Terminal Run Size: > 1100 (Total) **8% UM SUS ER Cap, 12.4% M SUS ER Cap**
- Original ERs: 21.7% (UM Total), 11.5% (UM SUS), 23.3% (M SUS)
- Remove FW Sport Incidentals, Reduce FW Net from 35 to 22, Reduce Winter Treaty Troll from 4500 to 2000, Close summer sport A7, Close winter sport A7, A8, A9, Reduce A9 summer sport quota from 5558 to 1000
- New ERs: 17.7% (UM Total), 7.1% (UM SUS); 12.4% (M SUS)

Stillaguamish exploitation limits

- **2017 Pre-Season Abundances Scaled Up (>LAT; > 1400) and New Management Objectives:**
 - Allowable ER: **12% UM SUS ER Cap, 17.6% M SUS ER Cap**
 - Reduce Chin Dir FW Net from 35 to 30, Reduce Winter Treaty Troll from 4500 to 2000, Close summer sport A7 July (Aug-Sept open) and winter sport A7.
 - New ERs: 19.5% (UM Total), 9.1% (UM SUS), 17.6% (M SUS)

Stillaguamish exploitation limits

- **2017 Pre-Season Abundances Scaled Up (>UMT) and New Management Objectives:**
 - Allowable ER: **13% UM SUS ER Cap, No Marked SUS ER Cap**
 - No fishery changes required.

Stillaguamish exploitation limits

- At low abundances, significant reductions to state and tribal fisheries likely needed to meet the Stillaguamish ER ceilings.
- At higher abundances, fishery reductions might not be needed to meet Stillaguamish ER ceilings

Why the 8 percent limit in low abundance years?

- NOAA's RER analysis completed in 2017
 - There is some productivity in the watershed at low escapements
 - High stream flows and high sediment levels from landslides have major negative effects on Chinook survival and productivity
 - In years with less severe winter flows, maximizing escapement should lead to increased abundance in subsequent brood years
- In light of continued Chinook declines, the new plan takes a harder look at conservation when populations are consistently at low abundances
- 8% represented a rate slightly above the actual recent-year average ER on Stillaguamish Chinook in SUS fisheries
 - Idea was to not increase SUS fishery impact on the stock above the rates of recent years

Why the 8 percent limit in low abundance years?

- 8% in low abundance years is a very conservative approach
 - Considers importance of the Stillaguamish population for ESA purposes
 - Reflects the fact that a 10-year ESA plan may call for less risk to listed Chinook
 - Extirpation of this population is not an option for the Stillaguamish Tribe and the State

Why the 8 percent limit in low abundance years?

- Are there alternative perspectives on Stillaguamish productivity?
 - WDFW developed independent spawner recruit analysis during development of the plan, showing different productivity estimates
- The differences in the analyses led us to ask questions like:
 - Is there an escapement level above which increased escapement does not result in an increased number of recruits?
 - Is there an escapement level below which providing additional escapement through fishery constraints provides minimal benefit?
 - If benefits to the population from fishery constraints are minimal, what other tools are available to rebuild the population?

Why the 8 percent limit in low abundance years?

- Accepting higher levels of risk should be paired with mitigation
 - This is an approach used in prior plans where harvest rates were higher than NOAA was comfortable with as a starting point
- Development of additional mitigation may be an option
 - Hatchery production
 - Hatchery marking strategy
 - Habitat improvements

Next steps

- Continue work with NOAA and co-managers to revise the Plan
- Unclear how long those revisions might take, but likely a minimum of a few months
- The ~18-month NOAA review process won't start until the revised Plan is deemed sufficient by NOAA
- Comanagers need to finalize management objectives for 2018 fisheries by late February

Questions?

Table 1. Pre-season predicted exploitation rates on unmarked Stillaguamish Chinook by fishery in Southern US fisheries using new FRAM base period from 2013-2017.

Fishery Name	Timestep	Average	2017	2016	2015	2014	2013
FW Net	July-Sept	3.6%	4.3%	2.6%	4.7%	2.5%	3.7%
Tr 3:4 Trl	Oct-Apr	1.7%	1.4%	2.9%	1.1%	1.2%	2.0%
Ar 7 Sport	July-Sept	1.2%	0.8%	2.5%	0.9%	0.9%	0.9%
Ar 7 Sport	Oct-Apr	0.9%	0.4%	0.9%	0.9%	0.4%	1.8%
Tr 3:4 Trl	May-June	0.8%	0.5%	0.7%	1.0%	0.8%	0.9%
Tr TulaNet	July-Sept	0.6%	0.6%	0.5%	0.5%	0.6%	0.6%
Ar 8-1 Spt	Oct-Apr	0.5%	0.4%	0.7%	0.6%	0.6%	0.2%
Ar 9 Sport	Oct-Apr	0.4%	0.4%	0.6%	0.3%	0.3%	0.6%
A 11 Sport	Oct-Apr	0.4%	0.1%	0.2%	0.1%	0.1%	1.6%
FW Sport	July-Sept	0.4%	0.5%	0.1%	0.6%	0.4%	0.2%
Ar 6 Sport	Oct-Apr	0.3%	0.2%	0.6%	0.2%	0.3%	0.4%
Tr StSnNet	July-Sept	0.3%	0.0%	0.1%	0.7%	0.1%	0.3%
Ar 9 Sport	July-Sept	0.3%	0.2%	0.3%	0.2%	0.2%	0.3%
Ar 5 Sport	Oct-Apr	0.2%	0.2%	0.1%	0.3%	0.2%	0.4%
Ar 5 Sport	July-Sept	0.2%	0.3%	0.3%	0.2%	0.2%	0.1%
Ar 3:4 Spt	July-Sept	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%
Ar 8-1 Spt	July-Sept	0.1%	0.0%	0.0%	0.2%	0.2%	0.2%
Tr JDF Trl	Oct-Apr	0.1%	0.0%	0.1%	0.0%	0.2%	0.3%
A 11 Sport	July-Sept	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%
A 10 Sport	July-Sept	0.1%	0.2%	0.1%	0.0%	0.1%	0.1%
Tr 3:4 Trl	July-Sept	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Tr JDF Trl	July-Sept	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%
Tr JDF Net	July-Sept	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%
Total ER		25.3%	21.7%	31.6%	24.8%	21.3%	27.1%
SUS ER		13.0%	11.5%	14.2%	13.6%	10.0%	15.7%
Northern ER		12.3%	10.2%	17.4%	11.2%	11.3%	11.4%
UM Management Obj.							
Total ER			24.0%	24.0%	24.0%	24.0%	24.0%
SUS ER			8.0%	8.0%	LBT	10.0%	13.0%

Table 2. Pre-season predicted exploitation rates on marked Stillaguamish Chinook by fishery in Southern US fisheries using new FRAM base period from 2013-2017.

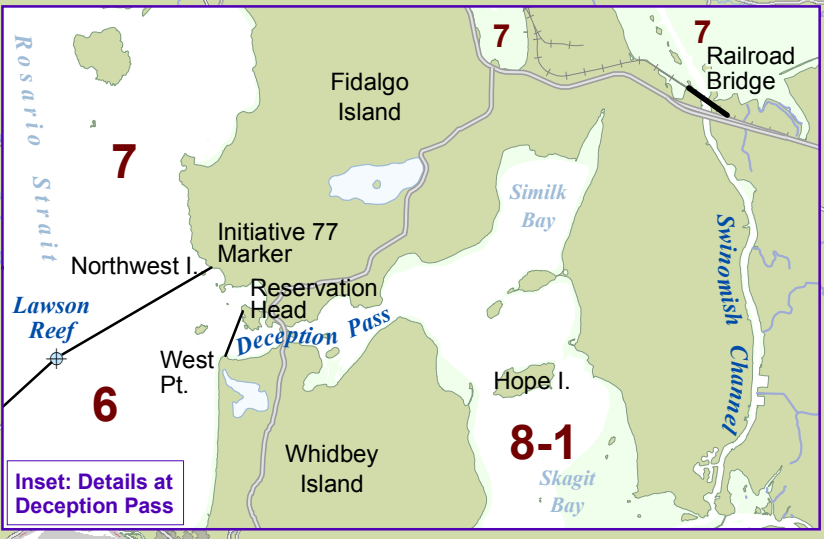
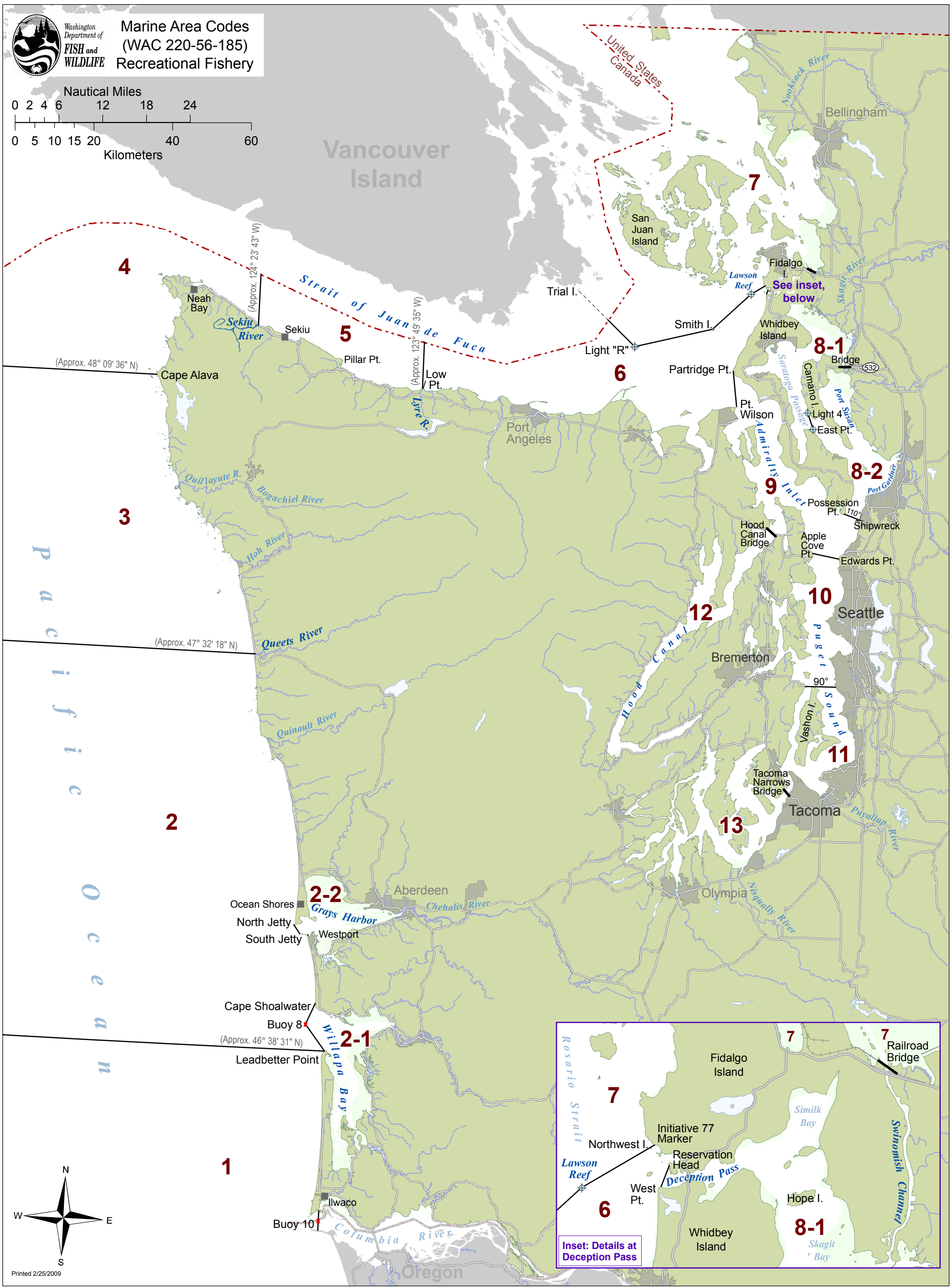
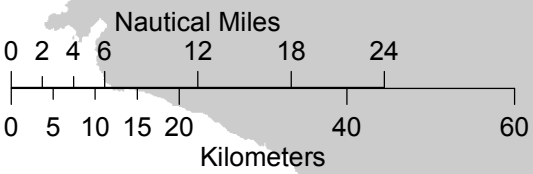
Fishery Name	Timestep	Average	2017	2016	2015	2014	2013
FW Net	July-Sept	3.3%	3.3%	2.4%	4.1%	2.4%	4.0%
Ar 7 Sport	Oct-Apr	3.2%	3.3%	3.7%	5.4%	2.5%	1.2%
Tr 3:4 Trl	Oct-Apr	1.9%	2.6%	2.8%	1.3%	1.3%	1.2%
Ar 7 Sport	July-Sept	1.4%	2.2%	2.2%	1.1%	1.0%	0.5%
Ar 8-1 Spt	Oct-Apr	1.3%	1.5%	1.3%	1.2%	1.2%	1.0%
Ar 9 Sport	Oct-Apr	1.0%	1.8%	1.0%	0.6%	0.6%	0.8%
Ar 6 Sport	Oct-Apr	0.8%	0.8%	1.2%	0.9%	0.7%	0.5%
Tr 3:4 Trl	May-June	0.8%	0.8%	0.7%	1.2%	0.8%	0.5%
Ar 5 Sport	July-Sept	0.6%	0.9%	0.8%	0.6%	0.5%	0.3%
Ar 9 Sport	July-Sept	0.6%	1.1%	0.7%	0.5%	0.4%	0.3%
Tr TulaNet	July-Sept	0.5%	0.6%	0.5%	0.4%	0.6%	0.6%
A 11 Sport	July-Sept	0.4%	0.9%	0.3%	0.4%	0.3%	0.3%
Ar 5 Sport	Oct-Apr	0.4%	0.5%	0.3%	0.5%	0.4%	0.2%
A 11 Sport	Oct-Apr	0.3%	0.5%	0.2%	0.3%	0.3%	0.5%
FW Sport	July-Sept	0.3%	0.4%	0.1%	0.5%	0.4%	0.3%
Tr StSnNet	July-Sept	0.3%	0.1%	0.1%	0.8%	0.1%	0.2%
Ar 3:4 Spt	July-Sept	0.2%	0.3%	0.2%	0.3%	0.2%	0.1%
Ar 6 Sport	July-Sept	0.2%	0.4%	0.3%	0.2%	0.2%	0.0%
A 10 Sport	July-Sept	0.2%	0.4%	0.2%	0.1%	0.1%	0.1%
Ar 8-1 Spt	July-Sept	0.1%	0.0%	0.0%	0.3%	0.3%	0.1%
A 10 Sport	Oct-Apr	0.1%	0.2%	0.1%	0.1%	0.0%	0.1%
Tr JDF Trl	Oct-Apr	0.1%	0.1%	0.1%	0.0%	0.2%	0.1%
Ar 2 Sport	May-June	0.1%	0.0%	0.0%	0.2%	0.2%	0.1%
Tr 3:4 Trl	July-Sept	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Tr JDF Trl	July-Sept	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%
A 11 Sport	May-June	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%
Tr JDF Net	July-Sept	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%
Total ER		31.6%	39.6%	36.2%	34.1%	26.7%	21.4%
SUS ER		18.6%	23.3%	19.5%	21.4%	14.8%	13.7%
Northern ER		13.1%	16.3%	16.7%	12.6%	11.9%	7.7%
Marked Management Obj. SUS ER			12.2%	12.0%	LBT	14.8%	None

Table 3. Management abundance thresholds and corresponding allowable exploitation rates

THRESHOLD LEVEL	FORECASTED TRS	SUS NOR ER CEILING	HOR % diff	SUS HOR ER CEILING	TOTAL NOR ER*
BELOW LBT	< 900	LBT GUIDELINES IMPLEMENTED			24.0%
LBT	900	8.0%	4.0%	12.0%	24.0%
	1000	8.0%	4.2%	12.2%	24.0%
	1100	8.0%	4.4%	12.4%	24.0%
LAT	1200	10.0%	4.8%	14.8%	24.0%
	1300	11.0%	5.2%	16.2%	24.0%
	1400	12.0%	5.6%	17.6%	24.0%
UMT	1500	13.0%	6.0%	19.0%	24.0%
ABOVE UMT	1500+	13.0%	no constraint		24.0%
* Total NOR ER not to be exceeded w/ consideration of Northern Fisheries, which may cause SUS impacts to be lowered from defined ceiling rates.					



**Marine Area Codes
(WAC 220-56-185)
Recreational Fishery**



The term "marine area code numbers" is defined as the catch area for the catch record card. The following is a list of the catch areas:

- (1) Area 1 (Ilwaco): Waters west of the Buoy 10 Line and north to Leadbetter Point.
- (2)(a) Area 2 (Westport-Ocean Shores): From Leadbetter Point north to the Queets River. Area 2 excludes waters of Willapa Bay and Grays Harbor.
- (b) Area 2-1: Willapa Bay east of a line from Leadbetter Point to Willapa Channel Marker 8 (Buoy 8) then to the westerly most landfall on Cape Shoalwater.
- (c) Area 2-2: Grays Harbor east of a line from the outermost end of the north jetty to the outermost exposed end of the south jetty.
- (3) Area 3 (La Push): From the Queets River north to Cape Alava.
- (4) Area 4 (Neah Bay): From Cape Alava north and inside Juan de Fuca Strait to the Sekiu River.
- (5) Area 5 (Sekiu and Pillar Point): From mouth of Sekiu River east to Low Point, mouth of the Lyre River.

- (6) Area 6 (East Juan de Fuca Strait): From Low Point east to the Partridge Point-Point Wilson line north to the line from Trial Island (near Victoria, B.C.) - Rosario Strait Traffic Lane Entrance Lighted Buoy R (USCG Light List No. 16340, referenced as Y "R" on National Ocean Service Chart No. 18400-1 dated 1997-08-30 - Smith Island - the most northeasterly of the Lawson Reef lighted buoys (RB1 QK FI Bell) - Northwest Island - the Initiative 77 marker on Fidalgo Island.
- (7) Area 7 (San Juan Islands): All marine waters north of the line described under Area 6 to the United States-Canadian boundary.
- (8)(a) Area 8 (Deception Pass, Hope and Camano Islands): Line projected from West Point on Whidbey Island to Reservation Head on Fidalgo Island east through Deception Pass, including all waters east of Whidbey Island to the Possession Point - Shipwreck Line.
- (b) Area 8-1 (Deception Pass and Hope Island): East of a line projected from West Point on Whidbey Island to Reservation Head on Fidalgo Island, south of the Burlington Northern Railroad Bridge at the north end of Swinomish Slough, north of the Highway 532 Bridge between Camano Island and the mainland, and westerly of a line from the East Point Light on Whidbey Island to the Saratoga Pass Light #4 on Camano Island (FI red 4 sec.).
- (c) Area 8-2 (Port Susan and Port Gardner): East of a line from the East Point Light on Whidbey Island to the Saratoga Pass Light #4 on Camano Island (FI red 4 sec.) and north of a line from the south tip of Possession Point 110 degrees true to a shipwreck on the opposite shore.

- (9) Area 9 (Admiralty Inlet): All waters inside and south of the Partridge Point-Point Wilson Line and a line projected from the southerly tip of Possession Point 110 degrees true to a shipwreck on the opposite shore and northerly of the Hood Canal Bridge and the Apple Cove Point-Edwards Point Line.
- (10) Area 10 (Seattle-Bremerton): From the Apple Cove Point-Edwards Point Line to a line projected true east-west through the northern tip of Vashon Island.
- (11) Area 11 (Tacoma-Vashon Island): From the northern tip of Vashon Island to the Tacoma Narrows Bridge.
- (12) Area 12 (Hood Canal): All contiguous waters south of the Hood Canal Bridge and adjacent waters north of the Hood Canal Bridge when fishing from the pontoon beneath the bridge.
- (13) Area 13 (South Puget Sound): All contiguous waters south of the Tacoma Narrows Bridge.

99-15-081 (Order 99-102), § 220-56-185, filed 7/20/99, effective 8/20/99; 99-08-029 (Order 99-13), § 220-56-185, filed 3/30/99, effective 5/1/99. Statutory Authority: RCW 75.08.080, 95-04-066 (Order 95-10), § 220-56-185, filed 1/30/95, effective 5/1/95; 91-08-054 (Order 91-13), § 220-56-185, filed 4/2/91, effective 5/3/91; 89-07-060 (Order 89-12), § 220-56-185, filed 3/16/89; 88-10-013 (Order 88-15), § 220-56-185, filed 4/26/88; 85-18-026 (Order 85-111), § 220-56-185, filed 5/27/85; 85-09-017 (Order 85-20), § 220-56-185, filed 4/9/85; 80-03-064 (Order 80-12), § 220-56-185, filed 2/27/80, effective 4/1/80.]