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An update on catch trends for Pacific salmon in British Columbia Canada

by

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ABSTRACT

Irvine, J.R., L. Biagini, and M. Poon. 2005. An update on catch trends for Pacific salmon in British Columbia Canada. (NPAFC Doc. 868). 14p. Fisheries and Oceans Canada.

This document reports preliminary estimates for commercial catch (numbers and total weight), recreational catch (numbers only) and aboriginal catch (numbers only) for the five major salmon species caught in British Columbia (B.C.) waters from 1952 (commercial), 1953 (recreational), or 1951 (aboriginal) to 2004. Catches include non-Canadian fish caught in B.C. and exclude Canadian fish caught outside B.C. Some changes from previous documents resulted from ongoing efforts to standardize estimation approaches. In general, preliminary catch estimates for 2004 were lower than most other recent years.

INTRODUCTION

The six species of salmon native to British Columbia (B.C.) contribute to commercial, recreational, and aboriginal fisheries. Commercial net fisheries tend to focus on sockeye (*Oncorhynchus nerka*), chum (*O. keta*), and pink (*O. gorbuscha*) salmon, while recreational harvesters catch mostly chinook (*O. tshawytscha*), coho (*O. kisutch*), and steelhead (*O. mykiss*). All species of salmon are valued by aboriginal fisheries, which usually occur in terminal areas within freshwater. Steelhead constitute a minor component of the catch, and are not discussed further in this document.

In general, catch data for commercial fisheries are reasonably reliable and time series analyses can be undertaken on these. Unfortunately, methods to gather recreational and aboriginal catch data have been more variable and time series analysis of these data should not be undertaken without a good understanding of the limitations of the data.

Commercial catch data are often used as indices of abundance for salmon. For sockeye, chum, and pink salmon, since fishery exploitation rates are often high, catch data may be useful indices of abundance when exploitation rates have been consistent over time. However, since numerous factors control abundance and catch, we do not advocate the use of catch data alone to assess stock status (e.g. see Irvine and Chen 2004).

This document reports data on commercial catch (numbers and total weight), recreational catch (numbers only) and aboriginal catch (numbers only) for the five major salmon species caught in B.C. waters from 1952 (commercial), 1953 (recreational), or 1951 (aboriginal) to 2004. Catches include non-Canadian fish caught in B.C. and exclude Canadian fish caught outside B.C.

METHODS

The Regional Data Unit within Pacific Region of Fisheries and Oceans Canada is responsible for compiling, producing, maintaining, and disseminating official catch statistics for the Pacific Region, according to Regional standards and procedures. Official catches are the Region's best estimates of catch. Some changes from earlier documents resulted from ongoing efforts to standardize estimation approaches. A brief description of the approaches used for the 3 major fishery types follows.

Commercial Catch Estimates

Official commercial catch data include weights and numbers (pieces) of fish caught. When practicable, official catch includes released catch as well as retained catch.

Although various harvester produced data (e.g. sales slips, logbooks, at-sea hails) and independently verified data (e.g. on-board observes and dockside monitors) have been used to estimate commercial salmon catches, sales slips are the most important source of information. Sales slips record gear type, area of catch, date of landing, species, volume and value of the landing. Sales slips document transactions between commercial fishermen and fish buying companies. Since the value of the landing and resulting payments are based primarily on the landed weight, weight estimates are considered reasonably accurate.

Pieces are also recorded on sales slips. Since this information is generally not used to determine the payment to the fishermen, there is less incentive to report pieces as accurately as landed weights. Pieces are usually estimated by applying an arbitrary estimated average weight to the landed weight, particularly for high volume net landings.

The accuracy of chinook and coho piece estimates improved in the mid-1980's when data from the Mark Recovery Program were incorporated. This program estimates numbers of chinook and coho caught along the coast.

The accuracy of piece estimates for sockeye, chum and pink salmon has also improved during the last decade. Samples of 200, 100 and 200 fish, respectively, per Mark Recovery region/statistical week/gear are individually weighed. These data are used, when appropriate, to estimate pieces based on accurate estimates of total landed weight.

Recreational Catch Estimates

Official recreational catch consists of pieces only. When available, this includes numbers released as well as retained. Creel surveys are the primary source of recreational catch data. The time/area resolution depends on the survey methodology and sampling intensity. Recreational catch is usually resolved by Statistical Area and month, but is sometimes only available by year.

General one-day surveys covering tidal sport fishing activity in major fishing regions began in 1957. These surveys provided a cross section of tidal sport catch and effort and supplemented estimates from other sources.

The largest creel survey estimates catch and effort in the Strait of Georgia. Dockside interviews collect catch per unit effort and aerial overflights gather effort data.

Aboriginal Catch Estimates

Official aboriginal catch consists of pieces. Aboriginal catch statistics can usually be resolved by statistical area and year, but areas may be grouped in some cases. A variety of approaches have been used to generate estimates.

RESULTS

During 2004, fisheries in B.C. were again managed with a strong emphasis on conservation, with the result that catches were relatively modest.

Commercial Fisheries

Total commercial catches, by numbers and weight, are reported in Tables 1 and 2, respectively, for 1952-2004. Tables 3 and 4 provide a breakdown of salmon catch by major Statistical Area in 2004, by numbers and weight, respectively. Weights are given as round equivalents.

The 2004 catch was ~25,613 tonnes, about 38% of the average since 1952 (Table 2). The sockeye catch was ~4,323 tonnes, and the chum catch was ~14,112 tonnes. Chinook and coho catches in 2004, although much lower than historically, were higher than the previous several years.

Recreational Fisheries

Recreational catches for 1953-2004 are given in Table 5, with a breakout by major statistical area for 2004 in Table 6. It should be noted that the locations and time periods surveyed vary from year to year, and therefore annual summaries are not valid trend indicators. Chinook and coho traditionally are the main targets of recreational anglers, but harvest of these species has declined during the past decade in response to conservation concerns, and recreational catch of other species, notably pink and chum salmon, has been an increasing proportion of the catch.

Aboriginal Fisheries

Aboriginal catch for 1951-2004 is given in Table 7. The data for 2000-2004 are incomplete, especially 2004, with many areas not represented. The data for 1998 and 1999 are complete, but subject to further revision. In general, reporting inconsistencies with aboriginal catch data make them difficult to use as trend indicators.

LITERATURE CITED

Irvine, J. R. and D. G. Chen. 2004. Salmon Indices – The Importance of Using Appropriate Data. (NPAFC Doc. 808). 10 p.

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Table 1: Preliminary commercial salmon catches (numbers) by species and year, 1952-2004

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1952	904,000	4,838,000	2,719,000	11,217,000	2,479,000	22,157,000
1953	1,017,000	5,914,000	2,871,000	11,103,000	4,672,000	25,577,000
1954	876,000	6,702,000	2,442,000	5,439,000	5,838,000	21,297,000
1955	876,000	2,835,000	2,976,000	11,240,000	1,569,000	19,496,000
1956	982,000	3,257,000	3,041,000	7,352,000	2,458,000	17,090,000
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	26,208,000
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	11,576,000
1961	700,000	4,564,000	3,299,000	8,305,000	1,218,000	18,086,000
1962	720,000	3,499,000	3,623,000	23,429,000	1,496,000	32,767,000
1963	800,000	2,086,000	3,418,000	12,200,000	1,463,000	19,967,000
1964	961,000	3,619,000	4,147,000	9,628,000	2,253,000	20,608,000
1965	981,000	3,019,000	4,437,000	5,108,000	633,000	14,178,000
1966	1,163,000	4,020,000	5,402,000	17,261,000	1,311,000	29,157,000
1967	1,099,000	6,748,000	3,151,000	9,712,000	1,130,000	21,840,000
1968	1,054,000	6,346,000	5,147,000	20,247,000	3,095,000	35,889,000
1969	1,076,000	4,267,000	2,341,000	2,564,000	1,310,000	11,558,000
1970	1,143,000	4,067,000	3,347,000	13,580,000	3,679,000	25,816,000
1971	1,518,000	6,304,000	4,608,000	8,445,000	1,263,000	22,138,000
1972	1,508,000	3,561,000	3,208,000	13,995,000	6,031,000	28,303,000
1973	1,372,000	7,583,000	3,338,000	6,493,000	6,225,000	25,011,000
1974	1,422,000	7,222,000	3,511,000	7,372,000	2,202,000	21,729,000
1975	1,380,000	2,270,000	2,225,000	4,620,000	1,147,000	11,642,000
1976	1,499,000	4,813,000	3,485,000	10,344,000	1,901,000	22,042,000
1977	1,470,000	6,346,000	3,265,000	10,307,000	1,088,000	22,476,000
1978	1,352,000	7,222,000	3,350,000	10,748,000	2,979,000	25,651,000
1979	1,328,000	5,669,000	3,630,000	11,807,000	851,000	23,285,000
1980	1,269,000	3,186,000	3,415,000	8,364,000	3,414,000	19,648,000
1981	1,133,000	8,413,000	2,815,000	18,072,000	1,116,000	31,549,000
1982	1,234,000	10,057,000	3,171,000	2,675,000	2,966,000	20,103,000
1983	950,000	5,500,000	4,125,000	23,944,000	999,000	35,518,000
1984	1,010,000	5,065,000	3,599,000	7,491,000	1,843,000	19,008,000
1985	869,000	12,217,000	2,946,000	20,224,000	5,470,000	41,726,000
1986	813,000	10,548,000	4,904,000	17,977,000	5,580,000	39,822,000
1987	766,000	5,373,000	3,348,000	13,349,000	2,267,000	25,103,000
1988	723,000	4,449,000	2,739,000	23,122,000	6,167,000	37,200,000
1989	648,000	13,747,000	3,425,000	17,050,000	1,809,000	36,679,000
1990	664,000	14,152,000	3,865,000	17,223,000	3,175,000	39,079,000
1991	639,000	10,336,000	3,506,000	23,977,000	2,349,000	40,807,000
1992	679,000	8,170,000	2,956,000	10,263,000	4,006,000	26,074,000
1993	619,000	18,060,000	1,889,000	10,127,000	4,221,000	34,916,000
1994	428,000	11,504,000	2,548,000	2,207,000	4,322,000	21,009,000
1995	193,000	4,412,000	1,871,000	11,727,000	2,475,000	20,678,000
1996	50,000	5,868,000	1,406,000	5,905,000	1,374,000	14,603,000
1997	207,000	10,610,000	227,000	6,481,000	1,890,000	19,415,000
1998	150,000	1,754,000	1,000	2,408,000	4,475,000	8,788,000
1999	104,000	652,000	4,000	6,065,000	946,000	7,771,000
2000	68,000	3,408,000	4,000	4,432,000	552,000	8,464,000
2001	96,000	2,534,000	14,000	6,126,000	1,149,000	9,919,000
2002	235,000	3,596,000	117,000	5,310,000	2,464,000	11,722,000
2003	297,200	2,347,400	217,800	10,331,900	2,829,900	16,024,200
2004	347,200	1,695,300	303,100	2,336,000	3,032,600	7,714,200

Table 2: Preliminary commercial salmon catch (round weight, tonnes) by species and year, 1952-2004

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1952	7,104	15,208	10,829	25,281	15,738	74,160
1953	7,717	17,456	11,377	30,476	26,883	93,909
1954	6,643	23,228	10,224	12,722	36,750	89,567
1955	6,197	8,224	11,652	31,270	8,980	66,323
1956	6,774	10,619	12,416	14,311	13,549	57,669
1957	6,262	7,770	11,272	28,297	13,456	67,057
1958	7,033	36,608	12,225	16,752	18,823	91,441
1959	6,686	8,921	9,687	17,315	11,416	54,025
1960	5,107	7,646	7,045	8,394	10,035	38,227
1961	4,486	13,150	12,235	24,731	7,217	61,819
1962	4,471	9,931	13,157	46,231	8,918	82,708
1963	5,002	5,865	12,599	29,925	7,620	61,011
1964	6,565	11,337	15,662	18,163	11,821	63,548
1965	6,266	8,010	18,128	11,343	3,288	47,035
1966	7,568	12,697	19,102	36,292	7,588	83,247
1967	7,368	18,347	10,557	25,311	6,006	67,589
1968	7,348	20,695	16,350	28,256	18,132	90,781
1969	6,916	11,923	8,517	6,816	6,617	40,789
1970	6,732	12,405	12,640	26,173	18,259	76,209
1971	9,033	18,870	14,886	19,183	5,901	67,873
1972	8,870	10,324	10,958	19,453	32,595	82,200
1973	7,928	23,386	11,703	14,457	35,566	93,040
1974	8,072	23,623	10,767	12,203	13,586	68,251
1975	7,773	6,184	8,085	11,127	5,870	39,039
1976	8,255	13,438	9,653	18,576	11,897	61,819
1977	8,058	18,928	10,493	26,818	6,565	70,862
1978	8,504	24,316	9,989	16,688	17,259	76,756
1979	7,456	15,745	11,211	26,887	5,092	66,391
1980	7,288	8,534	10,012	15,304	18,750	59,888
1981	6,451	22,763	8,175	41,661	6,664	85,714
1982	7,723	32,780	10,073	4,330	16,429	71,335
1983	5,865	15,523	11,387	43,068	5,325	81,168
1984	6,826	13,965	11,002	13,138	9,804	54,735
1985	5,964	34,292	9,783	41,072	25,751	116,862
1986	5,463	33,573	14,448	32,134	27,443	113,061
1987	5,717	16,321	9,140	29,329	11,968	72,475
1988	6,434	12,927	7,681	35,079	32,982	95,103
1989	5,680	37,312	9,494	33,758	10,148	96,392
1990	5,667	40,327	11,478	28,572	18,706	104,750
1991	5,496	27,375	10,932	38,216	11,146	93,165
1992	5,786	22,655	7,955	16,239	19,560	72,195
1993	5,222	46,101	4,679	17,473	18,808	92,283
1994	3,864	33,362	8,325	3,684	22,129	71,364
1995	1,624	11,244	5,230	21,524	13,190	52,812
1996	451	16,675	4,188	9,386	7,136	37,836
1997	1,758	27,382	807	13,303	9,447	52,697
1998	1,506	5,466	5	4,269	21,683	32,929
1999	806	1,817	14	10,361	5,436	18,434
2000	528	9,501	15	7,861	3,095	21,000
2001	714	7,694	50	11,947	6,372	26,777
2002	1,675	10,067	460	8,610	12,343	33,155
2003	2,169	6,286	800	15,447	13,722	38,424
2004	2,460	4,323	1,143	3,575	14,112	25,613

Table 3: Preliminary 2004 commercial salmon catch (numbers) by species and Statistical Area

AREA	CHINOOK	CHUM	COHO	PINK	SOCKEYE	Grand Total
1	114,719	48	123,578	22,198	1,261	261,803
2 EAST	1,701	60,078	20,388	44,829		126,996
2 WEST	40,682	7	2,860	376	4	43,929
3	6,424	94,474	44,927	1,316,479	482,868	1,945,172
4	5,860	11,359	7,022	176,977	152,951	354,169
5	22	3,587	14,252	158,347	7,786	183,993
6	95	165,062	18,409	67,675	5,811	257,052
7	68	346,209	24,834	122,154	2,305	495,571
8	5,241	886,448	36,644	328,446	4,983	1,261,761
11	815	225	2	1,748	9,123	11,914
12	618	491,609	47	78,065	557,319	1,127,661
13	136	475,647	40	18,672	160,249	654,745
14		99,826				99,826
17		4,178				4,178
18		5,958				5,958
20		17		24	8,535	8,576
21	1	154,248			43	154,292
23	57,218	17,819	525	2	70,113	145,677
24	8,185	75				8,260
25	13,197	141,427	3,805			158,429
26	62,952	2,024		12		64,989
27	14,458	396		1		14,854
29AB	4,771	55,526		6	203,005	263,308
29C	7,636	16,399		1	8,914	32,950
TAKU	2,415		5,727		20,050	28,192
Grand Total	347,214	3,032,644	303,060	2,336,011	1,695,320	7,714,253

Table 4: Preliminary 2004 commercial salmon catch (round weight, tonnes) by species and Statistical Area¹

AREA	CHINOOK	CHUM	COHO	PINK	SOCKEYE	Grand Total
1	913	0	475	45	4	1,438
2 EAST	14	285	77	64		439
2 WEST	340	0	11	1	0	352
3	43	439	167	1,884	1,221	3,754
4	48	56	27	276	363	771
5	0	17	54	241	20	333
6	1	828	72	113	19	1,031
7	1	1,575	94	216	5	1,891
8	41	4,380	121	599	14	5,155
11	6	1	0	3	24	34
12	4	2,206	0	106	1,441	3,757
13	1	2,148	0	27	421	2,596
14		442				442
17		19				19
18		25				25
20		0		0	22	22
21	0	662			0	663
23	291	76	2	0	170	539
24	49	0				49
25	93	614	17			724
26	408	9		0		416
27	99	2		0		101
29AB	35	249		0	520	804
29C	58	79		0	23	160
TAKU	16		25		56	97
Grand Total	2,460	14,112	1,143	3,575	4,323	25,613

¹Catches <0.5 tonnes appear as 0.

Table 5: Preliminary recreational salmon catch (numbers) by species and year for 1953-2004

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1953	74,400	0	130,200	0	0	204,600
1954	75,900	0	134,400	0	0	210,300
1955	89,200	0	184,600	0	0	273,800
1956	106,500	0	197,500	0	0	304,000
1957	101,300	0	252,300	10,200	0	363,700
1958	106,000	400	261,800	3,100	0	371,300
1959	93,600	0	243,000	36,800	0	373,500
1960	68,900	0	238,100	800	0	307,800
1961	46,300	100	157,200	26,500	0	230,000
1962	55,400	100	184,100	3,500	0	243,000
1963	61,000	100	197,500	111,000	0	369,500
1964	49,300	0	181,000	2,300	0	232,600
1965	52,800	100	188,600	9,600	0	251,000
1966	61,400	0	253,000	5,000	0	319,400
1967	61,300	0	169,200	29,100	900	260,500
1968	63,700	0	218,500	5,600	0	287,900
1969	66,800	1,400	143,900	36,400	0	248,400
1970	97,500	500	236,900	10,700	0	345,600
1971	85,600	200	371,100	46,000	0	503,000
1972	294,600	1,900	345,200	12,100	0	653,800
1973	281,500	4,500	384,400	51,700	0	722,200
1974	282,200	3,400	788,100	16,400	0	1,090,100
1975	439,700	2,300	469,800	28,500	0	940,300
1976	515,500	1,200	440,400	16,600	0	973,800
1977	255,000	900	255,200	33,900	1,800	546,800
1978	276,000	300	378,700	6,500	4,900	666,400
1979	188,900	2,400	407,300	89,600	1,300	689,600
1980	204,100	0	393,500	0	0	597,600
1981	197,200	0	317,100	0	0	514,300
1982	124,400	0	411,700	2,800	0	538,900
1983	198,400	0	404,000	54,900	0	657,300
1984	457,800	0	449,600	10,200	0	917,600
1985	292,800	3,000	760,200	111,800	3,100	1,170,800
1986	220,300	1,600	614,600	35,900	2,900	875,300
1987	196,500	33,200	735,700	128,000	5,500	1,098,900
1988	195,400	18,600	1,121,200	58,700	7,200	1,401,200
1989	255,000	15,000	591,700	148,900	9,400	1,020,000
1990	245,600	45,700	740,100	50,100	4,200	1,085,800
1991	206,600	107,500	232,500	297,600	5,800	850,000
1992	219,500	121,700	717,800	65,400	7,300	1,131,700
1993	226,300	131,200	879,300	181,100	4,300	1,422,100
1994	187,400	45,400	366,200	23,200	2,700	624,900
1995	152,500	18,400	197,100	198,300	6,800	573,100
1996	120,300	72,500	249,800	21,900	6,500	471,000
1997	206,400	91,700	253,000	119,400	6,300	676,800
1998	128,300	62,500	1,800	18,100	7,000	217,700
1999	156,500	95,800	19,600	129,000	1,500	402,400
2000	115,700	32,200	31,400	70,800	4,900	255,000
2001	144,900	42,200	133,200	95,800	7,000	423,100
2002	217,700	61,000	141,300	20,700	18,300	459,000
2003	209,400	130,500	173,800	158,900	10,700	683,300
2004	192,800	134,700	137,800	25,500	23,500	514,300

Table 6: Preliminary 2004 Recreational Salmon Catch (numbers) by Species and Statistical Area

STATISTICAL AREA	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
AREA 1	52,000	110	41,600	700	1,450	95,860
AREA 2E	250		1,000	30	30	1,310
AREA 2W	21,750	20	10,900	450	490	33,610
AREA 3 COMBINED	4,200	10	10,500	1,000	75	15,785
AREA 4	4,200	10	10,500	1,000	75	15,785
AREAS 5-6	3,600	2	3,500	350	100	7,552
AREA 7	6,465	13	10,039	282	181	16,980
AREA 8	3,015	1	6,387	2,059	421	11,883
AREA 9	1,465	2	18,192	2,170	403	22,232
AREA 12	12,619	1,352	1,861	12,166	512	28,510
OUTSIDE AREA 21	953	6				959
OUTSIDE AREA 23	10,026	7	3,046	415	6	13,500
OUTSIDE AREA 24	4,220	23		18	3	4,264
OUTSIDE AREA 26	1,535					1,535
AREA 13	8,099	1,844		4,010	18,943	32,896
AREA 14	1,299			85		1,384
AREA 15	507					507
AREA 16	229					229
AREA 17	655			64		719
AREA 18	925					925
AREA 19	3,775		81	13	32	3,901
AREA 20	25,770	1,602	4,467	399	333	32,571
AREA 21	388	4				392
AREA 23	6,895	79,244	9,852	230	33	96,254
AREA 24	1,501		1,109			2,610
AREA 25	27	6	3,403	54		3,490
AREA 26	2,773	6		6		2,785
AREA 28	1,479	70			255	1,804
AREA 29AB	391	2			2	395
AREA 29 ABOVE MISSION	11,741	50,388	1,352		196	63,677
TOTALS	192,752	134,722	137,789	25,501	23,540	514,304

Table 7: Preliminary aboriginal salmon catch (numbers) by species and year, 1951-2004

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	43,400	970,300	75,600	17,700	519,700	1,626,700
1997	36,200	316,800	49,900	34,900	296,100	733,900
1998	29,800	325,500	4,500	44,800	22,600	427,200
1999	70,000	512,400	28,000	151,600	63,400	825,400
2000	50,900	1,593,500	92,400	33,100	91,500	1,861,400
2001	56,000	972,000	19,200	212,800	140,000	1,400,000
2002	42,200	1,083,600	18,100	18,100	82,900	1,244,900
2003	54,500	902,500	12,400	334,500	101,000	1,404,900
2004	17,500	148,000	9,400	19,900	1,800	196,600

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

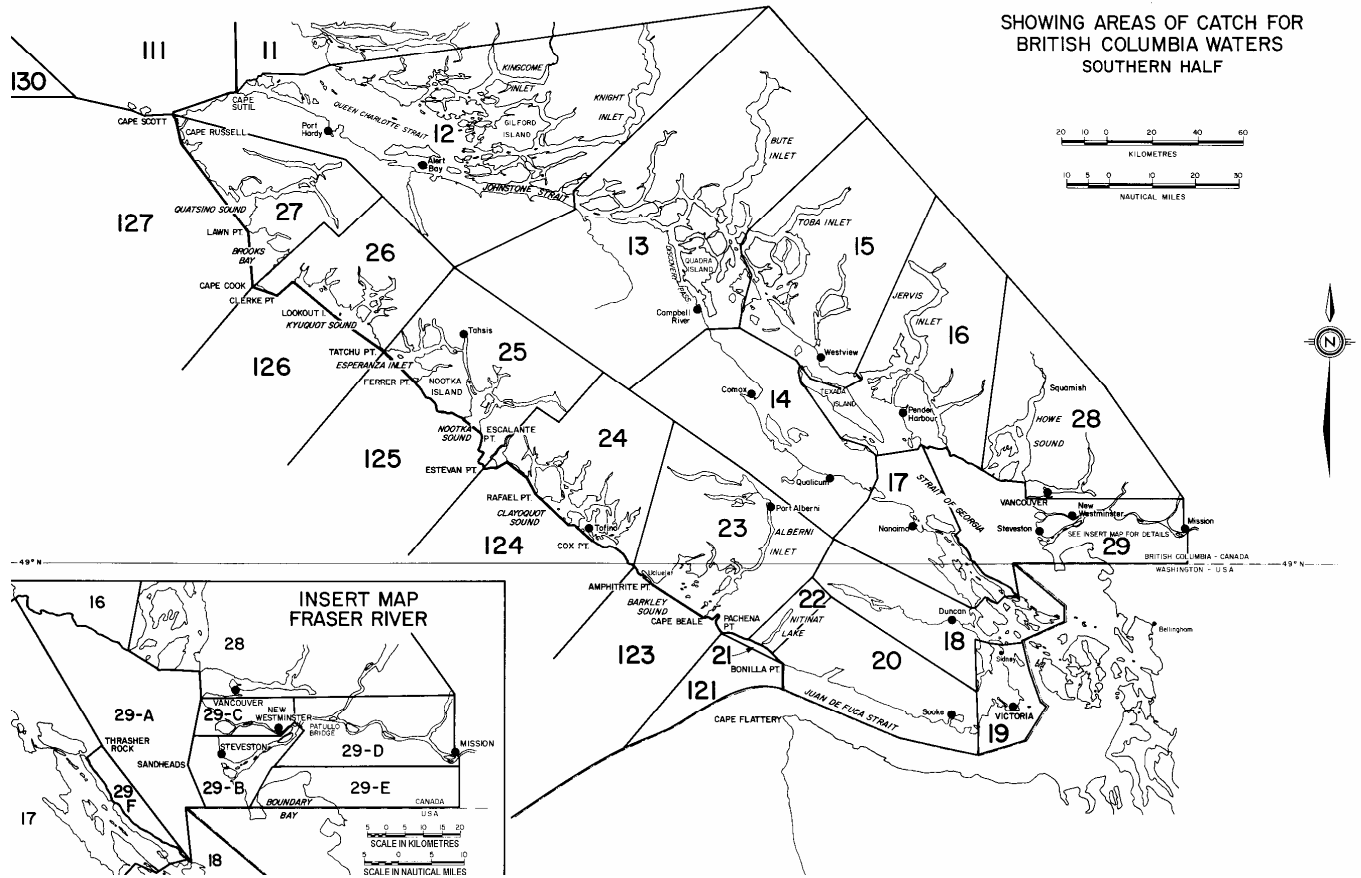


Figure 1 b

READ CAREFULLY

1. Reporting of all catches to the Dept. of Fisheries and Oceans is the Responsibility of the fisherman and a condition of licence renewal.
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- Dept. of Fisheries and Oceans Office
- Statistical areas
- Surffline

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

