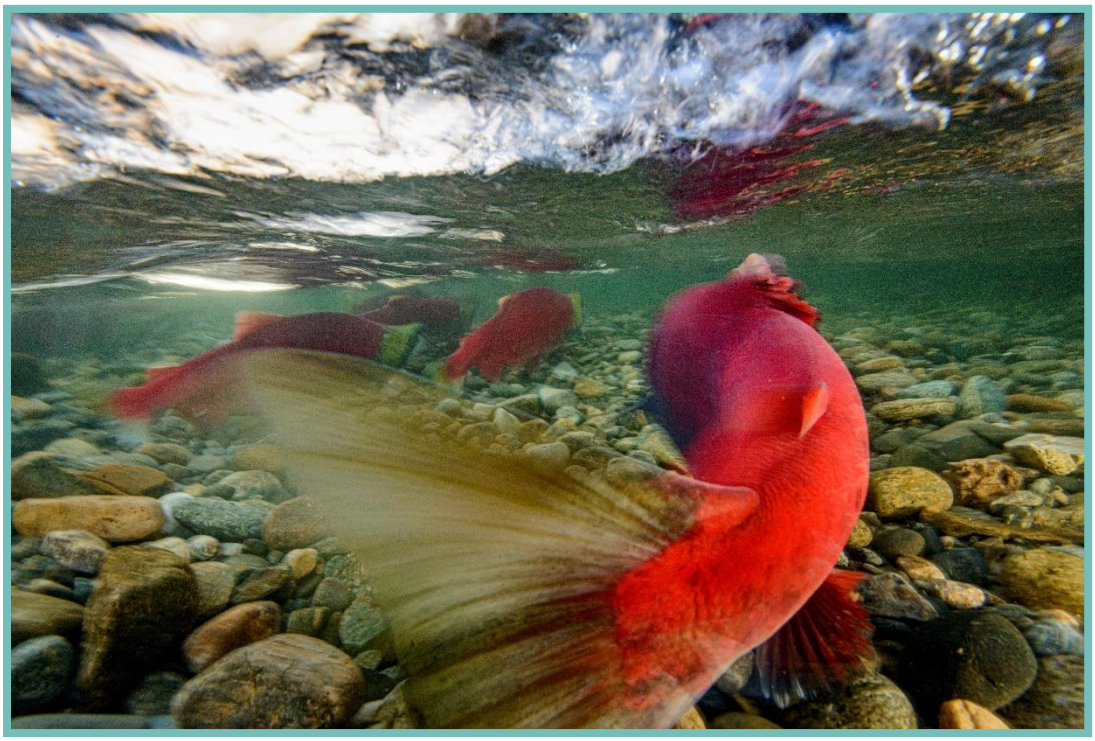
Hatchery Effectiveness Review

REVIEW AND ASSESSMENT OF ENHANCEMENT FOR HARVEST

SUPPLEMENTAL INFORMATION



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PACIFIC SALMON FOUNDATION

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Table 1. Mean percent of target releases in BC that fall under each primary management objective for each life stage (E = egg, F = fry, SP = seapen, S0 = sub-yearling smolt, S1 = yearling smolt) released for each salmon species (standard deviation in parentheses). Numbers capture all target enhancement from both hatcheries and spawning channels for listed primary objectives from the Integrated Fisheries Management Plans from 2014-2021.

SPECIES	STAGE	ASSESSMENT	ASSESSMENT /CONSERVATION	ASSESSMENT/ HARVEST	ASSESSMENT/ REBUILDING	CONSERVATION	EDUCATION	HARVEST	HARVEST/ REBUILDING	REBUILDING	STEWARDSHIP	STEWARDSHIP/ EDUCATION
Chinook	E	<0.1 (0.0)	-	-	-	-	<0.1 (0.0)	-	-	-	-	-
	F	0.6 (0.2)	0.3 (0.0)	6.4 (0.0)	0.2 (0.1)	0.7 (0.5)	<0.1 (0.0)	1.5 (1.8)	-	3.4 (1.0)	0.1 (<0.1)	<0.1 (0.0)
	SP	-	-	1.1 (1.6)	0.2 (<0.1)	0.1 (<0.1)	-	16.1 (2.4)	-	1.1 (0.2)	0.2 (0.1)	-
	S0	3.2 (0.7)	3.3 (1.8)	**34.8 (0.9)**	0.2 (<0.1)	0.4 (<0.1)	<0.1 (0.0)	22.3 (2.1)	-	7.5 (0.9)	1.0 (0.4)	-
	S1	0.6 (0.2)	-	-	0.7 (<0.1)	0.3 (0.4)	<0.1 (0.0)	0.2 (<0.1)	-	0.5 (0.1)	-	-
Chum	E	-	-	-	-	-	-	-	-	0.2 (0.2)	0.1 (<0.1)	-
	F	-	-	-	0.6 (0.1)	<0.1 (<0.1)	0.1 (0.0)	**74.3 (2.4)**	-	8.3 (1.8)	1.0 (0.7)	0.1 (0.0)
	SP	-	-	-	-	-	-	15.5 (0.8)	-	0.6 (0.6)	<0.1 (0.0)	-
Coho	E	-	-	-	-	-	-	-	-	-	-	-
	F	0.5 (0.0)	0.6 (0.1)	-	-	0.4 (0.2)	1.2 (0.0)	12.4 (4.5)	-	16.0 (4.3)	7.3 (3.4)	<0.1 (0.0)
	SP	-	-	-	-	-	-	2.7 (0.4)	-	-	0.3 (0.0)	-
	S1	2.1 (1.7)	1.9 (0.7)	11.7 (1.1)	-	0.6 (0.2)	-	**41.3 (1.6)**	-	2.2 (0.1)	0.6 (0.3)	-
Pink	E	<0.1 (0.0)	-	-	-	-	-	-	-	0.5 (0.0)	0.1 (0.1)	-
	F	-	-	-	-	-	-	**76.8 (4.0)**	1.9 (0.0)	15.2 (3.2)	3.4 (3.1)	-
	SP	-	-	-	-	-	-	4.9 (2.4)	-	3.4 (0.0)	1.1 (0.2)	-
Sockeye	F	-	-	0.1 (<0.1)	<0.1 (<0.1)	0.4 (0.2)	-	**99.3 (0.2)**	-	0.1 (0.1)	<0.1 (0.0)	-
	S1	<0.1 (0.0)	-	-	<0.1 (0.0)	<0.1 (<0.1)	-	-	-	<0.1 (<0.1)	<0.1 (<0.1)	-

APPENDIX A. ENHANCED CONTRIBUTION TO CATCH

Table A.1. Total annual **Chinook** catch (commercial + recreational) by region and fishery in BC. NCST = North Coast (statistical areas 1-5), CCST = Central Coast (statistical areas 6-10 and 130), WCVI = west coast Vancouver Island (statistical areas 20-27), and ISC = inner South Coast (statistical areas 11-19, 28, and 29). N = net fisheries (gill and seine), T = troll fisheries, R = recreational fisheries. Where 'NA' is recorded, there is no available data.

	NCST			CCST			WCVI			ISC		
YEAR	N	T	R	N	T	R	N	T	R	N	T	R
1981	NA	NA	NA	NA	NA	NA	NA	NA	4,128	NA	NA	73,513
1982	81,578	174,239	NA	51,026	45,887	NA	62,124	544,167	10,721	66,941	207,623	113,681
1983	26,659	162,917	NA	33,123	50,770	NA	45,521	385,532	17,253	85,440	159,810	174,477
1984	50,807	179,562	NA	10,202	39,091	NA	71,600	460,504	54,642	66,012	132,309	358,962
1985	70,512	186,654	NA	27,257	15,980	NA	66,618	354,040	39,375	79,826	68,449	217,054
1986	42,651	152,958	NA	55,240	27,871	NA	65,743	342,437	34,758	57,622	68,580	160,302
1987	41,227	177,345	NA	21,408	29,354	NA	11,866	378,946	56,273	33,093	73,257	103,098
1988	40,339	152,350	NA	21,834	11,689	NA	28,407	408,629	52,991	20,882	38,982	100,882
1989	48,825	207,461	NA	7,422	9,852	NA	72,776	203,884	55,239	59,573	37,814	132,856
1990	39,240	153,888	NA	30,206	15,814	NA	41,897	298,023	83,261	39,320	45,841	83,594
1991	56,215	193,576	NA	18,927	22,495	NA	73,042	202,597	97,404	34,362	37,505	96,785
1992	43,496	142,067	NA	20,738	25,634	NA	25,384	346,616	64,674	21,167	53,846	99,697
1993	44,677	161,643	NA	11,176	12,960	NA	32,185	274,736	82,664	36,682	45,136	109,502
1994	26,218	164,257	NA	15,360	8,093	NA	17,588	145,861	73,732	25,299	24,981	55,862
1995	28,008	56,869	NA	12,122	2,662	NA	1,980	81,194	41,360	8,109	2,041	50,670
1996	30,589	8	NA	7,201	0	NA	137	4	20,746	4,617	0	74,698
1997	20,829	84,384	NA	3,651	9,274	NA	301	52,635	68,891	25,185	2,052	44,744
1998	6,135	117,146	NA	5,467	2,188	NA	327	11,396	67,982	4,948	2,547	15,695
1999	8,662	44,900	NA	4,342	2,073	NA	80	56,280	93,604	164	314	36,021
2000	19,716	9,948	NA	3,198	NA	NA	25	34,480	53,752	4,520	694	30,401
2001	22,670	13,351	NA	6,465	0	NA	70	58,369	48,304	342	781	40,688
2002	13,514	103,021	NA	4,676	482	NA	241	134,462	87,328	4,973	569	60,270
2003	13,401	139,862	NA	2,816	0	NA	9,237	155,307	102,900	4,965	1,018	30,368

	NCST			CCST			WCVI			ISC		
YEAR	N	T	R	N	T	R	N	T	R	N	T	R
2004	11,107	169,306	NA	5,403	0	NA	12,308	169,852	137,554	8,110	683	30,061
2005	5,107	155,247	NA	6,305	22	NA	23,364	140,394	122,787	167	0	26,239
2006	10,176	129,292	NA	5,298	0	NA	19,955	105,824	105,190	3,610	15	21,200
2007	9,012	77,287	NA	5,577	0	NA	26,881	74,442	110,901	90	0	26,431
2008	5,686	45,847	NA	1,184	9	NA	8,257	91,193	94,972	0	0	16,169
2009	3,737	71,365	NA	4,180	NA	NA	9,765	48,983	121,223	34	0	31,034
2010	1,755	84,444	NA	1,570	0	NA	1,747	78,968	94,186	6,497	0	25,381
2011	2,703	71,045	NA	5,185	0	NA	21,509	121,171	145,340	5,627	52	36,663
2012	780	80,522	NA	3,817	0	NA	10,230	59,156	109,727	1	0	34,664
2013	2,126	69,543	28,416	5,308	0	9,589	8,859	33,668	146,363	115	0	62,186
2014	2,632	172,223	43,167	2,238	0	17,176	19,086	107,624	124,168	6,844	2	69,270
2015	2,413	105,756	72,803	5,351	0	23,563	10,131	53,909	160,277	8	0	95,611
2016	1,222	149,449	64,481	3,232	0	19,102	5,122	48,904	118,626	3	0	67,909
2017	1,257	97,742	54,957	3,119	0	18,780	30,486	46,808	124,380	1	0	95,282
2018	0	70,276	50,215	4,603	0	20,269	21,766	19,111	136,862	289	6	100,490
2019	0	42,801	63,073	6,092	0	19,316	45,505	23,195	121,199	0	NA	73,033
2020	0	30,096	17,016	4,130	0	6,076	42,883	11,305	69,059	0	0	52,468

Table A.2. Total annual **Coho** catch (commercial + recreational) by region and fishery in BC. NCST = North Coast (statistical areas 1-5), CCST = Central Coast (statistical areas 6-10 and 130), WCVI = west coast Vancouver Island (statistical areas 20-27), and ISC = inner South Coast (statistical areas 11-19, 28, and 29). N = net fisheries (gill and seine), T = troll fisheries, R = recreational fisheries. Where 'NA' is recorded, there is no available data.

	NCST			CCST			WCVI			ISC		
YEAR	N	T	R	N	T	R	N	T	R	N	T	R
1981	NA	NA	NA	NA	NA	NA	NA	NA	8,578	NA	NA	165,212
1982	187,281	393,014	NA	110,670	77,980	NA	141,034	1,790,739	8,076	222,667	247,551	403,615
1983	216,736	734,208	NA	153,405	209,378	NA	26,153	2,169,144	35,818	270,901	344,722	335,816
1984	163,128	531,096	NA	60,370	152,753	NA	85,420	2,175,679	34,204	141,893	288,584	412,380
1985	176,350	527,712	NA	96,898	54,252	NA	232,266	1,389,345	23,900	197,192	272,178	706,493
1986	212,581	1,089,552	NA	277,416	204,943	NA	213,102	2,159,656	33,947	177,259	569,761	540,615
1987	100,354	595,555	NA	93,244	87,777	NA	223,643	1,821,459	80,691	81,256	344,231	587,715
1988	61,610	347,989	NA	107,864	44,728	NA	67,689	1,596,025	62,354	117,672	395,652	990,896
1989	161,238	573,308	NA	28,822	36,913	NA	381,745	1,952,212	45,268	131,088	159,540	497,226
1990	163,586	974,674	NA	153,322	118,332	NA	156,841	1,864,567	80,905	127,329	306,117	565,820
1991	196,107	981,934	NA	47,654	70,065	NA	185,617	1,889,690	152,950	87,537	47,132	53,860
1992	122,010	515,869	NA	67,482	83,677	NA	115,712	1,671,621	147,443	88,705	291,359	483,972
1993	134,375	336,955	NA	37,829	17,185	NA	9,663	953,738	113,505	68,384	331,315	739,548
1994	174,387	739,781	NA	94,234	26,791	NA	135,774	1,251,744	130,042	43,808	81,475	178,520
1995	111,549	296,871	NA	31,196	13,331	NA	39,718	1,353,853	109,906	18,674	5,532	17,810
1996	132,028	322,726	NA	36,059	10,410	NA	4,285	793,525	118,733	5,891	3	36,900
1997	30,795	160,504	NA	15,787	7,171	NA	251	41	125,056	6,411	1,182	14,994
1998	6	0	NA	991	0	NA	64	0	61	0	0	1,772
1999	2,779	864	NA	601	0	NA	112	0	8,488	3	0	310
2000	1,775	5,739	NA	1,641	NA	NA	249	5	7,775	464	14	4,225
2001	241	8,948	NA	2,272	0	NA	101	0	39,141	28	0	12,088
2002	413	115,108	NA	1,259	9,037	NA	1,084	5	29,875	232	6	6,125
2003	7,343	207,988	NA	3,047	20,712	NA	6,366	283	66,985	237	3	11,267
2004	22,966	237,193	NA	55,872	33,548	NA	2,891	233	50,981	43	10	8,262
2005	48,452	260,281	NA	52,456	48,099	NA	3,908	2,010	49,614	166	4	10,369

	NCST			CCST			WCVI			ISC		
YEAR	N	T	R	N	T	R	N	T	R	N	T	R
2006	1,055	127,528	NA	4,982	10,735	NA	2,183	2,644	18,985	8	0	3,572
2007	61,728	160,552	NA	18,907	28,184	NA	4,816	1,426	50,235	14	0	8,660
2008	8	62,809	NA	0	13,725	NA	4,974	310	28,035	6	5	1,565
2009	2,011	220,436	NA	15,914	NA	NA	909	0	88,716	19	6	10,626
2010	100	138,295	NA	362	0	NA	767	458	16,576	600	0	5,477
2011	11,163	280,715	NA	15,672	15,932	NA	985	0	69,864	800	0	7,725
2012	0	215,452	NA	495	0	NA	260	2,106	68,203	5	0	10,285
2013	21,022	378,187	45,076	24,499	21,121	28,722	1,108	6,126	133,548	2,639	0	57,257
2014	26,730	176,662	43,825	11,775	0	31,184	607	34,949	77,061	1,897	6	33,769
2015	20,182	255,675	45,976	964	0	32,743	335	6,186	53,131	687	0	23,619
2016	37,739	214,610	49,879	224	4,343	19,738	808	253	33,222	356	0	21,592
2017	12,852	333,175	44,554	536	4,568	31,659	783	331	30,201	369	0	18,121
2018	728	176,527	36,391	0	0	24,458	4,053	2	47,719	813	1	29,442
2019	0	177,119	53,612	6	2,161	34,742	2,922	0	54,817	0	NA	14,094
2020	0	89,381	22,717	0	0	8,177	0	6	34,453	196	0	10,916

Table A.3. Total annual **Chum** catch (commercial + recreational) by region and fishery in BC. NCST = North Coast (statistical areas 1-5), CCST = Central Coast (statistical areas 6-10 and 130), WCVI = west coast Vancouver Island (statistical areas 20-27), and ISC = inner South Coast (statistical areas 11-19, 28, and 29). N = net fisheries (gill and seine), T = troll fisheries, R = recreational fisheries. Where 'NA' is recorded, there is no available data.

	NCST			CCST			WCVI			ISC		
YEAR	N	T	R	N	T	R	N	T	R	N	T	R
1982	245,431	5,829	NA	610,885	3,103	NA	535,945	73,418	NA	1,485,872	5,923	NA
1983	236,886	10,245	NA	442,940	5,028	NA	8,585	8,976	NA	270,585	16,046	NA
1984	857,325	61,521	NA	332,639	7,925	NA	333,569	12,920	NA	231,020	6,382	NA
1985	1,018,979	146,887	NA	968,189	28,521	NA	1,875,410	221,824	NA	1,149,229	61,156	NA
1986	626,947	50,721	NA	2,231,144	56,235	NA	536,724	264,359	175	1,711,733	102,458	707
1987	371,348	62,115	NA	898,341	5,489	NA	430,190	15,800	128	480,718	3,106	3,416
1988	832,210	148,132	NA	1,917,525	11,341	NA	1,834,672	80,485	171	1,306,206	36,841	4,634
1989	401,052	71,949	NA	366,304	4,454	NA	315,417	23,409	60	607,920	18,602	7,819
1990	448,135	32,621	NA	1,073,110	7,811	NA	26,055	8,382	178	1,560,396	18,636	2,748
1991	551,297	45,760	NA	448,379	2,980	NA	495,973	12,934	395,407	737,815	53,568	3,549
1992	389,478	63,633	NA	285,307	4,919	NA	1,230,090	45,380	1,395	1,964,002	23,588	4,754
1993	796,921	260,917	NA	313,172	683	NA	880,772	8,376	173	1,943,492	16,435	1,692
1994	626,947	56,872	NA	788,810	4,591	NA	1,026,727	10,312	112	1,782,953	25,250	4,172
1995	670,612	176,150	NA	962,568	8,012	NA	238,643	31,017	443	331,846	56,082	3,596
1996	521,750	25,886	NA	371,723	893	NA	392,247	4,592	396	81,065	44	3,073
1997	283,810	42,691	NA	302,360	366	NA	1,133,326	267	317	94,396	3,394	1,444
1998	375,590	9,378	NA	1,166,713	339	NA	939,034	192	133	2,134,675	116,928	3,579
1999	369,876	1,791	NA	301,832	81	NA	211,375	1,707	21	36,220	125	790
2000	215,618	4,864	NA	97,108	NA	NA	26,836	539	38	175,200	1,773	2,638
2001	102,942	2,993	NA	510,209	299	NA	198,787	279	62	304,262	8,699	4,578
2002	176,009	973	NA	777,374	116	NA	614,894	2,197	509	1,099,305	35,516	12,196
2003	80,662	200	NA	1,340,078	3,770	NA	528,734	3,493	1,354	927,068	85,818	5,251
2004	172,284	143	NA	1,397,720	0	NA	365,521	3,562	368	1,263,979	106,193	19,727
2005	178,219	53	NA	575,114	1	NA	801,614	2,254	512	858,629	49,017	10,529
2006	143,434	160	NA	426,758	0	NA	596,091	1,642	372	1,065,757	68,631	9,631

	NCST			CCST			WCVI			ISC		
YEAR	N	T	R	N	T	R	N	T	R	N	T	R
2007	24,516	746	NA	272,333	4	NA	209,061	871	485	503,408	40,424	5,657
2008	16,714	54	NA	12,806	0	NA	60,117	311	253	333,995	21,262	2,937
2009	50,747	80	NA	73,772	NA	NA	8	168	432	546,151	67,939	177
2010	23,990	92	NA	14,793	0	NA	14,056	400	78	60,956	394	927
2011	0	10	NA	353,120	0	NA	301,056	234	484	1,133,246	106,691	571
2012	40,188	41	NA	341,025	0	NA	26,885	233	191	593,947	27,481	437
2013	53,922	304	838	547,620	0	119	17,152	130	721	697,385	42,375	16,547
2014	31,219	123	1,459	229,205	0	260	7	1,170	749	409,807	1,566	10,395
2015	224,742	64	1,155	985,038	0	507	170,571	1,014	1,227	807,427	47,258	8,435
2016	69,126	19	2,615	503,378	0	4,354	420,008	461	663	2,158,578	65,010	11,380
2017	59,496	340	1,134	334,241	0	744	56,486	156	767	771,233	17,580	5,107
2018	46,874	3,175	869	452,439	0	198	27,525	35	808	192,104	2,032	1,990
2019	21,045	902	519	146,034	0	160	6,843	1	245	0	NA	665
2020	1,751	25	116	13,155	0	11	9,042	1	363	186,644	12,771	2,884

NCST

Table A.4. All CWT-associated catch, total hatchery catch, total catch, and enhanced contribution to catch of **Chinook** in **north coast** fisheries. Total catch and enhanced contribution are not available for this region.

YEAR	CWT-ASSOCIATED CATCH	TOTAL HATCHERY CATCH	TOTAL CATCH	ENHANCED CONTRIBUTION (%)
1981	20,500	24,942	NA	NA
1982	30,647	30,812	NA	NA
1983	24,938	27,404	NA	NA
1984	27,053	31,328	NA	NA
1985	25,353	28,020	NA	NA
1986	12,711	29,501	NA	NA
1987	15,478	19,006	NA	NA
1988	19,181	21,285	NA	NA
1989	32,350	46,749	NA	NA
1990	48,683	60,534	NA	NA
1991	55,591	68,158	NA	NA
1992	44,611	54,301	NA	NA
1993	40,298	49,119	NA	NA
1994	30,635	36,106	NA	NA
1995	13,230	17,468	NA	NA
1996	3,757	5,108	NA	NA
1997	13,172	16,730	NA	NA
1998	23,356	32,818	NA	NA
1999	13,675	16,379	NA	NA
2000	3,384	3,923	NA	NA
2001	2,948	3,882	NA	NA
2002	14,714	17,618	NA	NA
2003	11,124	12,914	NA	NA
2004	18,296	25,849	NA	NA
2005	14,885	19,239	NA	NA
2006	14,376	17,026	NA	NA
2007	13,030	15,403	NA	NA
2008	5,363	36,696	NA	NA
2009	5,328	35,484	NA	NA
2010	5,466	54,270	NA	NA
2011	7,113	75,983	NA	NA
2012	3,381	21,929	NA	NA
2013	3,597	28,583	100,085	29
2014	4,376	28,291	218,022	13
2015	4,886	38,132	180,972	21
2016	7,316	37,023	215,152	17
2017	10,831	97,292	153,956	63
2018	13,523	14,515	120,491	12
2019	12,050	12,910	105,874	12
2020	6,423	6,704	47,111	14

Table A.5. All CWT-associated catch, total hatchery catch, total catch, and enhanced contribution to catch of **Coho** in **north coast** fisheries. Total catch and enhanced contribution are not available for this region.

YEAR	CWT-ASSOCIATED CATCH	TOTAL HATCHERY CATCH	TOTAL CATCH	ENHANCED CONTRIBUTION (%)
1981	971	971	NA	NA
1982	701	701	NA	NA
1983	4,870	6,811	NA	NA
1984	2,734	11,042	NA	NA
1985	1,959	11,615	NA	NA
1986	14,360	96,217	NA	NA
1987	14,137	25,094	NA	NA
1988	16,326	32,668	NA	NA
1989	11,829	20,545	NA	NA
1990	25,659	42,728	NA	NA
1991	28,830	41,672	NA	NA
1992	37,016	76,668	NA	NA
1993	22,450	30,418	NA	NA
1994	25,166	41,628	NA	NA
1995	10,412	16,677	NA	NA
1996	10,099	14,338	NA	NA
1997	5,277	13,134	NA	NA
1998	34	58	NA	NA
1999	227	372	NA	NA
2000	53	101	NA	NA
2001	337	751	NA	NA
2002	513	3,459	NA	NA
2003	1,456	4,173	NA	NA
2004	3,305	8,925	NA	NA
2005	1,826	5,272	NA	NA
2006	388	813	NA	NA
2007	1,871	39,635	NA	NA
2008	228	2,885	NA	NA
2009	822	30,230	NA	NA
2010	623	21,282	NA	NA
2011	2,380	103,774	NA	NA
2012	1,220	65,381	NA	NA
2013	1,494	51,527	444,284	12
2014	377	11,979	247,217	5
2015	773	22,981	321,834	7
2016	1,014	27,213	302,282	9
2017	1,407	26,599	390,581	7
2018	1,130	24,352	213,646	11
2019	811	14,284	230,731	6
2020	203	3,341	112,098	3

Table A.6. All marked (CWT or fin clip) hatchery catch (adjusted for mark mortality), total catch, and enhanced contribution to catch of **chum** in **north coast** net fisheries. Data from Lynch et al. (2020).

YEAR	HATCHERY CATCH	TOTAL CATCH	ENHANCED CONTRIBUTION (%)
1981	145	42,872	0
1982	456	79,041	1
1984	36,388	378,367	10
1985	55,761	703,807	8
1986	22,015	237,761	9
1987	47,234	191,226	25
1988	79,464	396,356	20
1989	20,142	395,653	5
1990	49,446	448,135	11
1991	68,852	548,340	13
1992	137,781	389,478	35
1993	59,906	796,921	8
1994	63,216	626,947	10
1995	11,844	670,612	2
1996	76,772	521,733	15
1997	35,510	285,552	12
1998	72,156	106,401	68
1999	93,327	369,093	25
2000	64,859	220,980	29
2001	6,217	101,108	6
2002	22,004	95,909	23
2003	760	5,941	13

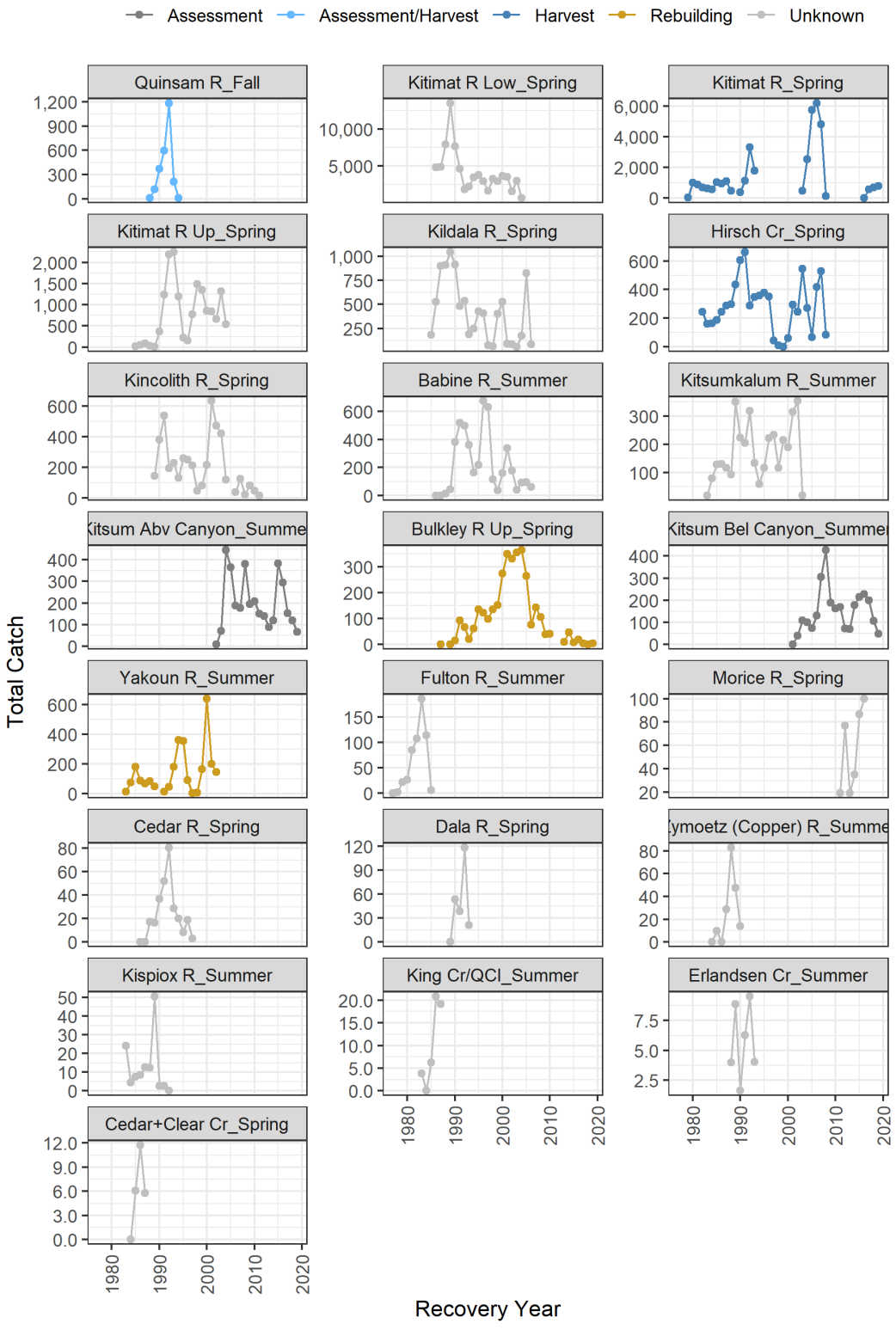

Figure A. 1. Total catch (#s of fish) of CWT **Chinook** stocks released from hatcheries on the **north coast** over time coloured by production objective.

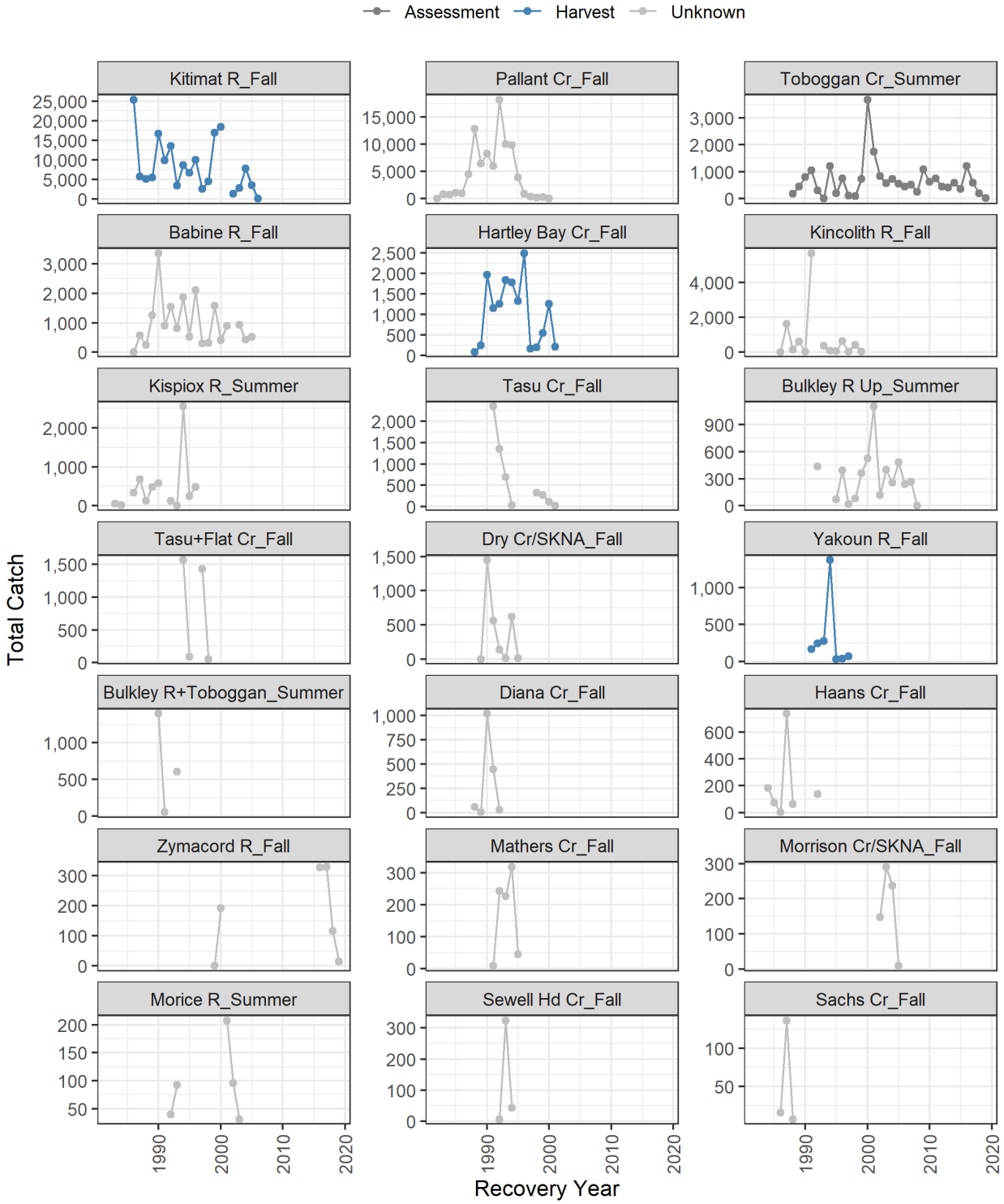

Figure A.2. Total catch (#s of fish) of CWT **Coho** stocks released from hatcheries on the **north coast** over time coloured by production objective.

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Table A.7. All CWT-associated catch, total hatchery catch, total catch, and enhanced contribution to catch of **Chinook** in **central coast** fisheries. Total catch and enhanced contribution are not available for this region.

YEAR	CWT-ASSOCIATED CATCH	TOTAL HATCHERY CATCH	TOTAL CATCH	ENHANCED CONTRIBUTION (%)
1981	14,793	15,375	NA	NA
1982	19,667	49,257	NA	NA
1983	14,429	NA	NA	NA
1984	7,571	NA	NA	NA
1985	6,452	8,190	NA	NA
1986	17,305	17,913	NA	NA
1987	9,195	9,784	NA	NA
1988	10,313	11,394	NA	NA
1989	10,484	11,352	NA	NA
1990	18,062	21,756	NA	NA
1991	20,106	25,011	NA	NA
1992	23,296	27,946	NA	NA
1993	13,981	15,260	NA	NA
1994	10,628	11,727	NA	NA
1995	6,455	6,455	NA	NA
1996	5,874	6,619	NA	NA
1997	7,377	8,414	NA	NA
1998	6,447	11,434	NA	NA
1999	6,467	7,615	NA	NA
2000	2,638	3,031	NA	NA
2001	3,694	4,603	NA	NA
2002	6,032	6,736	NA	NA
2003	11,109	11,520	NA	NA
2004	15,046	15,810	NA	NA
2005	19,524	23,797	NA	NA
2006	10,085	10,563	NA	NA
2007	3,610	3,610	NA	NA
2008	1,450	27,640	NA	NA
2009	4,565	4,939	NA	NA
2010	1,192	1,318	NA	NA
2011	4,274	4,499	NA	NA
2012	3,643	3,662	NA	NA
2013	3,157	3,225	14,897	22
2014	2,480	2,593	19,414	13
2015	6,833	7,004	28,914	24
2016	5,935	5,976	22,334	27
2017	3,457	3,511	21,899	16
2018	5,475	5,624	24,872	23
2019	9,000	9,243	25,408	36
2020	4,953	5,066	10,206	50

Table A.8. All CWT-associated catch, total hatchery catch, total catch, and enhanced contribution to catch of **Coho** in **central coast** fisheries. Total catch and enhanced contribution are not available for this region.

YEAR	CWT-ASSOCIATED CATCH	TOTAL HATCHERY CATCH	TOTAL CATCH	ENHANCED CONTRIBUTION (%)
1981	3,995	NA	NA	NA
1982	4,729	4,729	NA	NA
1983	9,790	NA	NA	NA
1984	3,849	3,849	NA	NA
1985	4,198	5,447	NA	NA
1986	11,405	11,405	NA	NA
1987	4,011	4,011	NA	NA
1988	3,771	23,610	NA	NA
1989	2,623	5,872	NA	NA
1990	8,636	23,292	NA	NA
1991	7,905	26,085	NA	NA
1992	10,721	15,400	NA	NA
1993	2,791	3,362	NA	NA
1994	5,036	5,325	NA	NA
1995	5,269	7,638	NA	NA
1996	6,434	6,536	NA	NA
1997	3,196	3,256	NA	NA
1998	85	125	NA	NA
1999	1,048	2,360	NA	NA
2000	205	355	NA	NA
2001	228	442	NA	NA
2002	292	1,408	NA	NA
2003	2,771	5,972	NA	NA
2004	1,428	4,020	NA	NA
2005	388	549	NA	NA
2006	256	256	NA	NA
2007	3	16	NA	NA
2008	337	337	NA	NA
2009	82	224	NA	NA
2010	153	780	NA	NA
2011	361	1,728	NA	NA
2012	226	910	NA	NA
2013	966	3,396	74,342	5
2014	290	1,038	42,959	2
2015	63	168	33,707	1
2016	374	2,073	24,305	9
2017	167	473	36,763	1
2018	211	211	24,458	1
2019	130	130	36,908	<1
2020	0	NA	8,177	NA

Table A.9. All marked (CWT or fin clip) hatchery catch (adjusted for mark mortality), total catch, and enhanced contribution to catch of **Chum** in **central coast** net fisheries. Data from Lynch et al. (2020).

YEAR	HATCHERY CATCH	TOTAL CATCH	ENHANCED CONTRIBUTION (%)
1981	196	513,611	0
1982	3,109	448,479	1
1983	22,191	356,771	6
1984	13,235	298,775	4
1985	36,069	781,237	5
1986	174,756	1,990,386	9
1987	217,888	884,163	25
1988	454,761	1,909,558	24
1989	132,153	360,059	37
1990	164,045	1,070,859	15
1991	64,675	430,268	15
1992	48,871	267,716	18
1993	64,316	300,583	21
1994	116,375	78,810	15
1995	176,613	956,094	18
1996	56,435	370,446	15
1997	65,591	302,358	22
1998	167,723	1,179,286	14
1999	48,258	301,833	16
2000	27,857	97,535	29
2001	148,663	510,419	29
2002	151,108	777,490	19
2003	296,718	1,345,394	22
2004	489,685	1,235,642	40
2005	59,037	341,954	17
2006	125,179	380,476	33
2007	54,116	258,080	21
2008	856	9,764	9
2009	6,781	44,177	15
2011	12,479	334,737	4
2012	73,390	326,239	22
2013	187,769	547,620	34
2014	30,504	229,560	13
2015	246,300	874,823	28
2016	124,444	475,253	26
2017	111,069	316,501	35
2018	136,225	452,439	30

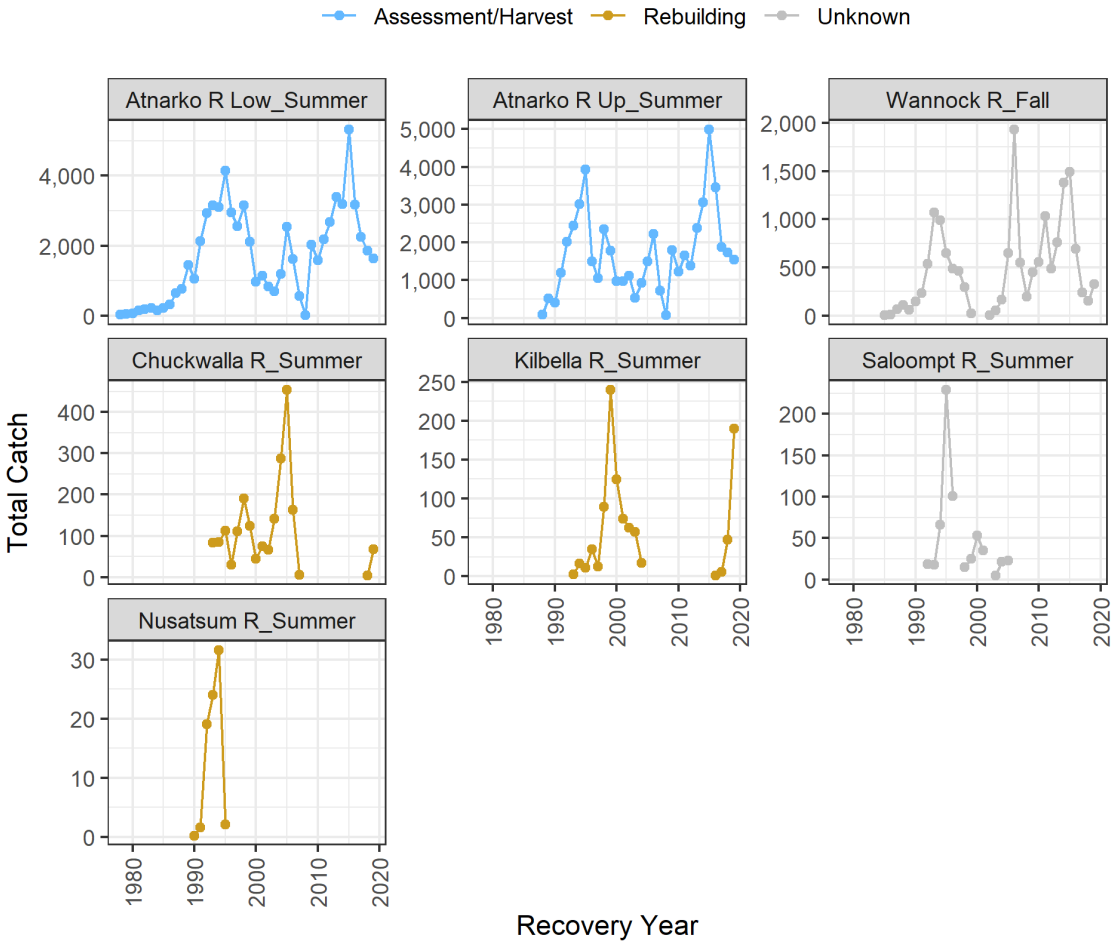

Figure A. 3. Total catch (#s of fish) of CWT **Chinook** stocks released from hatcheries on the **central coast** over time coloured by production objective. Plots are ordered from highest to lowest catch from the top left to the bottom right.

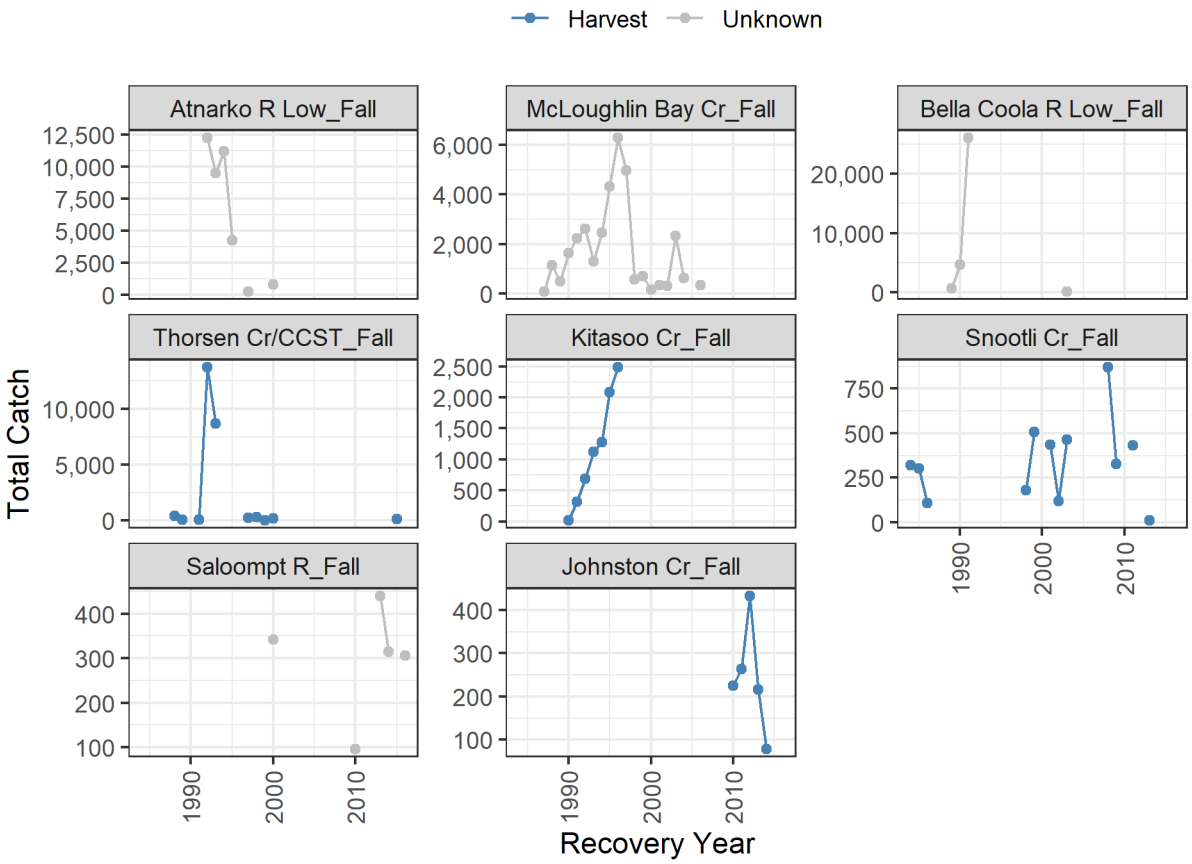

Figure A.4. Total catch (#s of fish) of CWT **Coho** stocks released from hatcheries on the **central coast** over time coloured by production objective. Plots are ordered from highest to lowest catch from the top left to the bottom right.

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Table A.10. All CWT-associated catch, total hatchery catch, total catch, and enhanced contribution to catch of **Chinook** in **west coast Vancouver Island** fisheries. Values in red indicate data errors where the enhanced contribution is > 100%.

YEAR	CWT-ASSOCIATED CATCH	ALL HATCHERY CATCH	TOTAL CATCH	ENHANCED CONTRIBUTION (%)
1981	24,614	25,367	4,128	615
1982	41,257	56,145	617,012	9
1983	36,039	37,882	448,306	8
1984	45,741	45,932	586,746	8
1985	16,089	16,095	460,033	3
1986	14,563	14,610	442,938	3
1987	16,320	16,586	447,085	4
1988	37,747	39,683	490,027	8
1989	82,364	84,850	331,899	26
1990	86,180	96,912	423,181	23
1991	125,020	155,951	373,043	42
1992	128,548	177,904	436,674	41
1993	139,313	167,538	389,585	43
1994	76,978	88,369	237,181	37
1995	28,812	35,860	124,534	29
1996	2,835	3,401	20,887	16
1997	37,837	47,298	121,827	39
1998	42,266	49,551	79,705	62
1999	23,893	27,391	149,964	18
2000	8,132	9,510	88,257	11
2001	9,235	10,788	106,743	10
2002	45,559	59,513	222,031	27
2003	41,513	48,927	267,444	18
2004	78,071	100,828	319,714	32
2005	75,115	91,374	286,545	32
2006	60,246	80,617	230,969	35
2007	45,589	104,373	212,224	49
2008	27,786	70,115	194,422	36
2009	13,439	29,129	179,971	16
2010	7,229	16,482	174,901	9
2011	26,136	53,592	288,020	19
2012	13,724	32,710	179,113	18
2013	7,328	19,756	188,890	10
2014	7,319	17,106	250,878	7
2015	16,667	41,674	224,317	19
2016	17,271	45,755	172,652	27
2017	37,350	92,771	201,674	46
2018	53,635	125,175	177,739	70
2019	66,327	144,837	189,899	76
2020	47,925	273,394	123,247	222

Table A. 11. All CWT-associated catch, total hatchery catch, total catch, and enhanced contribution to catch of **Coho** in **west coast Vancouver Island** fisheries. Values in red indicate data errors where the enhanced contribution is > 100%.

YEAR	CWT-ASSOCIATED CATCH	TOTAL HATCHERY CATCH	TOTAL CATCH	ENHANCED CONTRIBUTION (%)
1981	57,942	93,108	8,578	1,085
1982	59,066	157,345	1,939,849	8
1983	72,033	91,404	2,231,115	4
1984	107,347	198,098	2,295,303	9
1985	97,138	297,440	1,645,511	18
1986	164,882	329,119	2,406,705	14
1987	183,039	382,248	2,125,793	18
1988	107,763	183,496	1,726,068	11
1989	207,592	546,455	2,379,225	23
1990	158,762	334,727	2,102,313	16
1991	271,273	922,627	2,228,257	41
1992	186,832	436,343	1,934,776	23
1993	73,469	155,108	1,076,906	14
1994	194,483	484,005	1,517,560	32
1995	144,557	342,658	1,503,477	23
1996	119,915	257,461	916,543	28
1997	16,483	33,302	125,348	27
1998	87	772	125	618
1999	203	508	8,600	6
2000	4,866	9,729	8,029	121
2001	35,084	90,669	39,242	231
2002	6,101	13,925	30,964	45
2003	17,987	57,229	73,634	78
2004	13,031	33,370	54,105	62
2005	10,178	33,045	55,532	60
2006	1,901	6,620	23,812	28
2007	8,241	21,209	56,477	38
2008	5,542	14,945	33,319	45
2009	12,796	31,546	89,625	35
2010	1,039	3,250	17,801	18
2011	15,912	67,677	70,849	96
2012	5,947	19,141	70,569	27
2013	18,098	54,967	140,782	39
2014	3,512	14,856	112,617	13
2015	2,760	17,650	59,652	30
2016	3,912	24,852	34,283	72
2017	3,849	15,035	31,315	48
2018	5,885	25,570	51,774	49
2019	5,217	27,918	57,739	48
2020	5,850	25,540	34,459	74

Table A.12. All marked (CWT or fin clip) hatchery catch (adjusted for mark mortality), total catch, and enhanced contribution to catch of **Chum** in **west coast Vancouver Island** net fisheries. Data from Lynch et al. (2020).

YEAR	HATCHERY CATCH	TOTAL CATCH	ENHANCED CONTRIBUTION (%)
1980	29,323	783,500	4
1981	379	198,604	0
1982	92,667	1,660,737	6
1983	440	139,631	0
1984	164,066	396,615	41
1985	1,271,263	2,428,031	52
1986	722,838	1,761,941	41
1987	283,104	528,900	54
1988	1,576,414	2,920,436	54
1989	318,852	793,208	40
1990	330,386	1,209,889	27
1991	241,712	724,871	33
1992	1,053,120	2,574,771	41
1993	914,899	2,141,968	43
1994	902,697	2,292,118	39
1995	172,055	496,073	35
1996	172,176	424,314	41
1997	922,524	1,235,673	75
1998	1,011,417	2,230,933	45
1999	134,807	241,445	56
2000	46,780	213,970	22
2001	203,781	421,113	48
2002	133,005	568,444	23
2003	71,475	938,382	8
2004	20,970	919,381	2
2005	30,023	809,474	4
2006	29,678	817,017	4
2007	14,098	441,799	3
2008	2,457	278,654	1
2009	6,790	892,012	1
2010	6,554	61,310	11
2011	20,392	646,517	3
2012	49,344	365,088	14
2013	38,331	593,531	6
2014	21,225	345,178	6
2016	390,041	1,309,466	30

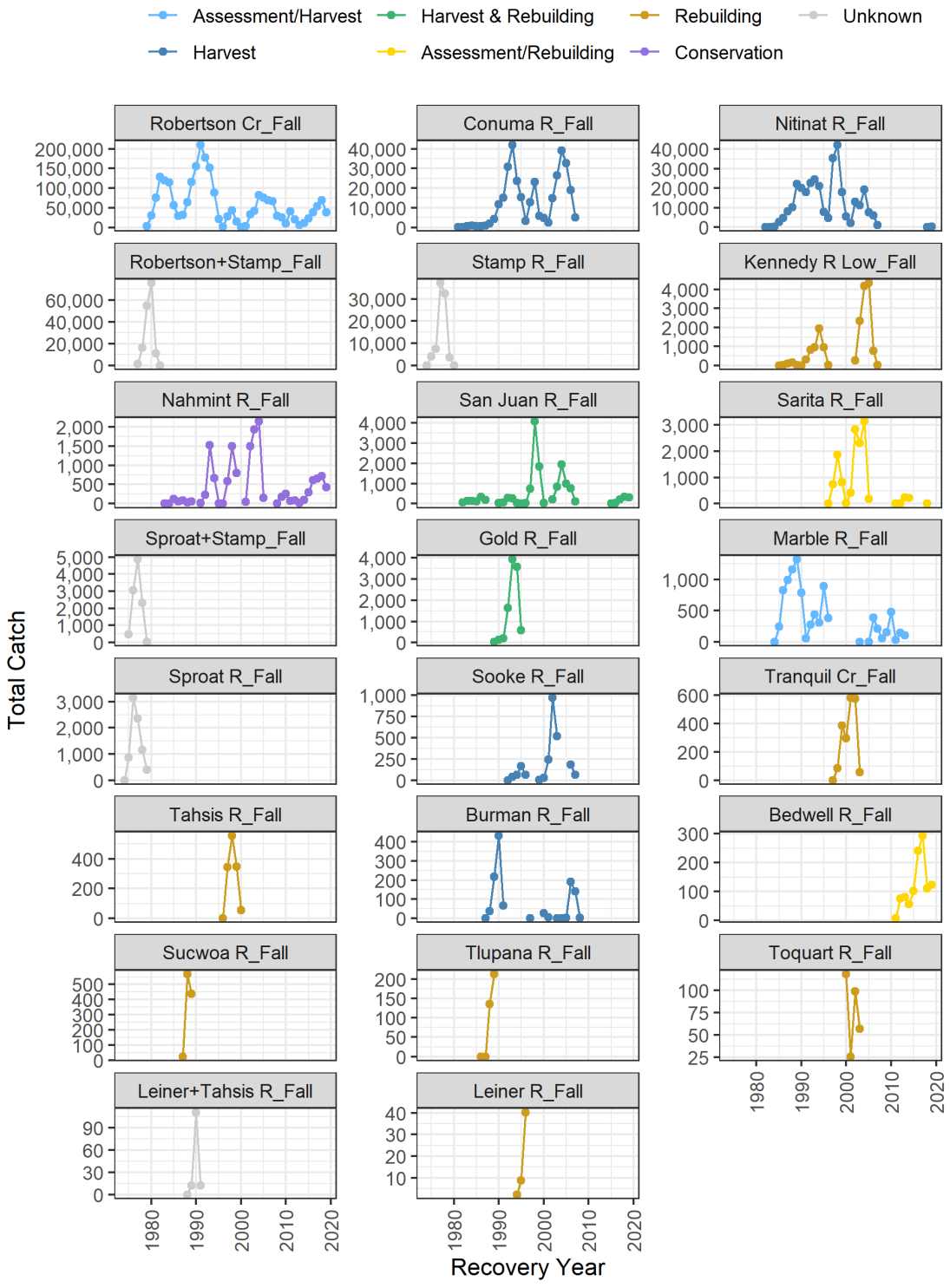

Figure A.5. Total catch (#s of fish) of CWT **Chinook** stocks released from hatcheries on **west coast Vancouver Island** over time coloured by production objective.

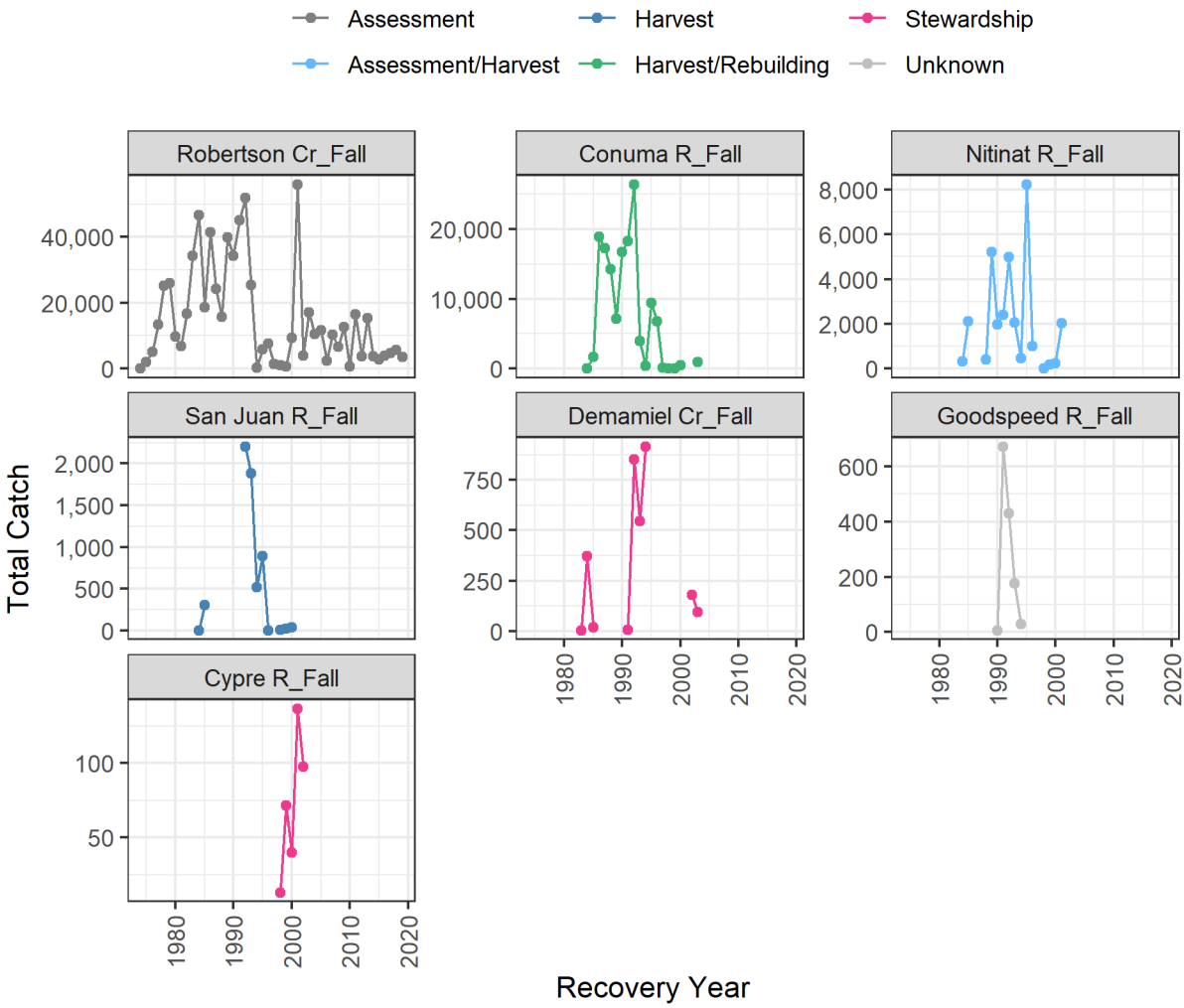

Figure A.6. Total catch (#s of fish) of CWT **Coho** stocks released from hatcheries on the **west coast Vancouver Island** over time coloured by production objective. Plots are ordered from highest to lowest catch from the top left to the bottom right.

Table A.13. All CWT-associated catch, total hatchery catch, total catch, and enhanced contribution to catch of **Chinook** in **inner south coast** fisheries.

YEAR	CWT-ASSOCIATED CATCH	TOTAL HATCHERY CATCH	TOTAL CATCH	ENHANCED CONTRIBUTION (%)
1981	47,994	47,994	73,513	65
1982	40,737	40,743	388,245	10
1983	57,088	59,387	419,727	14
1984	68,014	69,433	557,283	12
1985	43,820	44,543	365,329	12
1986	51,066	53,283	286,504	19
1987	34,265	36,008	209,448	17
1988	27,299	28,831	160,746	18
1989	39,678	43,047	230,243	19
1990	40,881	45,150	168,755	27
1991	60,761	64,636	168,652	38
1992	66,256	71,468	174,710	41
1993	59,561	65,911	191,320	34
1994	29,022	31,554	106,142	30
1995	23,385	25,332	60,820	42
1996	31,786	34,551	79,315	44
1997	24,667	28,496	71,981	40
1998	9,685	10,935	23,190	47
1999	19,530	22,860	36,499	63
2000	8,885	10,982	35,615	31
2001	17,636	20,966	41,811	50
2002	15,516	20,237	65,812	31
2003	11,554	16,006	36,351	44
2004	11,553	16,366	38,854	42
2005	18,594	23,975	26,406	91
2006	9,056	12,352	24,825	50
2007	7,720	12,862	26,521	48
2008	4,453	9,430	16,169	58
2009	8,153	14,584	31,068	47
2010	11,584	19,641	31,878	62
2011	5,744	9,995	42,342	24
2012	6,924	12,357	34,665	36
2013	10,116	18,657	62,301	30
2014	15,751	27,531	76,116	36
2015	12,046	21,539	95,619	23
2016	12,858	22,312	67,912	33
2017	15,461	26,086	95,283	27
2018	16,740	26,626	100,785	26
2019	16,089	25,100	73,033	34
2020	23,809	36,184	52,468	69

Table A.14. All CWT-associated catch, total hatchery catch, total catch, and enhanced contribution to catch of **Coho** in **inner south coast** fisheries. Values in red indicate data errors where the enhanced contribution is > 100%.

YEAR	CWT-ASSOCIATED CATCH	TOTAL HATCHERY CATCH	TOTAL CATCH	ENHANCED CONTRIBUTION (%)
1981	187,799	211,232	165,212	128
1982	172,797	274,120	873,833	31
1983	232,115	302,907	951,439	32
1984	146,517	202,347	842,857	24
1985	336,939	473,665	1,175,863	40
1986	355,618	427,547	1,287,635	33
1987	406,549	534,210	1,013,202	53
1988	502,812	631,752	1,504,220	42
1989	239,392	327,328	787,854	42
1990	264,912	414,409	999,266	41
1991	60,967	83,199	188,529	44
1992	241,028	313,053	864,036	36
1993	296,629	467,650	1,139,247	41
1994	90,060	134,773	303,803	44
1995	13,509	18,788	42,016	45
1996	20,293	29,310	42,794	68
1997	16,074	24,180	22,587	107
1998	2,108	3,152	1,772	178
1999	9,483	13,391	313	4,278
2000	173,907	236,465	4,703	5,028
2001	35,641	57,548	12,116	475
2002	13,892	28,224	6,363	444
2003	14,485	29,391	11,507	255
2004	1,750	3,428	8,315	41
2005	1,930	4,490	10,539	43
2006	0	0	3,580	0
2007	2,766	11,580	8,674	134
2008	265	920	1,576	58
2009	532	2,176	10,651	20
2010	364	1,597	6,077	26
2011	704	3,559	8,525	42
2012	2,568	7,789	10,290	76
2013	8,332	25,353	59,896	42
2014	1,700	5,548	35,672	16
2015	696	2,286	24,306	9
2016	3,125	10,267	21,948	47
2017	4,180	17,413	18,490	94
2018	3,453	12,172	30,256	40
2019	2,034	7,841	14,094	56
2020	5,695	26,412	11,112	238

Table A. 15. All marked (CWT or fin clip) hatchery catch (adjusted for mark mortality), total catch, and enhanced contribution to catch of **Chum** in **inner south coast** net fisheries. Values in red indicate data errors where the enhanced contribution is > 100%. Data from Lynch et al. (2020).

YEAR	HATCHERY CATCH	TOTAL CATCH	ENHANCED CONTRIBUTION (%)
1980	74,319	162,891	46
1981	46,256	61,356	75
1982	138,536	296,540	47
1983	111,533	131,369	85
1984	180,917	164,134	110
1985	482,398	578,407	83
1986	333,928	468,746	71
1987	265,634	367,872	72
1988	63,787	204,020	31
1989	81,687	123,033	66
1990	109,956	373,047	29
1991	259,754	500,987	52
1992	457,028	607,717	75
1993	371,314	678,522	55
1994	336,675	505,774	67
1995	21,790	71,261	31
1997	4,170	20,770	20
1998	322,295	581,568	55
1999	13,814	43,591	32
2000	3,650	21,693	17
2001	23,278	111,710	21
2002	68,798	239,746	29
2003	1,892	42,057	4
2004	11,742	170,713	7
2005	7,017	100,333	7
2006	5,307	265,373	2
2007	1,755	62,985	3
2011	137,954	452,128	31
2012	1,742	14,070	12
2013	12,801	30,873	41

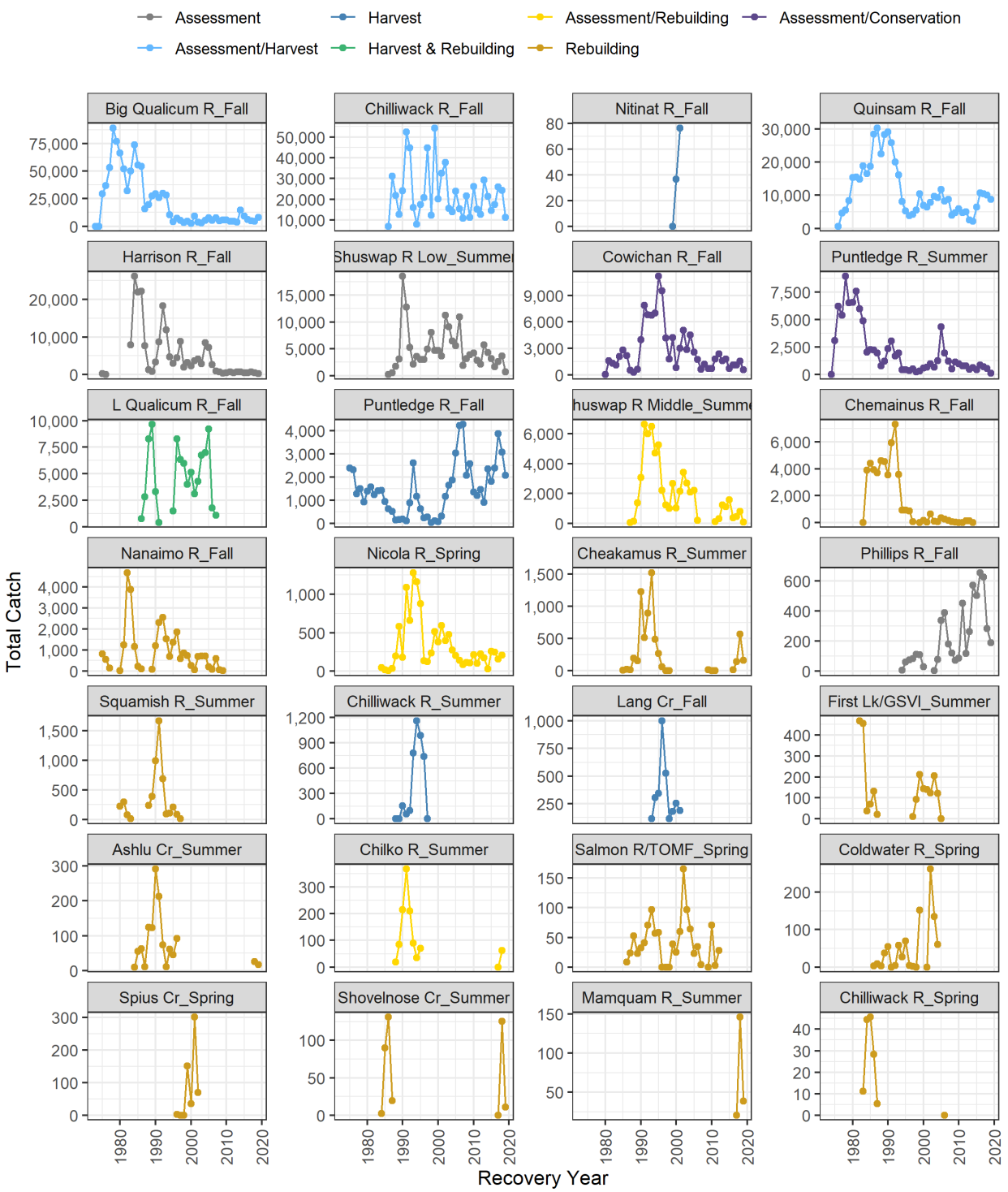

Figure A.7. Total catch (#s of fish) of CWT **Chinook** stocks released from hatcheries on the **inner south coast** over time coloured by production objective.

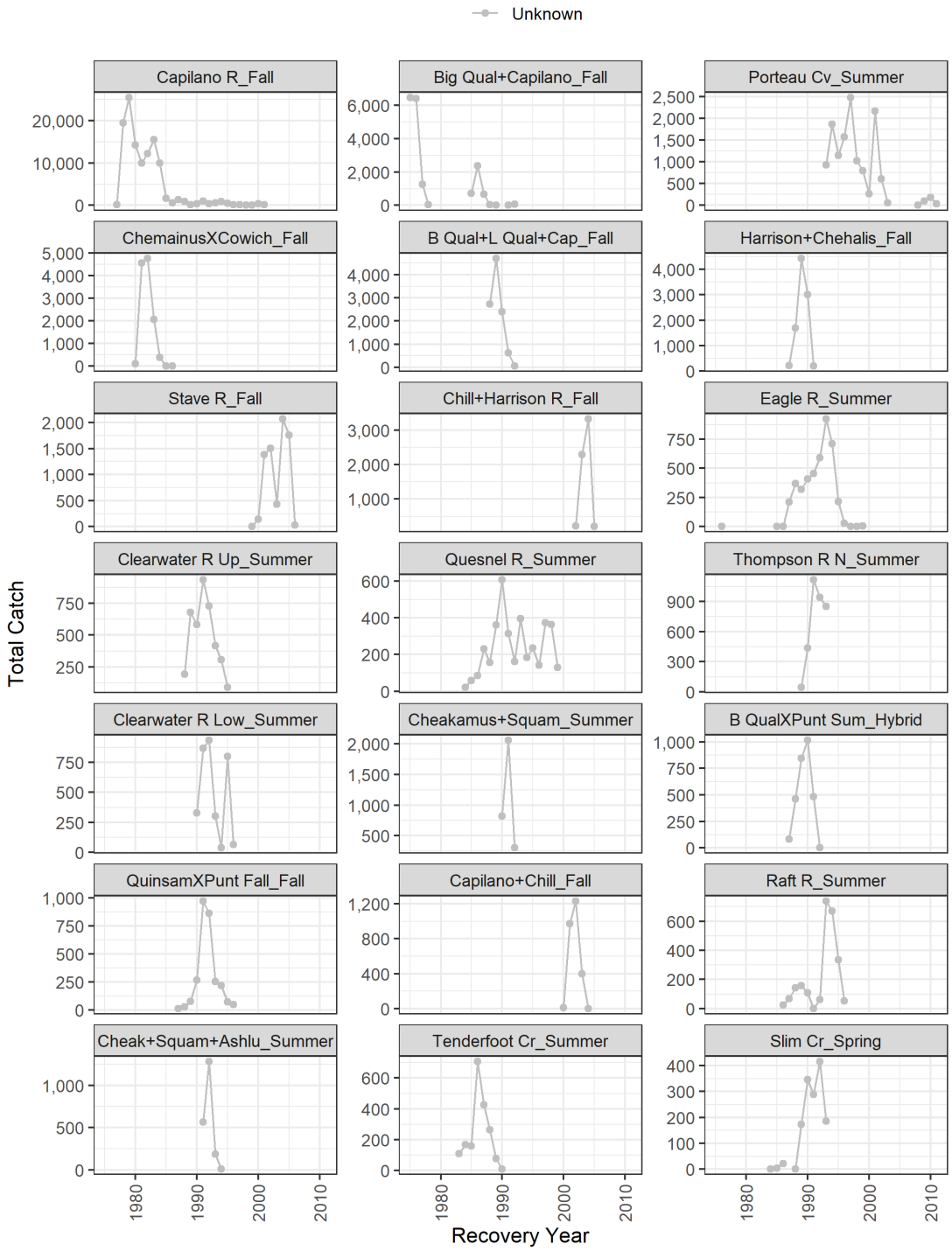

Figure A.8. Total catch (#s of fish) of CWT **Chinook** stocks over time released from hatcheries on the **inner south coast** without a known production objective (continues on next page).

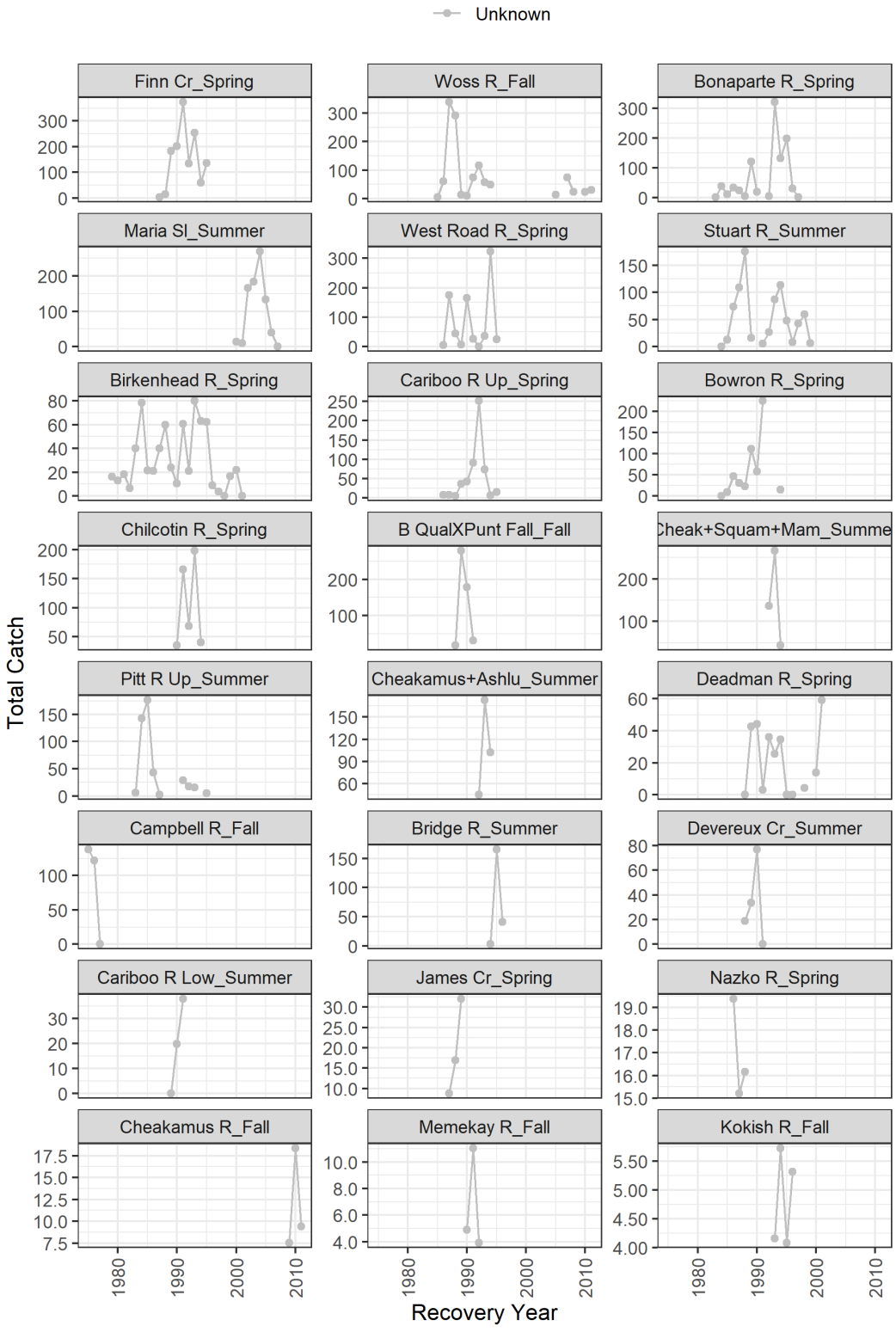

Figure A.8. continued.

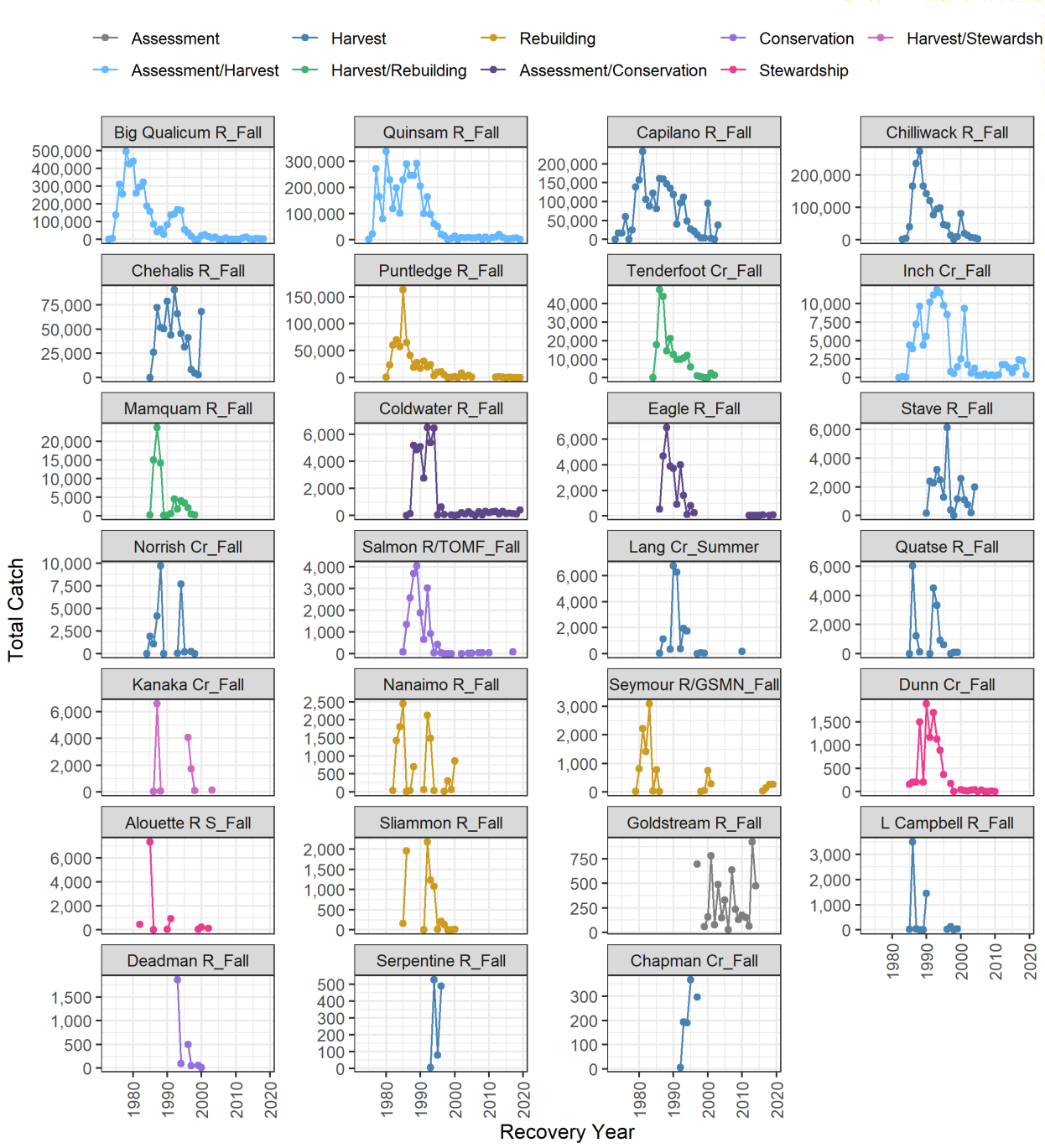

Figure A.9. Total catch (#s of fish) of CWT **Coho** stocks released from hatcheries on the **inner south coast** over time coloured by production objective.

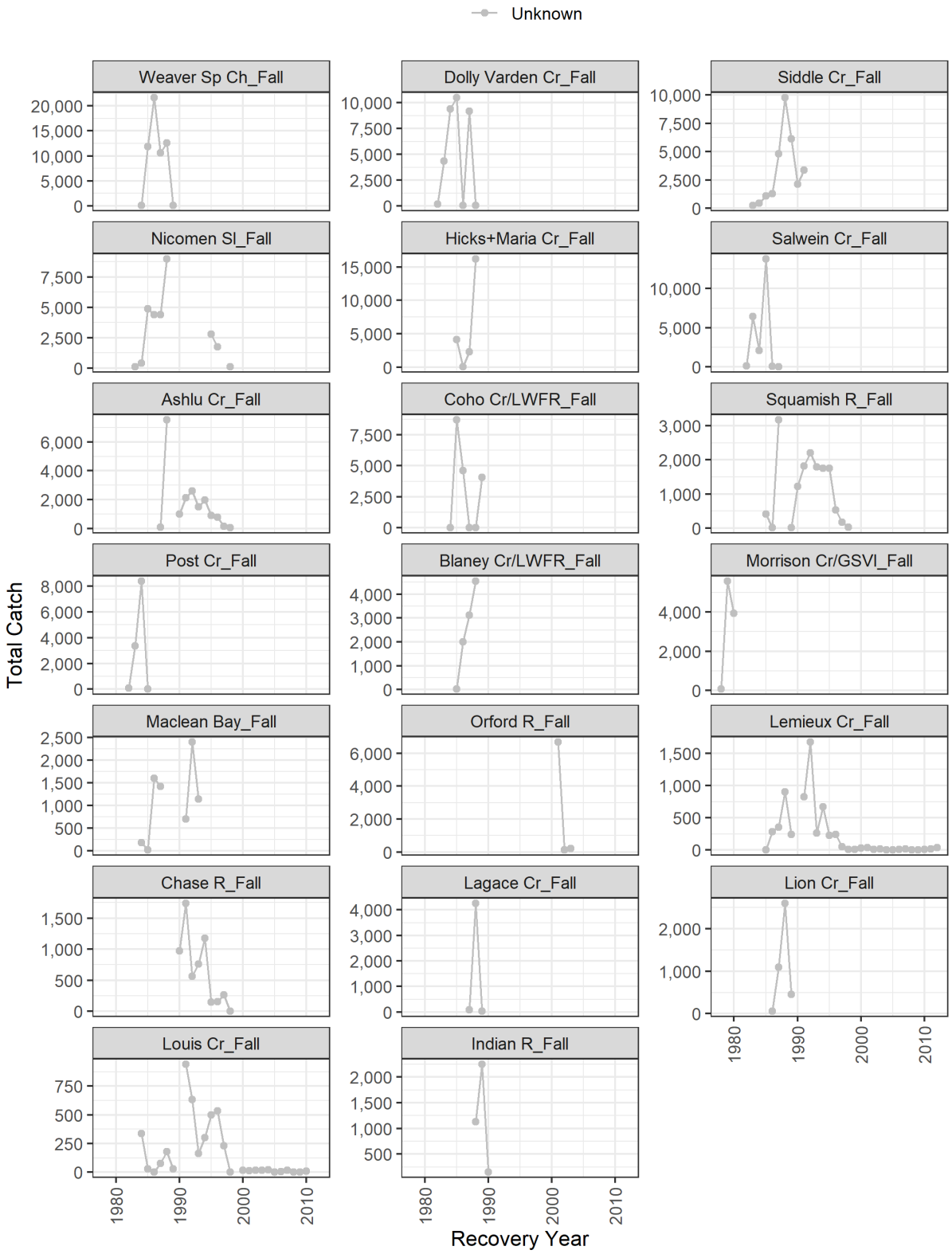

Figure A.10. Total catch (#s of fish) of CWT **Coho** stocks over time released from hatcheries on the **inner south coast** without a known production objective (continues on next page).

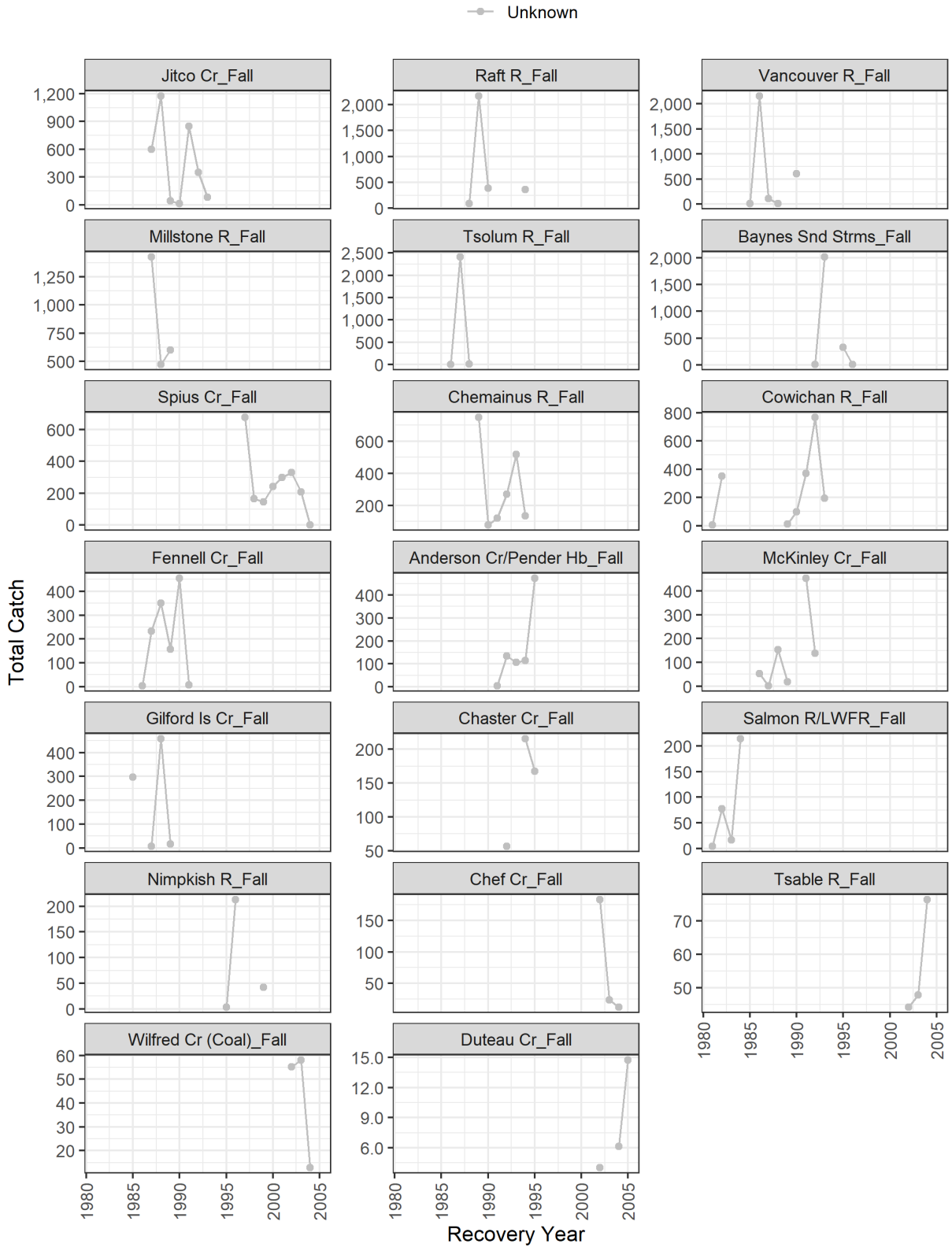

Figure A.10. continued.

APPENDIX B. CATCH DISTRIBUTION

NCST

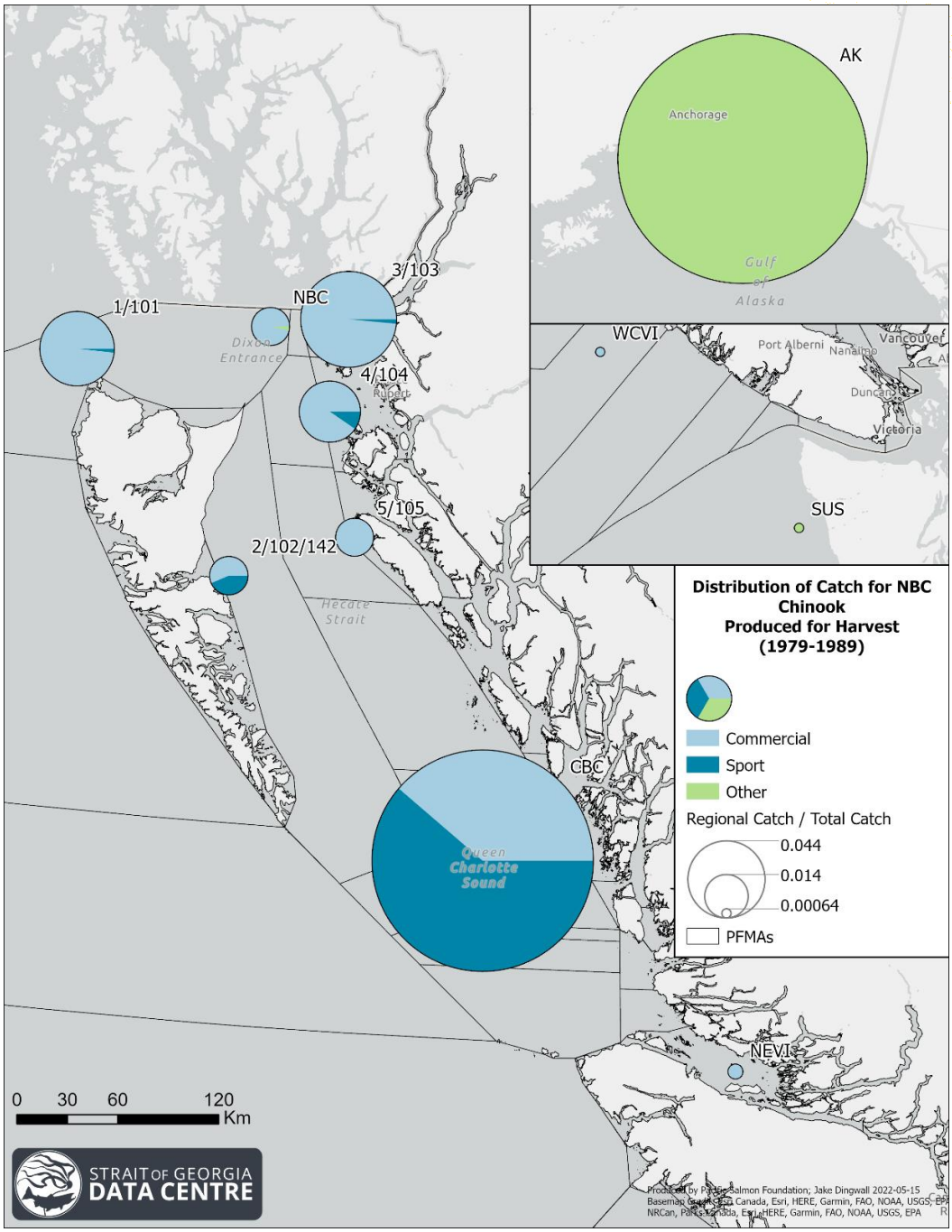

Figure B.1. The distribution of total catch of CWT'd **Chinook** from hatchery production on the **north coast** from recovery years 1979-1989. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

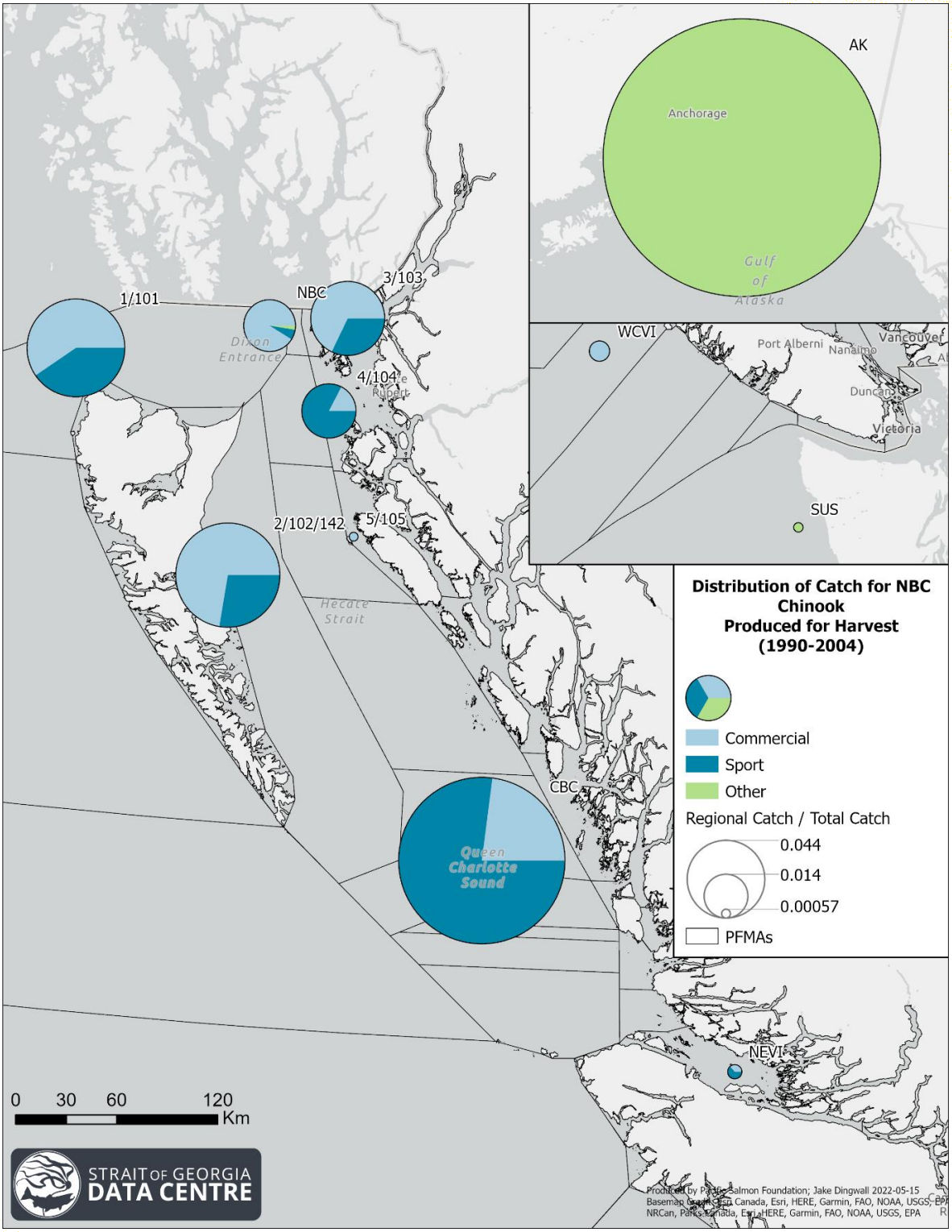

Figure B.2. The distribution of total catch of CWT'd **Chinook** from hatchery production on the **north coast** from recovery years 1990-2004. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

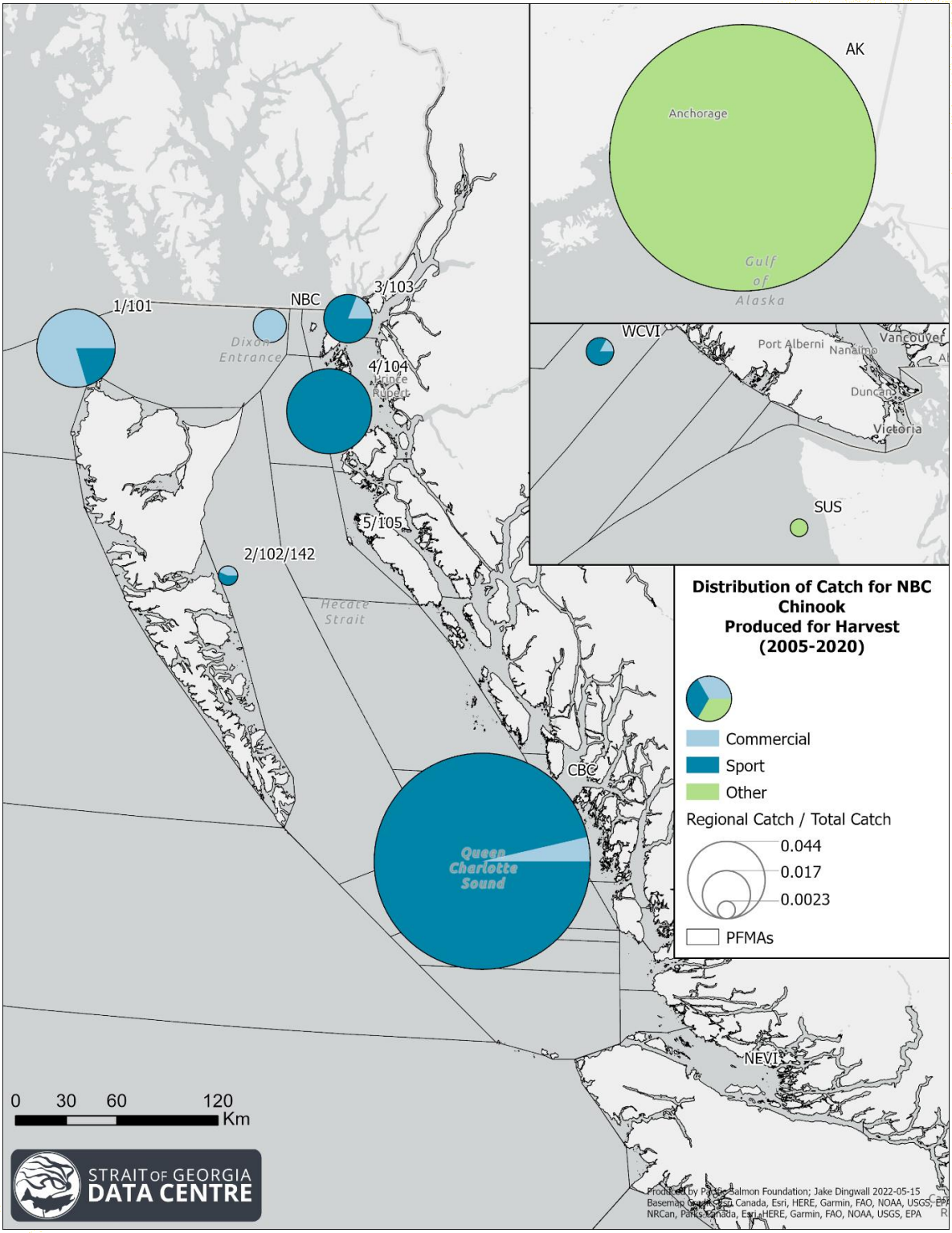

Figure B.3. The distribution of total catch of CWT'd **Chinook** from hatchery production on the **north coast** from recovery years 2005-2020. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

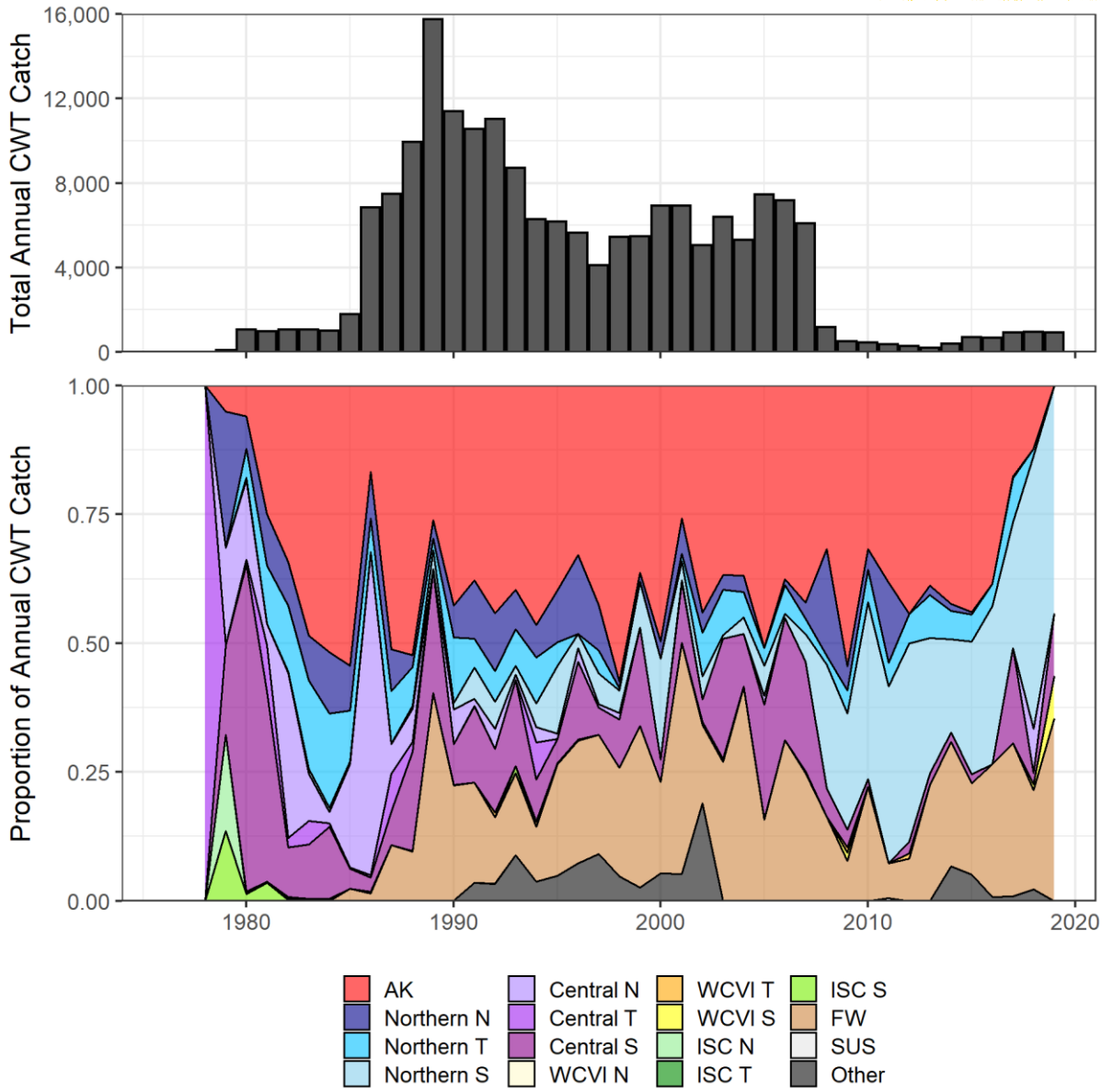

Figure B.4. Total annual catch of CWT **Chinook** from **north coast** hatcheries (top) and the distribution of that catch across fisheries over time (bottom).

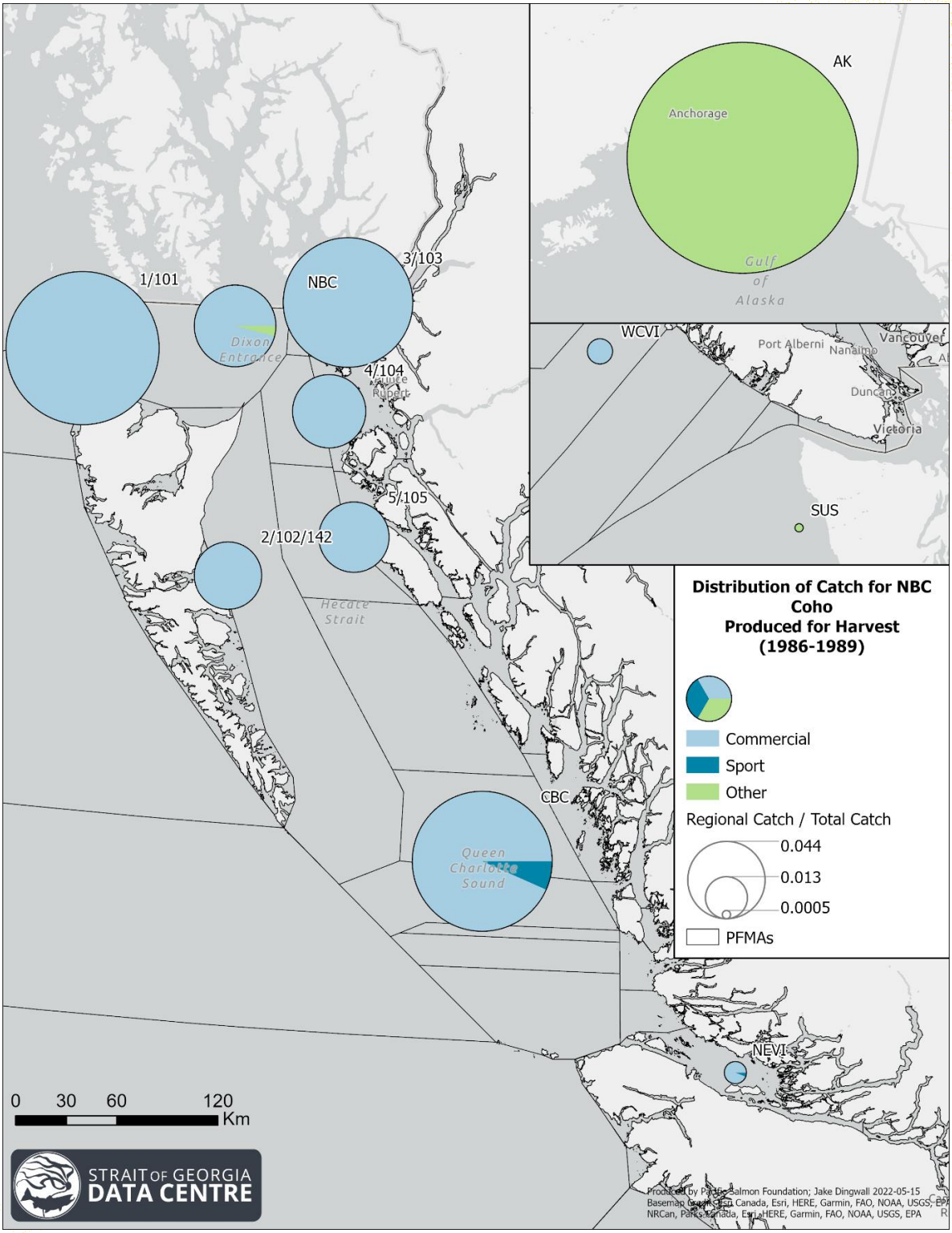

Figure B.5. The distribution of total catch of CWT'd **Coho** from hatchery production on the **north coast** from recovery years 1986-1989. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

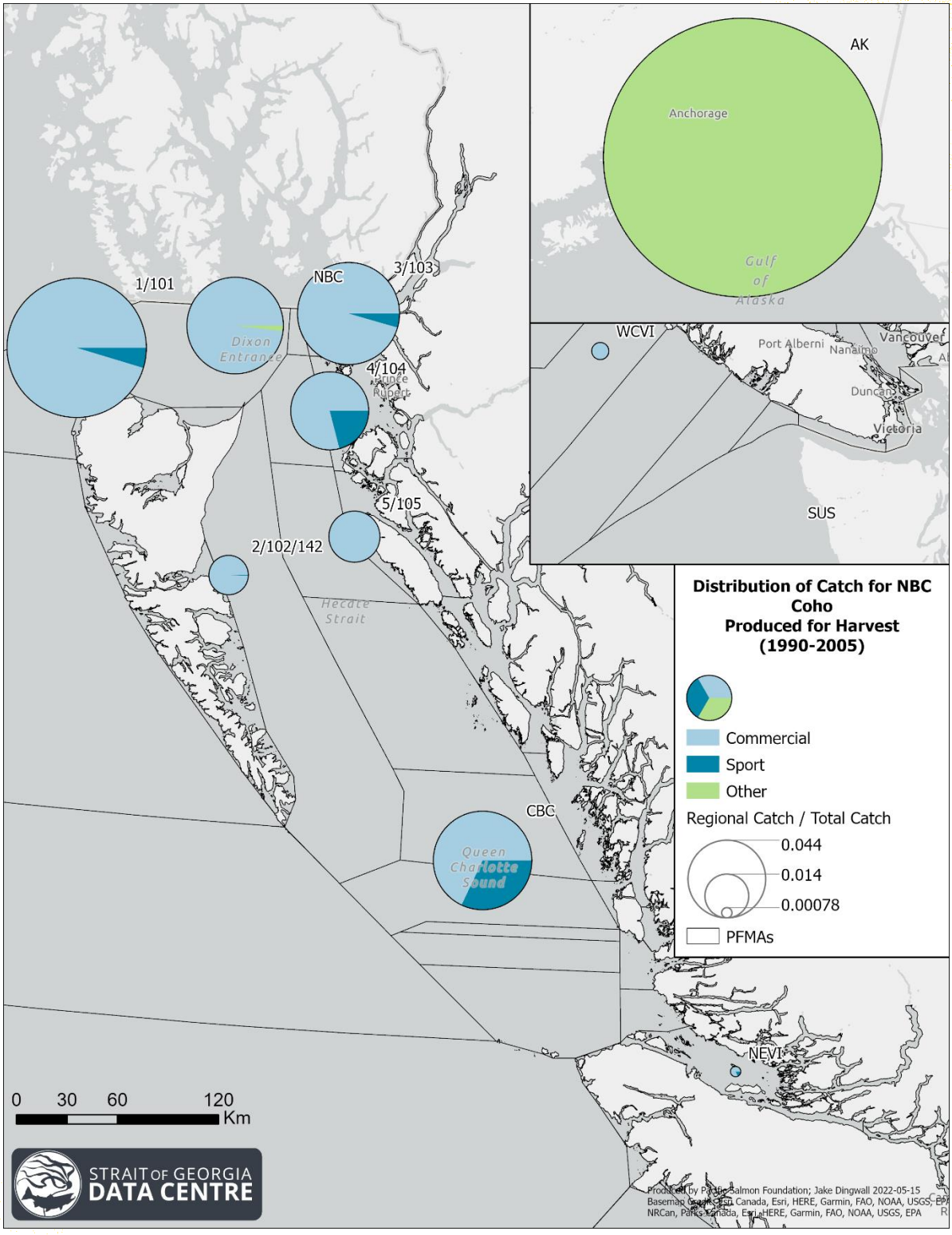

Figure B.6. The distribution of total catch of CWT'd **Coho** from hatchery production on the **north coast** from recovery years 1990-2005. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

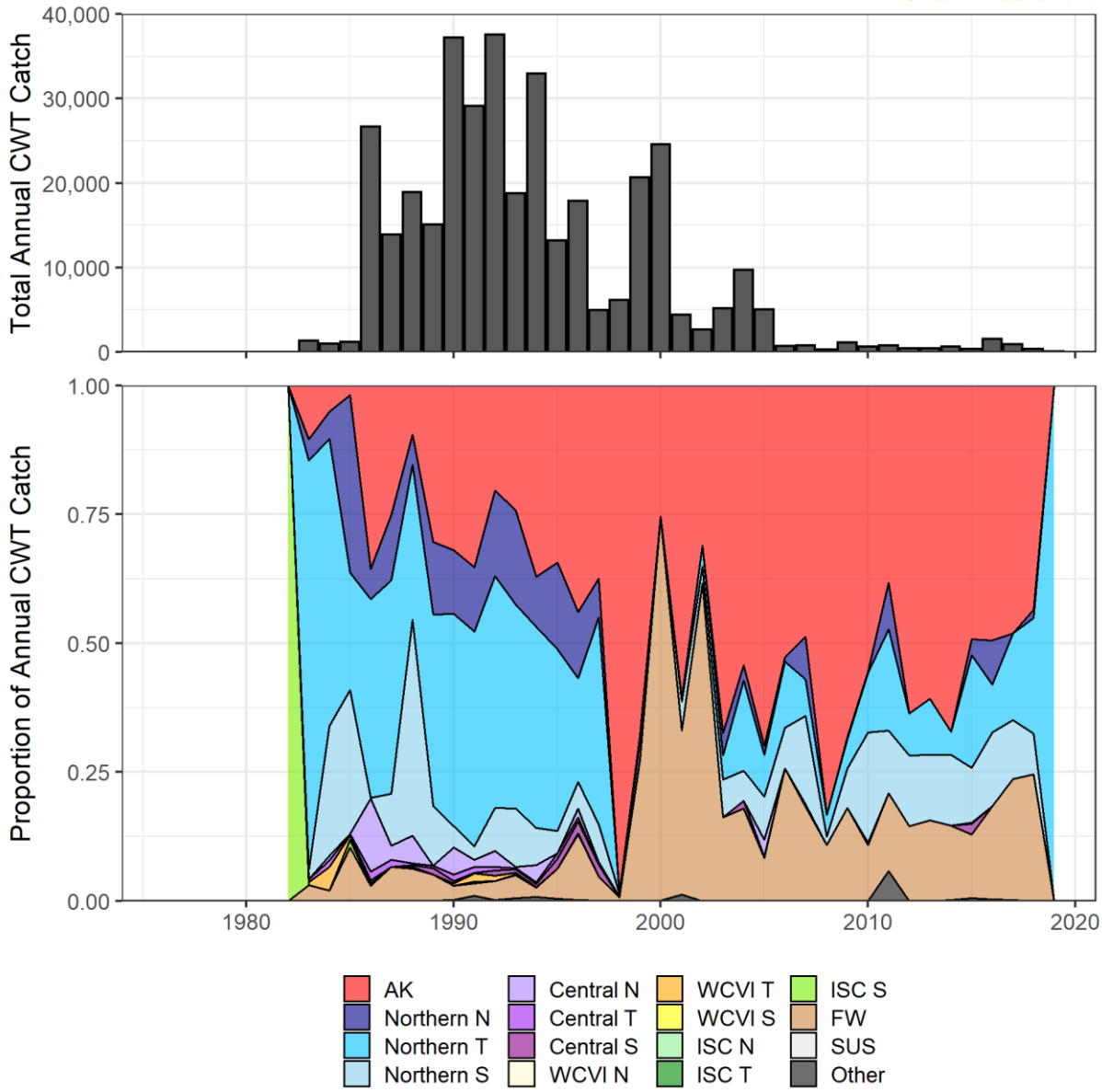

Figure B.7. Total annual catch of CWT **Coho** from **north coast** hatcheries (top) and the distribution of that catch across fisheries over time (bottom).

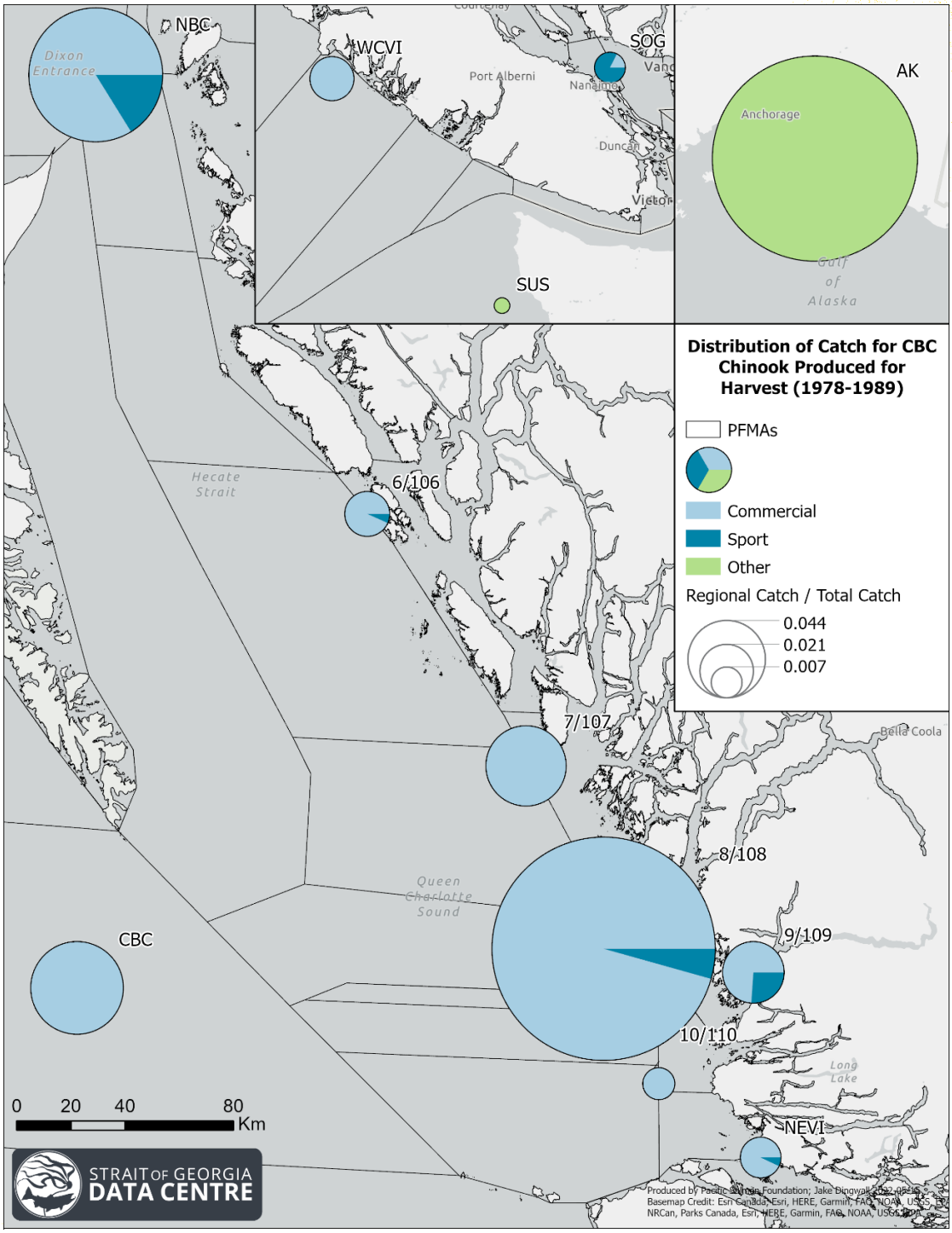

Figure B.8. The distribution of total catch of CWT'd **Chinook** from hatchery production on the **central coast** from recovery years 1978-1989. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

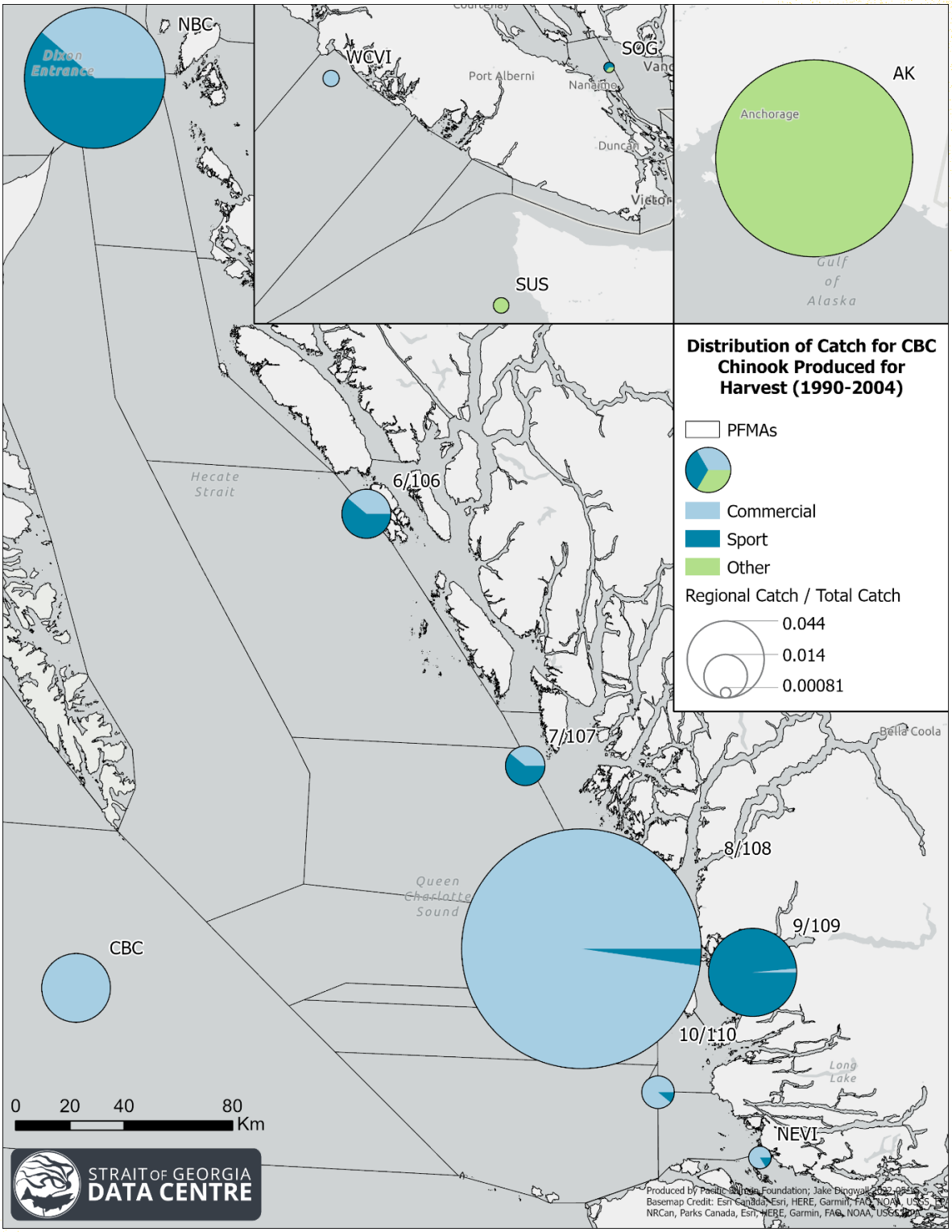

Figure B.9. The distribution of total catch of CWT'd **Chinook** from hatchery production on the **central coast** from recovery years 1990-2004. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

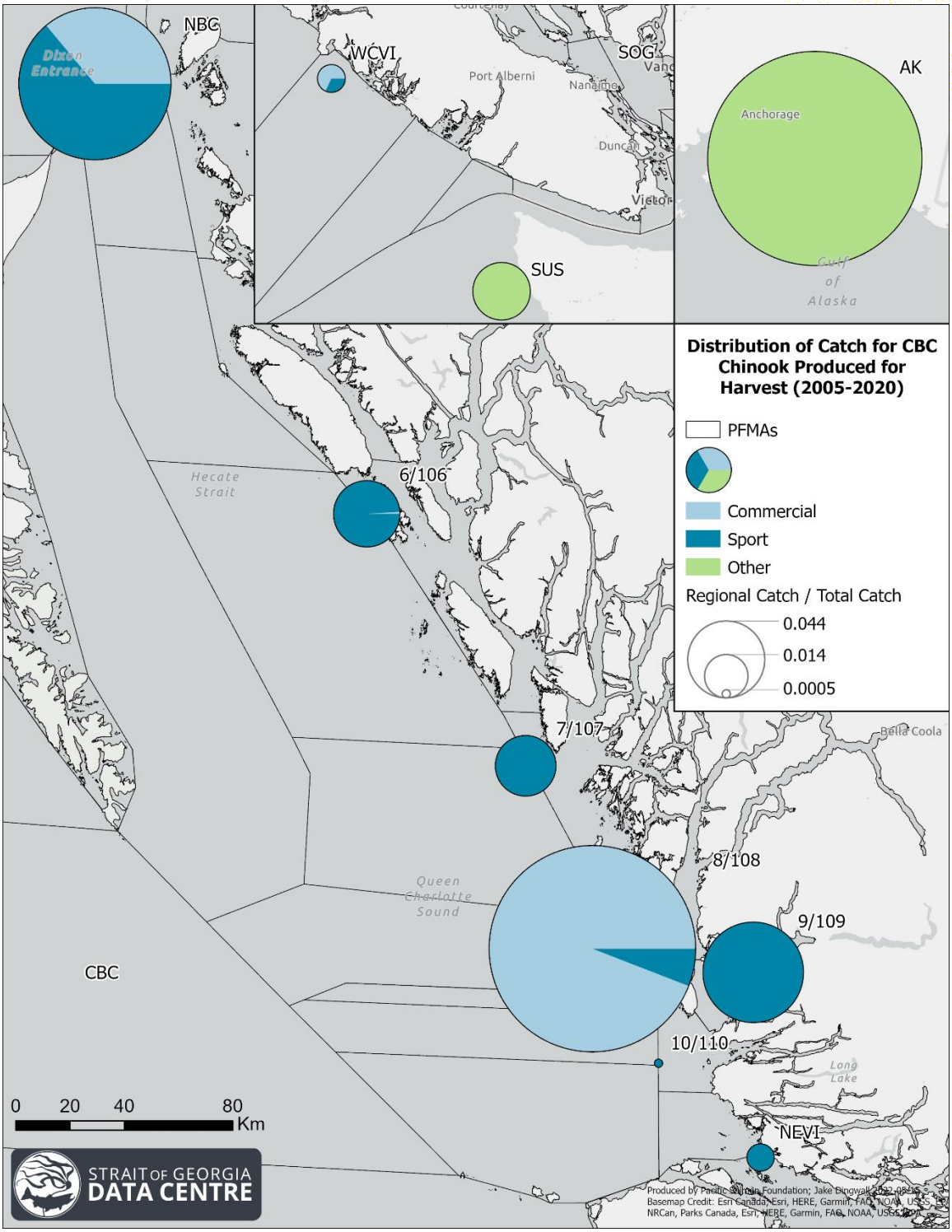

Figure B.10. The distribution of total catch of CWT'd **Chinook** from hatchery production on the **central coast** from recovery years 2005-2020. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

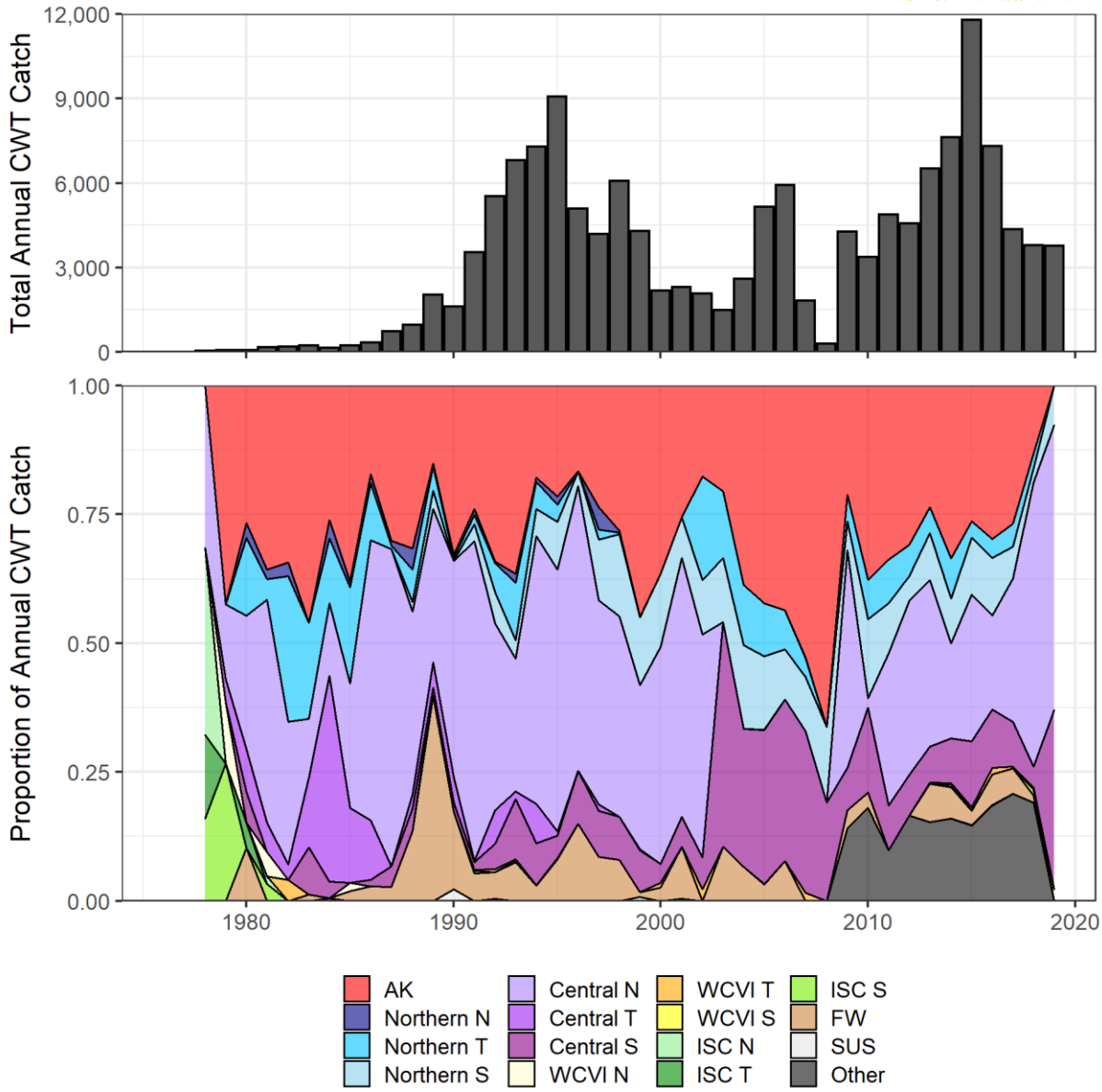

Figure B.11. Total annual catch of CWT **Chinook** from **central coast** hatcheries (top) and the distribution of that catch across fisheries over time (bottom).

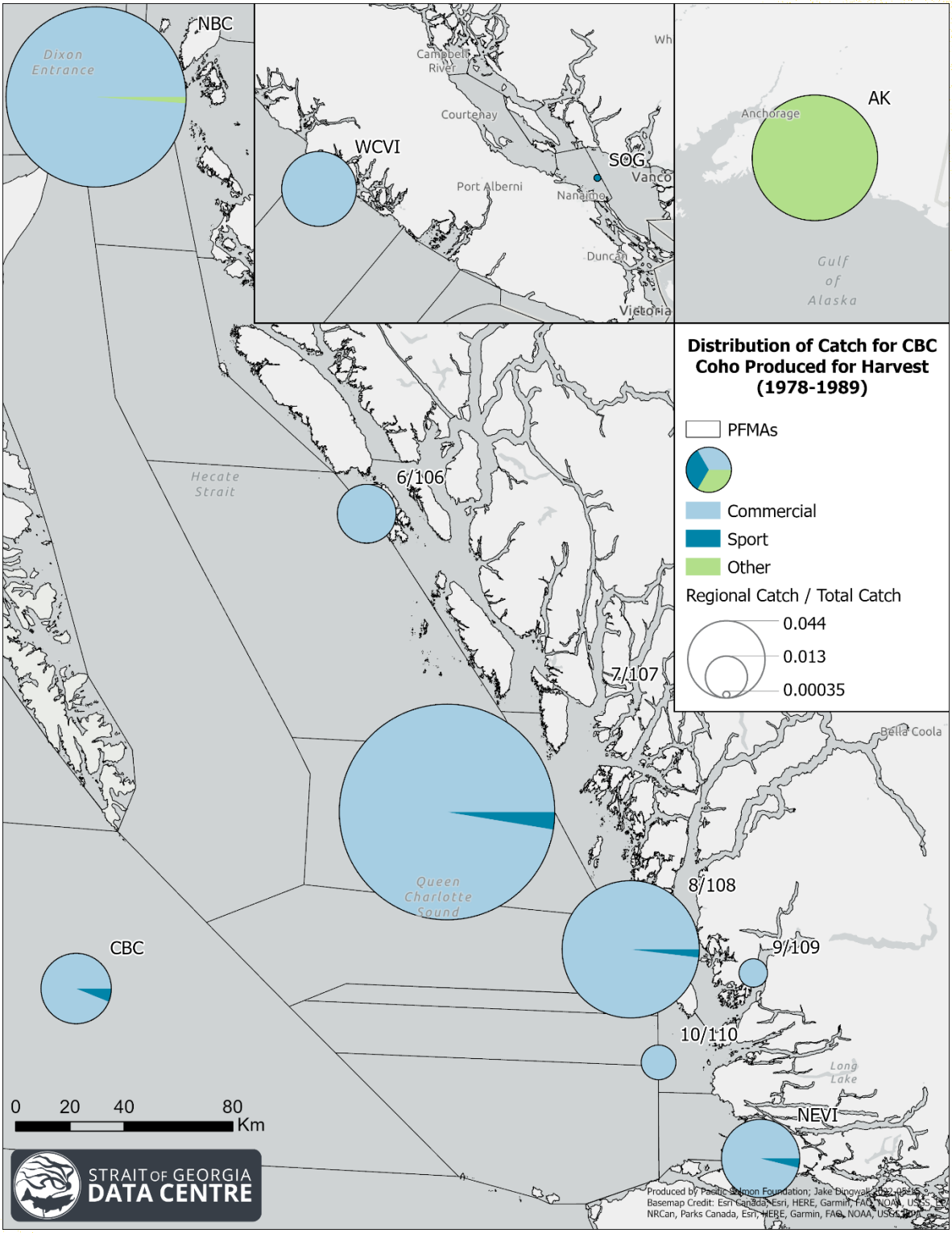

Figure B.12. The distribution of total catch of CWT'd **Coho** from hatchery production on the **central coast** from recovery years 1978–1989. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

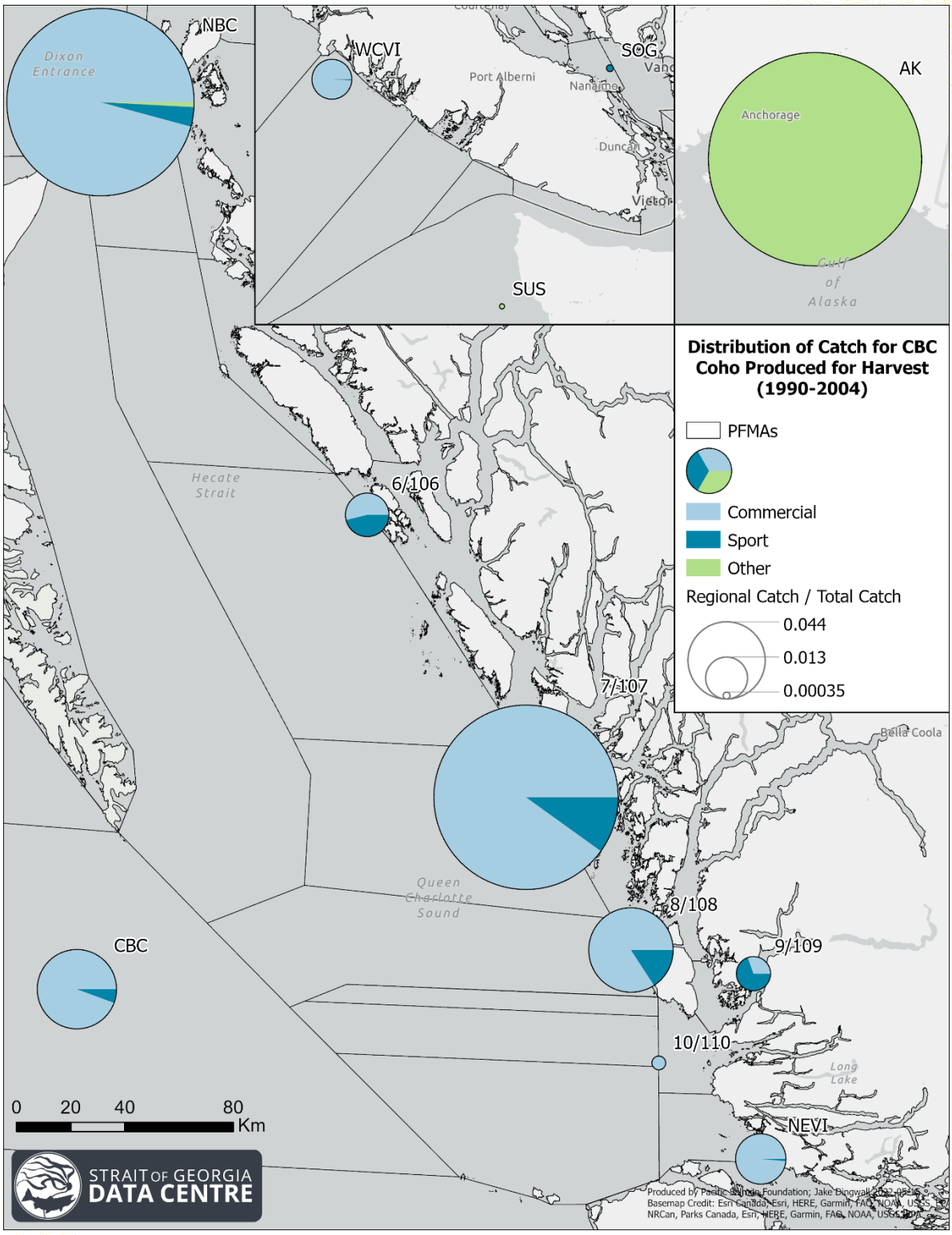

Figure B.13. The distribution of total catch of CWT'd **Coho** from hatchery production on the **central coast** from recovery years 1990-2004. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

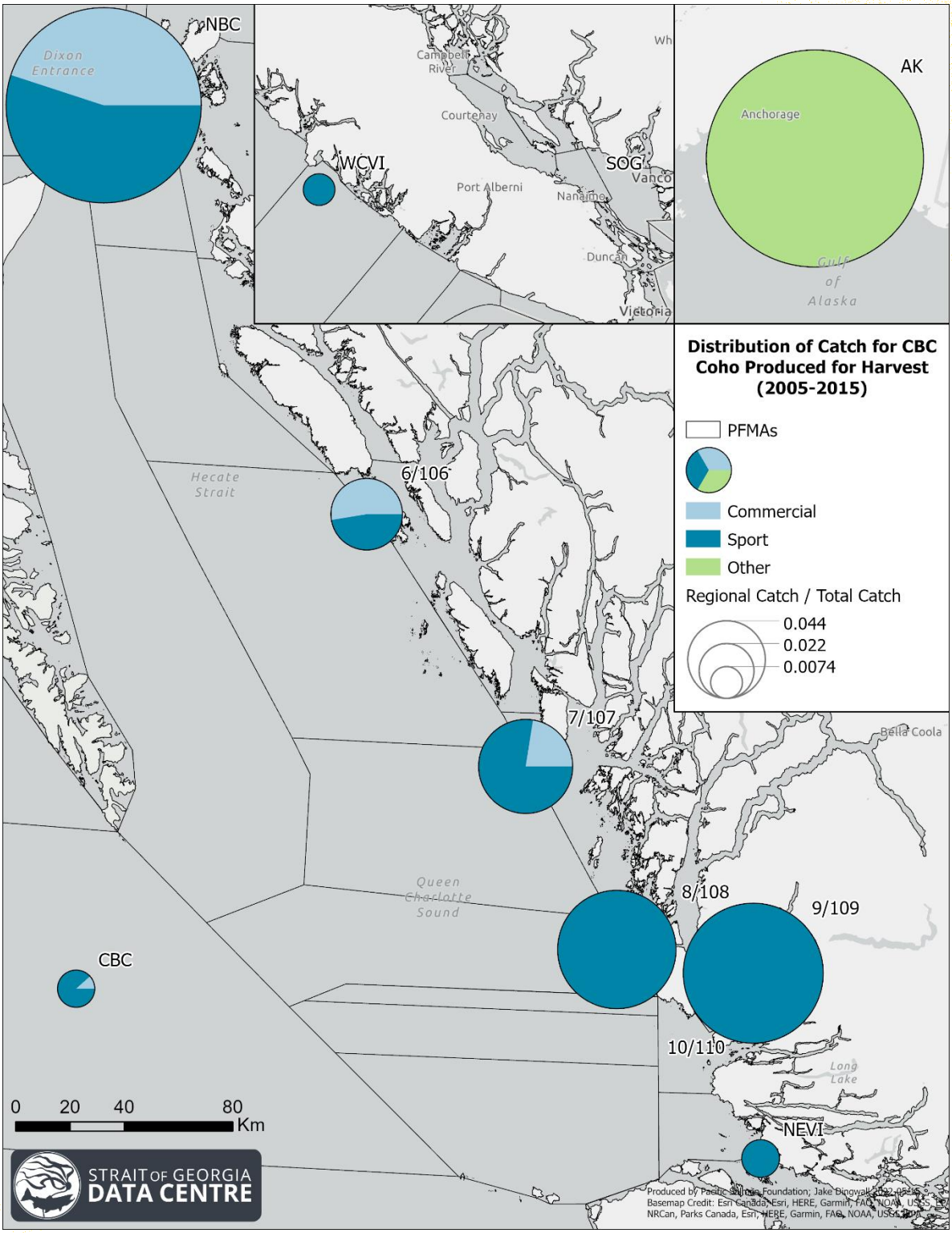

Figure B.14. The distribution of total catch of CWT'd **Coho** from hatchery production on the **central coast** from recovery years 2005-2020. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

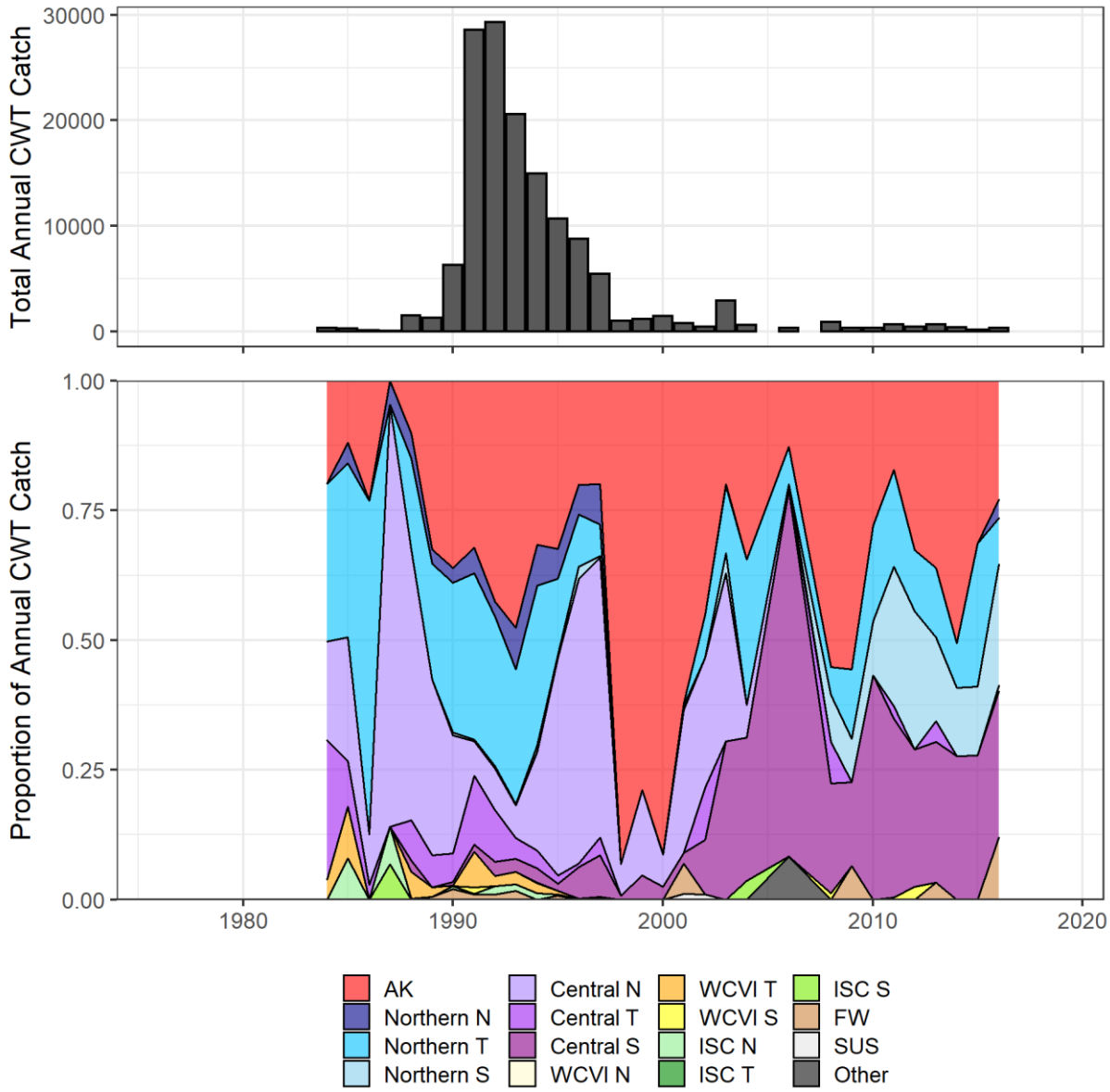

Figure B.15. Total annual catch of CWT **Coho** from **central coast** hatcheries (top) and the distribution of that catch across fisheries over time (bottom).

WCVI

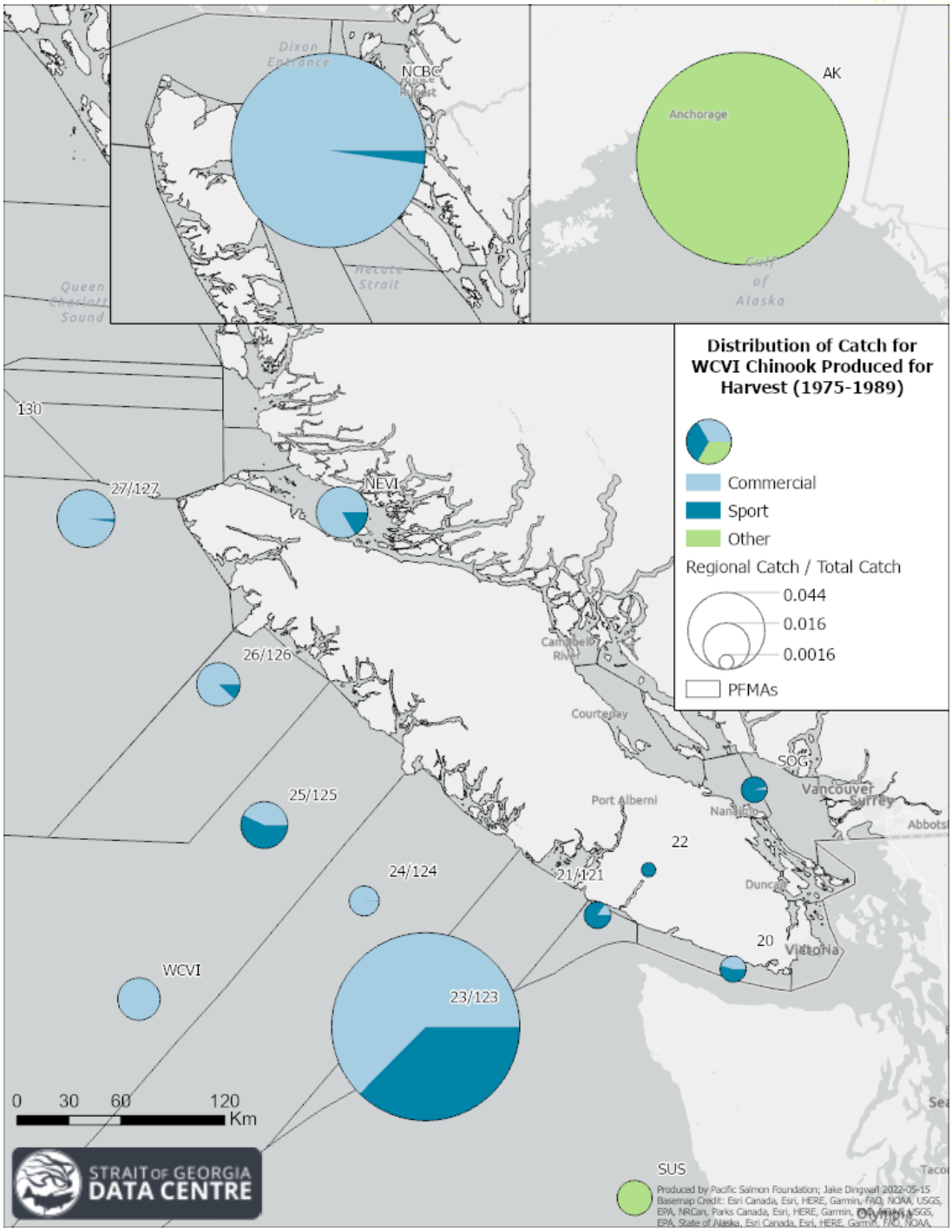

Figure B.16. The distribution of total catch of CWT'd **Chinook** from hatchery production on the **west coast of Vancouver Island** from recovery years 1974-1989. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

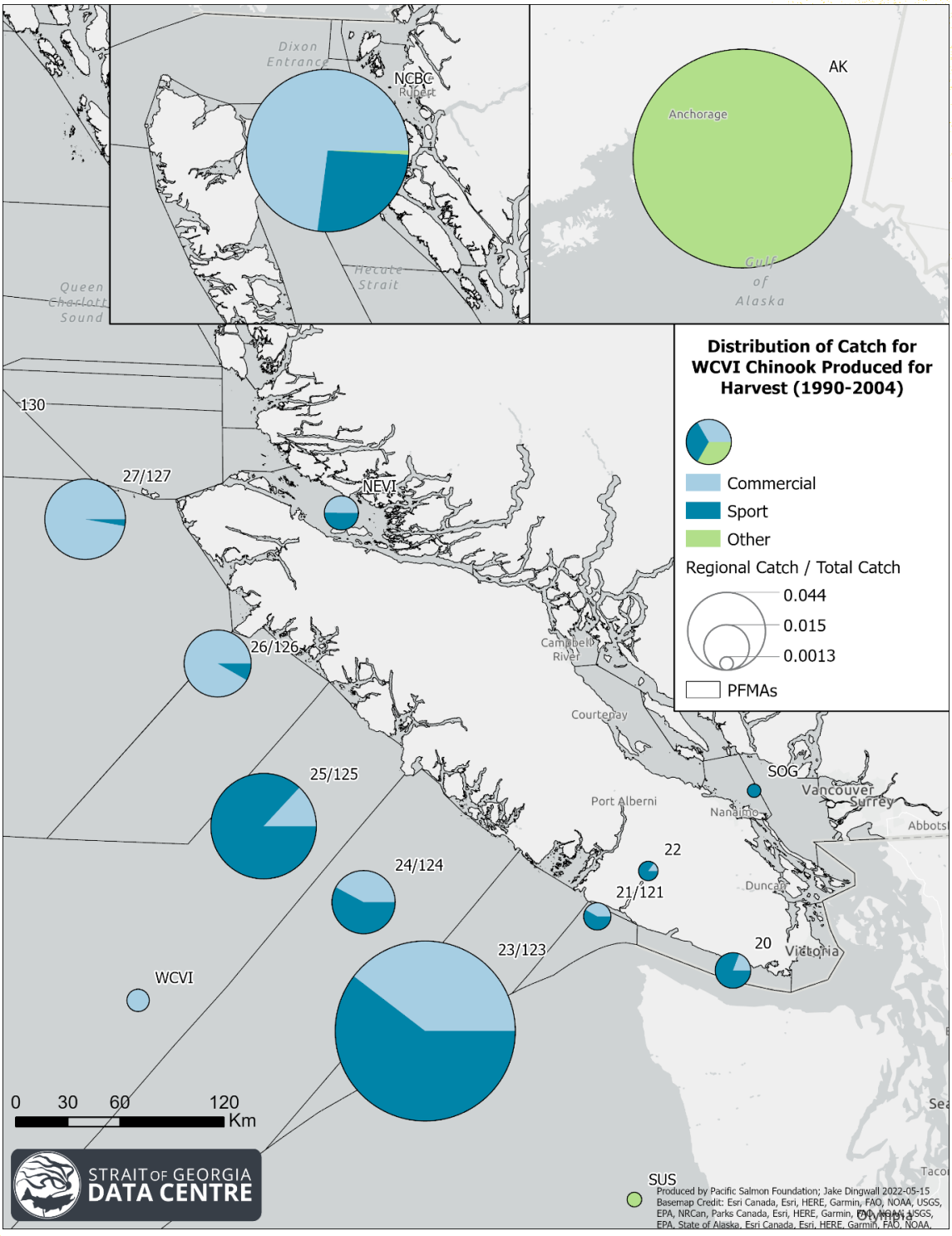

Figure B.17. The distribution of total catch of CWT'd **Chinook** from hatchery production on the **west coast of Vancouver Island** from recovery years 1990-2004. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

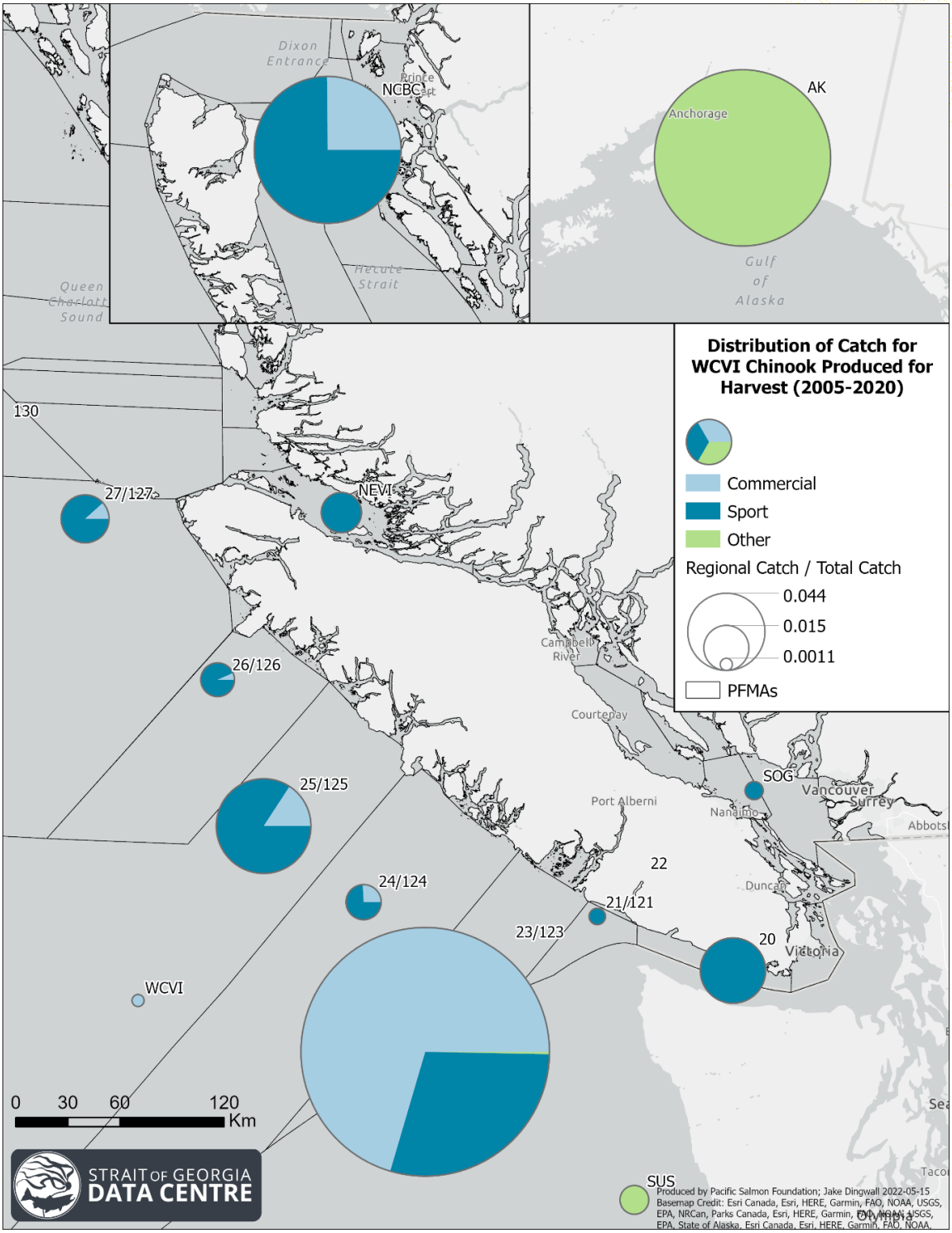

Figure B.18. The distribution of total catch of CWT'd **Chinook** from hatchery production on the **west coast of Vancouver Island** from recovery years 2005-2020. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

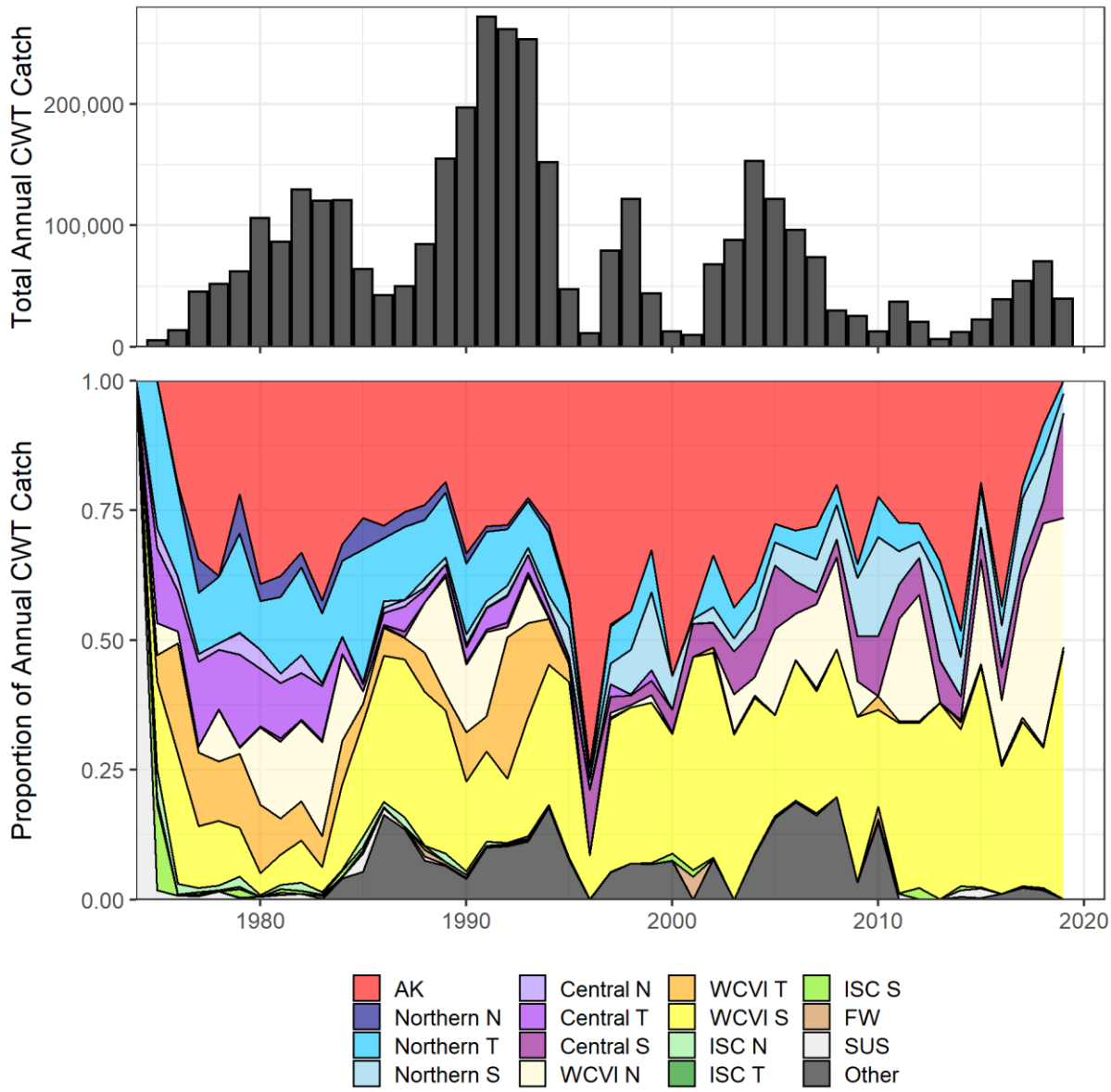

Figure B.19. Total annual catch of CWT **Chinook** from **west coast Vancouver Island** hatcheries (top) and the distribution of that catch across fisheries over time (bottom).

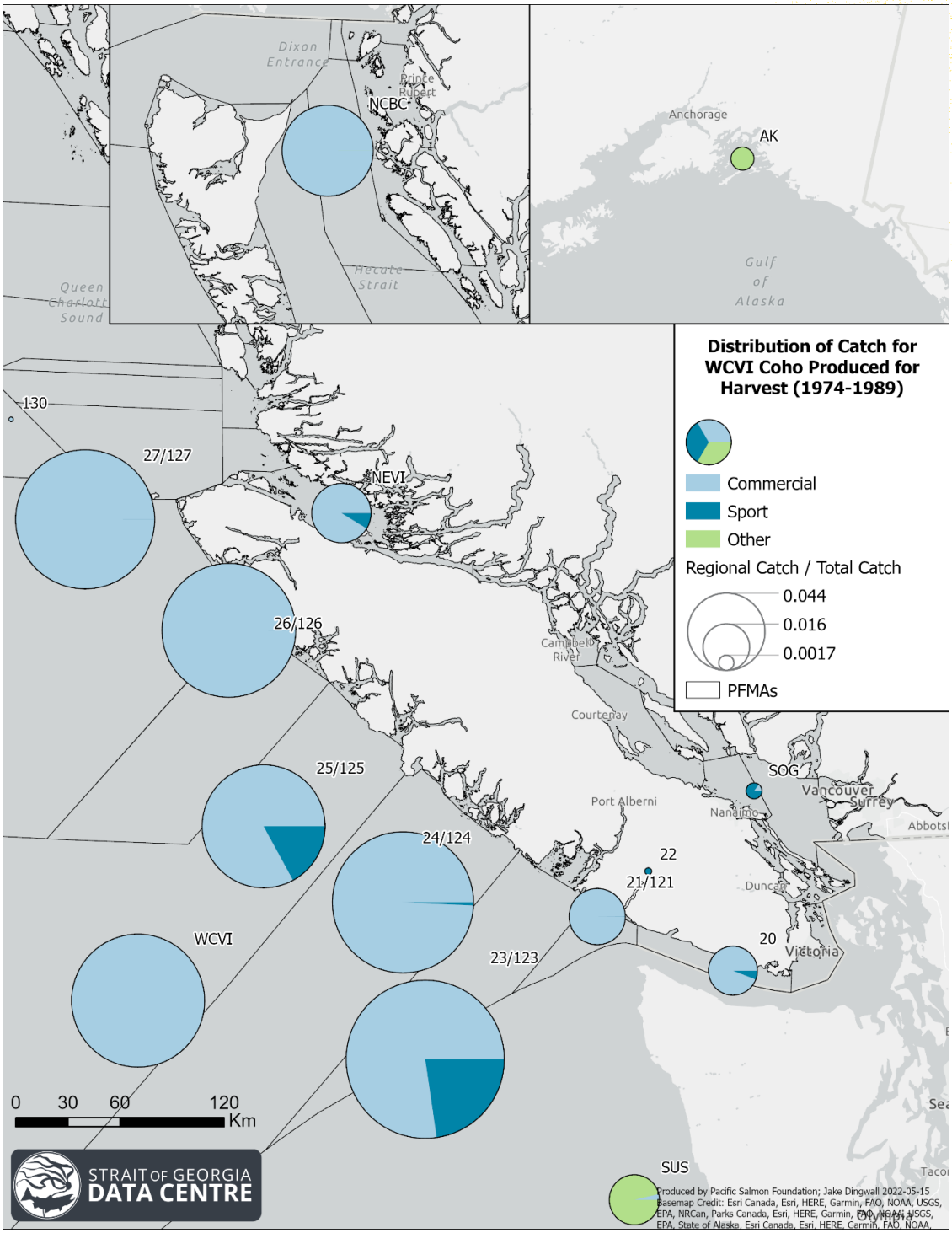

Figure B.20. The distribution of total catch of CWT'd **Coho** from hatchery production on the **west coast of Vancouver Island** from recovery years 1974-1989. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

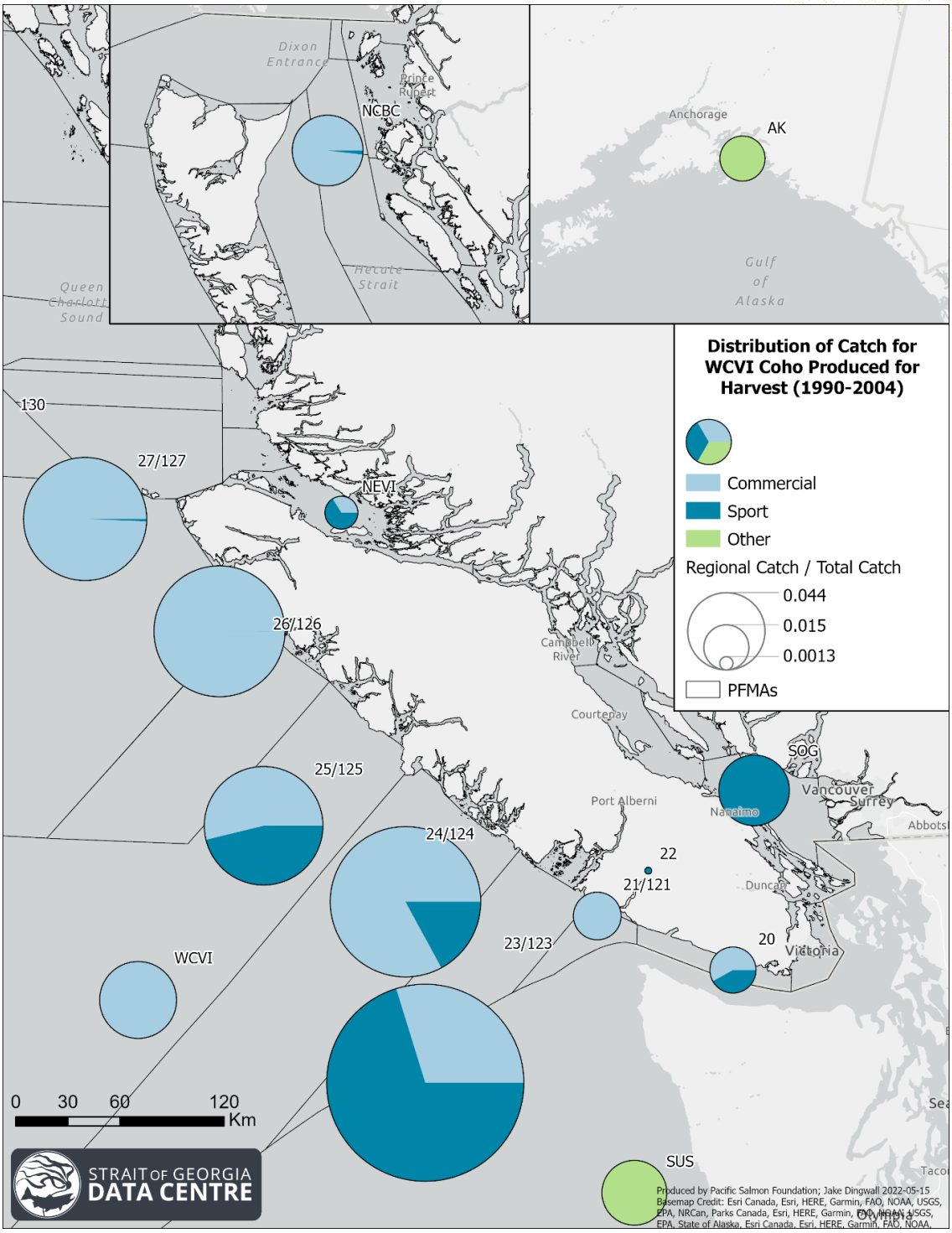

Figure B.21. The distribution of total catch of CWT'd **Coho** from hatchery production on **the west coast of Vancouver Island** from recovery years 1990-2004. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

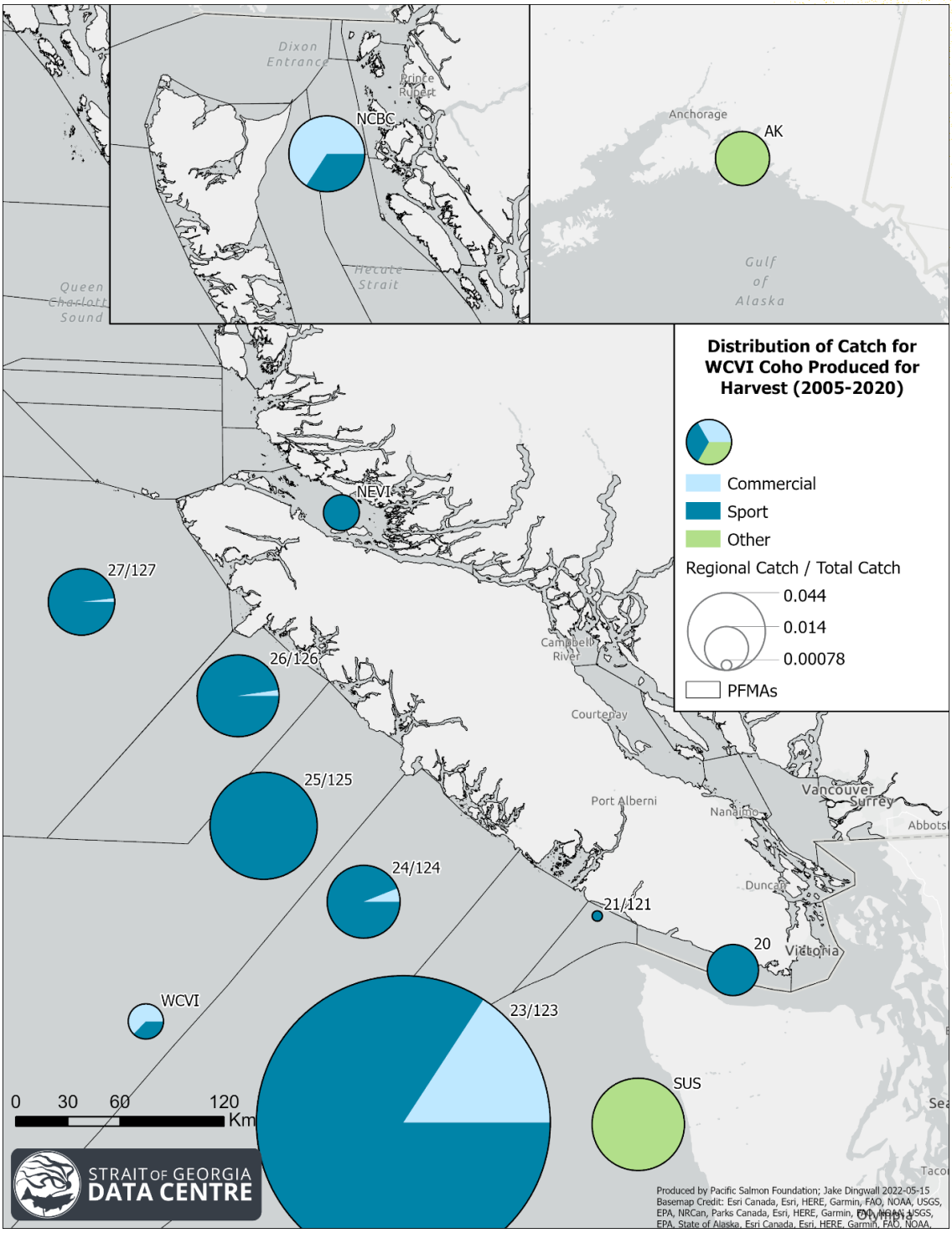

Figure B.22. The distribution of total catch of CWT'd **Coho** from hatchery production on the **west coast of Vancouver Island** from recovery years 2005-2020. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

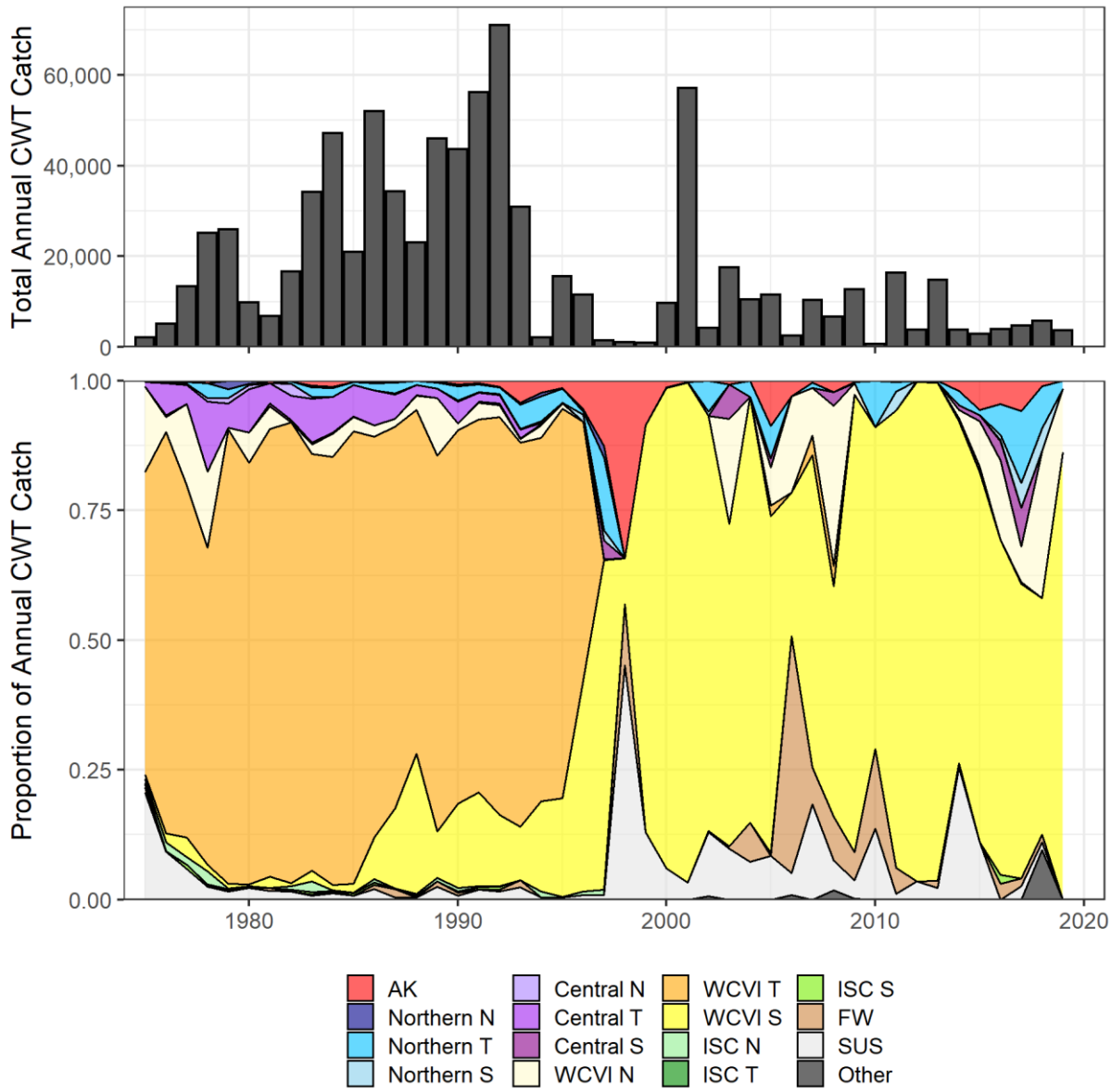

Figure B.23. Total annual catch of CWT **Coho** from the **west coast of Vancouver Island** hatcheries (top) and the distribution of that catch across fisheries over time (bottom).

ISC

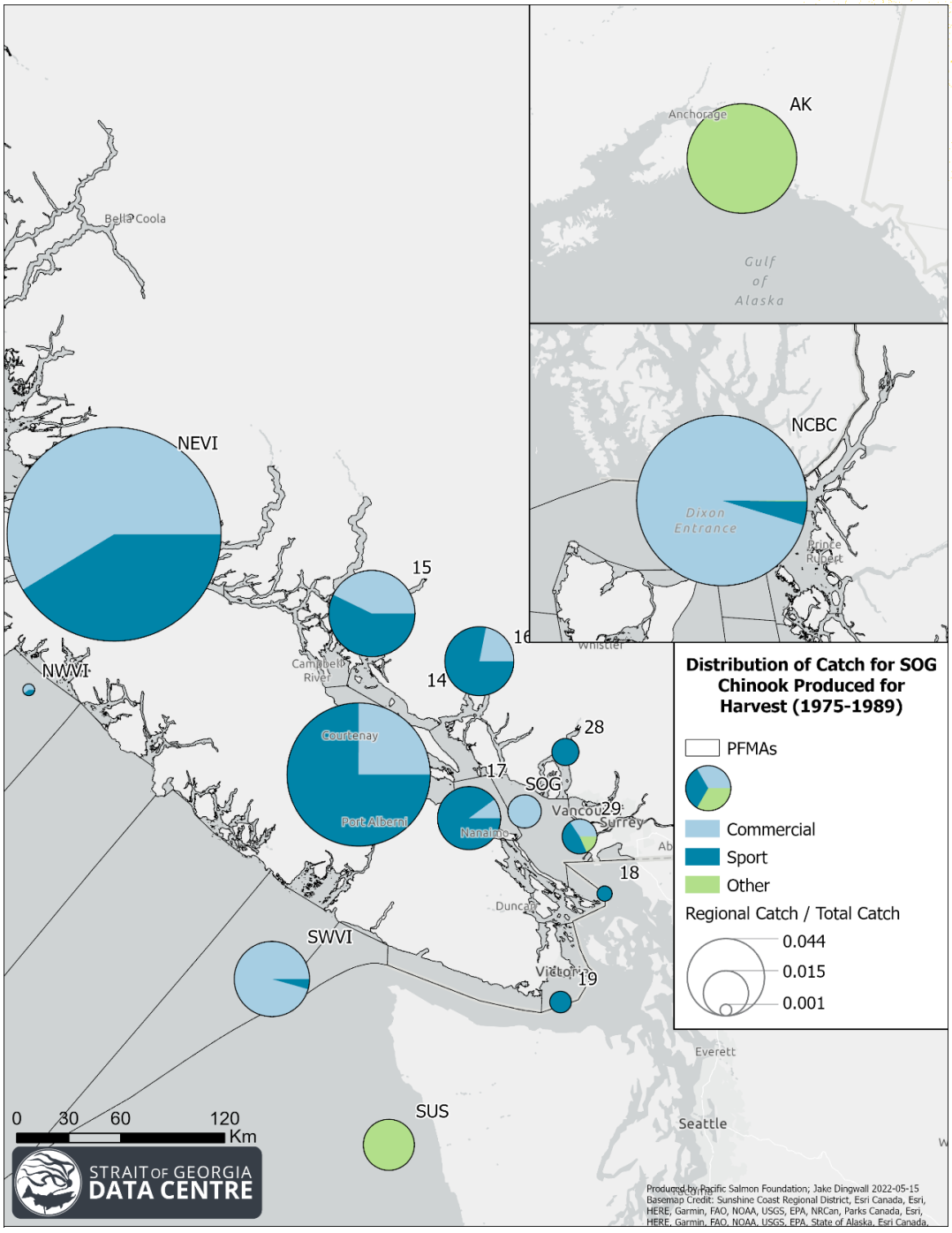

Figure B.24. The distribution of total catch of CWT'd **Chinook** from hatchery production in the **inner south coast** (incl. Fraser River) from recovery years 1975-1989. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

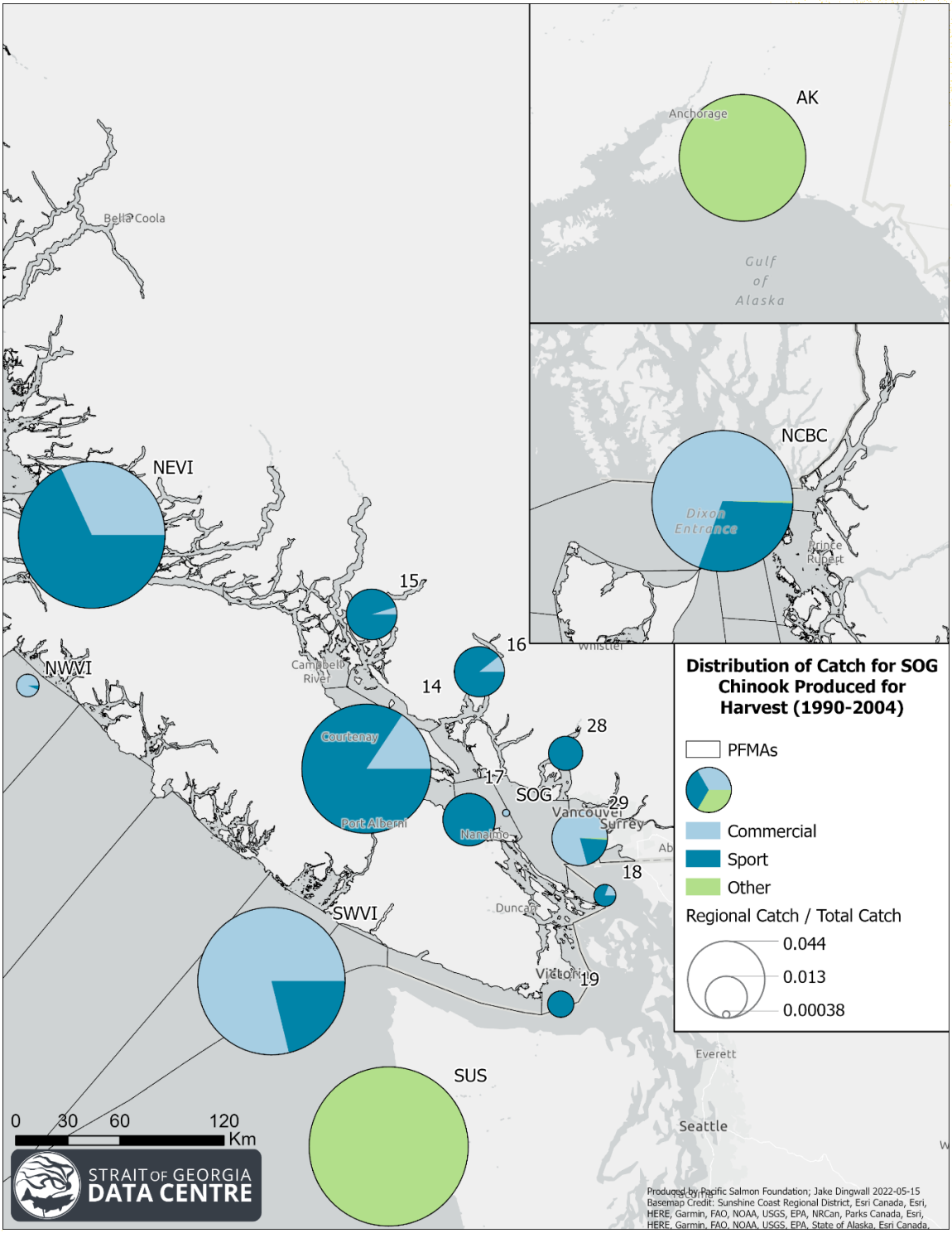

Figure B.25. The distribution of total catch of CWT'd **Chinook** from hatchery production in the **inner south coast** (incl. Fraser River) from recovery years 1990-2004. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

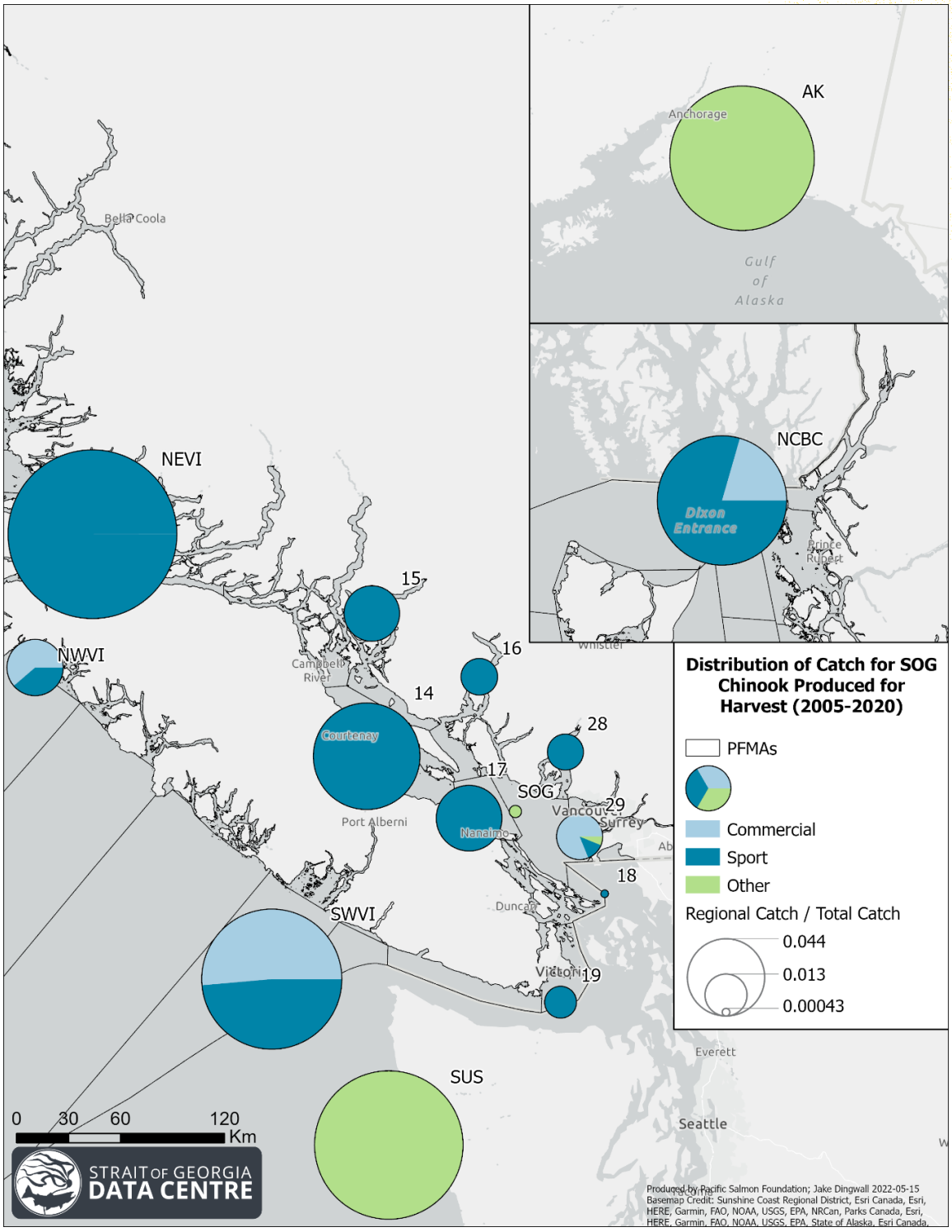

Figure B.26. The distribution of total catch of CWT'd **Chinook** from hatchery production in the **inner south coast** (incl. Fraser River) from recovery years 2005-2020. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

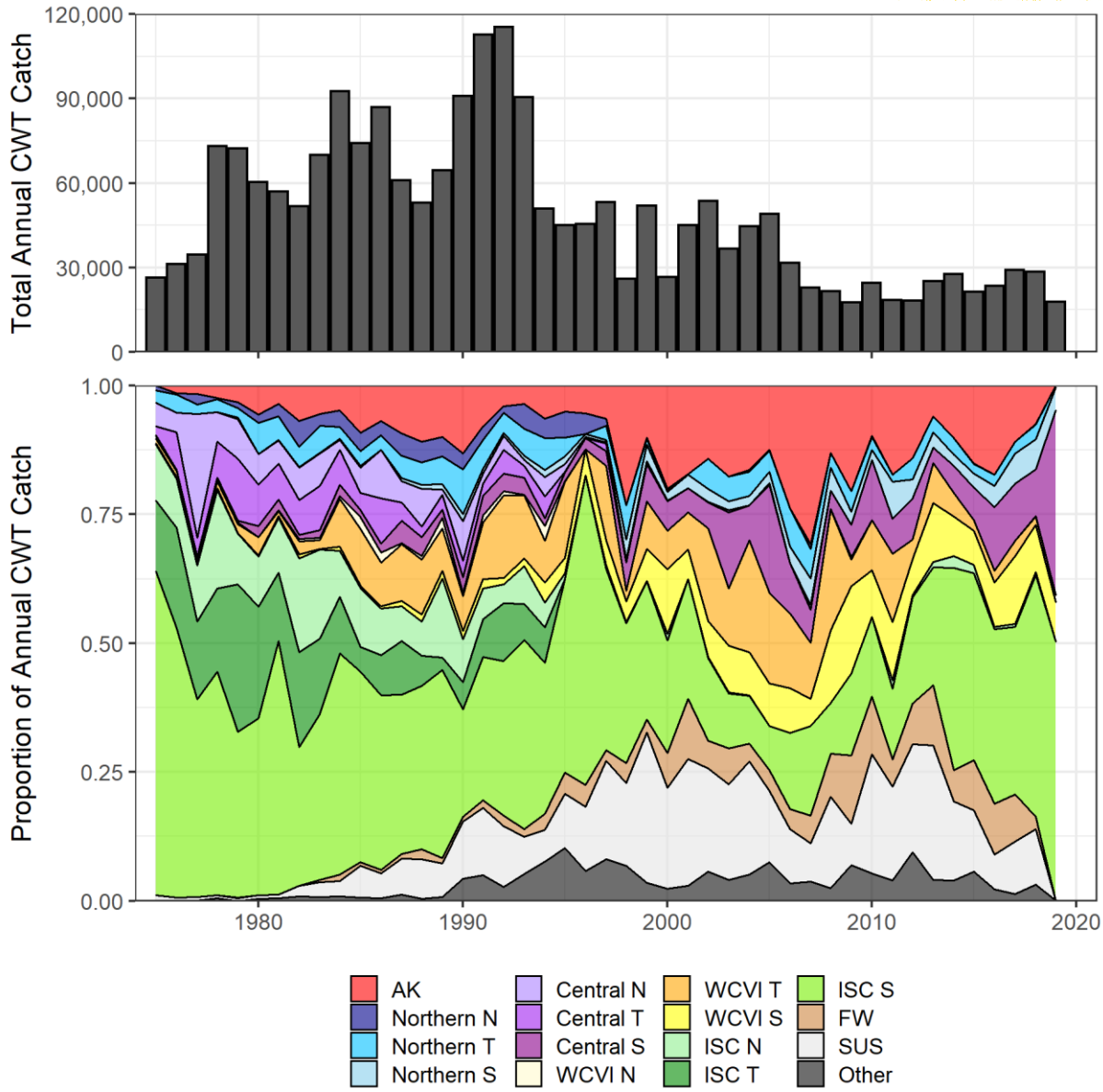

Figure B.27. Total annual catch of CWT **Chinook** from **inner south coast** hatcheries (top) and the distribution of that catch across fisheries over time (bottom).

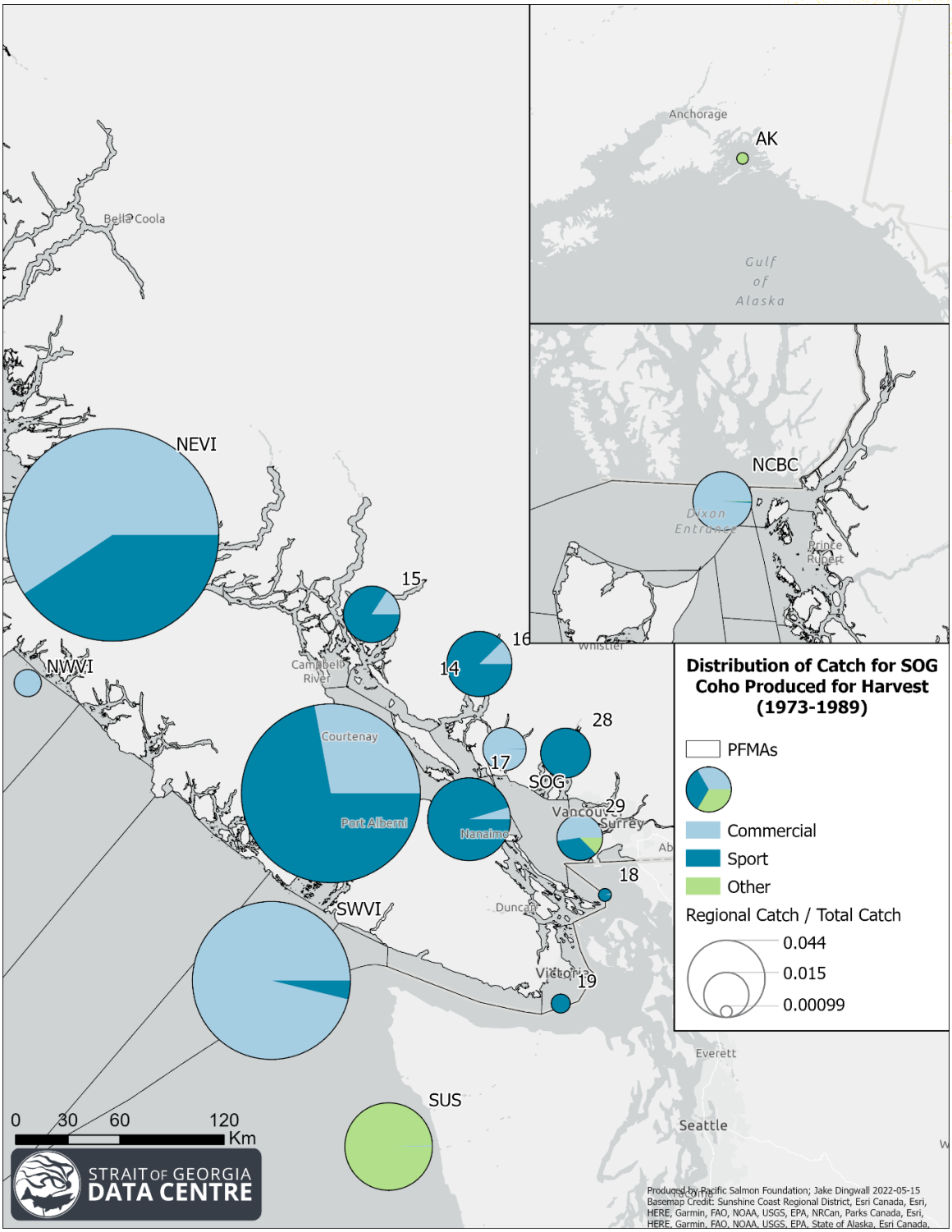

Figure B.28. The distribution of total catch of CWT'd **Coho** from hatchery production in the **inner south coast** (incl. Fraser River) from recovery years 1973-1989. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

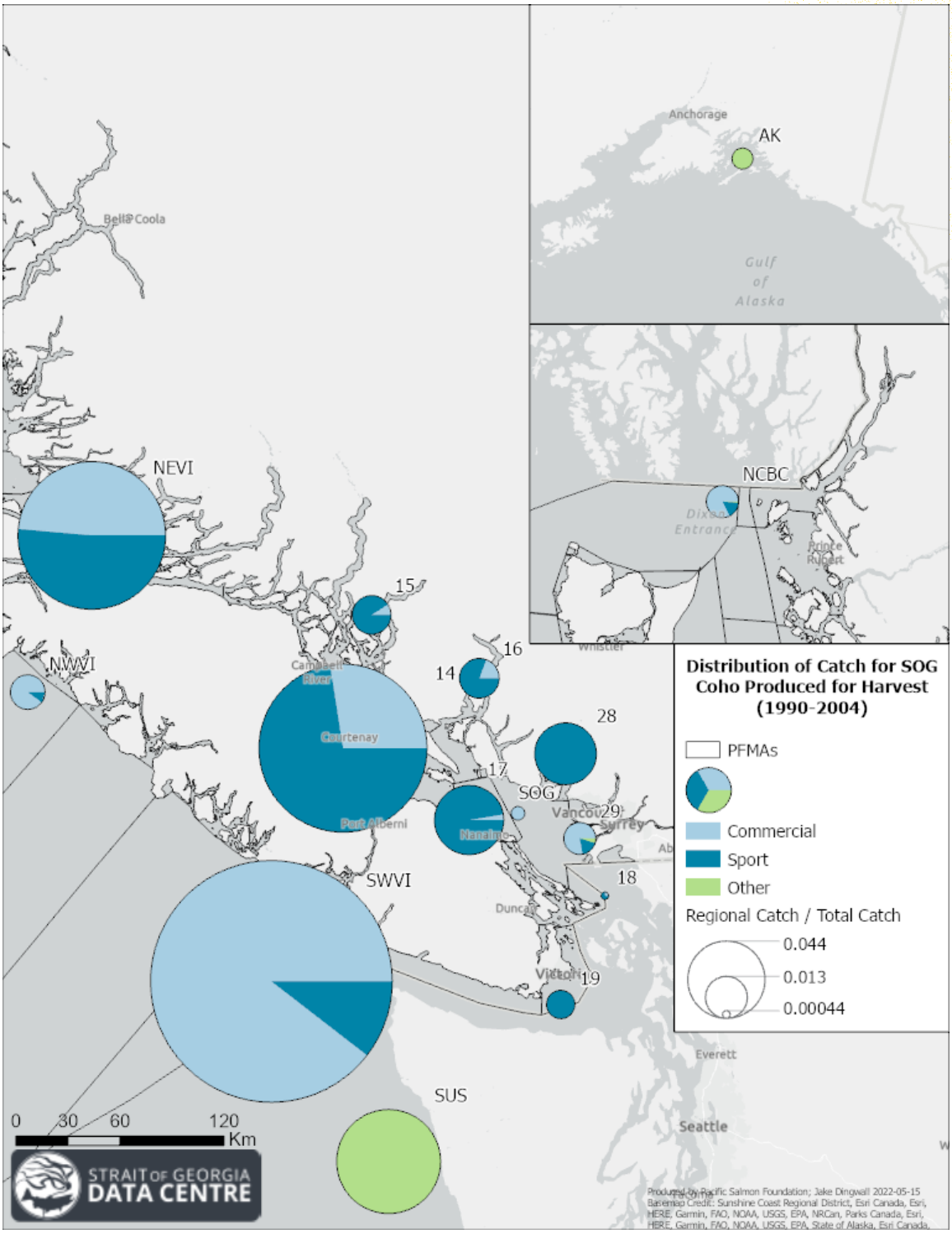

Figure B.29. The distribution of total catch of CWT'd **Coho** from hatchery production in the **inner south coast** (incl. Fraser River) from recovery years 1990-2004. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

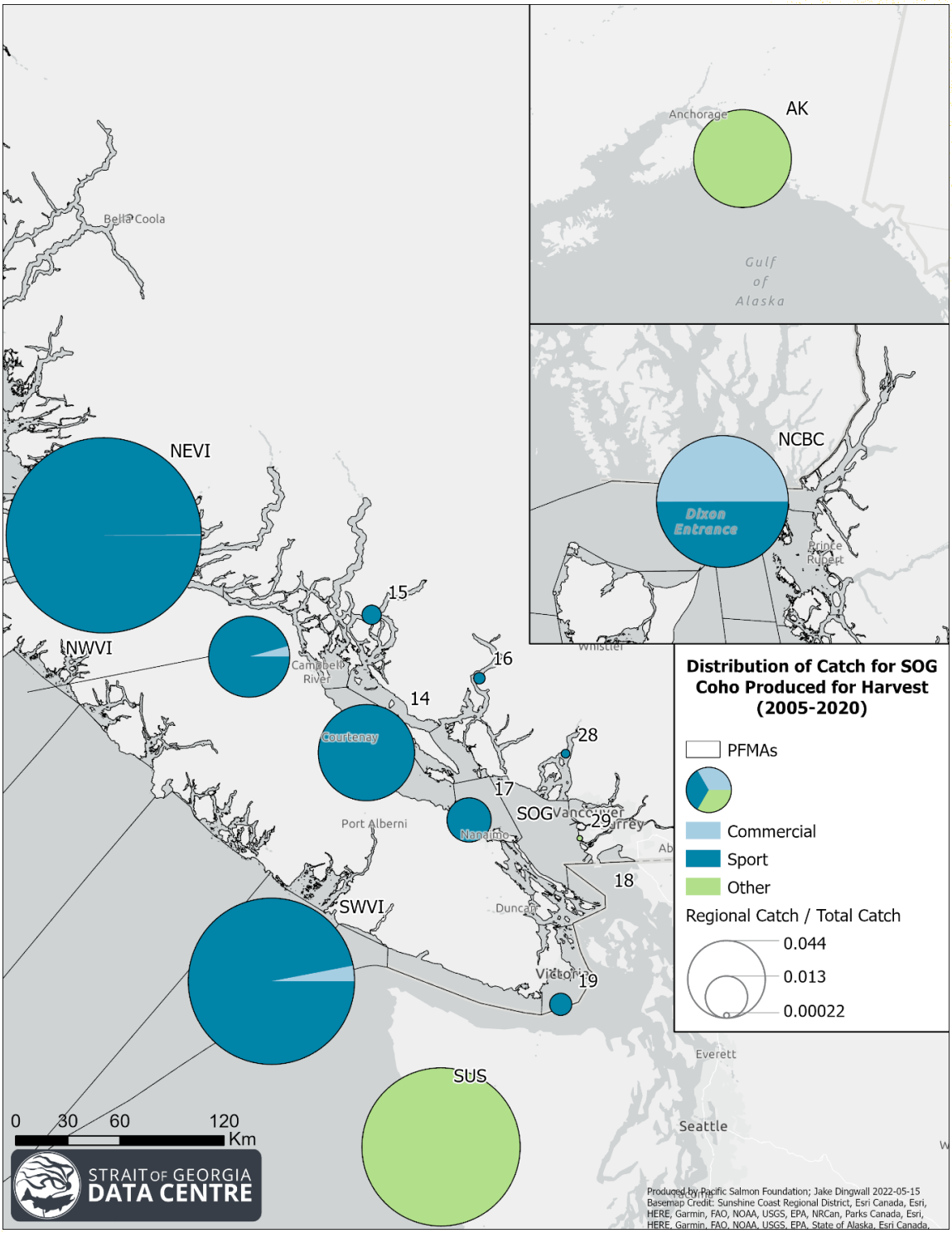

Figure B.30. The distribution of total catch of CWT'd **Coho** from hatchery production in **the inner south coast** (incl. Fraser River) from recovery years 2005-2020. Allocation of catch between commercial, recreational (sport) or 'Other' (non-classified) fisheries is shown by colour within each circle. The size of the circle represents the proportion of total catch in that area for that time period.

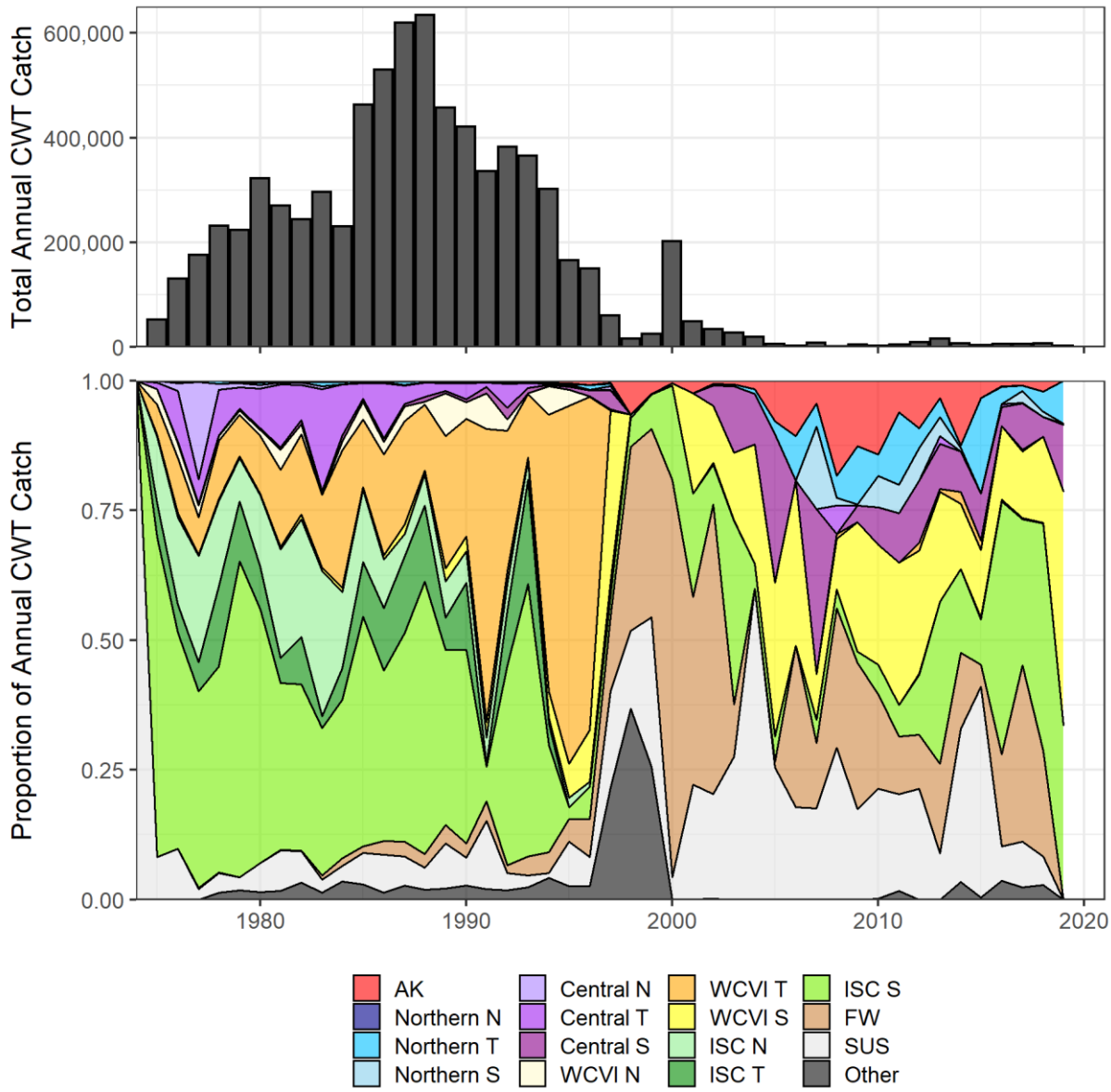

Figure B.31. Total annual catch of CWT **Coho** from **inner south coast** hatcheries (top) and the distribution of that catch across fisheries over time (bottom).

APPENDIX C. EFFICIENCY

Coho: There are 3 facilities on the North Coast that have released CWT Coho and have production objectives outlined in the 2014 IFMP: Toboggan Creek, Kitimat River, and Hartley Bay Creek. All three have similar catch efficiencies, except for the fed fall fry releases from Hartley Bay Creek, for which the number of fish caught per thousand released is lower.

On the Central Coast, there have been 3 stocks released with CWTs, all produced for harvest: Kitasoo Creek, Snootli Creek, and Thorsen Creek. The Kitasoo Creek Coho were released from seapends in the 1990s and saw a higher catch efficiency than the other stocks/locations. Thorsen Creek had exceptionally high catch efficiency in the early 1990s, but it has been < 10 fish caught per thousand releases since.

Managed, CWT releases of Coho have been far more numerous in the ISC region. Here, we can see that production for harvest has generally resulted in higher catches per thousand releases than production for other objectives. Namely, Chehalis River, Capilano River, Norrish Creek, and Tenderfoot Creek Coho have all seen catch efficiencies > 50. Interestingly, production for both Assessment and Harvest, such as Inch Creek, Big Qualicum River, or Quinsam River, have had lower catch efficiencies. Production for Conservation and Stewardship purposes has seen the lowest catch efficiencies.

On the WCVI, efficiency was highest for Conuma River Coho produced for both harvest and rebuilding objectives. Efficiency for all other production was similar across objectives, however fed fry releases of Cypre River Coho saw the lowest catch efficiency.

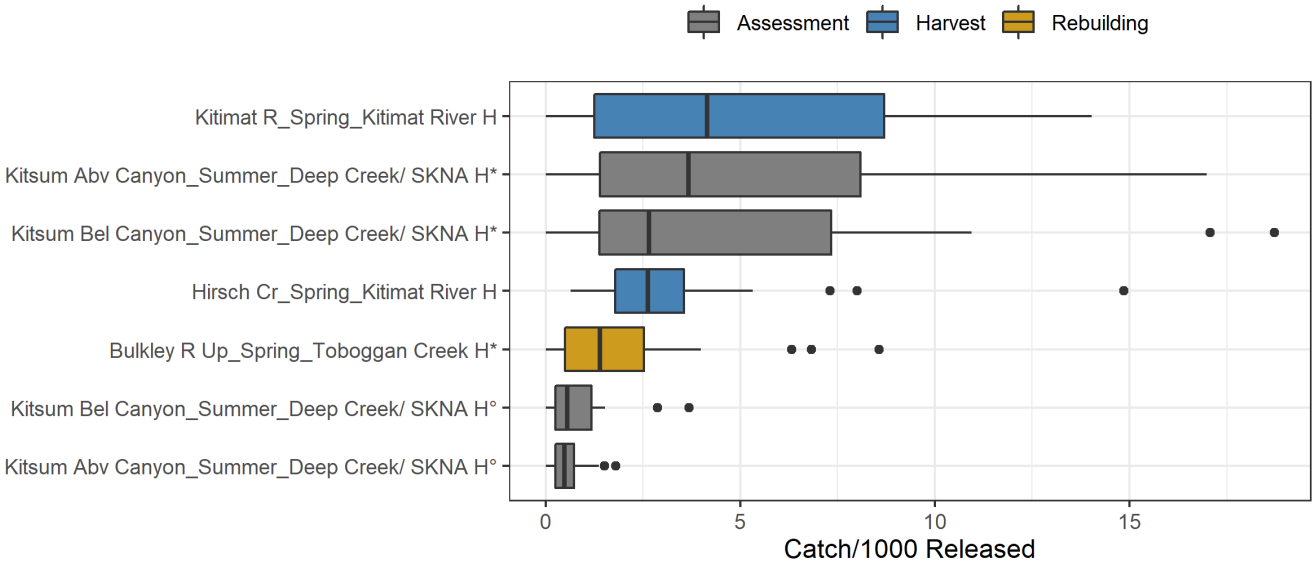

Figure C.1. Annual expanded CWT catch per thousand releases of CWT **Chinook** from hatcheries along the **north coast** from ocean entry years 1978-2019 coloured by production objective. The box gives the interquartile range with the median indicated by the vertical black line. Whiskers show the 95th percentiles and black dots are outliers. Y axis release groups = stock_run_facility. An * indicates a yearling release, ° indicates a fed fry release, otherwise all releases are subyearling smolts. Only release groups with 5 or more years of releases are shown.

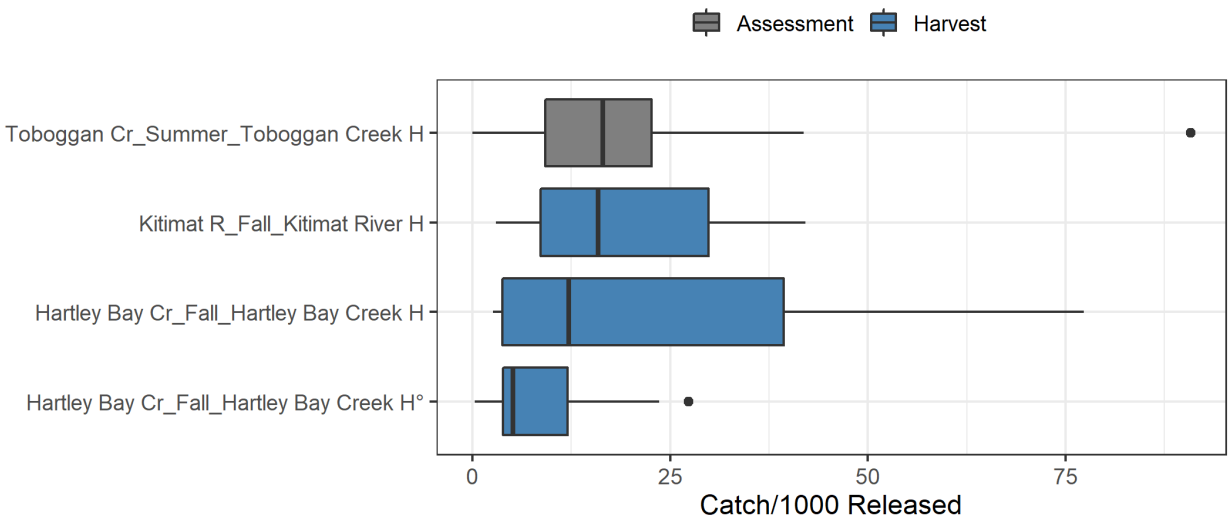

Figure C.2. Annual expanded CWT catch per thousand releases of CWT **Coho** from hatcheries along the **north coast** from ocean entry years 1985-2019 coloured by production objective. The box gives the interquartile range with the median indicated by the vertical black line. Whiskers show the 95th percentiles and black dots are outliers. Y axis release groups = stock_run_facility. An ° indicates a fed fry release, otherwise all releases are yearling smolts. Only release groups with 5 or more years of releases are shown.

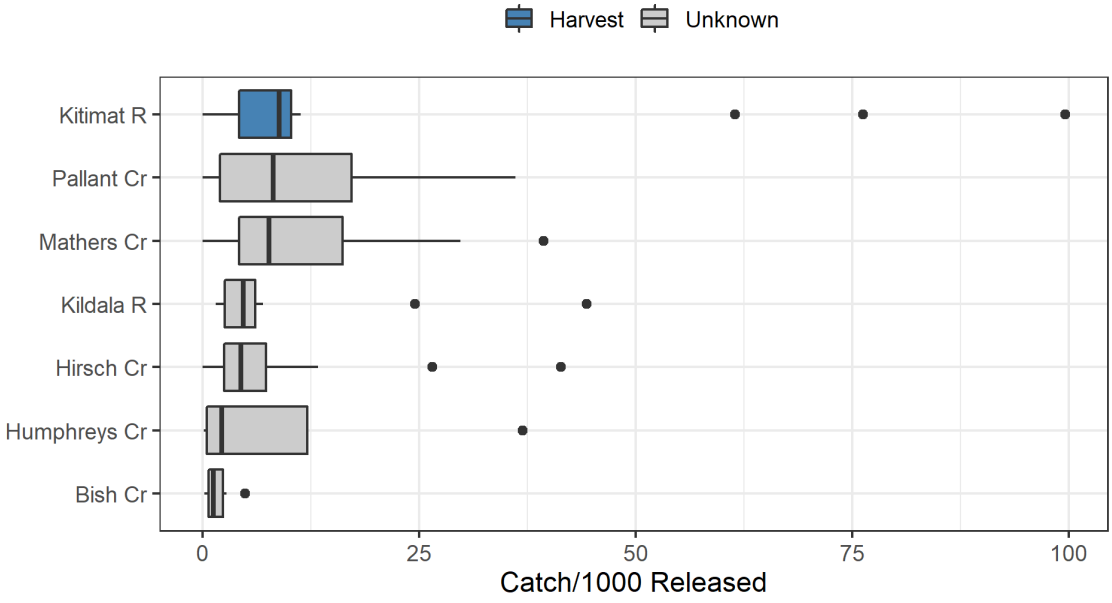

Figure C.3. Annual catch per thousand releases of **Chum** from hatcheries along the **north coast** from ocean entry years 1975-2011 coloured by production objective. The box gives the interquartile range with the median indicated by the vertical black line. Whiskers show the 95th percentiles and black dots are outliers. Catch data are from Lynch et al 2020 and represent clipped or CWT chum.

CCST

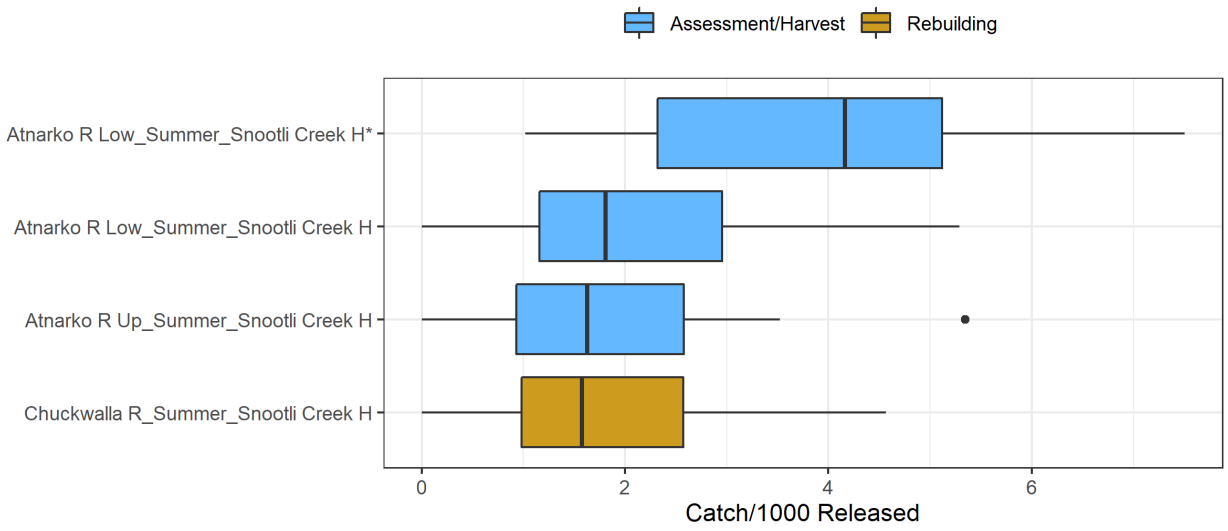

Figure C.4. Annual expanded CWT catch per thousand releases of CWT **Chinook** from hatcheries along the **central coast** from ocean entry years 1983-2019 coloured by production objective. The box gives the interquartile range with the median indicated by the vertical black line. Whiskers show the 95th percentiles and black dots are outliers. Y axis release groups = stock_run_facility. An * indicates a yearling release, ° indicates a fed fry release, otherwise all releases are subyearling smolts. Only release groups with 5 or more years of releases are shown.

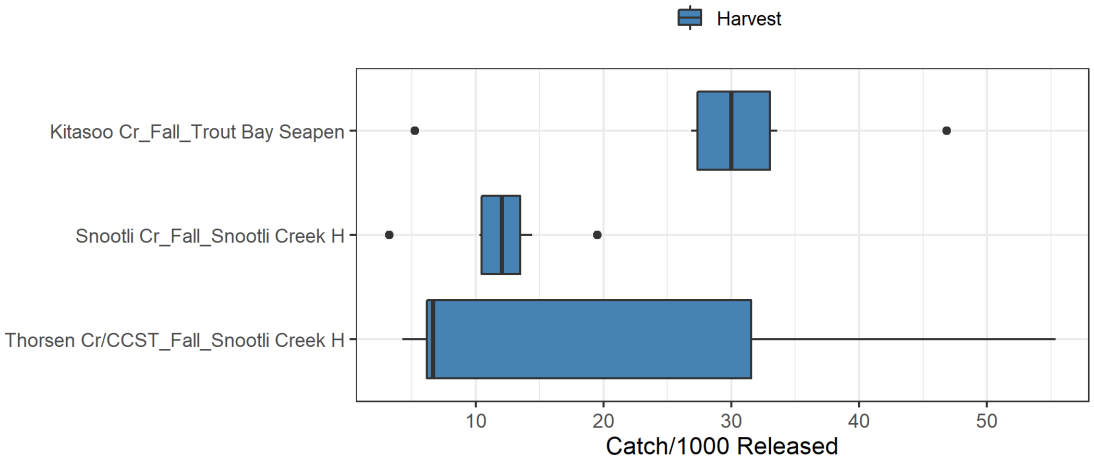

Figure C.5. Total annual expanded CWT catch per thousand releases of CWT **Coho** from hatcheries along the **central coast** from ocean entry years 1990-2014 coloured by production objective. Y axis release groups = stock_run_facility. An ° indicates a fed fry release, otherwise all releases are yearling smolts. Only release groups with 5 or more years of releases are shown.

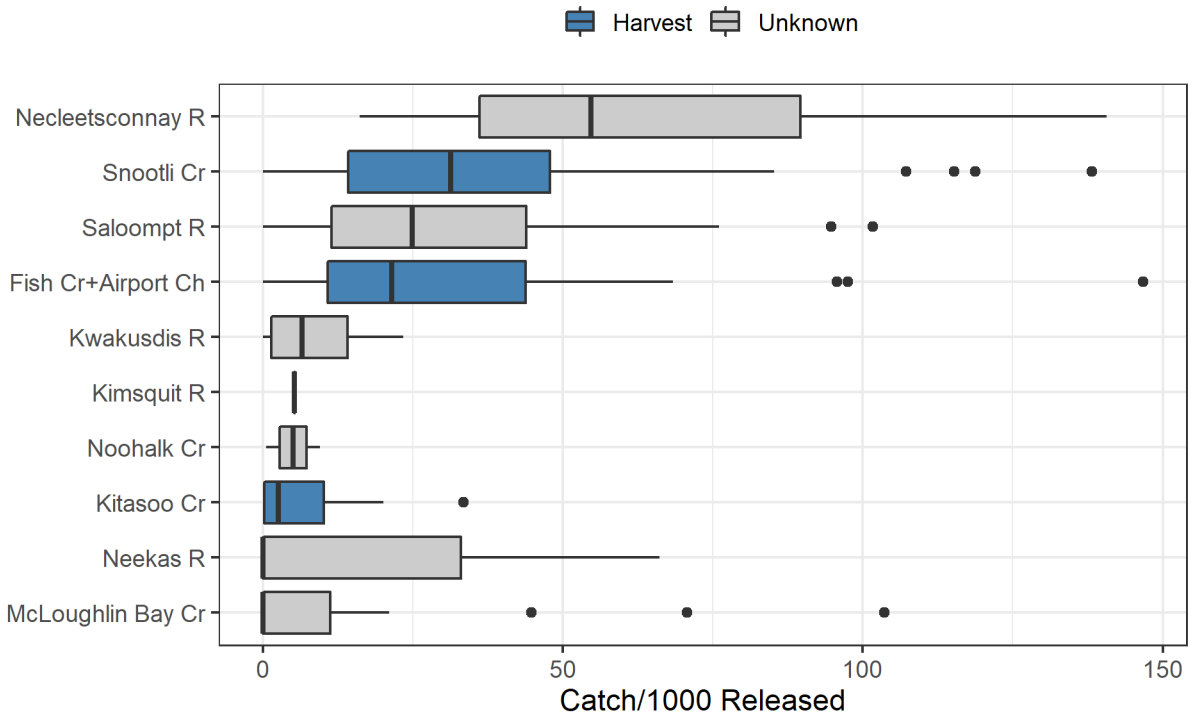

Figure C.6. Annual catch per thousand releases of **Chum** from hatcheries along the **central coast** from ocean entry years 1975-2016 coloured by production objective. The box gives the interquartile range with the median indicated by the vertical black line. Whiskers show the 95th percentiles and black dots are outliers. Catch data are from Lynch et al 2020 and represent clipped or CWT chum.

WCVI

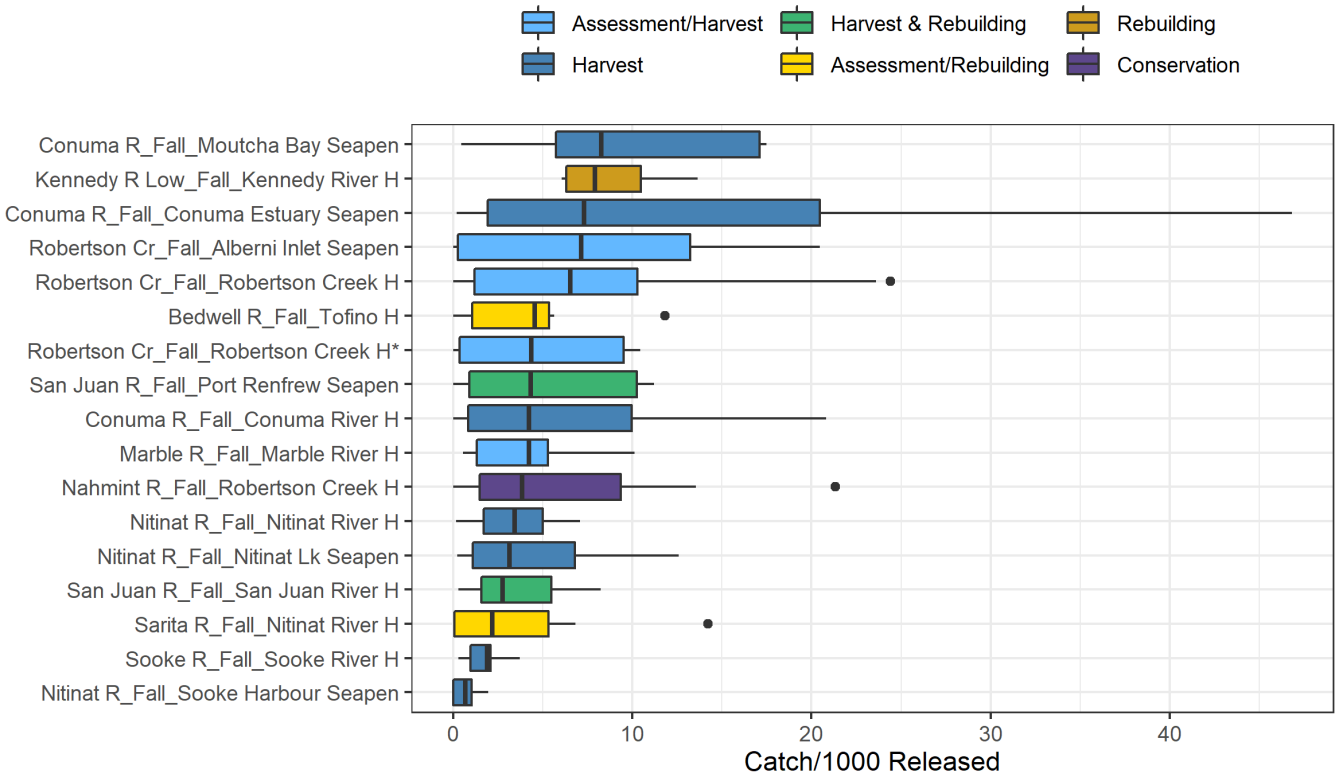

Figure C.7. Annual expanded CWT catch per thousand releases of CWT **Chinook** from hatcheries along the **west coast of Vancouver Island** from ocean entry years 1978-2019 coloured by production objective. The box gives the interquartile range with the median indicated by the vertical black line. Whiskers show the 95th percentiles and black dots are outliers. Y axis release groups = stock_run_facility. An * indicates a yearling release, ° indicates a fry release, otherwise all releases are subyearling smolts. Only release groups with 5 or more years of releases are shown.

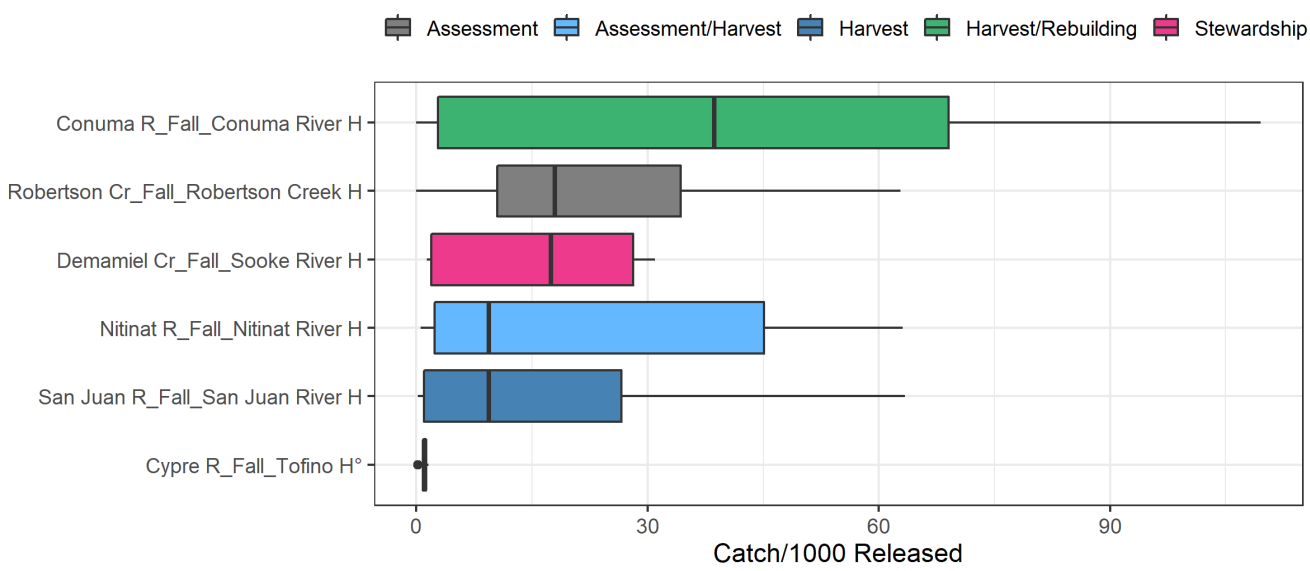

Figure C.8. Annual expanded CWT catch per thousand releases of CWT **Coho** from hatcheries along the **west coast of Vancouver Island** from ocean entry years 1974-2019 coloured by production objective. The box gives the interquartile range with the median indicated by the vertical black line. Whiskers show the 95th percentiles and black dots are outliers. Y axis release groups = stock_run_facility. An * indicates a yearling release, ° indicates a fry release, otherwise all releases are subyearling smolts. Only release groups with 5 or more years of releases are shown.

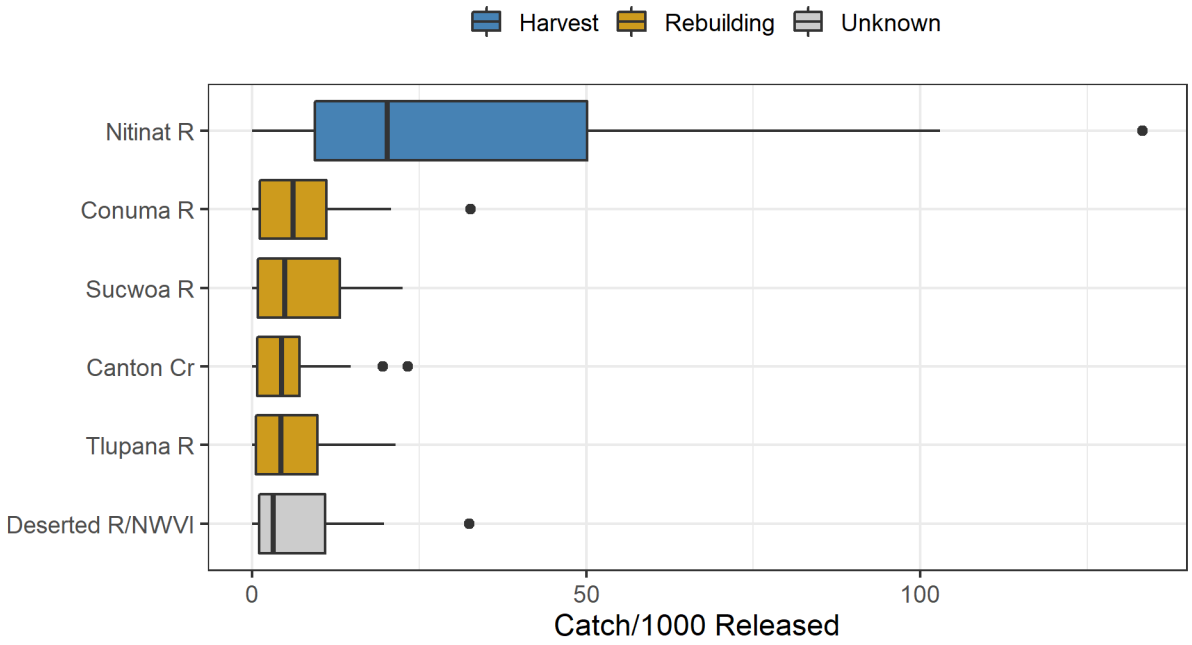

Figure C.9. Annual catch per thousand releases of **Chum** from hatcheries along the **west coast of Vancouver Island** from ocean entry years 1975-2001 coloured by production objective. The box gives the interquartile range with the median indicated by the vertical black line. Whiskers show the 95th percentiles and black dots are outliers. Catch data are from Lynch et al 2020 and represent clipped or CWT chum.

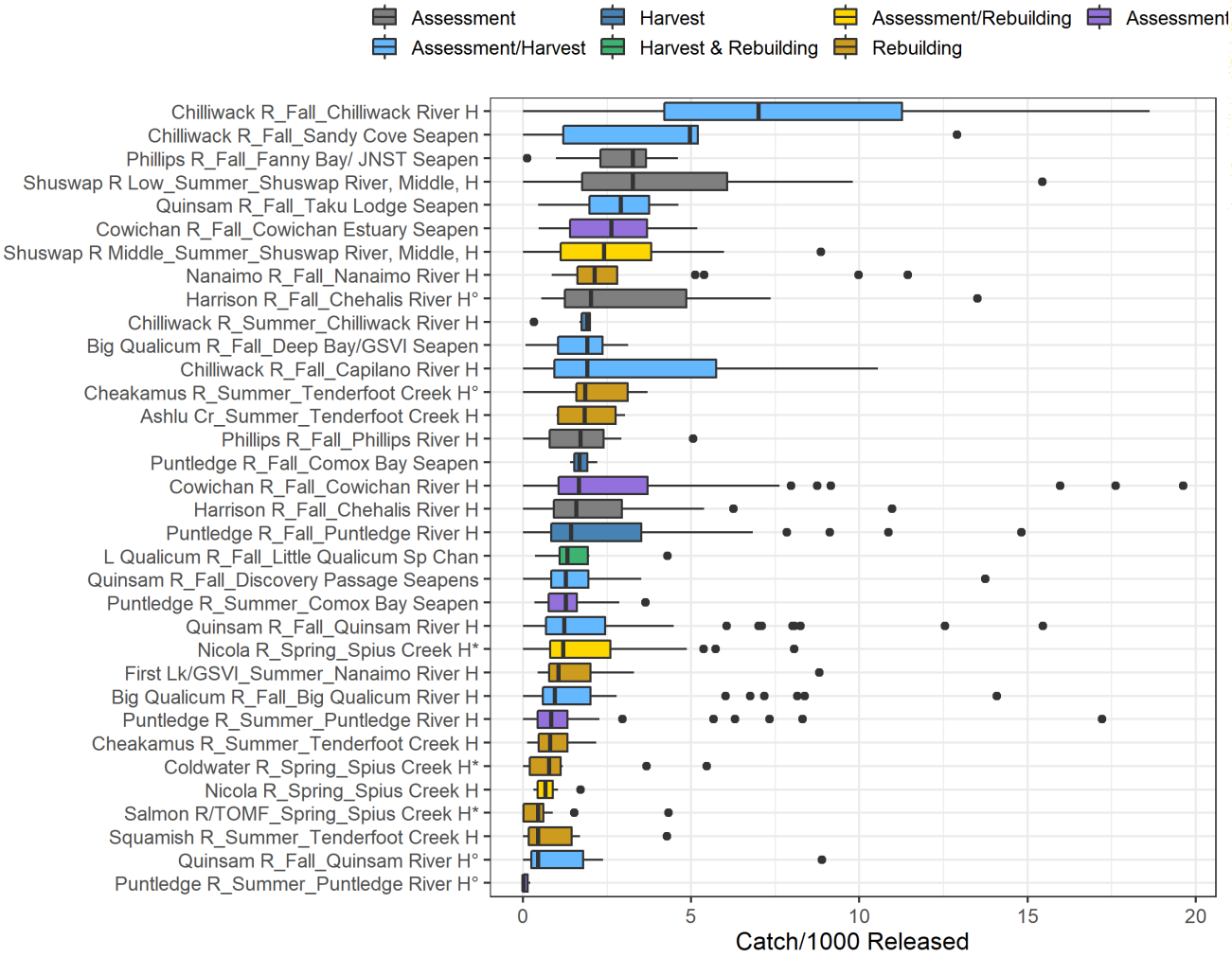

Figure C.10. Annual expanded CWT catch per thousand releases of CWT **Chinook** from hatcheries in the **inner south coast** region from ocean entry years 1971-2019 coloured by production objective. The box gives the interquartile range with the median indicated by the vertical black line. Whiskers show the 95th percentiles and black dots are outliers. Note, outliers > 20 (n = 23) were removed. Y axis release groups = stock_run_facility. An * indicates a yearling release, ° indicates a fry release, otherwise all releases are subyearling smolts. Only release groups with 5 or more years of releases are shown.

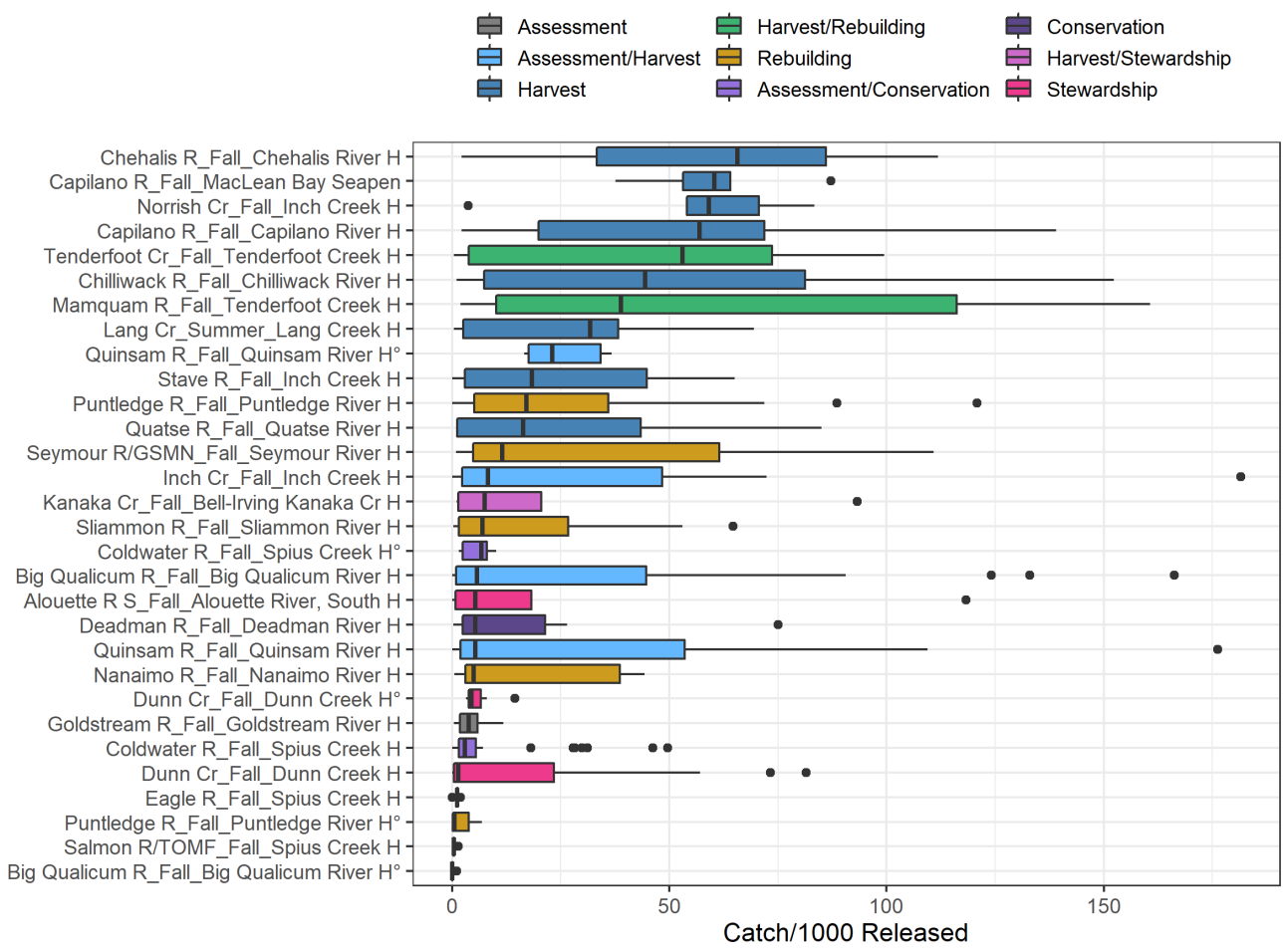

Figure C.11. Annual expanded CWT catch per thousand releases of CWT **Coho** from hatcheries in the **inner south coast** region from ocean entry years 1972-2019 coloured by production objective. The box gives the interquartile range with the median indicated by the vertical black line. Whiskers show the 95th percentiles and black dots are outliers. Note, outliers > 200 (n = 5) were removed). Y axis release groups = stock_run_facility. An ° indicates a fed fry release, otherwise all releases are yearling smolts. Only release groups with 5 or more years of releases are shown.

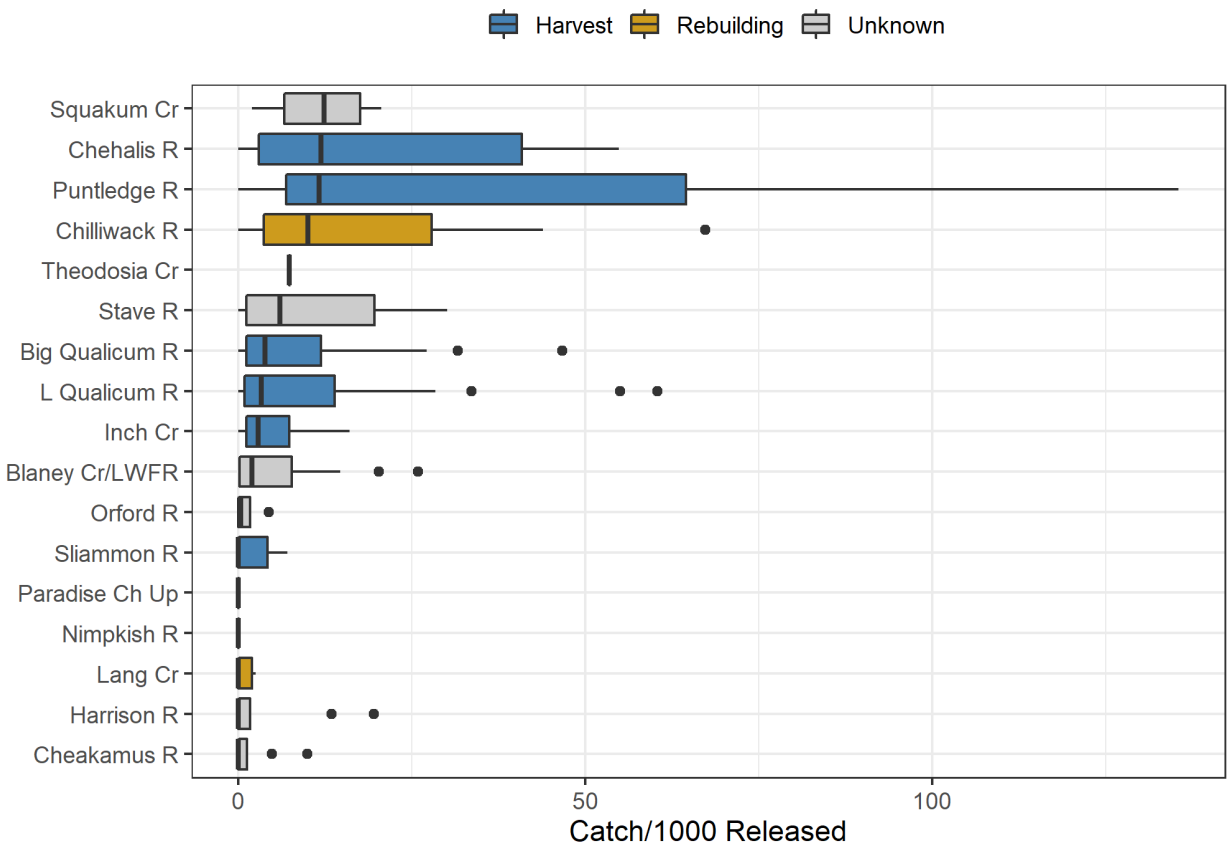

Figure C.12. Annual catch per thousand releases of **Chum** from hatcheries in the **inner south coast** region from ocean entry years 1974-2015 coloured by production objective. The box gives the interquartile range with the median indicated by the vertical black line. Whiskers show the 95th percentiles and black dots are outliers. Catch data are from Lynch et al 2020 and represent clipped or CWT chum.