Willapa Bay Salmon Policy (C-3622) Staff Recommended Revisions: Commissioner's Questions

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Meeting Purpose

-Review & discuss Commissioner's questions/answers

-Accept feedback

-Review original proposed schedule for policy revision completion & determine a new timeline for moving forward

Slide from previous staff ppt on June 24, 2021
Forks Creek Production:
Out of Basin Stocks

Species	Stock	Years Released
Chinook	Big Soos	1954-58
	Deschutes	1964-67, 69-70
	Elk River	1974
	Finch Creek	1971, 79
	Kalama	2019
	Spring Creek	1953
	Trask	1974-75
	Unspecific Wild	1953-71
Coho	Big Soos	1952-56, 58
	Cowlitz	1990, 91
	Dungeness	1956-57
	Humptulips	1982
	Lake Creek	1961
	Satsop	1973
	Unspecific Wild	1952-71
	Washington State	1960
Chum	Unspecific Wild	1959-62

Slide from previous staff ppt on June 24, 2021
Nemah & Naselle Production:
Out of Basin Stocks

Hatchery	Species	Stock	Years Released
Nemah	Chinook	Abernathy	1972
		Big Soos	1954-58
		Deschutes	1962, 64-67
		Elochoman	1959
		Klickitat	1958
		Unspecific Wild	1954
	Coho	Big Soos	1954-56
		Dungeness	1956-57
		Unspecific Wild	1953-54, 62-65
	Chum	Undetermined Mix	1988
		Washington State	1961-62
Naselle	Chinook	Spring Creek	1953
		Unspecific Wild	1953
	Coho	Big Soos	1952-53
		Cowlitz	1991
		Dungeness	1982
		Humptulips	1980-83
		Satsop	1993
		Sol Duc	1981
		Unspecific Wild	1952-53

Information Detail on Out of Basin Stocks

Data pulled from RMIS (rmpc.org)

See handout materials for tabular information detail

If there have been more out-of-basin stock transfers than those shown on that summary slide, provide the information on all such transfers.

The data provided are for each species are exhaustive with respect to information available in RMIS (rmpc.org).

- prior to 2008, stock names were used inconsistently, and data are less reliable.

Information on the transfer of Kalama Falls Spring Chinook as referenced in a recent Commission meeting (date of transfer, number fish, stage of life at transfer and release, reason for transfer, etc.).

Species	Stock	Years Released
Chinook	Big Soos	1954-58
	Deschutes	1964-67, 69-70
	Elk River	1974
	Finch Creek	1971, 79
	Kalama	2019
	Spring Creek	1953
	Trask	1974-75
	Unspecific Wild	1953-71

-Only out of basin transfer since 1982

-Southern Resident Orca initiative package reviewed by HSRG and NOAA fisheries

-One-time transfer of 567,560 sub-yearlings

-100,956 were ad-clipped and coded-wire-tagged; 466,604 ad-clipped only

-Population not self-sustaining and broodstock only available for the one year

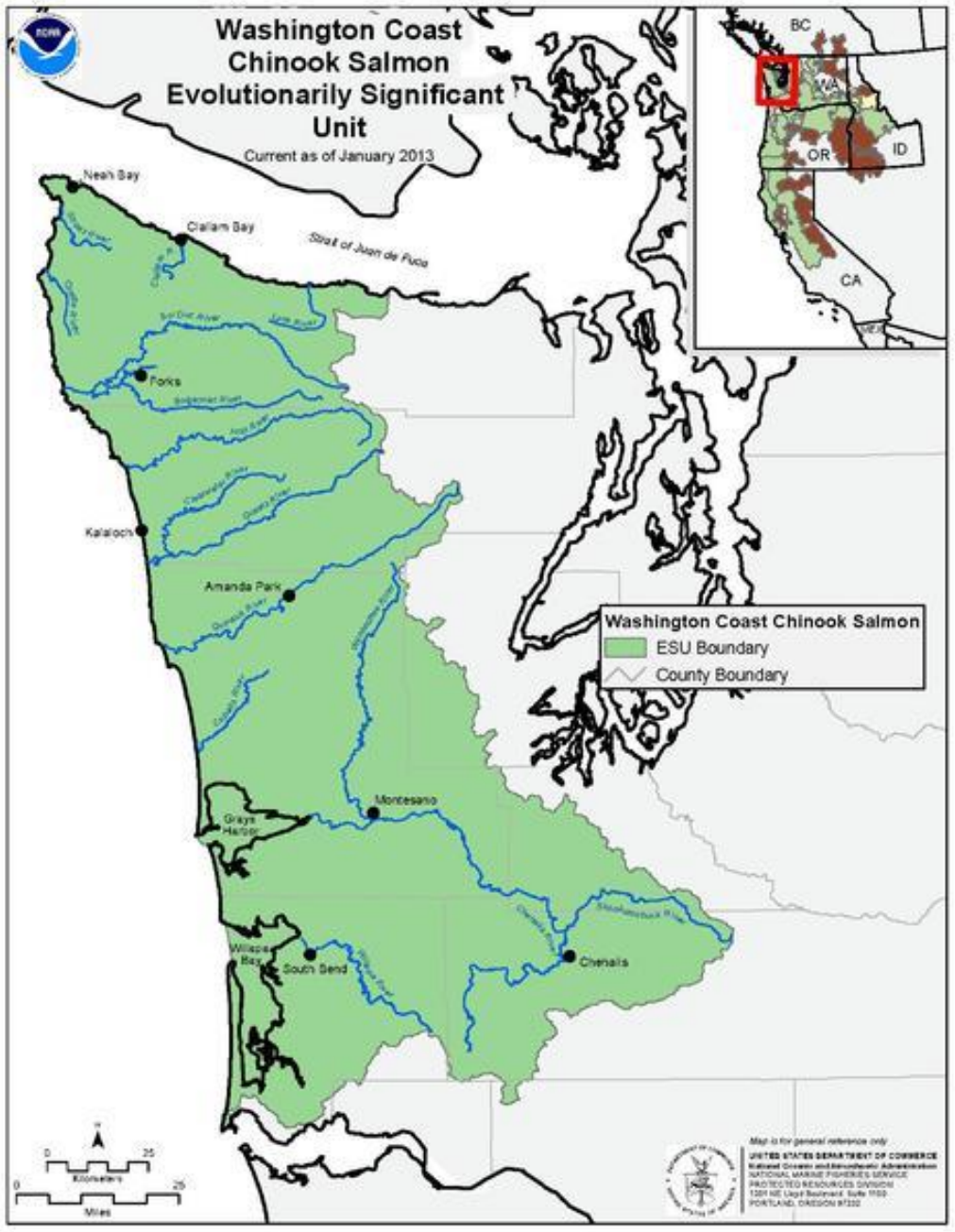
-5 fish returned to hatchery rack (3yo ~1/3 return)

Chinook Salmon ESU geographic boundary and populations involved*

NORTH COAST: Hoko R. (fall), Dickey R. (fall), Sol Duc R (summer, fall), Calawah R (summer, fall), Quillayute/Bogachiel R. (summer, fall), Hoh R. (spring/summer, fall), Queets/Clearwater R. (spring, fall), Quinault R. (spring/summer, fall)

GRAYS HARBOR AND CHEHALIS BASIN: Humptulips R. (fall), Hoquim R. (fall), Wishkah R. (fall), Wynoochee R. (fall), Satsop R. (summer, fall), Chehalis R. (spring, fall), Skookumchuck R (spring, fall), Newaukum R. (summer/fall)

WILLAPA BAY: North R./Fall R. (fall), Smith Cr. (fall)



* Based on NOAA (1997)

The ESA designation following the federal status review (endangered, threatened, or not listed) and a summary of the rationale as to why*

- WA Coast ESU is not ESA listed
- Long-term trends for most populations have been upward, but several smaller populations have downward trends
- Fall runs are predominant; hatchery production more significant in southern portion
- Chinook salmon in Coastal ESU not in danger of extinction
- Hatchery influence is greatest in Willapa Bay

* From NOAA (1997)

Items of other relevance to the Coastal Chinook ESU: Genetic Analyses

- F_{ST} and PCA molecular genetic analyses performed

- The genetic identity of Willapa Bay Chinook populations (North/Fall, Forks Creek, Nemah, and Naselle) compared to other WA Coast ESU populations, and nearby Puget Sound ESU and Lower Columbia ESU

Items of other relevance to the Coastal Chinook ESU: Across Population F_{ST} analyses

Average pairwise F_{ST} between the four Willapa Bay populations and populations in the Lower Columbia, Puget sound, and WA Coast ESUs.

- Larger F_{ST} more differentiation, lower F_{ST}, less differentiation

Willapa Populations	Lower Columbia (ESU)	Puget Sound ESU	Washington Coast ESU (no Willapa pops)
North/Fall	0.094	0.115	0.025
Forks Creek	0.087	0.092	0.033
Naselle	0.083	0.088	0.029
Nemah	0.080	0.087	0.029

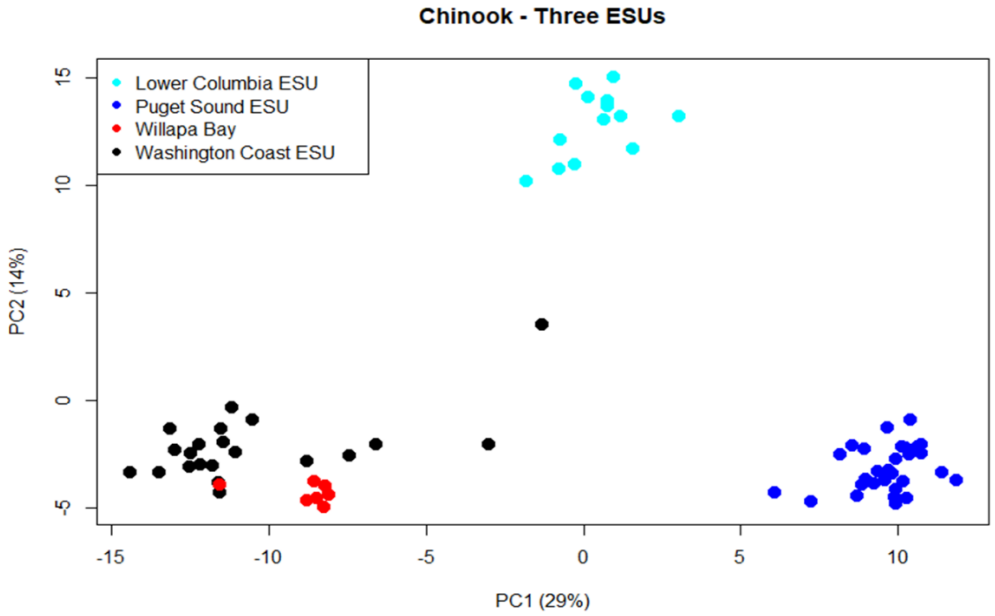
Items of other relevance to the Coastal Chinook ESU: Within Population F_{ST} analyses

- There is little differentiation between Naselle and Nemah and slightly more between Forks Creek and Naselle and Nemah
- Differentiation between North/Fall and other populations is an order of magnitude larger

	North/Fall	Forks Creek	Naselle
Forks Creek	0.013	-	-
Naselle	0.011	0.002	-
Nemah	0.010	0.003	0.000

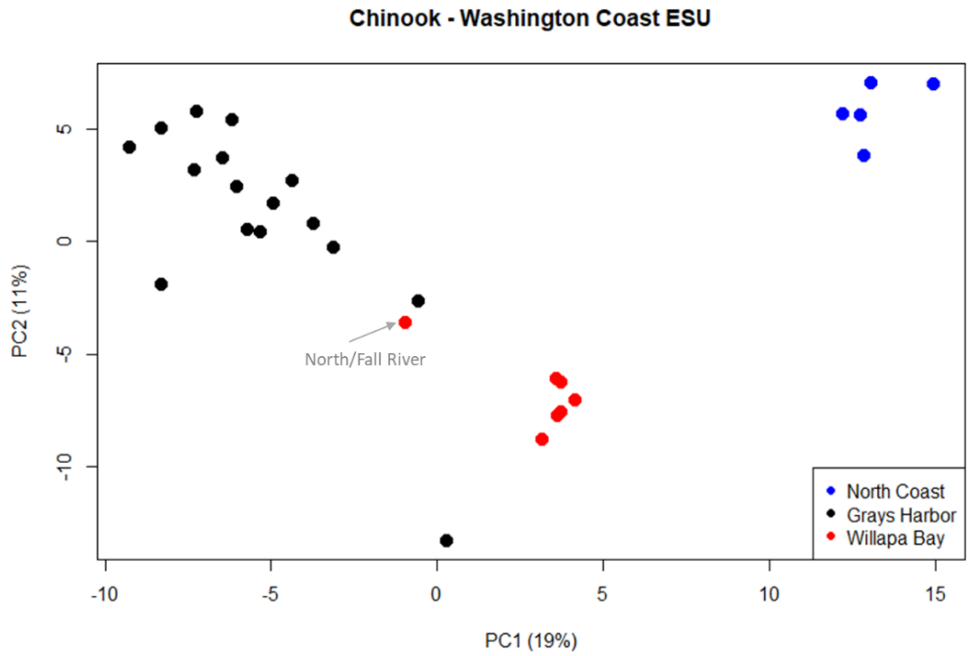
Items of other relevance to the Coastal Chinook ESU: Principal Component Analysis

- PCA examines correlation structure in molecular data without regard to the identity of the population
- Genetic structure is sorted in the analysis
- As with F_{ST}, the ESUs are well-differentiated



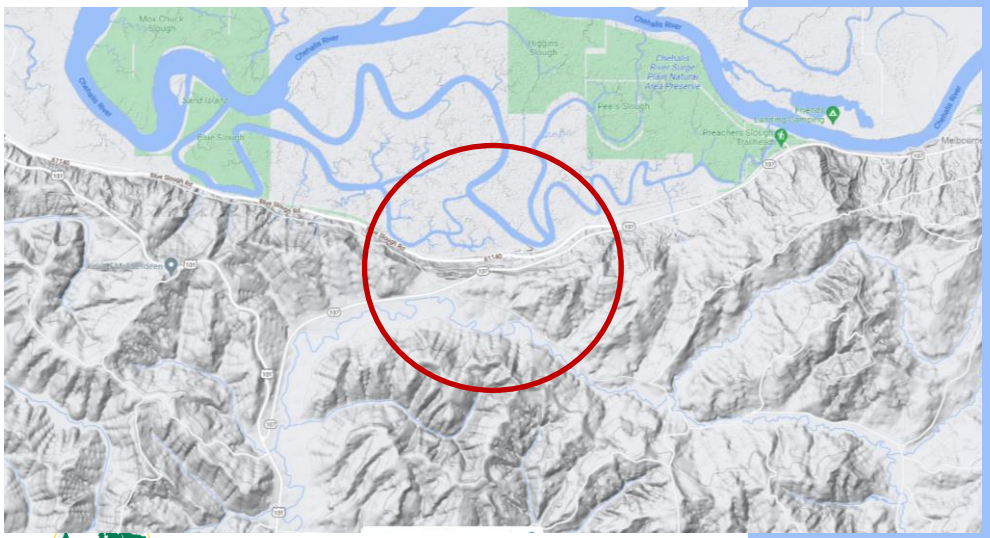
Items of other relevance to the Coastal Chinook ESU: Principal Component Analysis

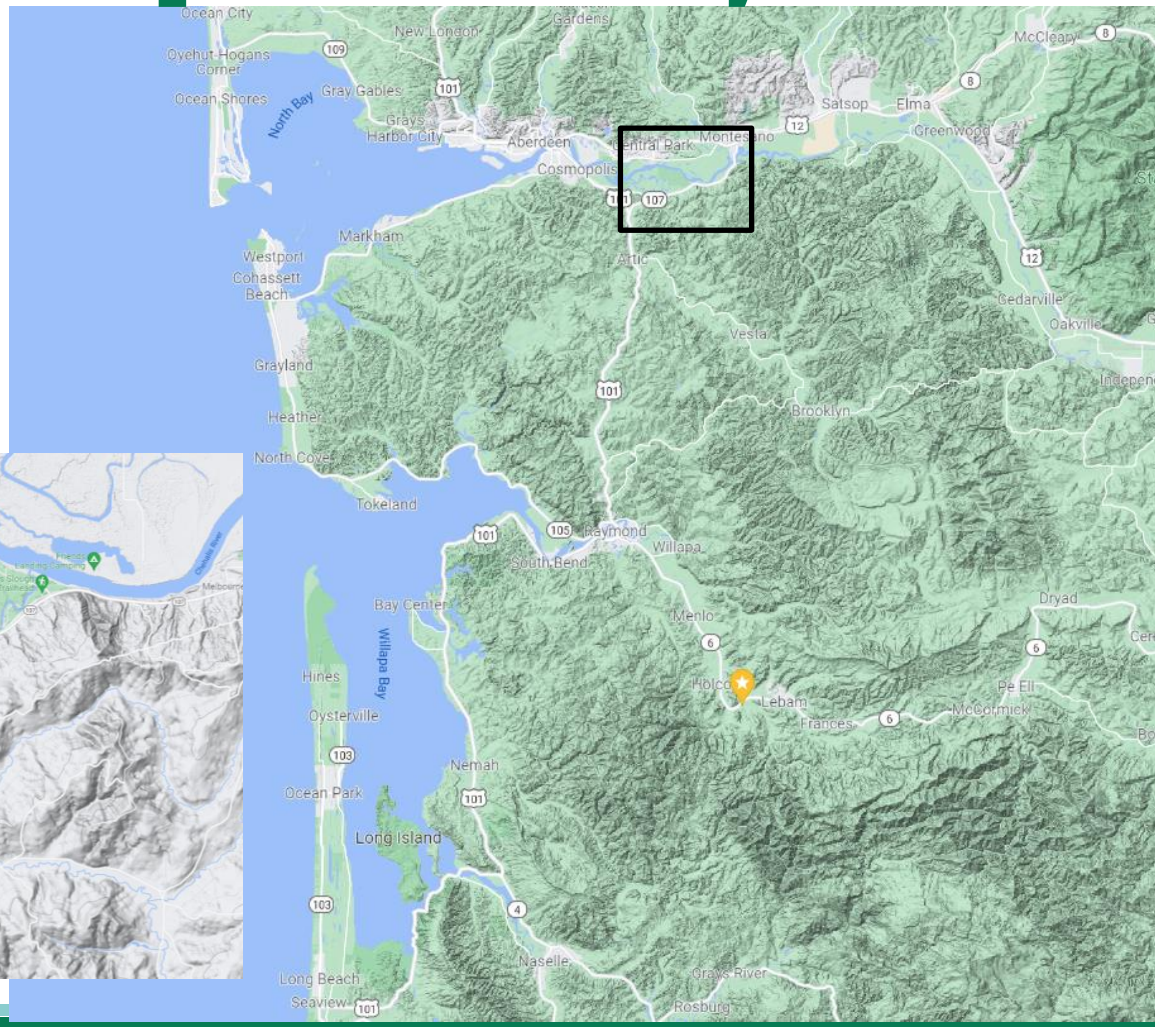
- Significant geographic structuring within WA Coast ESU
- North/Fall River intermediate between other WB populations and Grays Harbor populations



Items of other relevance to the Coastal Chinook ESU: Principal Component Analysis

Divide between North River and Chehalis Basin is geographically narrow and topographically low. Geologically may have been connected





Items of other relevance to the Coastal Chinook ESU

- Despite repeated releases of out-of-basin populations into Willapa Bay, Willapa Bay Chinook have maintained their WA Coast ESU genetic identity.
- Willapa Bay populations showing a unique genetic signature within the WA Coast ESU
- Data suggest that the Willapa Bay environment may exert a different selective pressure than the other WA Coast ESU populations, or the environments associated with the out-of-basin releases.
- Willapa Bay populations may be more fit in Willapa Bay than populations outside Willapa Bay.

Discuss the fall chinook spawning escapement goal review that was included in the final stages of the Policy 3622 Comprehensive Review, including information about how spawners and recruits were estimated.

-Completed in 2020 by Dr. Auerbach
-Appendix 1 of Comprehensive Review
-Ricker spawner-recruit relationships (brood years 2000-13)
-Confounding variables: ocean conditions, flow
-S_rep=spawners at replacement

	Natural spawner estimated capacity	S_rep
Willapa Bay aggregate	4,353	3,967
Willapa/North/Smith	2,172	2,126
Nemah/Palix	328	263
Naselle/Bear	1,853	1,551

Somewhere I noticed a suggestion that the sport fishery be managed (conservation actions shared equally-- 50/50?) between freshwater and saltwater. Is that the intent and why would that enhance the future plan?

This is currently in the WB Salmon Management Policy C-3622 under Fall Chinook Salmon Fishery Management Objectives and staff are not recommending any changes

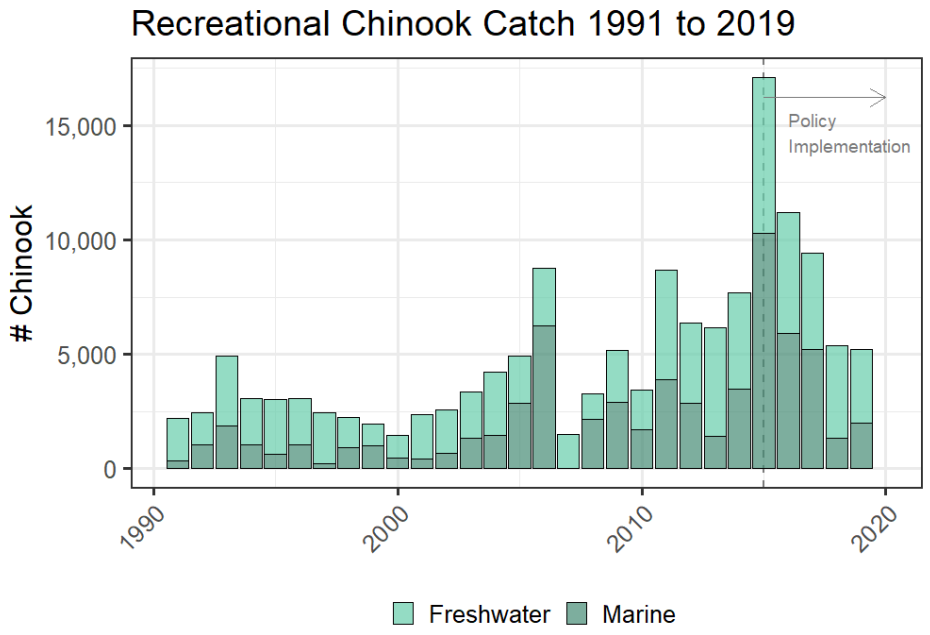
"Conservation actions, as necessary, shall be shared equally between marine and freshwater fisheries." (Page 5)

- 5-yr pre-policy

Freshwater: 59%
Marine: 41%

- 5-yr post-policy

Freshwater: 49%
Marine: 51%



Chinook management—"Management will be flexible for stocks achieving spawner objectives consistently over time and coupled with positive preseason forecasts." The metric is 3 of 5 years. Why this metric and not some other more conservative or less conservative?

-This is a general brood cycle

-Allows for conservation actions to occur if spawner goals are not met for more years than not in a brood cycle

-Aligns with Gray's Harbor Basin Salmon Management Plan C-3621

-Maintains consistency in fisheries management across the neighboring basins

-Easy to understand objectives

If the above metric is not met, then the impact rate on Willapa and Naselle river natural origin fall Chinook should not exceed 20%. Why continue to use the in-bay impact rate and not utilize the more conventional total impact rate?

-Allows for greater flexibility in the terminal area

-Current base-period for the Fishery Regulation Assessment Model (FRAM) is 2007 to 2013

-WB did not have the robust monitoring put in place since policy implementation

-Region has better knowledge of terminal in-house fisheries than FRAM at this time

Does the plan as suggested allow for an August commercial fishery that helps update the Chinook run size?

-Staff proposal is to open South Bay (Areas 2M, 2N, 2P, and 2R) before Labor Day

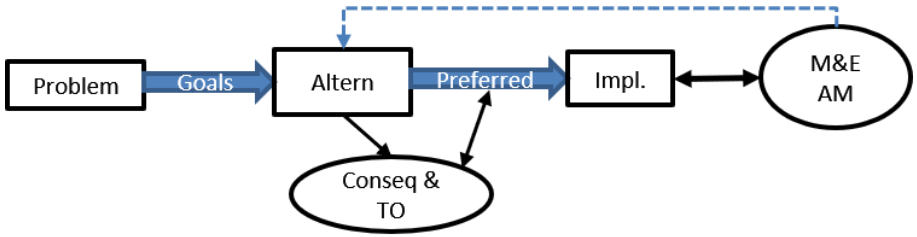
-Allows catch of excess SRO hatchery fish

-Provides data to inform in-season update models

-Occurred this year with Commission guidance with successful outcomes for both recreational and commercial fishers

The fall "Chinook rebuilding/broodstock management will be consistent with HMPs formulated from science-based risk management described in the Technical Procedures Document." Does this wording preclude the policy/legal, and social issues that will be a part of decision making?

Policy, legal, and social issues that will be a part of the decision making are included in the science-based risk management framework



Proposed Schedule

Date	Event	Purpose
November 2, 2021	Fish Committee	Provide markup draft of revisions to Policy
November 19, 2021	Fish Committee	Hear Fish Committee feedback on markup version
December 2-4, 2021	Fish Committee & FWC Commission	Briefing for Fish Committee meeting and full Commission (if approved-send out for public comment)
Mid-December 2021	Public Meeting	Take public comments on draft revisions
January 2022	FWC Commission	Brief Commission on public comment and ask for decision

QUESTIONS