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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. Bijsterveld and L. Nagy. 2003. An update on catch trends for Pacific salmon in British Columbia Canada. (NPAFC Doc. No. 709). 14 p. Dept. of Fisheries and Oceans, Science Branch & Corporate Services Branch - Pacific Region, Vancouver, B.C. Canada. V6C 3S4

This document reports 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 2002. 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 2002 exceeded most other recent years, although they were well below long term averages, at least in part because of an emphasis on conservation.

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, numerous factors control abundances and catches. We do not advocate the use of catch data alone to assess stock status.

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 2002. 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 2002, 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 1952-2002. Tables 3 and 4 provide a breakdown of salmon catch by major Statistical Area in 2002, by numbers and weight, respectively. Weights are given as round equivalents.

The 2002 catch was 33,155 tonnes, about one half of the average since 1952, and 25 percent higher than the 2001 commercial catch (Table 2). The sockeye catch was 10,067 tonnes, and the chum catch was 12,343 tonnes. Chinook and coho catches in 2002, although much lower than historically, were higher than the previous several years. Pink catches in 2002 were reasonably high considering this was an off year for Fraser River pink salmon.

Recreational Fisheries
Recreational catches for 1953-2002 are given in Table 5, with a breakout by major statistical area for 2002 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 1951-2002 is given in Table 7. The data for 1997-2002 are incomplete, with many areas not represented. The data for 1995 and 1996 are complete, but subject to further revision. In general, reporting inconsistencies with aboriginal catch data make it difficult to use the annual summaries as trend indicators. Estimates for 2002 will probably change.

LIST OF TABLES

Table 1. Commercial salmon catch (numbers) by species and year, 1952-2002
Table 2. Commercial salmon catch (round weight, tonnes) by species and year, 1952-2002
Table 3. 2002 commercial salmon catch (numbers) by species and Statistical Area
Table 4. 2002 commercial salmon catch (round weight, tonnes) by species and Statistical Area
Table 5. Recreational salmon catch (numbers) by species and year, 1953-2002
Table 6. 2002 recreational salmon catch (numbers) by species and Statistical Area
Table 7. Aboriginal salmon catch (numbers) by species and year, 1951-2002

LIST OF FIGURES

Fig. 1 a. Major statistical reporting areas for Pacific salmon catches in southern British Columbia.
Fig. 1 b. Major statistical reporting areas for Pacific salmon catches in northern British Columbia.

Table 1: Commercial salmon catch (numbers) by species and year, 1952-2002

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

Table 2: Commercial salmon catch (round weight, tonnes) by species and year, 1952-2002

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

Table 3: 2002 commercial salmon catch (numbers) by species and Statistical Area

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
AREA 1	49,507	313	81,552	25,048	498	156,917
AREA 2E	1,015	3	9,345	21,528	35,496	67,387
AREA 2W	46,267	4	6,805	21,740	70,678	145,494
AREA 3	5,639	710,954	4,071	2,505,207	54,916	3,280,787
AREA 4	10,212	545,408	109	505,930	15,617	1,077,276
AREA 5	58	8,735	3,580	471,981	1,532	485,887
AREA 6	582	20,024	6,826	515,887	202,779	746,099
AREA 7	261	201	4,482	95,529	189,179	289,652
AREA 8	4,584	5,792	0	1,033,271	385,489	1,429,136
AREA 11	32	16,095	0	4,581	1,490	22,197
AREA 12	950	454,128	0	89,427	239,333	783,838
AREA 13	128	167,563	1	18,153	356,238	542,084
AREA 14	1	0	0	0	192,767	192,768
AREA 17	0	0	0	0	125	125
AREA 18	49	11,729	0	68	152,988	164,834
AREA 19	0	0	0	0	15,398	15,398
AREA 20	188	367,655	0	227	37	368,107
AREA 21	0	0	0	0	397,938	397,938
AREA 23	57,450	447,013	3	146	70	504,683
AREA 24	10,957	74,014	0	64	120	85,155
AREA 25	5,505	9,333	0	73	106,156	121,067
AREA 26	28,771	25,137	0	480	735	55,123
AREA 27	5,285	9,314	0	406	322	15,327
AREA 29AB	3,419	678,716	0	42	26,449	708,625
AREA 29C	0	27	0	0	0	27
AREA 29D	3,811	43,948	0	0	17,116	64,876
TOTALS	234,670	3,596,108	116,776	5,309,787	2,463,465	11,720,806

Table 4: 2002 commercial salmon catch (round weight, tonnes) by species and Statistical Area[1]

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
AREA 1	410	1	319	47	2	779
AREA 2E	9	0	37	38	171	255
AREA 2W	405	0	28	39	336	808
AREA 3	45	2,000	16	4,116	331	6,508
AREA 4	87	1,525	0	844	90	2,546
AREA 5	0	23	14	761	9	807
AREA 6	5	60	28	820	1,114	2,027
AREA 7	2	0	18	152	816	988
AREA 8	49	17	0	1,630	2,227	3,9223
AREA 11	0	50	0	7	8	645
AREA 12	6	1,427	0	128	1,189	2,750
AREA 13	1	536	0	26	1,800	2,363
AREA 14	0	0	0	0	952	952
AREA 17	0	0	0	0	1	1
AREA 18	0	36		0	726	762
AREA 19	0	0	0	0	74	74
AREA 20	1	951		0	0	952
AREA 21	0	0	0	0	1,800	1,800
AREA 23	271	866	0	0	0	1,137
AREA 24	52	246	0	0	1	299
AREA 25	35	30	0	0	458	523
AREA 26	197	88	0	1	4	290
AREA 27	38	32	0	1	2	73
AREA 29AB	27	2,043	0	0	136	2,206
AREA 29D	35	136	0	0	96	267
TOTALS	1,675	10,067	460	8,610	12,343	33,155

[1]Catches <0.5 tonnes appear as 0.

Table 5: Recreational salmon catch (numbers) by species and year for 1953-2002

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1953	74,400	0	130200	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	1170,800
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	573,000
1996	120,300	72,500	249,800	21,900	6,500	470,900
1997	206,400	91,700	253,000	119,400	6,300	676,800
1998	189,800	120,900	1,800	33,200	8,000	353,700
1999	170,900	5,200	19,300	88,200	5,400	288,900
2000	110,300	31,500	34,200	47,300	4,800	228,000
2001	109,841	18,858	108,059	155,695	15,409	407,862
2002	211,607	60,978	113,868	15,652	17,783	419,888

Table 6: 2002 recreational salmon catch (numbers) by species and Statistical Area

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
AREA 1	31,136	45	25,352	1,248	297	58,078
AREA 2W	6,031	0	3,656	20	54	9,761
AREA 3	7,868	21	20,257	1,847	130	30,123
AREA 6	2,616	1	2,543	350	61	5,571
AREA 12	6	62	0	0	2,330	2,398
AREA 13	24,918	2,668	1,870	11,004	12,105	52,565
AREA 14	14,852	0	1,189	563	187	16,791
AREA 15	1,448	0	0	0	51	1,499
AREA 16	2,150	0	3	0	22	2,175
AREA 17	4,115	0	13	59	981	5,168
AREA 18	1,370	0	0	0	103	1,473
AREA 19	1,482	93	240	2	554	2,371
AREA 20	17,258	978	3,933	323	329	22,821
AREA 21	100	0	566	0	0	666
AREA 23	60,837	55,717	22,749	37	218	139,558
AREA 24	14,465	0	10,576	0	0	25,041
AREA 25	16,395	0	17,616	199	1	34,211
AREA 26	2,315	0	1,818	0	0	4,133
AREA 28	1,052	80	1,336	0	151	2,619
AREA 29AB	1,193	1,313	151	0	209	2,866
Total	211,607	60,978	113,868	15,652	17,783	419,888

Table 7: Aboriginal salmon catch (numbers) by species and year, 1951-2002

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	56,400	409,500	9,400	90,500	19,700	585,500
2000	48,200	1,519,000	70,800	24,100	74,000	1,736,100
2001	44,800	781,700	14,400	133,800	74,800	1,049,500
2002	6,400	119,600	5,700	14,500	500	146,700

Figure 1 a

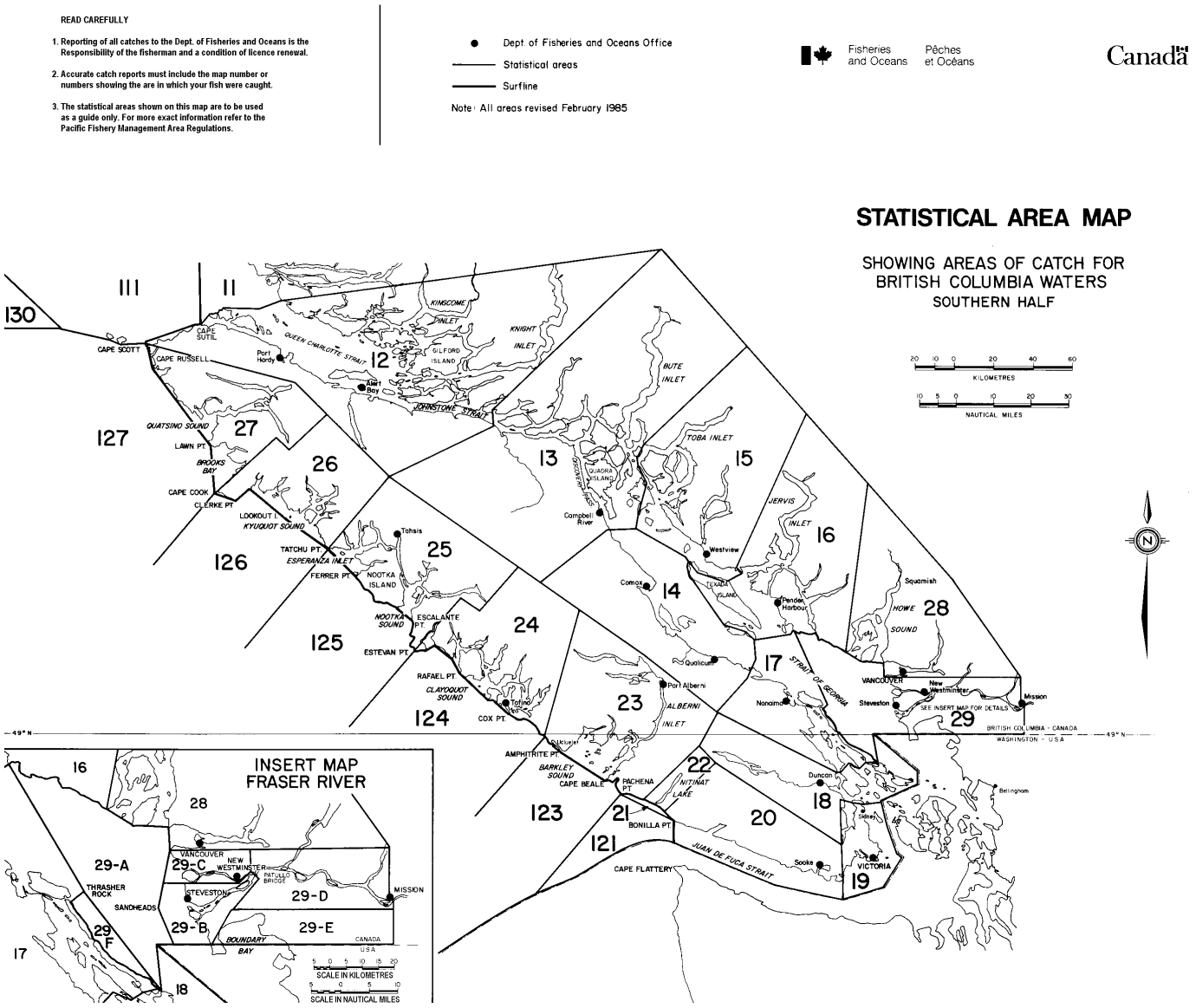
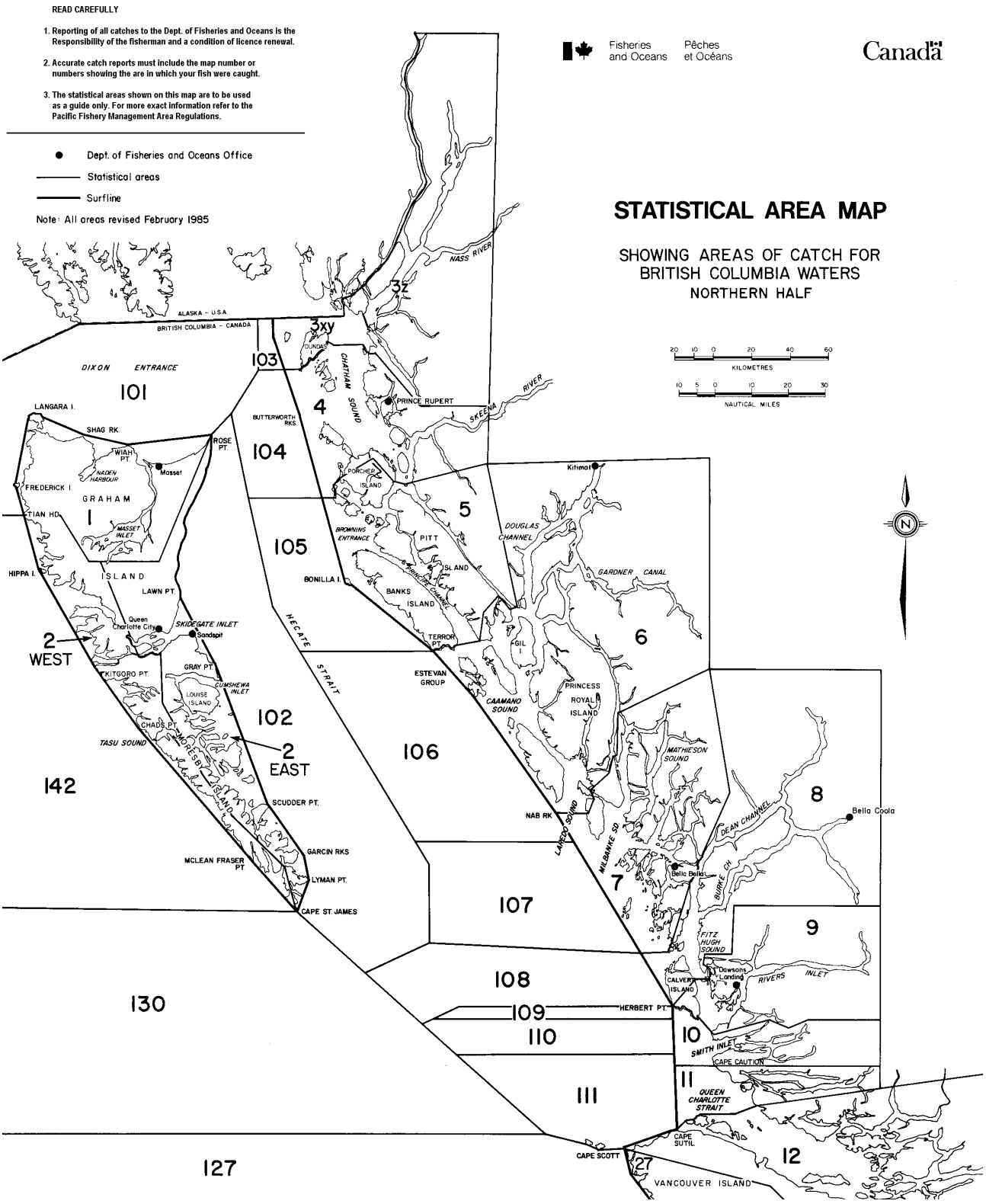

READ CAREFULLY
1. Reporting of all catches to the Dept. of Fisheries and Oceans is the Responsibility of the fisherman and a condition of licence renewal.
2. Accurate catch reports must include the map number or numbers showing the are in which your fish were caught.
3. The statistical areas shown on 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
Canada
STATISTICAL AREA MAP
SHOWING AREAS OF CATCH FOR BRITISH COLUMBIA WATERS
SOUTHERN HALF
KILOMETRES
NAUTICAL MILES
INSERT MAP FRASER RIVER
SCALE IN KILOMETRES
SCALE IN NAUTICAL MILES
BRITISH COLUMBIA - CANADA
WASHINGTON - U.S.A.
SEE INSERT MAP FOR DETAILS

Figure 1 b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STATISTICAL AREA MAP
SHOWING AREAS OF CATCH FOR BRITISH COLUMBIA WATERS
NORTHERN HALF
KILOMETRES
NAUTICAL MILES
ALASKA - U.S.A.
BRITISH COLUMBIA - CANADA
DIXON ENTRANCE
LANGARA I.
SHAG RK.
WIAH PT.
NADEN HARBOUR
Masset
FREDERICK I.
GRAHAM ISLAND
TIAN HD.
MASSET INLET
HIPPA I.
LAWN PT.
Queen Charlotte City
SKIDEGATE INLET
Sandspit
KITGORO PT.
GRAY PT.
LOUISE ISLAND
CUMSHEWA INLET
CHAOS PT.
TASU SOUND
MORESBY ISLAND
SCUDDER PT.
MCLEAN FRASER PT.
GARCIN RKS
LYMAN PT.
CAPE ST. JAMES
ROSE PT.
BUTTERWORTH RKS
PRINCE RUPERT
CHATHAM SOUND
DUNDAS I.
NASS RIVER
SKEENA RIVER
PORCHER ISLAND
BROWNING ENTRANCE
PITT ISLAND
BONILLA I.
BANKS ISLAND
PRINCE CHANNEL
HECATE STRAIT
TERROR PT.
GIL I.
ESTEVAN GROUP
CAAMANO SOUND
Kitimat
DOUGLAS CHANNEL
GARDNER CANAL
PRINCESS ROYAL ISLAND
MATHIESON SOUND
NAB RK.
LARSEN SOUND
MILBANKE SD.
Bella Bella
DEAN CHANNEL
BURKE CH.
Bella Coola
FITZ HUGH SOUND
CALVERT ISLAND
Dawsons Landing
RIVERS INLET
HERBERT PT.
SMITH INLET
CAPE CAUTION
QUEEN CHARLOTTE STRAIT
CAPE SUTIL
CAPE SCOTT
VANCOUVER ISLAND
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3xy
101
103
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104
105
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2 WEST
2 EAST
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142
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