

EXCERPTS FROM: *RECOVERY OF CODED-WIRE TAGS FROM CHINOOK SALMON IN CALIFORNIA'S CENTRAL VALLEY ESCAPEMENT, INLAND HARVEST, AND OCEAN HARVEST IN 2021*

CDFW SUPPLEMENTAL INFORMATIONAL REPORT

CDFW is submitting this informational report to highlight hatchery stock composition and contribution data to ocean harvest from a recently published analysis: [*Recovery of Coded-Wire Tags from Chinook Salmon in California's Central Valley Escapement, Inland Harvest, and Ocean Harvest in 2021*](#) (White et al. 2025). Fishery managers, industry, and members of the public expressed interest in contributions of Central Valley stocks or stock components to ocean harvest in an effort to guide decision making during the Pacific Fishery Management Council's 2025 ocean salmon season planning process. In particular, interest was centered around contributions of Fall-run Chinook originating from Coleman National Fish Hatchery and Mokelumne River Hatchery, as well as contributions of Central Valley Spring Run Chinook from Feather River Hatchery. Although there is significant interest in understanding the natural-origin contributions of these stocks or stock components, data availability is limited to the hatchery-origin fish.

The excerpts included here from the White et al. analysis display hatchery contributions to ocean harvest in the 2021 ocean recovery year. Reports for prior recovery years beginning in 2010 can be found on the [Constant Fractional Marking Program Website](#). Contributions of hatchery stocks to ocean harvest vary annually, in part due to hatchery release strategies and relative stock abundance. Current levels of relative stock abundance informing the 2025 fishery planning process are quite different than in 2021, with significant declines in Sacramento River Fall Chinook and in particular, the Upper Sacramento River stock component from Coleman National Fish Hatchery and natural areas. Conversely, escapements of San Joaquin Fall-run Chinook to hatchery and natural areas have significantly increased in years 2023-2024 relative to years 2020-2022.

The largest hatchery contributor to total harvest in 2021 ocean salmon fisheries occurring south of Cape Falcon was Fall-run Chinook from Feather River Hatchery, comprising 14% of total ocean harvest. Following close behind were contributions from Coleman National Fish Hatchery, comprising 11% of total ocean harvest. Fall-run Chinook salmon originating from Mokelumne River Hatchery comprised 8% of total ocean harvest. Spring run harvest in ocean fisheries was minimal in 2021, with Feather River Hatchery Spring-run Chinook comprising only 0.008% of total harvest in ocean fisheries south of Cape Falcon.

Looking specifically at contributions of Mokelumne River Hatchery to the California recreational fishery, fall-run Chinook salmon originating from Mokelumne River Hatchery comprised roughly 19% of recreational ocean harvest. In particular, coastal net pen releases of Mokelumne River Hatchery fish at Pillar Point (Half Moon Bay) and Santa Cruz comprised 4% of the total California recreational harvest in 2021.

Excerpts included here from the White et al. (2025) analysis include:

- Hatchery contributions by release type to total ocean harvest, sport harvest, and commercial harvest (Section 6)
- CWT recoveries by run type and brood year in California and Oregon ocean fisheries (Tables 7-8)
- Number and percent contribution of CWT recoveries by time-area fishery for the sport and commercial sectors (Tables 12-15)
- Pie chart data visualizations of natural and hatchery proportions and breakout of hatchery stock composition in total ocean harvest, CA sport harvest, and CA commercial harvest (Figures 17-19)

Recovery of Coded-Wire Tags from Chinook Salmon in California's Central Valley Escapement, Inland Harvest, and Ocean Harvest in 2021

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LIST OF ACRONYMS AND ABBREVIATIONS

- Ad-clipped clipped adipose fin
- BOR U.S. Bureau of Reclamation
- BY Brood year
- CDFW California Department of Fish and Wildlife
- CFH Coleman National Fish Hatchery
- CFM Constant Fractional Marking
- CV California Central Valley
- CWT coded-wire tag
- DPD Daguerre Point Dam (Yuba River)
- DWR California Department of Water Resources
- EBMUD East Bay Municipal Utilities District
- FRH Feather River Hatchery
- FWS U.S. Fish and Wildlife Service
- KES Keswick Dam Fish Trap
- MER Merced River Hatchery
- MOK Mokelumne River Hatchery
- NMFS National Marine Fisheries Service
- NIM Nimbus Fish Hatchery
- OSP Ocean Salmon Project
- PFMC Pacific Fishery Management Council
- PSMFC Pacific States Marine Fisheries Commission
- RMPC Regional Mark Processing Center
- SFRA Sport Fish Restoration Act
- SJ San Joaquin
- TL Total length
- WD Woodbridge Dam (Mokelumne River)
- YARMT Yuba Accord River Management Team

Central Valley Chinook salmon CWT release types and classifications:

Sacramento River Basin Fall-run Chinook salmon release types

CFHF	Coleman National Fish Hatchery F all-run in-basin releases
FRHF	Feather River Hatchery F all-run in-basin releases
FRHFn	Feather River Hatchery F all-run bay/delta n et pen releases
FRHFgg	Feather River Hatchery F all-run G olden G ate releases (no net pen acclimation)
NIMF	Nimbus Fish Hatchery F all-run in-basin releases
NIMFn	Nimbus Fish Hatchery F all-run bay/delta n et pen releases

San Joaquin River Basin Fall-run Chinook salmon release types

MOKF	Mokelumne River Hatchery F all-run in-basin releases
MOKFn	Mokelumne River Hatchery F all-run bay/delta n et pen releases
MOKFnc	Mokelumne River Hatchery F all-run c oastal n et pen releases (Pillar Point/Santa Cruz)
MOKFgg	Mokelumne River Hatchery F all-run G olden G ate releases (no net pen acclimation)
MOKFb	Mokelumne River Hatchery F all-run b arge study releases
MERF	Merced River Hatchery F all-run in-basin releases
MERFn	Merced River Hatchery F all-run bay/delta n et pen releases

Sacramento River Winter-run Chinook salmon release types

SacW	Sacramento River W inter-run supplementation natural production releases (in-basin)
SacWbat	Sacramento River W inter-run B attle Creek reintroduction releases (in-basin)

Central Valley Spring-run Chinook salmon release types

FRHS	Feather River Hatchery S pring-run in-basin releases
SJOSx	San Joaquin River S pring-run e xperimental reintroduction releases (in-basin)

Central Valley Late-fall-run Chinook salmon release types

CFHL	Coleman National Fish Hatchery L ate-fall-run in-basin releases
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6. Hatchery Proportion and Contribution of CV Release Types to Ocean Salmon Fisheries

Over half of the nearly 281,800 Chinook salmon harvested in California and Oregon (south of Cape Falcon) ocean salmon fisheries were hatchery-origin fish (Fig. 17). The most prevalent CV release types recovered off both states were FRH fall-run bay/delta net pen releases followed by fall-run in-basin releases from CFH.

Hatchery-origin contribution by R_{type} to CA and OR ocean harvest

R _{type}	Run	CWT _{total}	% harvest
CFHF	Fall	30,093	11%
FRHF	Fall	101	<1%
FRHF _n	Fall	34,281	12%
FRHF _{gg}	Fall	6,323	2%
NIMF	Fall	4,793	2%
NIMF _n	Fall	21,032	7%
MOKF	Fall	124	<1%
MOKF _n	Fall	12,404	4%
MOKF _{nc}	Fall	6,494	2%
MOKF _{gg}	Fall	9,649	3%
MERF	Fall	0	0%
MERF _n	Fall	1,910	1%
Other CV	Non-fall	3,867	1%
Non-CV		14,243	5%
	Total	145,315	52%

California ocean sport fishery

California anglers harvested approximately 55,500 Chinook salmon in the ocean sport fishery during 2021. The total contribution of hatchery-origin salmon to the California ocean sport fishery was 64%, ranging from 52% to 68% of the total harvest depending on major port area (Fig. 18). Most of the harvest occurred in the San Francisco port area (62%), followed by the Monterey (31%), Fort Bragg (7%), and Eureka/Crescent City (1%) port areas (Table 12). The relatively low harvest in the Eureka/Crescent City port area should be contextualized with the area experiencing a shorter season of 34 days compared to other management areas (Table 2).

Of all hatchery release types, FRH fall-run bay/delta net pen releases contributed the most (16%) to the total California ocean sport harvest, followed by CFH fall-run in-basin and MOK Golden Gate releases (13% and 9%, respectively). Non-CV releases composed 1% of the total sport harvest (Table 13).

Hatchery-origin contribution by R_{type} to CA ocean sport harvest

R _{type}	Run	CWT _{total}	% harvest
CFHF	Fall	7,248	13%
FRHF	Fall	41	<1%
FRHF _n	Fall	8,807	16%
FRHF _{gg}	Fall	1,182	2%
NIMF	Fall	1,104	2%
NIMF _n	Fall	4,695	8%
MOKF	Fall	16	<1%
MOKF _n	Fall	3,475	6%
MOKF _{nc}	Fall	2,394	4%
MOKF _{gg}	Fall	4,911	9%
MERF	Fall	0	0%
MERF _n	Fall	558	1%
SacW	Winter	75	<1%
FRHS	Spring	379	1%
SJOS _x	Spring	33	<1%
CFHL	Late-fall	192	<1%
Non-CV		437	1%
	Total	35,534	64%

California ocean commercial fishery

California trollers harvested approximately 202,500 Chinook salmon in the commercial ocean fishery during 2021. The total contribution of hatchery-origin salmon to the California commercial ocean fishery was 48%, ranging from 44% to 53% of the total harvest depending on major port area (Fig. 19). Most of the harvest occurred in the San Francisco port area (52%), followed by the Monterey (26%), and Fort Bragg (22%) port areas (Table 14). The Eureka/Crescent City port area was closed to commercial fishing during 2021.

Of all hatchery release types, FRH fall-run bay/delta net pen releases contributed the most (12%) to the total California commercial harvest, followed by CFH fall-run in-basin releases and NIM bay/delta net pen releases (11% and 8%, respectively). Non-CV releases contributed 3% to the total commercial harvest (Table 15).

Hatchery-origin contribution by R_{type} to CA ocean commercial harvest

R _{type}	Run	CWT _{total}	% harvest
CFHF	Fall	21,830	11%
FRHF	Fall	58	<1%
FRHF _n	Fall	24,281	12%
FRHF _{gg}	Fall	4,611	2%
NIMF	Fall	3,585	2%
NIMF _n	Fall	15,649	8%
MOKF	Fall	103	<1%
MOKF _n	Fall	8,345	4%
MOKF _{nc}	Fall	3,834	2%
MOKF _{gg}	Fall	4,370	2%
MERF	Fall	0	0%
MERF _n	Fall	1,138	1%
SacW	Winter	54	<1%
FRHS	Spring	1,675	1%
SJOS _x	Spring	78	<1%
CFHL	Late-fall	1,266	1%
Non-CV		6,120	3%
	Total	96,999	48%

Table 7. Raw and expanded Chinook CWT recoveries in 2021 California ocean fisheries by run type and brood year^{a/}.

Fall-run		2019	2018	2017	2016	Total Ocean	Total Ocean
Age		2	3	4	5	CWTs	%
Raw CWT Recoveries		1,102 (11%)	7,496 (76%)	1,200 (12%)	7 (<1%)	9,805	87%
Expanded CWT ^{total}		14,821 (12%)	90,894 (74%)	16,465 (13%)	55 (<1%)	122,236	92%
Spring-run		2019	2018	2017	2016	Total Ocean	Total Ocean
Age		2	3	4	5	CWTs	%
Raw CWT Recoveries		19 (3%)	552 (96%)	3 (<1%)		574	5%
Expanded CWT ^{total}		73 (3%)	2,083 (96%)	11 (<1%)		2,167	2%
Late-fall-run		2020	2019	2018	2017	Total Ocean	Total Ocean
Age		2	3	4	5	CWTs	%
Raw CWT Recoveries			252 (64%)	140 (36%)		392	3%
Expanded CWT ^{total}			959 (66%)	499 (34%)		1,458	1%
Winter-run		2020	2019	2018	2017	Total Ocean	Total Ocean
Age		2	3	4	5	CWTs	%
Raw CWT Recoveries			14 (42%)	19 (58%)		33	0.3%
Expanded CWT ^{total}			60 (47%)	69 (53%)		129	0.1%
Non-CV stocks		2019	2018	2017	2016	Total Ocean	Total Ocean
Age		2	3	4	5	CWTs	%
Raw CWT Recoveries		2 (<1%)	309 (67%)	141 (31%)	9 (2%)	461	4%
Expanded CWT ^{total}		132 (2%)	4,480 (68%)	1,912 (29%)	33 (<1%)	6,557	5%
All Runs		2019	2018	2017	2016	Total Ocean	Total Ocean
Age		2	3	4	5	CWTs	%
Raw CWT Recoveries		1,123 (10%)	8,623 (77%)	1,503 (13%)	16 (<1%)	11,265	100%
Expanded CWT ^{total}		15,026 (11%)	98,476 (74%)	18,956 (14%)	88 (<1%)	132,547	100%
CV Expanded CWT ^{total} (Proportion CV stocks)		14,894 (99%)	93,996 (95%)	17,044 (90%)	55 (63%)	125,990	95%

a/ Recoveries of age-1, age-6+, and tagged natural-origin fish removed.

Table 8. Raw and expanded Chinook CWT recoveries in 2021 Oregon ocean fisheries by run type and brood year^{a/}.

Fall-run		2019	2018	2017	2016	Total Ocean CWTs	Total Ocean %
Age		2	3	4	5		
Raw CWT Recoveries		10 (2%)	337 (51%)	298 (45%)	13 (2%)	658	45%
Expanded CWT _{total}		102 (2%)	2,607 (52%)	2,190 (44%)	70 (1%)	4,968	39%
Late-fall-run		2020	2019	2018	2017	Total Ocean CWTs	Total Ocean %
Age		2	3	4	5		
Raw CWT Recoveries				4 (100%)		4	0%
Expanded CWT _{total}				7 (100%)		7	0%
Spring-run		2019	2018	2017	2016	Total Ocean CWTs	Total Ocean %
Age		2	3	4	5		
Raw CWT Recoveries		1 (2%)	39 (95%)		1 (2%)	41	3%
Expanded CWT _{total}		4 (4%)	100 (94%)		2 (2%)	106	0.8%
Non-CV stocks		2019	2018	2017	2016	Total Ocean CWTs	Total Ocean %
Age		2	3	4	5		
Raw CWT Recoveries		2 (<1%)	272 (36%)	261 (35%)	219 (29%)	754	52%
Expanded CWT _{total}		123 (2%)	5,083 (66%)	1,976 (26%)	503 (7%)	7,686	60%
All Runs		2019	2018	2017	2016	Total Ocean CWTs	Total Ocean %
Age		2	3	4	5		
Raw CWT Recoveries		13 (<1%)	648 (44%)	563 (39%)	233 (16%)	1,457	100%
Expanded CWT _{total}		230 (2%)	7,790 (61%)	4,173 (33%)	575 (5%)	12,768	100%
CV Expanded CWT _{total} (Proportion CV stocks)		107 (46%)	2,707 (35%)	2,197 (53%)	71 (12%)	5,082	40%

a/ Recoveries of age-1, age-6+, and tagged natural-origin fish removed.

Table 12. Total CWT_{total} recoveries by port area, month, and release type^{a/} in the 2021 California ocean salmon sport fishery.

		<u>CFH</u>		<u>FRH</u>				<u>NIM</u>		<u>MOK</u>				<u>MER</u>		<u>SJO</u>	<u>Non-CV</u>	<u>Total CV</u>	<u>Total CWT_{total}</u>		<u>Total Harvest</u>	
	<u>SacW</u>	<u>CFHL</u>	<u>CFHF</u>	<u>FRHS</u>	<u>FRHF</u>	<u>FRHF_n</u>	<u>FRHF_{gg}</u>	<u>NIMF</u>	<u>NIMF_n</u>	<u>MOKF</u>	<u>MOKF_n</u>	<u>MOKF_{nc}</u>	<u>MOKF_{gg}</u>	<u>MERF</u>	<u>MERF_n</u>	<u>SJOS_x</u>			<u>Hatchery</u>	<u>Natural</u>		
California Sport Harvest																						
Eureka/Crescent City																						
May																		16		16	12	28
Jun																		193	129	322	297	619
Jul				3		23		21	20			41	8	10			3					
Aug																						
Sep																						
Total				3		23		21	20			41	8	10			3	209	129	338	309	647
																						(1%)
Fort Bragg																						
Apr																						
May																						
Jun			15					12				12		12			3		55	55	98	153
Jul		13	378	9		400	51	56	112			107	60	34		17		17	1,236	1,254	654	1,908
Aug		9	18	18		128	74	18	73			109	50	72					570	570	289	859
Sep								22	22			22	6	89				23	162	170		170
Oct		8	99	8		143		4	111			16	19	77			4		489	489		685
Total		31	511	35		671	125	112	318			266	135	284		17	7	40	2,512	2,538	1,041	3,775
																						(7%)
San Francisco																						
Apr																						
May																						
Jun	3	20	279	13		382	39	72	421			212	192	678		64		34	2,376	2,410	1,454	3,864
Jul	14	61	1,970	41	17	2,384	153	373	1,455			1,200	886	2,232		170		108	10,956	11,064	5,365	16,429
Aug	8	12	1,311	23	16	1,583	356	143	649	4		527	427	492		62	4	16	5,616	5,632	3,496	9,128
Sep	4	4	61	7	3	360	57	114	639	7		623	295	734		68			2,976	2,976	876	3,852
Oct		24	17			34			223			102	112	183		17		18	712	730	168	898
Total	29	122	3,638	36	36	4,744	605	701	3,386	11		2,665	1,913	4,319		379	4	175	22,637	22,812	11,359	34,171
																						(62%)
Monterey																						
Apr	5	19	1,654	191		1,556	170	107	364			210	87	78		39	20	7	4,499	4,506	3,120	7,626
May	15	15	789	34	5	909	177	78	273	5		161	138	97		39		5	2,736	2,742	1,442	4,184
Jun	5	5	531	26		691	84	41	226			48	43	102		61			1,864	1,864	1,336	3,200
Jul	10		100			212	20	20	60			85	65	20					591	591	1,119	1,710
Aug	12		24	6				24	48							23			137	137	40	177
Sep												6							6	6	51	57
Total	46	40	3,098	257	5	3,368	452	269	970	5		504	338	297		162	20	13	9,833	9,845	7,109	16,954
																						(31%)
California Total Sport Harvest																						
	75	192	7,248	379	41	8,807	1,182	1,104	4,695	16		3,475	2,394	4,911		558	33	437	35,111	35,534	19,818	55,547
Oregon Total Sport Harvest (South of Cape Falcon)																						
	3	319		32		392	109	32	177			182	91	181		84		1,524	1,601	3,125	3,315	6,440

a/ Release types defined in Table 3; SacWbat recoveries merged with SacW, barged and trucked releases for MOKFb merged with MOKFgg, coastal trucked releases for MOKFt merged with MOKFnc, bay/delta trucked releases for MOKFt merged with MOKFn.

Table 13. Percentage^{a/} of CWT_{total} recoveries by port area, month, and release type^{b/} in the 2021 California ocean salmon sport fishery.

	SacW	CFH		FRHS	FRH			NIM		MOK				MER		SJO	Non-CV	Total CV	Total %		Total Harvest
		CFHL	CFHF		FRHF	FRHFfn	FRHFgg	NIMF	NIMFn	MOKF	MOKFn	MOKFnc	MOKFgg	MERF	MERFn	SJOSx			Hatchery	Natural	
California Sport Harvest																					
Eureka/Crescent City																					
May																					
Jun																	59%		59%	41%	28
Jul				0%		4%		3%	3%			7%	1%	2%		0%	31%	21%	52%	48%	619
Aug																					
Sep																					
Total				0%		4%		3%	3%			6%	1%	2%		0%	32%	20%	52%	48%	647
Fort Bragg																					
Apr																					
May																					
Jun			10%					8%				8%		8%		2%		36%	36%	64%	153
Jul		1%	20%	0%		21%	3%	3%	6%			6%	3%	2%		1%		65%	66%	34%	1,908
Aug		1%	2%	2%		15%	9%	2%	8%			13%	6%	8%				66%	66%	34%	859
Sep								13%	13%			13%	3%	52%			13%	95%	108%	-8%	170
Oct		1%	15%	1%		21%		1%	16%			2%	3%	11%		1%		71%	71%	29%	685
Total		1%	14%	1%		18%	3%	3%	8%			7%	4%	8%		0%	0%	67%	68%	32%	3,775
San Francisco																					
Apr																					
May																					
Jun	0%	1%	7%	0%		10%	1%	2%	11%			5%	5%	18%		2%		62%	62%	38%	3,864
Jul	0%	0%	12%	0%	0%	15%	1%	2%	9%			7%	5%	14%		1%		67%	67%	33%	16,429
Aug	0%	0%	14%	0%	0%	17%	4%	2%	7%	0%		6%	5%	5%		1%	0%	62%	62%	38%	9,128
Sep	0%	0%	2%	0%	0%	9%	1%	3%	17%	0%		16%	8%	19%		2%		77%	77%	23%	3,852
Oct		3%	2%			4%			25%			11%	12%	20%		2%		79%	81%	19%	898
Total	0%	0%	11%	0%	0%	14%	2%	2%	10%	0%		8%	6%	13%		1%	0%	66%	67%	33%	34,171
Monterey																					
Apr	0%	0%	22%	3%		20%	2%	1%	5%			3%	1%	1%		1%	0%	59%	59%	41%	7,626
May	0%	0%	19%	1%	0%	22%	4%	2%	7%	0%		4%	3%	2%		1%	0%	65%	66%	34%	4,184
Jun	0%	0%	17%	1%		22%	3%	1%	7%			1%	1%	3%		2%		58%	58%	42%	3,200
Jul	1%		6%			12%	1%	1%	3%			5%	4%	1%				35%	35%	65%	1,710
Aug	7%		14%	3%				14%	27%							13%		77%	77%	23%	177
Sep													10%					10%	10%	90%	57
Total	0%	0%	18%	2%	0%	20%	3%	2%	6%	0%		3%	2%	2%		1%	0%	58%	58%	42%	16,954
California Total Sport Harvest																					
	0%	0%	13%	1%	0%	16%	2%	2%	8%	0%		6%	4%	9%		1%	0%	63%	64%	36%	55,547
Oregon Total Sport Harvest (South of Cape Falcon)																					
	0%	5%	0%		6%	2%		0%	3%			3%	1%	3%			24%	25%	49%	51%	6,440

a/ Any non-zero values less than 0.5% of CWT_{total} are displayed as 0%.

b/ Release types defined in Table 3; SacWbat recoveries merged with SacW, barged and trucked releases for MOKFb merged with MOKFgg, coastal trucked releases for MOKFt merged with MOKFnc, bay/delta trucked releases for MOKFt merged with MOKFn.

Table 14. Total CWT_{total} recoveries by port area, month, and release type^{a/} in the 2021 California ocean salmon commercial fishery.

	<u>CFH</u>		<u>FRH</u>				<u>NIM</u>		<u>MOK</u>				<u>MER</u>		<u>SJO</u>	<u>Non-CV</u>	<u>Total CV</u>	<u>Total CWT_{total}</u>		<u>Total Harvest</u>	
	SacW	CFHL	CFHF	FRHS	FRHF	FRHF _n	FRHF _{gg}	NIMF	NIMF _n	MOKF	MOKF _n	MOKF _{nc}	MOKF _{gg}	MERF	MERF _n	SJOSx			Hatchery	Natural	
California Commercial Harvest																					
Eureka/Crescent City																					
Jun																					
Jul																					
Aug																					
Total																					(0%)
Fort Bragg																					
Jun																					
Jul																					
Aug		403	2,799	301	8	4,358	960	630	3,030	31	1,582	686	846		300	12	2,409	15,944	18,352	24,465	42,817
Total		429	2,951	319	8	4,492	975	675	3,356	34	1,785	749	891		300	12	2,499	16,975	19,473	25,252	44,725
San Francisco																					
May																					
Jun		343	6,891	687	11	8,090	1,378	1,302	5,346	38	3,125	1,324	1,515		383	30	2,305	30,462	32,767	40,065	72,832
Jul	3	71	938	91	9	1,179	177	148	1,118	3	483	209	225		52	3	369	4,710	5,079	5,909	10,988
Aug		149	1,192	111		1,649	386	348	1,331	8	836	304	259		75	8	505	6,656	7,161	7,223	14,384
Sep		38	165	22		404	178	295	1,182	3	661	373	627		26		6	3,975	3,980	1,669	5,649
Oct		17				13		65	298	3	107	84	94		13			694	694	346	1,040
Total	3	618	9,185	911	21	11,335	2,119	2,158	9,275	55	5,212	2,294	2,720		549	41	3,185	46,497	49,681	55,212	104,893
Monterey																					
May	39	173	8,800	418	27	7,563	1,375	631	2,581	12	1,189	640	655		211	26	321	24,339	24,660	22,221	46,881
Jun	9	22	666	15	3	555	112	64	269		101	83	37		62		107	1,998	2,105	1,786	3,891
Jul	2	24	201	8		323	17	44	126	2	55	47	67		17		8	933	942	702	1,644
Aug			28	3		14	14	14	41		3	21						138	138	283	421
Total	51	219	9,694	445	30	8,454	1,518	753	3,018	14	1,348	791	759		289	26	436	27,408	27,844	24,993	52,837
California Total Commercial Harvest																					
	54	1,266	21,830	1,675	58	24,281	4,611	3,585	15,649	103	8,345	3,834	4,370		1,138	78	6,120	90,879	96,999	105,456	202,455
Oregon Total Commercial Harvest (South of Cape Falcon)																					
	5	696	74	1	802	421	72	511	5	401	175	188		130		6,163	3,480	9,643	7,717	17,360	

^{a/} Release types defined in Table 3; SacWbat recoveries merged with SacW, barged and trucked releases for MOKFb merged with MOKFgg, coastal trucked releases for MOKFt merged with MOKFnc, bay/delta trucked releases for MOKFt merged with MOKFn.

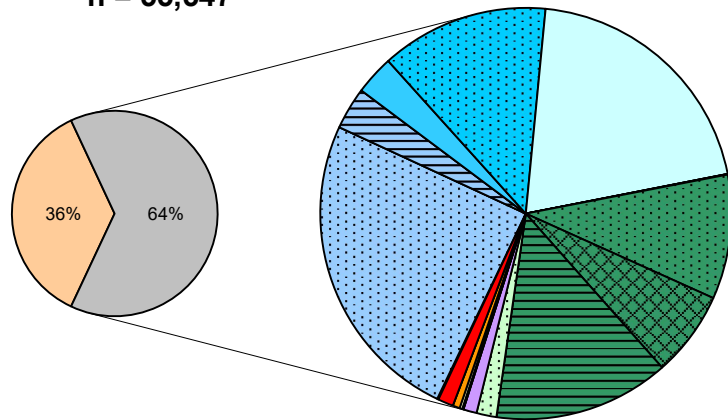
Table 15. Percentage^{a/} of CWT_{total} recoveries by port area, month, and release type^{b/} in the 2021 California ocean salmon commercial fishery.

	<u>CFH</u>		<u>FRH</u>				<u>NIM</u>		<u>MOK</u>				<u>MER</u>		<u>SJO</u>	Non-CV	Total CV	Total %		Total Harvest
	SacW	CFHL	CFHF	FRHS	FRHF	FRHF _n	FRHF _{gg}	NIMF	NIMF _n	MOKF	MOKF _n	MOKF _{nc}	MOKF _{gg}	MERF	MERF _n			SJOSx	Hatchery	
California Commercial Harvest																				
Eureka/Crescent City																				
Jun																				
Jul																				
Aug																				
Total																				
Fort Bragg																				
Jun																				
Jul																				
Aug		1%	7%	1%	0%	10%	2%	1%	7%	0%	4%	2%	2%		1%	0%	6%	37%	43%	57%
Total		1%	7%	1%	0%	10%	2%	2%	8%	0%	4%	2%	2%		1%	0%	6%	38%	44%	56%
San Francisco																				
May																				
Jun		0%	9%	1%	0%	11%	2%	2%	7%	0%	4%	2%	2%		1%	0%	3%	42%	45%	55%
Jul	0%	1%	9%	1%	0%	11%	2%	1%	10%	0%	4%	2%	2%		0%	0%	3%	43%	46%	54%
Aug		1%	8%	1%		11%	3%	2%	9%	0%	6%	2%	2%		1%	0%	4%	46%	50%	50%
Sep		1%	3%	0%		7%	3%	5%	21%	0%	12%	7%	11%		0%		0%	70%	70%	30%
Oct		2%				1%		6%	29%	0%	10%	8%	9%		1%			67%	67%	33%
Total	0%	1%	9%	1%	0%	11%	2%	2%	9%	0%	5%	2%	3%		1%	0%	3%	44%	47%	53%
Monterey																				
May	0%	0%	19%	1%	0%	16%	3%	1%	6%	0%	3%	1%	1%		0%	0%	1%	52%	53%	47%
Jun	0%	1%	17%	0%	0%	14%	3%	2%	7%		3%	2%	1%		2%		3%	51%	54%	46%
Jul	0%	1%	12%	1%		20%	1%	3%	8%	0%	3%	3%	4%		1%		1%	57%	57%	43%
Aug			7%	1%		3%	3%	3%	10%		1%	5%						33%	33%	67%
Total	0%	0%	18%	1%	0%	16%	3%	1%	6%	0%	3%	1%	1%		1%	0%	1%	52%	53%	47%
California Total Commercial Harvest																				
	0%	1%	11%	1%	0%	12%	2%	2%	8%	0%	4%	2%	2%		1%	0%	3%	45%	48%	52%
Oregon Total Commercial Harvest (South of Cape Falcon)																				
	0%	4%	0%	0%	5%	2%	0%	3%	0%	2%	1%	1%		1%		36%	20%	56%	44%	17,360

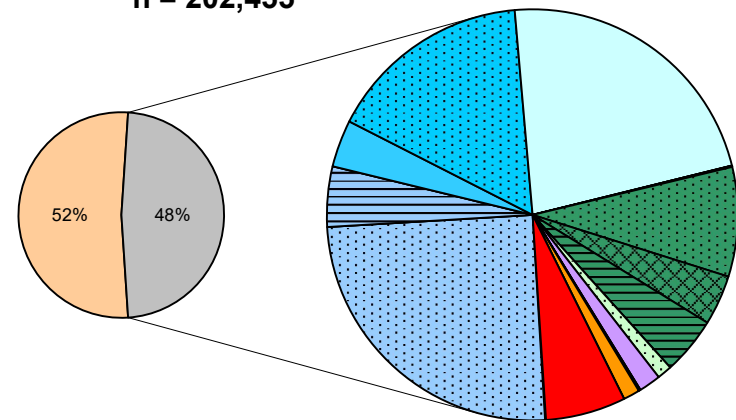
a/ Any non-zero values less than 0.5% of CWT_{total} are displayed as 0%.

b/ Release types defined in Table 3; SacW_{bat} recoveries merged with SacW, barged and trucked releases for MOKF_b merged with MOKF_{gg}, coastal trucked releases for MOKF_t merged with MOKF_{nc}, bay/delta trucked releases for MOKF_t merged with MOKF_n.

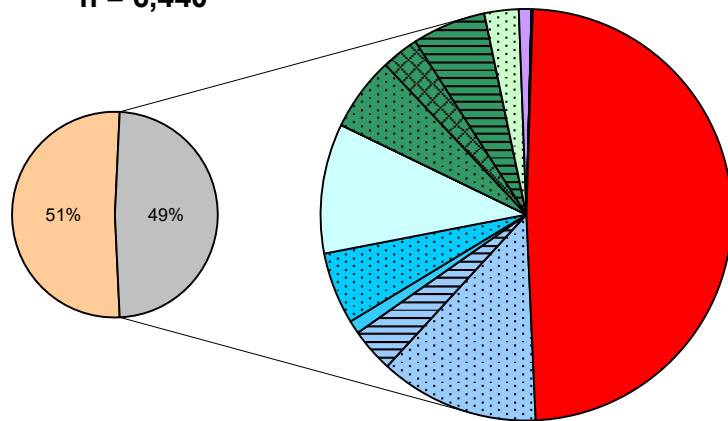
California Sport Harvest
n = 55,547



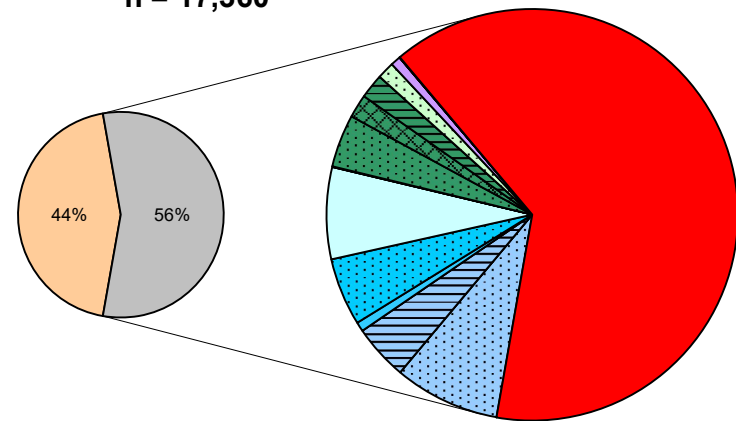
California Commercial Harvest
n = 202,455



Oregon Sport Harvest
n = 6,440



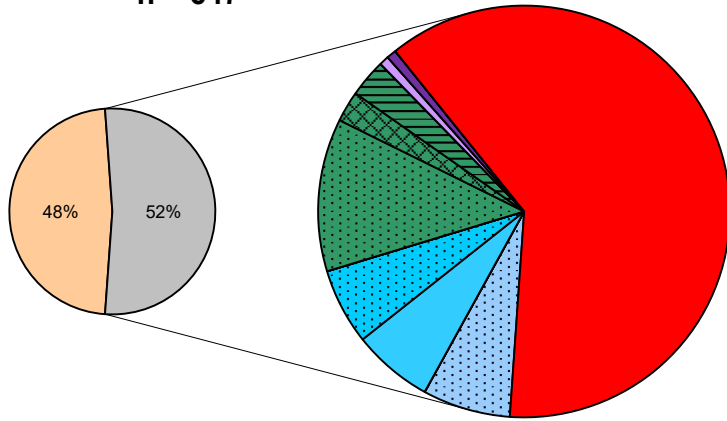
Oregon Commercial Harvest
n = 17,360



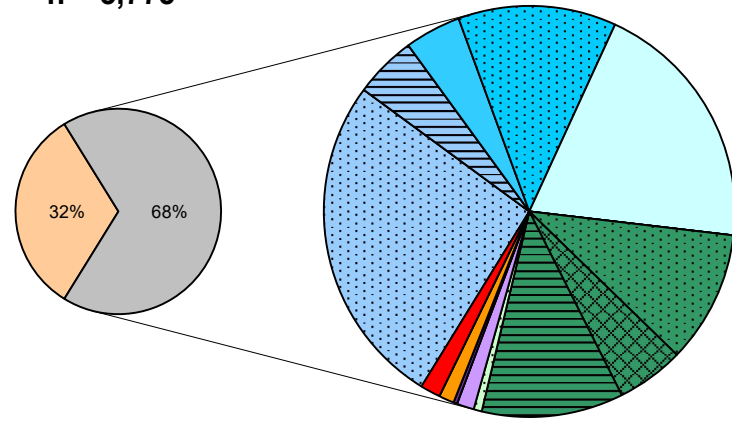
- Natural
 FRHF
 FRHFfn
 FRHFfg
 NIMF
 NIMFfn
 CFHF
 CFHFfn
 MOKF
 MOKFfn
 MOKFnc
 MOKFfg
 MERF
 MERFfn
 FRHS
 SJOSx
 SacW
 CFHL
 nonCV

Figure 17. Proportion of hatchery- and natural-origin salmon in 2021 California and Oregon ocean fisheries.

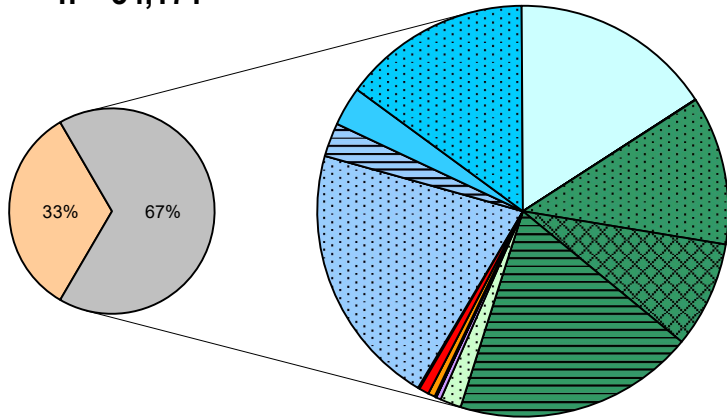
Eureka / Crescent City Sport
n = 647



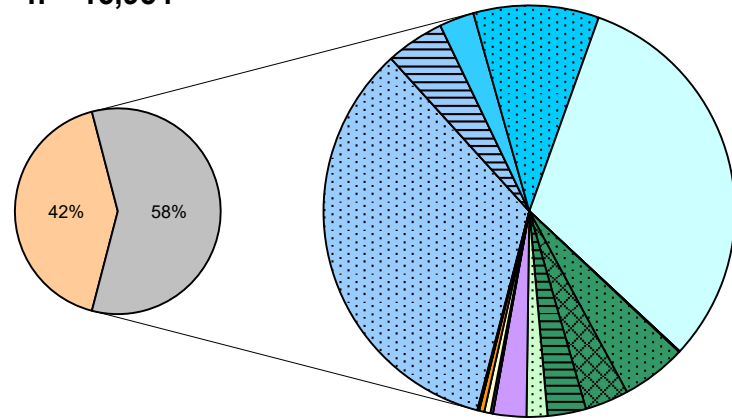
Fort Bragg Sport
n = 3,775



San Francisco Sport
n = 34,171



Monterey Sport
n = 16,954



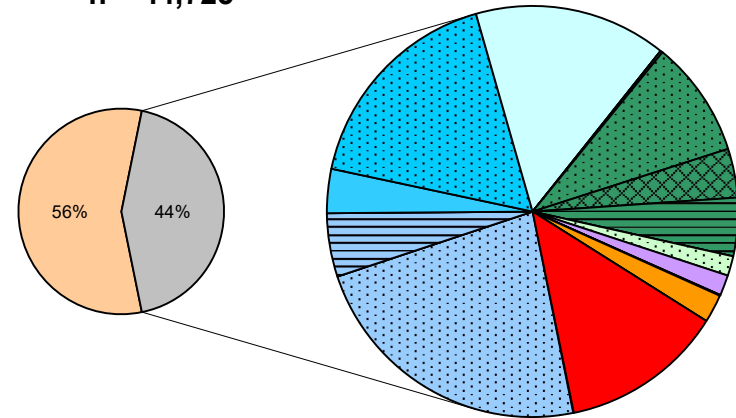
- Natural
 FRHF
 FRHFfn
 FRHFegg
 NIMF
 NIMFfn
 CFHF
 CFHFfn
 MOKF
 MOKFfn
 MOKFegg
 MERF
 MERFfn
 FRHS
 SJOSx
 SacW
 CFHL
 nonCV

Figure 18. Proportion of hatchery- and natural-origin salmon in the 2021 California ocean sport fishery.

Eureka / Crescent City Commercial
n = 0

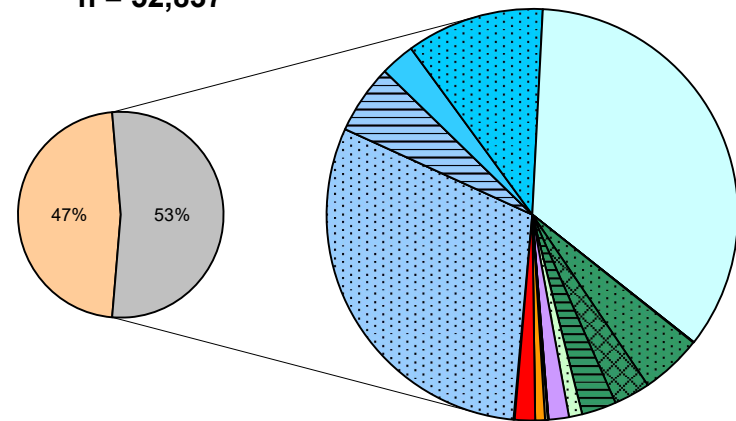
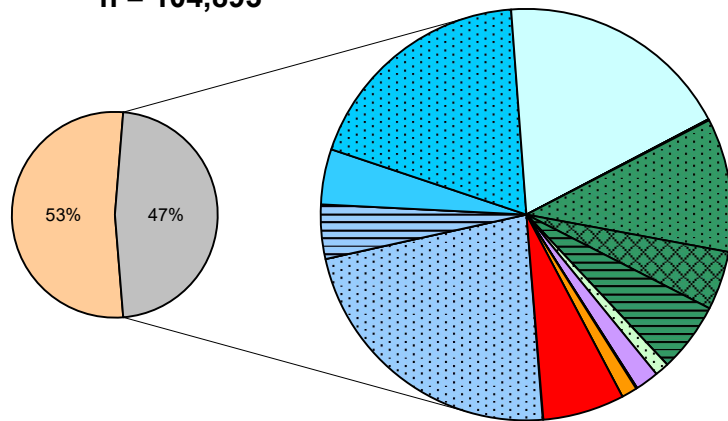
Fort Bragg Commercial
n = 44,725

Area Closed in 2021



San Francisco Commercial
n = 104,893

Monterey Commercial
n = 52,837



- Natural
 FRHF
 FRHF_n
 FRHF_{gg}
 NIMF
 NIMF_n
 CFHF
 CFHF_n
 MOKF
 MOKF_n
- MOKF_{nc}
 MOKF_{gg}
 MERF
 MERF_n
 FRHS
 SJOSx
 SacW
 CFHL
 nonCV

Figure 19. Proportion of hatchery- and natural-origin salmon in the 2021 California ocean commercial fishery.