Status and Trends of Adult Chinook S and Coho Salmon in the Scott Riv

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California Department of Fish and Wildlife
Klamath Trinity Program

Overview:

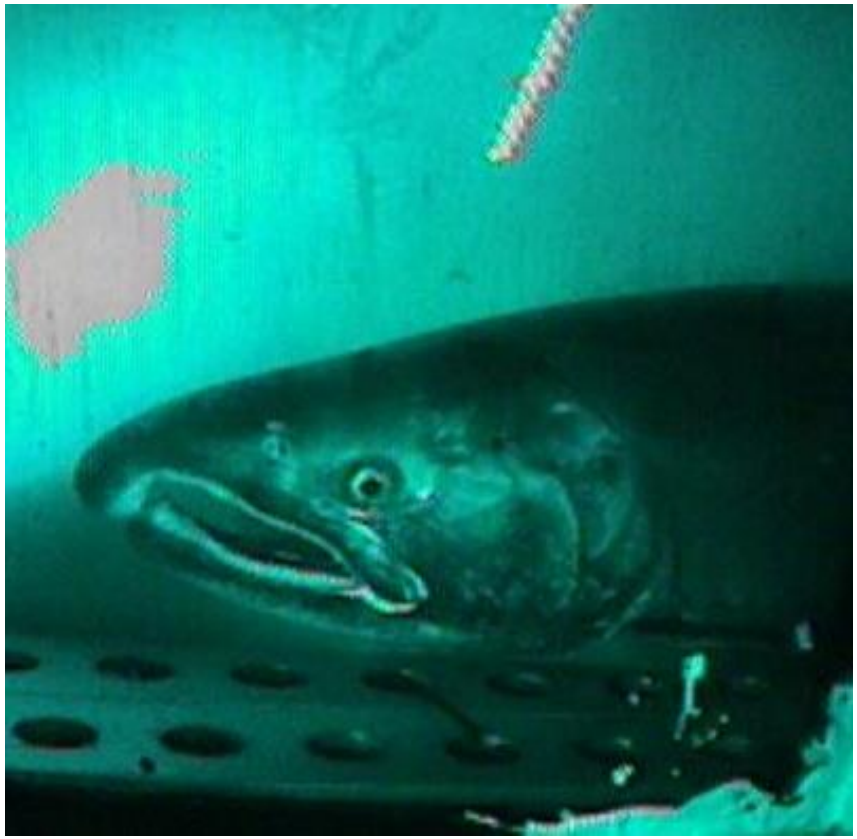
-2023 Scott River survey results

-Overview of Chinook Salmon forecasting

-New projects

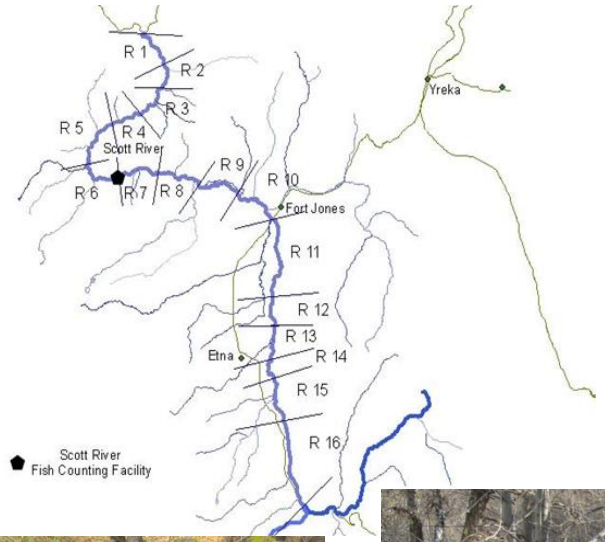
Annual Goals:

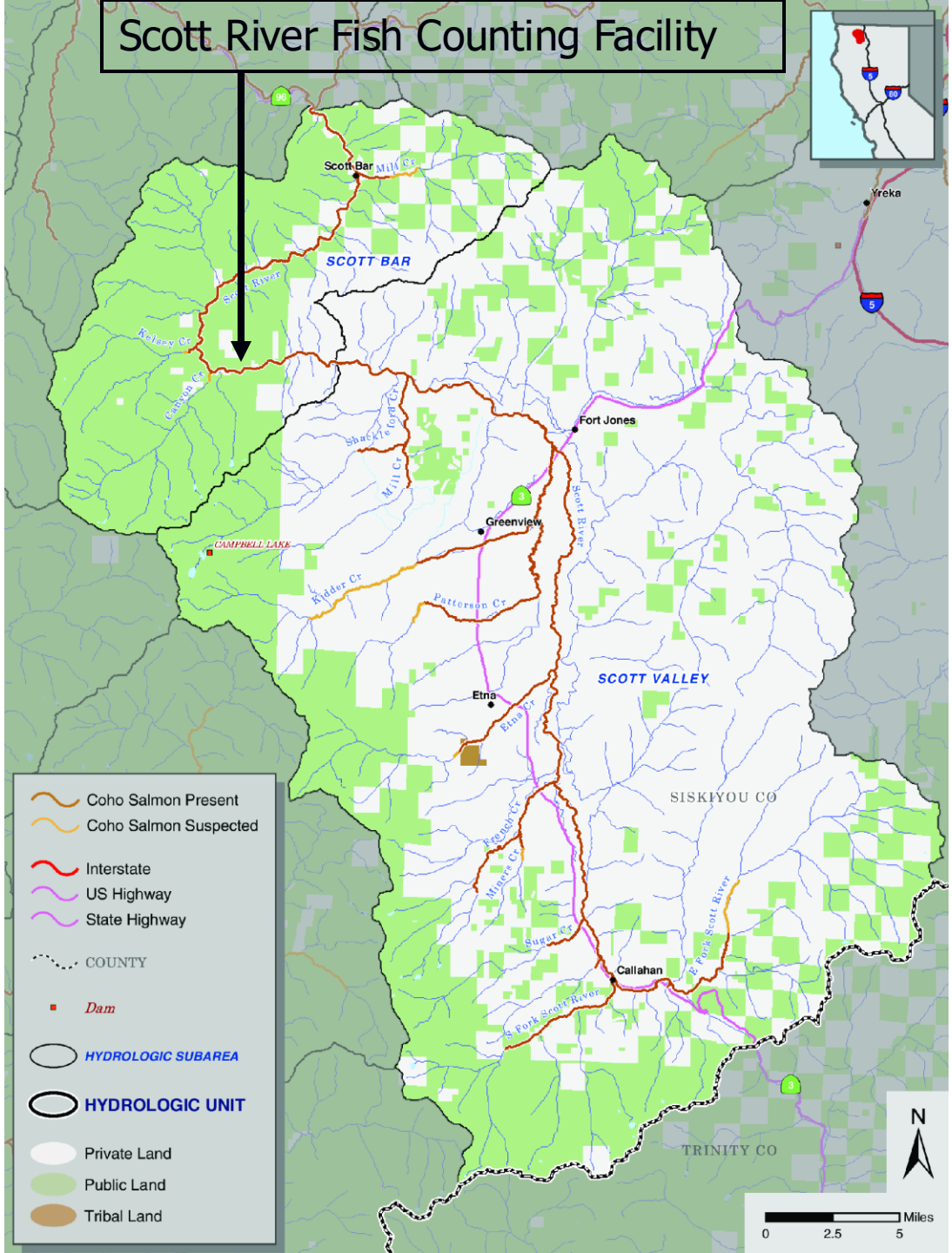
- Run timing
- Abundance
- Sex composition
- Hatchery contribution rates
- Age structure



Male Coho Scott River

Spawning Ground Surveys

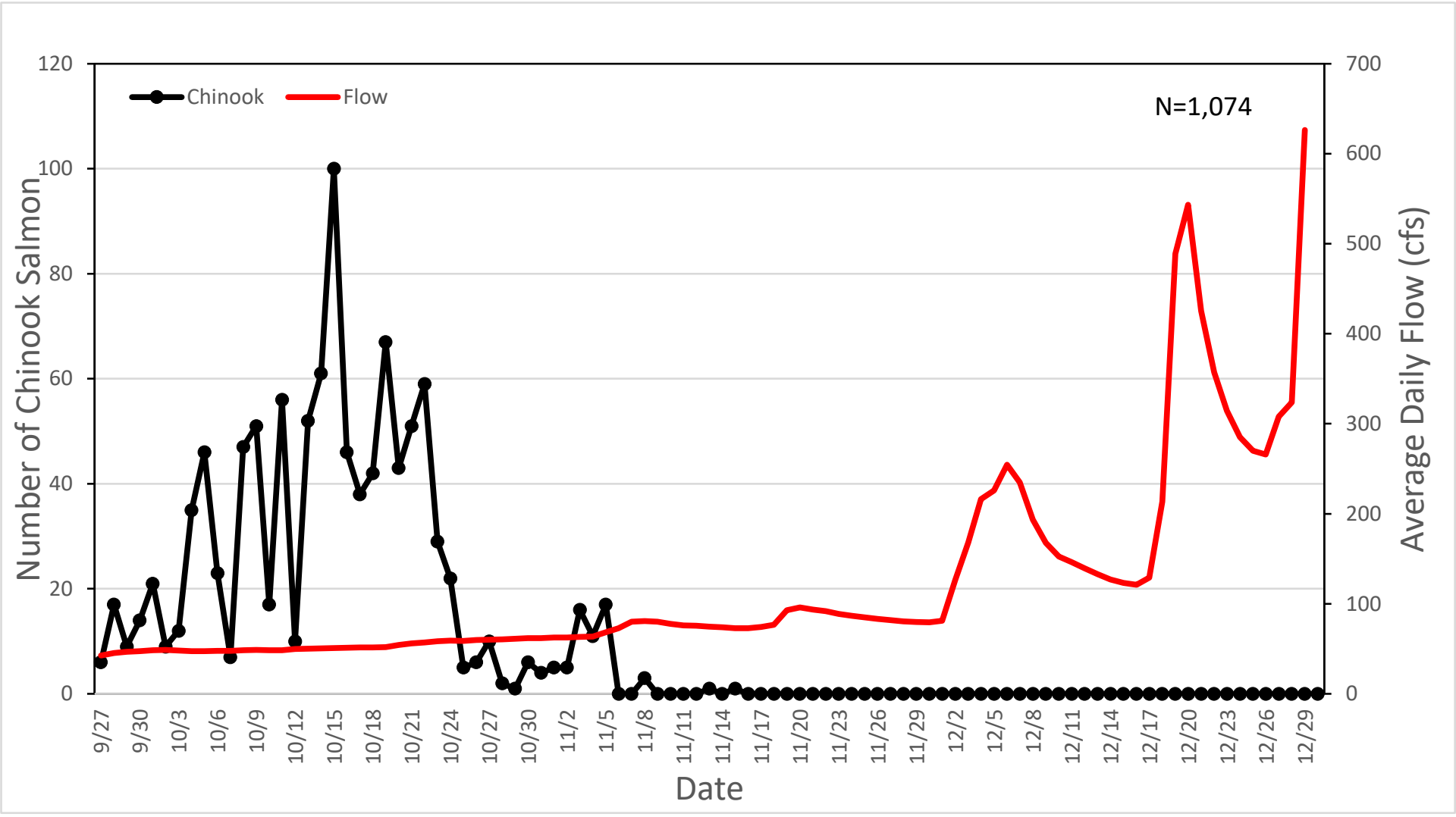


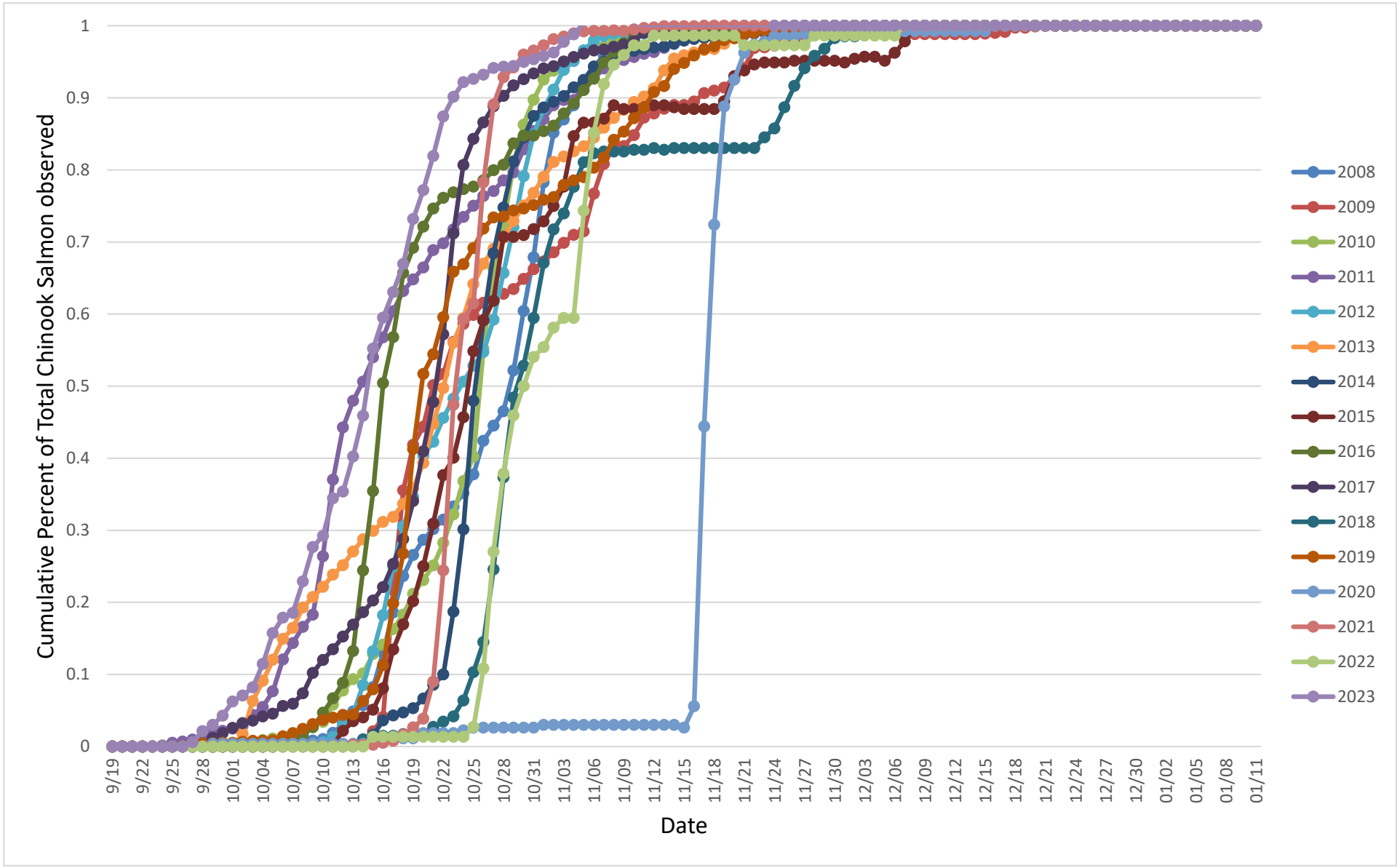


*DFG 2004 Recovery Strategy for California Coho Salmon

Chinook

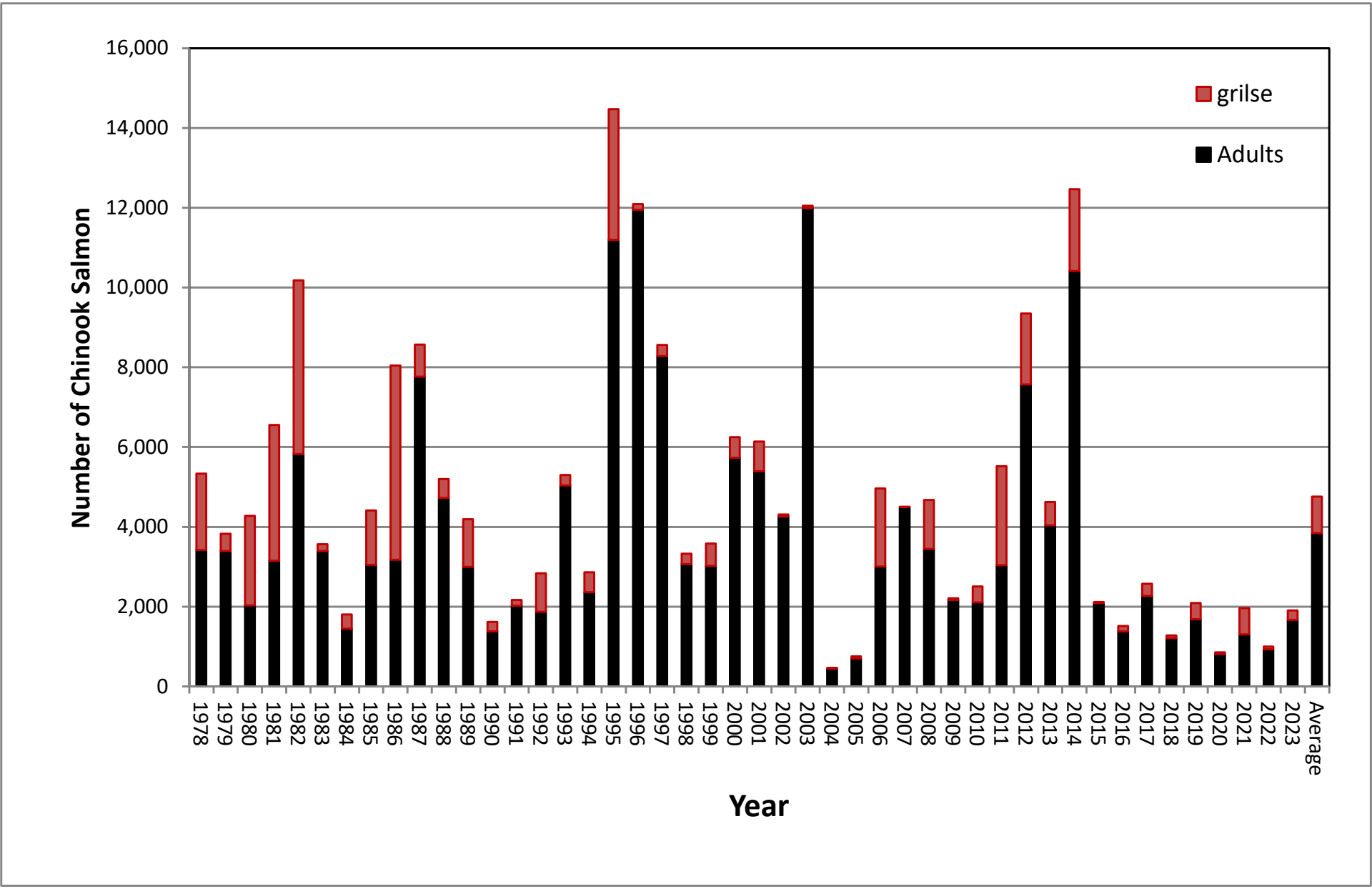
Scott River 2023

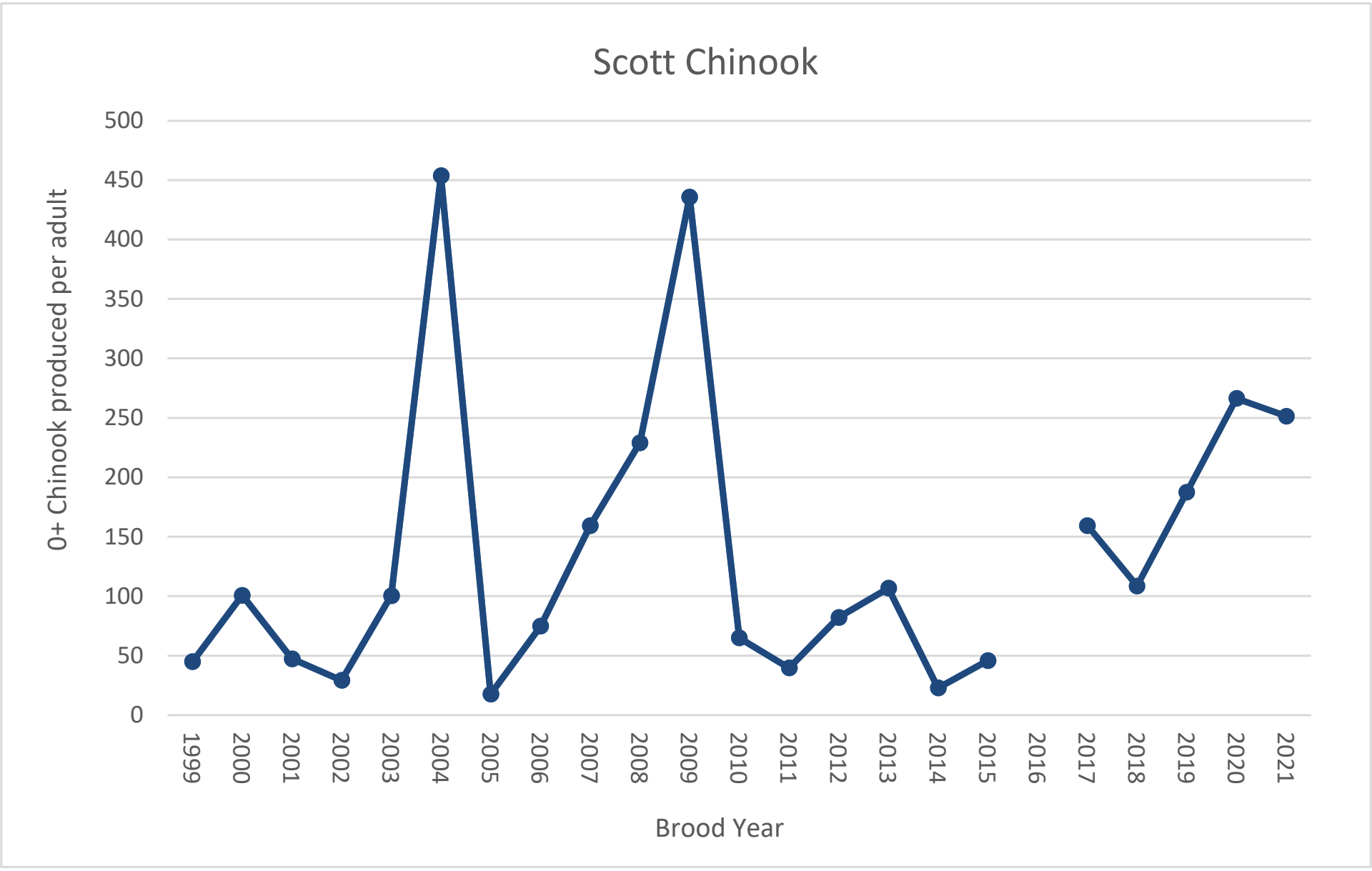


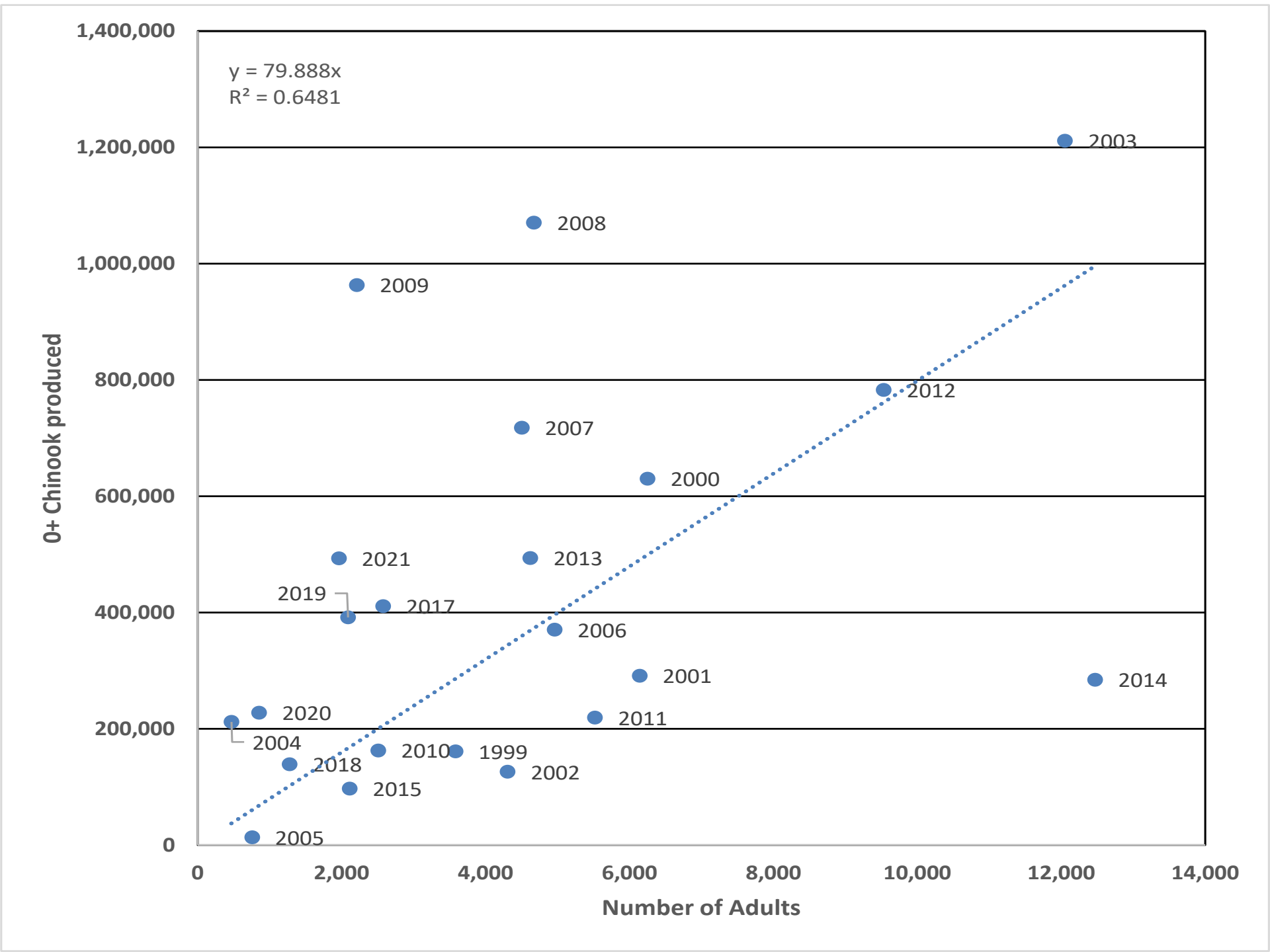

Cumulative Percent of Total Chinook Salmon observed
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
9/19
9/22
9/25
9/28
10/01
10/04
10/07
10/10
10/13
10/16
10/19
10/22
10/25
10/28
10/31
11/03
11/06
11/09
11/12
11/15
11/18
11/21
11/24
11/27
11/30
12/03
12/06
12/09
12/12
12/15
12/18
12/21
12/24
12/27
12/30
01/02
01/05
01/08
01/11
Date
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023

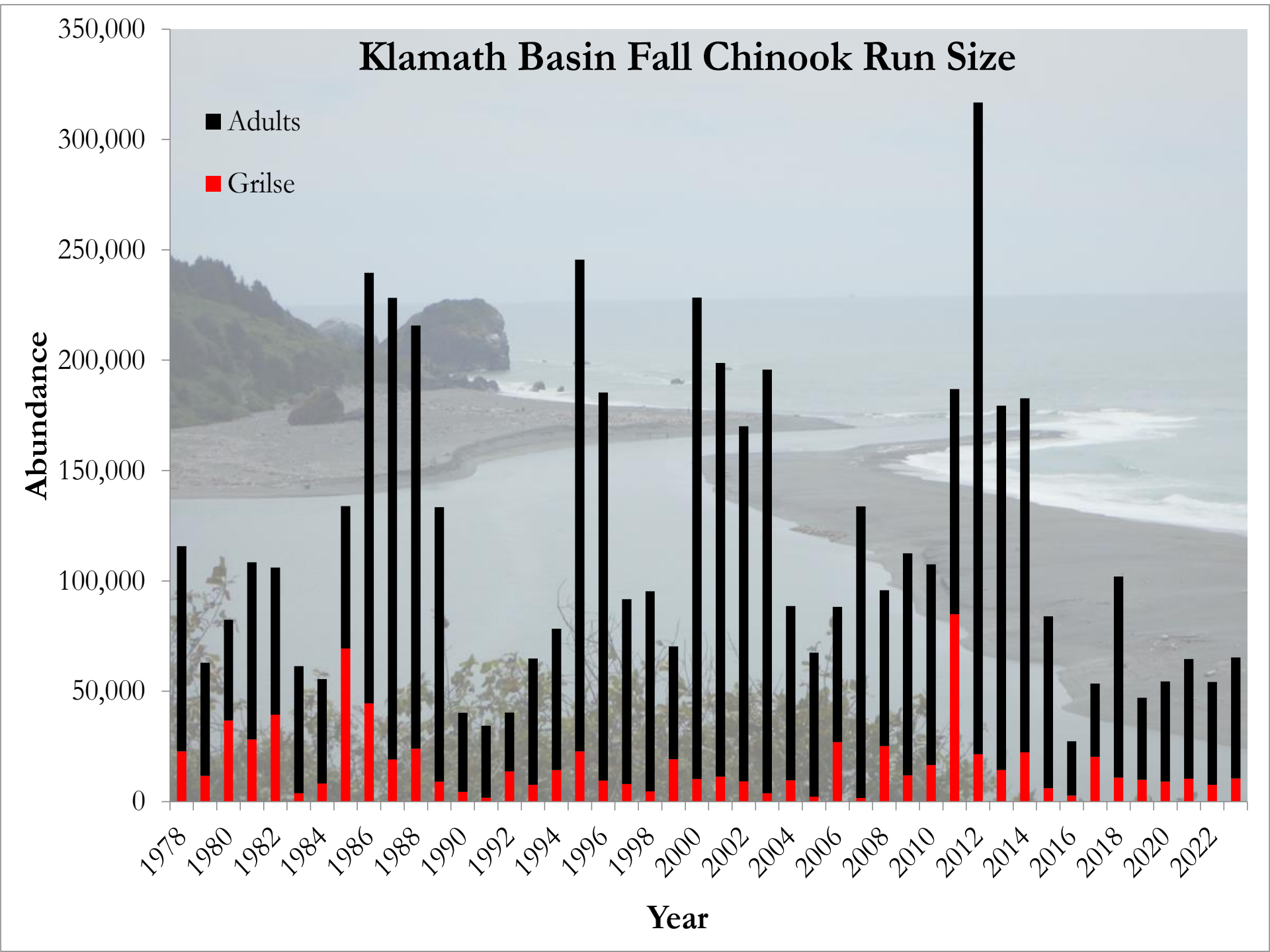
Year	Downstream of Counting Station	Upstream of Counting Station	% Downstream of Counting Station	% Upstream of Counting Station	Total Basin Estimate
2008	1,439	3,234	31%	69%	4,673
2009	1,014	1,197	46%	54%	2,211
2010	280	2,228	11%	89%	2,508
2011	983	4,538	18%	82%	5,521
2012	1,208	8,144	13%	87%	9,352
2013	1,252	3,372	27%	73%	4,624
2014	2,995	9,476	24%	76%	12,471
2015	1,741	372	82%	18%	2,113
2016	363	1,152	24%	76%	1,515
2017	297	2,279	12%	88%	2,576
2018	875	404	68%	32%	1,279
2019	537	1,553	26%	74%	2,090
2020	586	269	69%	31%	855
2021	561	1,400	29%	71%	1,961
2022	920	74	93%	7%	994
2023	832	1,074	44%	56%	1,906
Average	993	2,548	38%	62%	3,541

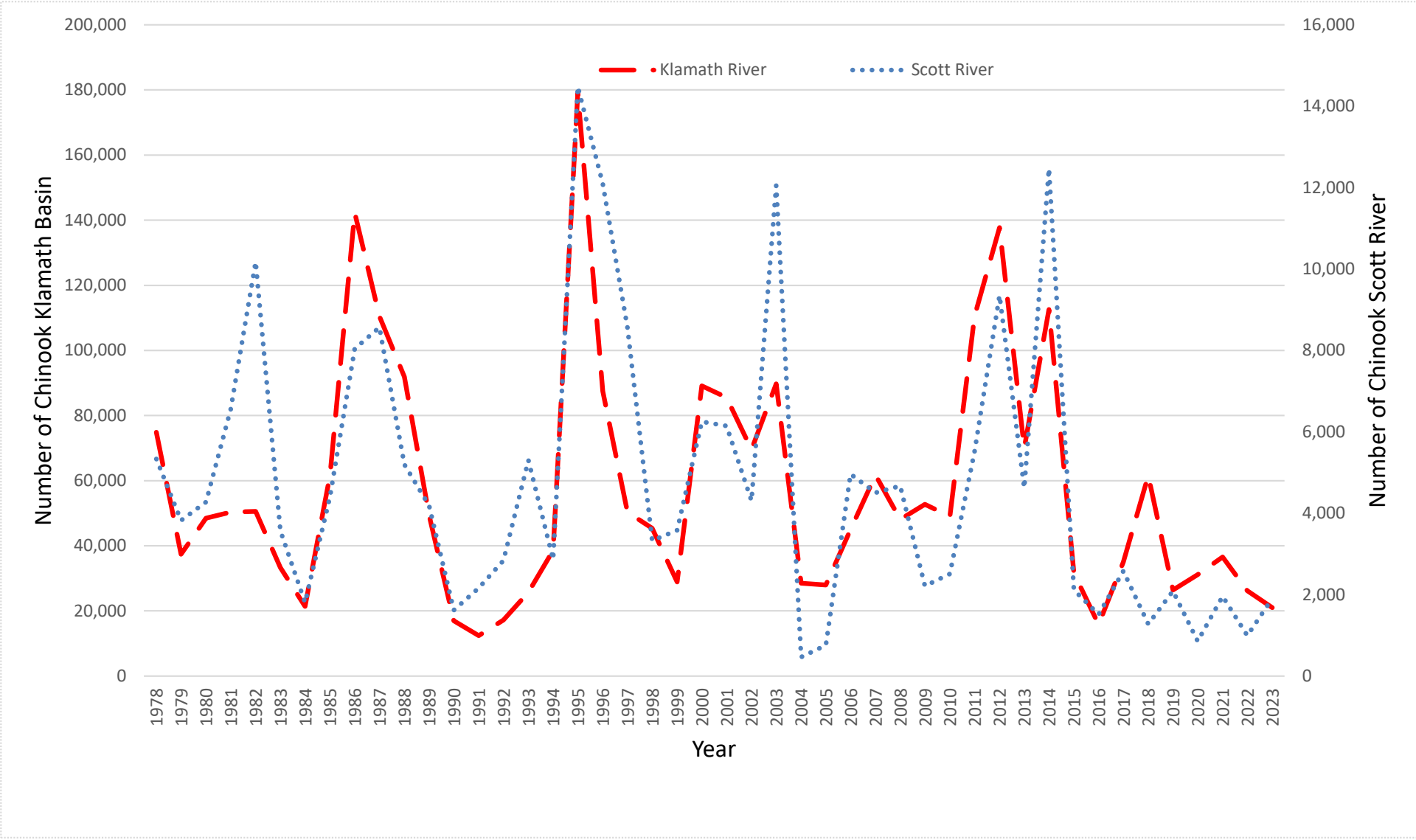
Scott River Fall Chinook run-size 1978-2023




Scott Chinook
0+ Chinook produced per adult
500
450
400
350
300
250
200
150
100
50
0
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
Brood Year


y = 79.888x
R² = 0.6481
0+ Chinook produced
Number of Adults
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
2,000
4,000
6,000
8,000
10,000
12,000
14,000
2003
2008
2009
2012
2007
2000
2021
2013
2019
2017
2006
2001
2014
2020
2011
2004
2010
1999
2018
2002
2015
2005


Klamath Basin Fall Chinook Run Size
Adults
Grilse
Abundance
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
Year


Klamath River
Scott River
Number of Chinook Klamath Basin
Number of Chinook Scott River
Year
200,000
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 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

Age structured data:

*KRTT

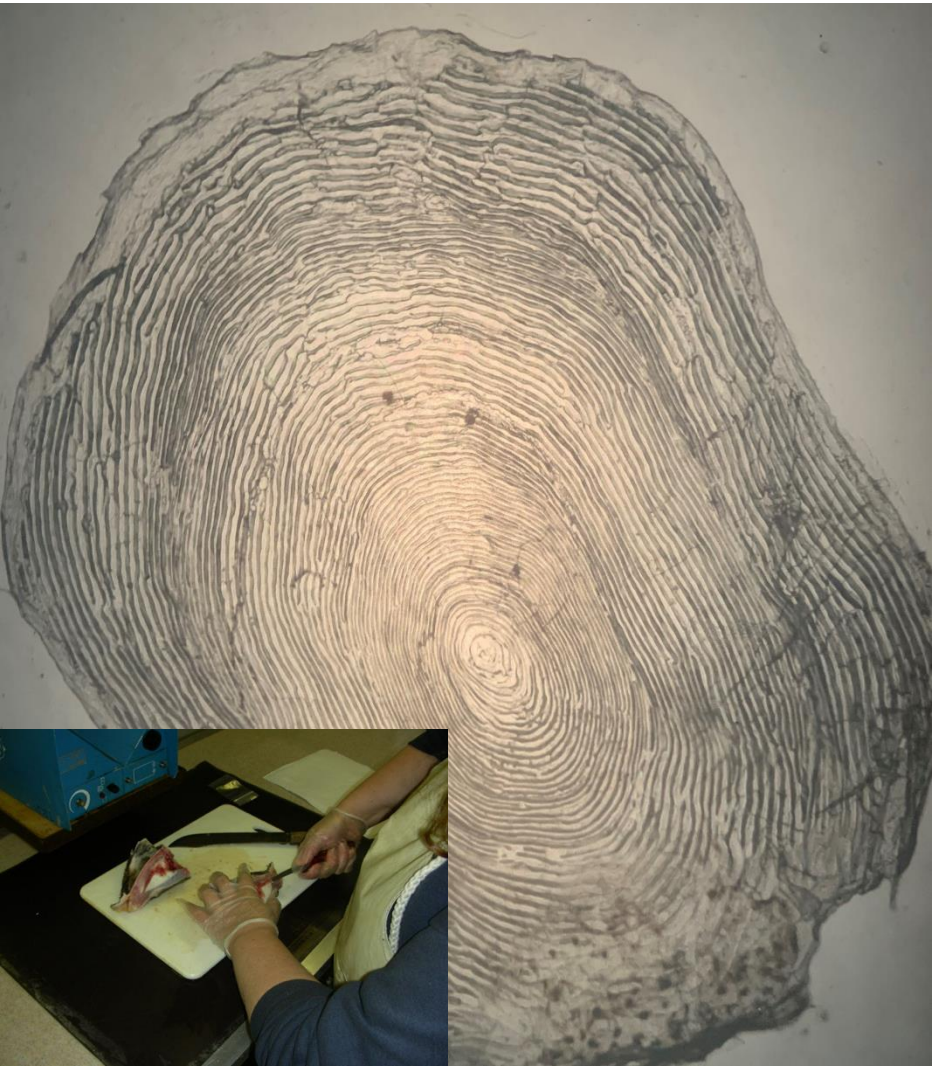
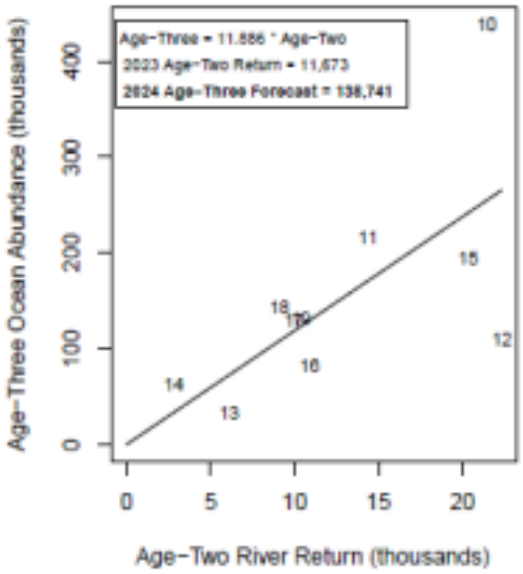
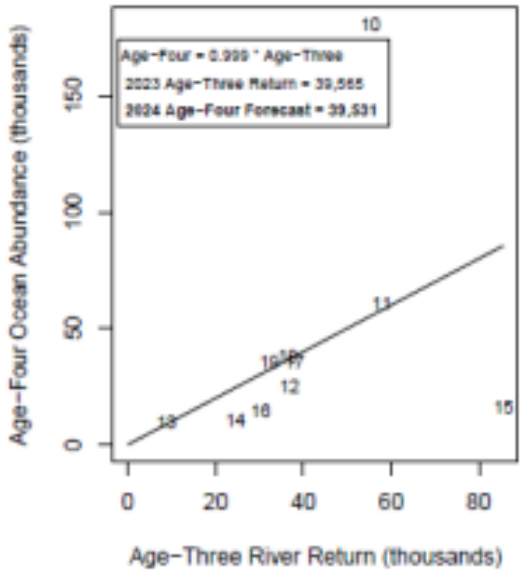
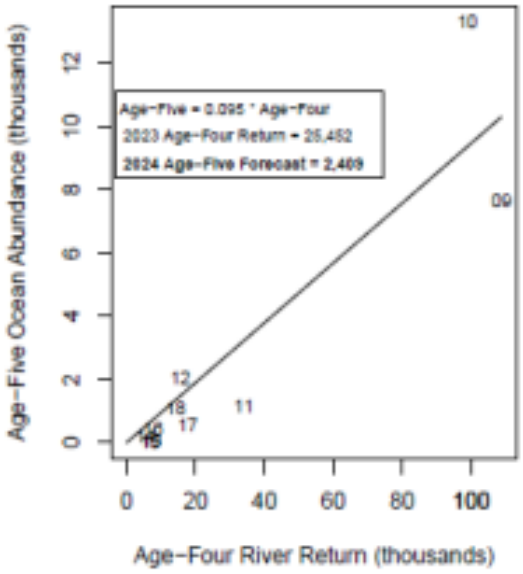


Table 5. Age composition of the 2024 Klamath Basin fall Chinook run. 02/04/2025

Escapement & Harvest	AGE 2	3	4	5	Total Adults	Total Run
Hatchery Spawners						
Fall Creek Hatchery (FCH)*	18	127	165	7	299	317
Trinity River Hatchery (TRH)	622	3,074	1,116	0	4,190	4,812
Hatchery Spawner subtotal	640	3,201	1,281	7	4,489	5,129
Natural Spawners						
Salmon River Basin	245	886	634	0	1,520	1,765
Scott River Basin	29	620	197	29	846	875
Shasta River Basin	31	3,046	1,905	0	4,951	4,982
Bogus Creek Basin	31	218	141	24	383	414
Fall Creek*	1	64	62	12	138	139
Spencer Creek*	22	128	33	3	164	186
Klamath River mainstem (Link River Dam to Keno Dam)*	0	0	0	0	0	0
Klamath River mainstem (Keno Dam to CA/OR border)*	19	162	125	16	303	322
Klamath River mainstem (CA/OR border to Iron Gate)*	13	192	135	8	335	348
Klamath River mainstem (Iron Gate to Shasta R.)	1	8	5	2	15	16
Klamath River mainstem (Ash Cr. to Wingate Bar)	0	0	0	0	0	0
Klamath River mainstem (Perailo Bar to Big Bar)	0	0	0	0	0	0
Upper Klamath Tributaries (above Iron Gate)*	79	438	108	12	558	637
Mid Klamath Tributaries (Trinity confluence to Iron Gate)	31	559	572	147	1,278	1309
Blue Creek	49	62	174	26	262	311
Klamath Basin subtotal	551	6,383	4,091	279	10,753	11,304
Trinity River (mainstem above WCW)	5,283	10,863	2,153	0	13,016	18,299
Trinity River (mainstem below WCW)	54	112	22	0	134	188
Trinity Tributaries (above Reservation; below WCW)	11	23	4	0	27	38
Hoopa Reservation tributaries	43	88	18	0	106	149
Trinity Basin subtotal	5,391	11,086	2,197	0	13,283	18,674
Natural Spawners subtotal	5,942	17,469	6,288	279	24,036	29,978
Total Spawner Escapement	6,582	20,670	7,569	286	28,525	35,107
Recreational Harvest						
Klamath River (below Hwy 101 bridge)	0	0	0	0	0	0
Klamath River (Hwy 101 to Weitchpec)	0	0	0	0	0	0
Klamath River (Weitchpec to IGH)	0	0	0	0	0	0
Trinity River Basin (above WCW)	0	0	0	0	0	0
Trinity River Basin (below WCW)	3	113	23	0	136	139
Subtotals	3	113	23	0	136	139
Tribal Harvest						
Klamath River (below Hwy 101)	43	1,148	1,268	1	2,417	2,460
Klamath River (Hwy 101 to Trinity mouth)	21	993	1,134	419	2,546	2,567
Trinity River (net, hook-and-line, and tribal creel)	75	849	620	0	1,469	1,544
Trinity River (selective harvest weir)	332	611	204	2	817	1,149
Subtotals	471	3,601	3,226	422	7,249	7,720
Total Harvest	474	3,714	3,249	422	7,385	7,859
Totals						
Harvest and Escapement	7,056	24,384	10,818	708	35,910	42,966
Recreational Angling Dropoff Mortality 2.04%	0	2	0	0	2	2
Tribal Net Dropoff Mortality 8.7%	12	264	267	37	568	580
Klamath-Trinity Basin Ich disease testing	0	45	44	3	92	92
Total River Run	7,068	24,695	11,129	748	36,572	43,640







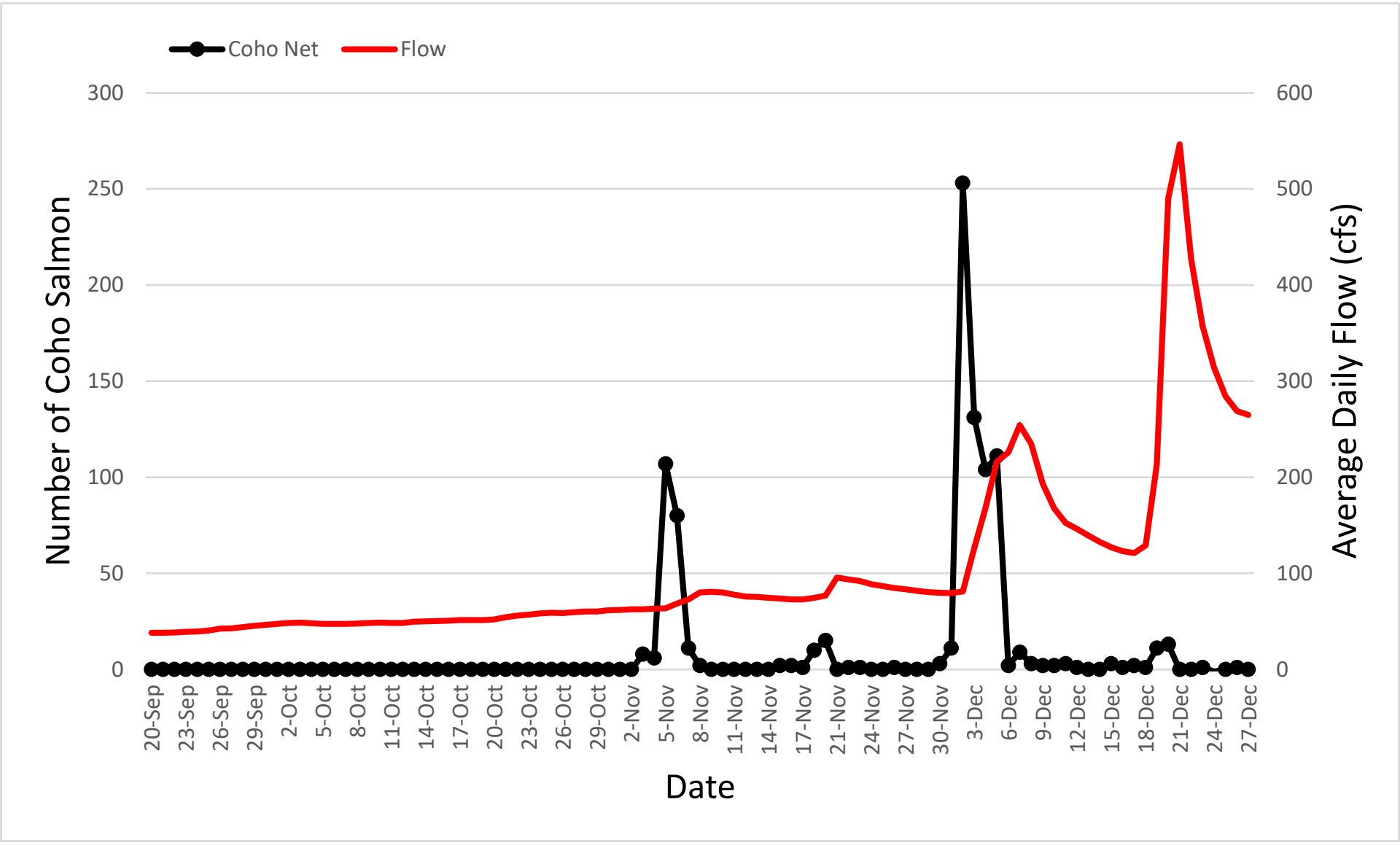
*PFMC

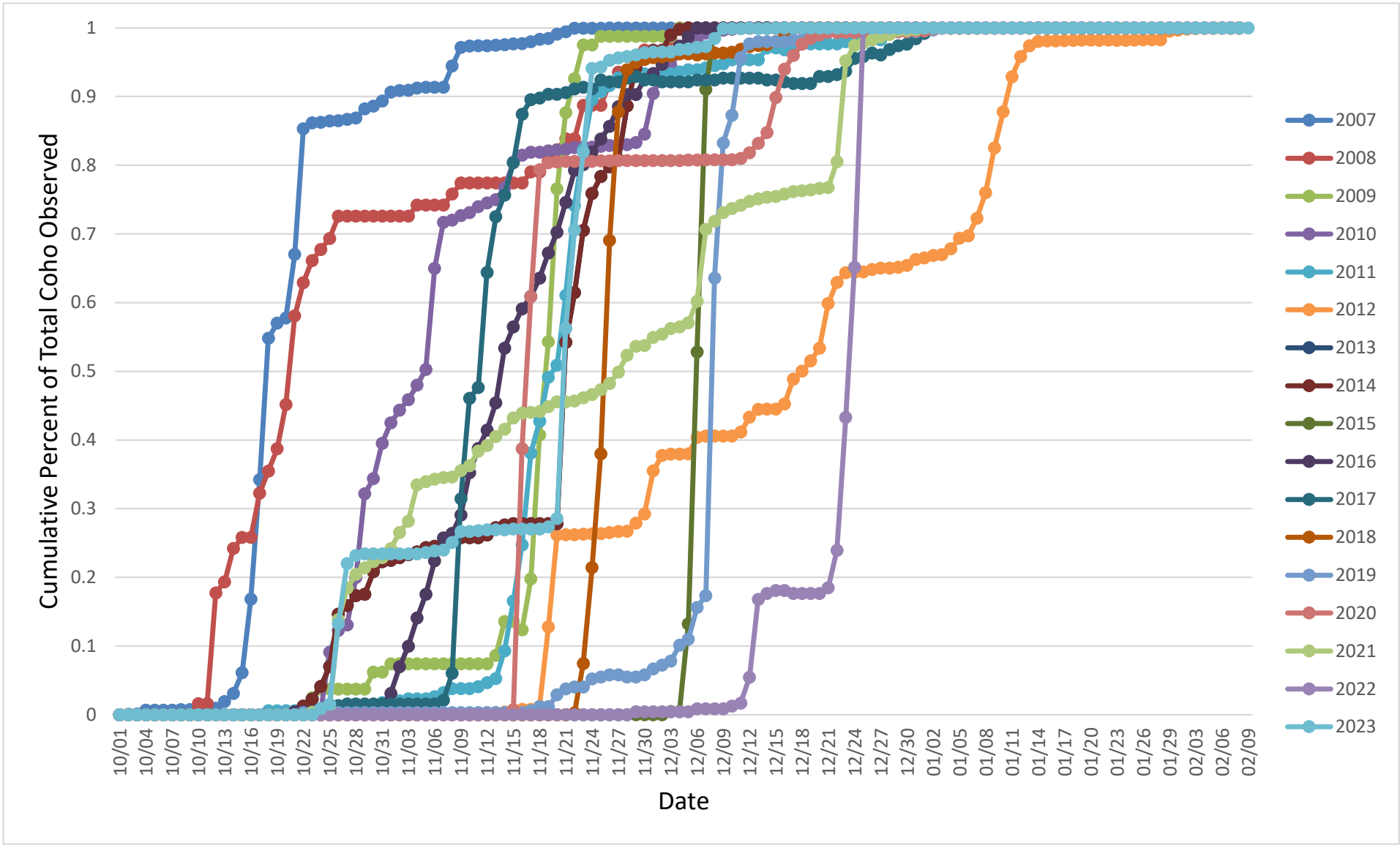
FIGURE II-3. Regression estimators for Klamath River fall Chinook ocean abundance (September 1) based on that year's river return of same cohort. Numbers in plots denote brood years.

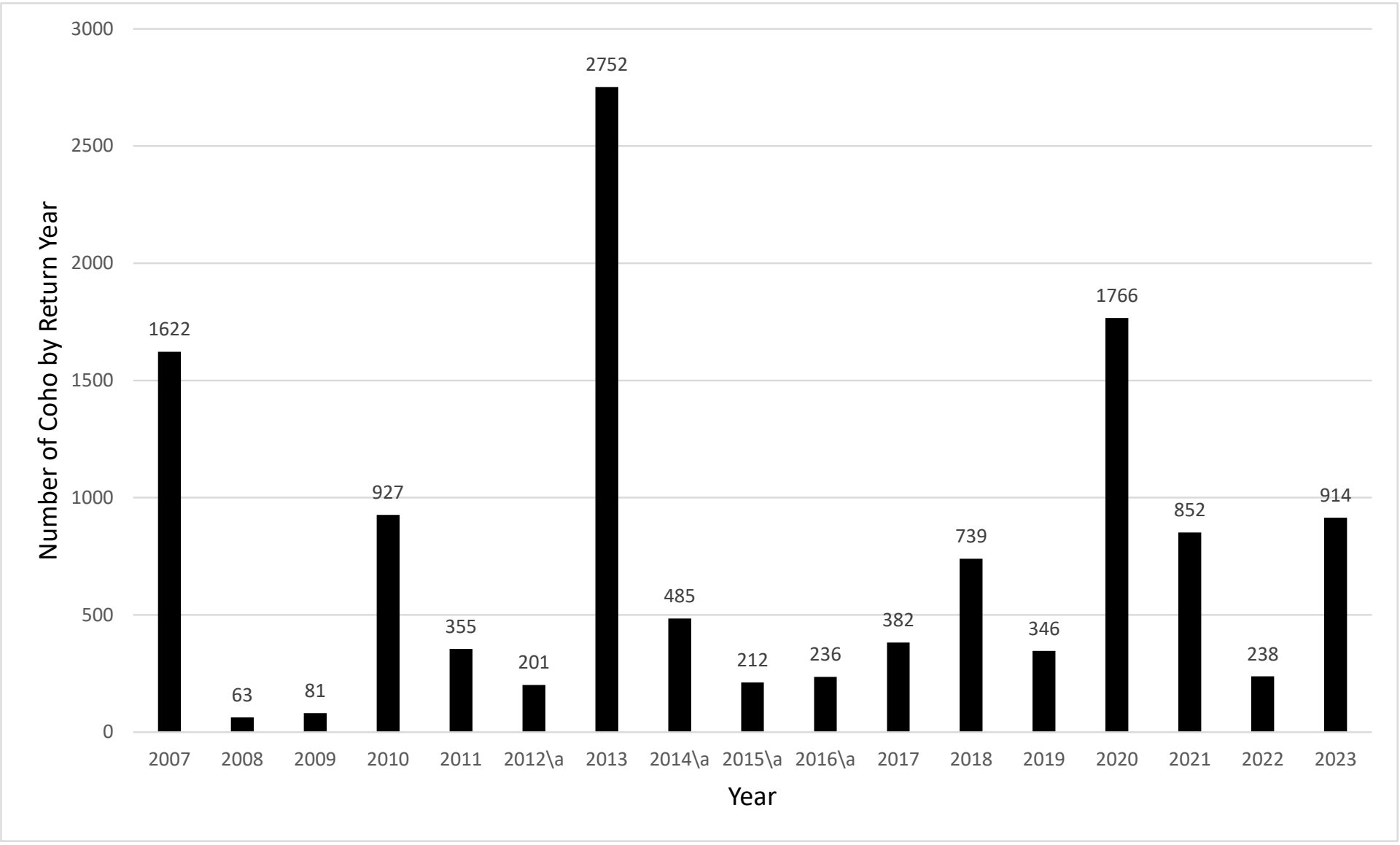
TABLE 5. Projected key stock escapements (thousands of fish) or management criteria for 2024 ocean fishery management measures - Council adopted.[a/] (Page 3 of 5)

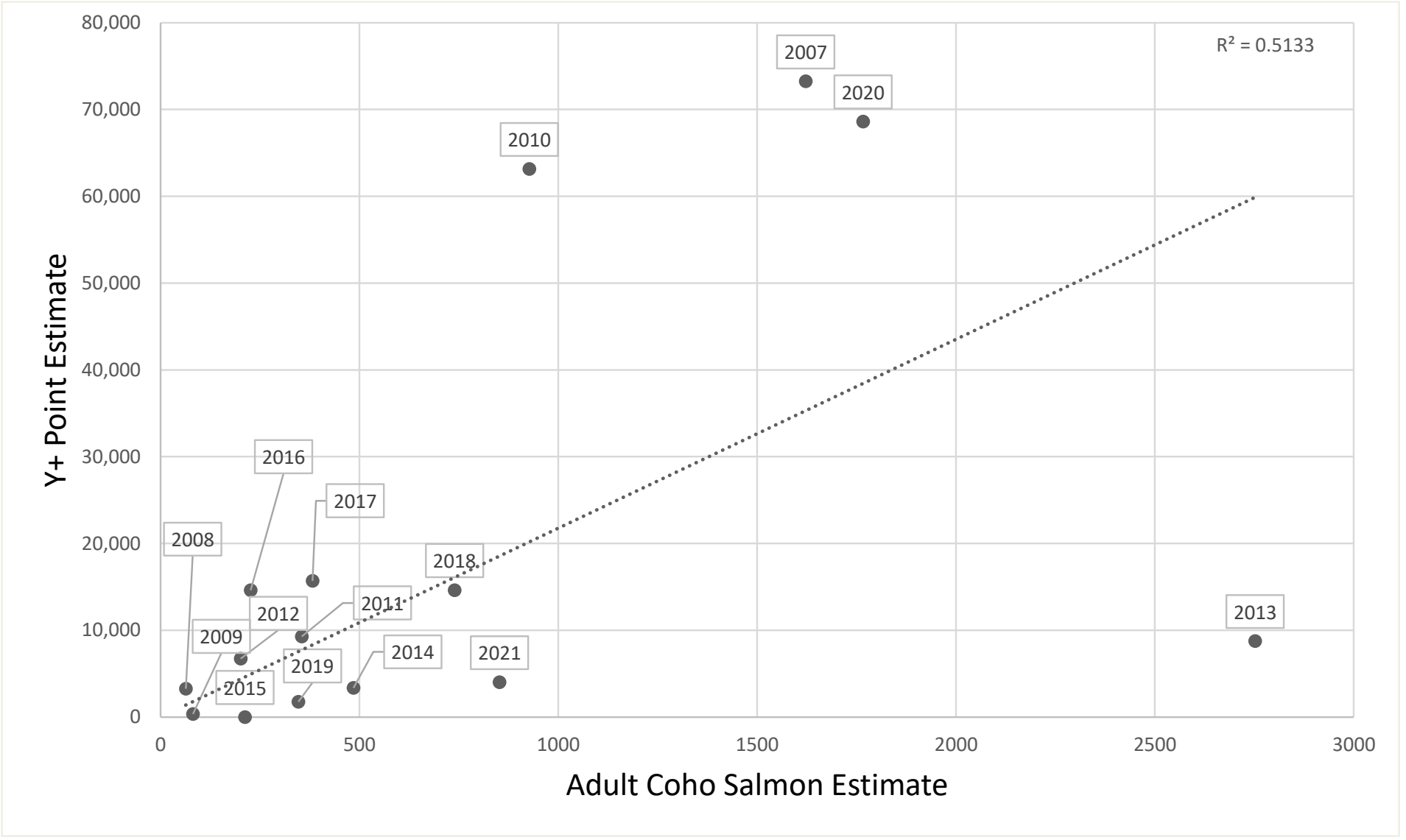
Key Stock/Criteria	Projected	2024 Criteria	Spawner Objective or Other Comparative Standard as Noted [b/]
CHINOOK	**CHINOOK**		**CHINOOK**
OREGON COAST:			
Nehalem Fall	--	≤ 0.85	ISBM obligation applicable when escapement goal is not met. Compliance assessed postseason by the PSC.
Siletz Fall	--	≤ 0.85	ISBM obligation applicable when escapement goal is not met. Compliance assessed postseason by the PSC.
Siuslaw Fall	--	≤ 0.85	ISBM obligation applicable when escapement goal is not met. Compliance assessed postseason by the PSC.
South Umpqua	--	≤ 0.85	ISBM obligation applicable, as this stock lacks a CTC agreed escapement goal. Compliance assessed postseason by the PSC.
Coquille	--	≤ 0.85	ISBM obligation applicable, as this stock lacks a CTC agreed escapement goal. Compliance assessed postseason by the PSC.
CALIFORNIA:			
Klamath River Fall	36.511	≥ 36.511	2024 minimum natural area adult escapement (reflects Council guidance for KRFC ER ≤ 20.0%).
Federally recognized tribal harvest	50.0%	50.0%	Equals 6,434 adult fish for Yurok and Hoopa Valley tribal fisheries.
Exploitation (spawner reduction) rate	20.0%	≤ 20.0%	Council guidance.
Adult river mouth return	65.1	NA	Total adults in thousands.
Age-4 ocean harvest rate	2.2%	≤ 6.0%	NMFS guidance.
KMZ sport fishery share	12.8%		
River recreational fishery share[g/]	77.7%		Equals 4,999 adult fish for recreational inriver fisheries.
Sacramento River Winter (endangered)	0.0%	≤ 12.3%	Age-3 ocean impact rate in fisheries south of Pt. Arena. In addition, the following season restrictions apply: Recreational- Pt. Arena to Pigeon Pt. between the first Saturday in April and the second Sunday in November; Pigeon Pt. to the U.S./Mexico border between the first Saturday in April and the first Sunday in October. Minimum size limit ≥ 20 inches total length. Commercial- Pt. Arena to the U.S./Mexico border between May 1 and September 30, except Pt. Reyes to Pt. San Pedro between October 1 and 15 (Monday-Friday). Minimum size limit ≥ 26 inches total length (NMFS 2024 ESA Guidance).
Sacramento River Fall	180.1	≥ 180.0	2024 minimum hatchery and natural area adult escapement (NMFS Guidance).
Sacramento Index Exploitation Rate	15.7%	≤ 42.9%	FMP control rule.
Ocean commercial impacts	5.0		Includes fall (Sept-Dec) 2023 impacts (12 SRFC).
Ocean recreational impacts	1.0		Includes fall (Sept-Dec) 2023 impacts (141 SRFC).
River recreational impacts[g/]	27.5	27.5	Council guidance.

* PFMC


Coho Net
Flow
Number of Coho Salmon
Average Daily Flow (cfs)
Date
300
250
200
150
100
50
0
600
500
400
300
200
100
0
20-Sep
23-Sep
26-Sep
29-Sep
2-Oct
5-Oct
8-Oct
11-Oct
14-Oct
17-Oct
20-Oct
23-Oct
26-Oct
29-Oct
2-Nov
5-Nov
8-Nov
11-Nov
14-Nov
17-Nov
21-Nov
24-Nov
27-Nov
30-Nov
3-Dec
6-Dec
9-Dec
12-Dec
15-Dec
18-Dec
21-Dec
24-Dec
27-Dec


Cumulative Percent of Total Coho Observed
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
10/01
10/04
10/07
10/10
10/13
10/16
10/19
10/22
10/25
10/28
10/31
11/03
11/06
11/09
11/12
11/15
11/18
11/21
11/24
11/27
11/30
12/03
12/06
12/09
12/12
12/15
12/18
12/21
12/24
12/27
12/30
01/02
01/05
01/08
01/11
01/14
01/17
01/20
01/23
01/26
01/29
02/03
02/06
02/09
Date
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023


Number of Coho by Return Year
3000
2500
2000
1500
1000
500
0
1622
63
81
927
355
201
2752
485
212
236
382
739
346
1766
852
238
914
2007
2008
2009
2010
2011
2012\a
2013
2014\a
2015\a
2016\a
2017
2018
2019
2020
2021
2022
2023
Year


80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Y+ Point Estimate
0
500
1000
1500
2000
2500
3000
Adult Coho Salmon Estimate
R² = 0.5133
2007
2020
2010
2016
2017
2008
2018
2011
2012
2009
2014
2021
2019
2015
2013

Scott River Coho Salmon out of basin survival

Brood Year	Smolt Year	Smolt point Estimate	Age 3 Return Year	Age 2 Return	Age 3 Return	Age 2 and 3 Return	Percent smolt survival
2004	2006	95815	2007	0	1539	1539	1.61
2005	2007	3931	2008	83	60	143	3.64
2006	2008	1142	2009	3	77	80	7.01
2007	2009	73232	2010	4	913	917	1.25
2008	2010	3257	2011	14	344	358	10.99
2009	2011	353	2012	11	188	199	56.37
2010	2012	63135	2013	13	2631	2644	4.19
2011	2013	9283	2014	121	383	504	5.43
2012	2014	6734	2015	102	188	290	4.31
2013	2015	8758	2016	24	226	250	2.85
2014	2016	3372	2017	0	368	368	10.91
2015	2017	N/A	2018	14	712	726	N/A
2016	2018	14628	2019	27	338	365	2.50
2017	2019	15707	2020	8	1664	1672	10.64
2018	2020	14628	2021	102	845	947	6.47
2019	2021	1762	2022	7	231	238	13.51
2020	2022	68996	2023	8	906	914	1.32

- Average of 5.78%
  - Excluding Brood Year 2009
  - Hatchery fish removed

Scott River Coho Salmon smolts produced per adult female

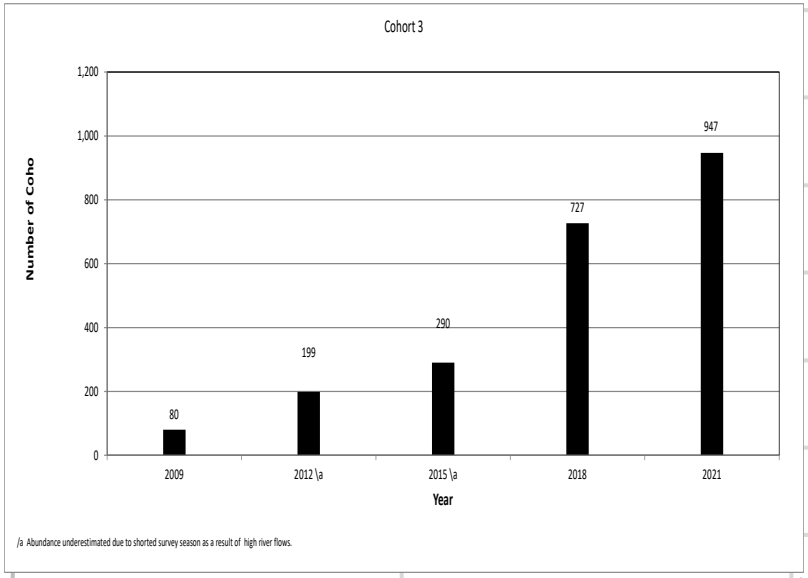
Adult Year Brood Year	Adult Estimate	Adult Female Estimate	Smolt Year	Smolt point Estimate	Smolts produced per Female
2007	1622	860	2009	73,232	85.15
2008	63	32	2010	3,257	101.78
2009	81	41	2011	353	8.61
2010	927	640	2012	63,135	98.65
2011	355	170	2013	9,283	54.61
2012	201	86	2014	6,734	78.30
2013	2752	1514	2015	8,758	5.78
2014	485	179	2016	3,372	18.84
2015	212	170	2017	N/D	N/D
2016	226	175	2018	14,628	83.59
2017	382	174	2019	15,707	90.27
2018	739	422	2020	14,628	34.66
2019	346	195	2021	1,762	9.04
2020	1,766	883	2022	68,616	77.71
2021	852	426	2023	4,014	9.42
				Average	**54.03**

Why does this matter????

Scott River

Year	Females	Average smolts produced Female	Average out of Basin Survival (5.78%)	Expected Adults
1	32	54.03	0.0578	100
2	100	54.03	0.0578	312
3	312	54.03	0.0578	975
4	975	54.03	0.0578	3044
	100	34.6	0.0578	200

Scott Sample Growth

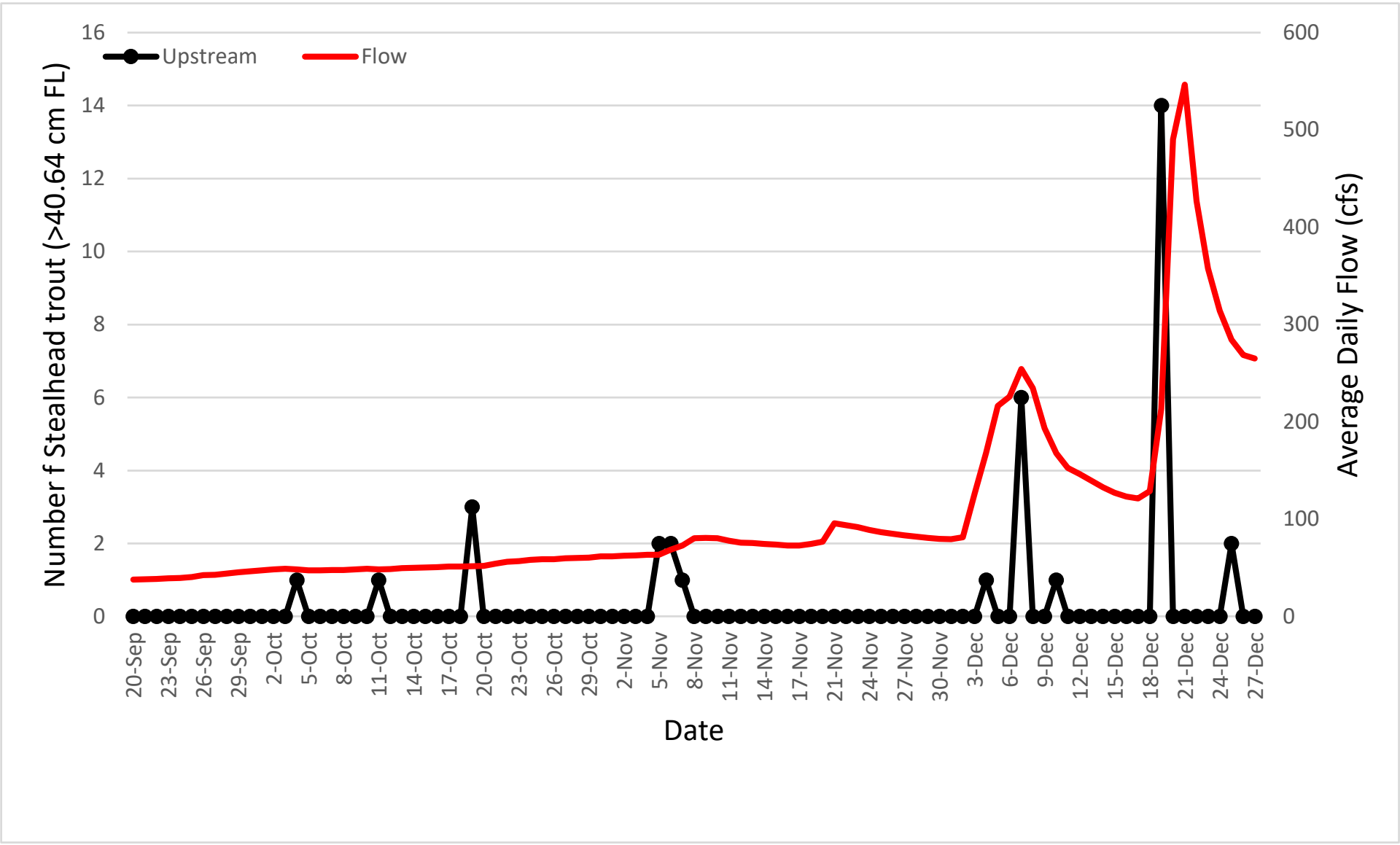


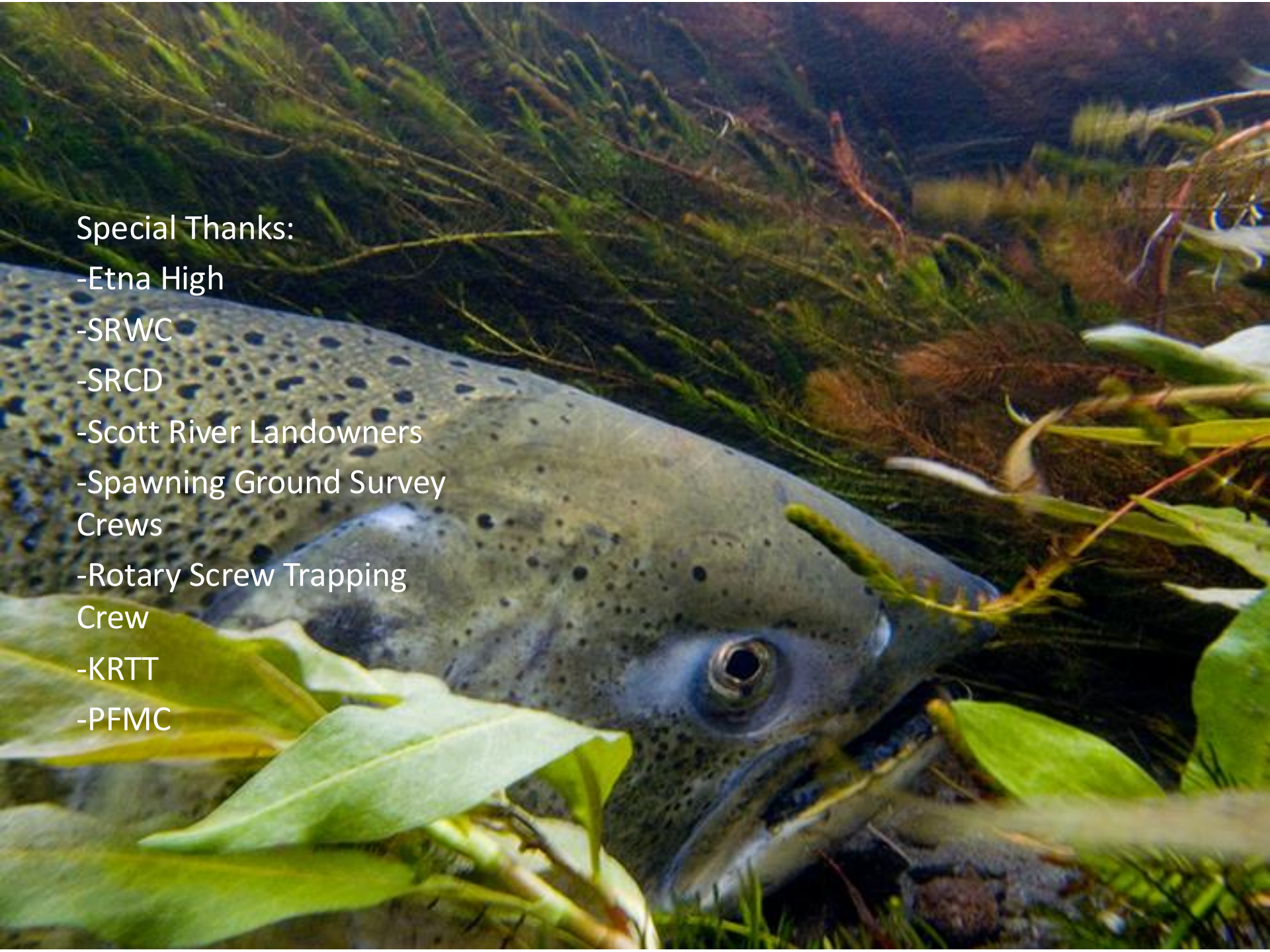
Sample adults

1000
900
800
700
600
500
400
300
200
100
0

1
2
3
4

Sample Year


Upstream
Flow
Number f Stealhead trout (>40.64 cm FL)
Average Daily Flow (cfs)
Date
0
2
4
6
8
10
12
14
16
0
100
200
300
400
500
600
20-Sep
23-Sep
26-Sep
29-Sep
2-Oct
5-Oct
8-Oct
11-Oct
14-Oct
17-Oct
20-Oct
23-Oct
26-Oct
29-Oct
2-Nov
5-Nov
8-Nov
11-Nov
14-Nov
17-Nov
21-Nov
24-Nov
27-Nov
30-Nov
3-Dec
6-Dec
9-Dec
12-Dec
15-Dec
18-Dec
21-Dec
24-Dec
27-Dec



Special Thanks:

-Etna High

-SRWC

-SRCD

-Scott River Landowners

-Spawning Ground Survey Crews

-Rotary Screw Trapping Crew

-KRTT

-PFMC

New Projects: Klamath Dam Removal

Project Location & Mainstem Klamath River Dams

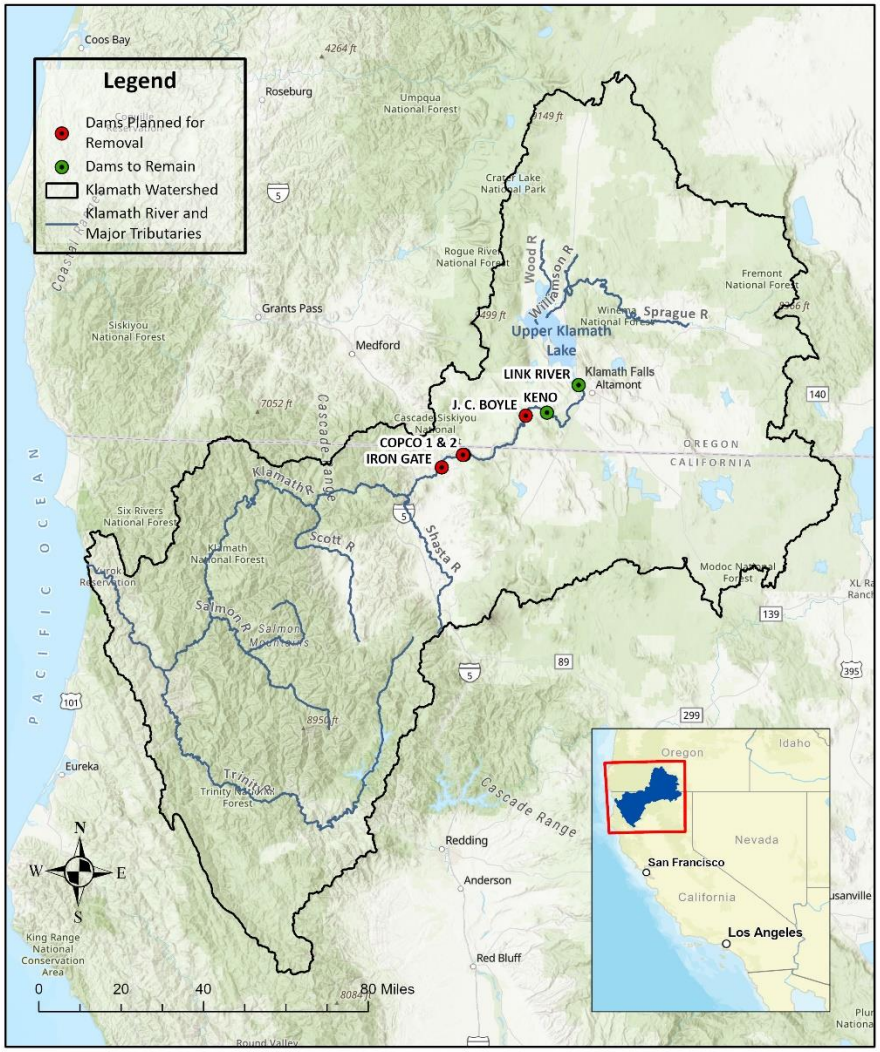
Klamath Watershed (≈40,507 square kilometers)

Hydroelectric Dams to be Removed

- **J.C. Boyle** (1958)
- **Copco No.1** (1922)
- **Copco No.2** (1925)
- **Iron Gate** (1962)

Dams to Remain

- **Link River (1921)**
- **Keno (1966)**



Iron Gate Dam:

Copco 1 and Copco 2 Dams:

KRRC

Removal of Copco No.2 Dam

Future Monitoring:

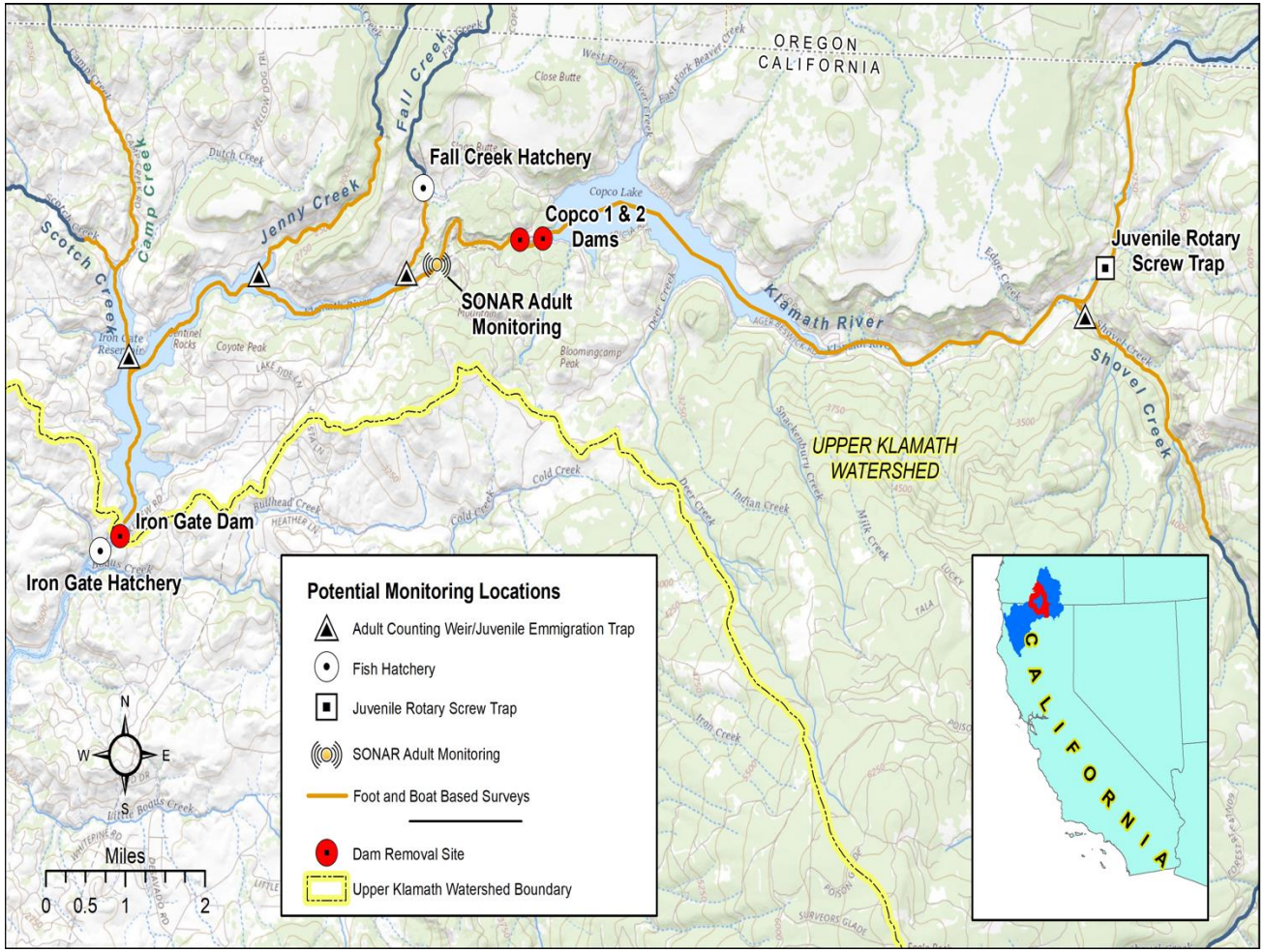
-Tributaries (adults in and juveniles out)

-abundance, age structure, hatchery fraction

-Mainstem (adult carcass/redd)

-Mainstem (adult SONAR)

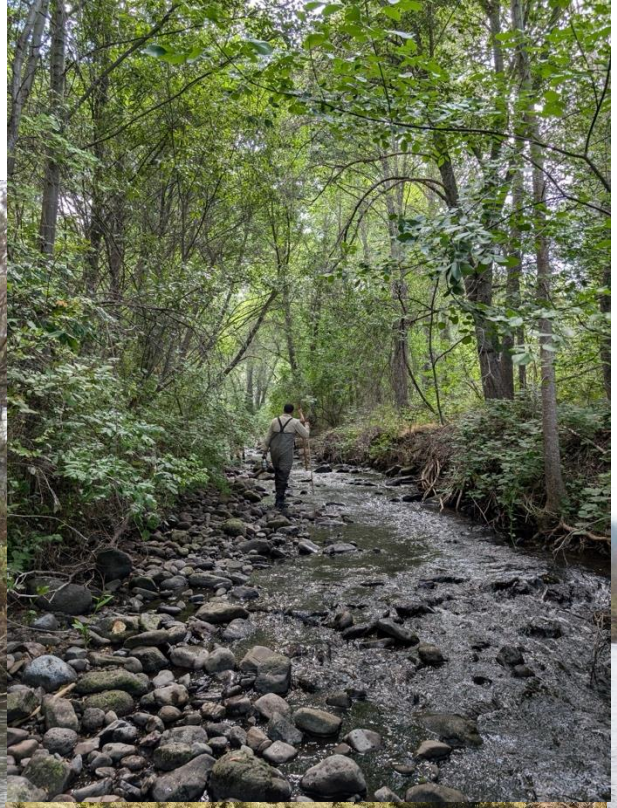
-Mainstem RST

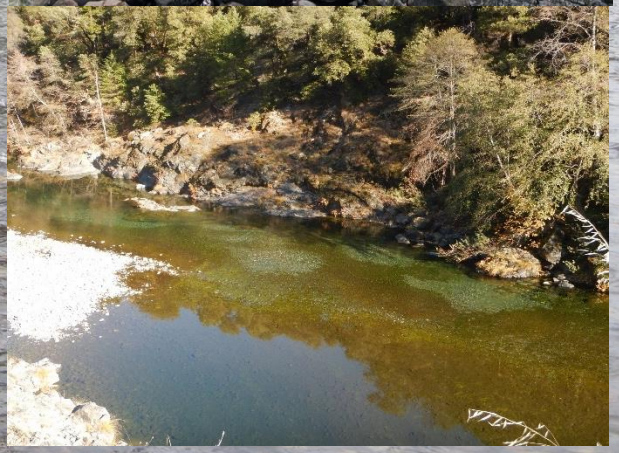


Fish Counting Stations:

- Alaskan style weirs

- SONAR





Juvenile Trapping:

Table 5. Catch Table Chinook Salmon 0+, Shasta River 2019

Julian week	Live fish trapped[1]	Mortalities	Adjusted total trapped[2]	Volume sampled, MCF	Adjusted marked & released[3]	Recaptured	% Trap efficiency[4]	Weekly population estimate[5]	Lower 95% CI	Upper 95% CI
5	28,717	115	28,832	19.66	2,496	404	16.19%	207,389	191,451	223,327
6	30,617	214	30,831	20.69	2,500	496	19.84%	181,005	168,710	193,301
7	7,637	200	7,837	8.84	999	131	13.11%	138,533	129,053	148,012
8	30,932	178	31,110	20.24	1,882	143	7.60%	474,608	410,827	538,388
9	14,399	389	14,788	4.66	500	0**	17.30%	299,179*	---	---
10	192,373	788	193,161	25.63	2,496	413	16.55%	1,359,203	1,256,716	1,461,691
11	211,489	743	212,232	14.64	2,497	245	9.81%	2,514,288	2,258,950	2,769,626
12	93,530	508	94,038	16.89	2,493	312	12.52%	874,183	796,550	951,816
13	93,704	725	94,429	18.19	2,493	332	13.32%	825,096	754,369	895,823
14	48,275	883	49,158	17.90	1,890	303	16.03%	428,095	396,560	459,631
15	24,332	1,431	25,763	14.53	1,995	193	9.67%	371,093	335,610	406,576
16	36,377	967	37,344	20.66	1,794	340	18.95%	229,339	210,502	248,175
17	45,655	991	46,646	21.99	1,386	208	15.01%	361,153	322,481	399,825
18	29,436	572	30,008	16.31	1,484	223	15.03%	232,093	208,050	256,136
19	17,120	103	17,223	17.99	898	304	33.85%	59,226	54,562	63,891
20	8,216	13	8,229	12.01	500	282	56.40%	16,996	15,859	18,133
21	6,150	45	6,195	15.95	400	236	59.00%	14,675	13,807	15,542
22	6,416	53	6,469	19.95	498	88	17.67%	42,315	35,476	49,154
23	4,592	49	4,641	14.73	300	140	46.67%	13,870	12,664	15,076
24	4,210	73	4,283	12.90	482	155	32.16%	15,471	13,733	17,209
25	596	6	602	14.54	415	218	52.53%	1,334	1,213	1,456
26	267	4	271	13.14	202	129	63.86%	592	540	645
Totals	**935,040**	**9,050**	**944,090**	**362.05**	**30,600**	**5,295**	**17.30%**	**8,659,737**	–	–

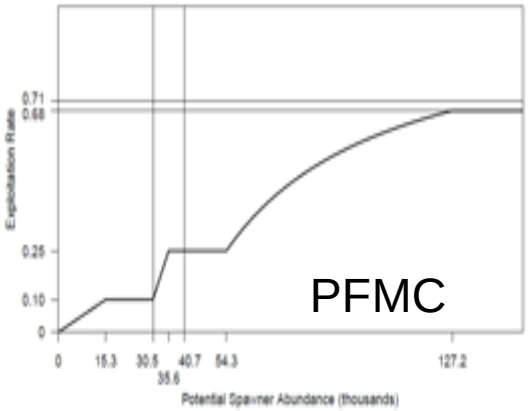
Harvest Monitoring:

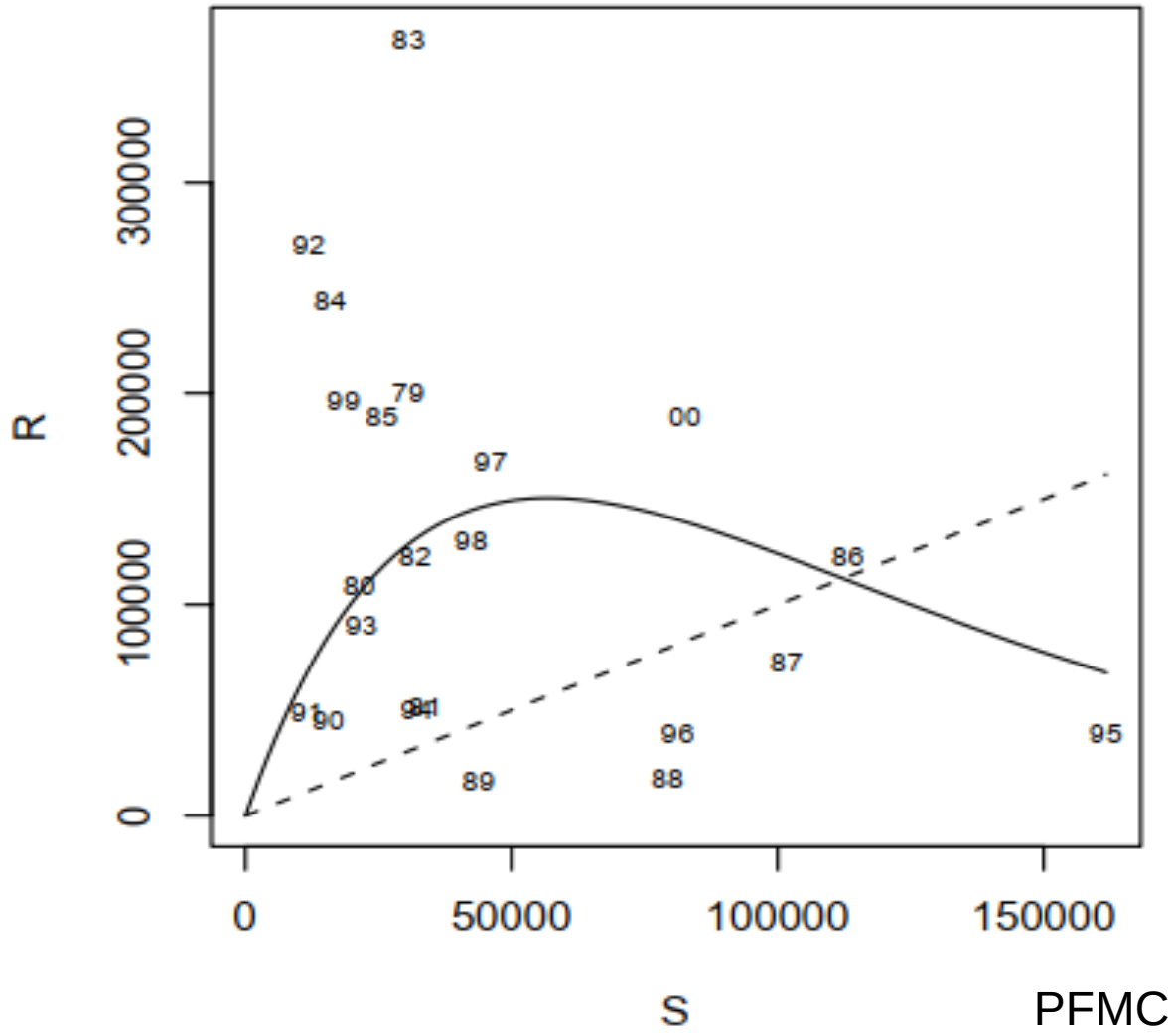
Future Management:

-updated sportfishing regulations

-potential changes to harvest control rule

-new stock recruit relationship





Questions?

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