Zoom Guidelines and Etiquette

Please note the following guidelines for our webinar:

- Upon entering the webinar, your microphone will be muted automatically.
- To ask a question, please use the "raise hand" feature. If you're joining by phone, dial *9, and if you're joining via computer, use the hand icon at the bottom of your screen.
- During the comment period, the host will enable you to unmute yourself. You can then unmute yourself by pressing the mute button on your device or dialing *6 on your phone.
- If you face any technical issues during the webinar, please let us know in the chat, and we will assist you.
- We expect all participants to treat each other with respect and refrain from making personal attacks, insults, or threats.
- Please keep discussions focused on the issues and questions at hand, and avoid attacking individuals or organizations.
- The use of offensive, disrespectful, or derogatory language, including profanity, is strictly prohibited.
- To ensure a balanced discussion, please limit the length and frequency of your contributions to the conversation.
- Assume positive intentions from those speaking, and listen respectfully.

Puget Sound Salmon Fishing Town Hall

Jan. 30, 2024

Washington Department of FISH & WILDLIFE

Process of Washington Salmon Fishery Management

JANUARY - FEBRUARY

WDFW

Develop salmon run forecasts.

FEBRUARY

WDFW & Tribal Governments

Release initial forecasts for Columbia River, Puget Sound, and Washington Coast.

MARCH

Pacific Fishery Management Council

WDFW works with state, tribal and federal fisheries managers and other representatives to develop preliminary options for ocean fisheries based on annual abundance forecasts.

MARCH

WDFW

Receive comments and feedback from public on potential fishing seasons based on pre-season forecasts.

Public meetings

- Coast Proposals
- Columbia River Proposals
- Puget Sound Proposals

MARCH - APRIL

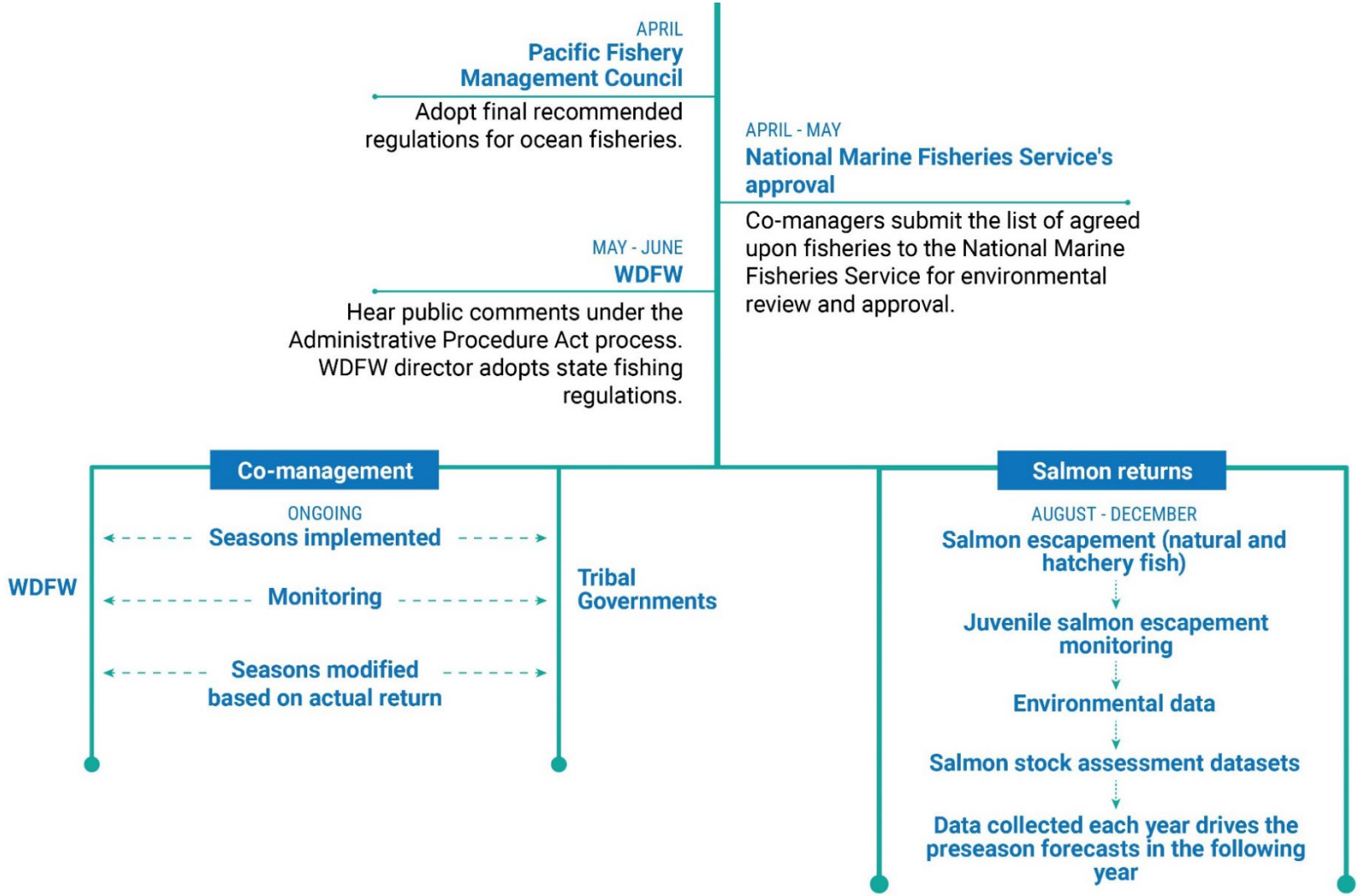
Draft regulations developed

Draft regulations for state fisheries developed based on public input, co-manager negotiations, and PFMC final regulations.

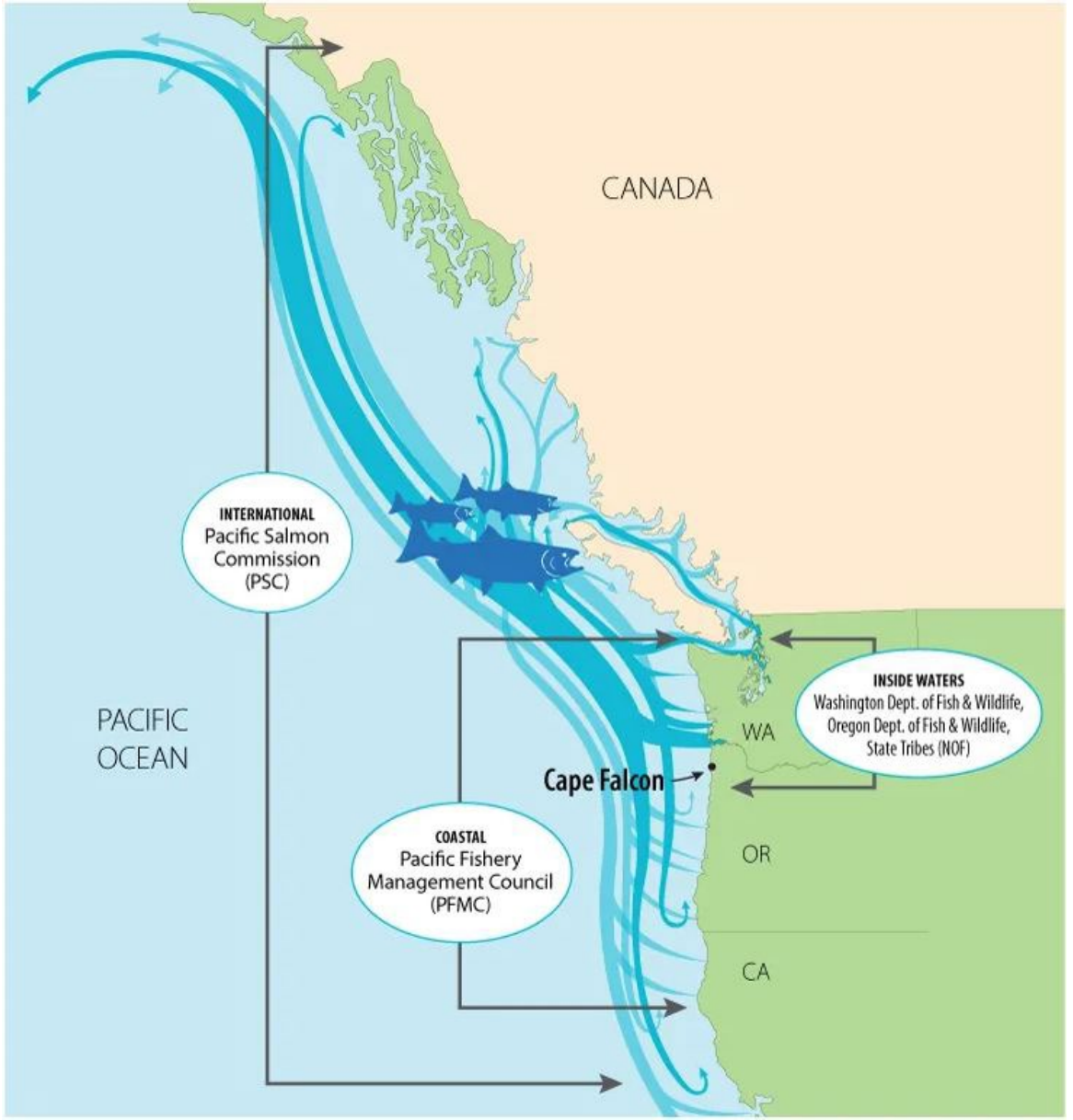
Conservation Objectives and Legal Framework

US v WA, *US v Oregon*, Magnuson-Stevens Act, Endangered Species Act, State Law and Pacific Salmon Treaty.

Process of Washington Salmon Fishery Management



Process of Washington Salmon Fishery Management



Ocean Conditions Dashboard

Dr. Marisa Litz, WDFW Research Scientist

Talk Outline

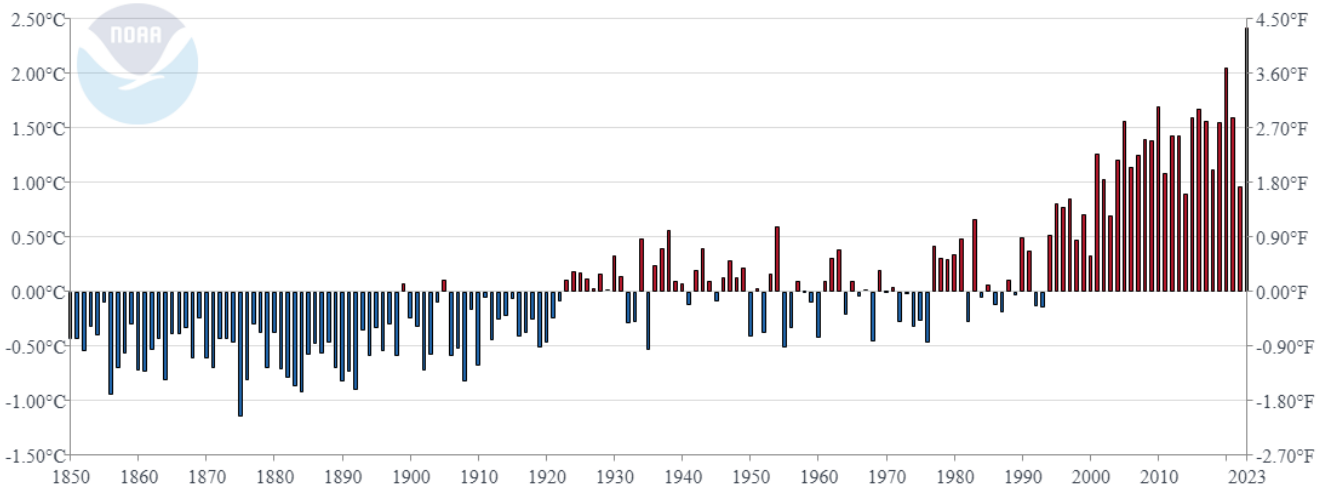
- Update on physical conditions (Temperature, El Niño, marine heatwaves)
- Notable biological observations
- NOAA environmental indicators (stoplight chart)

Take-Home Messages:

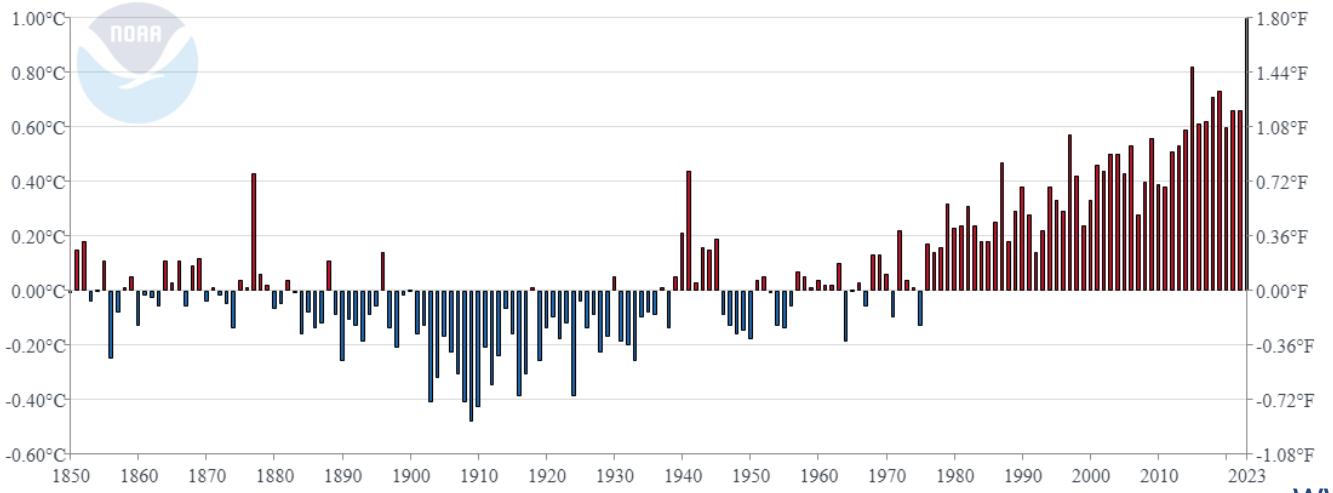
- Climate variability will continue to impact salmon returns in 2024
- Stressors affect BOTH freshwater and marine life history stages of salmon
- Effect of 2023-2024 warmer El Niño unknown

Global land and ocean surface temperatures in 2023 warmest on record

Land temperatures ranked #1 and were **2.42°C** warmer than 1901-2000 average



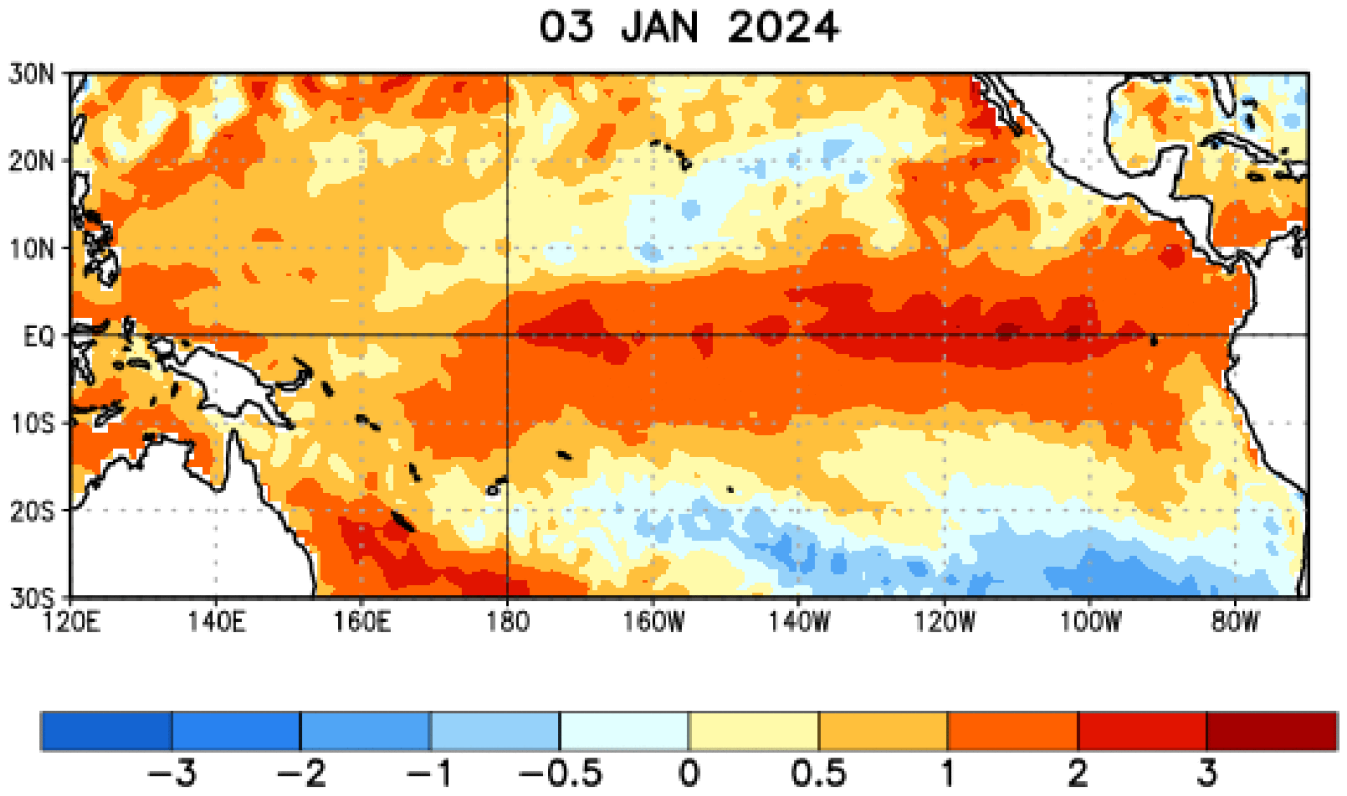
Ocean temperatures ranked #1 and were **1.00°C** warmer than 1901-2000 average



www.ncdc.noaa.gov

Current El Niño could reach historically strong levels, but impacts may be short-lived

Sea Surface Temperature (SST) Anomalies

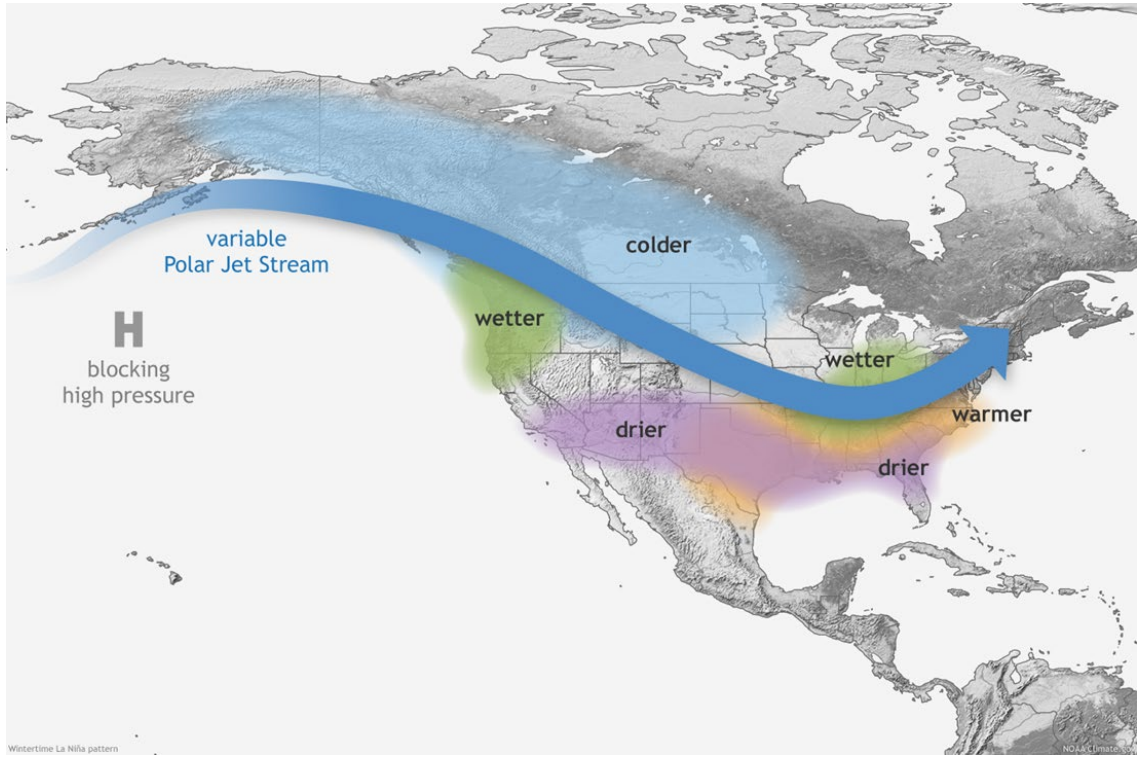


www.climate.gov/enso

Three-peat La Niña August 2020-January 2023 was considered favorable for salmon marine survival

La Niña

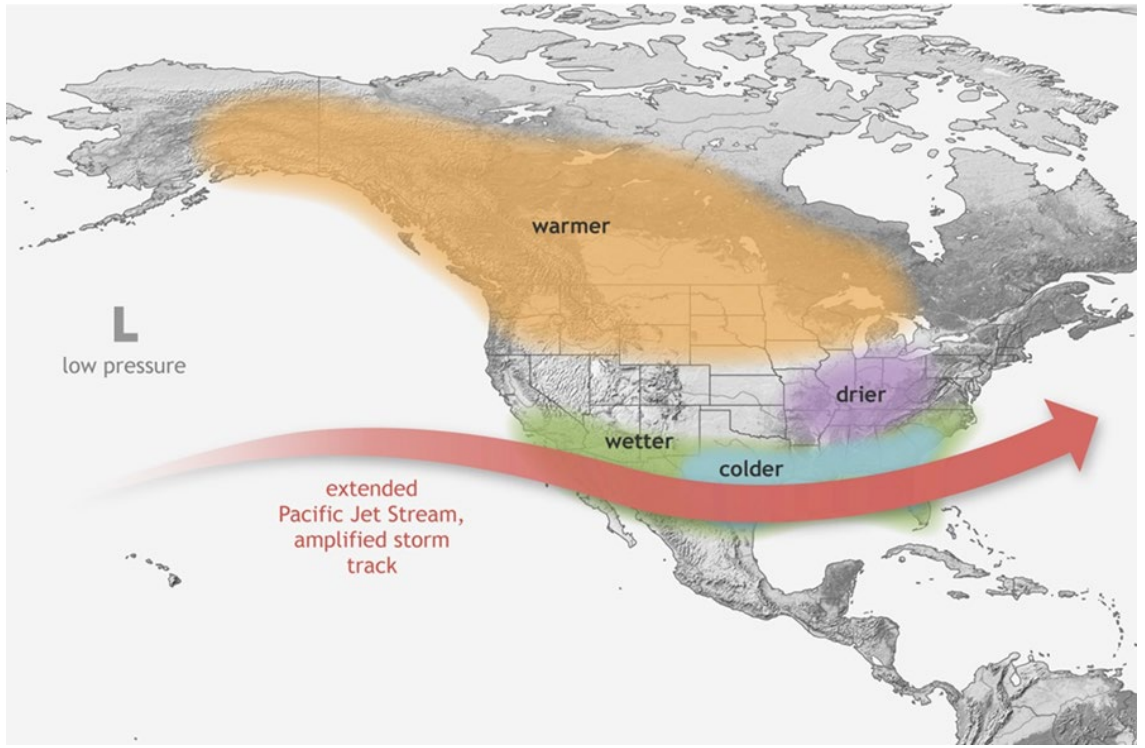
< -0.5°C SST 3-month anomaly



Good for PNW Salmon

El Niño

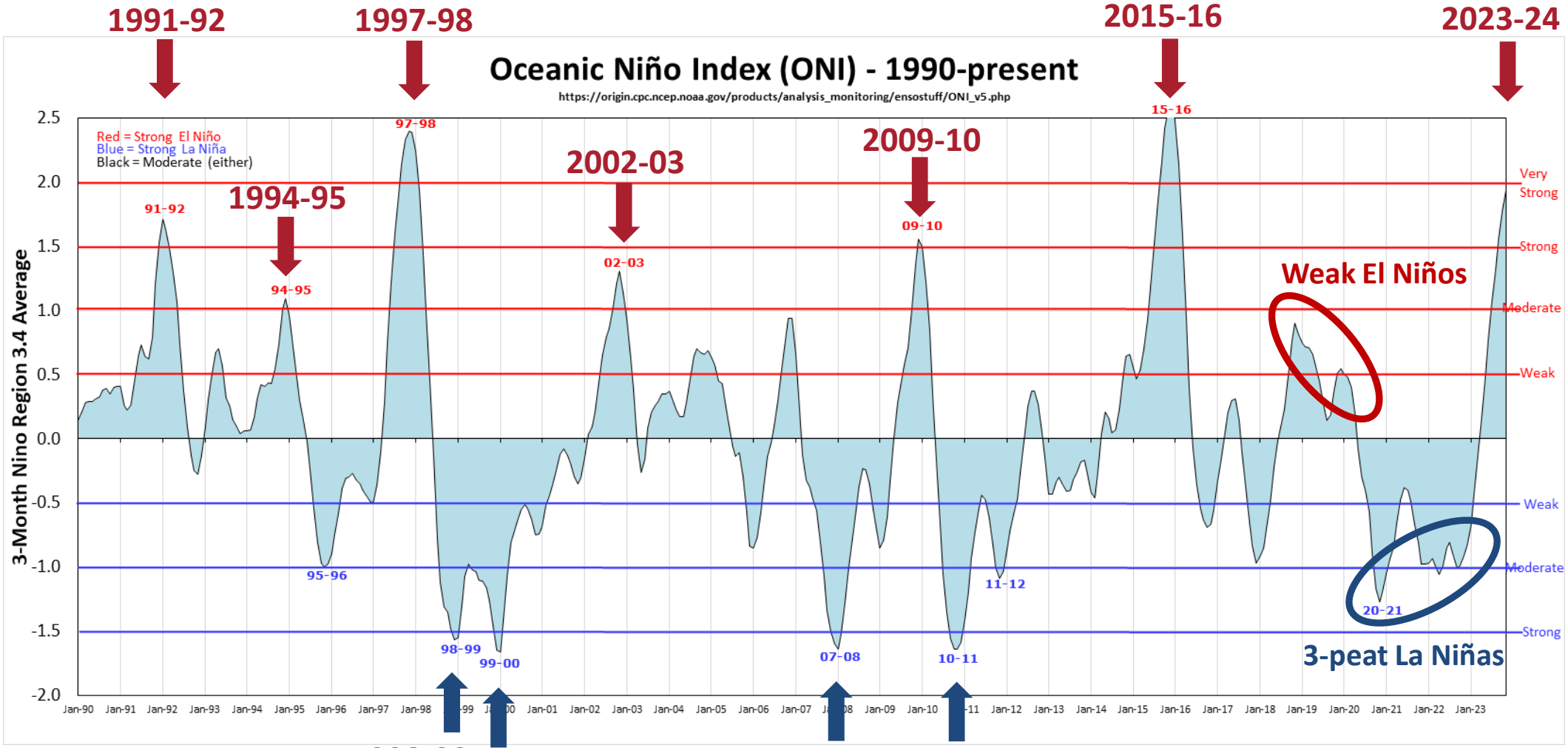
> 0.5°C SST 3-month anomaly



Bad for PNW Salmon

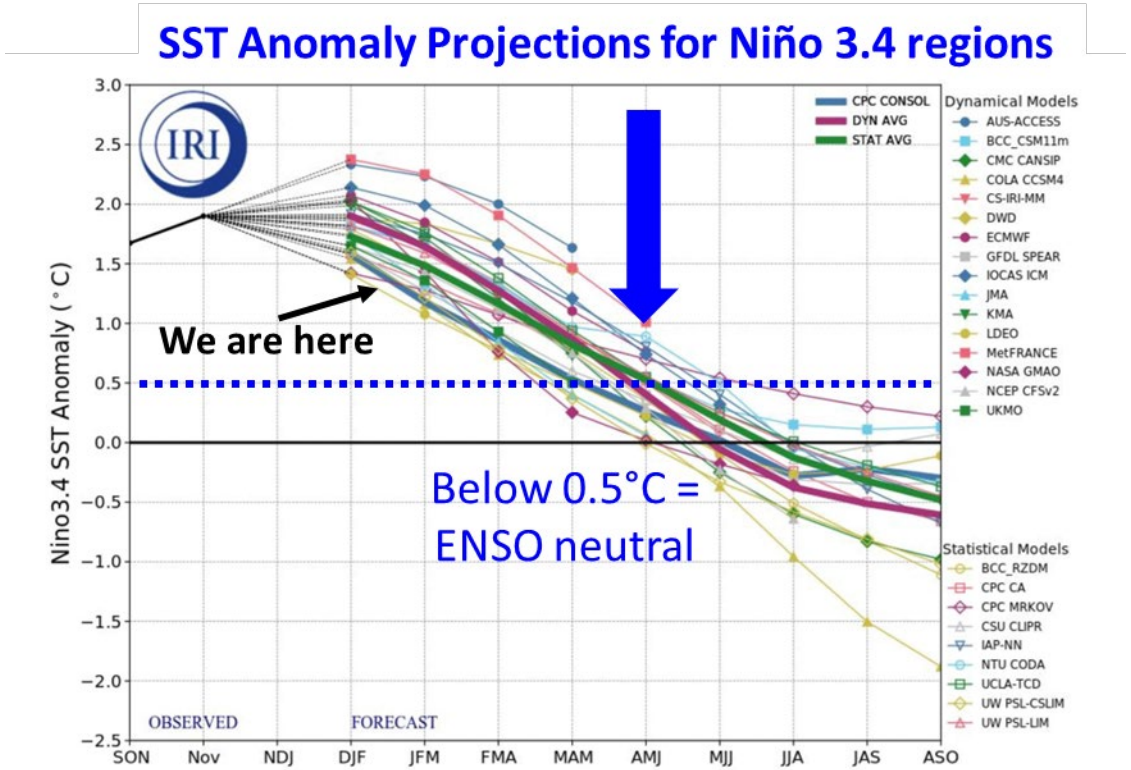
www.climate.gov

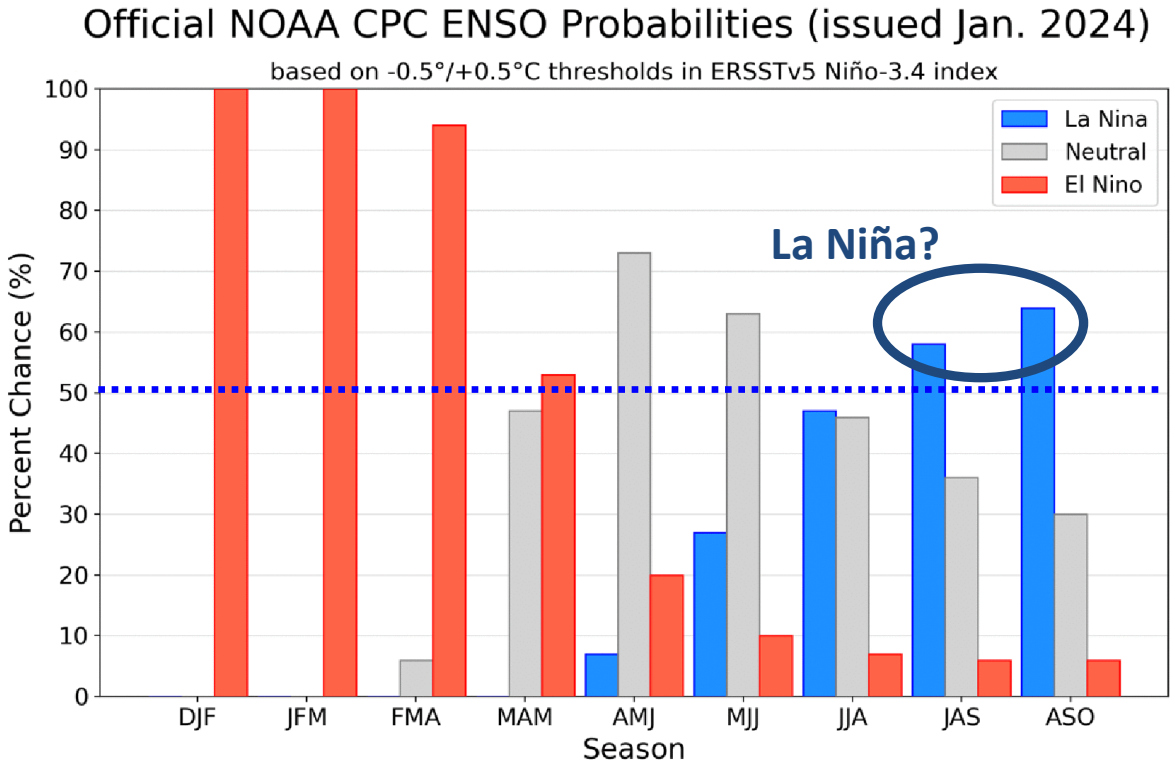
Multiple El Niño's (5 per century) can cause ecosystem tipping points that harm fish (Broughton et al. 2022)



www.ggweather.com

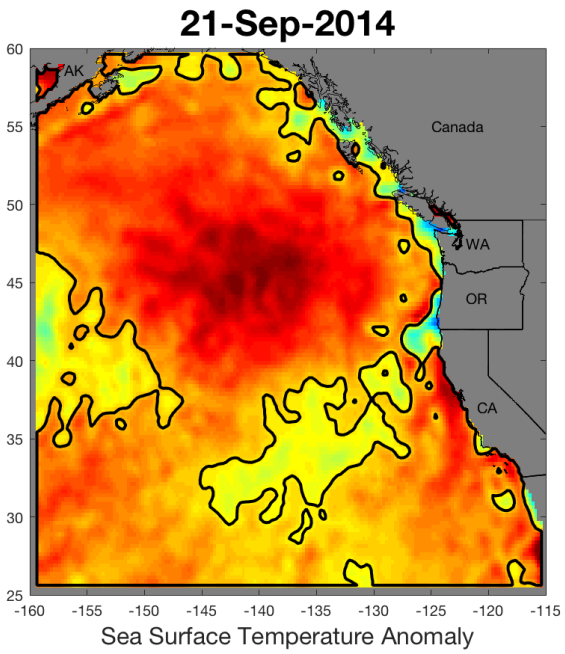
Models predict El Niño will end April-June and there's a >50% chance of a La Niña by August

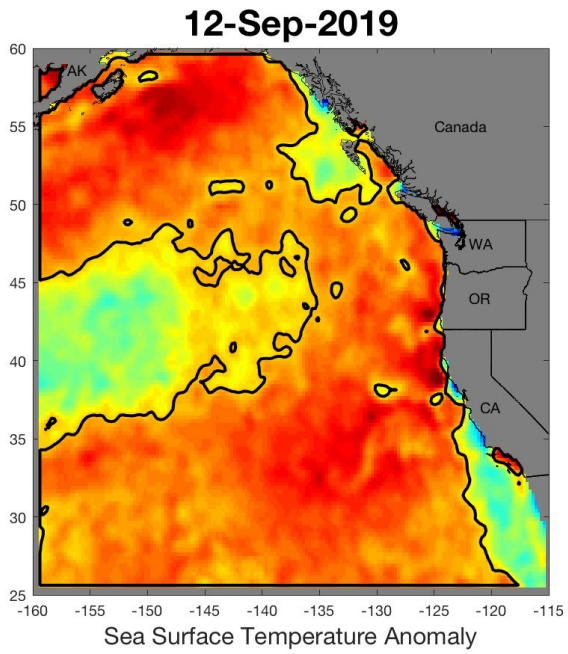


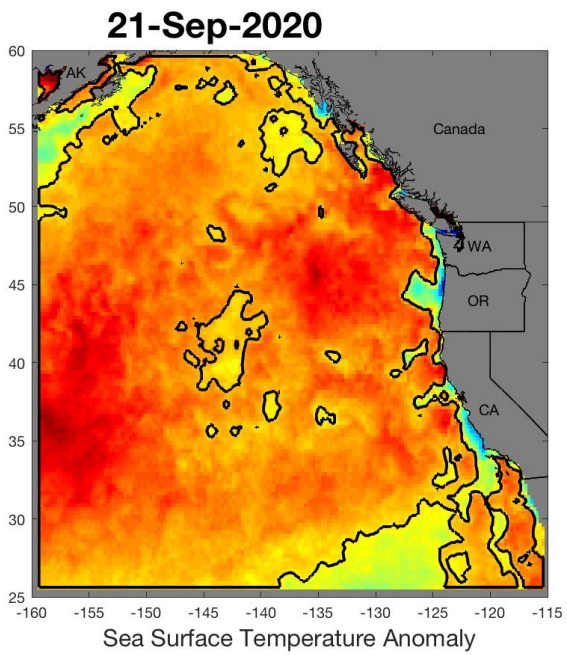


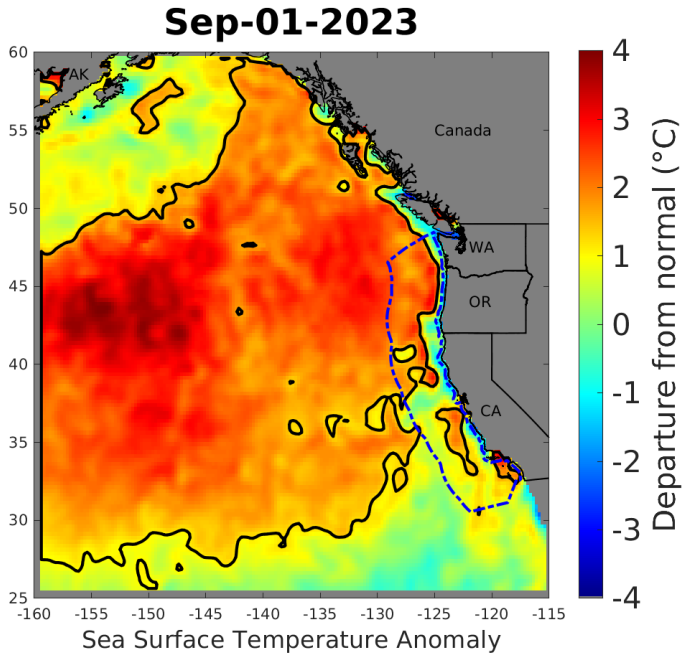
www.climate.gov/enso

The "warm blob" formed May 2023 reached 7.6 million km^2 (4th largest by area)









2nd largest/1st longest event back to 1982

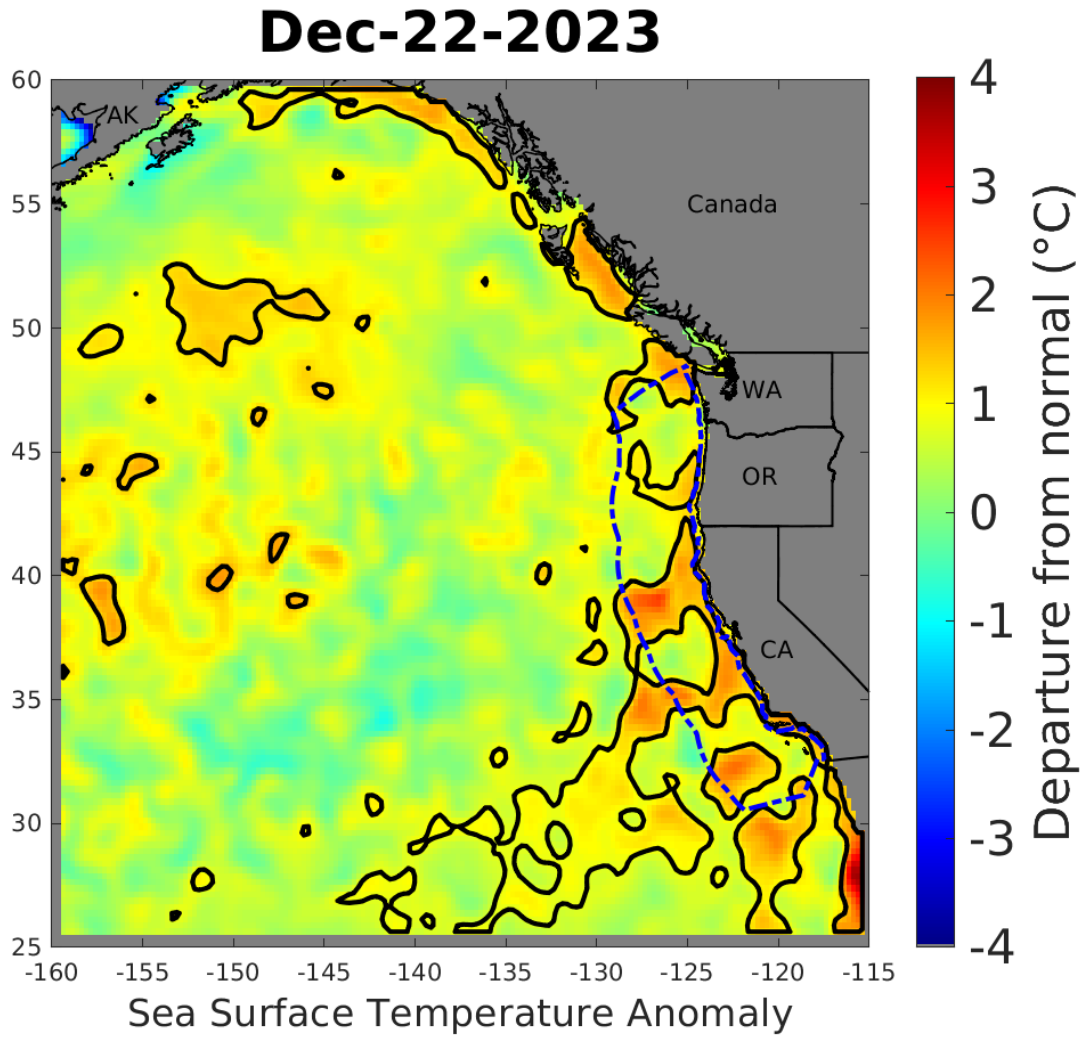
3rd largest/3rd longest event back to 1982

1st largest/4th longest event back to 1982

4th largest/7th longest event back to 1982

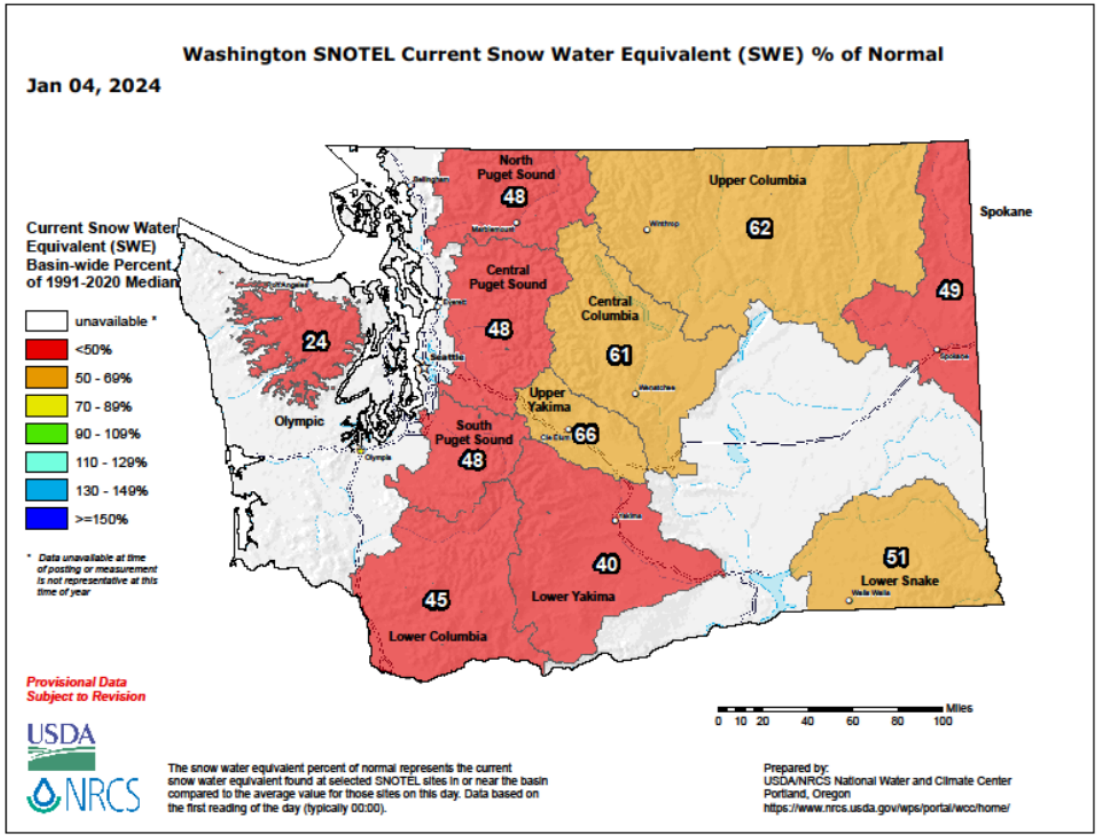
www.integratedecosystemassessment.noaa.gov/regions/california-current/cc-projects-blobtracker

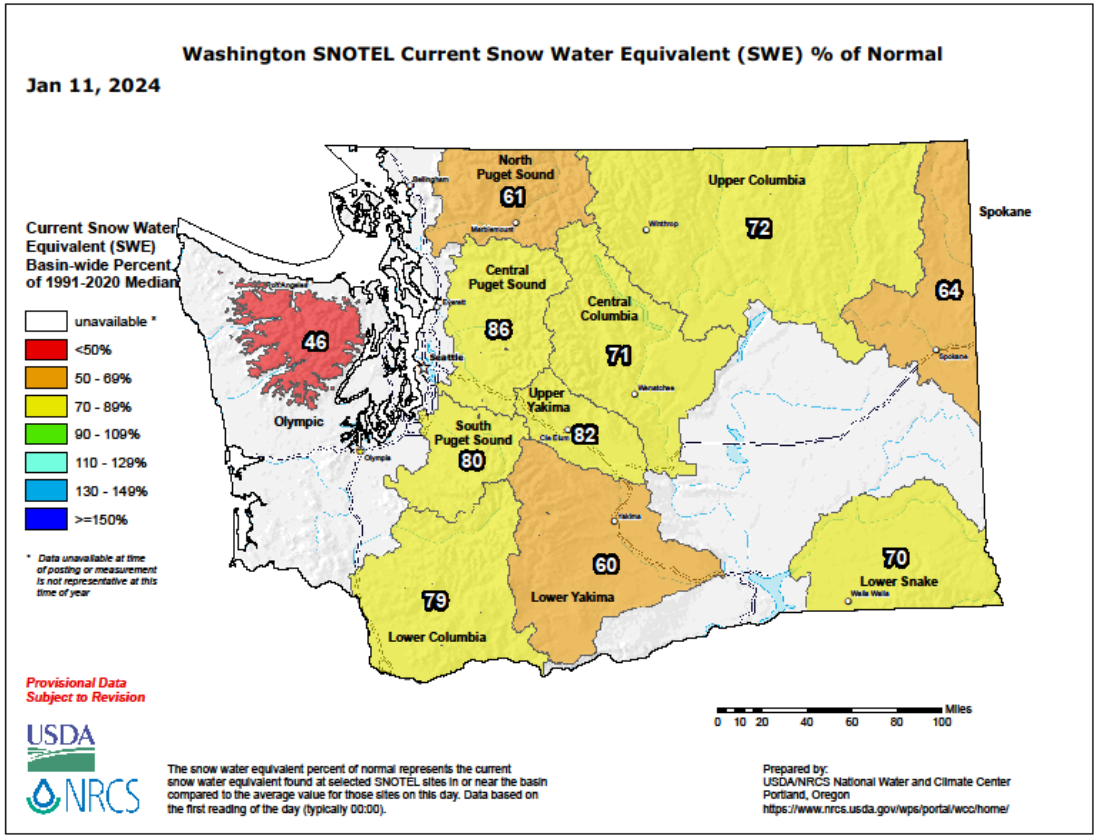
Current heatwave conditions minimal



www.integratedecosystemassessment.noaa.gov/regions/california-current/cc-projects-blobtracker

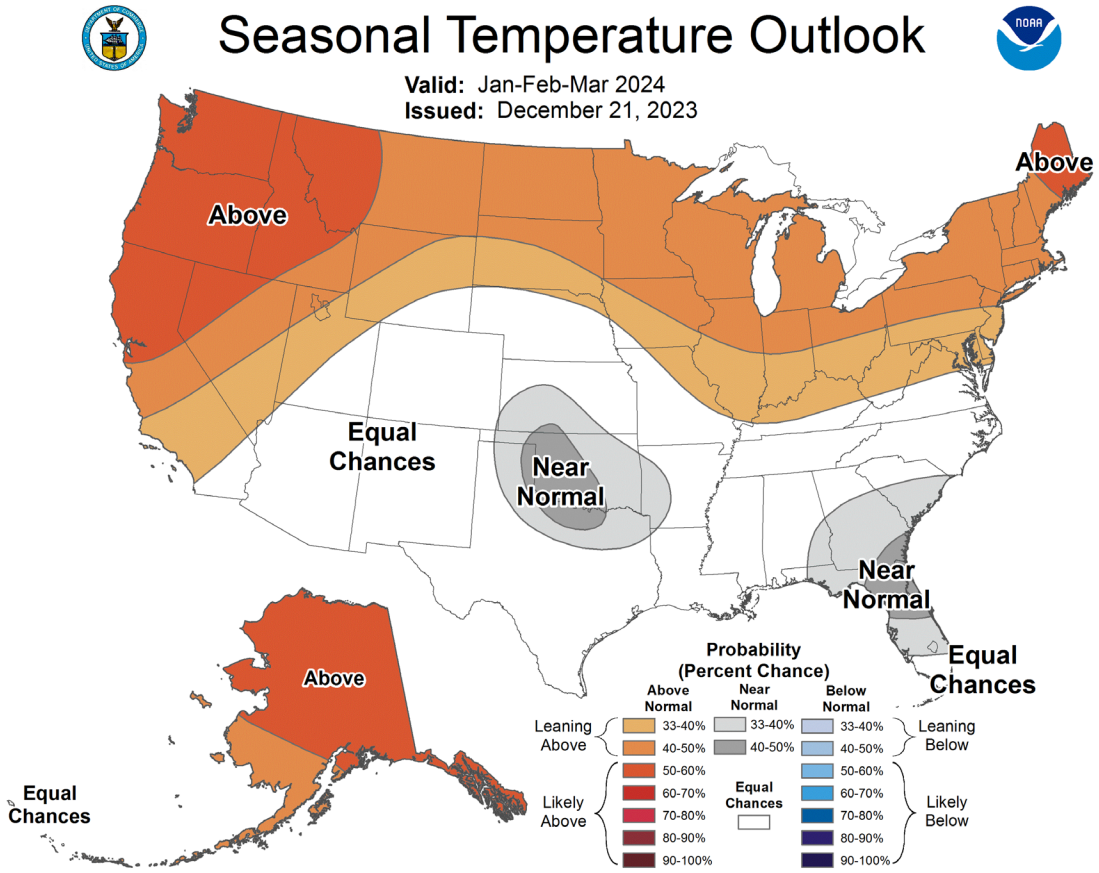
Snowpack transitioned from 24-66% of normal in WA to 46-86% in one week!



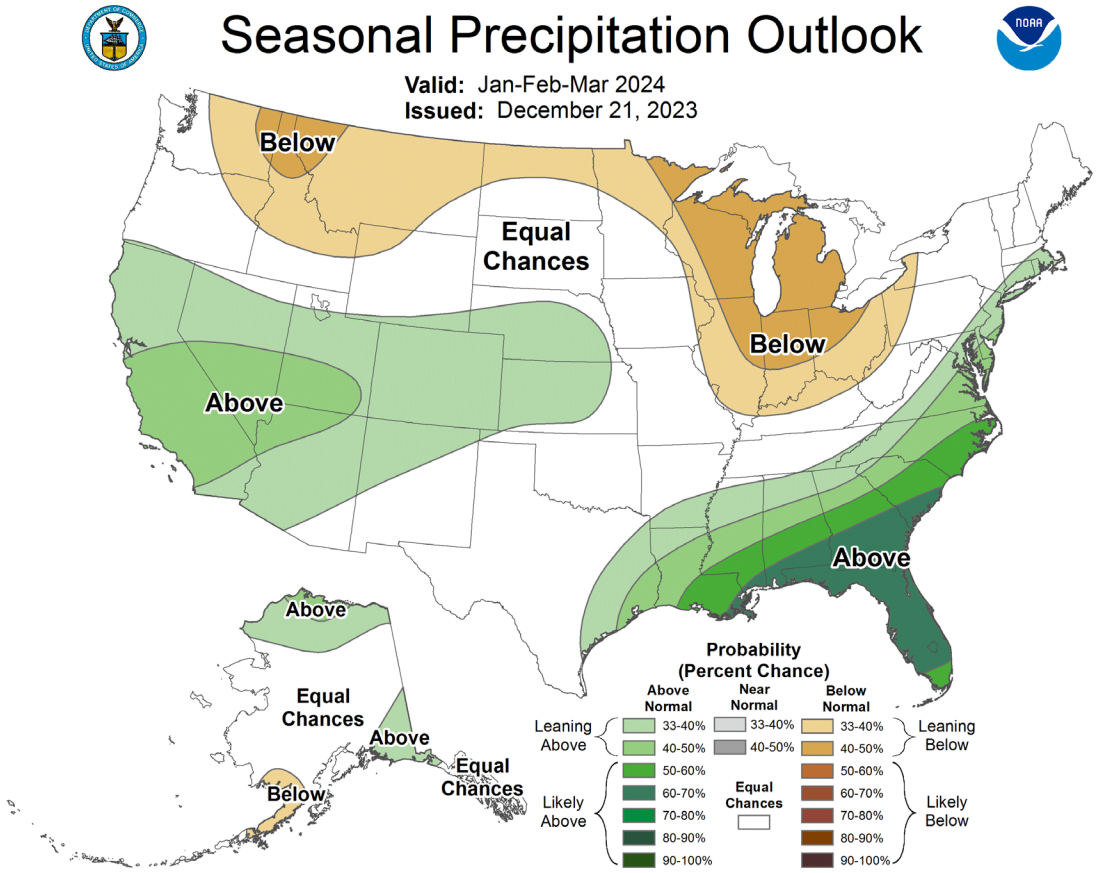


Outlook over next 3 months (Jan-Mar)

Temperature: 50-60% chance temperatures will be *warmer* than average



Precipitation: 30-50% chance precipitation will be *below* average



www.cpc.ncep.noaa.gov/products/forecasts

Biological responses to the warming ocean

2021	2022	2023
Tropical fish such as opah off Seaside 	More tropical fish caught off WA: shortbill spearfish and mahi mahi  	Bluefin tuna washed up on Orcas Island 
39-fold increase in market squid off WA 	Closure of snow crab fishery in AK for the first time in history 	Salmon spawning in the Arctic: Anaktuvuk River 
Billions of organisms die in June heat wave 	European green crab invasion continues north and east  	King of the salmon 
Dungeness crab season started on time with high landings 		New record 21.0 lb mahi mahi caught off Washington 

Salmon Indicators: Bad -> Fair -> Good

	ECOSYSTEM INDICATORS	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
CLIMATE & ATMOSPHERIC	PDO (Sum Dec-March)	23	9	5	17	10	25	16	21	18	13	7	2	20	6	4	11	14	26	24	22	15	19	12	8	3	1
	PDO (Sum May-Sept)	14	5	11	8	13	23	18	21	17	19	7	16	9	4	3	10	24	26	25	20	15	22	12	6	2	1
	ONI (Average Jan-June)	25	1	1	9	17	19	18	21	10	15	3	13	22	6	8	10	12	23	26	16	7	24	20	5	4	14
LOCAL PHYSICAL	SST NDBC buoys (°C; May-Sept)	21	7	9	5	6	13	26	14	2	17	1	12	3	8	10	19	24	23	22	15	18	25	11	4	20	16
	Upper 20 m T (°C; Nov-Mar)	25	14	11	13	8	19	20	16	17	7	1	12	22	6	4	9	3	26	24	23	18	21	2	10	15	5
	Upper 20 m T (°C; May-Sept)	18	12	14	5	1	3	26	21	10	11	2	7	19	9	8	20	24	15	16	13	17	25	23	4	22	6
	Deep Temp (°C; May-Sept)	25	7	10	5	1	12	15	17	13	6	2	9	8	11	4	16	24	21	14	19	20	18	26	3	23	22
	Deep Salinity (May-Sept)	25	4	12	5	7	21	22	13	8	2	3	18	17	15	16	14	26	20	10	9	6	11	24	1	23	19
LOCAL BIOLOGICAL	Copepod richness (May-Sept anom)	24	3	1	11	10	19	18	23	20	14	12	13	22	6	9	4	15	25	26	21	17	16	7	5	2	8
	N copepod biomass (May-Sept anom)	24	19	14	15	6	21	18	25	20	16	9	13	11	3	5	7	8	22	26	23	10	4	2	1	17	12
	S copepod biomass (May-Sept anom)	26	2	7	4	3	18	20	25	17	14	1	9	21	13	10	8	15	23	24	22	16	19	12	5	6	11
	Biological transition	24	14	10	9	12	19	15	23	18	5	1	2	21	3	13	6	6	24	24	22	17	19	8	11	4	16
	Nearshore Ichthyoplankton (Jan-Mar)	21	4	14	8	1	25	26	20	11	22	3	17	2	10	5	13	23	18	19	16	12	24	9	6	15	7
	Near & offshore Ichthyoplankton (community index Jan-Mar)	11	6	4	8	10	13	20	24	1	16	3	12	18	5	2	7	9	22	25	26	21	23	19	15	14	17
	Chinook salmon juvenile catch	23	2	7	20	6	10	18	25	14	12	1	8	5	16	3	4	9	17	22	26	21	15	24	13	11	19
	Coho salmon juvenile catch	24	13	21	5	7	6	23	25	19	2	4	10	11	20	15	1	12	18	17	26	3	16	22	14	9	8

Physical indicators: PDO the best

Biological indicators (e.g., prey) were good to average in 2023

Juveniles entering ocean in 2023 = Ranked 11th out of 26 years

www.nwfsc.noaa.gov

Conclusions

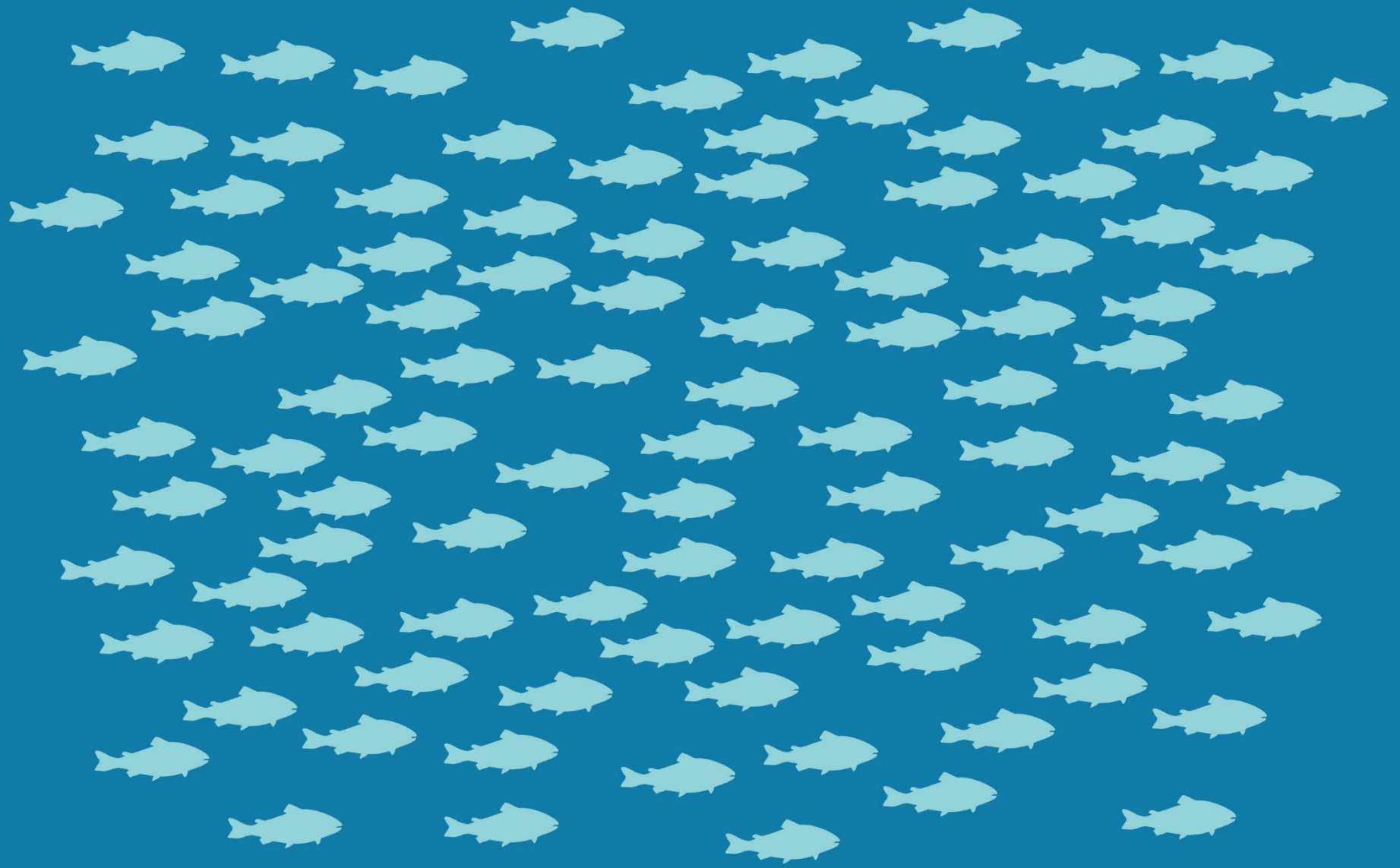
- Ocean conditions favorable for smolts 2021-2023
- Sea surface temperature ranked best in 2023
- Biological indicators ranked average in 2023
- El Niño signals have not yet reached Puget Sound
- Transition to ENSO neutral by spring & La Niña by summer could limit any negative El Niño impacts in 2024

Overview of Mixed-Stock Fisheries and Updates on Puget Sound Chinook Harvest Management Plan and Stillaguamish Payback Provision

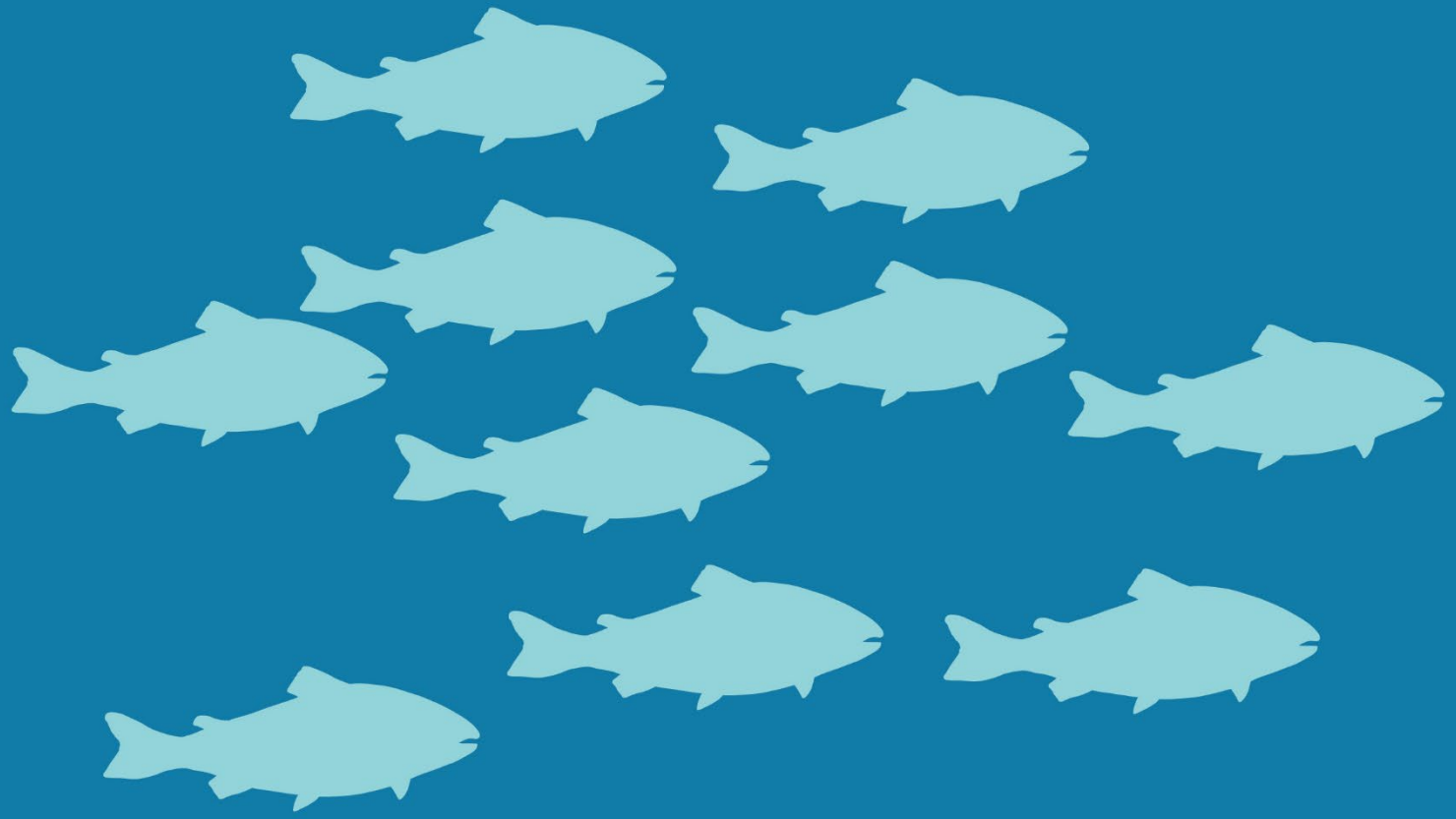
Kyle Adicks, WDFW Intergovernmental Salmon Manager

Marine Areas

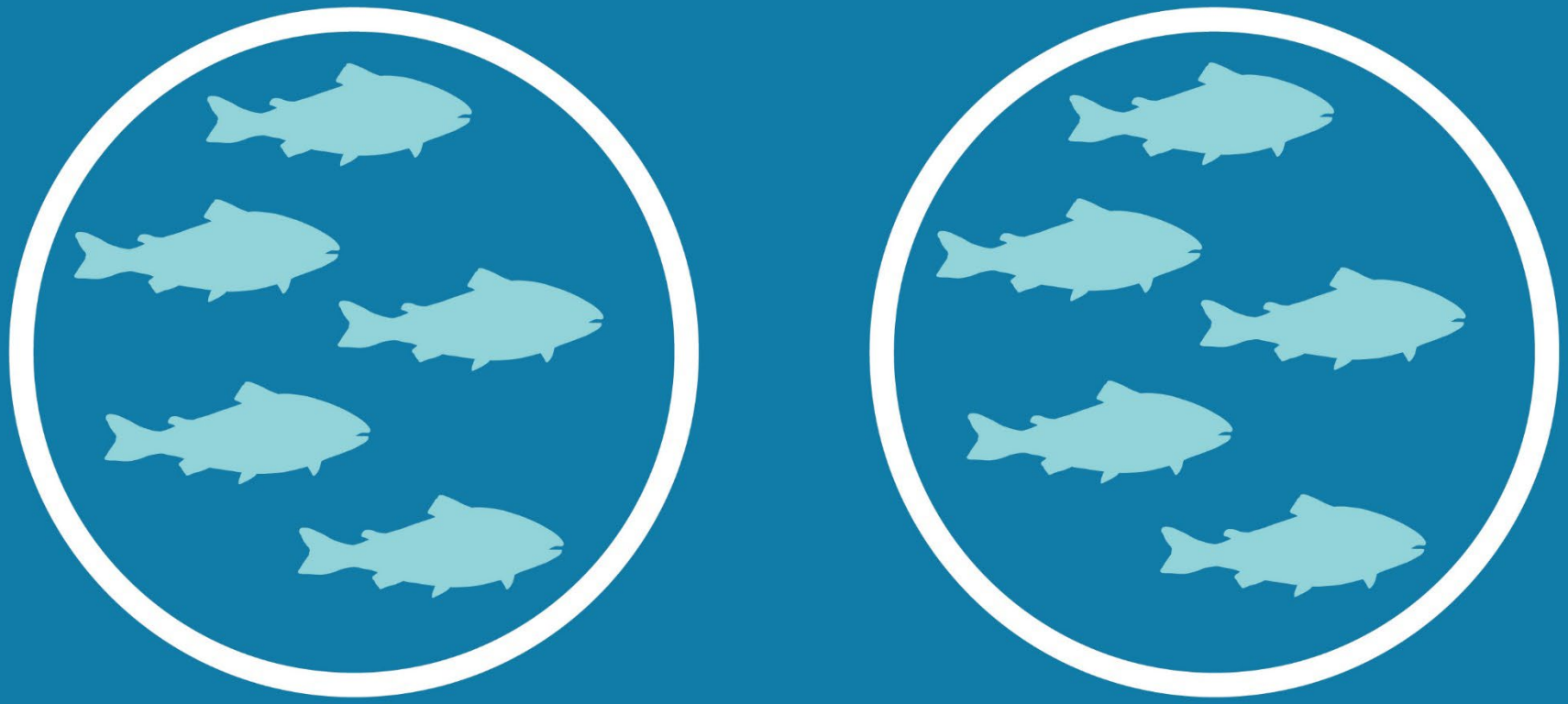
An Environmental Species Act protected run of 100 fish return to their river.



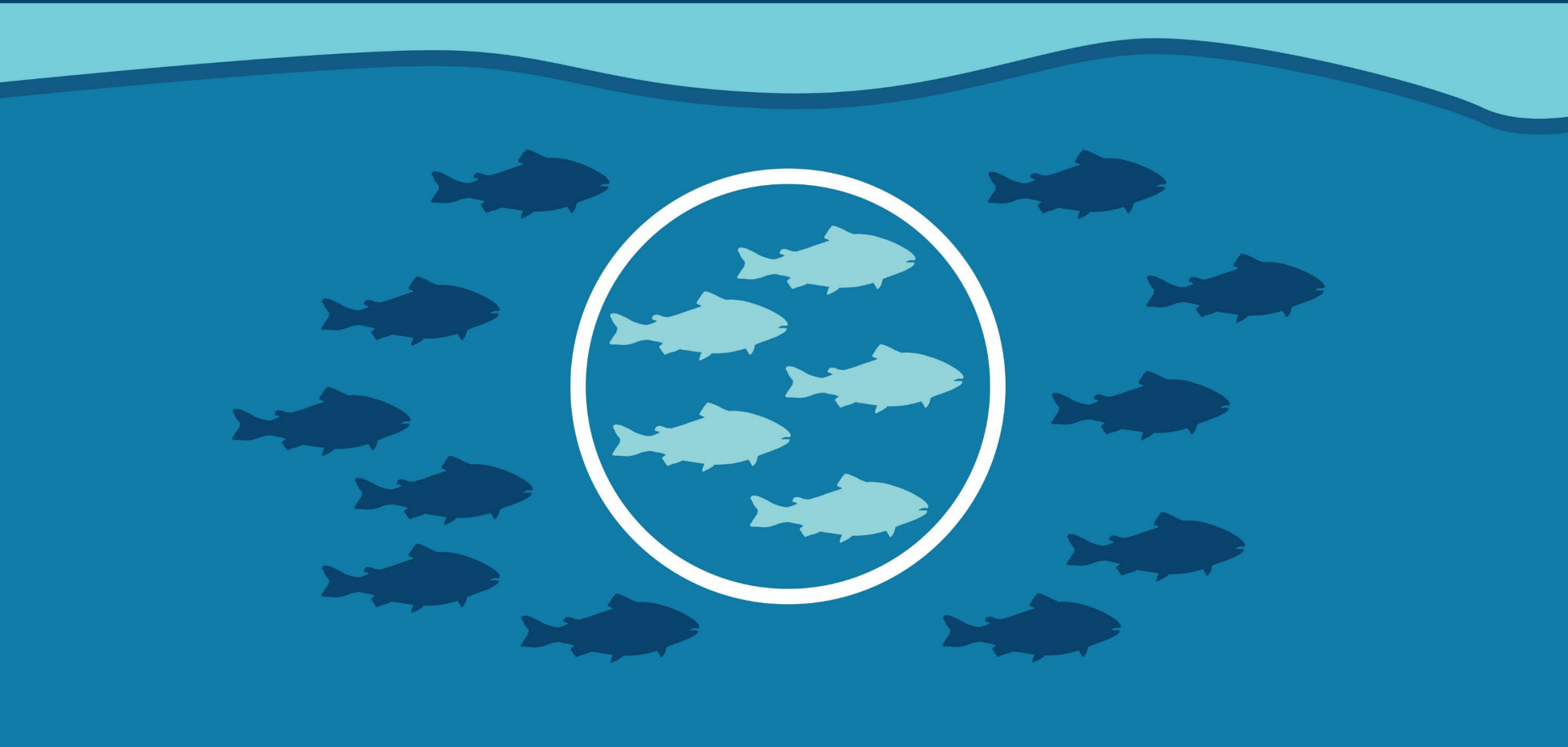
The Endangered Species Act requires 90 of those fish, or 90%, need to pass up river to spawn, leaving 10 fish for harvest.



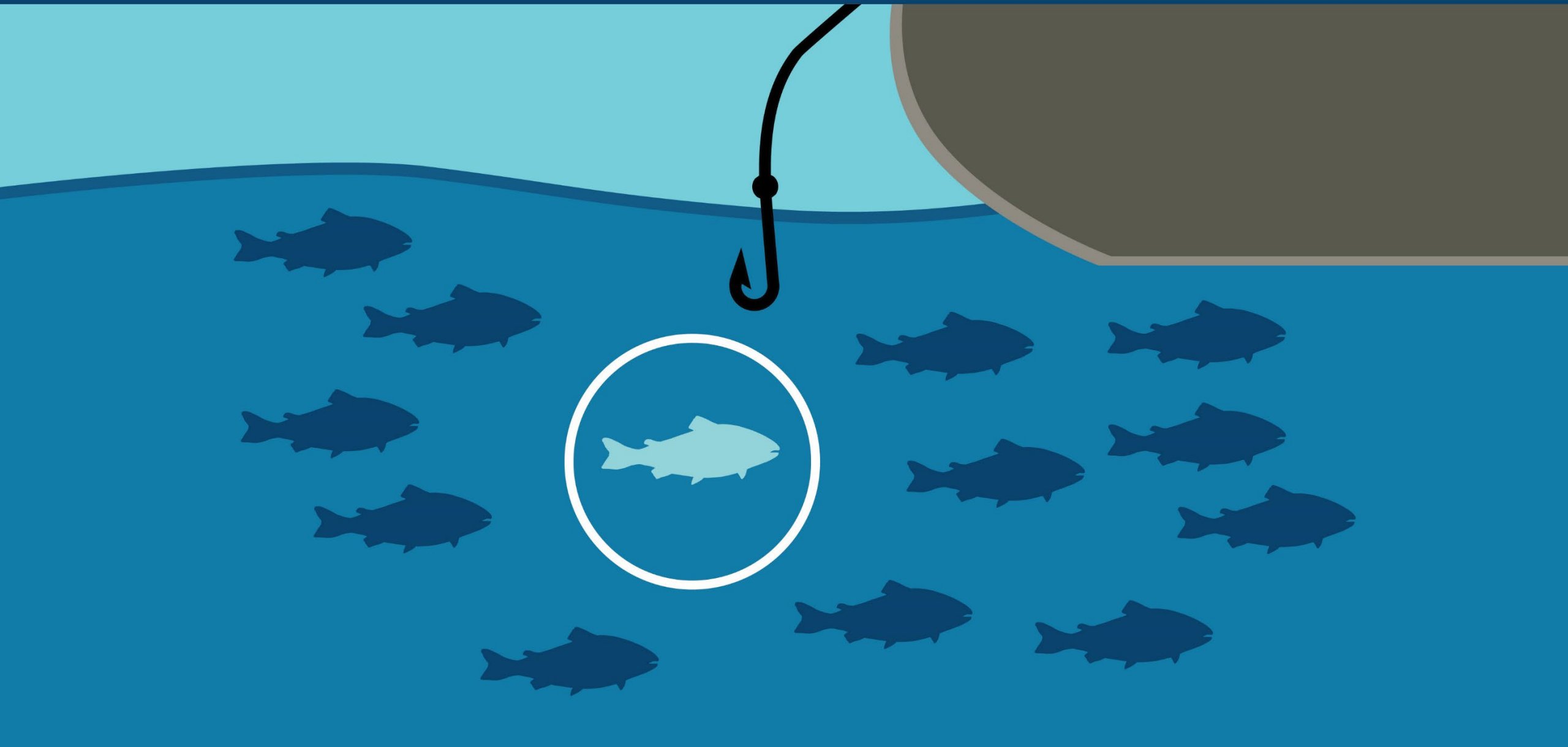
These 10 fish are split between the state and the tribes.



They come in from the ocean and congregate in the Puget Sound from all different river systems.



Salmon stocks in a poor status encountered during a “mixed stock fishery” in Puget Sound typically limit the opportunity in these types of fisheries, even though the fishery targets more abundant stocks or hatchery fish.



Comprehensive Management Plan for Puget Sound Chinook:

Harvest Management Component

PUGET SOUND INDIAN TRIBES
AND
THE WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

FEBRUARY 17, 2022

Stillaguamish payback

- **Purpose:** Ensure fisheries are implemented consistent with the management strategy developed in North of Falcon and described in the List of Agreed Fisheries.
- **Evaluated:** Non-tribal and tribal fisheries in Puget Sound with ≥ 0.1 Stillaguamish mortality.
- **Calculated as:** an aggregate in-season estimated Stillaguamish mortality versus pre-season predicted Stillaguamish mortality for all non-tribal fisheries in Washington.
- **Includes:** Winter period from previous year plus summer period from previous year.
- For 2024 preseason, winter 2022-2023 plus summer 2023
- **Result:** If estimated in-season Stillaguamish mortalities are greater than predicted pre-season, the allowable Stillaguamish mortalities in the coming pre-season are reduced by the total overage.
- Evaluation of if payback is required by the state or tribes occurs on approximately Feb. 7th.
- 2024 pre-season is the first year of implementation.

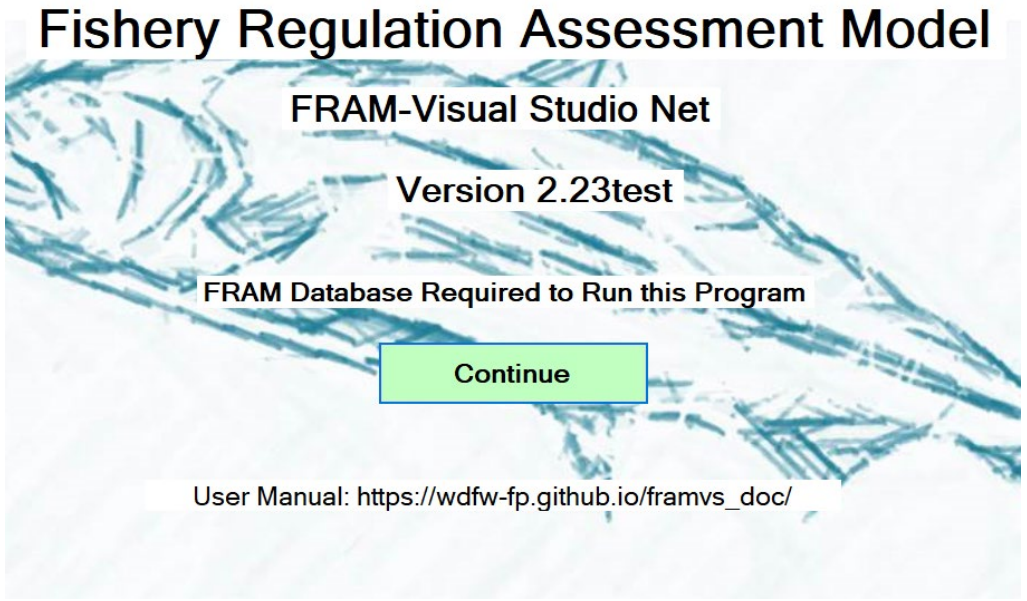
FRAM Overview

Dr. Derek Dapp, WDFW Lead Salmon Modeler

What is FRAM?

Tool used to assign impacts in mixed-stock salmon fisheries and evaluate compliance with management objectives

- **F**isheries **R**egulation **A**ssessment **M**odel



Documentation and User's Guide:
https://framverse.github.io/fram_doc/

Application and Code:
https://github.com/FRAMverse/FRAM

Purposes and use of FRAM?

Pre- and post-season assessments of fisheries on individual stocks

- Calculate landed and non-landed mortality and exploitation rates
- Examine escapement
- Evaluate achievement of management objectives
- For Chinook and coho only

Key definitions for modeling

Adult Equivalent (AEQ) Mortalities: Chinook-only "adult equivalence" is a rate applied to each fish to represent the likelihood of a given stock-age-time step returning as an adult if not killed in a fishery. It takes into account natural mortality and maturation rates. It does not necessarily mean the fish will return in that year. Coho does not use AEQ.

- **Example:** AEQ rate of 50% for some stock at age 2.

- Model predicts that, in the absence of fishing, half of the fish will die due to natural mortality prior to spawning on average.

- More likely to return as an age three, four or five fish.

Key definition for modeling

Exploitation Rate (ER): Percentage of the adult population taken by fisheries. Can be assessed as an individual fishery or combination of fisheries. Most management objectives are in terms of exploitation rate limits designated by the predicted abundance of a stock. ER objectives are stock specific.

$$ER = \frac{AEQ\ Mortalities}{AEQ\ Mortalities + Escapement}$$

$$Example\ Total\ ER = \frac{50}{50 + 100}$$

Fishery	AEQ Morts
Alaska	10
BC	10
WA	10
OR	10
CA	10
Escapement	100
Total ER	33%
SUS ER	20%

Management Objectives – Dungeness Example

If Dungeness Chinook escapement is above the LAT (low abundance threshold), manage to an ERC (exploitation rate ceiling) of 10.0% SUS ER. If escapement falls below the LAT, manage to a CERC (critical exploitation rate ceiling) of 6.0% SUS ER.

Dungeness Management Objectives	
Escapement	**Management Objective**
< 500	6.0% SUS ER
≥ 500	10.0% SUS ER

Management Objectives – Chinook (2023)

Management Unit	NMFS Guidance/Co-Manager Proposal
Nooksack River spring	10.9% SUS ER
Skagit River summer/fall	17% SUS ER
Skagit River spring-run	36% Total
Stillaguamish River	**9% UM SUS max; 14% M SUS max**
Snohomish River	20% Total / 8.3% SUS ER
Lake Washington	15% PT SUS
Green River	15% PT SUS
White River spring-run	22% SUS
Puyallup River	15% PT SUS
Nisqually River	47% Total + 2% Experimental
Skokomish River fall-run	50% total
Mid Hood Canal	<4 spawner reduction in PS
Dungeness River	10% SUS
Elwha River	10% SUS

Pre-Season Considerations - Chinook

- Management objectives (dependent on forecast returns) drive allowable fisheries.
- Chinook catches per day that the fishery is open have greatly increased in recent years in many marine areas.
- Management objectives for 2024 are unknown, but unlikely to allow for increased marine area catches that would be necessary to have season lengths from the mid to late-2010s.
- Example: MA 5 Winter

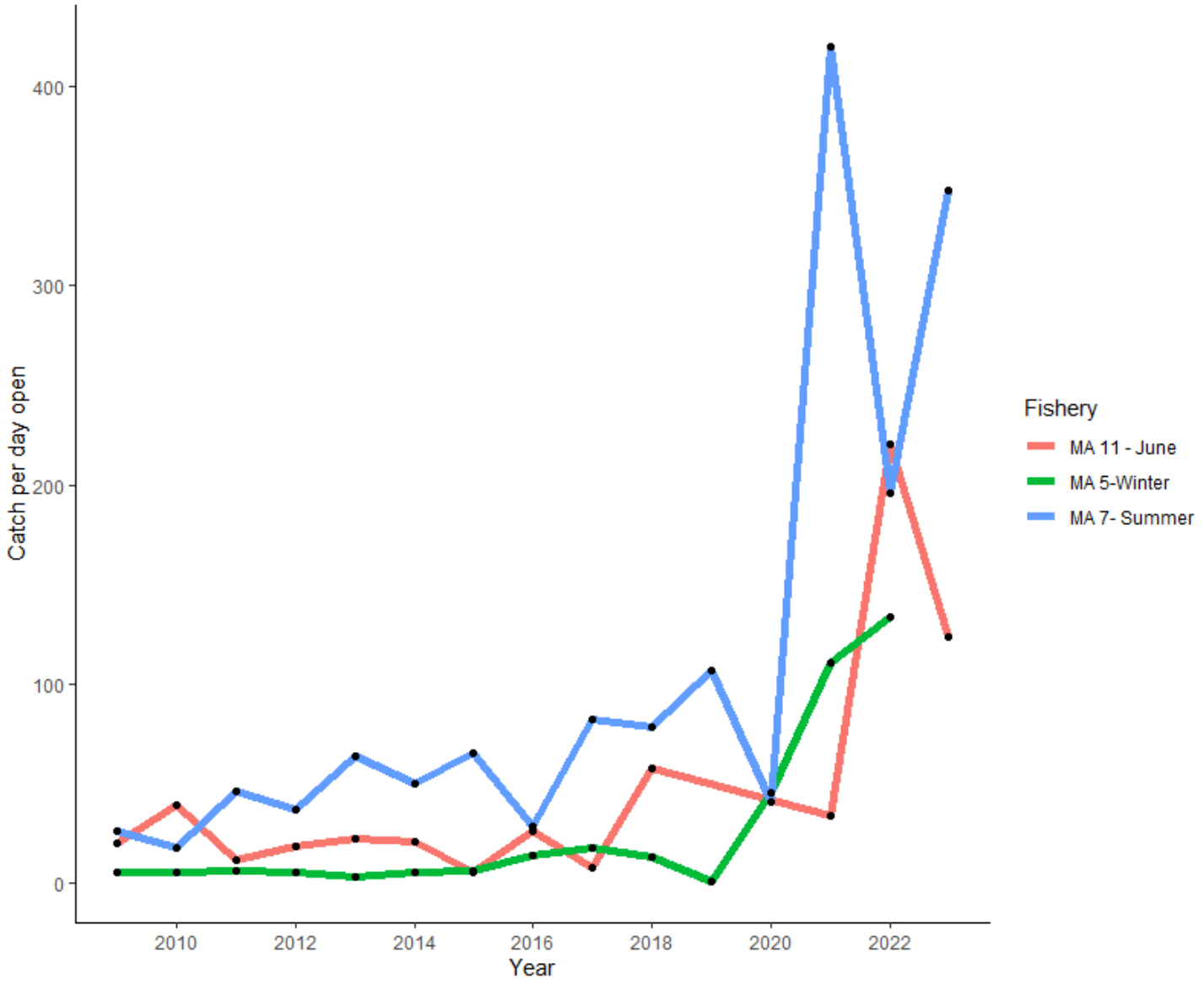
- **Marine Area 5 (Sekiu and Pillar Point)** is located on the Olympic Peninsula between the mouth of the Sekiu River to the west and Low Point (mouth of the Lyre River) to the east, and south of the U.S./Canada border within the western Strait of Juan de Fuca.

Pre-Season Considerations - Chinook

Area	Year	Period	Catch	OpenDays	Catch Per Day
5	2009-10	Oct-Apr	393	72	5
5	2010-11	Oct-Apr	482	84	6
5	2011-12	Oct-Apr	532	85	6
5	2012-13	Oct-Apr	488	85	6
5	2013-14	Oct-Apr	276	85	3
5	2014-15	Oct-Apr	460	85	5
5	2015-16	Oct-Apr	470	75	6
5	2016-17	Oct-Apr	1013	74	14
5	2017-18	Oct-Apr	820	46	18
5	2018-19	Oct-Apr	977	74	13
5	2019-20	Oct-Apr	26	25	1
5	2020-21	Oct-Apr	2761	61	45
5	2021-22*	Oct-Apr	4411	40	110
5	2022-23	Oct-Apr	1333	10	133
*2021-22 is a preliminary estimate pending CRC processing					

Pre-Season Considerations – Chinook

- **Marine Area 11 (Tacoma-Vashon Island)** is located between the north tip of Vashon Island and the Tacoma Narrows Bridge.
- **Marine Area 7 (San Juan Islands)** consists of waters south of the Canadian border containing the San Juan Islands, Haro Strait, Rosario Strait, Bellingham Bay, the southern Strait of Georgia, and the northeastern portion of the Strait of Juan de Fuca.



Pre-Season Considerations

- Given recent catch trends, aim to maximize fishing opportunity within conservation constraints while considering recreational priorities.
- Modeling tool for Chinook/coho.
- Explore scenarios for each marine area.
- Will be hosted on NOF website at the start of each meeting with modeling scenarios: https://wdfw.wa.gov/fishing/management/north-falcon/public-meetings

Marine Area 5 (Summer) - Potential Actions	Change to Stillaguamish AEQs
1.) Same effort as modeled in 2023 pre-season with new abundance (quota from 3890 to 4162)	+ 0.5
2.) Same effort as modeled in 2023 pre-season with new abundance and apply a 20% buffer (quota from 3890 to 4994)	+2.1
3.) Use 3 year average catch per day to model quota necessary to run a full MA 5 season (quota from 3890 to 6481)	+5.0
4.) Retain last year's quota (3890) and close for salmon fishing July 1-August 15; Open for Chinook during the same period as coho (Aug 16-Sept 30) such that it is unnecessary to model Chinook non-retention encounters.	-2.1
5.) Close July (Chinook season from Aug 1-15; Chinook non-retention from Aug 16-Sept 30; model using the 3 year average catch per day; quota of 2687)	-2.2

Puget Sound Season Recap

Dr. Kirsten Simonsen, Puget Sound Recreational Salmon Manager

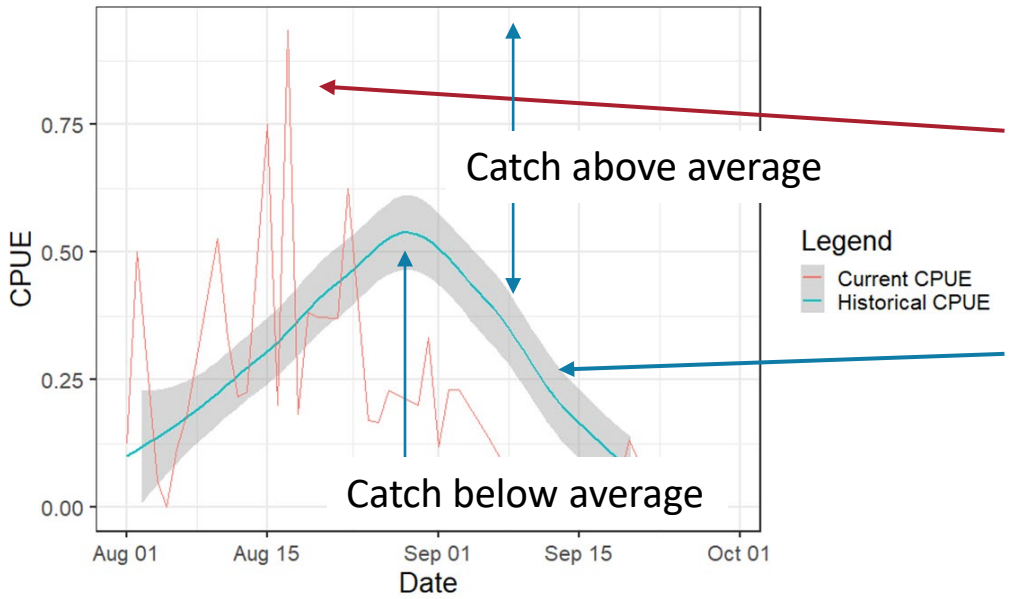
Puget Sound Season Recap

MA-7 and -9

- Chinook data displayed as harvest per open day
  - Harvest: number of legal-marked Chinook caught
- Coho / Pink displayed as CPUE
  - CPUE: catch per unit effort. This is a rate of catch (fish/angler) for each day of the fishery

MA-10 and -11

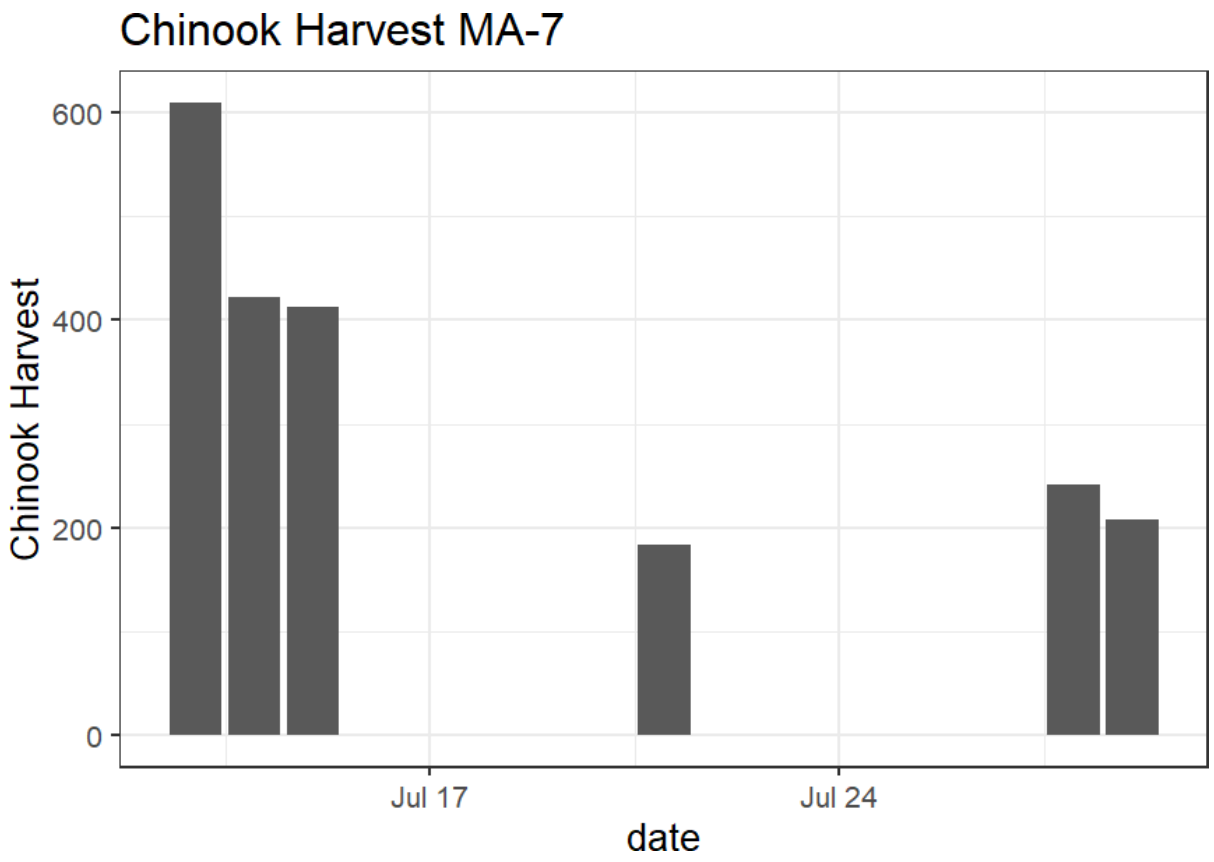
- All displayed as CPUE



Current CPUE: current year of data (2023)

Historical CPUE: average of previous 5 years (5 odd-years for Pink)

Chinook Catch MA-7 (San Juan Islands)

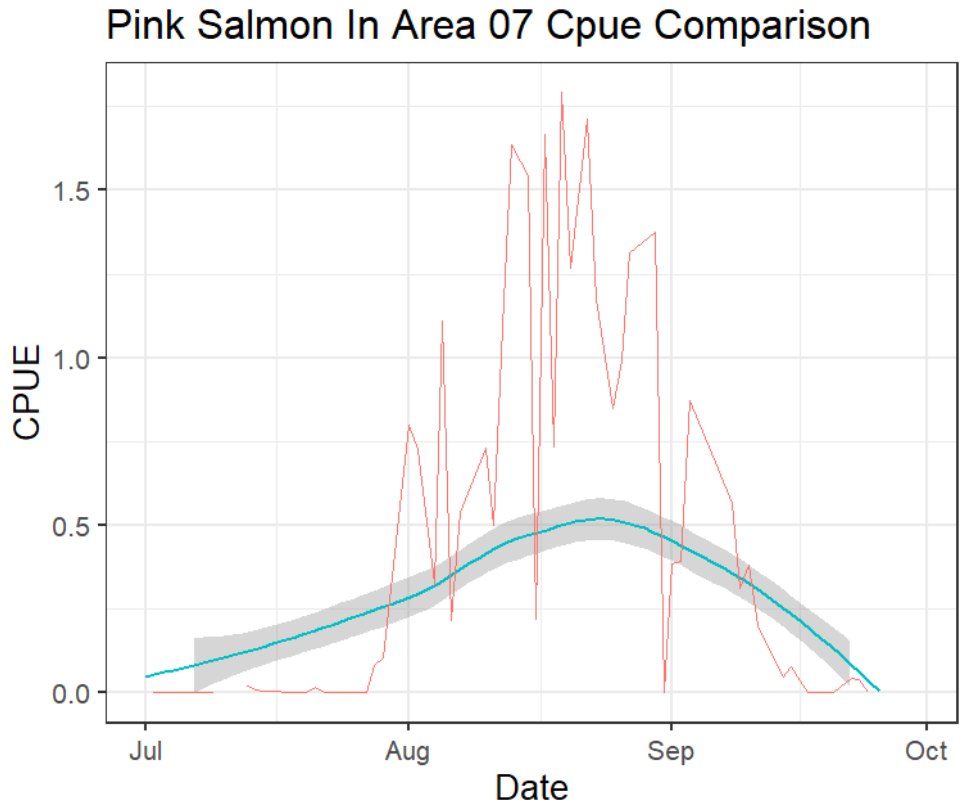


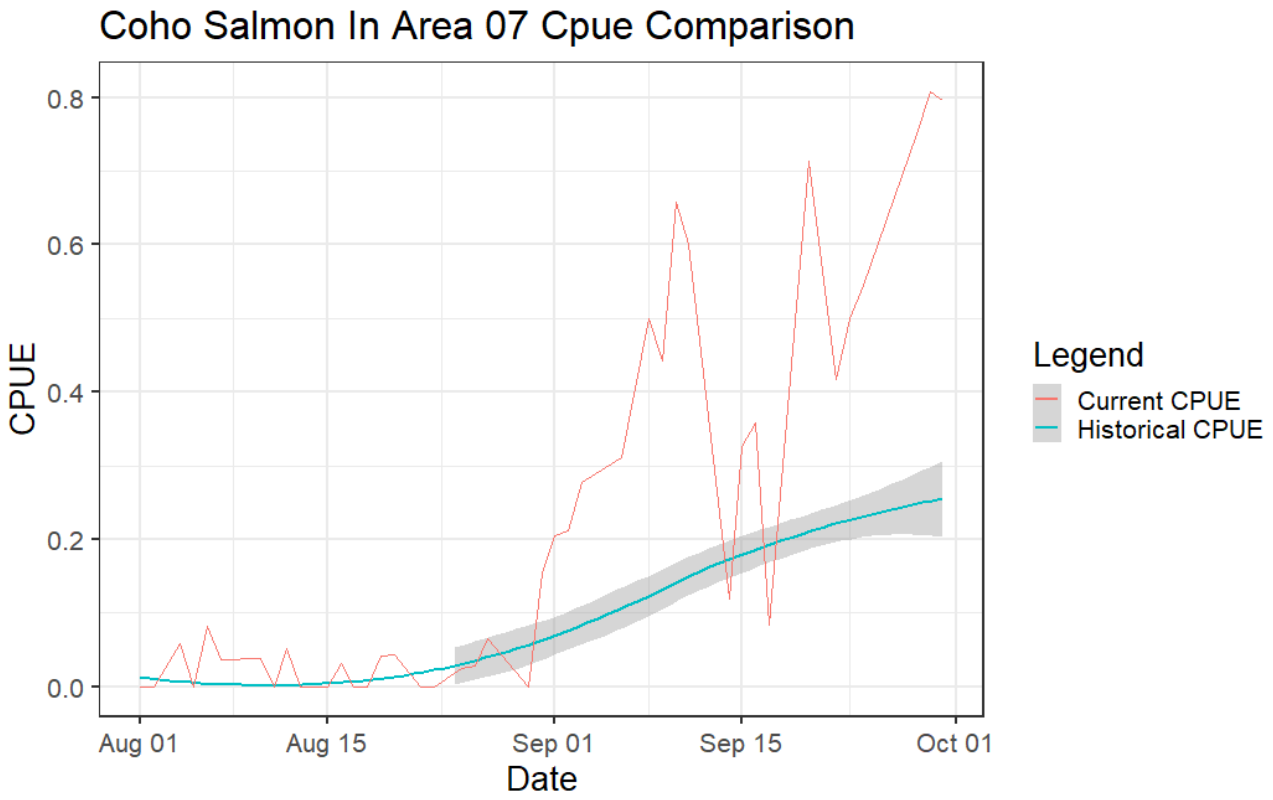
Planned Season:
July 13 – 15

Actual Season:
July 13 – 15, 21, 28, 29

Fishery Controls	FRAM	Est.	%	Est. Thru
Harvest Quota	2,181	2,088	**96%**	7/29
Unmarked Encounters	4,258	2,687	**63%**	
Sublegal Encounters	2,544	2,687	**106%**	

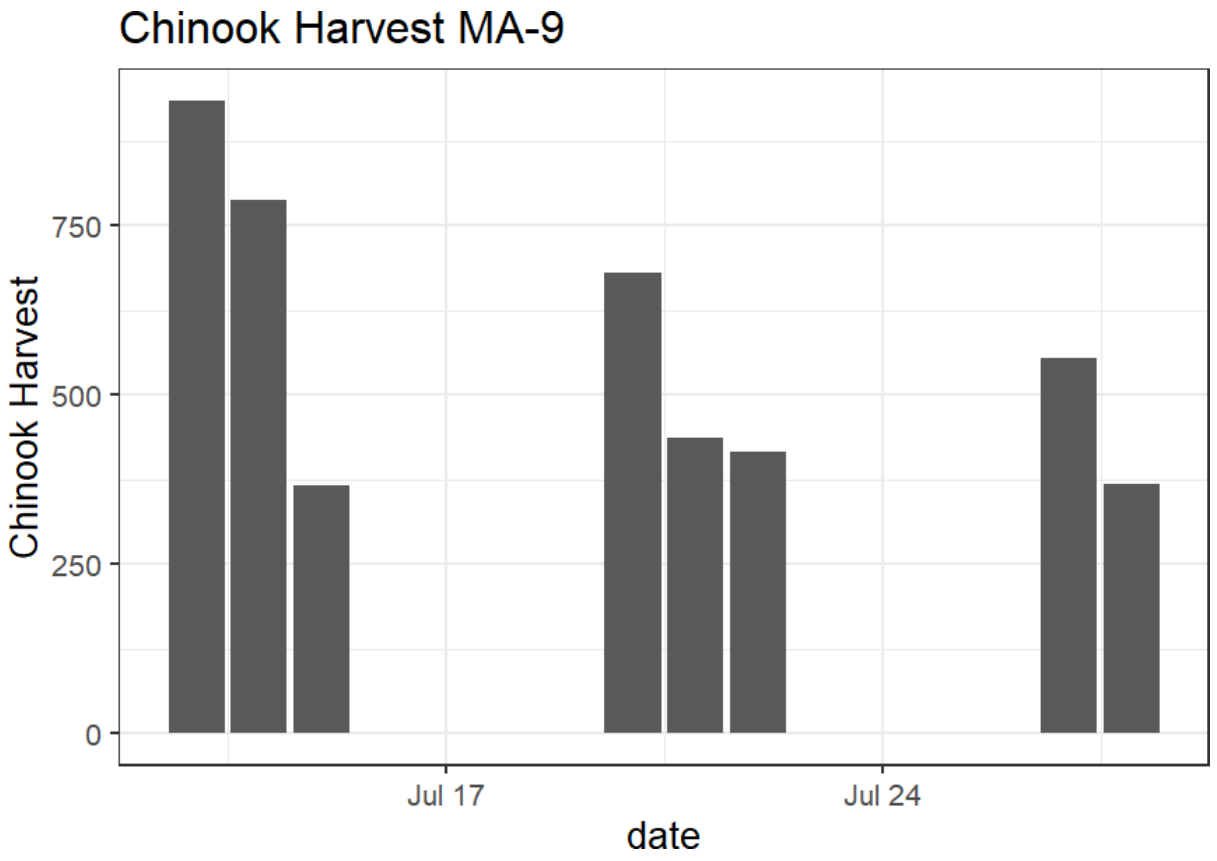
MA-7 Pink and Coho CPUE





- **Mark-Selective fishery for Coho 8/1 – 8/31**
- **Non-Selective for Coho 9/1 – 9/30**
- ***2 Additional pinks August 19th**

Chinook Catch MA-9 (Admiralty Inlet)

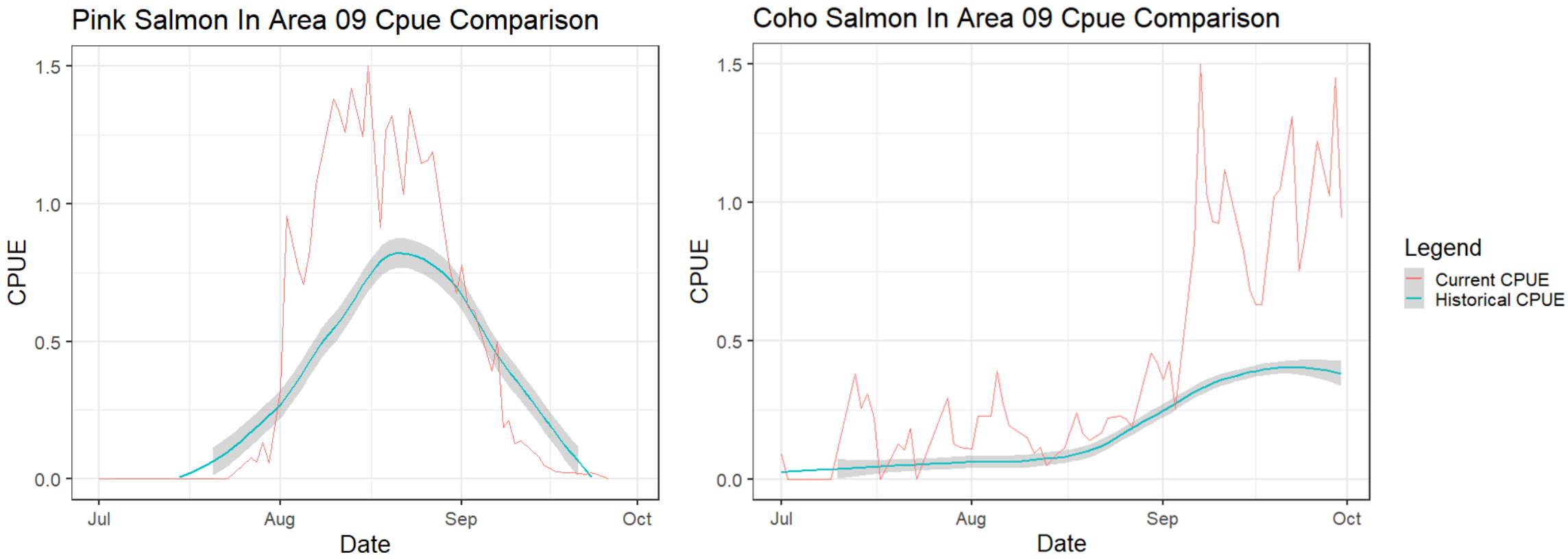


Planned Season:
July 13-31 Thurs-Sat only

Actual Season:
July 13-15, 20-22, 27-28 closed 7/29

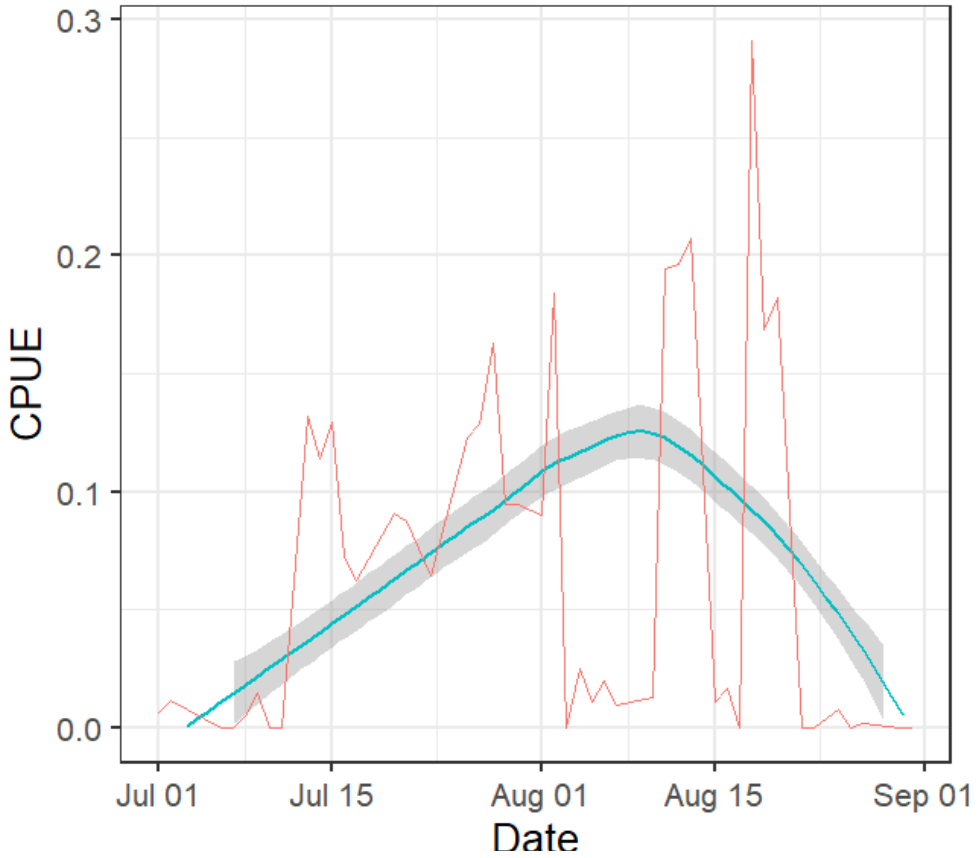
Fishery Controls	FRAM	Est.	%	Est. Thru
Harvest Quota	4,300	4,558	**106%**	7/28

MA-9 Pink and Coho CPUE



- **Mark-Selective fishery through 9/17**
- **Non-Selective fishery 9/18 – 9/30**
- **Open through 9/30**

Chinook CPUE - MA-10 (Seattle/Bremerton)



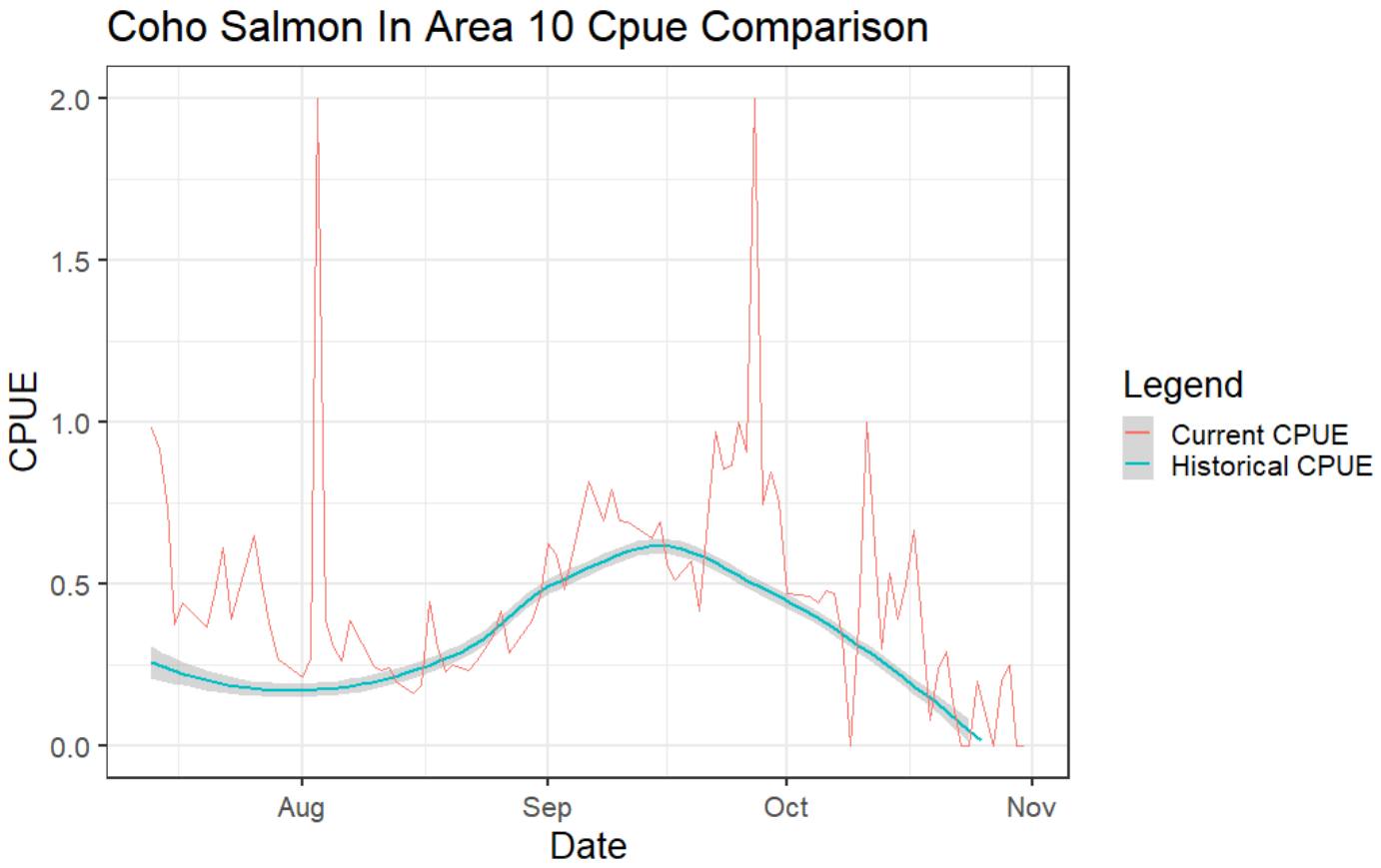
Planned Season:
July 13 – Aug 31

Actual Season:
July 13 – August 3, August 11 – 13
August 18 – 20

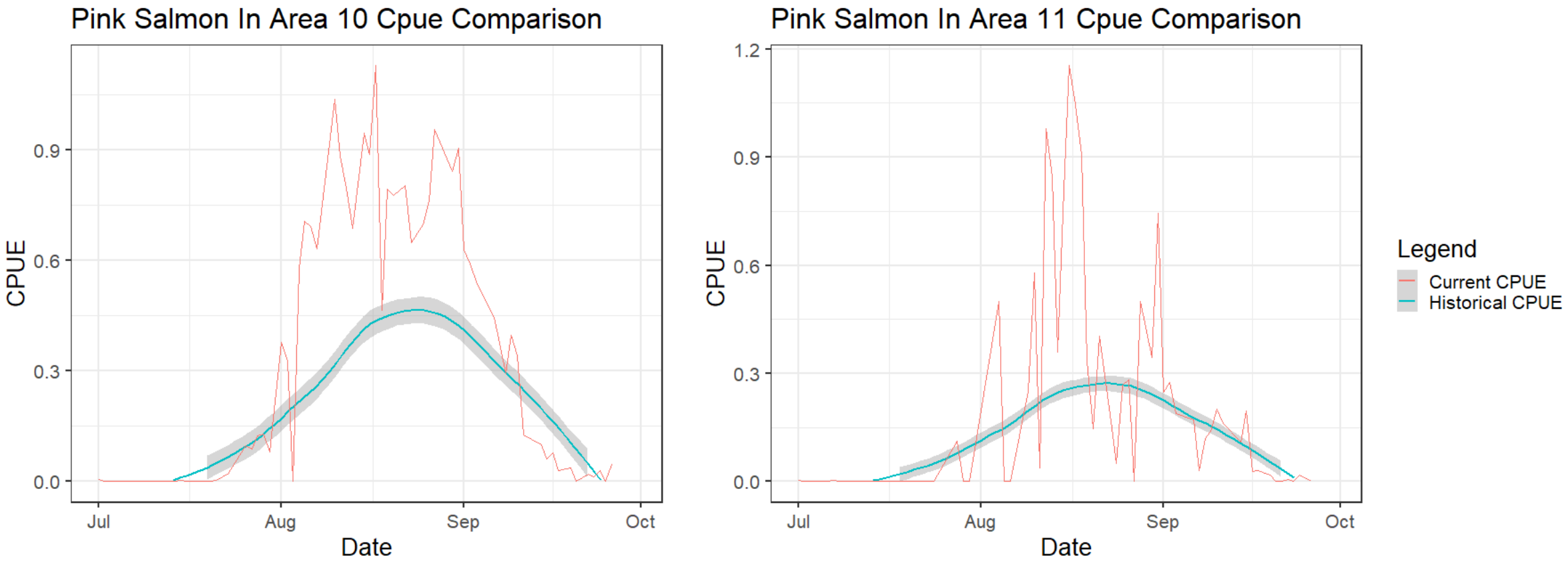
Fishery Controls	FRAM	Est.	%	Est. Thru
Harvest Quota	3,566	3,420	**96%**	8/20
Sublegal Encounters	7,748	9,079	**117%**	

MA-10 Coho CPUE

- Non-Selective for Coho
- Open through 10/31
- 1-Coho limit in early Aug due to high catch totals
- Back to 2-Coho limit to spread out pressure on central sound



Pink CPUE – MA-10 and MA-11



***2 Additional pinks Sept 8**

Chinook Season - MA-11 (Tacoma)

- June and July were modeled as separate seasons, each with separate quotas and controls
- Due to difference in stocks modeled in MA-11 during these times

Planned Season:

Opens June 1, Thurs-Sunday only.

July 1– Sep 30, Thurs-Sunday only

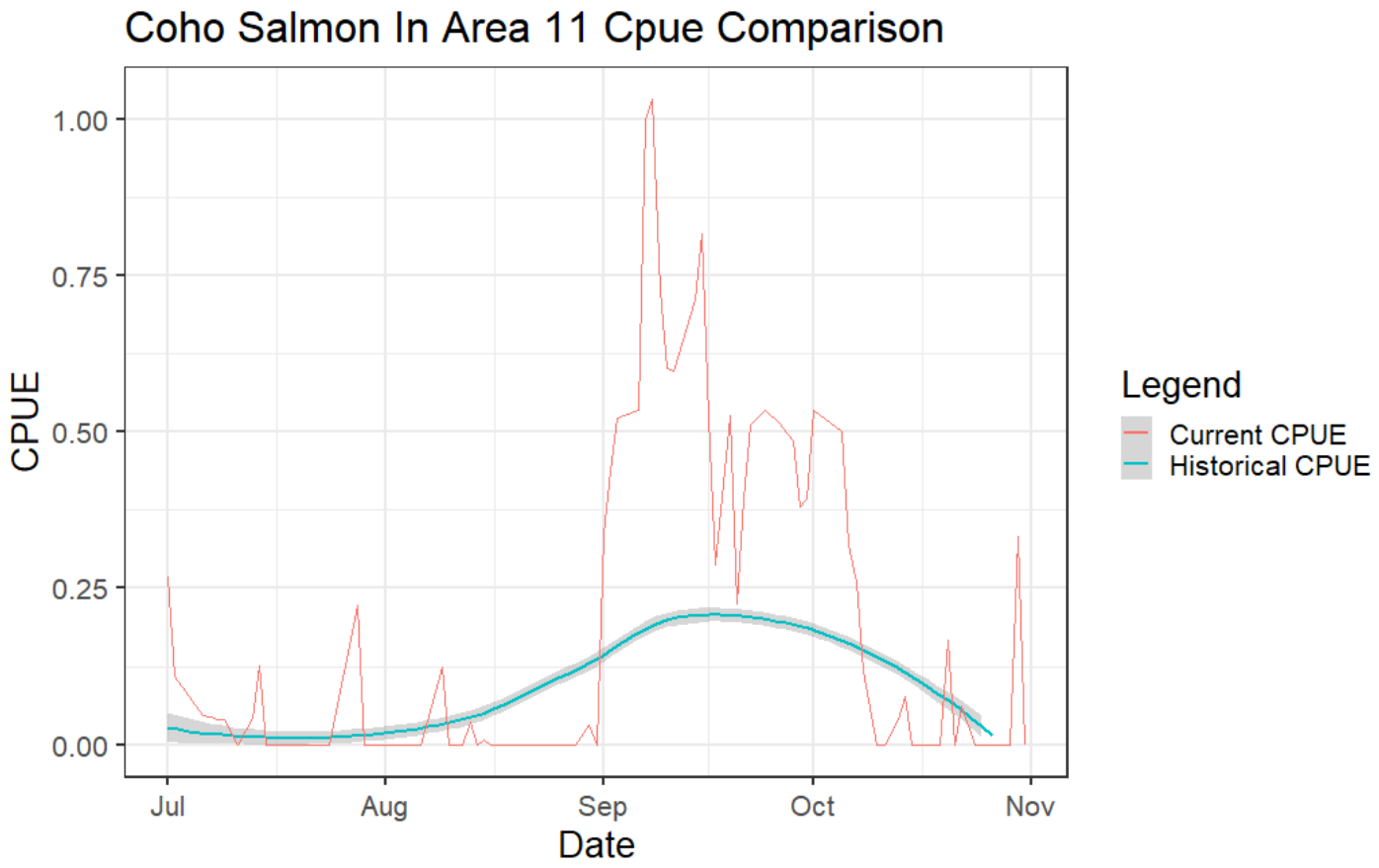
Actual Season:

June 1-4, 8-11, closed June 15th.

July 1-2, 6-9, 13-14, closed July 15th.

Month	Fishery Controls	FRAM	Est.	%	Est. Thru
June	Harvest Quota	1,423	988	69%	6/11
	Sublegal Encounters	1,697	1,130	67%	
	Unmarked Encounters	901	1,036	**115%**	
July	Harvest Quota	3,379	820	24%	7/16
	Sublegal Encounters	3,845	3,715	**97%**	
	Unmarked Encounters	1,858	2,002	**93%**	

MA-11 Coho CPUE



- Pre-season modeling did not include Chinook non-retention impacts until September.
  Due to high impact on unmarked (wild) Chinook in July, we were unable to open Pink and Coho fishery in the Marine Area in August
  - Shore-based only in August
  - Marine Area fishery reopened 9/1

  Coho non-selective
  Open through 10/31

2023 Coho In-Season Management

Marine Area	Metric	Pre-Season Prediction	Estimate	%
MA-9	Retained	928	3277	353%
	Total Encounters	3041	8072	265%
MA-10	Retained	4,810	12,717	264%
	Total Encounters	9,610	17,029	177%
MA-11	Retained	323	562	174%
	Total Encounters	643	689	107%

* July catch estimates

- In-season management actions taken in MA-10 but not other areas where catch was high
- Two reasons:
  - Magnitude of catch in MA-10 in July higher than other areas during same time
  - Concern for impacts to Coho stocks of concern, namely Skagit River wild Coho-

Coho directed fisheries and Chinook impacts

- Accounting for catch and release impacts to Chinook during pink and coho directed fisheries important
- Additional intensive monitoring has been implemented since 2020 during Coho fisheries to assess Chinook impacts
- Any salmon directed fishery has potential to impact our conservation goals

Looking Ahead

Mark Baltzell, Statewide Salmon and Steelhead Manager
Dr. Kirsten Simonsen, Puget Sound Recreational Salmon Manager

What are 2024 salmon season expectations?

- Forecasts will be finalized in mid/late February
- Stillaguamish Chinook will continue to restrict Marine Area fisheries opportunities
- Not a pink year
- WDFW will continue to provide a diverse and balanced suite of Marine and Freshwater fisheries opportunities that stay within conservation and recovery objectives

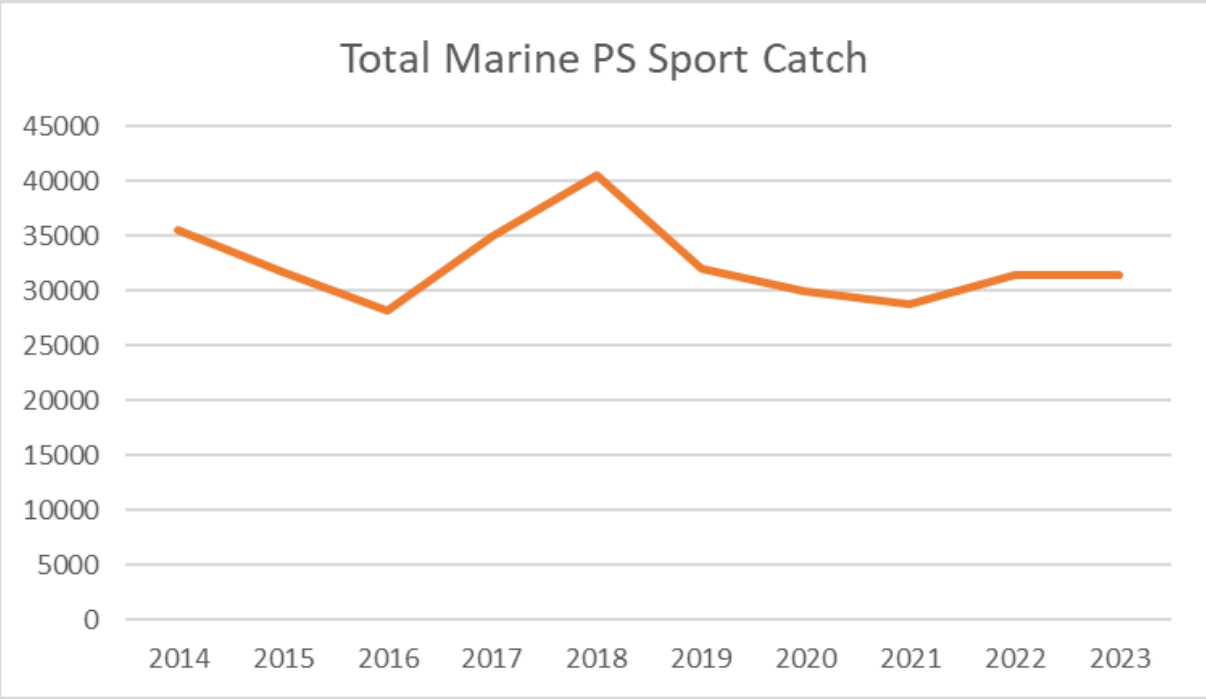
In-Season Management and the List of Agreed Fisheries (LOAF)

- Fisheries need to be monitored so that we can ensure we are implementing fisheries consistent with the Chinook Harvest Management Plan and meeting our conservation and recovery objectives. In-season management is a tool that helps us achieve those objectives.
- List of Agreed Fisheries is a co-manager document that captures all the planned state and tribal fisheries in a given fishing year (May-April). Document includes recreational and commercial fishery impact limits (harvest quota's, encounter thresholds).
- Deviations from the LOAF can occur through co-manager agreement, agreed-to in-season update tools such as test fisheries or other stock/return assessment tools.
- Document published 7-10 days following final agreement on seasons.

Recent year opportunities/choices/priorities

- Not all marine salmon fisheries are the same. Some areas like Area 7 have high mortalities (impacts) in the modeling on Stillaguamish Chinook.
- Anglers have consistently favored using limited available Chinook mortalities (impacts) on Summer fishing opportunities directed at returning adults as opposed to winter fisheries targeting blackmouth (immature Chinook).
- WDFW/Anglers have favored maximizing pink and coho seasons which also have Chinook mortalities (release mortality).
- WDFW has attempted to balance opportunities that maximize catch, maximize fishing time (season), provide for freshwater harvest, across time and geographic area, within conservation constraints.

Pre-Season Sport Modeled Catch (Summer + Winter)

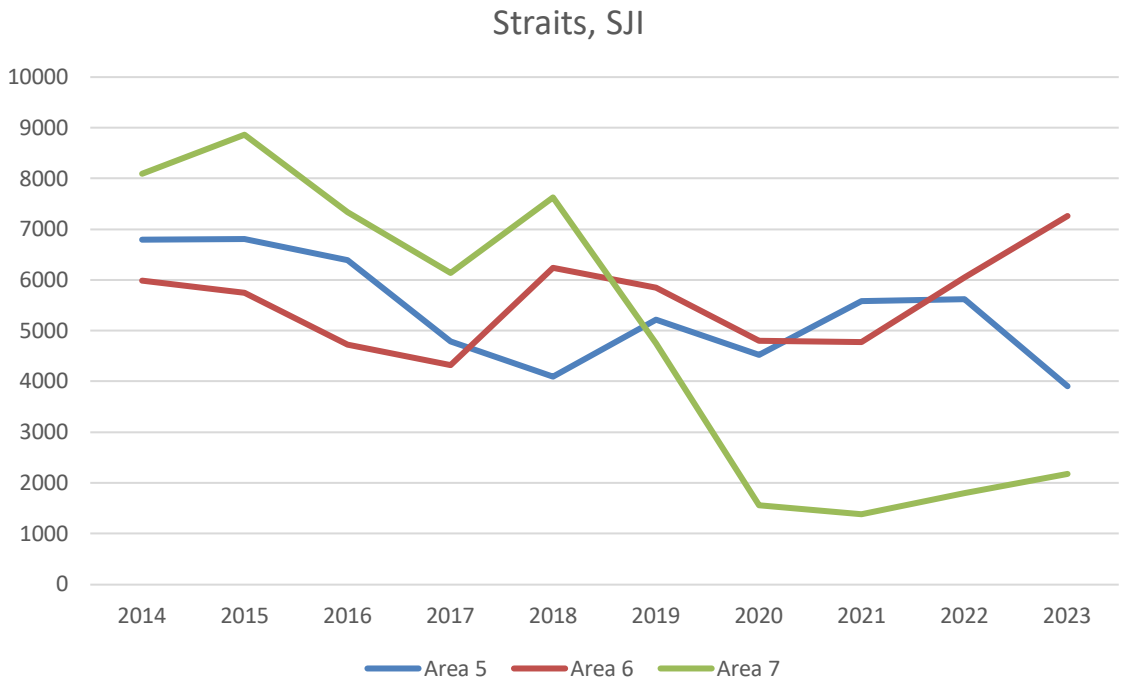


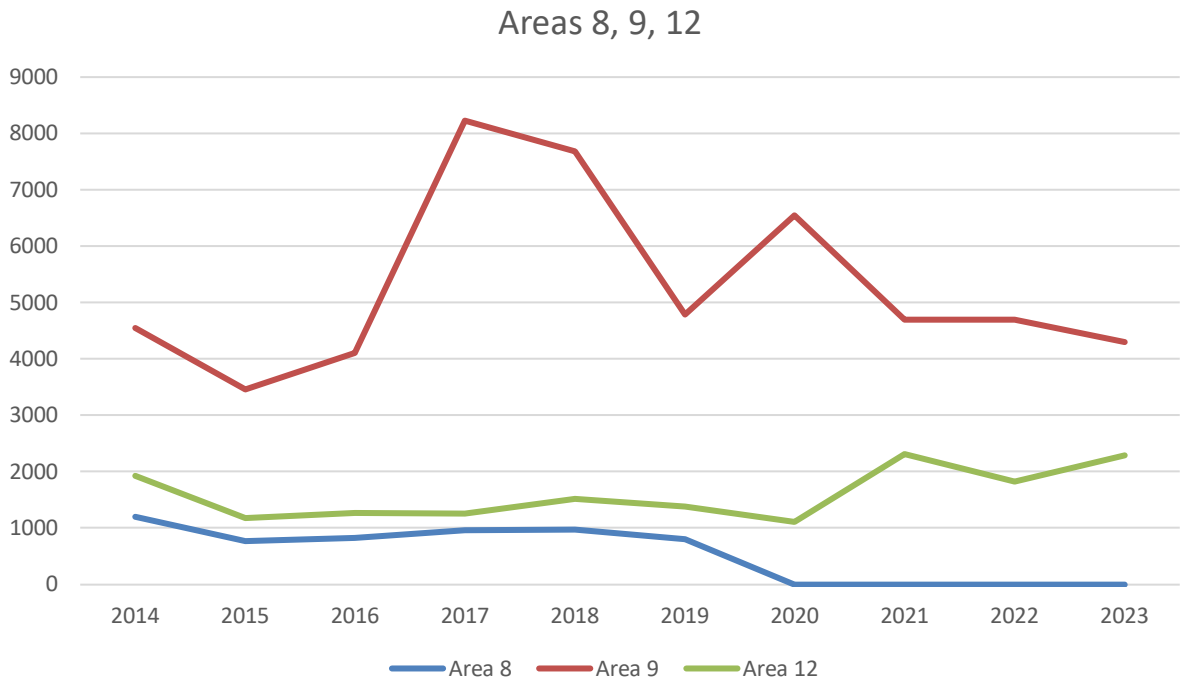
	SPS Terminal Run Size		
Year	Hatchery	Off-Station	Wild
2014	40,009	4,177	3,135
2015	47,024	6,021	5,270
2016	79,624	8,940	6,621
2017	145,080	11,746	8,715
2018	103,887	12,817	7,318
2019	84,806	14,120	5,511
2020	55,979	7,505	5,706
2021	85,050	11,966	6,354

This and graphic and those on the next two slides represent an aggregate of pre-season modeled summer and winter marine area sport catch.

2017 and 2018 = extraordinary years.
2017 was the second highest hatchery return of South Puget Sound Chinook since 1975.

Pre-Season Sport Modeled Catch

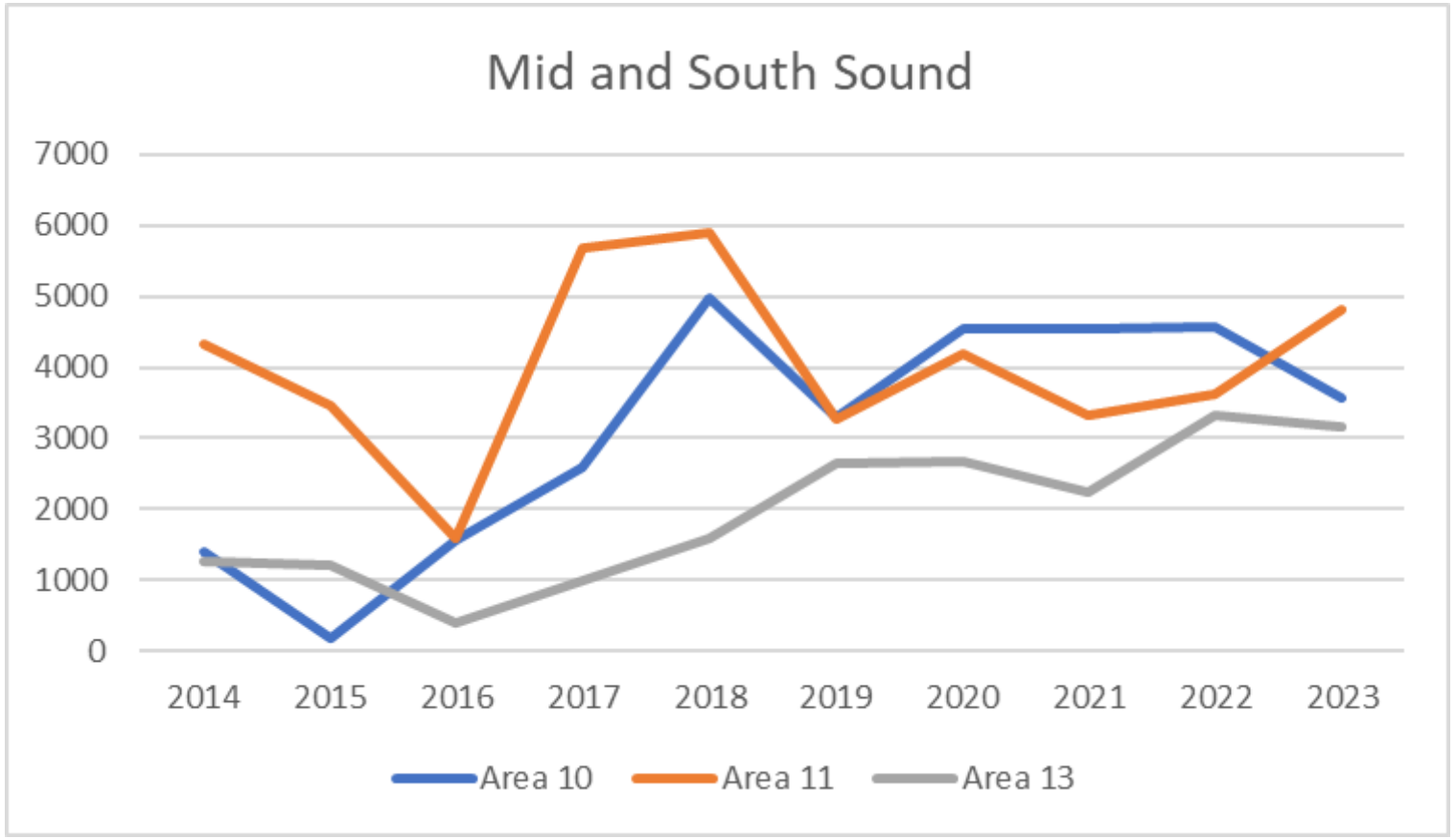




Relatively stable modeled catches in 5 and 6, perhaps 5 with a decreasing trend, 6 perhaps increasing. Reduction in 7 due to constraining stocks.

Stable modeled catches in 12. Reduction in 8 and 9 due to constraining stocks. But, major effect of 2017 and 2018 for 9.

Pre-Season Sport Modeled Catch



Stable modeled catches in 11, especially when accounting for 2017 and 2018. Increases in 10 and 13.

Post-Season Marine Sport Modeled Chinook Catch

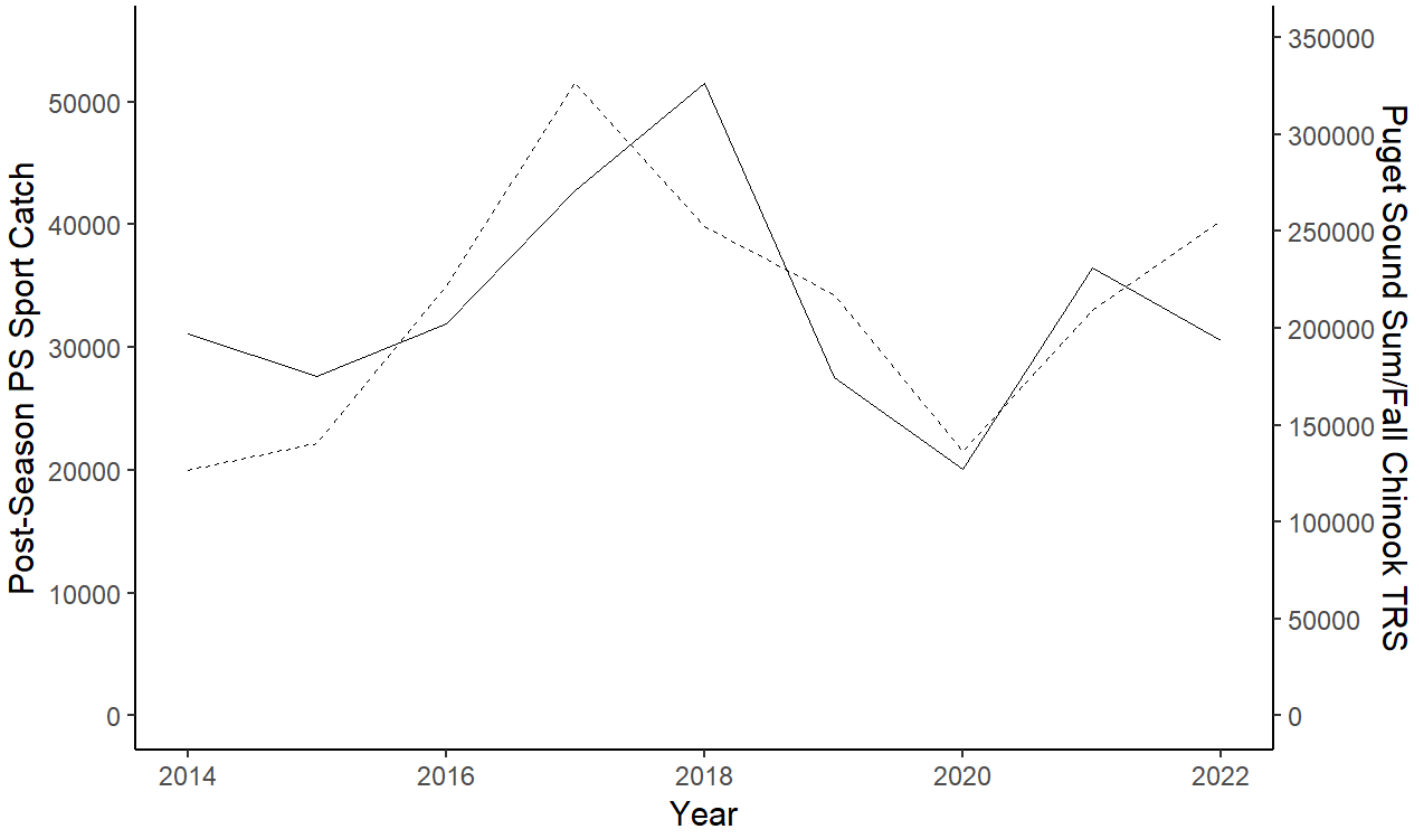


Figure: Summer + Winter Chinook sport catch in Puget Sound (solid line) and Puget Sound Summer/Fall Chinook returns (dotted line).

- Pre-season catches important for planning purposes.
- Post-season catches are the estimated actual catches in a fishing season.
- Trends of catch in Puget Sound sport fisheries follow trends in Summer/Fall Chinook returns.

Challenges related to future recreational opportunity

MA-7 Average Catch per Day

2009 – 2018: 50

2019 – 2023: 222

MA-9 Average Catch per Day

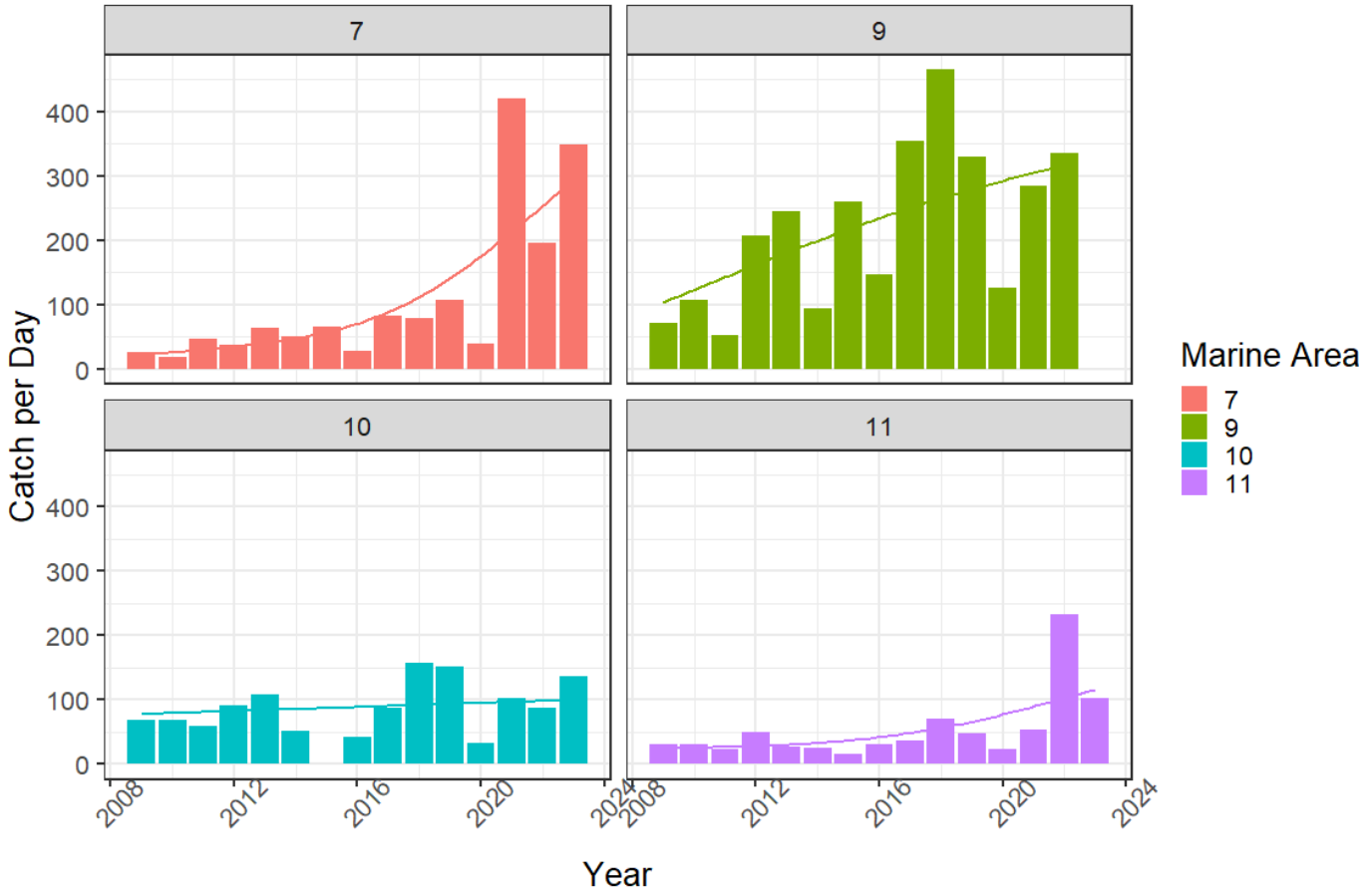
2009 – 2016: 147

2017 – 2022: 315

MA-11 Average Catch per Day

2009 – 2021: 24

2022 – 2023: 172



Challenges related to future recreational opportunity

- Recreational salmon fisheries have seen recent year trends of increasing effort and catchability.
- Trends and fishery success are readily available through social media that informs an increasingly mobile fishing fleet.
- As opportunities decrease, effort concentrates in available time and areas causing harvest and encounter levels to be reached sooner than planned.
- Irregularity in the trends make predictability in any given year much harder.
- As climate change continues, anomalous weather patterns, increased flooding, prolonged droughts, and other phenomenon will add to increased uncertainty and predictability
- ESA listed populations not recovering since 1999 listing. Fisheries remain constrained until improvement is seen.

Preliminary 2024 Washington Salmon Season Meeting Schedule

Date	Purpose	Location/Contact
Feb. 28 (Wed)	Willapa/Grays Harbor salmon forecast meeting	Online only
March 1 (Fri)	WDFW salmon forecast kickoff meeting	In-person and online Office Building 2 Auditorium 1115 Washington St SE, Olympia, WA 98501 (time TBD)
March 6 - 11	Pacific Fishery Management Council meeting	Doubletree by Hilton Fresno Convention Center 2233 Ventura Street, Fresno, CA 93721
March 13 (Wed)	WDFW and public North of Falcon meeting #1	In-person and online Office Building 2 Auditorium, 1115 Washington St SE, Olympia, WA 98501 (time TBD)
March 19 (Tue)	Recreational Fisheries Discussion - Coastal Freshwater and Puget Sound	Zoom (6-8pm)
March 21 (Thu)	Columbia River fisheries	Ridgefield, WDFW office and Teams (hybrid) (10am)

(Please note that highlighted dates and locations are tentative and subject to change based on meeting space availability, co-manager policymakers' schedules, and other considerations. Shaded cells are where WDFW has planned public engagement on proposed seasons.)

Preliminary 2024 Washington Salmon Season Meeting Schedule Cont.

Date	Purpose	Location/Contact
March 21 (Thu)	Recreational Fisheries - Puget Sound freshwater and Puget Sound	Zoom (6-8 pm)
March 27 (Wed)	WDFW and public North of Falcon meeting #2	In-person and online Lynnwood Embassy Suites, 20610 44th Avenue West, Lynnwood, WA 98036 (time TBD)
March 27 (Wed)	NE of McNary/Upper Columbia/Snake River	Location TBD, Clarkston, WA (6-8 pm)
March 28 (Thu)	Willapa/Grays Harbor fisheries	Zoom (6-8 pm)
April 6 - 11	Pacific Fishery Management Council meeting	The Westin Seattle, 1900 5th Avenue, Seattle, WA 98101
April 16 (Tue)	Willapa/Grays Harbor final proposed fisheries	Zoom (6-8 pm)

(Please note that highlighted dates and locations are tentative and subject to change based on meeting space availability, co-manager policymakers' schedules, and other considerations. Shaded cells are where WDFW has planned public engagement on proposed seasons.)

Q&A