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An update on trends in catch of Pacific salmon in Canada

by

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INTRODUCTION

Six species of Pacific salmon are harvested in British Columbia coastal waters. Sockeye, pink, and chum salmon are mainly harvested in commercial net fisheries while chinook and coho salmon are targeted by commercial troll, and (increasingly) by sport fisheries located primarily in the Strait of Georgia. Steelhead constitute a minor component of the catch, and are not discussed in this document.

In general, escapement goals are established in Canada for major sockeye, pink, and chum stocks, and fisheries are managed to meet these escapement objectives. Chinook and coho fisheries are managed to achieve specified harvest rates although escapement goals have also been established for key stocks.

This document reports data on the changes in commercial catch (numbers and total weight), recreational catch (numbers only) and aboriginal catch (numbers only) for the five major salmon species caught in British Columbian waters for the period 1952-1999.

Catch Trends

Commercial Fisheries

The 1999 Catch was 16,860 tonnes or roughly one quarter of the average catch of 65,390 tonnes for the period 1952-1999. More than half the 1999 catch was composed of pink (9,530 tonnes). The sockeye catch was 1640 tonnes, less than one tenth the average catch for 1952-1999 of 16,770 tonnes. The 1999 pink catch of 9,530 tonnes was well below the long term average catch of 20,180 tonnes and the odd-year cycle average catch of 22,140 tonnes. Chum salmon catch was 4,940 tonnes, also well below the long term average catch of 13,340 tonnes. Chinook salmon production has decreased steadily since the early 1970's and the 1999 catch of 740 tonnes was the second lowest on record and only 13 percent of the long term average catch of 5,640 tonnes. Coho salmon catches in 1999 were severely reduced at 10 tonnes and were well below the long term average catch of 9,460 tonnes.

Reduced levels of both coho and chinook salmon production have resulted in catch restrictions since 1997. Conservation concerns resulted in no directed fisheries for coho in 1999, and harvest restrictions on fisheries that intercept coho salmon. Thus, only incidental catches of coho salmon were allowed in 1999. Similarly, conservation concerns for sockeye returning to the Fraser River resulted in fishery closures in 1999 to protect those stocks. Catch data for 1999 were anticipated to be less than that in 1998 both as a result of decreased production as well as the curtailment of a number of fisheries as special conservation initiatives.

Total commercial catch, numbers and weight, is reported in Tables 1 and 2 for the period 1952-99. Tables 3 and 4 provide a breakdown of salmon catch by major statistical area in 1999, numbers and weight. Note that weights are given as round equivalents, which implies an increase of approximately 20 percent to troll-caught fish reported previously as dressed head-on.

Recreational Fisheries

Recreational catch for 1953-1999 is given in Table 5, with a breakout by major statistical area for 1999 in Table 6. It should be noted that the locations and time periods which are surveyed vary

from year to year, so it is not meaningful to look at the annual summaries as trend indicators. Chinook and coho are the main targets of recreational anglers, but coho opportunities have been severely limited by conservation concerns since 1998.

Aboriginal Fisheries

Aboriginal catch for 1951-1999 is given in Table 7. The data for 1997-1999 are incomplete, with many areas not represented. The data for 1995 and 1996 are complete, but subject to further revision. In general, reporting problems with aboriginal catch data make it difficult to use the annual summaries as trend indicators.

TABLES

- Table 1.** Commercial salmon catch (numbers) by species and year, 1952-1999
- Table 2.** Commercial salmon catch (weight) by species and year, 1952-1999
- Table 3.** 1999 Commercial salmon catch (numbers) by species and area
- Table 4.** 1999 Commercial salmon catch (weight) by species and area
- Table 5.** Recreational salmon catch (numbers) by species and year, 1953-1999
- Table 6.** 1999 Recreational salmon catch (numbers) by species and area
- Table 7.** Aboriginal salmon catch (numbers) by species and year, 1951-1999

FIGURES

- Fig. 1 a,b.** Major statistical reporting areas for Pacific salmon catches in British Columbia.

Table 1: Commercial Salmon Catch (numbers) by Species and Year, 1952-1999

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1952	906,000	4,838,000	2,752,000	11,217,000	2,479,000	22,192,000
1953	1,021,000	5,914,000	2,893,000	11,110,000	4,672,000	25,610,000
1954	880,000	6,702,000	2,445,000	5,439,000	5,838,000	21,304,000
1955	876,000	2,835,000	2,976,000	11,240,000	1,569,000	19,496,000
1956	983,000	3,257,000	3,050,000	7,352,000	2,458,000	17,100,000
1957	948,000	3,036,000	3,137,000	11,310,000	2,412,000	20,843,000
1958	1,074,000	12,045,000	2,989,000	6,908,000	3,192,000	26,207,000
1959	956,000	3,260,000	2,897,000	6,776,000	2,015,000	15,904,000
1960	753,000	2,858,000	2,030,000	4,098,000	1,837,000	11,575,000
1961	701,000	4,564,000	3,300,000	8,305,000	1,218,000	18,088,000
1962	722,000	3,499,000	3,626,000	23,429,000	1,496,000	32,771,000
1963	803,000	2,086,000	3,421,000	12,201,000	1,463,000	19,975,000
1964	965,000	3,619,000	4,148,000	9,628,000	2,253,000	20,614,000
1965	981,000	3,020,000	4,443,000	5,109,000	633,000	14,186,000
1966	1,165,000	4,020,000	5,412,000	17,261,000	1,311,000	29,169,000
1967	1,130,000	6,750,000	3,318,000	9,846,000	1,130,000	22,174,000
1968	1,083,000	6,346,000	5,262,000	20,249,000	3,095,000	36,035,000
1969	1,100,000	4,268,000	2,407,000	2,571,000	1,310,000	11,656,000
1970	1,212,000	4,078,000	3,945,000	13,601,000	3,680,000	26,518,000
1971	1,593,000	6,306,000	4,789,000	8,456,000	1,263,000	22,407,000
1972	1,549,000	3,563,000	3,356,000	13,996,000	6,031,000	28,495,000
1973	1,424,000	7,586,000	3,530,000	6,521,000	6,225,000	25,286,000
1974	1,467,000	7,225,000	3,694,000	7,374,000	2,202,000	21,962,000
1975	1,412,000	2,271,000	2,332,000	4,634,000	1,147,000	11,796,000
1976	1,543,000	4,814,000	3,698,000	10,349,000	1,901,000	22,305,000
1977	1,493,000	6,346,000	3,317,000	10,356,000	1,088,000	22,600,000
1978	1,368,000	7,222,000	3,350,000	10,748,000	2,979,000	25,666,000
1979	1,329,000	5,691,000	3,647,000	11,823,000	866,000	23,356,000
1980	1,272,000	3,260,000	3,442,000	8,419,000	3,453,000	19,846,000
1981	1,134,000	8,443,000	2,822,000	18,086,000	1,123,000	31,608,000
1982	1,241,000	10,074,000	3,177,000	2,677,000	2,975,000	20,144,000
1983	956,000	5,524,000	4,130,000	23,946,000	1,006,000	35,561,000
1984	1,011,000	5,081,000	3,602,000	7,491,000	1,851,000	19,036,000
1985	881,000	12,248,000	2,951,000	20,228,000	5,493,000	41,801,000
1986	825,000	10,557,000	4,905,000	17,978,000	5,580,000	39,844,000
1987	778,000	5,393,000	3,360,000	13,357,000	2,299,000	25,185,000
1988	738,000	4,473,000	2,745,000	23,122,000	6,189,000	37,267,000
1989	659,000	13,782,000	3,435,000	17,051,000	1,821,000	36,748,000
1990	678,000	14,197,000	3,872,000	17,257,000	3,144,000	39,148,000
1991	649,000	10,360,000	3,510,000	23,978,000	2,358,000	40,856,000
1992	697,000	8,218,000	2,963,000	10,263,000	4,023,000	26,164,000
1993	635,000	18,132,000	1,896,000	10,127,000	4,229,000	35,020,000
1994	442,000	11,570,000	2,567,000	2,207,000	4,340,000	21,127,000
1995	210,000	4,489,000	1,889,000	11,728,000	2,477,000	20,793,000
1996	70,000	5,932,000	1,415,000	5,903,000	1,371,000	14,691,000
1997	214,000	10,693,000	229,000	6,503,000	1,892,000	19,531,000
1998	142,000	1,766,000	4,000	2,412,000	4,462,000	8,786,000
1999	86,000	634,000	3,000	5,928,000	812,000	7,463,000

Table 2: Commercial Salmon Catch (round weight, tonnes) by Species and Year, 1952-1999

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1952	6,540	14,000	10,070	23,260	14,460	68,320
1953	7,110	16,030	10,510	28,010	24,690	86,330
1954	6,120	21,330	9,380	11,680	33,750	82,260
1955	5,680	7,550	10,680	28,710	8,250	60,880
1956	6,210	9,750	11,410	13,140	12,440	52,960
1957	5,740	7,140	10,330	25,990	12,360	61,550
1958	6,450	33,620	11,200	15,380	17,290	83,940
1959	6,130	8,190	8,880	15,890	10,480	49,570
1960	4,680	7,020	6,450	7,710	9,220	35,080
1961	4,120	12,070	11,220	22,710	6,630	56,750
1962	4,110	9,120	12,070	42,450	8,190	75,940
1963	4,610	5,390	11,560	27,480	7,000	56,030
1964	6,060	10,410	14,360	16,680	10,860	58,370
1965	5,750	7,360	16,640	10,400	3,020	43,160
1966	6,950	11,660	17,550	33,330	6,970	76,450
1967	6,960	16,820	10,210	23,430	5,510	62,930
1968	6,910	18,770	15,140	25,220	16,560	82,610
1969	6,450	10,950	7,990	6,270	6,080	37,740
1970	6,570	11,420	13,650	24,020	16,770	72,430
1971	8,700	17,330	14,090	17,630	5,420	63,170
1972	8,350	9,520	10,530	18,140	30,190	76,740
1973	7,560	21,530	11,250	13,310	32,760	86,400
1974	7,640	21,690	10,380	11,210	12,480	63,400
1975	7,290	5,680	7,740	10,240	5,390	36,330
1976	7,780	12,340	9,320	17,060	10,920	57,410
1977	7,520	17,390	9,860	24,720	6,030	65,520
1978	7,890	22,320	9,150	15,330	15,860	70,550
1979	6,850	14,530	10,340	24,700	4,750	61,170
1980	6,540	7,730	9,030	13,720	16,810	53,820
1981	5,920	21,000	7,510	38,250	6,160	78,840
1982	7,090	30,140	9,300	3,980	15,090	65,600
1983	5,380	14,330	10,460	39,540	4,900	74,600
1984	6,250	12,880	10,090	12,060	9,000	50,280
1985	5,470	31,570	8,980	37,700	23,650	107,360
1986	5,010	30,830	13,240	29,510	25,200	103,780
1987	5,250	15,040	8,420	26,920	11,000	66,620
1988	5,920	11,940	7,080	32,220	30,300	87,460
1989	5,240	34,380	8,750	31,000	9,320	88,700
1990	5,230	37,130	10,570	26,240	17,180	96,350
1991	5,060	25,210	10,050	35,100	10,240	85,650
1992	5,340	20,940	7,330	14,910	17,960	66,480
1993	4,820	42,530	4,320	16,050	17,270	84,980
1994	3,530	30,560	7,700	3,350	20,080	65,210
1995	1,480	10,290	4,840	19,600	11,820	48,030
1996	460	15,530	3,870	8,600	6,520	34,980
1997	1,680	25,330	750	12,220	8,680	48,650
1998	1,390	5,050	20	3,920	19,910	30,280
1999	740	1,640	10	9,530	4,940	16,860

Table 3: 1999 Commercial Salmon Catch (numbers) by Species and Area

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
Area 1	2	5	2	26,778	1,657	28,444
Area 2E	746	13	2,124	0	99,539	102,422
Area 2W	41,500	0	30	0	35,915	77,445
Area 3XY	3,561	355,910	1	5,253,949	133,071	5,746,492
Area 3Z	704	53,616	0	101,795	8,187	164,302
Area 4	6,301	5,468	0	306,427	416	318,612
Area 5	0	0	0	15,657	0	15,657
Area 6	1,000	6,578	0	18,649	32,416	58,643
Area 7	1,230	5,251	587	49,913	85,400	142,381
Area 8	3,981	5,857	0	125,503	179,340	314,681
Area 11	4	1,161	10	74	27	1,276
Area 12	230	59,249	146	10,707	24,826	95,158
Area 13	71	25,774	14	2,468	4,411	32,738
Area 18	0	207	0	0	0	207
Area 20	216	43,507	0	10,176	76	53,975
Area 21	0	0	0	2	94,647	94,649
Area 23	15,480	58,885	0	153	153	74,671
Area 24	2,689	0	0	0	140	2,829
Area 25	2,397	2	0	13	87,169	89,581
Area 26	2,145	0	0	4	70	2,219
Area 27	232	1,036	0	1,766	331	3,365
Area 29AB	122	2,418	0	473	13,854	16,867
Area 29D	3,780	9,316	0	3,068	10,502	26,666
Totals	86,391	634,253	2,914	5,927,575	812,147	7,463,280

Table 4: 1999 Commercial Salmon Catch (round weight, tonnes) by Species and Area

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
Area 1	0	0	0	46	8	54
Area 2E	9	0	10	0	586	605
Area 2W	420	0	0	0	391	811
Area 3XY	24	925	1	8435	819	10204
Area 3Z	4	141	0	167	51	364
Area 4	55	15	0	481	2	553
Area 5	0	0	0	24	0	24
Area 6	8	20	0	46	240	314
Area 7	11	14	2	77	371	475
Area 8	34	14	0	203	1149	1400
Area 11	0	3	0	0	0	4
Area 12	1	160	1	17	194	373
Area 13	0	65	0	4	21	91
Area 18	0	1	0	0	1	1
Area 20	1	119	0	18	0	137
Area 21	0	0	0	0	465	465
Area 23	74	131	0	0	1	207
Area 24	10	0	0	0	1	10
Area 25	21	0	0	0	466	487
Area 26	31	0	0	0	1	32
Area 27	2	3	0	3	1	10
Area 29AB	1	8	0	1	109	119
Area 29D	30	25	0	6	59	120
Totals	737	1644	14	9529	4937	16861

Table 5: Recreational Salmon Catch (numbers) by Species and Year for 1953-1999

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1953	74400	0	130200	0	0	204600
1954	75900	0	134400	0	0	210300
1955	89200	0	184600	0	0	273800
1956	106500	0	197500	0	0	304000
1957	101300	0	252300	10200	0	363700
1958	106000	400	261800	3100	0	371300
1959	93600	0	243000	36800	0	373500
1960	68900	0	238100	800	0	307800
1961	46300	100	157200	26500	0	230000
1962	55400	100	184100	3500	0	243000
1963	61000	100	197500	111000	0	369500
1964	49300	0	181000	2300	0	232600
1965	52800	100	188600	9600	0	251000
1966	61400	0	253000	5000	0	319400
1967	61300	0	169200	29100	900	260500
1968	63700	0	218500	5600	0	287900
1969	66800	1400	143900	36400	0	248400
1970	97500	500	236900	10700	0	345600
1971	85600	200	371100	46000	0	503000
1972	294600	1900	345200	12100	0	653800
1973	281500	4500	384400	51700	0	722200
1974	282200	3400	788100	16400	0	1090100
1975	439700	2300	469800	28500	0	940300
1976	515500	1200	440400	16600	0	973800
1977	255000	900	255200	33900	1800	546800
1978	276000	300	378700	6500	4900	666400
1979	188900	2400	407300	89600	1300	689600
1980	204100	0	393500	0	0	597600
1981	197200	0	317100	0	0	514300
1982	124400	0	411700	2800	0	538900
1983	198400	0	404000	54900	0	657300
1984	457800	0	449600	10200	0	917600
1985	292800	3000	760200	111800	3100	1170800
1986	220300	1600	614600	35900	2900	875300
1987	196500	33200	735700	128000	5500	1098900
1988	195400	18600	1121200	58700	7200	1401200
1989	255000	15000	591700	148900	9400	1020000
1990	245600	45700	740100	50100	4200	1085800
1991	206600	107500	232500	297600	5800	850000
1992	219500	121700	717800	65400	7300	1131700
1993	226300	131200	879300	181100	4300	1422100
1994	187400	45400	366200	23200	2700	624900
1995	152500	18400	197100	198300	6800	573000
1996	120300	72500	249800	21900	6500	470900
1997	206400	91700	253000	119400	6300	676800
1998	189800	120900	1800	33200	8000	353700
1999	170900	5200	19300	88200	5400	288900

Table 6: 1999 Recreational Salmon Catch (numbers) by Species and Area

Area	Chinook	 sockeye	Coho	Pink	Chum	Total
1	21,000	30	1,000	3,400	150	25,580
2E	200	0	1,000	0	30	1,230
2W	4,600	20	2,200	500	40	7,360
3Z	2,000	0	1,000	436	27	3,463
4	456	0	55	83	0	594
6	2,609	1	0	784	21	3,415
7	2,358	23	1,597	546	37	4,561
9	2,859	4	3,018	1,580	102	7,563
12	7,813	1,538	430	52,359	607	62,747
13	9,457	142	415	23,929	4,393	38,336
14	8,611	4	7	566	0	9,188
15	683	0	4	102	0	789
16	4,494	0	0	2	0	4,496
17	8,706	11	8	30	0	8,755
18	801	2	0	174	0	977
19	7,968	332	0	2,895	0	11,195
20	5,770	24	90	204	7	6,095
23A	7,585	2,870	2,373	7	0	12,835
23B	40,361	153	3,934	414	14	44,876
24	11,765	0	2,091	15	0	13,871
25	15,966	0	0	0	0	15,966
26	2,592	0	0	0	0	2,592
28	1,368	0	3	6	0	1,377
29AB	915	0	31	130	7	1,083
Totals	170,937	5,154	19,256	88,162	5,435	288,944

Table 7: Aboriginal Salmon Catch (numbers) by Species and Year, 1951-1999

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1951	14,300	143,000	22,100	10,500	75,500	265,400
1952	19,100	152,800	22,200	9,400	66,600	270,200
1953	21,500	170,300	25,800	12,700	47,700	278,100
1954	22,100	147,500	29,000	7,000	38,800	244,500
1955	20,500	105,100	30,900	19,800	43,100	219,400
1956	17,400	129,900	29,500	17,900	38,800	233,600
1957	18,000	182,800	30,700	39,500	50,100	321,100
1958	19,900	183,300	29,600	21,700	42,000	296,500
1959	22,100	132,100	28,400	28,800	50,000	261,400
1960	17,100	146,000	20,100	8,200	51,700	243,100
1961	16,600	208,700	27,500	41,800	40,300	334,900
1962	16,500	200,000	32,400	15,700	43,600	308,300
1963	15,900	285,800	26,200	55,400	35,400	418,600
1964	17,200	220,000	35,100	9,900	42,200	324,200
1965	16,400	199,800	46,700	43,400	38,900	345,200
1966	14,400	231,800	44,000	17,600	37,500	345,300
1967	14,700	191,100	19,600	35,700	34,800	295,900
1968	16,700	208,500	40,500	14,000	59,500	339,200
1969	18,900	245,400	23,500	31,900	35,900	355,600
1970	26,200	245,900	35,800	31,200	43,900	383,000
1971	21,700	280,600	36,500	47,000	38,600	424,300
1972	23,500	231,000	33,800	14,500	49,400	352,300
1973	22,000	285,900	27,200	66,300	49,000	450,300
1974	27,900	356,200	42,500	10,200	75,800	512,600
1975	29,900	407,100	36,500	59,000	44,200	576,800
1976	28,600	377,500	47,300	24,000	60,600	538,000
1977	36,300	434,200	36,200	51,200	54,300	612,100
1978	29,600	418,600	50,300	19,100	51,100	568,700
1979	28,000	509,300	77,100	84,100	44,200	742,700
1980	40,400	411,500	104,000	13,400	56,400	625,700
1981	39,900	644,800	98,300	88,100	68,000	939,000
1982	76,800	787,400	119,600	43,900	82,200	1,109,900
1983	65,300	650,700	76,200	207,600	68,700	1,068,400
1984	57,000	647,400	121,400	61,400	99,100	986,400
1985	54,900	760,100	85,600	158,400	102,400	1,161,400
1986	79,400	795,500	92,900	45,300	127,100	1,140,200
1987	78,400	748,200	65,900	151,200	103,400	1,147,100
1988	69,400	676,600	68,300	20,500	108,600	943,300
1989	76,900	829,500	62,300	119,700	84,000	1,172,400
1990	69,500	1,150,400	60,600	51,800	147,700	1,480,000
1991	93,700	1,027,700	61,700	177,100	92,100	1,452,200
1992	76,700	861,500	82,300	70,500	197,200	1,288,200
1993	111,100	1,522,300	95,900	37,800	655,900	2,422,800
1994	72,300	1,580,200	121,400	17,500	609,400	2,400,700
1995	38,300	851,500	117,200	186,700	143,000	1,336,700
1996	33,400	948,600	75,600	17,700	517,100	1,592,300
1997	24,900	307,500	49,800	34,900	288,600	705,700
1998	24,200	213,900	4,300	26,300	12,200	281,000
1999	30,700	230,400	18,600	62,500	43,700	385,900

Figure 1 a

READ CAREFULLY

1. Reporting of all catches to the Dept. of Fisheries and Oceans is the Responsibility of the fisherman and a condition of licence renewal.
2. Accurate catch reports must include the map number or numbers showing the area in which your fish were caught.
3. The statistical areas shown on this map are to be used as a guide only. For more exact information refer to the Pacific Fishery Management Area Regulations.

● Dept of Fisheries and Oceans Office
 — Statistical areas
 — Surfline
 Note: All areas revised February 1985

Fisheries and Oceans Pêches et Océans



STATISTICAL AREA MAP

SHOWING AREAS OF CATCH FOR BRITISH COLUMBIA WATERS SOUTHERN HALF

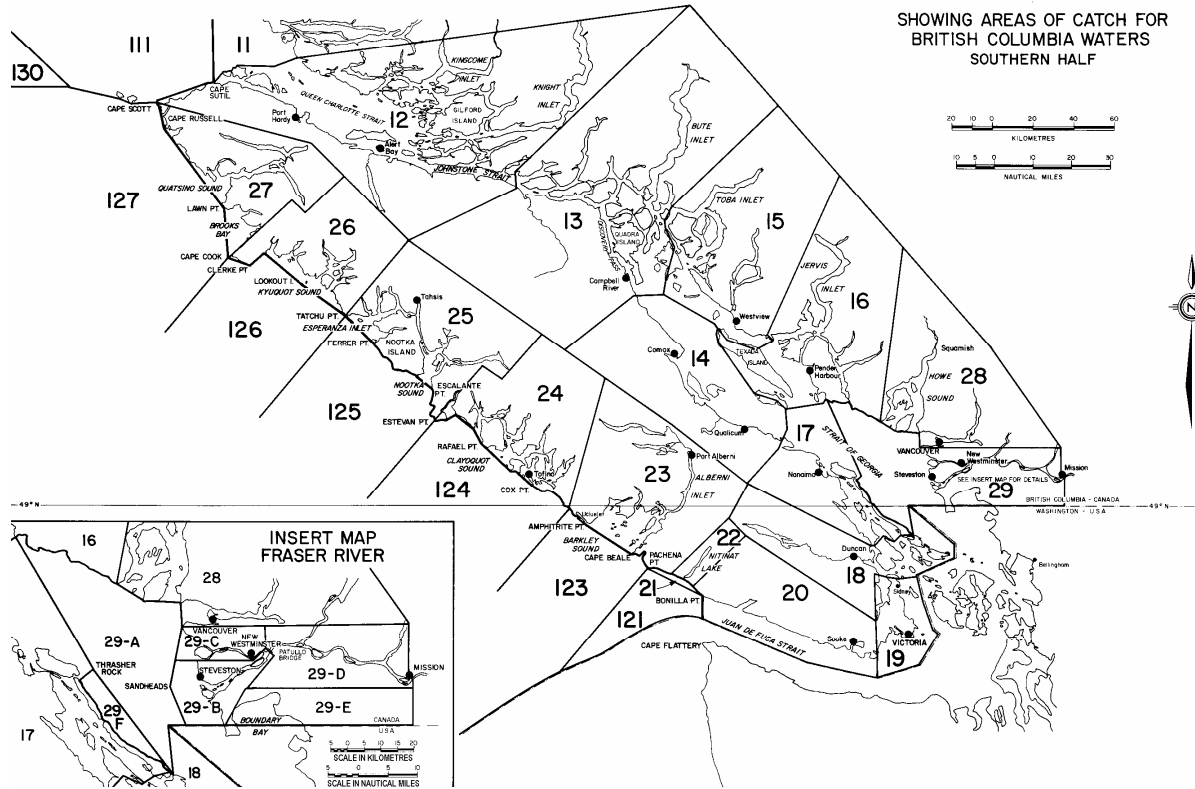


Figure 1 b

READ CAREFULLY

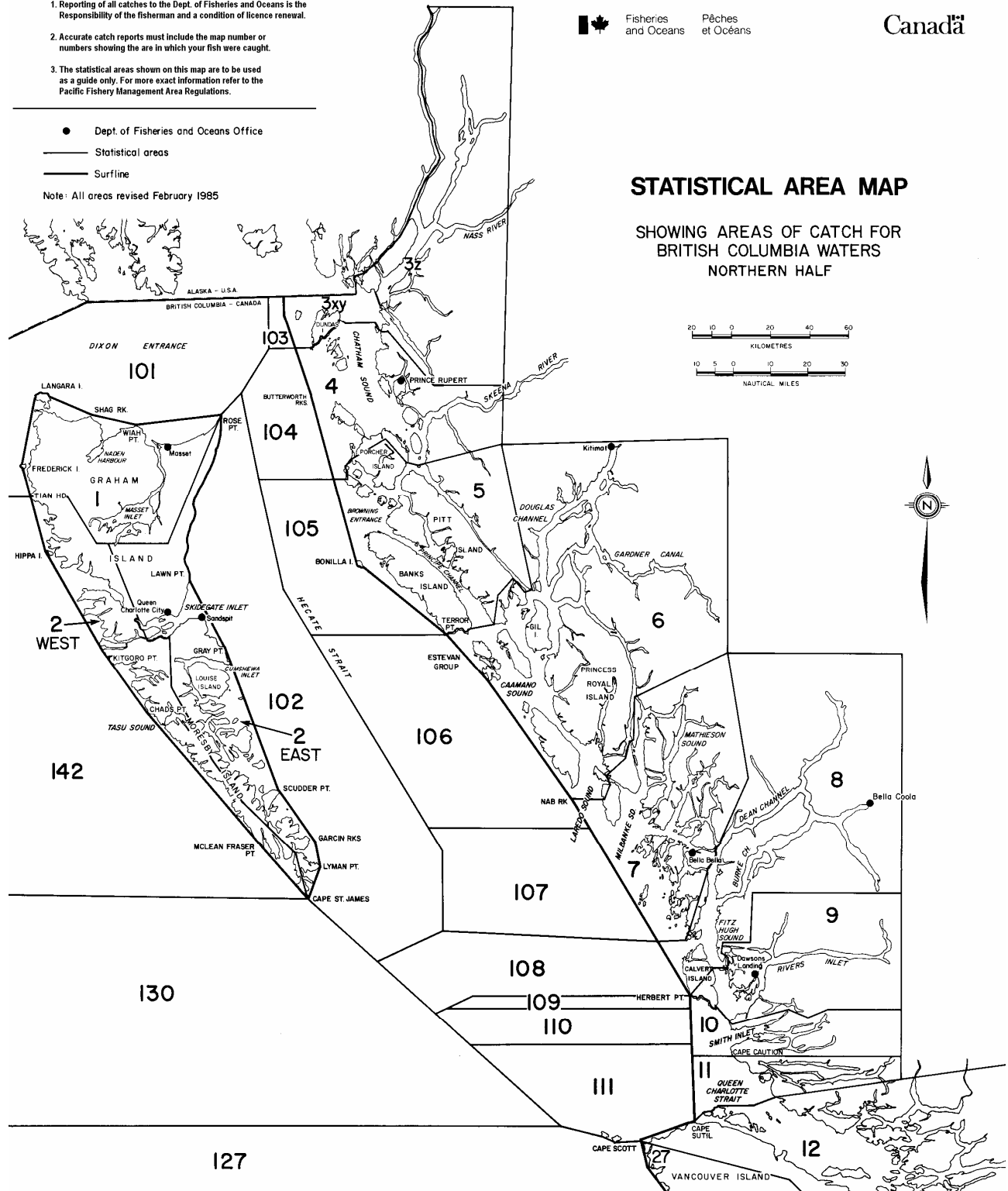
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- Dept. of Fisheries and Oceans Office
- Statistical areas
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Note: All areas revised February 1985

 Fisheries and Oceans Pêches et Océans





STATISTICAL AREA MAP

SHOWING AREAS OF CATCH FOR
BRITISH COLUMBIA WATERS
NORTHERN HALF

