

# STATE OF ALASKA

Commercial Fisheries Entry Commission

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## MEMORANDUM

**To:** Denby Lloyd; Commissioner, ADFG  
Emil Notti; Commissioner, DCED  
Vince Webster; Chairman, ABOF

**Date:** November 13, 2009

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**From:** Frank Homan, Chairman  
Peter Froehlich, Commissioner  
Bruce Twomley, Commissioner  
Commercial Fisheries Entry  
Commission

**Subject:** Request for information:  
Bristol Bay proposal; 32-foot  
limit



This memo is in response to Alaska Department of Fish and Game (ADFG) Commissioner Denby Lloyd's recent request for economic information that may help the Board of Fisheries with Proposal 15 at the December, 2009 meeting. The proposal seeks to eliminate the current 32-foot vessel length limit in the Bristol Bay drift gillnet fishery.

The information presented here is a summary derived from a variety of sources. A large part of the data comes from two Commercial Fisheries Entry Commission (CFEC, or commission) reports, which are attached<sup>1</sup>. Other sources include CFEC computer files on limited entry permits, vessel licenses, and ex-vessel earnings.

### Limited Entry and the Bristol Bay Optimum Number

The Bristol Bay drift gillnet fishery was limited to entry in 1974. It was one of 19 Alaska salmon fisheries that were identified as "distressed fisheries" under the new limited entry law; that is, the fisheries determined by CFEC to be those that

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<sup>1</sup> See *CFEC Permit Holdings, Harvests, and Estimated Gross Earnings by Resident Type in the Bristol Bay Salmon Gillnet Fisheries*; CFEC Report 08-1N; Feb. 2009 and *Vessel Lengths and Fishing Diversification Among Alaska Salmon Drift Gillnet Vessels, 1978 to 2007*; CFEC Report 08-4N; May, 2008.

had reached levels of participation where the optimum number of entry permits was likely less than the number of units of gear fished during any one of the four years immediately preceding January 1, 1973.

In 2005, after extensive study and a series of public hearings, the commission adopted an optimum number range of permits for the drift gillnet fishery. Statutes specify that the optimum number should reflect a balance of three general standards, which contain objectives for resource conservation and management, as well as aspects of economic efficiency and distributional goals. Based upon these standards, CFEC determined the existing number of limited entry permits should be reduced to 900 to 1,400 permits.

### Number of Permits, Permit Values, and Permits Fished

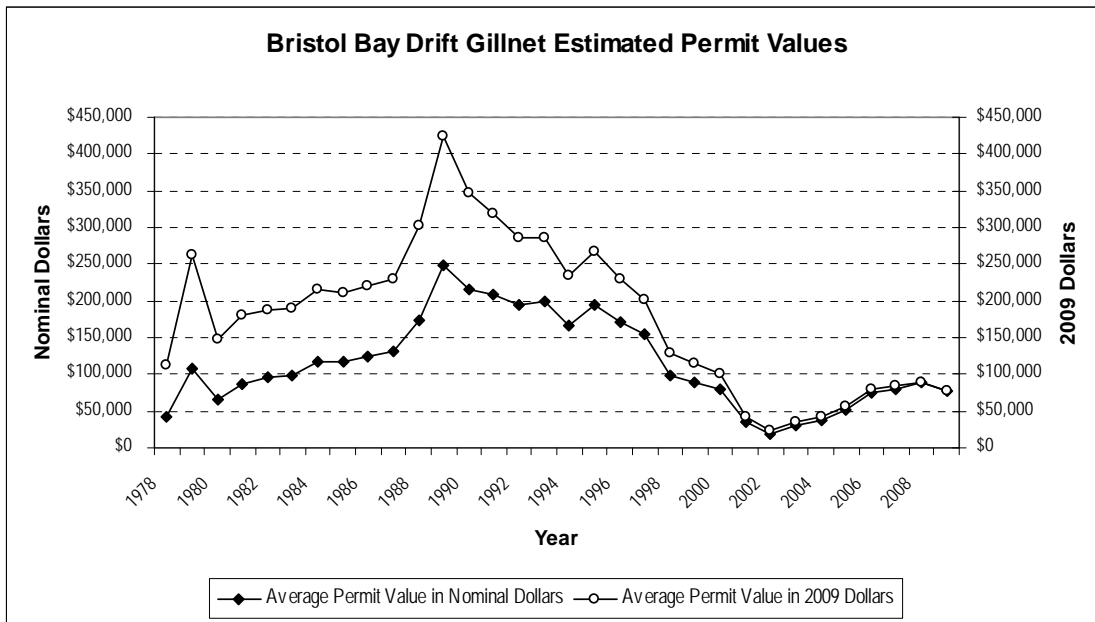
At year-end 2008, there were 1,863 limited-entry permits in the drift gillnet fishery. Alaskans hold 47% of the permits, while Nonresidents hold the remainder (Table 1). Since initial issuance, the number of permits held by Nonresidents has increased, due to the net effects of permit transfers (permit sales, gifts, or inheritances) and migrations (permit holders moving their residence).

Table 1. Number of Limited Entry Permits Currently Held  
In the Bristol Bay Drift Gillnet Fishery

Fishery	Residency	Total 2008 Year-end	Pct. Year- End
Drift Gillnet	Alaska Locals	391	21.0%
	Alaska Nonlocals	480	25.8%
	Nonresidents	988	53.0%
	DCED / CFAB	4	0.2%
Total		1,863	100.0%

### Permit Values

The current estimated value of a Bristol Bay drift gillnet permit is \$78,300 (CFEC estimate; Oct., 2009). Figure 1 illustrates changes in the value of permits over time, showing both nominal values and values that have been adjusted for inflation (using the Anchorage CPI). The highest estimate was in 1989, during a period of high ex-vessel revenues and permit values in nearly all statewide salmon fisheries. By 2002, when fishery earnings dropped to near-record lows, permit values plummeted to only \$19,700 (nominal value). In each year since then, permit values have increased, although the current estimate is somewhat lower than the year-end 2008 value.



## Permits Fished

CFEC regulations require persons to renew their permits annually, but not all permits are actually fished. The proportion of permits fished to permits renewed has changed in recent years. Overall, participation (permits fished) was 95% for each year from the mid-1970's through 2001, but dropped to only 63% in 2002, and has remained relatively low since then.

However, please note the figures on permits fished should be viewed with caution. Permits fished are counted using fish ticket records, and that data will under-estimate actual participation on the fishing grounds because some individuals, although active in the fishery, do not use their permits to record landings. This has been most prevalent since the 2004 season, when a change in regulations allowed two permit holders to fish together on one vessel to increase the vessel's total allowable amount of gear ("permit stacking"). In many of these cases, the landings from the vessel may be recorded on only one permit, with no fish ticket record of the second permit.

Table 2. Rates of Permits Fished to Permits Renewed in the Bristol Bay Drift Gillnet Fishery

	Alaska Locals	Alaska Nonlocals	Nonresidents	All Permit Holders
1975 - 2001 avg:	94%	93%	96%	95%
2002 - 2008 avg:	81%	70%	76%	76%
All years average:	92%	88%	92%	91%

## Estimated Earnings

Earnings have varied widely in the Bristol Bay drift gillnet fishery. The highest years of ex-vessel earnings occurred from 1988 through 1996, when the total value of the fishery (unadjusted for inflation) ranged from \$99.2 to \$186.1 million. Over that same period, average earnings were approximately \$53,000 to \$100,000 per permit.

In the late 1990's, ex-vessel revenues declined sharply, primarily due to dropping salmon prices, and hit record lows in 2001 and 2002. Since then, with improving prices and relatively high harvests, total and average earnings have gradually risen, yielding approximately \$68,169 per permit fished in 2008.

Table 3 illustrates the last 15 years of participation and ex-vessel earnings, and compares earnings between three resident classes of permit holders. Please note again that due to permit stacking, the number of permits fished is likely under-estimated, and therefore the average earnings may be over-estimated. Permit stacking has been in effect since the 2004 season.

The difference in average earnings between local residents and nonresidents appears to be correlated to the size of the total harvest. In years of high harvests, the disparity between local resident and nonresident earnings tends to increase.

**Table 3. Bristol Bay Drift Gillnet Fishery: Number of Permits Fished and Estimated Average Earnings**

Year	Local	Local	Nonlocal	Nonlocal	Nonresident	Nonresident	All Permits		Avg Sockeye Price
	Permits Fished	Avg. Earnings	Permits Fished	Avg. Earnings	Permits Fished	Avg. Earnings	All Permits	Avg. Earnings	
1994	489	\$66,551	464	\$92,319	912	\$108,761	1,865	\$93,603	\$0.99
1995	476	\$69,692	485	\$84,673	921	\$104,006	1,882	\$90,345	\$0.80
1996	470	\$56,613	489	\$65,230	925	\$77,953	1,884	\$69,327	\$0.81
1997	466	\$23,102	472	\$32,294	937	\$32,746	1,875	\$30,235	\$0.94
1998	465	\$27,646	462	\$29,817	931	\$32,837	1,858	\$30,787	\$1.21
1999	452	\$43,336	454	\$50,009	941	\$53,777	1,847	\$50,296	\$0.84
2000	441	\$33,456	463	\$35,497	919	\$40,504	1,823	\$37,527	\$0.67
2001	401	\$15,977	396	\$18,759	769	\$24,161	1,566	\$20,699	\$0.42
2002	304	\$10,739	277	\$23,325	603	\$26,047	1,184	\$21,480	\$0.49
2003	361	\$21,813	339	\$25,937	724	\$29,465	1,424	\$26,685	\$0.51
2004	333	\$31,791	352	\$45,951	726	\$53,593	1,411	\$46,541	\$0.52
2005	335	\$38,916	363	\$52,773	749	\$64,574	1,447	\$55,673	\$0.63
2006	331	\$44,223	377	\$65,245	767	\$74,092	1,475	\$65,128	\$0.67
2007	320	\$44,604	378	\$66,191	770	\$76,391	1,468	\$66,836	\$0.67
2008	328	\$42,548	379	\$66,313	762	\$80,119	1,469	\$68,169	\$0.75

## Quartile Earnings

Another view of the distribution of fishery earnings is shown in Table 4. Earnings are broken out by quartiles, showing four groups of permit holders, ranked highest to lowest by their average earnings. In most fisheries, there is a core group of highliners who account for a disproportionate share of the fishery's earnings. This holds true in Bristol Bay as well, where, on average, 12.4% of the drift gillnet permit holders over the last 15 years have accounted for the upper 25% of the fishery earnings. Nearly half (avg. 45.6%) of the permit holders typically fall into the lowest earnings group.

Table 4. Average Earnings in the Bristol Bay Drift Gillnet Fishery, by Quartile Group

Year	Total Pounds	Total Earnings	Quartile 1			Quartile 2			Quartile 3			Quartile 4		
			Permits	%	Avg Earnings	Permits	%	Avg. Earnings	Permits	%	Avg Earnings	Permits	%	Avg Earnings
2008	139,115,944	\$100,139,700	180	12.3	\$139,086	263	17.9	\$95,159	349	23.8	\$71,669	677	46.1	\$37,024
2007	153,885,221	\$98,114,659	190	12.9	\$129,105	263	17.9	\$93,328	350	23.8	\$69,949	665	45.3	\$36,928
2006	153,516,693	\$96,064,034	161	10.9	\$149,003	247	16.8	\$97,287	351	23.8	\$68,403	716	48.5	\$33,568
2005	135,574,162	\$80,559,324	168	11.6	\$119,927	260	18.0	\$77,459	351	24.3	\$57,364	668	46.2	\$30,146
2004	131,219,518	\$65,669,641	174	12.3	\$94,521	249	17.7	\$65,860	328	23.3	\$50,002	660	46.8	\$24,884
2003	78,461,500	\$37,999,418	156	11.0	\$60,953	237	16.6	\$40,001	345	24.2	\$27,547	686	48.2	\$13,858
2002	54,164,418	\$25,432,417	113	9.5	\$56,323	169	14.3	\$37,553	253	21.4	\$25,136	649	54.8	\$9,803
2001	80,634,776	\$32,414,815	176	11.2	\$46,088	280	17.9	\$28,920	389	24.8	\$20,825	721	46.0	\$11,241
2000	104,655,388	\$68,412,338	249	13.7	\$68,684	356	19.5	\$48,080	459	25.2	\$37,226	759	41.6	\$22,539
1999	113,553,577	\$92,895,948	265	14.4	\$87,635	364	19.7	\$63,853	467	25.3	\$49,660	751	40.7	\$30,945
1998	50,967,505	\$57,202,946	257	13.8	\$55,675	357	19.2	\$40,067	466	25.1	\$30,644	778	41.9	\$18,394
1997	62,586,918	\$56,691,067	188	10.0	\$75,358	274	14.6	\$51,796	373	19.9	\$37,976	1,040	55.5	\$13,622
1996	166,621,575	\$130,612,195	273	14.5	\$119,437	379	20.1	\$86,326	485	25.7	\$67,237	747	39.7	\$43,746
1995	218,001,719	\$170,029,398	257	13.7	\$165,526	380	20.2	\$111,888	492	26.1	\$86,318	753	40.0	\$56,445
1994	181,240,957	\$174,569,899	254	13.6	\$171,705	355	19.0	\$123,107	461	24.7	\$94,531	795	42.6	\$54,938

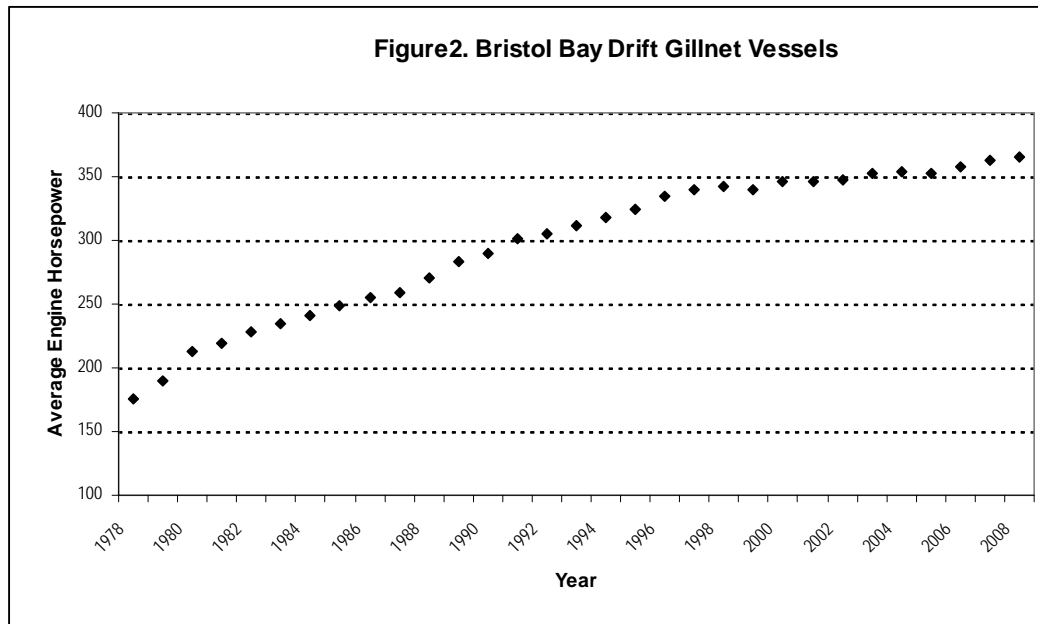
## Vessels and Vessel Attributes

Since 1949, there has been a 32-foot limit on the overall length of vessels in the Bristol Bay drift gillnet fishery. A review of vessels that have participated since 2003 indicates a very narrow distribution of vessel lengths in fishery: the average length is 31 feet (rounded), and the median length is 32 feet. Over the 5-year period from 2003 through 2007, 82.5% of the fleet was listed at 32 feet. Records indicate a small number of vessels under 25 feet in the fishery each year (5-10% of the total).

Despite the uniformity in vessel lengths, there is still a wide range of fishing capacity within the fleet. It is generally acknowledged that over time, vessels with increased hold capacity, speed, and maneuverability have entered the fishery. CFEC vessel license records substantiate this.

One indicator of change is vessel engine horsepower. CFEC's optimum number study documented that the range of engine horsepower was wide, and was

positively correlated to estimated vessel values. Figure 2 summarizes horsepower records from the CFEC vessel license file. The 2008 average stands at 365 horsepower. Approximately half the fleet contains engines from 200-400 hp, with roughly 10% of the vessels over 600 hp.



The number of vessels with refrigeration has increased over time. Through the late-1980's very few boats were equipped with refrigeration, but by 2008, 18.1% of the vessels indicated they had it. Table 5 indicates a steady increase in refrigeration over the history of the fishery.

**Table 5. Bristol Bay Drift Gillnet Vessels: Number and Percentage With and Without Refrigeration**

Year	Without		With		Total Vessels
	Vessels	%	Vessels	%	
1988	1,733	98.2	31	1.8	1,764
1989	1,753	97.6	43	2.4	1,796
1990	1,730	96.8	58	3.2	1,788
1991	1,694	95.7	77	4.3	1,771
1992	1,702	94.9	91	5.1	1,793
1993	1,685	93.8	112	6.2	1,797
1994	1,634	92.6	131	7.4	1,765
1995	1,625	91.0	160	9.0	1,785
1996	1,602	89.8	181	10.2	1,783
1997	1,572	88.8	199	11.2	1,771
1998	1,531	88.0	208	12.0	1,739
1999	1,522	87.6	215	12.4	1,737
2000	1,504	87.5	214	12.5	1,718
2001	1,282	87.2	188	12.8	1,470
2002	942	86.1	152	13.9	1,094
2003	1,129	86.1	183	13.9	1,312
2004	1,083	84.9	192	15.1	1,275
2005	1,097	84.3	204	15.7	1,301
2006	1,178	83.8	227	16.2	1,405
2007	1,129	83.1	230	16.9	1,359
2008	1,102	81.9	244	18.1	1,346

Only a small number of vessels are used outside of the salmon drift gillnet fishery. CFEC reports indicate that only 4.3% are used in other gillnet fisheries (primarily Togiak herring); 3.8% in longline fisheries; and 1% in seine fisheries (again, mainly Togiak).

## Conclusion

In conclusion, we hope that this economic information will be helpful to the Board of Fisheries during the consideration of Proposal 15. Please let us know if we can provide anything further before the Board's December meeting. We will also be available during the meeting to address questions that may arise during the Board's deliberations.

Finally, we plan to also respond to your request for economic information related to Proposal 68, which is scheduled for the Board's March 16 meeting. This proposal would eliminate the 58-foot limit for salmon seine vessels. We will provide what information we can a few weeks before that meeting.

As always, we appreciate being involved in the Board process.

Attachments: 2 reports cited in Footnote 1.

cc: with attachments:

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Casey Campbell; Economic Development Advisor, Office of Economic Development  
Cora Campbell; Fisheries Policy Advisor, Office of the Governor  
Jim Marcotte; Executive Director, Alaska Board of Fisheries  
Kevin O'Sullivan; Fisheries Specialist, Office of Economic Development  
Ray Riutta; Executive Director, Alaska Seafood Marketing Institute

# CFEC Permit Holdings, Harvests, and Estimated Gross Earnings by Resident Type in the Bristol Bay Salmon Gillnet Fisheries



*Photo courtesy of Lindsey Bloom*

CFEC Report 09-1N  
February, 2009

Commercial Fisheries Entry Commission  
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# **CFEC Permit Holdings, Harvests, and Estimated Gross Earnings by Resident Type in the Bristol Bay Salmon Gillnet Fisheries**

## **Abstract**

Limited entry permit holdings, fishery harvests, and estimated gross earnings are broken out by resident type for the Bristol Bay salmon drift gillnet and set gillnet fisheries. Three resident types are considered: persons who reside in places local to Bristol Bay; persons who reside in Alaska, but in places outside of Bristol Bay; and persons who are nonresidents of Alaska. The resident status for a permit is determined by the residence of the end-of-the-year permit holder. This report also contains a description of the computer files and methodology used to generate the figures.

Prepared by Kurt Iverson

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## **Introduction**

This report was prepared to provide a view of limited entry permit holdings, fishery harvests, and estimated gross earnings by resident status for permit holders in the Bristol Bay salmon drift gillnet and set gillnet fisheries. Resident status is broken into three classes: 1) permits held by persons residing locally to Bristol Bay; 2) permits held by persons from other parts of Alaska; and 3) permits held by nonresidents of Alaska.

## **Description of the Files**

Three CFEC files were used to generate the figures in the report: the Gross Earnings file, the Permit file, and the Census file. The following is a description of each file, with notes that correspond to the analysis done for the report.

### **CFEC Permit File**

The CFEC permit file contains data on persons who hold CFEC permits; it originates from CFEC permit renewal and permit transfer forms. A CFEC permit may be held by more than one person in a year. Permits may be transferred permanently or temporarily, in the event of an emergency or unforeseen event. The latter transfer type is referred to as an emergency transfer.

The Permit data file contains a field indicating the declared residency of permit holders. When a permit holder renews an existing permit, or receives a permit through permanent transfer, they must declare whether they are a resident of Alaska. Permit renewal fees are based upon Alaska resident or nonresident status. CFEC permit forms first asked for a declared residency in 1978. Residency on the permit file for the years 1975 through 1977 is based solely upon the listed mailing address of the permit holder.

Persons who receive a permit through an emergency transfer do not have to declare their residency. In these cases, a transferee's residency is assigned based upon their most recent residency declaration in the CFEC system. Sometimes, the person will be new to the CFEC files, and a declaration of residency is not available. These persons are listed as "Unknown" in the Permit file residency field. At the end of the year, permits that were emergency transferred automatically go back to the original permit holder.

### **CFEC Gross Earnings File**

The CFEC Gross Earnings file is based upon ADFG fish tickets and is enhanced with CFEC data on fishing permits and estimated gross earnings. Earnings information is derived

primarily through CFEC analysis of fish tickets and processor reports.<sup>1</sup> Price-per-pound estimates are derived for each area (which usually corresponds with the ADFG fishery management area), species, gear, and delivery type (gutted, in-the-round, etc.) on fish tickets. The prices are then applied to fish ticket data to estimate gross earnings.

## CFEC Census File

CFEC maintains a computer file of places within Alaska where permit holders or vessel owners reside. Each place is annotated with information on its rural or urban status, using United States Census Bureau criteria. CFEC also provides codes that indicate which fisheries are local to each place.

Table 1 shows the places that are designated as local to the Bristol Bay salmon fisheries in the CFEC Census File. This is not a complete list of all possible communities or places that are local to the Bristol Bay fisheries. Instead, the list reflects a combination of places from the Census Bureau, or places of residence given by CFEC permit holders during the 1975 – 2007 period. It is possible that other local Bristol Bay places could be added in the future, provided someone from a new location renews or temporarily holds a Bristol Bay salmon permit.

**Table 1.**  
**Places Local to the Bristol Bay Salmon Fisheries, as**  
**Designated in the CFEC Census File**

Aleknagik	Levelock
Cape Newenham	Manokotak
Clarks Point	Naknek
Dillingham	New Stuyahok
Egegik	Newhalen
Eku	Nondalton
Ekwok	Nunachuak
Hallersville	Nushagak
Igiugig	Pedro Bay
Igushik	Pilot Point
Iliamna	Port Alsworth
Kashiagamiut	Portage Creek
King Salmon	South Naknek
Koggiung	Togjak
Kokhanok	Twin Hills
Koliganek	Ugashik
Kvichak	Ungalikthluk

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<sup>1</sup> The Commercial Operator’s Annual Report (COAR) is a report required by the Alaska Department of Fish and Game for all operations that buy, process, and/or sell fishery resources in Alaska. One section of the report is devoted to ex-vessel purchases, where processors provide information on average prices paid to fishermen.

## **Selection Criteria Used in This Report**

Figures in this report may vary from other sources. Databases change over time as corrections are made, and the methods used to select the data can impact the results.

Harvest figures and permit counts in this report are limited to landings of “commercial” harvests on valid permits. Commercial harvests generally correspond to the competitive fisheries where product is sold. Other harvests, such as test fishing or landings made on educational permits are excluded. Also excluded are illegal landings, discards, personal use, and other harvests taken but not sold.

The estimates of gross earnings represent nominal dollar figures. No adjustments are made to compensate for inflation.

Because permit holdings continually change, data on residency must be viewed as a snapshot in time. In this report, each permit is assigned one resident type for the year, and is based upon the status of the last person to hold the permit. In this way, the residency of the person(s) who made landings during the fishery could be different than the end-of-year permit holder; nevertheless, end-of-the year permit holdings are the most common way CFEC evaluates permit distribution in Alaska, and represent a consistent view of permit holdings over time. Also note that using end-of-the-year permit holders to assign the status prevents the problem of permits with unknown residency; all end-of-the-year permit holders have a declared residency on file.

## **Limited Entry Permits in Bristol Bay**

Bristol Bay salmon are harvested by set and drift gill net gear; each gear type comprises a unique permit fishery. The Bristol Bay fisheries were part of an original group of 19 Alaska salmon fisheries that were limited in 1974. Under the authority of AS 16.43.230, CFEC identified both the Bristol Bay drift and set net fisheries as “distressed fisheries” in the state’s limited entry regulations.<sup>2</sup> Salmon limited entry permits were first issued in 1975.

Table 2 indicates an overall picture of the number of salmon permits in Bristol Bay. Between 1975 and 2008, CFEC issued 1,875 drift gillnet and 1,041 set gillnet permits. Of those totals, Alaska Locals received 38% and 63.5% of the permits in the respective drift and set gillnet fisheries.

By the end of 2008, the total number of permits had been reduced to 1,863 drift gillnet and 981 set gillnet permits due to permit cancellations. Cancellations most commonly occur on nontransferable permits, which are terminated when the permit holder dies or does not renew the permit for two successive years.<sup>3</sup> In the set net fishery, 158 nontransferable

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<sup>2</sup> See Alaska Statute 16.43.30 20 and CFEC regulation 20 AAC 05.300. The Bristol Bay fisheries were among eight salmon fisheries designated as distressed under the regulations.

<sup>3</sup> CFEC issues transferable and nontransferable permits. The Limited Entry Act requires CFEC to initially allocate permits using hardship ranking systems, often called “point systems”. The ranking serves as a surrogate measure for the relative



permits were issued; at the end of 2008, only 64 remained (Table 3). CFEC did not issue nontransferable permits in the drift gillnet fishery, although some cancellations have occurred there - mainly because some individuals failed to renew their permits.<sup>4</sup> Note that at year-end 2008, a small number of permits in the drift net fishery were temporarily held in foreclosure by the state Department of Commerce and Economic Development.

**Table 2. Initial Issuance and Year-end 2008 Totals of Bristol Bay Salmon Permits, With Net Changes Due to Permit Transfers, Migrations, and Cancellations**

Fishery	Residency	Total		Transfers		Migrations		Cancelled		Total 2008 Year-end	Pct. Year- End
		Initially Issued	Pct Issued	Change	Pct	Change	Pct	Change	Pct		
Drift Gillnet	Alaska Locals	713	38.0%	-252	-35.3%	-66	-9.3%	-4	-0.6%	391	21.0%
	Alaska Nonlocals	416	22.2%	114	27.4%	-48	-11.5%	-2	-0.5%	480	25.8%
	Nonresidents	746	39.8%	134	18.0%	114	15.3%	-6	-0.8%	988	53.0%
	DCED/CFAB	0	0.0%	4	0.0%	0	0.0%	0	0.0%	4	0.2%
Total		1,875	100.0%	0		0		-12		1,863	100.0%
Set Gillnet	Alaska Locals	661	63.5%	-156	-23.6%	-116	-17.5%	-25	-3.8%	364	37.1%
	Alaska Nonlocals	225	21.6%	63	28.0%	44	19.6%	-26	-11.6%	306	31.2%
	Nonresidents	155	14.9%	93	60.0%	72	46.5%	-9	-5.8%	311	31.7%
	DCED/CFAB	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total		1,041	100.0%	0		0		-60		981	100.0%

**Table 3. Transferable and Nontransferable Permits in the Set Gillnet Fishery**

Set Gillnet Permits Issued	Local	Nonlocal	Nonresident	All
				Permits
Transferable Permits	557	189	137	883
Nontransferable Permits	104	36	18	158
All Permits	661	225	155	1,041
Set Gillnet Permits; Year-end 2008				
Transferable Permits	327	292	298	917
Nontransferable Permits	37	14	13	64
All Permits	364	306	311	981

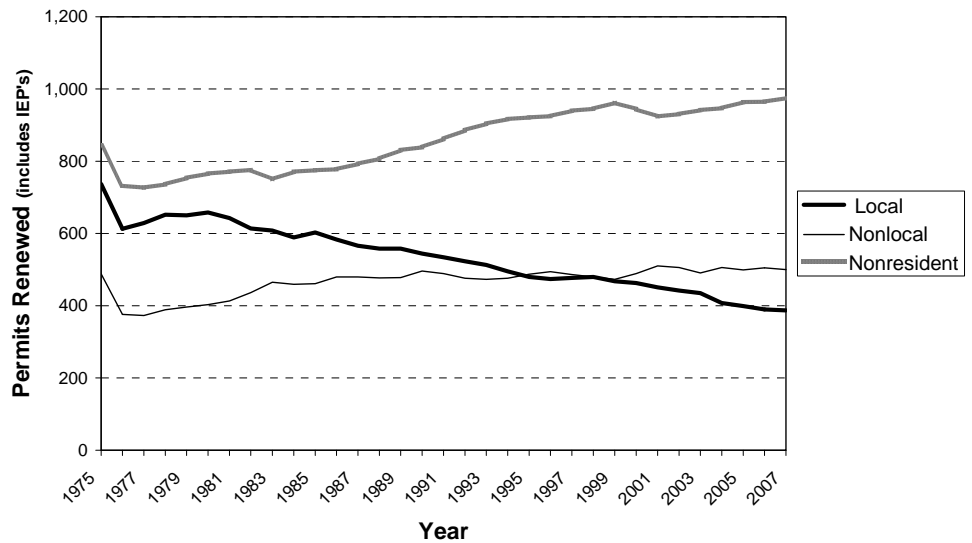
hardship an individual would suffer if they were denied a permit. The Act also requires CFEC to determine levels within the point systems where persons would experience only minor economic hardship if excluded from the fishery. Persons who receive permanent permits but who are ranked at or below the minor hardship level are issued nontransferable permits. No nontransferable permits were issued in the Bristol Bay salmon drift gillnet fishery.

<sup>4</sup> Permits that have been cancelled due to a failure to renew the permit for two successive years may be reinstated at a later date if the renewal fees are eventually paid.

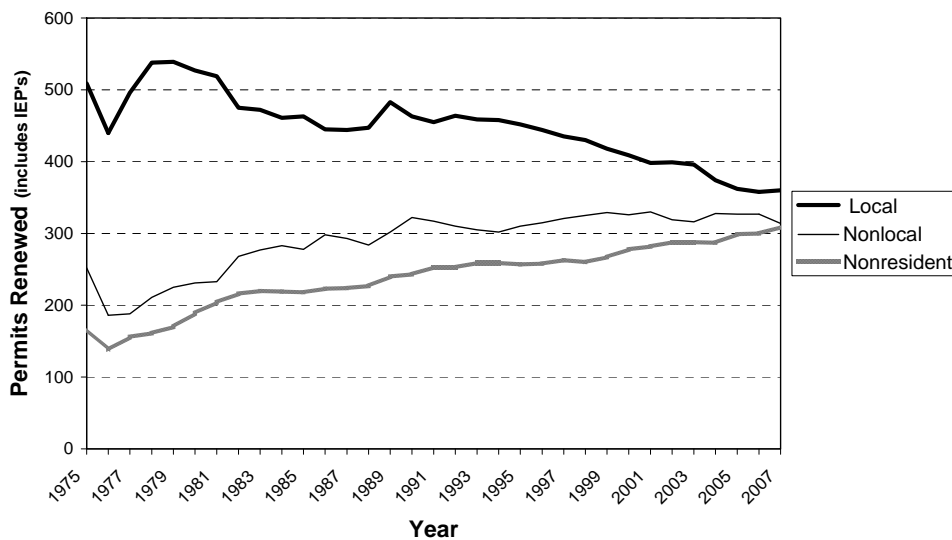
In each fishery, the number and percentage of permits held by Local Alaskans has declined. Drift gillnet permits held by local residents dropped from 38% of the total at initial issuance to 21% by year-end 2008. In the set net fishery, the percentage of locally-held permits was reduced from 63.5% at initial issuance to 37.1% in 2008. The drop in permits held by locals is reflected by a net gain of permits held by both Nonlocal Alaskans and Nonresidents, with Nonresidents showing the largest percentage gain in both the drift and set net fisheries.

The number of permits held by each resident type can change for three reasons: permits can be transferred to other resident types; permit holders can move from one locale to another (migration); or permits can be cancelled. Table 2 indicates the extent to which these factors have contributed to changes in Bristol Bay permit holdings. In each fishery, the net effect of transfers has been the most important reason, but migration has also resulted in significant changes, especially in the gain of permits held by Nonresidents.

**Figure 1.**  
**Bristol Bay Salmon Drift Gillnet Permits**



**Figure 2.**  
**Bristol Bay Salmon Set Gillnet Permits**



## Permits Fished, Harvests, and Estimated Gross Earnings

Tables 4 and 5 show the number of permits used to record landings in the set and drift gillnet fisheries, along with total harvests and estimated gross earnings for the three resident types. The annual number of permits renewed and permits fished is also shown. The tables contain figures for 1975 through 2007.

Figures for renewed permits include renewals of interim-entry permits, as well as permanent permits. Interim-entry permits are issued to individuals during the period when their permanent permit applications are in adjudications.

Each year, the number of permits renewed is greater than the number used to record landings. CFEC regulations require persons to renew their limited entry permits annually, irrespective of whether the person actually fishes.

However, the figures on “permits fished” should be viewed with caution. Many permits are renewed and actively used in the fishery, but are not used to record landings. These permits would not be counted in the “permits fished” column. This situation is especially common in the set net fishery, where groups of individuals or family members commonly fish together and record their landings on only one, or some of the group’s permits. Similarly, since 2003 in the drift gillnet fishery, two individuals have been allowed to fish together on one vessel to increase the vessel’s total allowable amount of gear (commonly referred to as “permit stacking”). In many of these cases, the landings from a vessel were recorded on only one permit. In addition to these common situations, there are probably other occurrences where permits were used in the fishery, but do not show up in the landings data.

Therefore, for the purposes of brevity and to use terminology common in other CFEC reports, the tables in this section use the term “permits fished” to reference the number of permits used to record landings. However, the actual number of permits used on the fishing grounds is almost certainly greater than is shown in the tables.

The rates of permits fished in the drift gillnet fishery were high among all three resident types until 2001, which corresponds with a sharp decline in the average price of salmon.<sup>5</sup> The lowest participation rates occurred the following year in 2002, when only 1,184 total permits (63%) recorded landings. Since then, the rate of permits fished has remained below average. While the new permit stacking regulations adopted in 2003 no doubt skewed the figures, low salmon prices likely contributed to the decline.

As expected, the rates of permits fished are somewhat lower in the set net fishery than in the drift gillnet fishery. However, the set net fishery also exhibits a decline in the rate of fished permits that roughly follows the patterns observed in the drift gillnet fishery, with a sharp

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<sup>5</sup> Per CFEC annual price estimates. The estimated average drift gillnet price for Bristol Bay sockeye salmon dropped to \$.42 per pound in 2001. From 2002 through 2004, the price was roughly \$.50 per pound. See Tables 6 and 7.

drop in 2001, followed by below-average participation in subsequent years. In both fisheries, Alaska Nonlocals show a slightly lower rate of permits fished than the other two resident types.

Average earnings in the fisheries have varied widely, as illustrated in Tables 6 and 7 and Figures 3 and 4. Local Alaskans consistently have the smallest average earnings and Nonresidents usually the highest. The earnings patterns of the three resident types roughly follow one another but the gap between Nonresidents and the other resident types appears to be largest in years of big harvests. For example, the years 1983, 1989-1990, 1992-1995, and 2006-2007 were all years with harvests far above average, and were also among the years where the earnings gap between Nonresidents and Alaskans was largest.

The earnings gap between Local and Nonresidents is much smaller in the set net fishery. Here, average earnings appear to be much more evenly distributed across all three resident types.

Note again that the earnings and price figures in this report are given in nominal dollars. If the figures were adjusted for inflation, the contrast between the high earnings years of the late 1980's and the low earnings years beginning around 2001 would be even greater.

Table 4. Bristol Bay Drift Gillnet Fishery, Permits, Harvests, and Estimated Gross Earnings

Year	Alaska Local				Alaska Nonlocal				Nonresident				All permits			
	Permits Renewed	Permits Fished	Total Pounds	Total Earnings	Permits Renewed	Permits Fished	Total Pounds	Total Earnings	Permits Renewed	Permits Fished	Total Pounds	Total Earnings	Permits Renewed	Permits Fished	Total Pounds	Total Earnings
1975	737	446	7,087,842	\$2,710,503	488	228	4,776,143	\$1,882,401	844	575	14,990,270	\$5,936,634	2,069	1,249	26,854,255	\$10,529,539
1976	613	480	16,738,556	\$7,237,917	376	244	7,157,837	\$3,206,153	732	631	20,112,479	\$9,414,856	1,721	1,355	44,008,872	\$19,858,926
1977	629	500	15,359,503	\$8,213,395	373	249	7,599,109	\$4,149,044	727	610	20,229,234	\$11,695,950	1,729	1,359	43,187,846	\$24,058,389
1978	652	576	30,318,659	\$17,597,001	389	310	13,307,962	\$8,361,022	736	689	35,265,320	\$23,225,019	1,777	1,575	78,891,941	\$49,183,042
1979	650	605	30,747,516	\$29,063,845	396	369	24,484,698	\$24,070,479	754	740	66,478,684	\$67,062,264	1,800	1,714	121,710,898	\$120,196,589
1980	658	620	36,996,654	\$19,449,558	403	384	30,662,140	\$16,770,453	766	760	65,459,947	\$36,363,977	1,827	1,764	133,118,741	\$72,583,988
1981	643	614	41,024,056	\$30,659,120	413	407	34,127,443	\$25,901,353	771	764	73,388,952	\$55,926,586	1,827	1,785	148,540,451	\$112,487,059
1982	614	589	27,248,331	\$18,339,050	436	430	29,275,753	\$19,957,166	776	773	45,048,275	\$30,778,782	1,826	1,792	101,572,359	\$69,074,998
1983	608	589	45,826,438	\$28,087,961	465	458	52,943,511	\$33,331,405	750	750	104,292,001	\$66,188,946	1,823	1,797	203,061,950	\$127,608,313
1984	589	577	37,881,381	\$21,801,313	459	456	39,715,041	\$24,761,023	771	771	73,153,294	\$46,195,034	1,819	1,804	150,749,716	\$92,757,369
1985	603	590	31,383,506	\$24,435,917	461	455	36,773,656	\$30,125,578	775	770	63,366,552	\$52,135,100	1,839	1,815	131,523,714	\$106,696,595
1986	583	570	25,342,690	\$30,720,591	480	477	24,568,874	\$32,838,892	778	776	40,932,028	\$55,369,003	1,841	1,823	90,843,592	\$118,928,486
1987	566	560	25,678,521	\$30,803,419	480	474	24,849,973	\$32,551,585	793	790	42,939,116	\$57,014,592	1,839	1,824	93,467,610	\$120,369,596
1988	558	556	25,921,102	\$43,487,084	477	475	24,098,113	\$46,114,156	807	806	39,344,663	\$77,841,931	1,842	1,837	89,363,878	\$167,443,171
1989	558	554	36,226,904	\$41,129,849	478	470	37,654,785	\$45,526,309	831	831	75,581,816	\$92,810,132	1,867	1,855	149,463,505	\$179,466,290
1990	544	540	38,720,547	\$39,663,520	496	490	43,522,152	\$45,959,624	839	839	93,573,639	\$100,462,621	1,879	1,869	175,816,338	\$186,085,765
1991	534	528	30,563,264	\$21,377,422	489	485	36,140,802	\$26,293,897	862	860	70,074,159	\$51,559,090	1,885	1,873	136,778,225	\$99,230,409
1992	523	521	35,755,365	\$36,771,168	476	472	41,971,410	\$45,739,953	886	886	90,184,577	\$99,705,891	1,885	1,879	167,911,352	\$182,217,012
1993	513	508	49,659,833	\$32,367,665	473	466	54,237,733	\$36,195,839	904	901	114,243,720	\$76,812,393	1,890	1,875	218,141,286	\$145,375,898
1994	495	489	35,490,676	\$32,543,533	476	464	44,382,582	\$42,836,059	917	912	101,367,699	\$99,190,307	1,888	1,865	181,240,957	\$174,569,899
1995	480	476	43,998,076	\$33,173,422	487	485	52,543,370	\$41,066,280	921	921	121,460,273	\$95,789,696	1,888	1,882	218,001,719	\$170,029,398
1996	474	470	35,600,145	\$26,608,172	494	489	40,515,206	\$31,897,509	925	925	90,506,224	\$72,106,514	1,893	1,884	166,621,575	\$130,612,195
1997	477	466	12,415,004	\$10,765,723	486	472	16,825,775	\$15,242,647	940	937	33,346,139	\$30,682,697	1,903	1,875	62,586,918	\$56,691,067
1998	480	465	12,408,765	\$12,855,614	480	462	12,210,300	\$13,775,647	945	931	26,348,440	\$30,571,684	1,905	1,858	50,967,505	\$57,202,946
1999	468	452	24,372,069	\$19,587,844	473	454	27,652,090	\$22,703,901	962	941	61,529,418	\$50,604,203	1,903	1,847	113,553,577	\$92,895,948
2000	463	441	23,265,390	\$14,754,312	489	463	25,075,047	\$16,435,155	944	919	56,314,951	\$37,222,871	1,896	1,823	104,655,388	\$68,412,338
2001	451	401	16,842,486	\$6,406,628	510	396	18,511,728	\$7,428,446	924	769	45,280,562	\$18,579,741	1,885	1,566	80,634,776	\$32,414,815
2002	442	304	7,494,820	\$3,264,792	506	277	13,726,768	\$6,461,107	931	603	32,942,830	\$15,706,518	1,879	1,184	54,164,418	\$25,432,417
2003	435	361	16,686,183	\$7,874,377	491	339	18,173,104	\$8,792,601	942	724	43,602,213	\$21,332,440	1,868	1,424	78,461,500	\$37,999,418
2004	407	333	22,127,596	\$10,586,430	506	352	32,263,198	\$16,174,742	947	726	76,828,724	\$38,908,468	1,860	1,411	131,219,518	\$65,669,641
2005	399	335	22,892,953	\$13,036,976	499	363	32,300,258	\$19,156,426	964	749	80,380,951	\$48,365,923	1,862	1,447	135,574,162	\$80,559,324
2006	390	331	24,532,891	\$14,637,930	505	377	39,222,257	\$24,597,340	965	767	89,761,545	\$56,828,764	1,860	1,475	153,516,693	\$96,064,034
2007	387	320	23,223,475	\$14,273,155	500	378	39,323,287	\$25,020,165	975	770	91,338,459	\$58,821,339	1,862	1,468	153,885,221	\$98,114,659

Table 5. Bristol Bay Set Gillnet Fishery: Permits, Harvests, and Estimated Gross Earnings

Year	Alaska Local				Alaska Nonlocal				Nonresident				All permits			
	Permits Renewed	Permits Fished	Total Pounds	Total Earnings	Permits Renewed	Permits Fished	Total Pounds	Total Earnings	Permits Renewed	Permits Fished	Total Pounds	Total Earnings	Permits Renewed	Permits Fished	Total Pounds	Total Earnings
1975	509	285	1,669,475	\$657,909	252	77	442,789	\$175,547	167	64	518,486	\$205,928	928	426	2,630,750	\$1,039,384
1976	440	312	2,669,075	\$1,238,775	186	92	776,798	\$365,599	138	98	865,906	\$412,399	764	502	4,311,779	\$2,016,773
1977	496	317	2,636,215	\$1,527,861	188	78	791,592	\$458,260	156	103	1,159,890	\$684,200	840	498	4,587,697	\$2,670,321
1978	538	400	5,462,006	\$3,504,706	211	134	2,528,533	\$1,593,518	161	122	1,803,966	\$1,181,153	910	656	9,794,505	\$6,279,377
1979	539	444	8,534,407	\$8,275,274	225	183	4,949,654	\$4,892,761	170	143	3,700,346	\$3,666,374	934	770	17,184,407	\$16,834,409
1980	527	441	9,295,711	\$5,091,354	231	195	6,601,671	\$3,641,970	189	171	5,023,897	\$2,780,046	947	807	20,921,279	\$11,513,369
1981	519	447	12,423,301	\$9,446,943	233	207	7,482,249	\$5,703,665	204	187	6,881,103	\$5,248,699	956	841	26,786,653	\$20,399,307
1982	475	422	6,607,344	\$4,318,930	268	238	4,966,078	\$3,273,056	216	199	4,177,843	\$2,717,040	959	859	15,751,265	\$10,309,026
1983	472	416	9,500,656	\$5,965,003	277	240	7,682,998	\$4,875,848	220	209	6,800,003	\$4,299,823	969	865	23,983,657	\$15,140,674
1984	461	415	7,962,820	\$4,707,737	283	244	6,058,010	\$3,556,080	219	210	4,979,872	\$2,868,005	963	869	19,000,702	\$11,131,822
1985	463	421	6,545,420	\$5,236,766	278	247	4,807,375	\$3,891,896	218	204	3,920,147	\$3,195,251	959	872	15,272,942	\$12,323,913
1986	445	409	7,315,745	\$9,563,922	298	255	5,118,342	\$6,749,054	223	205	4,080,238	\$5,456,289	966	869	16,514,325	\$21,769,265
1987	444	416	6,229,482	\$7,816,520	293	270	4,778,634	\$6,278,576	224	213	3,645,738	\$4,885,580	961	899	14,653,854	\$18,980,677
1988	447	429	6,823,440	\$11,707,951	284	270	4,384,890	\$7,940,827	227	222	3,760,088	\$7,141,125	958	921	14,968,418	\$26,789,902
1989	483	459	9,865,425	\$11,606,693	302	283	8,077,052	\$9,758,695	240	229	7,313,253	\$8,890,126	1,025	971	25,255,730	\$30,255,514
1990	463	441	10,811,313	\$11,255,156	322	297	8,394,583	\$8,838,286	243	233	7,534,438	\$7,999,465	1,028	971	26,740,334	\$28,092,907
1991	455	430	10,024,341	\$7,196,757	317	281	6,424,886	\$4,718,547	253	239	5,964,799	\$4,394,164	1,025	950	22,414,026	\$16,309,468
1992	464	440	10,062,291	\$10,281,953	310	286	7,766,880	\$8,240,573	253	242	7,402,699	\$7,916,341	1,027	968	25,231,870	\$26,438,867
1993	459	436	12,366,234	\$8,190,004	305	282	10,399,238	\$6,956,219	259	247	9,861,634	\$6,602,037	1,023	965	32,627,106	\$21,748,260
1994	458	425	9,831,826	\$8,878,590	302	272	8,012,238	\$7,561,431	259	242	6,875,245	\$6,549,140	1,019	939	24,719,309	\$22,989,161
1995	452	432	13,844,616	\$10,588,204	310	293	10,361,005	\$8,076,177	257	242	9,264,471	\$7,278,803	1,019	967	33,470,092	\$25,943,184
1996	444	420	11,908,840	\$9,029,808	315	284	8,257,438	\$6,506,500	258	237	7,345,649	\$5,837,098	1,017	941	27,511,927	\$21,373,407
1997	435	399	4,379,787	\$3,840,981	321	285	4,765,796	\$4,356,614	263	237	4,483,742	\$4,114,764	1,019	921	13,629,325	\$12,312,359
1998	430	386	4,886,281	\$5,300,553	325	277	3,916,662	\$4,513,472	260	238	3,659,402	\$4,298,694	1,015	901	12,462,345	\$14,112,720
1999	418	384	9,512,157	\$7,639,316	329	294	8,943,636	\$7,330,884	267	247	7,943,774	\$6,550,911	1,014	925	26,399,567	\$21,521,112
2000	409	372	9,685,086	\$6,189,573	326	293	8,003,823	\$5,217,123	278	256	6,951,673	\$4,573,444	1,013	921	24,640,582	\$15,980,140
2001	398	334	9,085,134	\$3,663,618	330	261	6,524,233	\$2,678,248	282	239	5,192,887	\$2,149,237	1,010	834	20,802,254	\$8,491,102
2002	399	280	4,717,159	\$2,183,929	319	190	4,374,023	\$2,095,890	288	210	4,818,461	\$2,316,780	1,006	680	13,909,643	\$6,596,599
2003	396	296	8,748,857	\$4,278,946	316	233	6,413,812	\$3,171,343	288	231	6,012,601	\$2,965,782	1,000	760	21,175,270	\$10,416,072
2004	374	293	6,659,719	\$3,152,531	328	248	8,319,225	\$4,081,568	287	254	9,016,743	\$4,429,423	989	795	23,995,687	\$11,663,522
2005	362	304	10,131,614	\$5,711,848	327	261	9,868,104	\$5,777,230	299	264	10,032,541	\$5,909,623	988	829	30,032,259	\$17,398,701
2006	358	307	9,966,985	\$5,591,376	327	265	8,589,339	\$5,092,623	300	272	8,832,611	\$5,287,229	985	844	27,388,935	\$15,971,228
2007	360	304	11,411,825	\$6,989,215	314	261	9,664,977	\$6,070,694	309	270	10,853,805	\$6,839,855	983	835	31,930,607	\$19,899,763

Table 6. Bristol Bay Salmon Drift Gillnet Fishery,  
Estimated Average Earnings by Residency

Year	Local Alaskans		Nonlocal Alaskans		Nonresidents		Sockeye Price
	Permits Fished	Avg. Earnings	Permits Fished	Avg. Earnings	Permits Fished	Avg. Earnings	
1975	446	\$6,077	228	\$8,256	575	\$10,325	\$0.40
1976	480	\$15,079	244	\$13,140	631	\$14,921	\$0.50
1977	500	\$16,427	249	\$16,663	610	\$19,174	\$0.60
1978	576	\$30,550	310	\$26,971	689	\$33,708	\$0.73
1979	605	\$48,039	369	\$65,232	740	\$90,625	\$1.01
1980	620	\$31,370	384	\$43,673	760	\$47,847	\$0.57
1981	614	\$49,933	407	\$63,640	764	\$73,202	\$0.77
1982	589	\$31,136	430	\$46,412	773	\$39,817	\$0.69
1983	589	\$47,688	458	\$72,776	750	\$88,252	\$0.64
1984	577	\$37,784	456	\$54,300	771	\$59,916	\$0.66
1985	590	\$41,417	455	\$66,210	770	\$67,708	\$0.83
1986	570	\$53,896	477	\$68,845	776	\$71,352	\$1.42
1987	560	\$55,006	474	\$68,674	790	\$72,170	\$1.40
1988	556	\$78,214	475	\$97,082	806	\$96,578	\$2.10
1989	554	\$74,242	470	\$96,864	831	\$111,685	\$1.25
1990	540	\$73,451	490	\$93,795	839	\$119,741	\$1.09
1991	528	\$40,488	485	\$54,214	860	\$59,952	\$0.75
1992	521	\$70,578	472	\$96,907	886	\$112,535	\$1.12
1993	508	\$63,716	466	\$77,673	901	\$85,252	\$0.68
1994	489	\$66,551	464	\$92,319	912	\$108,761	\$0.99
1995	476	\$69,692	485	\$84,673	921	\$104,006	\$0.80
1996	470	\$56,613	489	\$65,230	925	\$77,953	\$0.81
1997	466	\$23,102	472	\$32,294	937	\$32,746	\$0.94
1998	465	\$27,646	462	\$29,817	931	\$32,837	\$1.21
1999	452	\$43,336	454	\$50,009	941	\$53,777	\$0.84
2000	441	\$33,456	463	\$35,497	919	\$40,504	\$0.67
2001	401	\$15,977	396	\$18,759	769	\$24,161	\$0.42
2002	304	\$10,739	277	\$23,325	603	\$26,047	\$0.49
2003	361	\$21,813	339	\$25,937	724	\$29,465	\$0.51
2004	333	\$31,791	352	\$45,951	726	\$53,593	\$0.52
2005	335	\$38,916	363	\$52,773	749	\$64,574	\$0.63
2006	331	\$44,223	377	\$65,245	767	\$74,092	\$0.67
2007	320	\$44,604	378	\$66,191	770	\$76,391	\$0.68

Figure 3.  
Bristol Bay Salmon Drift Gillnet Fishery

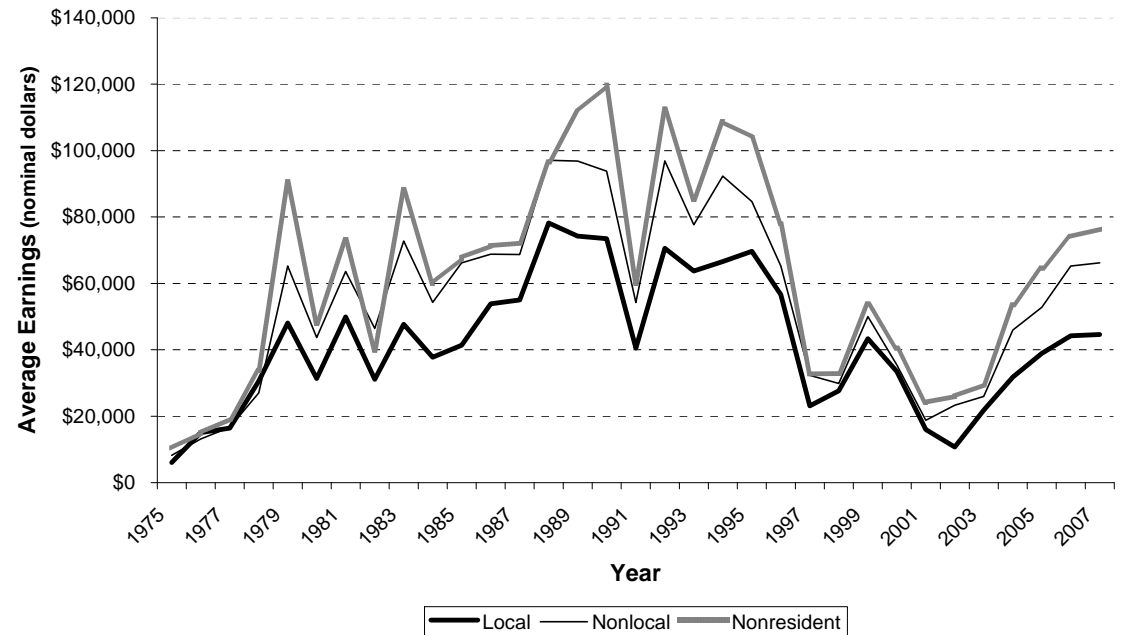


Table 7. Bristol Bay Salmon Set Gillnet Fishery, Estimated Average Earnings by Residency

Year	Local Alaskans		Nonlocal Alaskans		Nonresidents		Sockeye Price
	Permits Fished	Avg. Earnings	Permits Fished	Avg. Earnings	Permits Fished	Avg. Earnings	
1975	285	\$2,308	77	\$2,280	64	\$3,218	\$0.40
1976	312	\$3,970	92	\$3,974	98	\$4,208	\$0.50
1977	317	\$4,820	78	\$5,875	103	\$6,643	\$0.60
1978	400	\$8,762	134	\$11,892	122	\$9,682	\$0.73
1979	444	\$18,638	183	\$26,736	143	\$25,639	\$0.99
1980	441	\$11,545	195	\$18,677	171	\$16,258	\$0.57
1981	447	\$21,134	207	\$27,554	187	\$28,068	\$0.77
1982	422	\$10,234	238	\$13,752	199	\$13,653	\$0.69
1983	416	\$14,339	240	\$20,316	209	\$20,573	\$0.64
1984	415	\$11,344	244	\$14,574	210	\$13,657	\$0.66
1985	421	\$12,439	247	\$15,757	204	\$15,663	\$0.83
1986	409	\$23,384	255	\$26,467	205	\$26,616	\$1.42
1987	416	\$18,790	270	\$23,254	213	\$22,937	\$1.40
1988	429	\$27,291	270	\$29,410	222	\$32,167	\$2.10
1989	459	\$25,287	283	\$34,483	229	\$38,822	\$1.25
1990	441	\$25,522	297	\$29,759	233	\$34,332	\$1.09
1991	430	\$16,737	281	\$16,792	239	\$18,386	\$0.75
1992	440	\$23,368	286	\$28,813	242	\$32,712	\$1.12
1993	436	\$18,784	282	\$24,667	247	\$26,729	\$0.68
1994	425	\$20,891	272	\$27,799	242	\$27,063	\$0.97
1995	432	\$24,510	293	\$27,564	242	\$30,078	\$0.80
1996	420	\$21,500	284	\$22,910	237	\$24,629	\$0.81
1997	399	\$9,627	285	\$15,286	237	\$17,362	\$0.94
1998	386	\$13,732	277	\$16,294	238	\$18,062	\$1.21
1999	384	\$19,894	294	\$24,935	247	\$26,522	\$0.84
2000	372	\$16,639	293	\$17,806	256	\$17,865	\$0.67
2001	334	\$10,969	261	\$10,261	239	\$8,993	\$0.42
2002	280	\$7,800	190	\$11,031	210	\$11,032	\$0.49
2003	296	\$14,456	233	\$13,611	231	\$12,839	\$0.51
2004	293	\$10,759	248	\$16,458	254	\$17,439	\$0.50
2005	304	\$18,789	261	\$22,135	264	\$22,385	\$0.60
2006	307	\$18,213	265	\$19,217	272	\$19,438	\$0.62
2007	304	\$22,991	261	\$23,259	270	\$25,333	\$0.65

Figure 4. Bristol Bay Salmon Set Gillnet Fishery





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

CFEC Report 08-4N  
May, 2008

Prepared by Kurt Iverson and Justine Sears

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

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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.<sup>1</sup> Only legal commercial landings made on valid CFEC permits were retained.<sup>2</sup> 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.<sup>3</sup>

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

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

<sup>3</sup> 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.<sup>4</sup> 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

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<sup>4</sup> 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