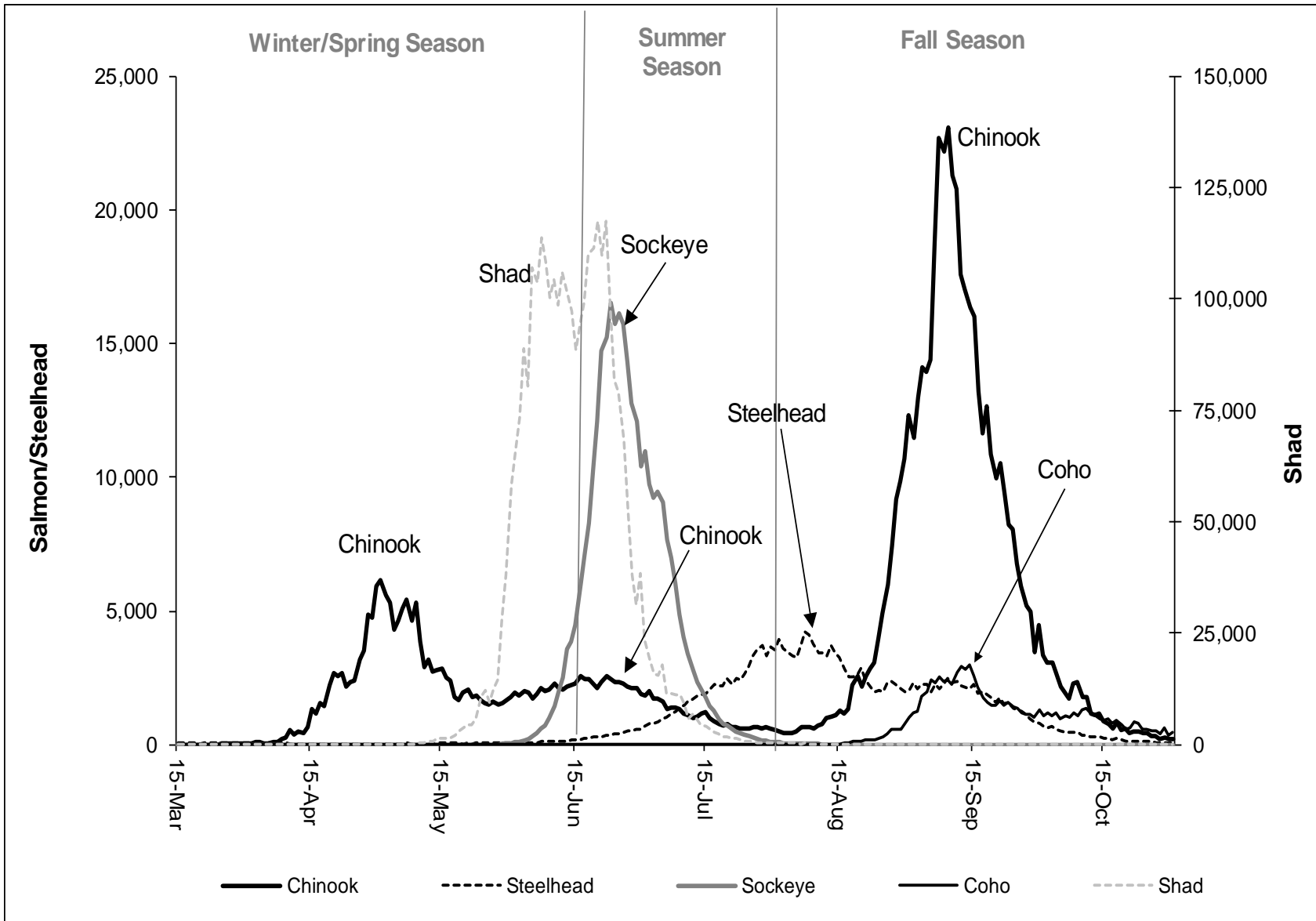


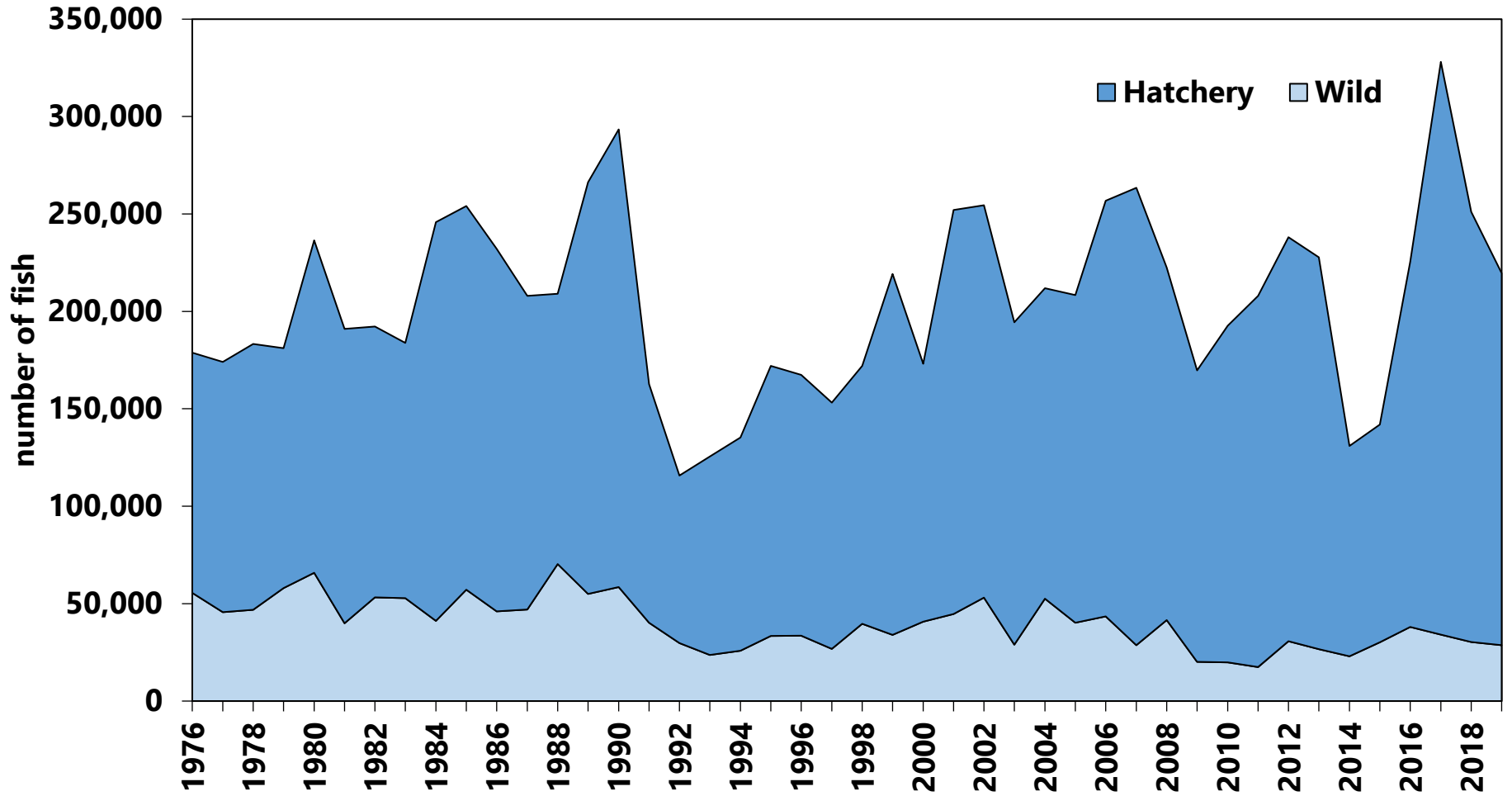
Columbia River Salmon and Steelhead Returns



Average daily counts of salmon, steelhead, and American Shad at Bonneville Dam, 2008–2019.

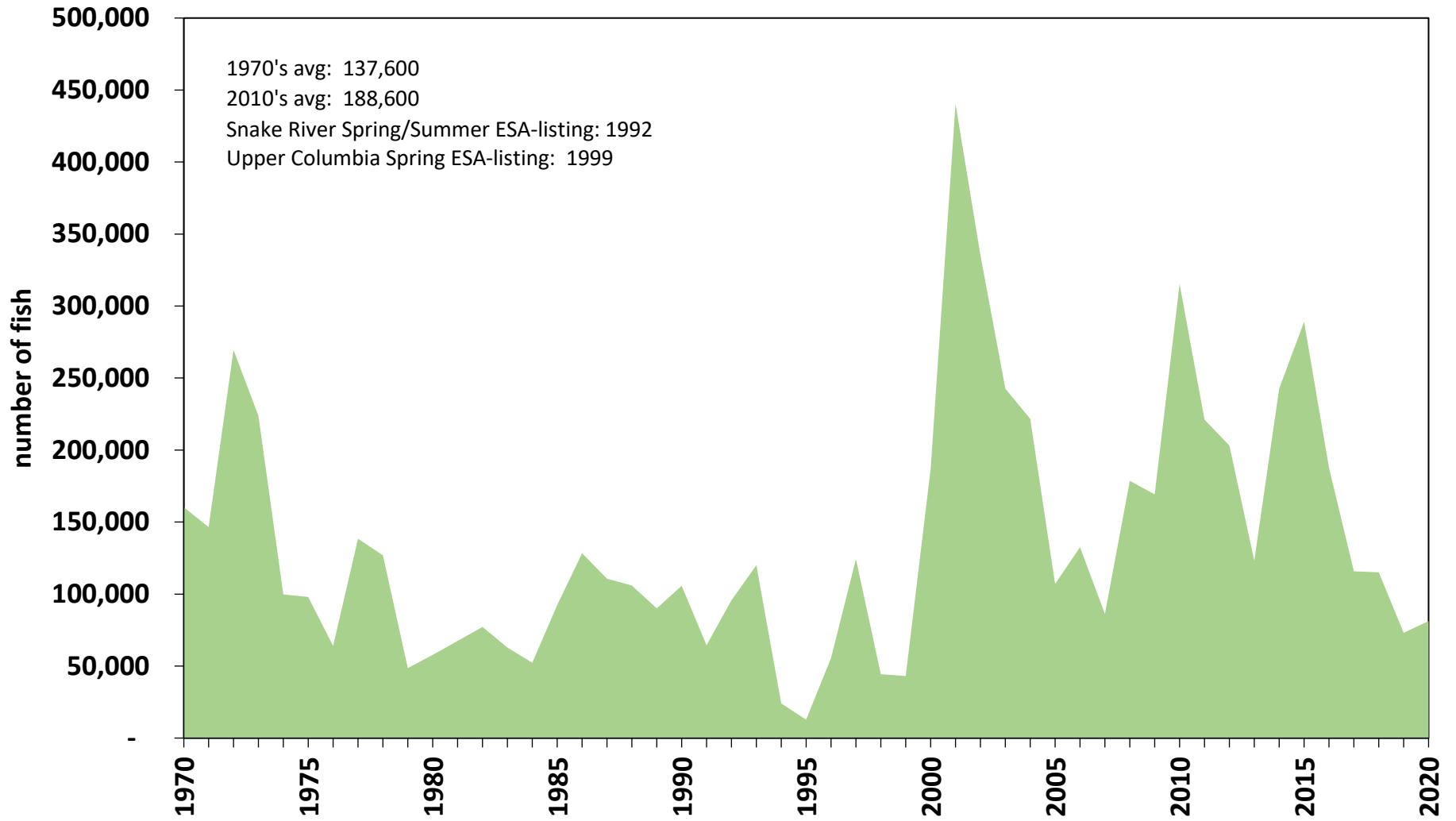
Columbia River Salmon and Steelhead Returns

Puget Sound Chinook Returns



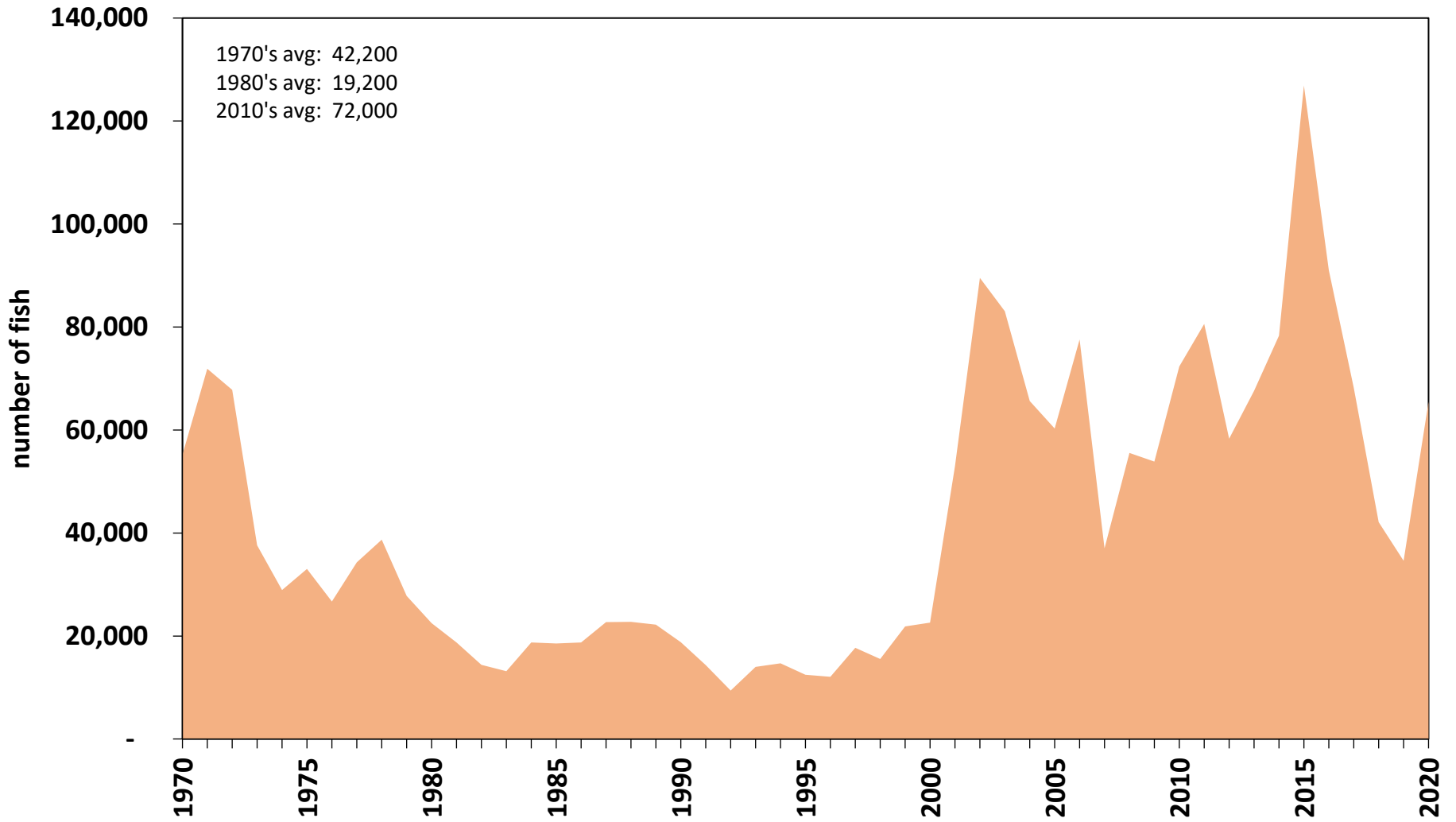
Columbia River Salmon and Steelhead Returns

Columbia River Upriver Spring Chinook Returns



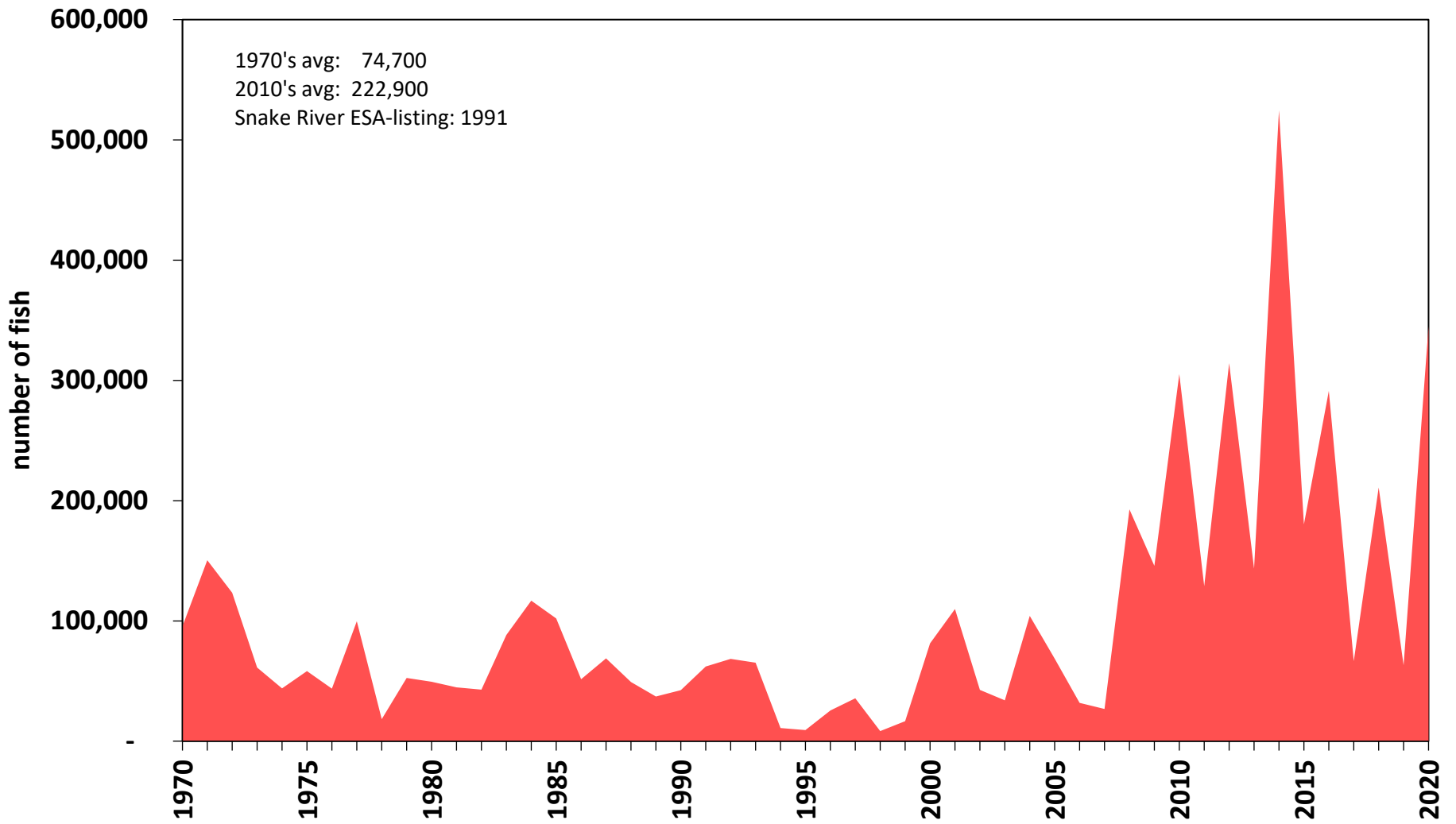
Columbia River Salmon and Steelhead Returns

Upper Columbia River Summer Chinook Returns



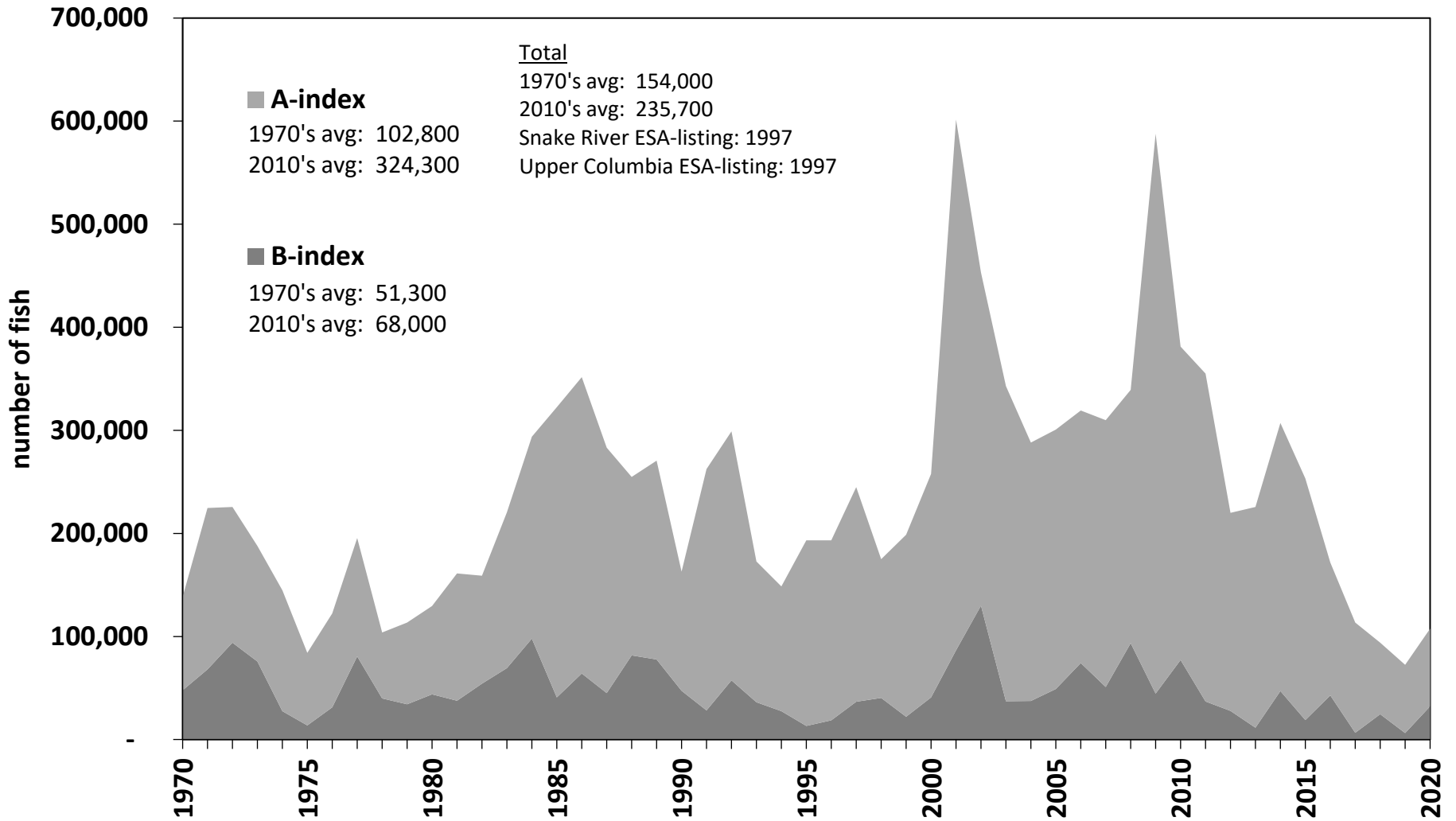
Columbia River Salmon and Steelhead Returns

Columbia River Sockeye Returns



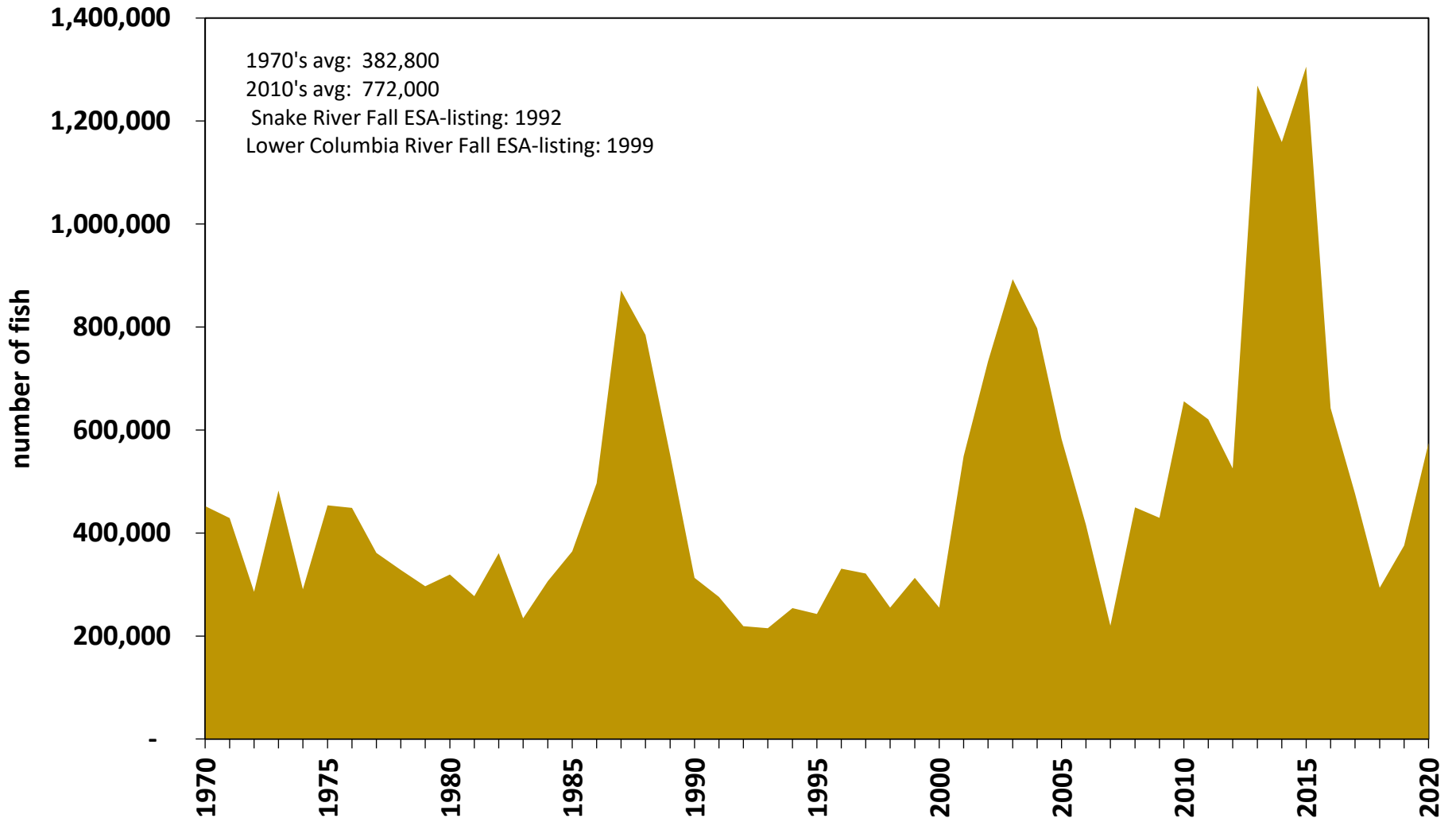
Columbia River Salmon and Steelhead Returns

Columbia River Upriver Summer Steelhead Returns



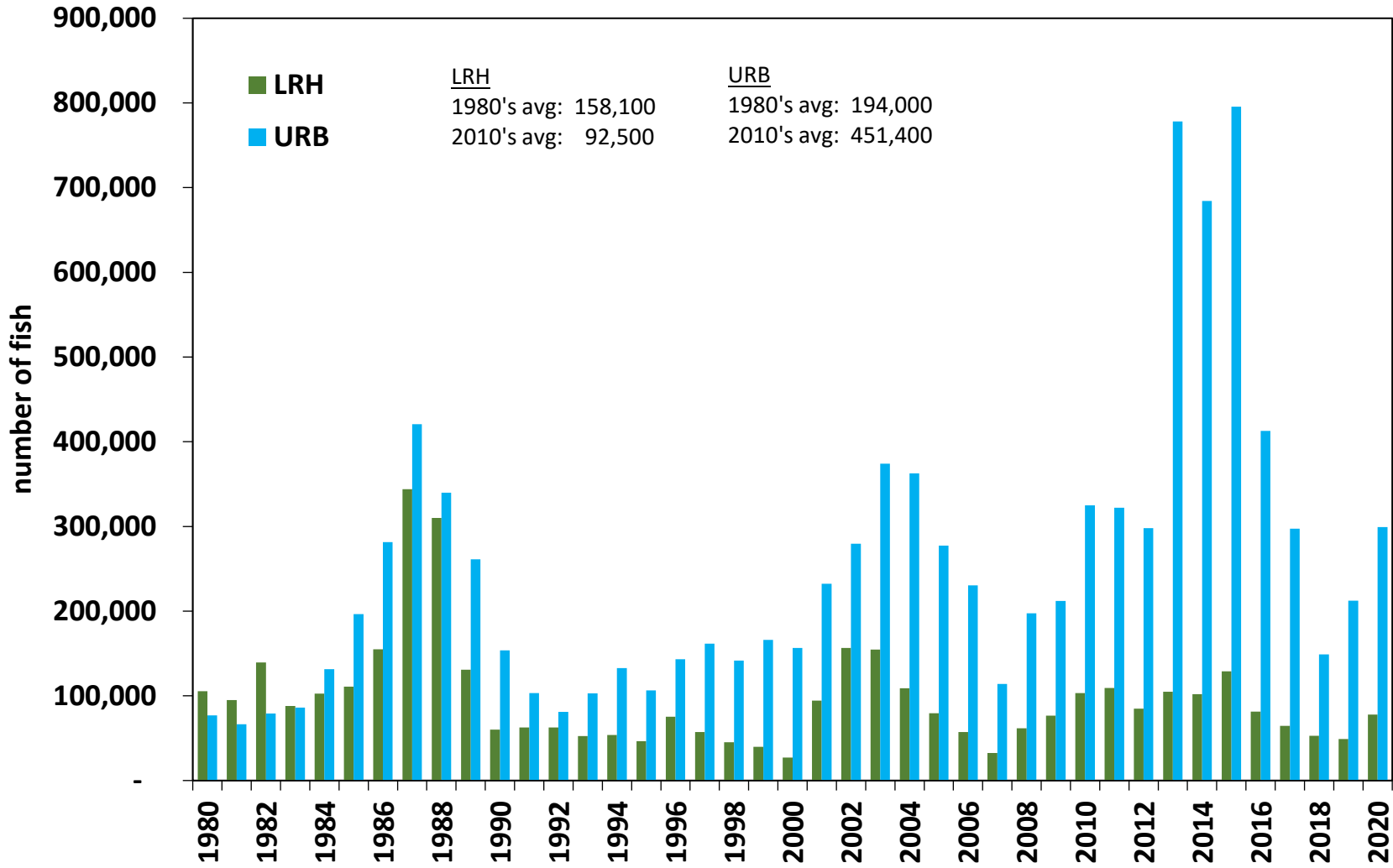
Columbia River Salmon and Steelhead Returns

Columbia River Fall Chinook Returns



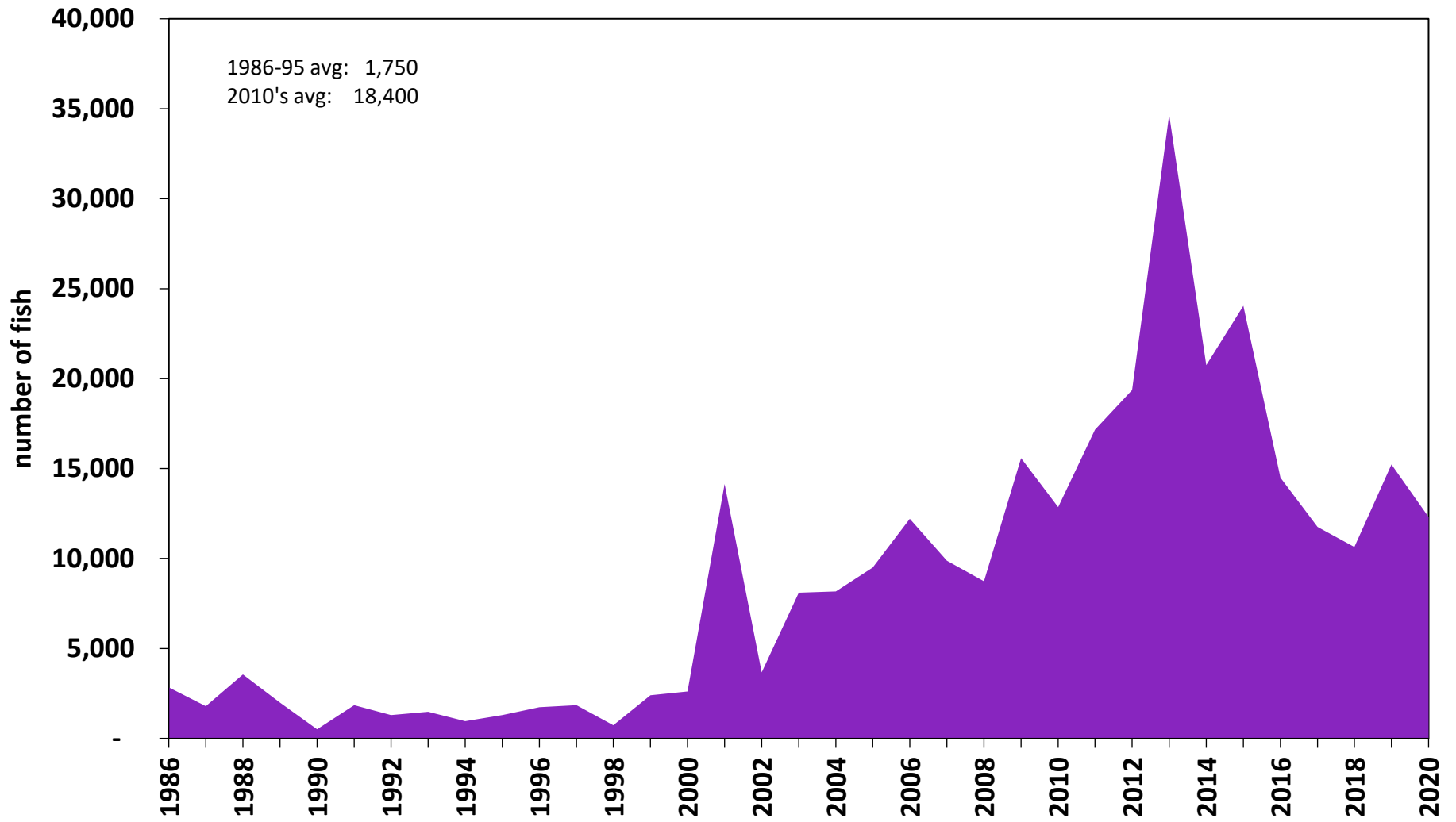
Columbia River Salmon and Steelhead Returns

Columbia River Fall Chinook Specific Stock Returns



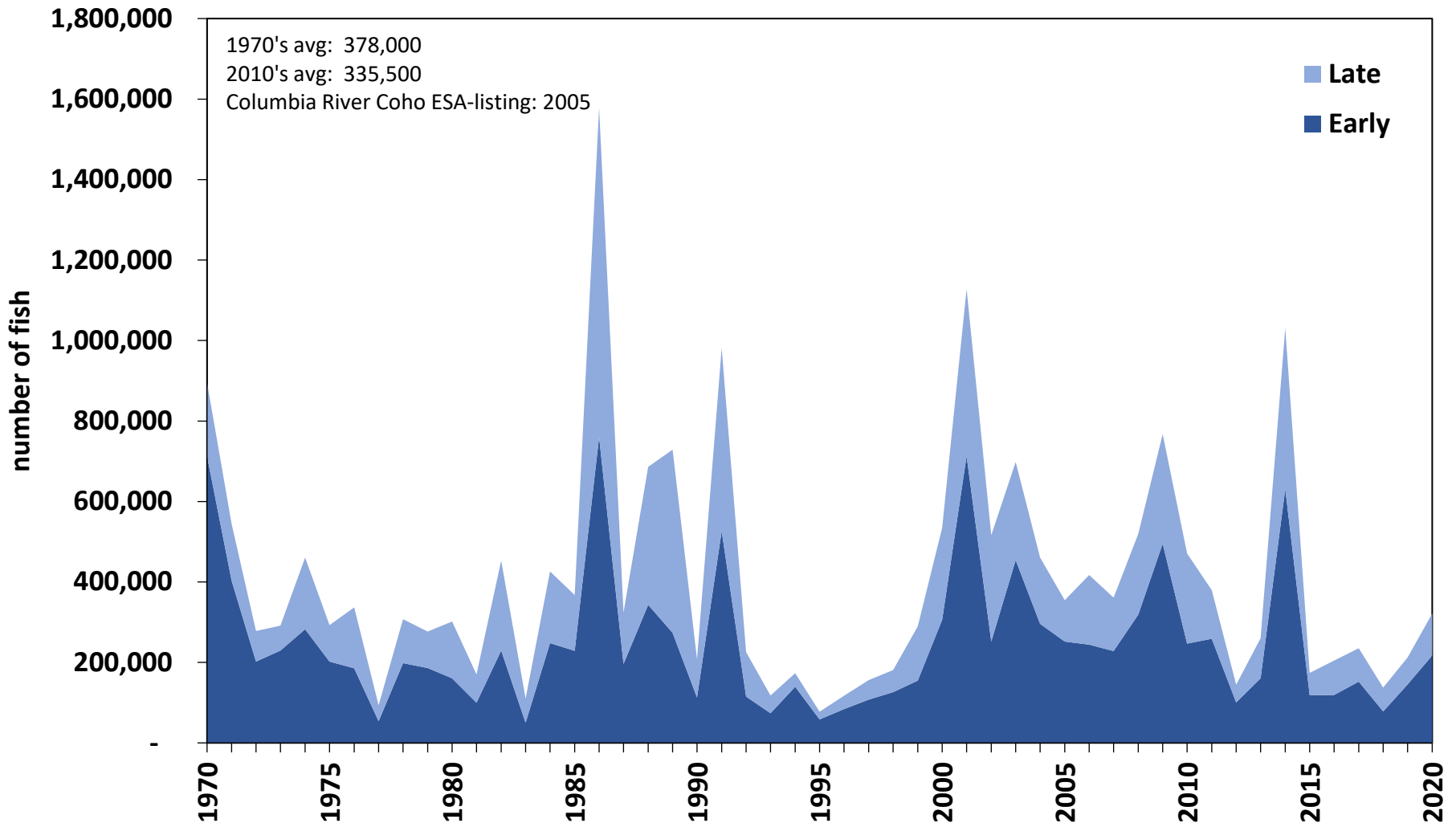
Columbia River Salmon and Steelhead Returns

Columbia River Snake River Wild Chinook Returns



Columbia River Salmon and Steelhead Returns

Columbia River Coho Returns (mouth)



Columbia River Salmon and Steelhead Returns

Columbia River salmon/steelhead returns													
Year	Chinook			Fall Chinook stocks			Sockeye	Coho (In-river)			Upriver Steelhead		
	Spring	Summer	Fall	LRH	URB	SRW		Total	Early	Late	Total	A-index	B-index
1970	237,800	55,200	452,000	176,700	126,900		95,400	895,273	712,745	182,528	138,500	90,700	47,800
1971	241,500	71,900	428,900	181,000	115,700		150,500	544,502	403,446	141,056	224,500	156,400	68,100
1972	334,700	67,800	285,500	151,600	86,700		123,300	277,840	202,296	75,544	225,500	131,600	93,900
1973	307,700	37,600	482,500	215,100	147,600		61,300	291,260	229,281	61,979	187,900	112,200	75,700
1974	206,900	28,900	290,500	154,200	89,800		43,800	460,810	282,547	178,263	144,800	117,400	27,400
1975	166,500	33,000	453,900	183,500	112,500		58,200	292,484	202,101	90,383	84,100	70,500	13,600
1976	144,700	26,700	448,700	171,000	115,100		43,700	336,957	185,264	151,693	122,400	91,100	31,300
1977	230,500	34,300	361,300	165,100	95,100		99,800	93,832	54,167	39,665	195,400	114,700	80,700
1978	233,700	38,700	328,400	166,500	85,300		18,400	307,499	198,448	109,051	103,800	63,900	39,900
1979	117,300	27,800	296,400	118,700	89,200		52,600	276,480	186,211	90,269	113,500	79,300	34,200
1980	130,383	22,498	319,300	105,584	76,806		49,387	301,593	160,300	141,293	129,600	85,900	43,700
1981	158,730	18,746	277,200	94,854	66,603		44,712	170,246	100,222	70,024	161,100	123,400	37,700
1982	186,215	14,369	361,000	139,466	78,979		42,808	453,122	229,442	223,680	158,800	104,500	54,300
1983	154,047	13,145	234,300	88,066	86,051		88,331	109,962	49,933	60,029	220,500	151,200	69,300
1984	166,867	18,765	306,400	102,477	131,369		116,913	425,903	247,937	177,966	293,762	195,751	98,011
1985	174,092	18,522	364,300	110,985	196,364		102,103	367,212	228,621	138,591	322,374	281,504	40,870
1986	216,759	18,752	496,900	154,786	281,551	2,830	51,590	1,578,053	760,027	818,026	351,524	287,508	64,016
1987	240,993	22,715	871,000	344,005	420,656	1,783	68,834	324,200	196,119	128,080	283,242	238,283	44,959
1988	249,820	22,720	784,700	309,949	339,915	3,558	49,063	686,140	343,017	343,123	254,794	173,151	81,643
1989	224,977	22,201	551,900	130,887	261,302	1,981	37,140	728,685	273,704	454,981	270,683	193,079	77,604
1990	255,983	18,794	312,800	59,954	153,593	508	42,436	207,983	112,774	95,208	162,802	115,628	47,174
1991	193,553	14,323	275,600	62,680	103,286	1,846	62,152	981,482	526,281	455,201	262,313	234,048	28,265
1992	195,458	9,428	219,000	62,617	81,016	1,289	68,483	225,435	115,253	110,183	298,962	241,524	57,438
1993	210,266	14,021	214,900	52,344	102,908	1,475	65,157	117,936	73,660	44,276	172,870	136,701	36,169
1994	84,005	14,691	254,000	53,609	132,839	958	10,828	173,391	139,581	33,810	148,434	120,971	27,463
1995	62,869	12,455	242,800	46,341	106,459	1,296	9,305	77,388	58,411	18,978	193,258	180,037	13,221
1996	97,544	12,080	330,700	75,451	143,117	1,729	25,403	117,122	83,641	33,480	193,157	174,464	18,693
1997	169,432	17,709	321,500	57,401	161,735	1,839	35,640	156,372	107,349	49,023	244,872	208,209	36,663
1998	96,489	15,536	255,000	45,265	141,575	730	8,337	181,192	126,401	54,791	174,928	134,687	40,241
1999	105,372	21,867	313,000	39,933	165,889	2,395	16,666	289,423	154,761	134,662	198,603	176,466	22,137
2000	257,813	22,595	255,000	26,997	156,595	2,612	81,234	534,782	306,130	228,652	257,632	216,723	40,909
2001	539,438	52,960	548,800	94,331	232,366	14,133	109,888	1,127,685	713,099	414,586	601,505	515,079	86,426
2002	481,496	89,524	733,300	156,444	279,548	3,665	42,615	515,924	251,583	264,341	453,006	323,124	129,882
2003	403,809	83,058	892,900	154,507	374,154	8,093	33,874	698,027	454,468	243,559	343,023	305,795	37,228
2004	416,048	65,623	797,700	109,002	362,804	8,174	104,229	460,358	295,799	164,559	288,013	250,615	37,398
2005	192,679	60,272	582,600	79,433	277,241	9,500	68,676	354,403	251,816	102,587	300,599	251,631	48,968
2006	223,034	77,573	415,800	57,272	230,390	12,202	31,824	416,991	244,350	172,641	319,296	245,168	74,128
2007	154,994	37,035	220,200	32,589	114,000	9,878	26,696	360,791	228,515	132,276	309,921	258,848	51,073
2008	221,197	55,532	449,700	61,566	197,295	8,738	192,746	519,674	319,003	200,671	339,252	245,823	93,429
2009	217,857	53,881	429,700	76,637	212,104	15,576	145,729	767,313	495,036	272,277	587,735	543,195	44,540
2010	465,257	72,346	655,900	103,336	324,908	12,855	305,154	471,042	246,909	224,133	381,148	304,002	77,146
2011	318,724	80,574	620,700	109,129	322,052	17,156	128,813	379,479	258,714	120,765	355,121	318,125	36,996
2012	294,676	58,300	525,100	84,978	297,827	19,360	314,369	144,815	100,592	44,223	219,857	192,134	27,723
2013	187,889	67,603	1,268,600	104,777	778,254	34,669	143,373	260,216	160,571	99,645	225,585	214,074	11,511
2014	309,287	78,304	1,159,200	101,906	684,239	20,752	524,658	1,030,599	631,306	399,293	307,187	260,130	47,057
2015	423,003	126,900	1,305,600	128,876	795,700	24,054	180,165	173,752	118,297	55,455	253,230	234,382	18,848
2016	280,584	91,000	642,500	81,492	412,851	14,493	291,348	204,591	119,235	85,356	171,806	128,890	42,916
2017	212,655	68,204	476,500	64,627	297,423	11,750	66,599	235,464	152,178	83,286	113,350	106,776	6,574
2018	177,967	42,120	293,400	52,963	149,044	10,642	210,915	137,709	78,473	59,236	94,000	69,338	24,662
2019	109,808	34,619	375,700	48,914	212,238	15,231	63,222	212,331	144,931	67,400	72,466	66,174	6,292
2020	142,529	65,494	574,700	77,922	299,337	12,300	345,018	321,422	217,177	104,245	107,591	75,392	32,199



Columbia River Joint WA/OR Commission Meeting: March 31, 2021

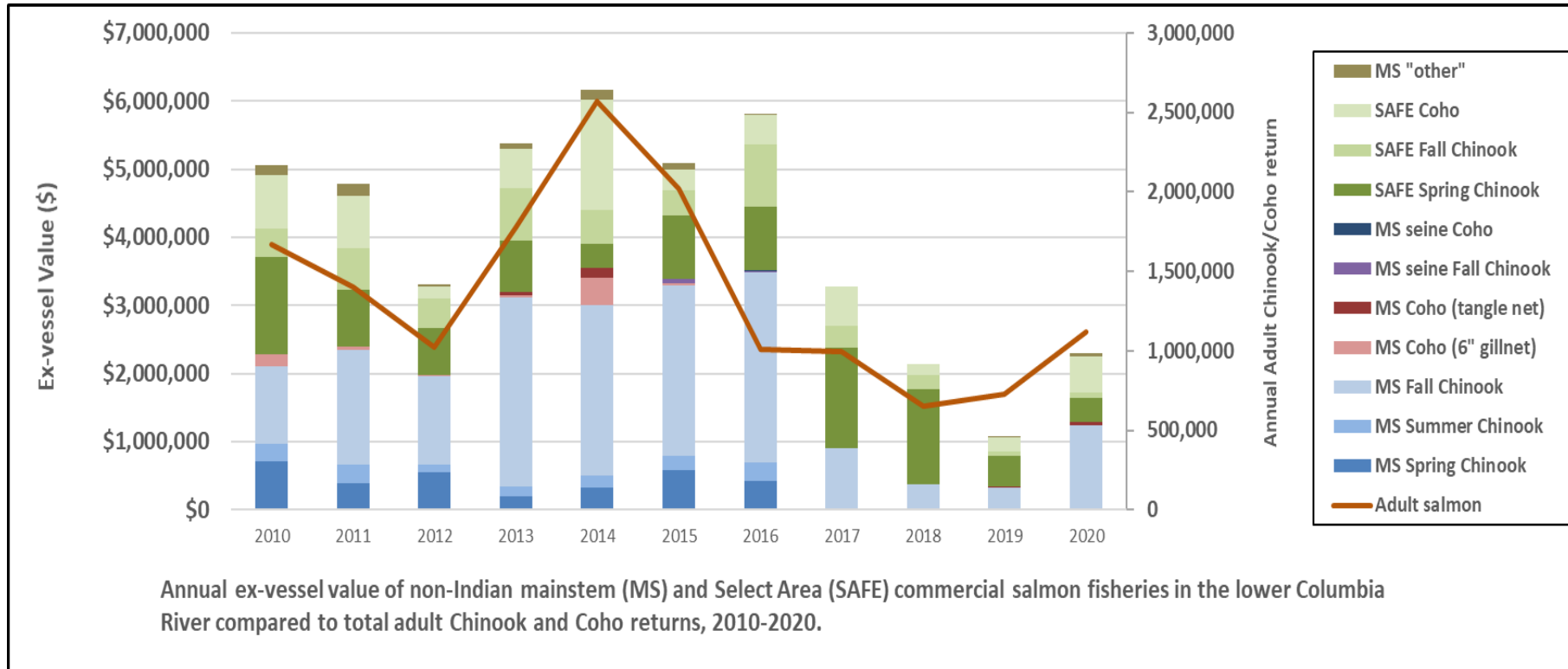
John North, Columbia River Fisheries Manager, ODFW

Dr. Charlene Hurst, Columbia River Management Unit Lead, WDFW

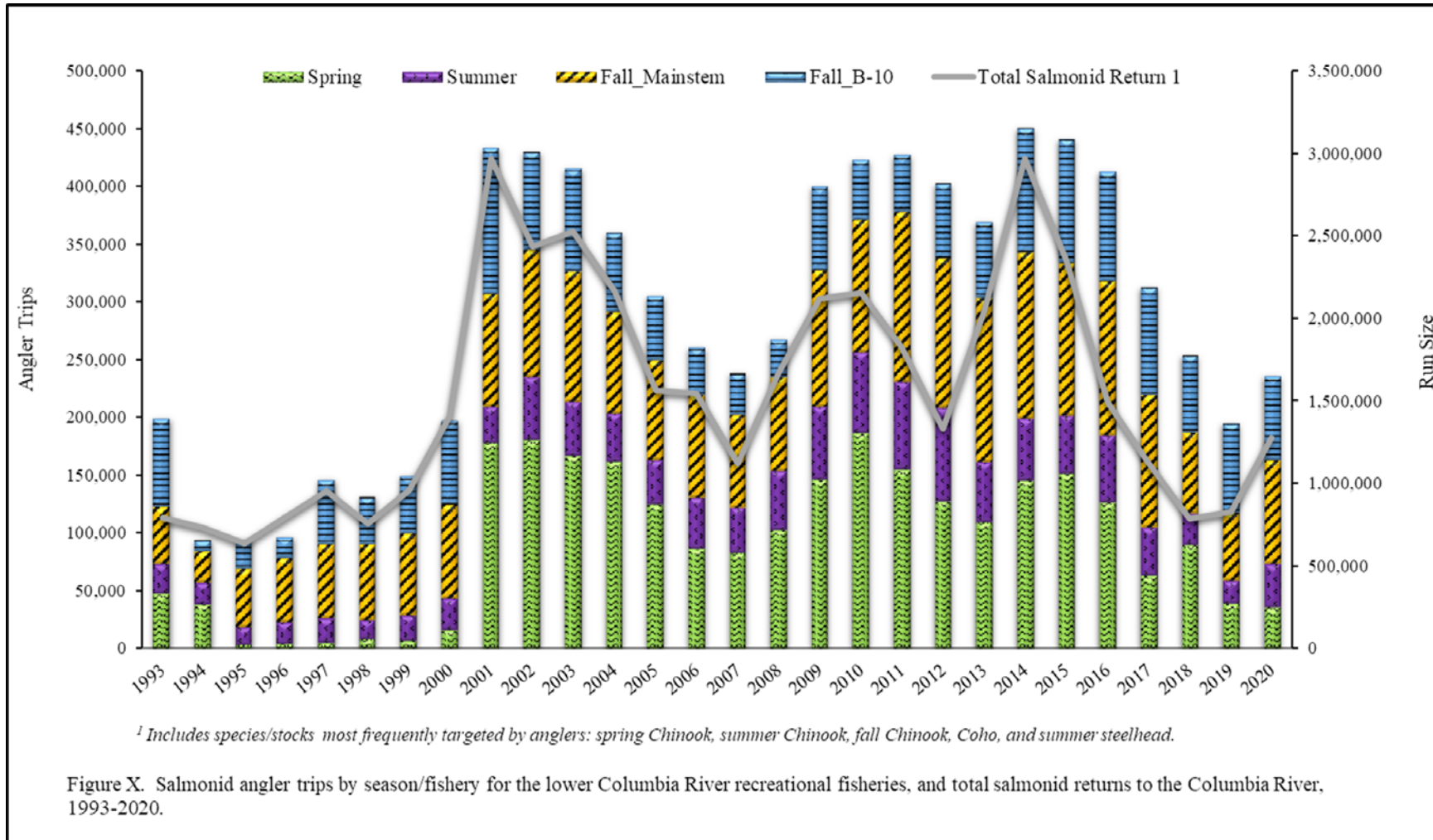
Economic Modeling

- Commercial ex-vessel and angler trips
 - Comparison with “Pre-Policy Baseline”
- Determine effects of:
 - Allocation changes
 - New commercial gear types
 - SAFE production increases

Economic Modeling



Economic Modeling



Economic Modeling Approach

- Isolate for effects of the policy:
 - Adjust for effects of run size fluctuations
 - Annual variables (survival, CPUE, water conditions, etc.)
- Compared difference between Actual and Expected
 - Actual = What happened
 - Expected = What would have likely happened in absence of the Policy
 - Reviewed each fishery and by year and season
 - Used “What was known when” approach

Economic Model Assumptions

Table 1. Summary of assumptions incorporated into modelling of policy options.

Policy Option	Allocation Sharing (%) Sport/Commercial			Mainstem Commercial Gears							
	Spring	Summer	Fall (LRH tule/URB)	Spring		Summer		Fall			
				Pre-Update Tangle Net	Post-Update Tangle Net/Gillnet	Gillnet	Alt Gear	Zone 4-5 Gillnet	Seine MSF	Coho 6" Gillnet	Coho Tangle Net MSF
2018 Washington Policy	80/20	80/20	≤75/≥25	N	N	N	Y	Y	Y	N	Y
Current Oregon Policy	80/20	80/20	≤70/≥30	N	Y	N	Y	Y	Y	N	Y
Pre-Policy (2010-2012 base)	60/40	50/50	59/41	Y	Y	Y	--	Y	--	Y	--

Summary: Modelling Estimates for 2019

Economic Metrics	Detail	Pre-Policy Base	2018 Washington Policy	Current Oregon Policy
Sport Angler Trips	Not applicable	339,846	354,378	352,577
	Total	\$4,948,463	\$3,362,124	\$3,762,010
	Mainstem	\$3,210,479	\$1,358,250	\$1,758,136
Commercial Ex-Vessel Value	SAFE	\$1,737,984	\$2,003,874	\$2,003,874

The current Oregon and original WA policies show:

- increase in angler trips (~15,000) compared to pre-policy base
- decrease in commercial ex-vessel values (~1.2-1.6 million) compared to pre-policy base

Questions?

EXPECTED EFFECTS OF CLIMATE CHANGE ON FISH/FISHERIES

It's the habitat; but the impacts will not be uniform

Changes in snow vs. rain will affect river flow patterns

Increased freshwater and marine temperatures

Increased risks from wildfires, flooding, drought

Changing ocean conditions (e.g., marine heat waves, ocean acidification, harmful algal blooms)

Changes in other species presence/abundance

Changes in species size, distribution, and run timing

Climate change will affect salmonids, including changes to abundance and productivity

CLIMATE CHANGE AND FISHERIES MANAGEMENT

Forecasting/stock assessment

Harvest Control Rules

Other protective measures, i.e. thermal sanctuaries

Identifying climate and early warning environmental indicators/coordination of information

Fisheries management is only one aspect – other actions important to improve status of fish stocks

FORECASTING/STOCK ASSESSMENT

Forecasting – can/does inclusion of environmental variables improve forecasting?

- Example: Oregon and Washington natural coho forecasts

Stock assessment – does consideration of environmental or other factors improve our understanding of population dynamics?

- Example: Stock-recruitment work with environmental covariates

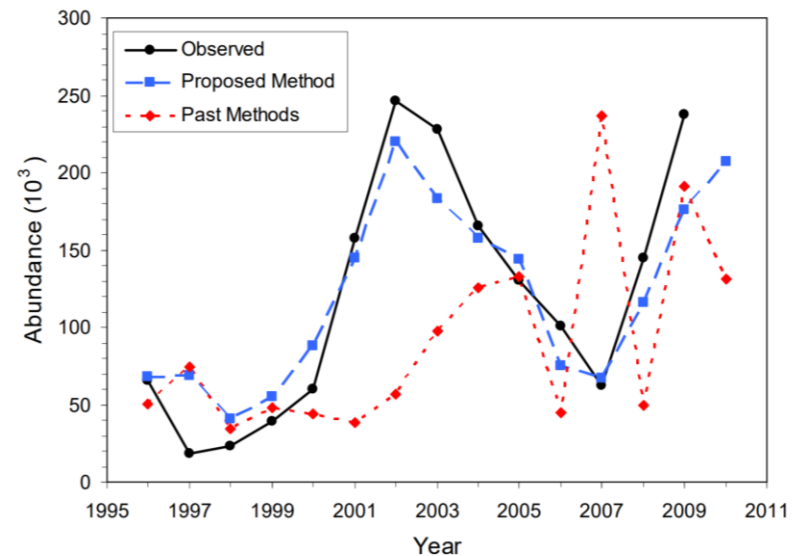
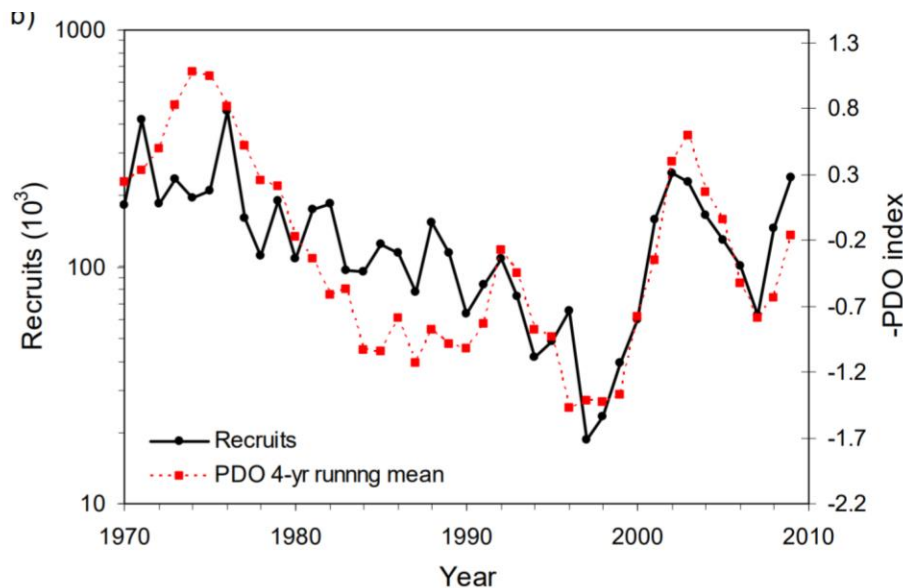
NWFSC Stoplight chart

		Year																						
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
Ocean basin	PDO (Sum Dec-March)	20	6	3	14	7	22	13	18	15	10	5	1	17	4	2	8	11	23	21	19	12	16	9
	PDO (Sum May-Sept)	11	4	6	5	12	18	17	19	13	15	2	10	7	3	1	8	21	23	22	16	14	20	9
	ONI (Average Jan-June)	22	1	1	7	14	16	15	18	8	12	3	11	19	4	6	8	10	20	23	13	5	21	17
Physical	SST NDBC buoys (°C; May-Sept)	18	6	8	4	5	12	23	13	2	15	1	11	3	7	9	17	21	20	19	14	16	22	10
	Upper 20 m T (°C; Nov-Mar)	22	12	9	11	7	16	17	14	13	6	1	10	19	5	4	8	3	23	21	20	15	18	2
	Upper 20 m T (°C; May-Sept)	15	10	12	4	1	3	23	19	8	9	2	5	16	7	6	17	21	18	13	11	14	22	20
	Deep temperature (°C; May-Sept)	22	6	8	4	1	10	12	16	11	5	2	7	14	9	3	15	21	20	13	18	19	17	23
	Deep salinity (May-Sept)	22	3	11	4	5	18	19	12	7	1	2	16	20	14	15	13	23	17	9	8	6	10	21
Biological	Copepod richness anom. (no. species; May-Sept)	21	2	1	8	7	16	15	20	17	11	9	10	19	4	6	3	12	22	23	18	14	13	5
	N. copepod biomass anom. (mg C m ⁻³ ; May-Sept)	21	16	12	13	5	18	15	22	17	14	8	11	10	2	4	6	7	19	23	20	9	3	1
	S. copepod biomass anom. (mg C m ⁻³ ; May-Sept)	23	2	5	4	3	15	17	22	14	11	1	7	18	10	8	6	12	20	21	19	13	16	9
	Biological transition (day of year)	20	11	10	4	9	16	15	21	14	5	1	2	18	6	12	7	7	22	22	19	17	13	3
	Nearshore Ichthyoplankton Log(mg C 1,000 m ⁻³ ; Jan-Mar)	18	3	12	6	1	22	23	16	9	18	3	14	2	8	5	11	20	15	16	13	10	21	7
	Nearshore & offshore Ichthyoplankton community index (PCO axis 1 scores; Jan-Mar)	11	6	5	8	10	13	17	21	1	14	3	12	15	4	2	7	9	19	22	23	18	20	16
	Chinook salmon juvenile catches (no. km ⁻¹ ; June)	20	4	5	17	8	12	18	21	13	11	1	6	7	16	2	3	10	14	19	22	15	9	NA
	Coho salmon juvenile catches (no. km ⁻¹ ; June)	20	8	14	6	7	3	17	21	18	4	5	10	11	16	19	1	13	9	15	22	2	12	NA
	Mean of ranks	19.1	6.3	7.6	7.4	6.4	14.4	17.3	18.3	11.3	10.1	3.1	8.9	13.4	7.4	6.5	8.6	13.8	19.0	18.9	17.2	12.4	15.8	10.9
	Rank of the mean rank	23	2	7	5	3	16	19	20	12	10	1	9	14	5	4	8	15	22	21	18	13	17	11

<https://www.fisheries.noaa.gov/west-coast/science-data/ocean-ecosystem-indicators-pacific-salmon-marine-survival-northern>

OCN coho forecast

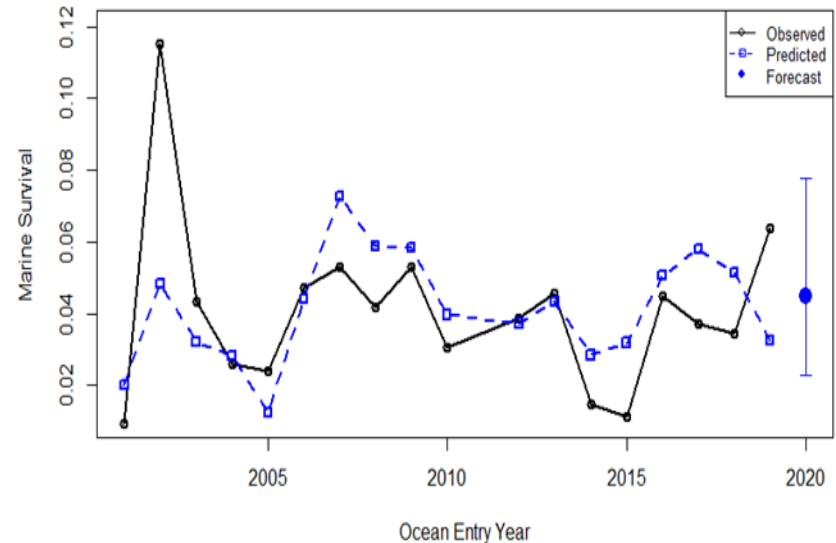
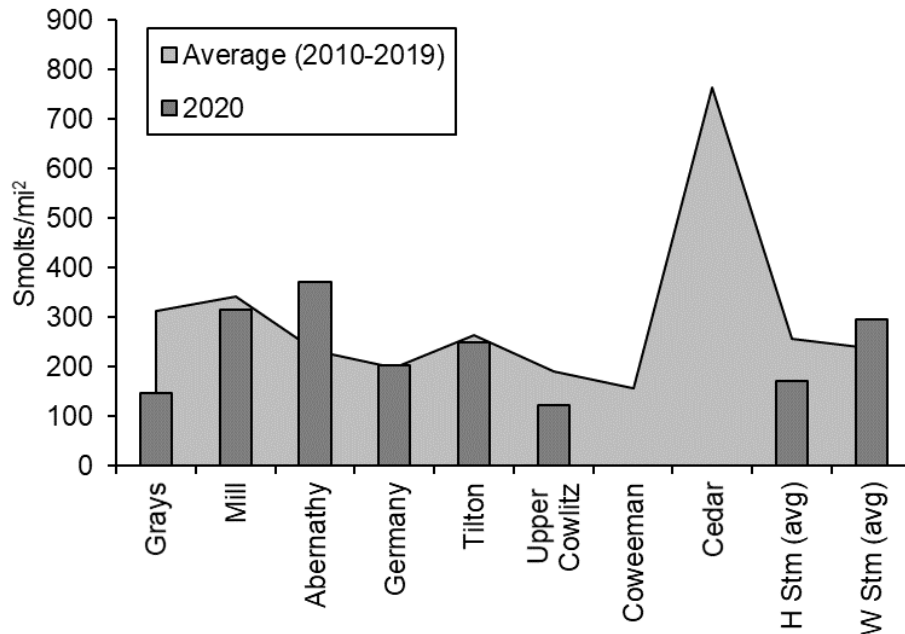
- Revised in 2011
- Predicts abundance from: spawner abundance, Pacific Decadal Oscillation, Upwelling Index, Sea Surface Ht., Sea Surface Temp., Multi-variate ENSO Index, and Spring Transition Date



Source: Rupp and Lawson PFMC 2011

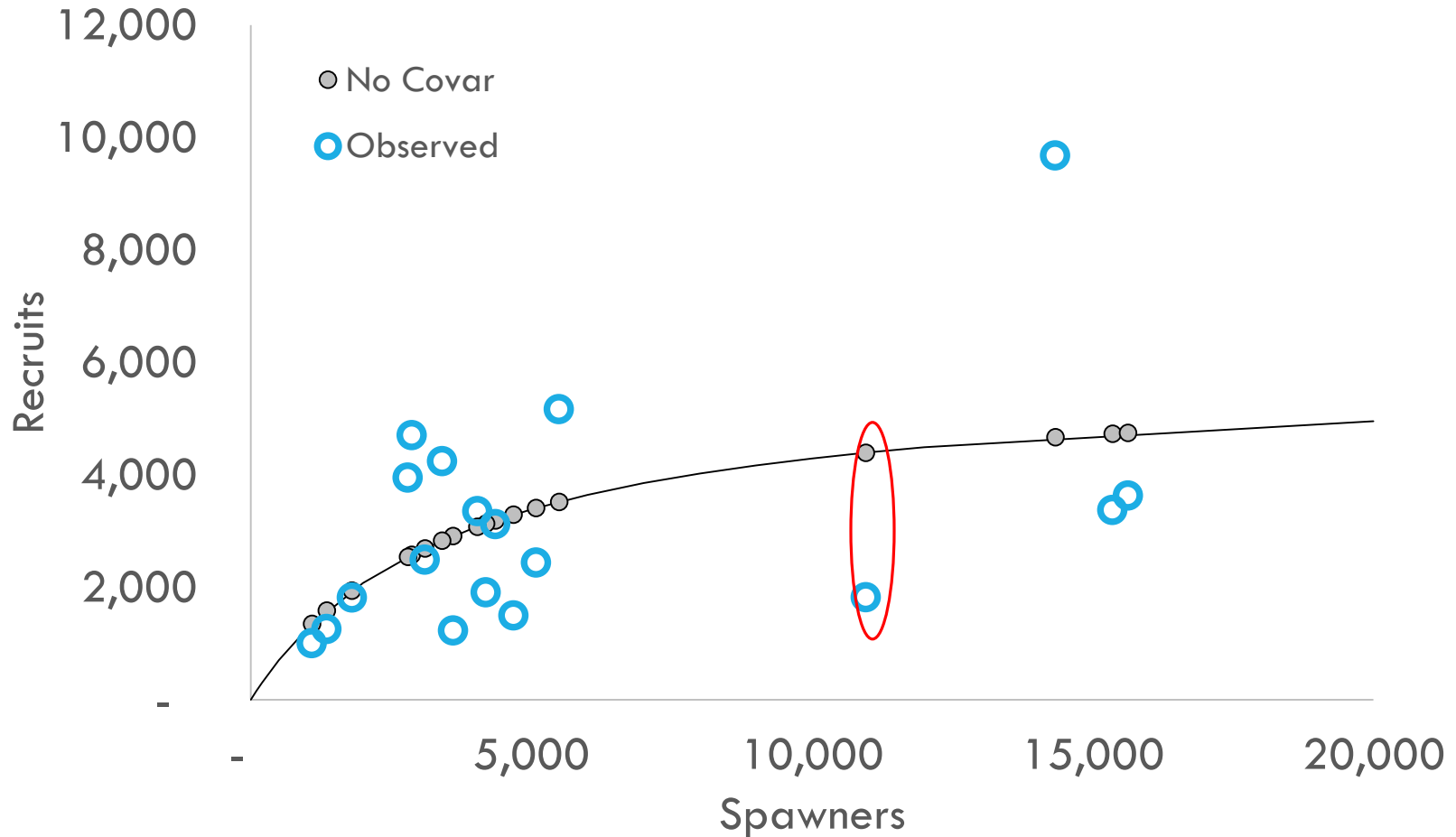
WA LCR coho forecast

- Revised in 2012
- Predicts marine survival from best fitting model using a suite of local, regional, and basin-scale ocean indicators
- 2021 forecast based on upwelling timing and Columbia River flow predicts: 4.5% marine survival

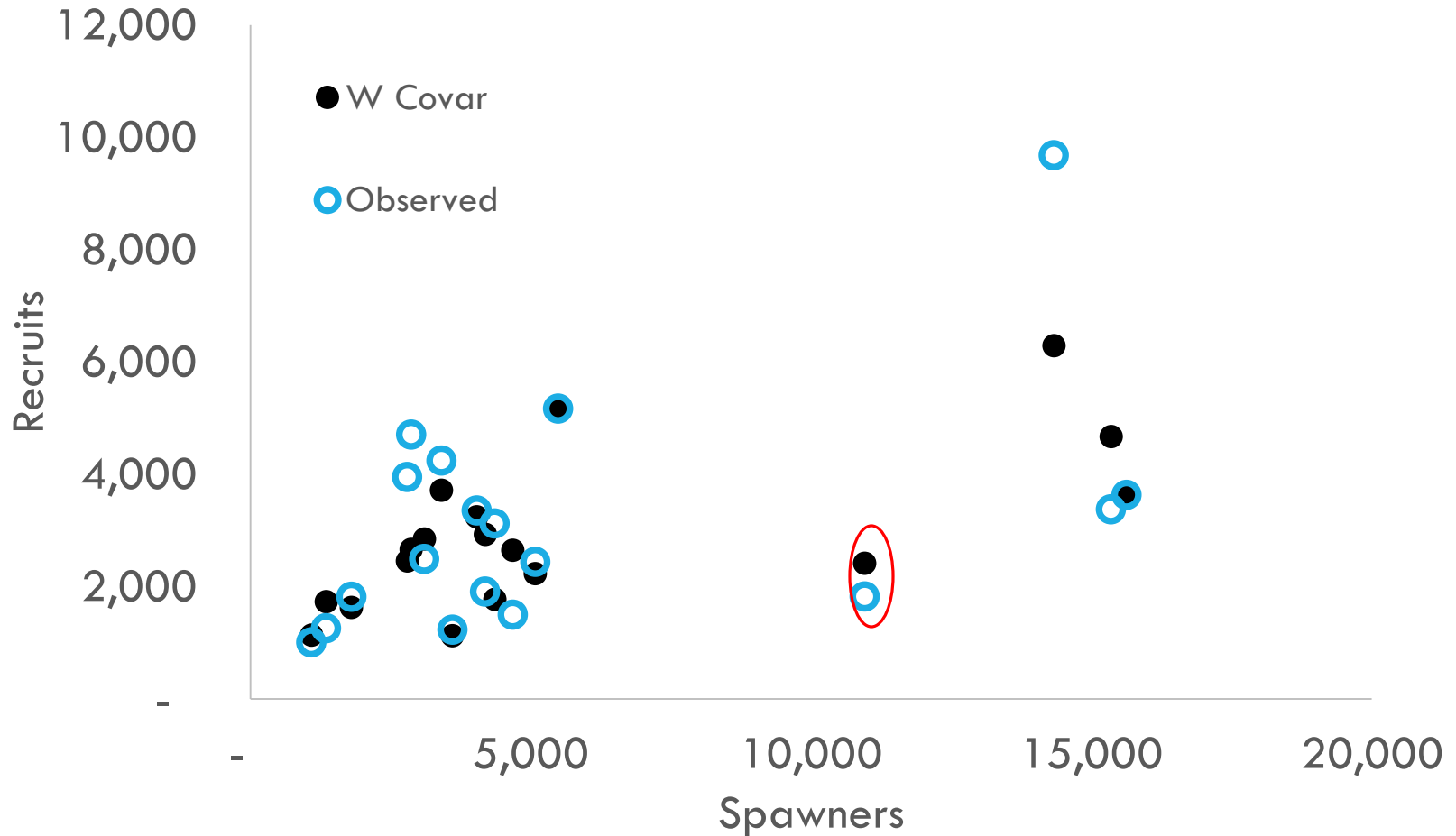


Source: Litz 2021

STOCK ASSESSMENT



STOCK ASSESSMENT



HARVEST CONTROL RULES

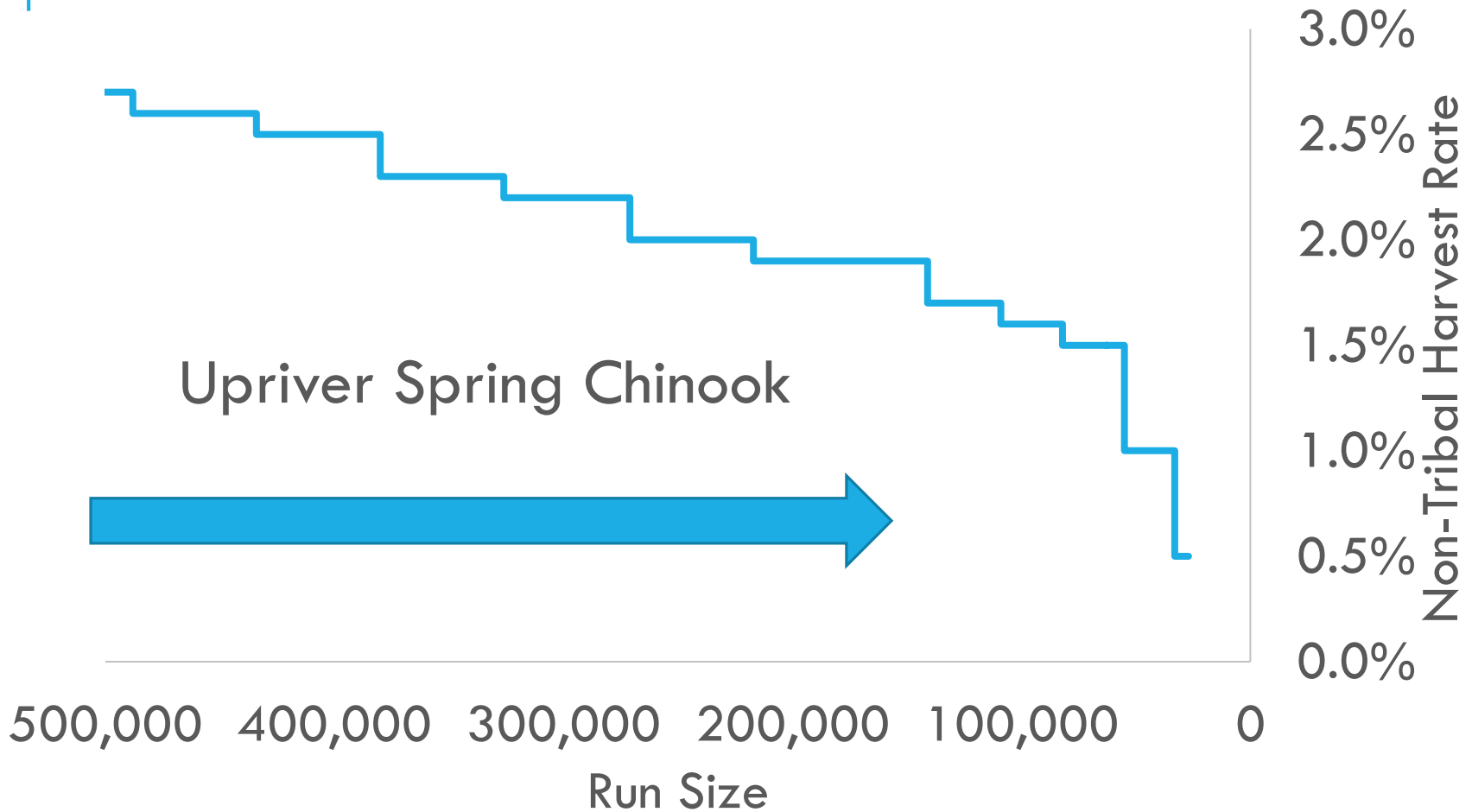
Abundance based examples

Responsive to observations

Change/adapt as needed

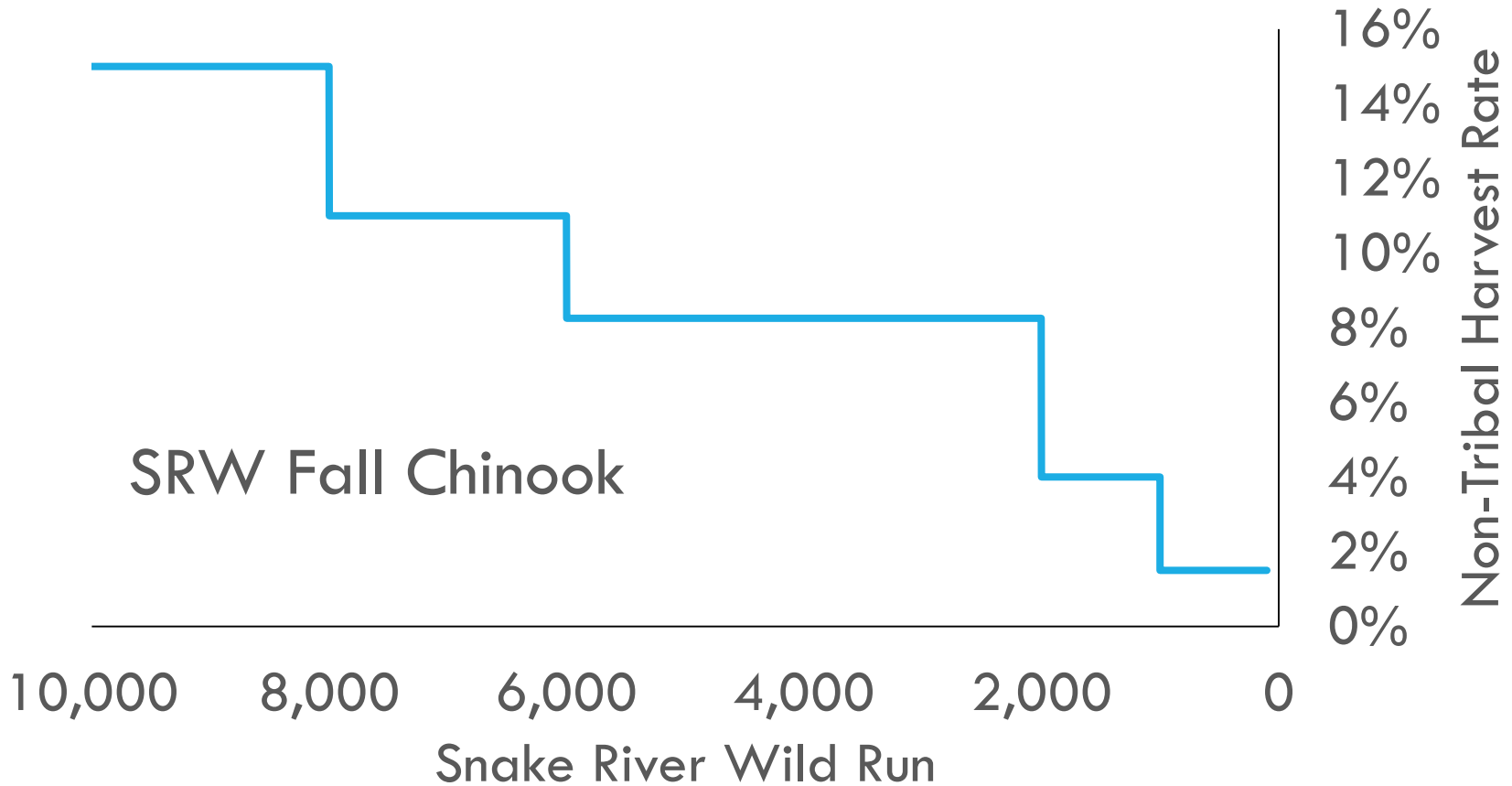
HARVEST CONTROL RULES

EXAMPLE: UPRIVER SPRING CHINOOK



HARVEST CONTROL RULES

EXAMPLE: SR WILD FALL CHINOOK



WEAK STOCK MANAGEMENT

In PFMC and Columbia River fisheries, mixed stock salmon fisheries are constrained to protect weak stocks – harvest of healthier stocks controlled by requirements to protect weaker stocks

PFMC – annual process to re-evaluate all fisheries based on current conditions; no static salmon fisheries – year-to-year differences are substantial

Columbia River – annual; but added real-time management based on in-season updates to run sizes, timing, stock composition

ADAPTATION OF CONTROL RULES

PFMC Examples:

LCR tule update/revision (2012)

LCN coho update/revision (2014)

OCN coho update/revision (2012)

Sacramento Winter Chinook (2018)

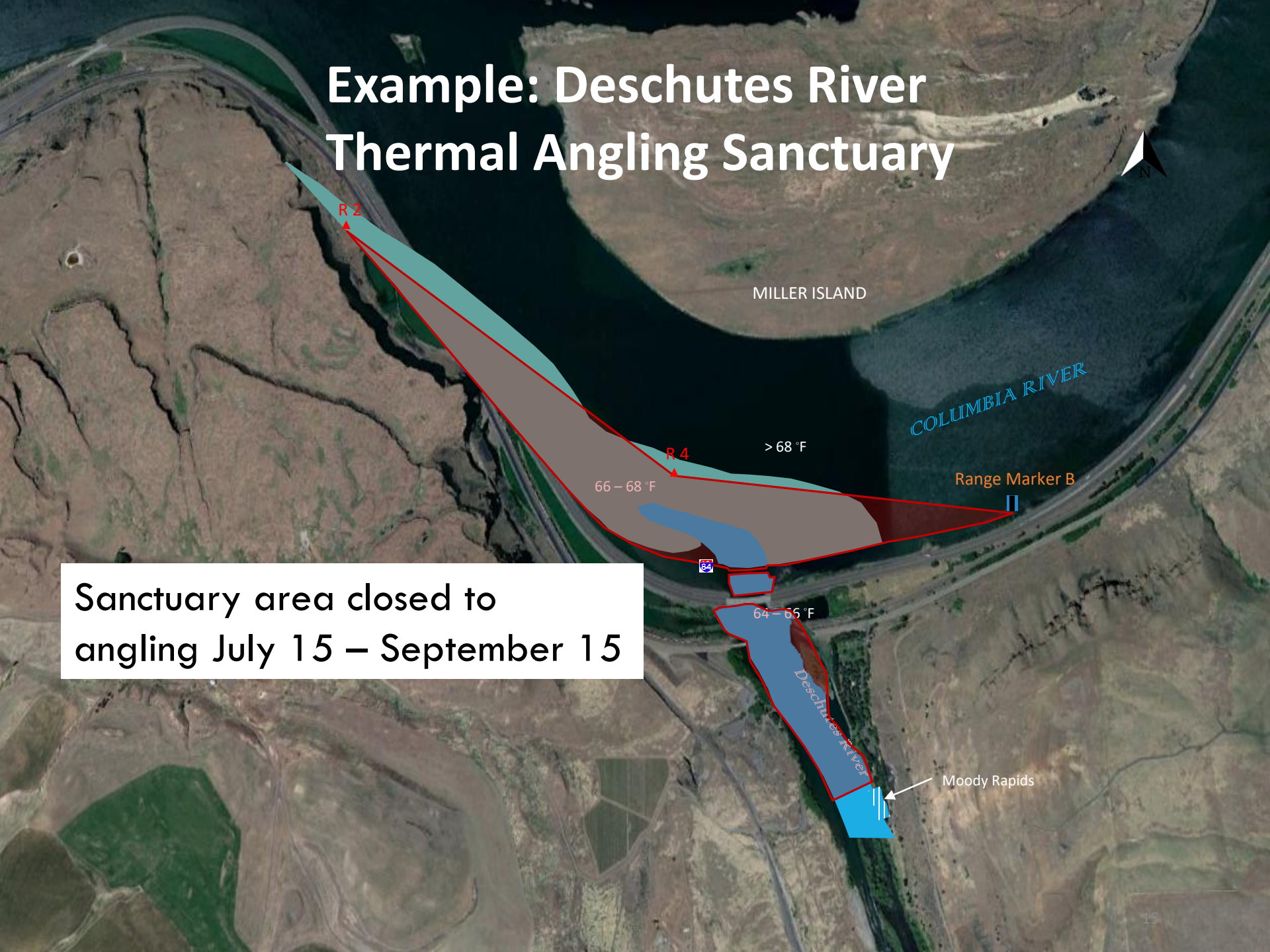
SONCC coho working group (in prog)

OTHER MANAGEMENT RESPONSES

Regulations to respond to temperatures

- Thermal sanctuaries
- Other actions

Example: Deschutes River Thermal Angling Sanctuary



MILLER ISLAND

COLUMBIA RIVER

66 – 68 °F

> 68 °F

Range Marker B

64 – 65 °F

Deschutes River

Moody Rapids

84

Sanctuary area closed to angling July 15 – September 15

OTHER MANAGEMENT RESPONSES

2015 Drought ODFW Action categories:

- Closures to protect native fish species
 - Full area closures, “hoot owl” restrictions, angling advisories
- Liberalize opportunities for game fish/non-natives where increased mortality expected (certain pond fisheries, etc.)
- Adjust hatchery operations and stocking practices
- Conduct salvage operations
- Opportunistic eradication actions
 - E.g., where drought has drawn down water levels, opportunities for more efficient eradication efforts taken

BROADER CONVERSATIONS

OFWC actions

- Forage Fish FMP 2016; support ecosystem resilience and reliance on forage fish, allow existing fisheries to continue, support sustainability of existing fisheries relative to reliance on forage fish prey, monitor forage fish landings.
- Climate and Ocean policy 2020; key principles for coordination, science, species and habitat management, agency operations.

WDFW actions

- *“It is the policy of WDFW to manage its operations and assets so as to better understand, mitigate and adapt to the impacts of climate change” - Policy 5408, adopted 3/2017*
- Fish Program Climate Action Team – New and ongoing action required for monitoring, research, policy development, communication, and personnel to be responsive to climate risks

BROADER CONVERSATIONS

Pacific Fishery Management Council Actions

- Prohibition on harvest of krill 2005
- Fishery Ecosystem FMP 2013;
 - Ecosystem Advisory Subpanel
 - Ecosystem Initiatives
 - Forage fish FMP 2016
 - Coordinated Ecosystem Indicator Review 2016
 - Annual California Current Ecosystem Report
 - Climate and Communities Initiative (current)

BROADER CONVERSATIONS

Pacific Salmon Commission/Pacific Salmon Treaty Actions

- Review of forecast methods for Chinook 2016
- 2015-2016 “extrema” report and workshop 2017
- PSC Southern Panel climate workshop for managers May 2021

Others

- MSA reauthorization discussions to include climate
- Oregon OAH Council
- Pacific Coast Partnership
- US Climate Alliance
- West Coast OAH Panel
- International Alliance



END

WASHINGTON FISH and WILDLIFE COMMISSION

POLICY DECISION

POLICY TITLE: Columbia River Salmon
Fishery Management

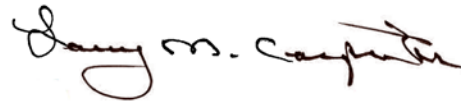
POLICY NUMBER: C-3630

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C-3617, 2009
C-3618, 2011
C-3620, 2013
C-3620, 2017

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Termination Date: N/A

Approved by:



Chair, Washington Fish and Wildlife Commission

Purpose

The over-arching purposes of this Policy are to guide management of Columbia River non-Tribal fisheries in a manner that

1. achieves conservation, preservation, recovery, protection and perpetuation goals for Columbia River salmon and steelhead;
2. does not impair the resource and maintains the economic well-being, and stability of the fishing industry in the State by enhancing and improving both recreational and commercial fishing, including the geographic distribution of fishing opportunities; and
3. promotes orderly fisheries in waters in which the states of Oregon and Washington have concurrent jurisdiction.

Authority Definition and Intent

This Policy is established by the Washington State Fish and Wildlife Commission, and is applicable to the management by the Washington State Department of Fish and Wildlife (Department) of Pacific salmon and steelhead (spring Chinook, summer Chinook, fall Chinook, sockeye, chum, coho, summer steelhead and winter steelhead) non-Tribal fisheries in the mainstem of the Columbia River and the Snake River downstream of Lower Granite Dam.

The intent of this Policy is to provide direction, positions, strategies, goals, and actions to the Department to achieve the stated purposes of the Policy. Further, the intent of this Policy is to be responsive to the comprehensive review of Columbia River salmon fishery management policies in place during 2013-17¹. The result of this review

included identifying several areas where a policy purpose or expectation was not met. While many of the provisions of this policy document are identical or equivalent to policy provisions adopted by the Commission in 2013, the provisions described in this policy document deliberately and fully supersede the policy directives of the policy adopted in 2013.

General Policy Statement

This policy provides the Department with a cohesive set of guiding principles, strategies and actions to improve the fishery management and abundance of wild and hatchery produced salmon and steelhead in the Columbia River basin. **Fishery and hatchery management measures should be implemented as part of an “all-H” strategy that integrates hatchery, harvest, hydro-system and habitat actions designed to increase abundance of Columbia River salmon and steelhead.** Although this Policy focuses primarily on fishery management and includes direction on hatchery production, this Policy in no way is meant to diminish the significance of habitat and hydro-system protection and restoration. Rather, this Policy explicitly supports additional minimization of hydro-system related fish mortality and further protection and restoration of salmon and steelhead habitat throughout the Columbia River basin.

It is acknowledged there is uncertainty in how and when the strategies and measures described in this Policy will achieve the stated purposes, such as the development and implementation of alternative selective fishing gear, securing funding for enhanced hatchery production, consideration of a commercial license buyback program, and a recreational fishery guiding license limitation. It is also recognized that there are likely to be unpredictable challenges to successful achievement of the intent of various strategies and measures, including such matters as changes in the environmental conditions that affect salmon steelhead abundance, rates of recovery of depressed wild populations, and the effectiveness of habitat restoration and population reintroduction initiatives. Consequently, management decisions must be informed by fishery and stock status monitoring and should be adaptively modified as necessary to meet the stated purposes of this Policy, in accordance with the flexibility intended by the adaptive management provisions of this Policy.

The Department will work collaboratively with its governmental partners to strive to achieve the Policy purposes and implement the policy guidelines and strategies. The Department will work with the Oregon Department of Fish and Wildlife (ODFW) and the Columbia River Treaty Tribes in a manner that is consistent with *U.S. v. Washington* and *U.S. v. Oregon* and other applicable state and federal laws and agreements; with the National Marine Fisheries Service to achieve compliance with the Endangered Species Act (ESA) in a manner that optimizes the strategies and actions described in this Policy; with other Federal, State, and Tribal agencies with authority and responsibility for Columbia River salmon, including the Northwest Power and Conservation Council, US Fish and Wildlife Service, Columbia River non-Treaty Tribes, Idaho Department of Fish and Game; local Salmon Recovery Boards, and with all other entities with authorities collateral with the purposes of this Policy.

¹ Washington Policy C-3620 was reviewed in the report “Comprehensive Evaluation of the Columbia River Basin Salmon Management Policy C-3620, 2013-17” (Bill Tweit, Ryan Lothrop, and Cindy LeFleur, November 2018, 204 p.).

Guiding Principles

The Department will apply the following principles and policy positions as guides and directives toward achieving the purposes of the Policy.

Conservation, Protection, Recovery, and Perpetuation of Columbia River Salmon

1. Promote the recovery of Endangered Species Act (ESA) listed populations of salmon and steelhead in the Columbia River and ensure that fisheries and hatcheries are operated in a manner consistent with the provisions of the ESA.
2. Promote the conservation of non-ESA listed wild stocks by managing fisheries to achieve conservation goals or set limits on fishery incidental take allowances when optimum population spawning escapement goals cannot be achieved in a given year.
3. Advocate for increased downstream and upstream survival of salmon and steelhead through the Columbia River hydro-power system.
4. Advocate for salmon and steelhead habitat protection and recovery, including reducing predation on sensitive stocks by marine mammals, birds, and fish in areas and situations of particular vulnerability.
5. Advocate for increased hatchery production for unmitigated loss of salmon and steelhead production associated with permanently lost or impaired habitat due to the construction of dams or other human-caused permanent habitat losses, in a manner that avoids or grossly minimizes genetic and ecological impacts to wild salmon and steelhead populations.

Orderly and Concurrently Regulated Fisheries

1. Through the Columbia River Compact and as appropriate in other forums dealing with fishery regulatory matters, strive to adopt regulations that are maximally concurrent in the joint waters of the Columbia River.
2. Non-Tribal fisheries shall continue to be managed to meet the terms of *U.S. v. Oregon* management agreements with Columbia River Treaty Tribes.
3. The Department shall continue to meet Colville tribal subsistence and ceremonial needs consistent with agreements with the Confederated Tribes of the Colville Reservation, as well as providing the Wanapum Band of Sokulk Indians a fishing opportunity consistent with Washington RCW 77.12.453.
4. Integrate the use of new alternative commercial gear in the mainstem Columbia River in a manner that maintains orderly commercial and recreational fisheries in the Columbia River and its tributaries.

Maintaining, Enhancing, and Optimizing the Economic Well-being and Stability of Recreational and Commercial Fisheries

1. In a manner that is consistent with conservation and recovery goals, seek to enhance the overall economic well-being and stability of Columbia River recreational and commercial fisheries in comparison to that yielded by the policies in place in the three years prior to the harvest reform policy provisions that began in 2013.

2. Acknowledging the variability of salmon runs through time and the conservation mandate of this Policy, seek to provide the maximum fishery stability and predictability possible for fishery-dependent local communities.
3. Develop and implement alternative selective-fishing gear and techniques for commercial mainstem fisheries in a manner that facilitates achieving conservation goals as well as enhancing and optimizing economic benefits to commercial and recreational fisheries. Provide incentives to commercial fishery participants to develop, promote, and implement alternative gear and techniques.
4. Work with the ODFW to maintain and enhance Select Area production of hatchery fish to support off-channel commercial fishing, but strive to improve the access of these fish to Washington fishing license holders and buyers in recognition of the allocation shift that occurred in 2013 coincident with an emphasis on off-channel fishing.

General Provisions

The Department will implement the following actions to promote the achievement of the purposes of this policy.

1. **Development and Implementation of Alternative Commercial Fishing Gear.** The Department shall work towards the goal that commercial fishing gear being used on the mainstem Columbia River optimize conservation and economic benefits. The Department shall pursue the development and, as appropriate, implementation of commercial fishing gear alternatives to the gears currently authorized in non-treaty mainstem commercial fisheries. This should be done in a manner that seeks to improve on the catches of target species and stocks in comparison to the mortality of non-target species and stocks, in an economically efficient manner across the commercial fishery infrastructure segments. The development and implementation process shall include the following actions.
 - a. The Department will work with representatives of the commercial and recreational fishing industries to develop recommendations on the development and implementation of commercial fishing gear that will increase the selectivity potential of commercial fisheries compared to current capabilities, and/or promote state conservation objectives (i.e. controlling hatchery fish on spawning grounds). Important objectives of this effort include gaining broad support from the commercial fishing industry, encouraging creative innovation from the commercial fishing industry, and complimenting the economic potential and stability of the commercial fishery while minimizing impacts to mainstem and tributary recreational fisheries. The Department shall consider options that provide economic and other incentives for participants to become involved in alternative gear fisheries.
 - b. The Department shall seek funding, as appropriate, to support efforts to develop and implement alternative gears, and work with partners as appropriate to experiment with alternative gear, conduct any necessary studies (in such areas as release mortality, stock compositions, and economic viability), and otherwise facilitate the development of options for

alternative gear use. Assessments of alternative gear types in comparison to current gear should include at least catch rates, release mortality rates and overall mortality effects on relevant stocks, economic value, and effect on the commercial fishery infrastructure as a whole. It should also be informed by perspectives from commercial and recreational fisheries.

The Department shall update the Commission annually on progress on the above policy actions. The Commission will consider authorizing any successful alternative commercial fishing gears through rulemaking in a manner that takes into account allocations and concurrent regulations with Oregon.

2. **Hatchery and Natural Production Goals.** The Department shall work towards the general goal to increase hatchery and natural production of salmon and steelhead in the Columbia River basin for the purpose of perpetuating a magnitude of abundance more consistent with historic abundance. It is also important to identify short- and long-term hatchery and natural-origin full production goals for individual populations and population aggregates where possible. The Department will pursue achieving these goals consistent with the following provisions.
 - a. The Department shall continue to lead in efforts to increase naturally produced salmon and steelhead survival from the effects of the Columbia River hydro-power system and to seek improvements in the quality and quantity of salmon and steelhead habitat.
 - b. The Commission recognizes the importance of hatchery production in meeting Columbia Basin mitigation responsibilities, supporting conservation and recovery efforts, supporting tribal and non-tribal fisheries, and providing ecological benefits such as forage for dependent marine animals and marine nutrient transfers. Hatchery production is to be conducted in a manner consistent with the recovery of ESA-listed wild populations, the sustainability of healthy wild populations, and in accordance with the Commission policy on hatchery operations. In a manner consistent with the above policy positions, the Department shall advocate for stability of current levels of hatchery produced salmon and steelhead in the Columbia River basin and increases where possible. The Department shall consider seeking increases in hatchery production where full mitigation of losses from human-caused uses has yet to occur, to accommodate initiatives to provide additional prey to endangered Southern Resident Killer Whales, and where appropriate, enhancement of Select Area and other fisheries. However, enhanced hatchery production of salmon and steelhead shall be done in areas and with strategies that avoid or strongly minimize negative genetic and ecological effects on wild populations.
 - c. In establishing hatchery and natural population goals, the Department shall consider the policy guidance described above, goals described in the NMFS sponsored Columbia Basin Partnership Task Force report, goals adopted by the Northwest Power and Conservation Council, and additional information, initiatives, and recommendations that evolve over the course of this Policy.

3. Commercial Fishery License Reduction Program. The comprehensive review of Policy C-3620 from 2013 – 2017 noted a low level of progress towards the commercial fishery license buyback program advocated by policy intent in 2013. The Commission recognizes that a fully effective program to buyback commercial fishery licenses would need to be implemented by both Oregon and Washington, that statutory changes may be required in one or both States, and that there are many difficulties in designing a concurrent and equitable program. The Department shall work with members of the commercial fishing industry, representatives of the recreational fishery sectors and the ODFW to develop workable objectives and options for a possible commercial license buyback program. The Department shall then strive to convene a policy level joint-State body with appropriate Oregon representatives to develop a report on alternatives for an effective program that is to be submitted to the Washington and Oregon Fish and Wildlife Commissions for consideration and, if warranted, possible transmission to statutory authorities.
4. Limiting the Number of Recreational Guide Licenses in Jointly Managed Waters of the Columbia River. The Commission is aware of public concerns that the lack of a limit on the number of recreational guide licenses issued in Washington and Oregon may have negative effects on the non-guided sector of the recreational fishery, such as overcrowding and a reduction in open fishing days. Further, it is recognized that any effective program to limit the number of recreational guide licenses on jointly managed waters of the Columbia River would need to consider the regulatory frameworks of both Oregon and Washington, that statutory changes may be required in one or both States, and that there are many difficulties in designing a concurrent and equitable program. The Department shall initiate discussions with ODFW and consult with representatives of the recreational fishery sectors to develop objectives and options for a workable license limitation program. In a similar manner as the commercial fishing license buyback program, the Department shall convene a policy level joint-State body with appropriate Oregon representatives to develop a report assessing the effects of limiting guide licenses or other measures and evaluating alternatives for an effective concurrent program. The report is to be submitted to the Commission and appropriate Oregon authorities for consideration and, if warranted, possible transmission to statutory authorities.
5. Scientific Monitoring. In recognition that the scientific monitoring of fisheries, spawning escapements, and other measures of stock status is necessary to execute the provisions of this Policy and achieve its purpose, the Department shall seek the funding necessary, and prioritizing funds available, to properly monitor the stock status of Columbia River salmon and steelhead populations. Further, the Department shall also seek funding to conduct scientific studies of catch and release mortality where significant uncertainty exists in current estimates in either commercial or recreational fisheries.
6. Thermal Angling Sanctuaries. It is recognized that summer and fall water temperatures in the Columbia River can reach levels that adversely affect the health and survival of migrating adult steelhead and salmon. Certain tributaries may

provide substantially cooler water than the mainstem Columbia River near their confluences. Research has demonstrated that migrating salmonids, particularly summer steelhead, preferentially use these differentially colder water areas under such conditions. Seasonal recreational fisheries closures in these areas may provide additional protections during these seasonally vulnerable times. In a similar manner as described for commercial and recreational guide license control actions, the Department shall strive to convene a policy level joint-State body with appropriate Oregon representatives to review available information regarding cold water refuge area migrating salmonids and the impacts of fisheries in these areas and develop a report with recommendations on possible thermal angling sanctuaries. The report is to be submitted to the Washington and Oregon Fish and Wildlife Commissions for their consideration for possible concurrent regulations.

Fishery Specific Provisions

Subject to the adaptive management provisions of this policy, the Departments will manage salmon and steelhead fisheries consistent with the prior sections of this Policy and the following allocation objectives. Regarding allowable commercial fishing gear, the Department through its seat on the Columbia River Compact shall strive to adopt concurrent commercial fishing regulations with the ODFW that optimize time, area and mesh size restrictions using gillnet, tangle-net, beach seine, purse seine, pound net and/or other alternative commercial fishing gear, towards a goal of selectively harvesting healthy hatchery and wild stocks while protecting weak stocks and minimizing by-catch.

Spring Chinook Salmon

1. The annual pre-season allocation to recreational and commercial fisheries is in accordance with the abundance-based provisions in the table below, with both fisheries constrained by the pre-run size update buffer requirement that is described in the current US v Oregon Management Agreement. Within the proportion of Upriver Run ESA impacts allocated pre-season to the recreational fishery, 70% are allocated to lower river recreational fisheries and 30% are allocated to recreational fisheries above Bonneville Dam. Within the 30% upriver pre-season allocation, 10% points are allocated to OR/WA fisheries from Bonneville Dam up to the state line and 20% points are allocated to the WA fishery in the Snake River and Upper Columbia River areas. After the run size has been updated with actual Bonneville Dam counts, any projected unused Upriver Run ESA impacts from either the recreational or commercial fishery may be transferred to other fisheries or remain uncaught.

Upriver Spring Chinook Adult Run	Allocation of Allowable Upriver Run ESA Impacts	
	Recreational Fisheries	Commercial Fisheries
< 82,000	80%	20%
82,001 – 217,000	70%	30%
> 217,000	65%	35%

Summer Chinook Salmon

1. The amount of the non-Treaty harvestable surplus under the US v Oregon Management Agreement shall be allocated between fisheries above and below Priest Rapids Dam based on the following sliding scale.

River-mouth run size	Percent of non-treaty allocation assigned to fisheries above Priest Rapids Dam
0 – 29,000	>90%
29,001 – 50,000	90%
50,001 – 60,000	70% - 90%
60,001 – 75,000	65% - 70%
75,001 – 100,000	60% - 65%
>100,000	60%

The allocation between recreational and commercial fisheries downstream of Priest Rapids Dam shall be in accordance with the following abundance-based approach.

Summer Chinook Adult Run	Allocation below Priest Rapids Dam	Allocation of Allowable Catch	
		Recreational Fisheries	Commercial Fisheries
< 50,000	10%	80%	20%
50,001 – 100,000	10% - 40%	70%	30%
> 100,000	40%	60%	40%

Unused impacts allocated to the commercial fishery are to be applied to recreational fisheries downstream or upstream of Bonneville Dam if they can be used, or to aid in additional spawning escapement.

Sockeye Salmon

1. The annual allocation to recreational and commercial fisheries is 70%/30% of allowable non-Treaty Snake River ESA impacts. The 30% commercial share is to be used for incidental impacts in commercial fisheries directed at summer Chinook salmon.

Fall Chinook Salmon

1. The annual recreational and commercial allocation is $\leq 70\%$ / $\geq 30\%$ of allowable Lower River Hatchery stock ESA impacts and allowable non-Treaty Snake River ESA impacts (whichever is more constraining in a given year). The commercial share of such ESA impacts is to cover mainstem Columbia River and Select Area fisheries.

Coho Salmon

1. While there is no explicit numerical sharing of Lower Columbia River Natural ESA impacts, the allocation is prioritized as follows: commercial fisheries are to be assigned sufficient impacts to implement Select Area coho and fall Chinook fisheries and mainstem fall Chinook fisheries, and the balance to in-river mainstem recreational fisheries. If these fisheries are expected to be unable to use all of the allowable impacts, the remainder will be assigned to mainstem commercial coho fisheries.

Chum Salmon

1. Commercial fisheries shall be assigned a sufficient share of the ESA-impact for chum to implement Select Area and mainstem fisheries targeting other salmon species. There shall not be retention of chum salmon in recreational or commercial fisheries.

Adaptive Management Provisions

The Commission recognizes that the provisions of this Policy describe a presumptive path forward to achieve the stated purposes, and that considerable uncertainty exists in how and when the purposes will be regarded as achieved. It is noted from the comprehensive review of 2013- 2017 that several aspects of the presumptive path for the policy initiatives that began in 2013 did not occur as expected, including in particular the successful development and implementation of alternative commercial selective fishing gear, the expansion or development of new Select Area fishing areas, and the securing of enhanced hatchery production. It is also noted that some adaptive management provisions were implemented in 2017 in response to policy performance findings at that time. In addition to management performance uncertainty, there are many unpredictable events that could have a substantial effect on the presumptive path forward, including large fluctuations in short-term run sizes, changes in long-term environmental patterns, possible environmental disasters, and population restoration results occurring sooner or later than expected. Therefore, the Commissions acknowledge that adaptive management procedures will be essential to achieve the purpose of this policy and are expected to occur after proper evaluation and as appropriate to achieve the purposes of this Policy.

The Department will track policy implementation and results of the fishery management actions and hatchery production programs and provide the Commissions with annual updates and a comprehensive review as soon as possible after 2025. State-managed fisheries pursuant to this Policy will be adaptive and adjustments should be considered to commercial and recreational fisheries if policy purposes, including fishery economics and stability, are not achieved consistent with the principles of this plan. If the policy purposes are not achieved, efforts will be made to determine why and to identify actions necessary to correct course. Department staff are expected to implement actions necessary to manage adaptively to achieve the purposes of this policy with authorization from the Commission, in order to implement corrective actions.

Delegation of Authority

The Commission delegates the authority to the Department Director, through the North of Falcon stakeholder consultation process and the Columbia River Compact, to set seasons for recreational and commercial fisheries in the Columbia River, to adopt temporary or emergency regulations to implement these fisheries, and to make harvest agreements with Columbia River Native American Tribes, the State of Idaho and other government agencies in a manner consistent with the provisions of this Policy. The Director shall work with the Director of the Oregon Fish and Wildlife to achieve implementation of the fishery regulation provisions of this Policy in a manner that results in concurrent fishing regulations between the two states in common boundary waters of the Columbia River. In the event circumstances result in a reason the Directors believe that non-concurrent fishing regulations must be considered, the Commission shall be consulted to seek resolution of the situation.