

Vessel Lengths and Fishing Diversification Among Alaska Salmon Drift Gillnet Vessels, 1978 to 2007

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Abstract

This report was prepared at the request of the Alaska Board of Fisheries Salmon Industry Restructuring Committee. It examines fishing vessels that participated in Alaska's five salmon drift gillnet fisheries: Southeast, Prince William Sound, Cook Inlet, Alaska Peninsula, and Bristol Bay. It covers the 1978 to 2007 period. Two sets of tables are provided: tables with descriptive statistics on the lengths of participating vessels, and tables showing the participation in other fisheries by the salmon drift gillnet fleets.

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Introduction and Purpose

This report was prepared at the request of the Alaska Board of Fisheries Salmon Industry Restructuring Committee. It examines fishing vessels that participated in Alaska's five salmon drift gillnet fisheries: Southeast, Prince William Sound, Cook Inlet, Alaska Peninsula, and Bristol Bay. It covers the 1978 to 2007 period. Two sets of tables are provided: tables with descriptive statistics on the lengths of participating vessels, and tables showing the participation in other fisheries by the salmon drift gillnet fleets.

Background and Methodology

The tables in this report were created from the Commercial Fisheries Entry Commission's (CFEC) vessel license and gross earnings (fish ticket) databases. We determined the vessels of interest first by selecting fish tickets with salmon landings made on Alaska salmon drift gillnet permits.¹ Only legal commercial landings made on valid CFEC permits were retained.² From this subset of fish tickets, we obtained a list of participating vessels for each fishery and year. We then merged the list of vessel license numbers (ADFG numbers) to the CFEC vessel license file to obtain information on vessel lengths.

The data from the merge of fish tickets to the vessel license file were not always reliable. Missing data were common in the early years of the fisheries, and dubious entries were also prevalent. Ultimately, we omitted from the analysis missing data and data that appeared to be erroneous.

Missing data occur for two principal reasons. Most commonly it happens when a vessel on the fish ticket file does not match to the vessel license file. This can occur if a fish ticket was filled out incorrectly at the time of sale, or if a data entry error was made when the fish ticket information was computerized. A failed match to the vessel license file can also occur if the vessel owner did not properly license the vessel.

Missing data also result when applicants leave out information on their vessel license applications. CFEC collects vessel attribute data so that fleets can be examined and described as needed; however, CFEC will issue a vessel license even if some of the fields are left blank. Currently, fields that are required to be filled out include the ADFG number, the year the vessel was built, and the overall vessel length. Information on vessel length has been required since 1996; in years prior, licenses were issued even if the vessel length information was omitted.³

¹ The permit types for the fisheries are: Southeast (S03A), Prince William Sound (S03E), Cook Inlet (S03H), Alaska Peninsula (S03M), and Bristol Bay (S03T).

² Excluded are harvest categories such as hatchery cost recovery, test fishing, confiscated catch, personal use, and discards.

³ Since 1996, Alaska vessel license fees have been based upon vessel length.

Sometimes on fish tickets, an incorrect ADFG number will be entered that *does* match to the vessel license file. In other words, an ADFG number belonging to another boat is mis-entered. When we merge this data to the vessel license file, it is possible to pick up information on vessels that never actually participated in the fishery. In this way, the data sometimes indicate abnormally large or small vessels, which we later attempt to identify as outliers (see more discussion on this below).

Errors also occur when a vessel owner supplies inaccurate information. Although CFEC requires evidence on vessel length when questions arise, some errors – especially in the period before 1996 – are probably present in the data. Moreover, vessel characteristics are pre-printed on vessel license renewal forms. Unless an applicant makes corrections on the renewal form, erroneous observations are retained in successive years until they are corrected.

CFEC applies an ADFG correction process to the data which cleans up many errors. Nevertheless, some mis-entries and missing data still remain. The follow section details how the authors handled these cases for this report.

Information Specific to Vessel Length Analysis

The United States Coast Guard (USCG) allows measurements of documented vessels to be done using either a “simplified” system, or by more complicated but precise systems that must be completed by certified professionals. In either case, there are two principal means of determining vessel length: the “overall length,” or the “registered length.” The overall length is basically the length of the buoyant portion of the hull from the stem to the stern, excluding bowsprits, outboard motor brackets, or other rigging. Under the simplified system, the registered length and the overall length are the same. Under the other systems, the registered length is: “95% of the length of a waterline at 85% of the least molded depth.” Again, these measurements made outside the simplified system must be done by a professional.

Prior to 1989, the definition of registered length was different. Under the simplified system, it was still equal to the overall length; however, under the other systems, it was basically a length measurement from the foremost part of the stem to the after part of the rudderpost.

Although the USCG changed their method for measuring registered length, they did not require existing documented vessels to be re-measured. Vessels were allowed to keep their existing registered length, provided nothing substantially changed on the vessel.

Through 1994, CFEC vessel license applications asked for “registered length.” Beginning in 1995, the applications changed and asked for “overall length.” For this reason, it is likely that the CFEC vessel length data represents an unknown blend of these definitions.

In 1996, responding to changes in AS 16.05.530, CFEC implemented a new fee schedule for vessel licenses. The new schedule established graduated fees in several distinct vessel size categories. This also began the period when vessel length was required on all vessel license applications; prior to this, CFEC would issue licenses even if the length information was omitted. Currently, fees are based upon 13 separate vessel length categories.

In Bristol Bay, the maximum allowable vessel length is 32 feet. The other Alaska salmon gillnet fisheries do not have vessel length restrictions. However, in all fisheries, the unedited data indicate a small number of vessels larger than 50 feet. These are likely recording errors. Conversely, the data also indicate some very small vessels, with lengths as small as 10 feet. To establish realistic vessel length parameters for our analysis, we consulted with Alaska Department of Fish and Game (ADFG) fishery managers; their insight was invaluable. We learned of cases where small, outboard-powered skiffs occasionally deployed drift gillnets in special circumstances. We also heard of instances where larger vessels, such as those more commonly used in longline fisheries, also participated in the salmon drift gillnet fisheries. Eventually, we determined what we feel are conservative limits for the data we would accept in our descriptive statistics. Extreme observations were removed, but without a complete exploration of the data, it is possible that some inaccurate observations still remain in the analysis.

The table below shows the minimum and maximum vessel lengths that we allowed. Observations outside these ranges were removed from the data. Note these exclusions are different from observations with missing values, which are explained above and are also excluded from the analysis. Vessels that appear on fish tickets but do not match to the vessel license file are also excluded.

Salmon Drift Gillnet Fishery	Vessel Length	
	Minimum	Maximum
Southeast	16	50
Prince William Sound	14	50
Cook Inlet	16	50
Alaska Peninsula	13	60
Bristol Bay	16	32

Information Specific to Fishing Vessel Diversification

These tables illustrate the amount of diversification in other fisheries by salmon drift gillnet vessels. The set of vessels for each year and area was determined in a similar fashion as above, then the fish ticket file was examined for other fishing activity recorded by the salmon drift gillnet fleets. The gear types were grouped accordingly. Note that a salmon drift gillnet vessel can appear in more than one gear group category in a year.

The “Other Gillnet” category refers to either herring gillnet or salmon set gillnet gear (a small number of drift gillnet boats are sometimes involved in set gillnet operations). Note the “Troll” category includes handlines and fishing with sport-fishing gear; this is probably the source of troll participation for many gillnet vessels outside of Southeast Alaska, especially vessels in Western Alaska. The “Unknown” gear category refers to cases where the gear code is missing from fish tickets.

Results

Vessel Length of Salmon Drift Gillnet Vessels

The figures in Table 1 provide descriptive statistics on vessel lengths in the 5 Alaska salmon drift gillnet fleets. Overall, the average vessel length in each fishery appears to have increased only slightly since 1978, but an examination of vessel lengths in distinct length categories in Table 1 indicates a significant shift toward larger vessels.

Among average vessel sizes, the largest change occurred in the Alaska Peninsula fishery, which showed a 25% increase, from 32 feet in 1978 to 38 feet in 2007. Other areas also reveal increases in average length, but to a lesser extent.

In all areas, average vessel lengths show an increase in the mid-1990's, but this might reflect not only a change in actual vessel sizes, but also in the way the data were collected. These years correspond with changes in the CFEC vessel license application, which began to ask for "overall length" instead of "registered length". This period also marks a change in CFEC's policy, which requires accurate vessel length information to be supplied annually.

Part of the increase in vessel length may also be related to the decline in permits fished. The unfished permits may have been associated with smaller vessels.

The most striking indicator of a trend toward larger vessels is shown in the percentage of vessels by length category. In all areas, there was a marked decrease in the percentage of boats in the lowest length categories, with a corresponding increase in larger vessels. For example, in Southeast Alaska, the percentage of boats in the 33-45 foot class steadily increased from 48.6% to 71.7% of the fleet over the 1978-2007 period. Cook Inlet and the Alaska Peninsula also exhibit marked changes away from smaller boats in the 25-32 foot class to boats from 33 to 45 feet. In Prince William Sound, where vessels tend to be smaller, the increase came in the 25-32 foot class, from 51.5% to 86.7%, with a corresponding decrease in boats less than 25 feet, which were formerly quite numerous. Bristol Bay vessels, with a regulation capping the maximum vessel length at 32 feet, showed little change, other than a small decrease in boats under 25 feet.

Vessel lengths are only one indicator of change in the fishing fleets. There is both direct and anecdotal evidence that drift gillnet vessels have changed substantially since 1978.⁴ Most evidence, including information supplied by fishery managers, indicates average horsepower and gross and net tonnage (volumetric measurements of a vessel's size) have all increased. Hull types also have apparently changed, with a trend away from the original wooden boats, to fiberglass, then to a greater prevalence of larger aluminum boats. However, examination of this data is outside of the scope of this report.

Fishing Diversification by Salmon Drift Gillnet Vessels

Many salmon drift gillnet vessels participate in other fisheries outside of the salmon season; Table 2 provides information on the extent of diversification in other fisheries. The table is

⁴ For example, see CFEC Report 00-10N, *Characteristics of Vessels Participating in the Alaska Peninsula Salmon Purse Seine and Drift Gillnet Fisheries, 1978 to 1999*, and Report 02-4N, *2002 Survey of Bristol Bay Salmon Drift Gillnet Fishery Permit Holders: Preliminary Summary of Responses*.

broken out by the gear type that was used. There are some striking differences between the 5 gillnet fleets. Vessels from Southeast Alaska, Cook Inlet, and the Alaska Peninsula have a higher rate of diversification than other areas, especially in the longline fisheries. Averaged over all years, nearly one-third (32.5%) of the Southeast salmon gillnet vessels also participated in longline fisheries. In Southeast, approximately 17% of the drift gillnet boats also fished in pot fisheries, and about 5% also fished in the troll and/or dive fisheries.

In Cook Inlet, the rate of fishing in the longline fisheries by salmon gillnet vessels ranged from 16.7% to 34.9%, whereas in the Alaska Peninsula, the rate varied from 14.7% to 21.4%. In these areas, and also in Southeast, the percentage of boats fishing longline gear appears to have declined somewhat since 1995, perhaps related to the consolidation of halibut and sablefish quota shares, and also possibly related to the National Marine Fisheries Service License Limitation Program for groundfish in the Gulf of Alaska.

Prince William Sound vessels appear to be the least diversified of all five gillnet fleets. Again, longline fishing is the most common gear used outside of salmon drift gillnetting, but has occurred, on average, with only 8.5% of the fleet since 1995. Besides longline gear, the percentage of Prince William Sound vessels fishing other types of gear is very small.

The most common gear by Bristol Bay drift gillnet vessels outside of salmon fishing is in the Other Gillnet category. This gear category includes fishing in both the salmon set gillnet and herring gillnet fisheries. Fishing in the Other Gillnet category has declined significantly since 1995, and is likely related to the dramatic drop in participation in the Togiak (Bristol Bay) herring fisheries. Note that in 1996 and 1997, 28.7% and 20.7% of the respective salmon drift gillnet boats also fished in "Other Gillnet" category. Each year, some Bristol Bay salmon drift gillnet vessels are outfitted to fish seine gear in the herring sac roe fisheries; this is also evident in the data, where seine gear is still used by a small number of boats, but was more prevalent in the mid-1990's than in recent years.

Table 1. Vessel Lengths of Alaska Salmon Drift Gillnet Vessels, 1978-2007.

Southeast Alaska Drift Gillnet Vessel Lengths					Total Number of Vessels by Length Category (ft)								Number of Observations Included	Number of Observations Excluded
Year	Mean Length	Median Length	Maximum Length	Minimum Length	Under 25	%	25-32	%	33-45	%	Over 45	%		
1978	33	32	49	16	4	0.9	233	49.5	229	48.6	5	1.1	471	5
1979	33	33	49	16	8	1.8	213	48.2	217	49.1	4	0.9	442	5
1980	33	33	46	18	6	1.4	211	47.9	221	50.1	3	0.7	441	5
1981	33	33	49	17	2	0.5	207	46.3	235	52.6	3	0.7	447	3
1982	33	33	50	18	8	1.9	204	47.4	213	49.5	5	1.2	430	4
1983	33	33	49	16	13	2.9	209	46.8	222	49.7	3	0.7	447	4
1984	33	33	49	16	4	0.9	207	46.5	231	51.9	3	0.7	445	4
1985	33	33	49	18	1	0.2	215	47.1	238	52.1	3	0.7	457	1
1986	33	33	50	16	8	1.7	207	43.6	252	53.1	8	1.7	475	8
1987	33	33	49	17	7	1.5	210	43.8	256	53.3	7	1.5	480	2
1988	34	34	49	16	5	1.0	212	42.8	270	54.6	8	1.6	495	1
1989	34	34	50	16	9	1.8	202	41.1	272	55.4	8	1.6	491	6
1990	34	34	49	16	6	1.2	191	39.1	284	58.2	7	1.4	488	5
1991	34	34	49	16	7	1.4	196	40.4	273	56.3	9	1.9	485	6
1992	34	34	49	16	9	1.9	190	39.3	275	56.8	10	2.1	484	2
1993	34	34	49	16	7	1.4	191	38.9	283	57.6	10	2.0	491	4
1994	34	34	49	16	7	1.5	178	38.6	267	57.9	9	2.0	461	2
1995	35	34	49	17	2	0.4	184	38.7	280	59.0	9	1.9	475	3
1996	35	35	48	16	5	1.1	160	34.6	289	62.6	8	1.7	462	1
1997	35	36	48	16	6	1.4	132	30.1	296	67.4	5	1.1	439	1
1998	35	36	48	18	1	0.2	122	28.5	298	69.6	7	1.6	428	1
1999	36	36	48	16	3	0.7	121	27.6	303	69.2	11	2.5	438	1
2000	36	36	48	20	1	0.2	118	27.7	298	70.0	9	2.1	426	1
2001	35	36	48	16	5	1.1	131	29.3	298	66.7	13	2.9	447	2
2002	36	36	48	26	0	0.0	118	29.5	271	67.8	11	2.8	400	0
2003	36	36	48	20	1	0.3	103	27.2	265	69.9	10	2.6	379	0
2004	36	36	48	20	1	0.3	94	27.2	241	69.7	10	2.9	346	2
2005	36	36	47	26	0	0.0	105	28.2	256	68.8	11	3.0	372	1
2006	36	36	47	21	2	0.6	89	24.5	263	72.3	10	2.8	364	1
2007	36	36	48	19	3	0.8	94	24.2	279	71.7	13	3.3	389	1

Notes: 1) Vessels are identified from fish tickets; this table includes only the vessels that can be matched to the CFEC vessel license file. Non-matches usually occur because of data entry errors. 2) Since 1996, CFEC has required vessel length information on CFEC vessel licenses.

Table 1. Vessel Lengths of Alaska Salmon Drift Gillnet Vessels, 1978-2007.

Prince William Sound Drift Gillnet Vessel Lengths					Total Number of Vessels by Length Category (ft)								Number of Observations Included	Number of Observations Excluded
Year	Mean Length	Median Length	Maximum Length	Minimum Length	Under 25	%	25-32	%	33-45	%	Over 45	%		
1978	27	26	42	15	200	38.7	266	51.5	51	9.9	0	0.0	517	5
1979	27	26	42	15	155	32.2	270	56.0	57	11.8	0	0.0	482	4
1980	27	26	49	15	112	30.5	209	57.0	45	12.3	1	0.3	367	4
1981	27	26	46	15	139	30.7	253	55.9	60	13.3	1	0.2	453	4
1982	27	26	46	17	138	26.8	307	59.6	69	13.4	1	0.2	515	2
1983	28	26	49	15	120	22.8	334	63.4	72	13.7	1	0.2	527	1
1984	28	27	50	14	123	22.2	343	61.9	82	14.8	6	1.1	554	3
1985	28	27	50	16	126	20.6	397	64.8	87	14.2	3	0.5	613	5
1986	28	27	49	16	111	18.8	401	68.0	76	12.9	2	0.3	590	3
1987	28	27	48	14	106	18.2	393	67.3	84	14.4	1	0.2	584	7
1988	28	27	49	14	116	18.8	414	67.2	82	13.3	4	0.7	616	5
1989	28	27	50	14	108	17.7	416	68.3	82	13.5	3	0.5	609	5
1990	28	28	50	14	133	18.1	494	67.4	99	13.5	7	1.0	733	17
1991	28	28	50	14	108	16.4	455	69.0	87	13.2	9	1.4	659	17
1992	29	28	49	15	52	8.8	465	78.7	69	11.7	5	0.9	591	6
1993	29	28	50	14	46	8.2	438	78.4	70	12.5	5	0.9	559	4
1994	29	28	49	14	46	8.4	433	79.0	64	11.7	5	0.9	548	3
1995	29	28	48	15	46	8.5	431	79.2	64	11.8	3	0.6	544	4
1996	29	28	46	18	36	6.7	437	81.5	62	11.6	1	0.2	536	2
1997	29	28	47	14	38	6.8	456	81.3	66	11.8	1	0.2	561	3
1998	29	28	48	16	49	8.5	464	80.0	65	11.2	2	0.3	580	7
1999	29	28	50	15	55	9.5	454	78.3	69	11.9	2	0.3	580	12
2000	29	28	48	16	34	6.1	461	82.2	65	11.6	1	0.2	561	3
2001	29	28	45	15	29	5.3	455	83.6	60	11.0	0	0.0	544	8
2002	29	28	50	14	38	6.8	464	82.9	55	9.8	3	0.5	560	4
2003	29	28	50	14	40	7.1	460	82.1	57	10.2	3	0.5	560	5
2004	29	29	43	14	41	7.2	472	83.1	55	9.7	0	0.0	568	5
2005	29	29	46	16	25	4.7	464	86.7	45	8.4	1	0.2	535	5
2006	29	29	43	20	17	3.4	442	88.2	42	8.4	0	0.0	501	1
2007	29	29	43	16	23	4.4	455	86.7	47	9.0	0	0.0	525	4

Notes: 1) Vessels are identified from fish tickets; this table includes only the vessels that can be matched to the CFEC vessel license file. Non-matches usually occur because of data entry errors. 2) Since 1996, CFEC has required vessel length information on CFEC vessel licenses.

Table 1. Vessel Lengths of Alaska Salmon Drift Gillnet Vessels, 1978-2007.

Cook Inlet Drift Gillnet Vessel Lengths					Total Number of Vessels by Length Category (ft)								Number of Observations Included	Number of Observations Excluded
Year	Mean Length	Median Length	Maximum Length	Minimum Length	Under 25	%	25-32	%	33-45	%	Over 45	%		
1978	32	32	49	17	22	3.9	386	68.8	148	26.4	5	0.9	561	12
1979	32	32	50	16	15	2.6	366	63.8	185	32.2	8	1.4	574	13
1980	32	32	49	16	16	3.0	333	61.7	186	34.4	5	0.9	540	10
1981	33	32	50	16	9	1.6	350	60.9	210	36.5	6	1.0	575	8
1982	33	32	49	16	8	1.4	337	60.8	203	36.6	6	1.1	554	7
1983	33	32	49	18	5	0.9	328	57.9	229	40.4	5	0.9	567	9
1984	33	32	49	22	3	0.5	320	57.6	230	41.4	3	0.5	556	7
1985	33	32	49	16	13	2.7	253	51.7	218	44.6	5	1.0	489	5
1986	33	32	49	18	9	1.5	322	54.8	253	43.0	4	0.7	588	4
1987	33	32	49	16	6	1.0	325	53.9	269	44.6	3	0.5	603	5
1988	33	32	49	16	10	1.7	299	49.3	293	48.4	4	0.7	606	4
1989*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1990	34	34	50	17	7	1.2	254	42.3	334	55.6	6	1.0	601	5
1991	35	34	50	16	5	0.9	236	40.2	344	58.6	2	0.3	587	7
1992	35	34	50	16	3	0.5	228	38.5	357	60.3	4	0.7	592	6
1993	35	34	50	19	4	0.7	217	36.8	367	62.2	2	0.3	590	5
1994	35	35	50	17	4	0.8	182	35.3	325	63.0	5	1.0	516	3
1995	35	34	50	16	8	1.4	203	34.4	376	63.6	4	0.7	591	2
1996	35	35	50	18	4	0.7	198	34.7	366	64.2	2	0.4	570	2
1997	35	35	50	16	5	0.9	198	34.0	375	64.4	4	0.7	582	5
1998	35	35	49	17	3	0.6	182	34.5	341	64.6	2	0.4	528	1
1999	35	35	49	17	3	0.6	162	32.9	325	66.1	2	0.4	492	0
2000	35	34	49	16	2	0.4	181	35.4	327	63.9	2	0.4	512	1
2001	35	35	48	16	1	0.2	161	34.6	303	65.0	1	0.2	466	2
2002	35	35	50	16	3	0.7	137	33.0	273	65.8	2	0.5	415	0
2003	35	35	49	17	3	0.7	139	33.3	274	65.6	2	0.5	418	1
2004	35	35	49	16	5	1.1	153	34.3	284	63.7	4	0.9	446	4
2005	35	35	50	21	2	0.4	165	35.3	297	63.5	4	0.9	468	6
2006	35	35	47	22	1	0.3	140	35.3	255	64.2	1	0.3	397	0
2007	35	35	49	18	5	1.2	132	31.9	272	65.7	5	1.2	414	1

Notes: 1) Vessels are identified from fish tickets; this table includes only the vessels that can be matched to the CFEC vessel license file. Non-matches usually occur because of data entry errors. 2) Since 1996, CFEC has required vessel length information on CFEC vessel licenses. 3) Salmon drift gillnet fishing was cancelled in 1989 due to the Exxon Valdez oil spill.

Table 1. Vessel Lengths of Alaska Salmon Drift Gillnet Vessels, 1978-2007.

Alaska Peninsula Drift Gillnet Vessel Lengths					Total Number of Vessels by Length Category (ft)								Number of Observations Included	Number of Observations Excluded
Year	Mean Length	Median Length	Maximum Length	Minimum Length	Under 25	%	25-32	%	33-45	%	Over 45	%		
1978	32	32	58	16	8	6.7	73	61.3	34	28.6	4	3.4	119	2
1979	33	32	49	15	11	8.1	69	50.7	53	39.0	3	2.2	136	2
1980	33	32	58	14	15	9.4	75	46.9	63	39.4	7	4.4	160	1
1981	33	32	51	15	15	9.7	70	45.5	63	40.9	6	3.9	154	1
1982	33	34	58	15	21	12.2	60	34.9	89	51.7	2	1.2	172	0
1983	33	34	49	14	12	7.0	65	38.0	92	53.8	2	1.2	171	1
1984	33	34	45	14	7	4.7	55	37.2	86	58.1	0	0.0	148	0
1985	34	34	45	15	8	5.4	44	29.5	97	65.1	0	0.0	149	0
1986	34	34	49	15	7	4.1	48	28.4	113	66.9	1	0.6	169	3
1987	34	34	57	15	7	4.1	47	27.5	115	67.3	2	1.2	171	2
1988	35	34	57	16	7	4.1	49	28.8	111	65.3	3	1.8	170	2
1989	35	35	49	14	6	3.5	46	27.1	115	67.7	3	1.8	170	2
1990	34	34	56	13	14	7.3	51	26.4	122	63.2	6	3.1	193	1
1991	36	35	46	14	4	2.4	46	27.1	117	68.8	3	1.8	170	0
1992	36	36	50	14	5	2.9	42	24.6	118	69.0	6	3.5	171	0
1993	37	37	55	14	6	3.5	36	20.8	124	71.7	7	4.1	173	1
1994	36	36	55	13	9	5.0	39	21.7	124	68.9	8	4.4	180	2
1995	37	37	55	16	6	3.5	32	18.6	125	72.7	9	5.2	172	1
1996	37	38	58	14	8	4.4	34	18.8	126	69.6	13	7.2	181	1
1997	37	38	58	16	8	4.6	29	16.8	124	71.7	12	6.9	173	1
1998	36	36	58	14	9	4.8	47	25.0	118	62.8	14	7.5	188	2
1999	37	38	58	17	7	3.9	39	21.4	121	66.5	15	8.2	182	0
2000	37	37	55	16	7	4.0	39	22.2	117	66.5	13	7.4	176	2
2001	37	38	50	16	3	2.1	30	21.4	98	70.0	9	6.4	140	1
2002	36	36	50	20	5	4.0	32	25.8	79	63.7	8	6.5	124	0
2003	37	38	48	16	3	2.7	21	18.8	79	70.5	9	8.0	112	0
2004	37	38	52	20	3	2.4	26	21.1	82	66.7	12	9.8	123	0
2005	37	38	48	14	4	3.1	25	19.4	89	69.0	11	8.5	129	1
2006	37	38	48	18	3	2.2	27	19.9	97	71.3	9	6.6	136	1
2007	38	38	58	20	2	1.5	30	22.1	92	67.7	12	8.8	136	0

Notes: 1) Vessels are identified from fish tickets; this table includes only the vessels that can be matched to the CFEC vessel license file. Non-matches usually occur because of data entry errors. 2) Since 1996, CFEC has required vessel length information on CFEC vessel licenses.

Table 1. Vessel Lengths of Alaska Salmon Drift Gillnet Vessels, 1978-2007.

Bristol Bay Drift Gillnet Vessel Lengths					Total Number of Vessels by Length Category (ft)								Number of Observations Included	Number of Observations Excluded
Year	Mean Length	Median Length	Maximum Length	Minimum Length	Under 25	%	25-32	%	33-45	%	Over 45	%		
1978	29	31	32	16	263	17.6	1,231	82.4	0	0.0	0	0.0	1,494	44
1979	30	32	32	16	220	13.7	1,391	86.3	0	0.0	0	0.0	1,611	50
1980	30	32	32	16	160	9.5	1,525	90.5	0	0.0	0	0.0	1,685	43
1981	30	32	32	16	132	7.9	1,530	92.1	0	0.0	0	0.0	1,662	31
1982	31	32	32	16	107	6.3	1,602	93.7	0	0.0	0	0.0	1,709	25
1983	31	32	32	16	84	4.9	1,630	95.1	0	0.0	0	0.0	1,714	16
1984	31	32	32	16	70	4.0	1,678	96.0	0	0.0	0	0.0	1,748	16
1985	31	32	32	18	49	2.7	1,743	97.3	0	0.0	0	0.0	1,792	9
1986	31	32	32	16	39	2.1	1,804	97.9	0	0.0	0	0.0	1,843	7
1987	31	32	32	18	32	1.7	1,823	98.3	0	0.0	0	0.0	1,855	9
1988	31	32	32	21	21	1.1	1,842	98.9	0	0.0	0	0.0	1,863	7
1989	31	32	32	18	26	1.4	1,861	98.6	0	0.0	0	0.0	1,887	7
1990	31	32	32	18	18	1.0	1,886	99.1	0	0.0	0	0.0	1,904	5
1991	31	32	32	16	17	0.9	1,875	99.1	0	0.0	0	0.0	1,892	4
1992	31	32	32	16	21	1.1	1,889	98.9	0	0.0	0	0.0	1,910	7
1993	31	32	32	16	19	1.0	1,893	99.0	0	0.0	0	0.0	1,912	15
1994	31	32	32	16	22	1.2	1,866	98.8	0	0.0	0	0.0	1,888	8
1995	31	32	32	16	16	0.8	1,898	99.2	0	0.0	0	0.0	1,914	8
1996	31	32	32	18	14	0.7	1,903	99.3	0	0.0	0	0.0	1,917	8
1997	31	32	32	16	17	0.9	1,883	99.1	0	0.0	0	0.0	1,900	9
1998	32	32	32	18	15	0.8	1,853	99.2	0	0.0	0	0.0	1,868	3
1999	31	32	32	16	23	1.2	1,846	98.8	0	0.0	0	0.0	1,869	6
2000	31	32	32	16	19	1.0	1,821	99.0	0	0.0	0	0.0	1,840	2
2001	31	32	32	18	28	1.8	1,540	98.2	0	0.0	0	0.0	1,568	1
2002	31	32	32	18	35	17.6	1,231	82.4	0	0.0	0	0.0	1,173	2
2003	31	32	32	16	42	13.7	1,391	86.3	0	0.0	0	0.0	1,405	3
2004	31	32	32	16	31	9.5	1,525	90.5	0	0.0	0	0.0	1,369	2
2005	31	32	32	16	40	7.9	1,530	92.1	0	0.0	0	0.0	1,384	4
2006	31	32	32	16	60	6.3	1,602	93.7	0	0.0	0	0.0	1,466	28
2007	31	32	32	16	54	4.9	1,630	95.1	0	0.0	0	0.0	1,417	21

Notes: 1) Vessels are identified from fish tickets; this table includes only the vessels that can be matched to the CFEC vessel license file. Non-matches usually occur because of data entry errors. 2) Since 1996, CFEC has required vessel length information on CFEC vessel licenses.

Table 2. Fishing Diversification by Alaska Salmon Drift Gillnet Vessels, 1995-2007.

Southeast Alaska Salmon Drift Gillnet Vessels and Other Gear Types Fished by Those Vessels

Year	Gear Type																				
	Drift Gillnet	Other Gillnet	%	Long-line	%	Troll	%	Pot	%	Seine	%	Jig	%	Dive	%	Pound	%	Other	%	Unknown	%
1995	475	23	4.8	177	37.3	17	3.6	80	16.8	2	0.4	12	2.5	32	6.7	2	0.4	2	0.4	13	0.0
1996	462	21	4.5	170	36.8	21	4.5	70	15.2	4	0.9	7	1.5	25	5.4	1	0.2	0	0.0	16	0.0
1997	439	16	3.6	163	37.1	15	3.4	70	15.9	2	0.5	4	0.9	22	5.0	4	0.9	0	0.0	13	0.0
1998	428	26	6.1	136	31.8	8	1.9	86	20.1	5	1.2	2	0.5	18	4.2	8	1.9	0	0.0	26	0.1
1999	438	23	5.3	142	32.4	16	3.7	75	17.1	15	3.4	3	0.7	19	4.3	7	1.6	0	0.0	20	0.0
2000	426	14	3.3	146	34.3	17	4.0	79	18.5	5	1.2	5	1.2	20	4.7	4	0.9	1	0.2	27	0.1
2001	447	13	2.9	137	30.6	21	4.7	77	17.2	4	0.9	2	0.4	25	5.6	5	1.1	4	0.9	23	0.1
2002	400	18	4.5	118	29.5	18	4.5	63	15.8	4	1.0	3	0.8	20	5.0	4	1.0	0	0.0	15	0.0
2003	379	22	5.8	120	31.7	20	5.3	71	18.7	1	0.3	0	0.0	19	5.0	2	0.5	0	0.0	11	0.0
2004	346	24	6.9	103	29.8	27	7.8	60	17.3	0	0.0	0	0.0	19	5.5	3	0.9	2	0.6	11	0.0
2005	372	20	5.4	105	28.2	26	7.0	49	13.2	3	0.8	1	0.3	22	5.9	3	0.8	1	0.3	6	0.0
2006	364	9	2.5	116	31.9	32	8.8	58	15.9	2	0.5	0	0.0	20	5.5	2	0.5	1	0.3	5	0.0
2007	389	9	2.3	115	29.6	30	7.7	54	13.9	3	0.8	0	0.0	22	5.7	2	0.5	0	0.0	6	0.0

Prince William Sound Salmon Drift Gillnet Vessels and Other Gear Types Fished by Those Vessels

Year	Gear Type																				
	Drift Gillnet	Other Gillnet	%	Long-line	%	Troll	%	Pot	%	Seine	%	Jig	%	Dive	%	Pound	%	Other	%	Unknown	%
1995	544	11	2.0	44	8.1	4	0.7	2	0.4	15	2.8	4	0.7	2	0.4	0	0.0	0	0.0	0	0.0
1996	536	7	1.3	43	8.0	3	0.6	1	0.2	8	1.5	6	1.1	1	0.2	0	0.0	1	0.2	1	0.0
1997	561	21	3.7	49	8.7	2	0.4	1	0.2	8	1.4	3	0.5	2	0.4	12	2.1	0	0.0	13	0.0
1998	580	18	3.1	48	8.3	2	0.3	2	0.3	11	1.9	5	0.9	1	0.2	7	1.2	0	0.0	8	0.0
1999	580	8	1.4	57	9.8	4	0.7	4	0.7	12	2.1	2	0.3	1	0.2	4	0.7	0	0.0	3	0.0
2000	561	11	2.0	54	9.6	4	0.7	5	0.9	10	1.8	4	0.7	0	0.0	0	0.0	2	0.4	0	0.0
2001	544	7	1.3	55	10.1	1	0.2	1	0.2	8	1.5	3	0.6	1	0.2	0	0.0	0	0.0	0	0.0
2002	560	8	1.4	51	9.1	2	0.4	1	0.2	5	0.9	2	0.4	2	0.4	0	0.0	0	0.0	1	0.0
2003	560	8	1.4	46	8.2	3	0.5	2	0.4	3	0.5	1	0.2	0	0.0	0	0.0	1	0.2	0	0.0
2004	568	5	0.9	46	8.1	5	0.9	1	0.2	3	0.5	2	0.4	1	0.2	0	0.0	1	0.2	1	0.0
2005	535	5	0.9	48	9.0	3	0.6	3	0.6	8	1.5	3	0.6	1	0.2	0	0.0	0	0.0	1	0.0
2006	501	3	0.6	33	6.6	0	0.0	1	0.2	5	1.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2007	525	4	0.8	34	6.5	4	0.8	0	0.0	5	1.0	0	0.0	2	0.4	1	0.2	0	0.0	0	0.0

Table 2. Fishing Diversification by Alaska Salmon Drift Gillnet Vessels, 1995-2007.

Cook Inlet Salmon Drift Gillnet Vessels and Other Gear Types Fished by Those Vessels

Year	Gear Type																				
	Drift Gillnet	Other Gillnet	%	Long-line	%	Troll	%	Pot	%	Seine	%	Jig	%	Dive	%	Pound	%	Other	%	Unknown	%
1995	591	23	3.9	206	34.9	12	2.0	6	1.0	3	0.5	33	5.6	1	0.2	0	0.0	0	0.0	4	0.0
1996	570	17	3.0	173	30.4	7	1.2	3	0.5	3	0.5	34	6.0	2	0.4	0	0.0	0	0.0	1	0.0
1997	582	18	3.1	188	32.3	6	1.0	3	0.5	4	0.7	40	6.9	0	0.0	0	0.0	0	0.0	2	0.0
1998	528	2	0.4	146	27.7	3	0.6	0	0.0	5	0.9	40	7.6	0	0.0	0	0.0	1	0.2	1	0.0
1999	492	4	0.8	137	27.8	2	0.4	3	0.6	6	1.2	27	5.5	2	0.4	0	0.0	1	0.2	2	0.0
2000	512	1	0.2	126	24.6	2	0.4	1	0.2	3	0.6	32	6.3	0	0.0	0	0.0	2	0.4	0	0.0
2001	466	3	0.6	111	23.8	1	0.2	2	0.4	1	0.2	10	2.1	1	0.2	0	0.0	5	1.1	1	0.0
2002	415	4	1.0	94	22.7	3	0.7	2	0.5	1	0.2	11	2.7	1	0.2	0	0.0	1	0.2	0	0.0
2003	418	3	0.7	93	22.2	0	0.0	2	0.5	0	0.0	14	3.3	0	0.0	0	0.0	6	1.4	0	0.0
2004	446	1	0.2	91	20.4	0	0.0	3	0.7	3	0.7	16	3.6	0	0.0	0	0.0	2	0.4	0	0.0
2005	468	5	1.1	96	20.5	1	0.2	4	0.9	3	0.6	16	3.4	0	0.0	0	0.0	8	1.7	0	0.0
2006	397	5	1.3	82	20.7	0	0.0	5	1.3	2	0.5	2	0.5	0	0.0	0	0.0	1	0.3	0	0.0
2007	414	1	0.2	69	16.7	0	0.0	2	0.5	0	0.0	5	1.2	0	0.0	0	0.0	0	0.0	0	0.0

Alaska Peninsula Salmon Drift Gillnet Vessels and Other Gear Types Fished by Those Vessels

Year	Gear Type																				
	Drift Gillnet	Other Gillnet	%	Long-Line	%	Troll	%	Pot	%	Seine	%	Jig	%	Dive	%	Pound	%	Other	%	Unknown	%
1995	172	5	2.9	35	20.3	0	0.0	4	2.3	9	5.2	8	4.7	1	0.6	0	0.0	0	0.0	0	0.0
1996	181	15	8.3	37	20.4	2	1.1	5	2.8	16	8.8	10	5.5	1	0.6	0	0.0	0	0.0	1	0.0
1997	173	11	6.4	37	21.4	0	0.0	6	3.5	11	6.4	6	3.5	0	0.0	0	0.0	0	0.0	2	0.0
1998	188	10	5.3	32	17.0	3	1.6	5	2.7	8	4.3	5	2.7	0	0.0	0	0.0	0	0.0	1	0.0
1999	182	6	3.3	36	19.8	3	1.6	4	2.2	4	2.2	2	1.1	1	0.5	0	0.0	0	0.0	0	0.0
2000	176	7	4.0	36	20.5	2	1.1	2	1.1	4	2.3	11	6.3	0	0.0	0	0.0	0	0.0	0	0.0
2001	140	2	1.4	25	17.9	0	0.0	3	2.1	1	0.7	20	14.3	0	0.0	0	0.0	1	0.7	0	0.0
2002	124	5	4.0	21	16.9	0	0.0	2	1.6	3	2.4	21	16.9	0	0.0	0	0.0	0	0.0	0	0.0
2003	112	6	5.4	18	16.1	0	0.0	3	2.7	2	1.8	15	13.4	0	0.0	0	0.0	0	0.0	0	0.0
2004	123	7	5.7	22	17.9	1	0.8	6	4.9	2	1.6	21	17.1	0	0.0	0	0.0	0	0.0	0	0.0
2005	129	10	7.8	21	16.3	3	2.3	11	8.5	3	2.3	18	14.0	1	0.8	0	0.0	0	0.0	0	0.0
2006	136	9	6.6	20	14.7	1	0.7	4	2.9	1	0.7	8	5.9	0	0.0	0	0.0	0	0.0	0	0.0
2007	136	10	7.4	22	16.2	1	0.7	3	2.2	3	2.2	6	4.4	0	0.0	0	0.0	0	0.0	1	0.0

Table 2. Fishing Diversification by Alaska Salmon Drift Gillnet Vessels, 1995-2007.

Bristol Bay Salmon Drift Gillnet Vessels and Other Gear Types Fished by Those Vessels

Year	Gear Type																				
	Drift Gillnet	Other Gillnet	%	Long-Line	%	Troll	%	Pot	%	Seine	%	Jig	%	Dive	%	Pound	%	Other	%	Unknown	%
1995	1,914	283	14.8	60	3.1	1	0.1	5	0.3	108	5.6	6	0.3	4	0.2	0	0.0	0	0.0	8	0.0
1996	1,917	551	28.7	53	2.8	4	0.2	4	0.2	109	5.7	10	0.5	3	0.2	1	0.1	1	0.1	6	0.0
1997	1,900	394	20.7	71	3.7	1	0.1	2	0.1	92	4.8	9	0.5	4	0.2	4	0.2	3	0.2	0	0.0
1998	1,868	227	12.2	66	3.5	3	0.2	2	0.1	53	2.8	7	0.4	3	0.2	4	0.2	1	0.1	0	0.0
1999	1,869	245	13.1	47	2.5	4	0.2	2	0.1	46	2.5	10	0.5	2	0.1	0	0.0	1	0.1	0	0.0
2000	1,840	245	13.3	69	3.8	3	0.2	3	0.2	47	2.6	11	0.6	1	0.1	0	0.0	7	0.4	0	0.0
2001	1,568	141	9.0	53	3.4	4	0.3	6	0.4	24	1.5	10	0.6	1	0.1	0	0.0	3	0.2	0	0.0
2002	1,173	80	6.8	58	4.9	0	0.0	5	0.4	12	1.0	5	0.4	0	0.0	0	0.0	0	0.0	2	0.0
2003	1,405	86	6.1	60	4.3	1	0.1	1	0.1	15	1.1	6	0.4	0	0.0	0	0.0	1	0.1	2	0.0
2004	1,369	66	4.8	49	3.6	1	0.1	5	0.4	14	1.0	13	0.9	1	0.1	0	0.0	0	0.0	0	0.0
2005	1,384	68	4.9	59	4.3	2	0.1	3	0.2	14	1.0	13	0.9	2	0.1	0	0.0	0	0.0	0	0.0
2006	1,466	55	3.8	52	3.5	3	0.2	5	0.3	13	0.9	10	0.7	2	0.1	0	0.0	0	0.0	1	0.0
2007	1,417	28	2.0	51	3.6	1	0.1	3	0.2	9	0.6	5	0.4	2	0.1	0	0.0	0	0.0	1	0.0