

SCOMM

156:2

ALASKA DEPARTMENT OF FISH AND GAME

DIVISION OF COMMERCIAL FISHERIES

NEWS RELEASE



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2008 UPPER COOK INLET COMMERCIAL SALMON FISHERY SUMMARY

The 2008 Upper Cook Inlet (UCI) commercial harvest of 2.8 million salmon is approximately 1.5 million fish below the average long-term harvest in UCI (Table 1). While all five species of Pacific salmon are present in Upper Cook Inlet, the primary focus of the commercial fishery is sockeye salmon. Sockeye salmon escapement goals are monitored in six systems in UCI. In 2008 two were within, two were below, and two were over the goal ranges (see table below and Table 2).

System	2008 Inriver Estimate	Lower Goal	Upper Goal
Crescent River	62,030	30,000	70,000
Fish Creek	19,339	20,000	70,000
Kasilof River ^a	301,469	150,000	250,000
Kenai River	614,946	650,000	850,000
Packers Creek	25,248	15,000	25,000
Yentna River	90,146	90,000	160,000

^a The Kasilof River BEG is 150,000 to 250,000; an OEG was established in 2002 of 150,000 to 300,000 to aid in achieving the lower end of the Kenai River goal.

SOCKEYE SALMON

The preseason forecast for the 2008 season projected a run of 5.6 million sockeye salmon, with a harvest estimate (sport, personal use & commercial) of 3.9 million fish. The total run to the Kenai River, generally the largest producer in UCI, was forecasted to be 3.1 million sockeye salmon. This resulted in managing for an inriver sonar goal range in the Kenai River of 750,000 to 950,000 sockeye salmon. Two regularly scheduled fishing periods plus up to 51 hours of additional fishing time in the Upper Subdistrict set gillnet fishery were allowed under this size or run under the abundance based escapement goal for the Kenai River. In addition, this run strength mandated two closed periods (windows) per week, a 24 and a 36-hour period in the Upper Subdistrict set gillnet fishery.

While the fishing season opens in most of Upper Cook Inlet in mid to late June, participation and harvests remain fairly low until about July 4. In 2008, harvests in the Central District were relatively low through July 12 for a return forecast at the level of 5.6 million; however winds and tides will sometimes have this effect. After July 12, the harvest from each fishing period was approximately one-half of that expected. Beginning July 20, indications from the Offshore Test Fish Program (OTF), coupled with harvests and escapements to date began to indicate the return was not going to be as strong as forecast. On July 24, the run estimate from the OTF was indicating that the run was going to be not only well below forecast but below 2 million triggering a different escapement goal of 650,000–850,000 sockeye salmon and different management parameters. The commercial fishery targeting Kenai Stocks in the Upper Subdistrict and Central District drift gillnet fishery was closed at the end of the July 24 fishing period and remained closed for the remainder of the year due to lagging sockeye passage to the Kenai River. Even with these actions to conserve Kenai Sockeye the inriver goal was not achieved. On August 1, the department assessed the total Kenai River sockeye salmon to be between 1.85 and 1.91 million fish. With this inseason assessment, the inriver goal for the Kenai River became 650,000 to 850,000 sockeye salmon. The final inriver sonar count in the Kenai River was 614,946 sockeye salmon, slightly below the lower end of the inriver goal range for a run of fewer than 2 million. The run in 2008 was approximately 4 days early and much weaker than forecast. Because of the run size estimate being so close to the 2 million demarcation point to the Kenai River and the changes dictated by management plans, it will be several weeks before information from fish tickets and escapements can be tallied for individual river systems to see if the estimates for run strengths listed above are indeed correct.

The UCI commercial harvest of 2.3 million sockeye salmon was significantly below the preseason forecast harvest estimate of 3.9 million and the 9th lowest harvest since 1980. The total run of sockeye salmon to UCI of 4.0 million was 29% less than the preseason forecast (see table below). Returns to all systems were significantly less than the forecast with the largest disparity in numbers of fish being with the run forecast to the Kenai River where the forecast was approximately 1 million fish off.

System	Forecast	Actual	Difference
Crescent River	100,000	82,000	-18%
Fish Creek	53,000	28,000	-50%
Kasilof River	1,286,000	1,100,000	-14%
Kenai River	3,064,000	2,086,000	-32%
Susitna River	344,000	307,000	-11%
Minor Systems	727,000	336,000	-54%
Overall Total	5,574,000	3,943,000	-29%

Sockeye salmon prices at the beginning of the season were in the range of \$1.20 per pound. The total exvessel value in UCI for sockeye salmon was approximately \$18.0 million, which was 92.5% of the total UCI exvessel value.

COHO SALMON

The 2008 coho salmon harvest of 166,475 was slightly below the recent 10-year average harvest of 188,000 and approximately half of the 1966–2007 long term average coho salmon harvest of 316,000. Commercial coho salmon harvests in 2008 were likely reduced due to restrictions in area to the drift fleet endeavoring to achieve the Yentna Sockeye escapement goal, as well as several periods closed in the Northern District set gillnet fishery for the same reason, and also due to an early closure in the drift fishery and Upper Subdistrict set gillnet on July 24 for most of the rest of the season. The coho salmon run in 2008 was judged to be above average. Commercial coho salmon harvests in UCI during the 1980's and early 1990's were much higher than the long term average due to good coho salmon production, and also due to strong sockeye salmon returns to Upper Cook Inlet, which resulted in more fishing time in the Central District. Since 1996, BOF regulations have reduced the fishing time of the drift fleet in the Central District and eliminated additional fishing time directed at coho salmon surpluses in the Northern District, Kalgin Island and Upper Subdistricts of the Central District, which has resulted in marked reductions in the commercial exploitation of this species. The only significant coho salmon return to UCI that is monitored with an escapement goal is the Little Susitna River. In 2008, the final escapement count of 18,485 was slightly below the upper end of the escapement goal range of 19,200. The exvessel value of coho salmon to the commercial fishery was approximately \$700,000 or 3.6% of the total exvessel value in Upper Cook Inlet.

PINK SALMON

Approximately 168,000 pink salmon were harvested in 2008. This figure is approximately 75% of the recent 10-year average pink salmon harvest of 187,000 and about one third of the average harvest of 490,000 since 1966. Pink salmon harvests were impacted by the restrictions implemented for Yentna River sockeye salmon and the early termination of the Upper Subdistrict set gillnet fishery. Pink salmon escapements are not monitored in Upper Cook Inlet to an appreciable degree; however it appears that escapements to most river systems were very good. Prices paid for pink salmon ranged from approximately \$.10 to \$.35 per pound, resulting in an exvessel value for this species of \$150,000, less than 1% of the total exvessel.

CHUM SALMON

The 2008 harvest of 51,301 chum salmon was well below the long-term average harvest of approximately 500,000 chum salmon. The 2008 chum salmon harvest was approximately 50% less than the recent 10-year average harvest of 120,000. Much of this reduction in harvest is the result of reduced fishing time in traditional fishing areas, primarily by the drift fleet, due to sockeye salmon concerns to Northern Cook Inlet. Following the flood of 1986 through the mid 1990s, chum salmon production in much of Southcentral Alaska was poor. Since the mid-1990s however, chum salmon production has increased. Chum salmon runs to most of Cook Inlet in 2008 were good by recent standards. The exvessel value of chum salmon to the commercial fishery was approximately \$150,000, or less than 1% of the total value.

CHINOOK SALMON

The 2008 harvest of 12,917 Chinook salmon is 25% below both the long and short-term average harvests of 16,200. The two fisheries where Chinook salmon are harvested in appreciable numbers in UCI are in the set gillnet fisheries in the Northern District King Salmon Fishery and in the Upper Subdistrict of the Central District. After experiencing a significant downturn in the early to mid 1990s, Northern District Chinook salmon stocks rebounded and were relatively strong for the preceding 10 years. However, in 2008, the Deshka River Chinook salmon run, which is the generally the largest run in the region was below average failing to meet its escapement goal. Closures were implemented with 1 of the 5 allowable king salmon periods being closed and the first regular sockeye period on June 26 was also closed in the Northern District to conserve Chinook salmon. Harvests in the Northern District fishery remain well below the harvest cap of 12,500 Chinook salmon due to reduced participation and regulatory closures of the highest producing fishing sites located north of the Theodore River. The 2008 harvest in the Northern District of 4,000 Chinook salmon is about 1,600 fish higher than the recent 10-year average harvest of 2,400 Chinook salmon. This is most likely due to changes made by the BOF in 2005 lengthening the fishing periods from 6 hours to 12 hours on each Monday. In 2008, the commercial harvest in the Upper Subdistrict set gillnet fishery of 7,000 Chinook salmon was about 75% of the average harvest since 1966 when harvest records were available. Late-run Kenai River Chinook salmon runs have been relatively stable and escapement objectives have been consistently achieved or exceeded. Beginning in 1999, a 24-hour closed period per week was mandated for the set gillnet fishery in the Upper Subdistrict. Since that time, longer closed periods of 36-hours or two shorter closed periods each week, a 24 and a 36-hour closed period, have also been adopted into regulation. The stated purpose of these closed periods is to pass fish into the inriver recreational fishery for the weekends. However, when large numbers of sockeye salmon pass into the Kenai and Kasilof Rivers during closed windows, allowable fishing time is maximized when fewer sockeye salmon are moving into UCI in an attempt to keep sockeye salmon goals within their ranges. This may result in increased Chinook salmon harvest in the set gillnet fishery. In 2008, the exvessel value for Chinook salmon was \$461,000 which is approximately 2.4% of the total exvessel value.

Table 1. Upper Cook Inlet commercial salmon harvest by species, 1966–2008.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1966	8,544	1,852,114	289,837	2,005,745	532,756	4,688,996
1967	7,859	1,380,062	177,729	32,229	296,837	1,894,716
1968	4,536	1,104,896	468,160	2,276,993	1,107,903	4,962,488
1969	12,386	691,815	100,684	32,499	267,686	1,105,070
1970	8,336	732,572	275,205	814,760	750,774	2,581,647
1971	19,765	636,289	100,362	35,590	323,945	1,115,951
1972	16,086	879,811	80,896	628,566	626,414	2,231,773
1973	5,194	670,098	104,420	326,184	667,573	1,773,469
1974	6,596	497,185	200,125	483,730	396,840	1,584,476
1975	4,787	684,751	227,376	336,330	951,588	2,204,832
1976	10,865	1,664,149	208,663	1,256,728	469,180	3,609,585
1977	14,790	2,052,291	192,593	553,855	1,233,436	4,046,965
1978	17,299	2,621,421	219,193	1,688,442	571,779	5,118,134
1979	13,738	924,406	265,164	72,980	649,758	1,926,046
1980	13,798	1,573,588	271,416	1,786,421	387,815	4,033,038
1981	12,240	1,439,262	484,405	127,143	831,977	2,895,027
1982	20,870	3,259,864	792,224	790,644	1,432,940	6,296,542
1983	20,634	5,049,733	516,322	70,327	1,114,858	6,771,874
1984	10,062	2,106,714	449,993	617,452	680,726	3,864,947
1985	24,088	4,060,429	667,213	87,828	772,849	5,612,407
1986	39,254	4,791,562	757,319	1,300,939	1,134,817	8,023,891
1987	39,431	9,465,994	449,421	109,381	348,809	10,413,036
1988	29,069	6,843,833	560,948	471,076	710,615	8,615,541
1989	26,737	5,011,124	339,818	67,441	122,051	5,567,171
1990	16,105	3,604,259	501,643	603,434	351,123	5,076,564
1991	13,542	2,178,331	426,487	14,663	280,223	2,913,246
1992	17,171	9,108,353	468,930	695,861	274,303	10,564,618
1993	18,871	4,755,329	306,882	100,934	122,770	5,304,786
1994	19,954	3,565,586	583,793	523,434	303,177	4,995,944
1995	17,893	2,951,827	446,554	133,575	529,422	4,079,671
1996	14,306	3,888,922	321,668	242,911	156,501	4,624,308
1997	13,292	4,176,738	152,404	70,933	103,036	4,516,403
1998	8,124	1,219,242	160,660	551,260	95,654	2,034,940
1999	14,383	2,680,510	125,908	16,174	174,541	3,011,516
2000	7,350	1,322,482	236,871	146,482	127,069	1,840,254
2001	9,295	1,826,833	113,311	72,559	84,494	2,106,492
2002	12,714	2,773,118	246,281	446,960	237,949	3,717,022
2003	18,490	3,476,159	101,756	48,789	120,767	3,765,961

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Table 1. Page 2 of 2.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
2004	27,476	4,926,220	311,056	357,939	146,164	5,768,855
2005	28,171	5,238,168	224,657	48,419	69,740	5,609,155
2006	18,029	2,192,730	177,853	404,111	64,033	2,856,756
2007	17,625	3,316,779	177,339	147,020	77,240	3,736,003
2008	12,917	2,362,880	166,475	168,759	51,301	2,762,332
1966-2007 Avg.	16,185	2,933,227	316,284	490,446	469,098	4,225,241
16,166	16,166	2,897,224	187,569	223,971	119,765	3,444,695

Note: Catch statistics prior to 2007 reflect minor adjustments to the harvest database.

Table 2. Sockeye salmon enumeration by river and date, 2008.

	Kenai River		Kasilof River		Crescent River		Yentna River		Fish Creek		Packers Creek	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
15-Jun			446	446								
16-Jun			271	717								
17-Jun			477	1,194								
18-Jun			427	1,621								
19-Jun			658	2,279								
20-Jun			3,229	5,508								
21-Jun			3,905	9,413								
22-Jun			5,504	14,917								
23-Jun			7,355	22,272								
24-Jun			4,728	27,000	35	35						
25-Jun			6,437	33,437	53	88						
26-Jun			15,121	48,558	55	143						
27-Jun			7,825	56,383	30	173						
28-Jun			7,849	64,232	20	193						
29-Jun			2,296	66,528	155	348						
30-Jun			4,618	71,146	166	514						
1-Jul	2,474	2,474	2,145	73,291	333	847						
2-Jul	2,791	5,265	2,944	76,235	2,541	3,388						
3-Jul	2,638	7,903	3,150	79,385	1,438	4,826						
4-Jul	1,384	9,287	1,216	80,601	2,859	7,685						
5-Jul	969	10,256	2,082	82,683	1,324	9,009					0	
6-Jul	890	11,146	1,574	84,257	873	9,882					81	81
7-Jul	829	11,975	5,914	90,171	3,148	13,030	102	102	0	0	289	370
8-Jul	1,069	13,044	3,039	93,210	3,111	16,141	113	215	0	0	948	1,318
9-Jul	2,123	15,167	2,479	95,689	3,734	19,875	136	351	1	1	9	1,327
10-Jul	3,019	18,186	4,371	100,060	3,915	23,790	159	510	1	2	2	1,329
11-Jul	1,527	19,713	2,095	102,155	1,751	25,541	131	641	0	2	24	1,353
12-Jul	2,056	21,769	4,697	106,852	3,765	29,306	299	940	114	116	391	1,744
13-Jul	4,465	26,234	2,147	108,999	3,352	32,658	221	1,161	7	123	475	2,219
14-Jul	2,718	28,952	9,213	118,212	3,629	36,287	370	1,531	0	123	39	2,258
15-Jul	25,514	54,466	19,047	137,259	2,946	39,233	4,635	6,166	0	123	159	2,417
16-Jul	68,124	122,590	18,828	156,087	1,282	40,515	7,164	13,330	0	123	172	2,589
17-Jul	51,062	173,652	12,343	168,430	1,883	42,398	7,249	20,579	12	135	149	2,738
18-Jul	18,535	192,187	7,821	176,251	2,905	45,303	6,389	26,968	304	439	101	2,839
19-Jul	17,110	209,297	19,026	195,277	2,493	47,796	7,923	34,891	386	825	318	3,157
20-Jul	29,398	238,695	5,591	200,868	1,526	49,322	13,571	48,462	315	1,140	225	3,382
21-Jul	32,015	270,710	6,918	207,786	2,067	51,389	8,854	57,316	562	1,702	259	3,641
22-Jul	31,450	302,160	8,292	216,078	1,940	53,329	5,781	63,097	1,004	2,706	742	4,383
23-Jul	10,529	312,689	5,600	221,678	984	54,313	7,147	70,244	3,312	6,018	674	5,057
24-Jul	11,401	324,090	5,470	227,148	437	54,750	3,760	74,004	2,624	8,642	383	5,440

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Table 2. Page 2 of 2.

	Kenai River		Kasilof River		Crescent River		Yentna River		Fish Creek		Packers Creek	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
25-Jul	10,920	335,010	8,779	235,927	849	55,599	2,677	76,681	2,124	10,766	622	6,062
26-Jul	7,387	342,397	14,539	250,466	760	56,359	1,053	77,734	441	11,207	20	6,082
27-Jul	16,437	358,834	12,167	262,633	962	57,321	547	78,281	1,243	12,450	1,467	7,549
28-Jul	19,164	377,998	6,844	269,477	1,119	58,440	868	79,149	1,128	13,578	360	7,909
29-Jul	22,136	400,134	3,516	272,993	1,009	59,449	1,103	80,252	665	14,243	726	8,635
30-Jul	26,216	426,350	2,930	275,923	1,062	60,511	582	80,834	207	14,450	1,674	10,309
31-Jul	19,548	445,898	3,525	279,448	412	60,923	932	81,766	1,432	15,882	407	10,716
1-Aug	22,615	468,513	3,256	282,704	592	61,515	669	82,435	168	16,050	116	10,832
2-Aug	17,284	485,797	2,886	285,590	515	62,030	883	83,318	91	16,141	405	11,237
3-Aug	13,332	499,129	3,018	288,608			1,317	84,635	668	16,809	432	11,669
4-Aug	14,327	513,456	2,819	291,427			1,770	86,405	41	16,850	484	12,153
5-Aug	11,409	524,865	2,263	293,690			1,351	87,756	513	17,363	427	12,580
6-Aug	10,903	535,768	1,753	295,443			700	88,456	226	17,589	1,216	13,796
7-Aug	8,477	544,245	1,154	296,597			385	88,841	144	17,733	823	14,619
8-Aug	6,603	550,848	1,161	297,758			307	89,148	83	17,816	310	14,929
9-Aug	7,729	558,577	1,763	299,521			489	89,637	424	18,240	464	15,393
10-Aug	10,802	569,379	1,948	301,469			509	90,146	40	18,280	366	15,759
11-Aug	10,951	580,330							68	18,348	573	16,332
12-Aug	10,392	590,722							401	18,749	436	16,768
13-Aug	7,351	598,073							481	19,230	459	17,227
14-Aug	8,415	606,488							109	19,339	273	17,500
15-Aug	5,448	611,936							0	19,339	700	18,200
16-Aug	1,530	613,466	0								178	18,378
17-Aug	1,480	614,946	0								630	19,008
18-Aug	0		0								284	19,292
19-Aug	0		0								345	19,637
20-Aug	0		0								815	20,452
21-Aug	0		0								543	20,995
22-Aug	0		0								1,849	22,844
23-Aug	0		0								566	23,410
24-Aug	0		0								298	23,708
25-Aug	0		0								455	24,163
26-Aug	0		0								112	24,275
27-Aug	0		0								153	24,428
28-Aug	0		0								231	24,659
29-Aug	0		0								93	24,752
30-Aug	0		0								496	25,248

Note: Days without data indicate days when the project was not operational.

Comparison of Recent Sport and Commercial Fisheries Economic Studies

Presented to the
Cook Inlet Salmon Task Force
January 29, 2009

- Gunnar Knapp
Professor of Economics
Institute of Social and Economic Research
University of Alaska Anchorage
907-786-7717
Gunnar.Knapp@uaa.alaska.edu
- Currently teaches courses at UAA on the Alaska Economy and on Fisheries Economics
 - Taught economic issues related to Alaska fisheries for many years
 - Research incorporates revisions to slides 9, 17, 21, 24 & 25 made on February 3, 2009

Who I Am

- Professor of Economics at the UAA Institute of Social and Economic Research (ISER).
- Studied economic issues related to Alaska fisheries for many years.
- Teach courses at UAA on the Alaska Economy and on Fisheries Economics.
- Currently preparing a report on what kinds of economic information exists and does not exist for Alaska's fisheries.

Purpose of Presentation

- Two recent reports have examined economic impacts and contributions of sport fishing and commercial fishing in Alaska.
- I was invited to compare the results of these two reports.

1. What policy conclusions can we draw?
2. How accurate and reliable are the estimates?
3. Comparison of reports, estimates of economic importance
4. Comparison of report methodologies

Outline of presentation

Outline of presentation

1. Comparison of report methodologies
2. Comparison of reports' estimates of economic importance
3. How accurate and reliable are the estimates?
4. What policy conclusions can we draw?

- I was invited to compare the results of these two reports: contributions of sport fishing and commercial fishing in Alaska.
- Two recent reports have examined economic impacts and

Purpose of Presentation

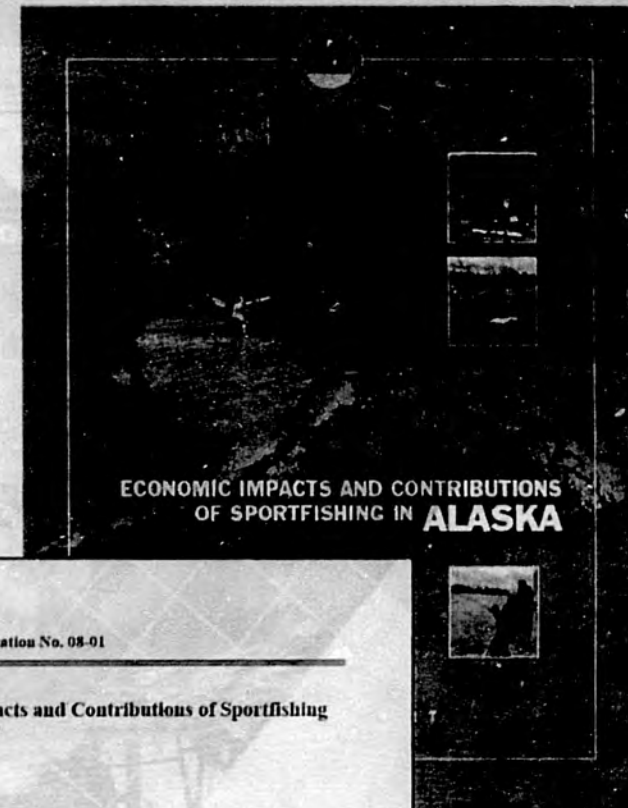
"Sport Fishing Report":

Economic Impacts and Contributions of Sportfishing in Alaska, 2007

available at:

<http://www.sf.adfg.state.ak.us/statewide/economics/>

- Sponsored by: Alaska Department of Fish and Game, Division of Sport Fish
- Prepared by: Southwick Associates, Inc. in cooperation with ADFG staff
- Released: December 2008
- Pages: 289; 12-page summary



Professional Publication No. 08-01

Economic Impacts and Contributions of Sportfishing in Alaska, 2007

by
Southwick Associates, Inc.
and
William J. Romberg
Allen E. Bingham
Gretchen B. Jennings
Robert A. Clark

December 2008

Alaska Department of Fish and Game

Division of Sport Fish



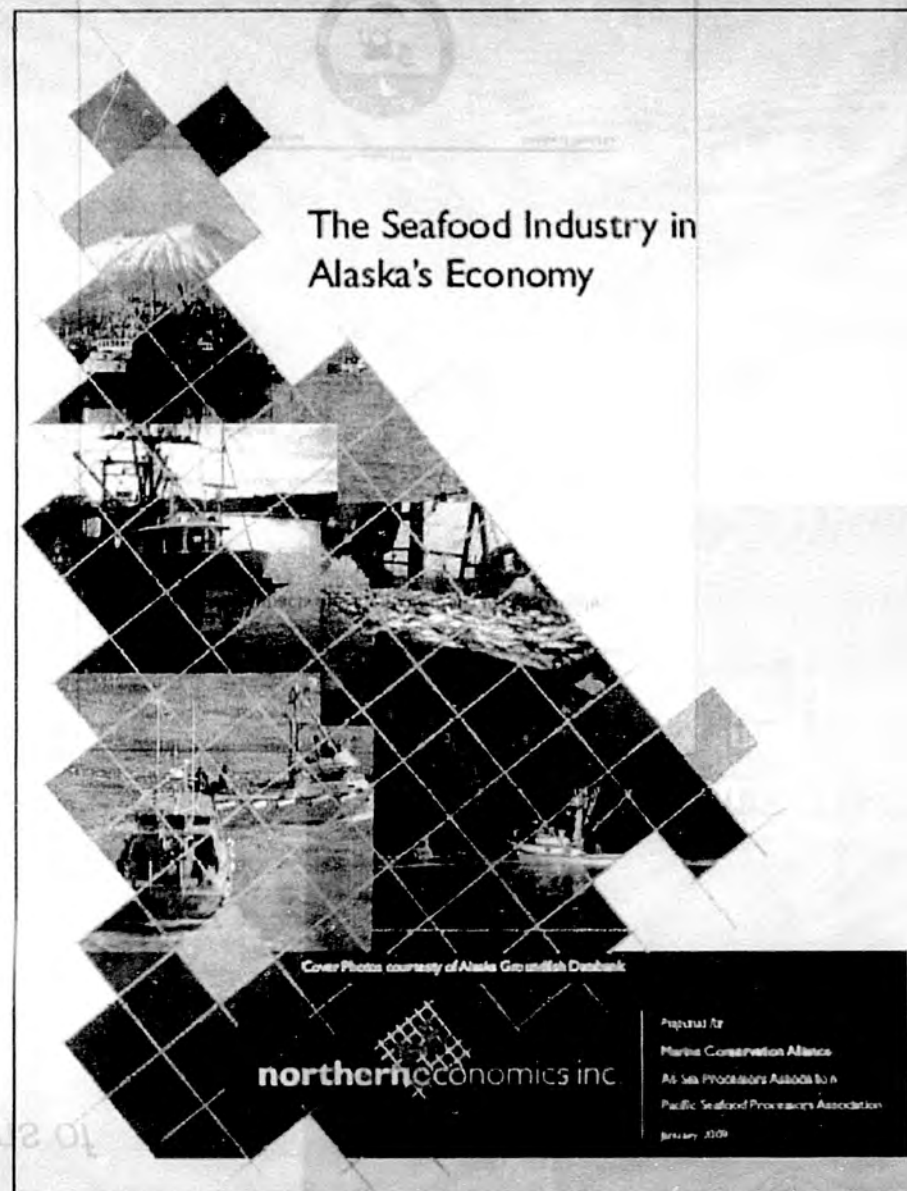
Commercial Fishing Report

The Seafood Industry in Alaska's Economy

available at:

www.marineconservationalliance.org

- Sponsored by: Marine Conservation Alliance; At-Sea Processors Association; Pacific Seafood Processors Association
- Prepared by: Northern Economics, Inc.
- Released January 2009
- Pages: 77



The Sport Fishing and Commercial Fishing Industries

	Commercial fisheries	Sport fisheries
What do they produce?	Fish products	Fish Angling experience Aesthetics Fishing Catching fish
Who are the consumers?	Fish consumers	Sport fishermen
Who is part of the industry?	Commercial fishermen Processors Fish transportation industries Distributors Retailers Restaurants	Charter operators Lodges Transportation industries Any other businesses supplying products or services used in sport-fishing

Purpose of the Reports

SPORT FISHING REPORT

- “to obtain current estimates of the economic contribution of sportfishing activities to the Alaska economy and to develop a consistent method for producing such estimates on a regular basis.”

(Executive summary, page 4)

Major goals were to collect new data and develop a method for estimating economic importance

COMMERCIAL FISHING REPORT

- “to describe the economic importance of Alaska’s seafood industry, focusing primarily on the industry’s significance to the state economy. The report draws on data from a wide range of sources”

(Page 1)

Based on data regularly collected by the state

A starting economic principle:

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- Sales of an industry to non-residents have a different effect on the Alaska economy than sales to residents.
- Sales of an industry to non-residents bring new money into the economy and increase the size of the economy
- Sales of an industry to residents don't necessarily bring new money into the economy and don't necessarily increase the size of the economy
 - Residents have only a limited amount of money to spend
 - If they spend more on Alaska fish or Alaska sport-fishing, they may buy less from other Alaska industries
 - If they spend less on Alaska fish or Alaska sport-fishing, they may buy more from other Alaska industries
 - Sales to residents probably have less effect on the Alaska economy (per dollars of sales) than sales to non-residents
- Economic terminology:
 - Economic contributions: Economic effects of all sales
 - Economic impacts: Economic effects of money brought in from outside the state or outside a region

Alaska's sport fishing and commercial fishing industries differ in the relative mix of sales to non-residents and residents

SPORT FISHING INDUSTRY

- Sales are to both residents and non-residents

SPORT FISHING REPORT

- Distinguishes between effects of sales to residents and non-residents
- Estimates both
 - Economic contributions
 - Economic impacts

COMMERCIAL FISHING INDUSTRY

- Almost all sales are to non-residents

COMMERCIAL FISHING REPORT

- Does not distinguish between effects of sales to residents and non-residents
- Estimates are mainly economic impacts

How economists define economic impacts of an industry ...

“Direct impacts” of the industry	“Indirect & induced impacts” in other industries created as businesses and workers in the industry spend money within Alaska	Total impacts
Sales or “output” of the industry	Sales or “output” in other industries	Total sales
Income earned in the industry	Income earned in other industries	Total income
Jobs or employment in the industry	Jobs or employment in other industries	Total jobs
Taxes paid by the industry	Taxes paid in other industries	Total taxes

Note: Economic contributions are defined in the same way.

How economists estimate economic impacts of an industry:

1. Estimate “direct sales” of the industry
(= total payments to the industry)
2. Use an “input-output model” to estimate how payments to the industry translate into sales of other industries as money circulates through the economy.
3. Use the “input-output model” to estimate how sales translate into income, jobs and taxes

Direct impacts of the industry	Indirect and induced impacts in other industries	Total impacts
Direct sales	Indirect & induced sales	Total sales
Direct income	Indirect & induced income	Total income
Direct jobs	Indirect & induced jobs	Total jobs
Direct taxes	Indirect & induced taxes	Total taxes

How economists estimate economic impacts of an industry:

(simplified)

sectors requires a lot of data and a lot of work!

Making all these assumptions about payments between industry

Estimate "direct sales"
of the industry



Make input-output model
assumptions



Estimate economic
impacts

- Tax payments in Alaska's region

- Payments to workers in Alaska's region

- Purchases from Alaska's region

how \$1 of sales translates

• Make assumptions for each industry sector and each region about

• Divide Alaska economy into geographic regions

• Divide Alaska economy into industry sectors

input-output models require lots of assumptions!

Input-output models require lots of assumptions!

- Divide Alaska economy into industry sectors
- Divide Alaska economy into geographic regions
- Make assumptions, for each industry sector and each region, about how \$1 of sales translates into:
 - Purchases from other Alaska industry sectors, by region
 - Payments to workers in Alaska, by region
 - Tax payments in Alaska, by region

Making all these assumptions about payments between industry sectors requires a lot of data and a lot of work!

So Alaska economic impact studies usually use assumptions based on national studies—which may not be very realistic for Alaska.

Typical problems with comparing economic impact studies for different Alaska industries

- They divide the Alaska economy into different industry sectors
- They use different geographic regions
- They make different assumptions about sales between industry sectors

surveys of anglers
Based on multiple
of the industry
Estimate "direct sales"

SPORT FISHING REPORT

reports of wholesale value
Based on mandatory processor
of the industry
Estimate "direct sales"

COMMERCIAL FISHING REPORT

important differences in how the reports estimated economic impacts

Important differences in how the reports estimated economic impacts

SPORT FISHING REPORT

**Estimate "direct sales"
of the industry**

Based on multiple
surveys of anglers



**Make
input-output model
assumptions**



**Estimate
economic
impacts**

Different
methods for
estimating
direct sales

COMMERCIAL FISHING REPORT

**Estimate "direct sales"
of the industry**

Based on mandatory processor
reports of wholesale value



**Make
input-output model
assumptions**

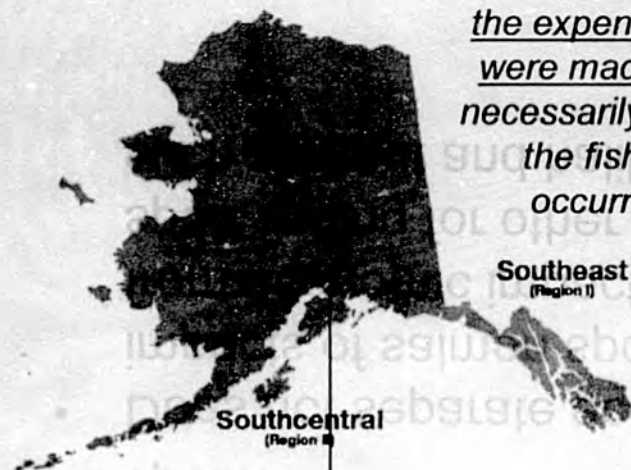


**Estimate
economic
impacts**

Different industry sectors
Different Alaska regions
Different assumptions about
payments between industries
Different definitions for:
"jobs"
"income"
"taxes"

SPORT FISHING REPORT

The sport fishing report regions are the regions where the expenditures were made--not necessarily where the fishing occurred.



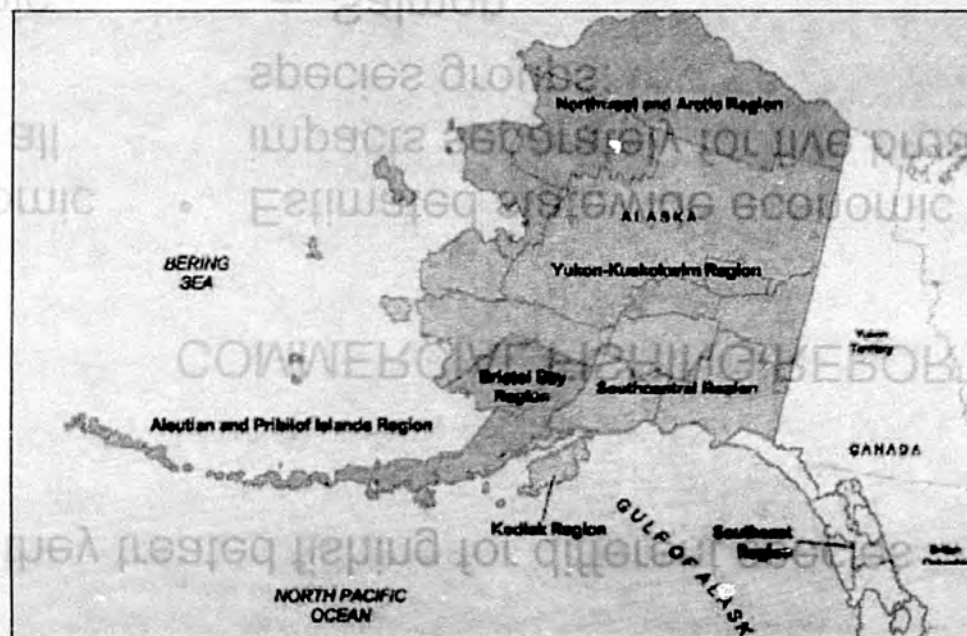
"Cook Inlet Subregion"



The reports divided Alaska into different "economic regions" which are not directly comparable. Only the statewide economic impacts are directly comparable.

The commercial fishing report regions are the regions where the fish were harvested and processed.

COMMERCIAL FISHING REPORT



The reports differed in how they treated fishing for different species

SPORT FISHING REPORT

- Estimated combined economic impacts of sport fishing for all species
- Does not separate economic impacts of salmon sport fishing from economic impacts of sport fishing for other species such as trout and halibut

COMMERCIAL FISHING REPORT

- Estimated statewide economic impacts separately for five broad species groups:
 - Salmon
 - Shellfish
 - Groundfish
 - Halibut
 - Herring

impacts are directly comparable. Only the statewide economic "economic regions," which are not directly comparable. The reports divided Alaska into different

Sources: Sport fishing report: Executive Summary, page 10; Commercial fishing report: Figures 38, 37, 38, 39
 Commercial income includes only payments to processors

seafood processed in Alaska. Note also that sport report and company owners' direct sales are based on estimates of total gross expenditures; commercial direct sales are based on wholesale value of
 Note: There are important differences between studies in the methodologies and definitions. Note in particular that sport

Outline of presentation

1. Comparison of report methodologies
2. Comparison of reports' estimates of economic importance
3. How accurate and reliable are the estimates?
4. What policy conclusions can we draw?

Total sales	\$1.6 billion	\$0.9 billion	\$2.8 billion
Direct sales	\$1.4 billion	\$0.7 billion	\$3.8 billion
	(from all sales) contribution Estimated	non-residents (from sales to Estimated impact	are to non-residents) (from all sales, almost all of which Estimated contribution (= impact)
	REPORT SPORT FISHING		REPORT COMMERCIAL FISHING

Comparison of Estimated Statewide Economic Importance in 2007

Comparison of Estimated Statewide Economic Importance in 2007

18

	SPORT FISHING REPORT		COMMERCIAL FISHING REPORT
	Estimated contribution (from all sales)	Estimated impact (from sales to non-residents)	Estimated contribution (= impact) (from all sales, almost all of which are to non-residents)
Direct sales	\$1.4 billion	\$0.7 billion	\$3.6 billion
Total sales	\$1.6 billion	\$0.9 billion	\$5.8 billion
Total income	\$.54 billion	\$.32 billion	\$1.75 billion
Total jobs	15,879	9,437	78,519

Note: There are important differences between studies in the methodologies and definitions. Note in particular that sport direct sales are based on estimates of total angler expenditures; commercial direct sales are based on wholesale value of seafood processed in Alaska. Note also that port income includes payment to both labor and company owners; Commercial income includes only payments to labor.

Sources: Sport fishing report: Executive Summary, page 10; Commercial fishing report: Figures 36, 37, 38, 39

Conclusions: Statewide Economic Importance

- Both the sport fishing and commercial fishing industries are large and important industries to Alaska
- If we assume that both studies estimates are correct, and that expenditures by residents don't bring new money into Alaska, then for all fisheries statewide:
 - Commercial fishing has about three times the economic contribution of sport fishing
 - Commercial fishing has about six times the economic impact of sport fishing
 - These conclusions are highly approximate and depend on numerous assumptions!!!!

The studies do not tell us what share of the income and jobs created by

An important caveat!!!

An important caveat!!!

The studies do not tell us what share of the income and jobs created by sport fishing and commercial fishing go to Alaska residents!

- These conclusions are highly approximate and depend on
- Many of the jobs in commercial fish harvesting and processing are held by non-residents
- Many of the jobs in sport fish guiding and tourism services (seasonal hotels, restaurants, etc.) are held by non-residents
- But doesn't the Sport Fishing study distinguish between residents and non-residents?
- In who spends the money: YES
- In who gets the money: NO

Conclusions: Statewide Economic Importance

What about the economic importance of Cook Inlet fisheries?

- We can't compare the reports
- The commercial report didn't estimate the economic importance of Cook Inlet fisheries

Direct sales	\$135 million	\$135 million	first wholesale value **
	(all sales)	residents	\$103 million in
	contribution	(sales to non-	are to non-residents)
	economic	economic impact	(all sales, most of which
	sales driving	sales driving	contribution & impact
			sales driving economic
	REPORT		(ADFC data)
	SPORT FISHING		

Estimated Direct Sales in the Cook Inlet Region* in 2001
 something we can compare:

Something we can compare:
 Estimated Direct Sales in the Cook Inlet Region* in 2007

	SPORT FISHING REPORT		(ADFG data)
	Sales driving economic contribution (all sales)	Sales driving economic impact (sales to non- residents)	Sales driving economic contribution & impact (all sales, most of which are to non-residents)
Direct sales	\$732 million	\$275 million	\$163 million in first wholesale value**

*Note: The geographic definitions differ between the sport fishing and commercial fishing reports, as noted in Slide 17. For the sport fishing report, the direct sales are all sales which occurred in the Cook Inlet region (which includes Anchorage)—not just those attributable to fishing which occurs in the Cook Inlet region. Thus the figures shown may overstate sales attributable to Cook Inlet sport fisheries. For the commercial fishing report, the figure shown is the first wholesale value of production which occurred in the Cook Inlet region (defined as Upper and Lower Cook Inlet).

**Source is annual Commercial Operator Annual Reports to ADFG. Wholesale value by species group: Salmon \$77 million; Halibut \$51 million; Groundfish \$33 million; Shellfish & Herring \$1 million.

Conclusions: Economic Importance of Cook Inlet Fisheries

- Both the sport fishing and commercial fishing industries are large and important industries in the Cook Inlet Region
- If we assume that the Sport Fishing Report's estimates of angler expenditures for Cook Inlet fisheries are correct, then:
 - The economic contribution of sport fishing may have been as much as 4½ times that of commercial fishing
 - The economic impact of sport fishing may have been as much as about 50% greater than that for commercial fishing.
 - Both of these ratios may be overstated to the extent that economic impacts of sport fishing from other regions occur in the Cook Inlet region.
 - The economic impact of Cook Inlet sport fisheries is probably significantly less than their economic contribution, because about 2/3 of sales for Cook Inlet sport fisheries are to residents—which bring less new money into the economy than sales to residents.
 - If all Cook Inlet sport fisheries disappeared, those residents would still spend a lot of that money in Alaska, in other ways.
 - These conclusions are highly approximate and depend on numerous assumptions!!!!

Outline of presentation

Outline of presentation

assumptions!!!!

- These conclusions are highly approximate and depend on numerous

1. Comparison of report methodologies

2. Comparison of reports' estimates of economic importance

3. How accurate and reliable are the estimates?

4. What policy conclusions can we draw?

- The economic impact of Cook Inlet sport fisheries is probably significantly greater than that for commercial fishing.

- Both of these ratios may be overstated to the extent that economic impacts of sport fishing from other regions occur in the Cook Inlet region.

- The economic impact of sport fishing may have been as much as about 20% greater than that of commercial fishing.

- The economic contribution of sport fishing may have been as much as 4% for Cook Inlet fisheries are correct, then:

- If we assume that the Sport Fishing Report's estimates of angler expenditures are correct, then:

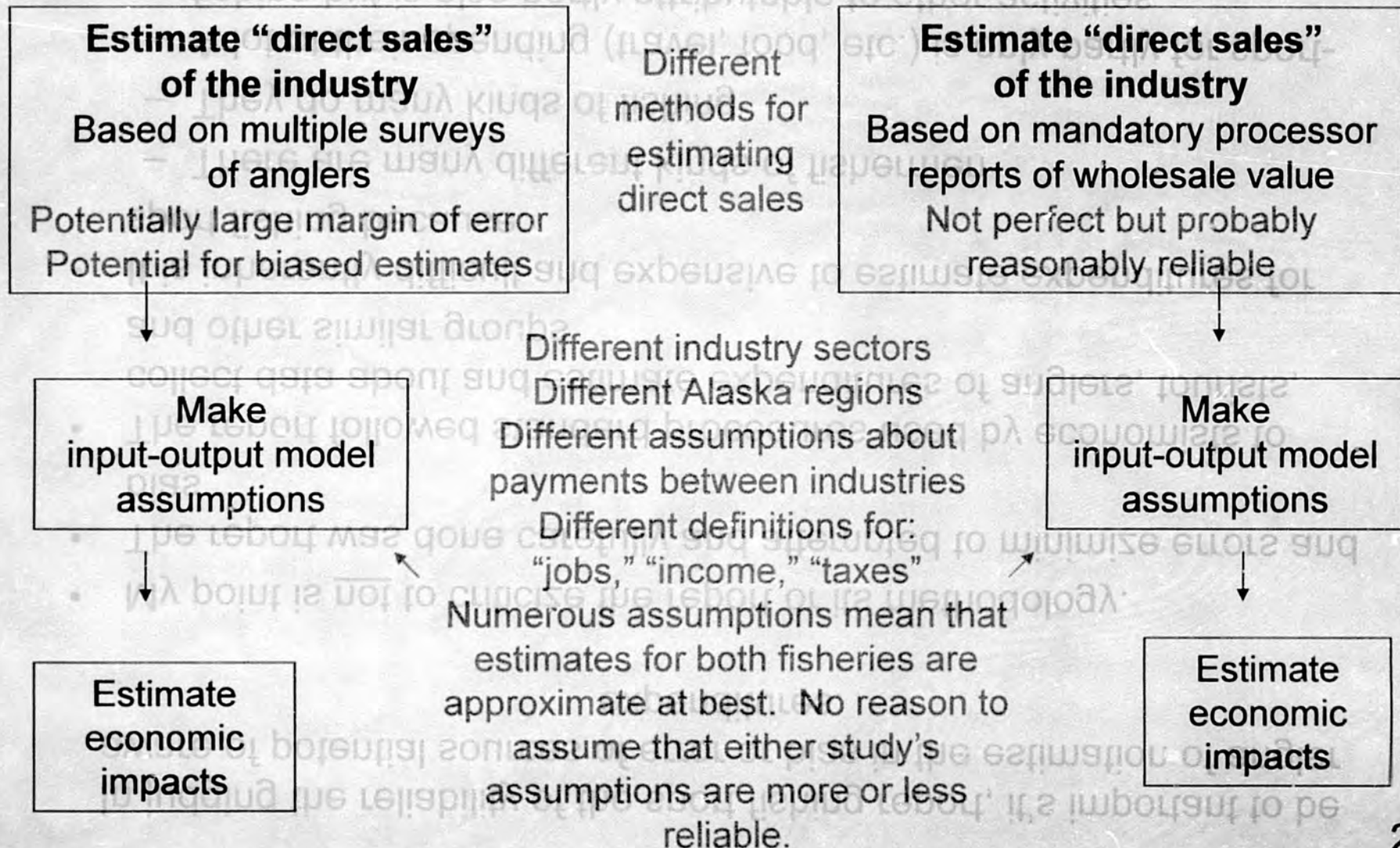
- Both the sport fishing and commercial fishing industries are large and important

Conclusions: Economic Importance of Cook Inlet Fisheries

How accurate and reliable are the estimates???

SPORT FISHING REPORT

COMMERCIAL FISHING REPORT



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In judging the reliability of the sport fishing report, it's important to be aware of potential sources of error or bias in the estimation of angler expenditures.

- My point is not to criticize the report or its methodology.
- The report was done carefully and attempted to minimize errors and bias
- The report followed standard procedures used by economists to collect data about and estimate expenditures of anglers, tourists, and other similar groups
- It is inherently difficult and expensive to estimate expenditures for sport fishing because:
 - There are many different kinds of fishermen
 - They do many kinds of fishing
 - A lot of their spending (travel, food, etc.) is only partly for sport-fishing but is also partly attributable to other activities
 - Not everyone answers surveys
 - People may not answer surveys accurately

How the sport fishing report estimated angler expenditures

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Step	Selected potential sources of error or bias
Sent surveys to samples of resident and non-resident anglers	Samples may not be representative Anglers who returned surveys may not be representative
Used survey results to estimate <u>average trip-related expenditures per angler day</u> , by residency, region, type of water fished, and use of guides Used survey results to estimate <u>average annual expenditures for equipment and angling-related real estate per licensed angler</u>	Anglers may not have answered the questions accurately Only asked about one trip per angler Difficult to accurately attribute how much of certain kinds of expenditures (travel, cars, etc.) are for sport-fishing
Estimated annual angler days based on the annual Statewide Harvest Survey of anglers.	Samples may not be representative Anglers who returned surveys may not be representative
Estimated expenditures as (Angler days x Average trip expenditure per day) + (Licensed anglers x Average equipment & RE expenditure per year)	

Note: Details of methodology are very complex and can only be understood by reading the report carefully!

Examples of survey questions (from resident survey) . . .

14. When was the last time you went sportfishing in Alaska between JULY 1st AND OCTOBER 31st, 2007?

(Check one)

☐ July

☐ August

☐ September

☐ October

☐ I did not fish between July 1st and Oct 31st (Skip to section C, page 6)

15. Fishing trips often include time for fishing, travel and non-fishing activities. How long was this fishing trip including fishing days, travel days and non-fishing days? Note that single-day trips do not need to take a whole day. For example, if the last time you went fishing JULY thru OCTOBER you only fished for a few hours after work, this would be counted as "1" day.

Total number of days involved in last fishing trip: _____

16. How many days did you actually fish during this last time that you went fishing in Alaska between JULY 1st AND OCTOBER 31st? (Count partial days of fishing as "1" day)

Number of days actually fished: _____

17. Would you have taken this trip even if you were unable to go fishing? (check one)

☐ Yes

☐ No

18. Was this trip primarily... (check one)

☐ rod & reel sportfishing

☐ dipnetting (personal use)

☐ shellfish fishing

19. Was this trip primarily... (check one)

☐ in freshwater

☐ in saltwater

☐ in both freshwater & saltwater

Examples of survey questions (from resident survey) . . .

24. As best as possible, please tell us how much YOU spent and where you bought the following fishing equipment and fishing related gear in the last 12 months. Only report purchases made in Alaska – exclude purchases from catalogs and web sites of out-of-state companies. Include purchases YOU made for yourself and for others. Write in the amount spent and, referring to the included map, circle the letter of the region or regions where you made the purchase(s). Since some items can be used for non-fishing activities, please estimate the percentage that the purchased fishing related gear is used for sportfishing.

	Total amount spent	Region or regions where you bought the item(s)	% Used for sport fishing:
EXAMPLE: Clothing	\$ 40	A (B) C (D) E F	65 %
FISHING EQUIPMENT:			
Licenses and stamps	\$	A B C D E F	100 %
Rods, reels, & components	\$	A B C D E F	100 %
Fishing tackle (lines, leaders, lures, creels, stringers etc)	\$	A B C D E F	100 %
Tackle boxes, cases to protect fishing equipment	\$	A B C D E F	100 %

etc.

FISHING-RELATED GEAR OR OTHER NON-FISHING PURCHASES:

Items to store/preserve fish (smoker, vacuum sealer, etc.)	\$	A B C D E F	%
Coolers, fish boxes	\$	A B C D E F	%
Clothing (fishing vest, raingear, head net, etc.)	\$	A B C D E F	%
Boots, shoes, waders and other footwear	\$	A B C D E F	%
Life jackets, survival suits or other PFDs	\$	A B C D E F	%
Boats, canoes, rafts, kayaks and other watercraft	\$	A B C D E F	%
Boat motors	\$	A B C D E F	%

etc.

Camping trailer (pop-up, self-contained, 5 th wheel)	\$	A B C D E F	%
Other camping equipment (stoves, grills, lanterns, etc.)	\$	A B C D E F	%
Vehicles (trucks, SUVs, motorhomes, etc.)	\$	A B C D E F	%
Airplanes and related equipment	\$	A B C D E F	%

Example of expenditure estimates for the southcentral region

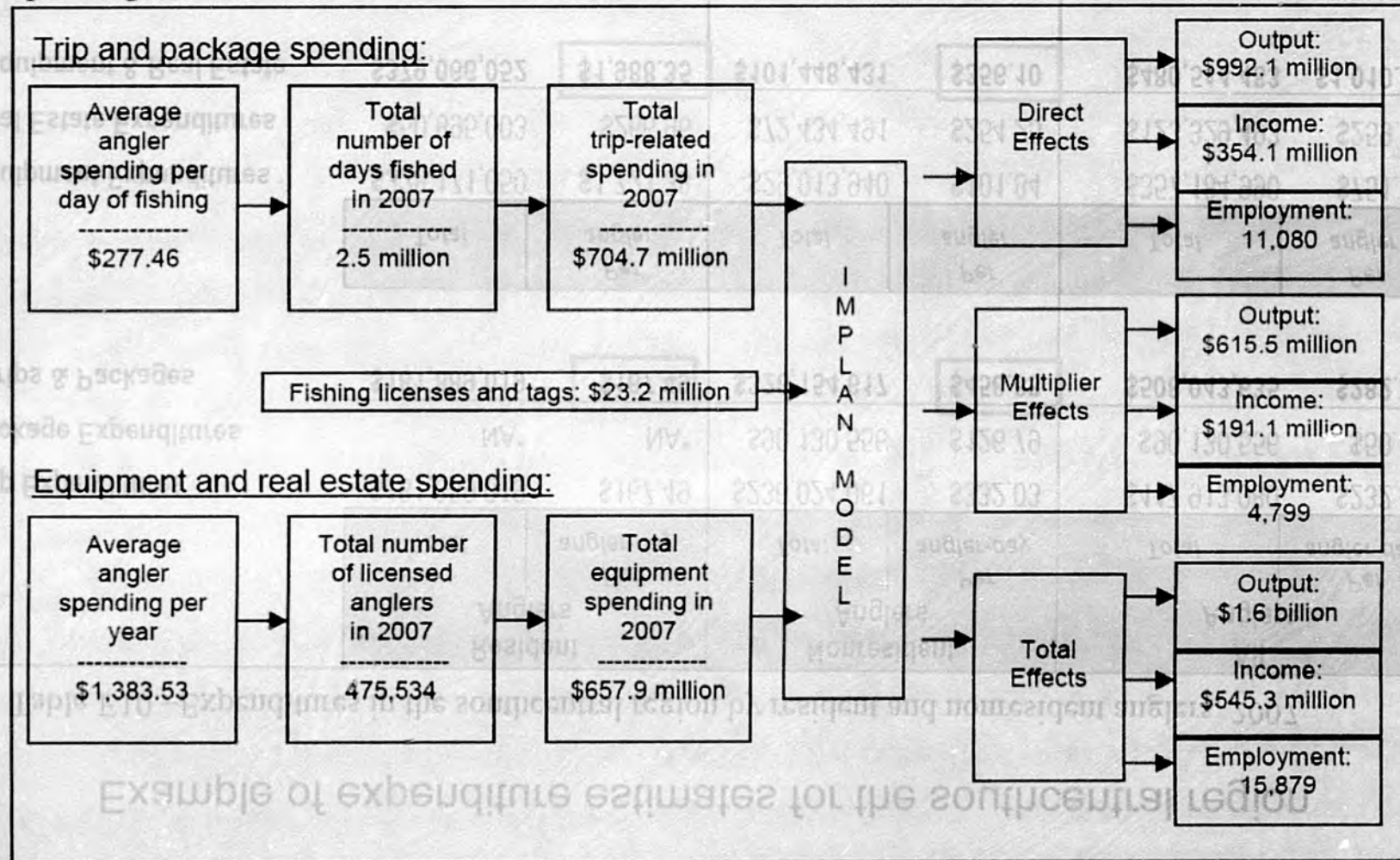
Table E10.—Expenditures in the southcentral region by resident and nonresident anglers, 2007.

	Resident Anglers		Nonresident Anglers		All Anglers	
	Total	Per angler-day	Total	Per angler-day	Total	Per angler-day
Trip Expenditures	\$181,889,019	\$167.49	\$236,024,061	\$332.03	\$417,913,080	\$232.59
Package Expenditures	NA*	NA*	\$90,130,556	\$126.79	\$90,130,556	\$50.16
Trips & Packages	\$181,889,019	\$167.49	\$326,154,617	\$458.83	\$508,043,635	\$282.75
	Total	Per angler	Total	Per angler	Total	Per angler
Equipment Expenditures	\$328,171,050	\$1,721.38	\$29,013,940	\$101.84	\$357,184,990	\$751.12
Real Estate Expenditures	\$50,895,003	\$266.96	\$72,434,491	\$254.25	\$123,329,493	\$259.35
Equipment & Real Estate	\$379,066,052	\$1,988.35	\$101,448,431	\$356.10	\$480,514,483	\$1,010.47
Total Expenditures	\$560,955,071		\$427,603,048		\$988,558,119	

*Package expenditures refer specifically to travel packages purchased by nonresidents prior to departing on their trip to Alaska.

Conceptual framework for how expenditure estimates were used to estimate economic contributions

Figure E2.—Conceptual framework for estimation of the economic contributions of angler spending in Alaska.



How reliable are the sport-fishing expenditure estimates?

- We don't know
 - They are based on a very large number of assumptions
 - Clearly they are not precise estimates
 - The margin of error may be large
 - There is no obvious reason to conclude that they are too high or low
- They appear to be generally comparable with other studies
 - But other studies could have similar biases
- It only means they have a greater margin of error
- That doesn't mean they are too high or too low

reliable than for commercial fishing
 The economic importance estimates for sport fishing are probably less

The economic importance estimates for sport fishing are probably less reliable than for commercial fishing

- That doesn't mean they are too high or too low
- It only means they have a greater margin of error
 - But other studies could have similar biases
- They appear to be generally comparable with other studies
 - There is no obvious reason to conclude that they are too high or too low
 - The margin of error may be large
 - Clearly they are not precise estimates
 - They are based on a very large number of assumptions
- We don't know

How reliable are the sport-fishing expenditure estimates?

Outline of presentation

1. Comparison of report methodologies
2. Comparison of reports' estimates of economic importance
3. How accurate and reliable are the estimates?
4. What policy conclusions can we draw?

- Economic impacts aren't necessarily proportional to fish catches
can change significantly from year to year
- Even if catches and allocations stay the same, economic impacts
- Public investments affect fisheries, economic impacts
- How fisheries are managed affects their economic impacts

(from my testimony to the Committee on May 25 2008 in Zolotoye)
economic impacts of commercial and sport fisheries:

Here are some important things to keep in mind when comparing

Here are some important things to keep in mind when comparing economic impacts of commercial and sport fisheries:
(from my testimony to the Committee on May 22 2008 in Soldotna)

- How fisheries are managed affects their economic impacts
- Public investments affect fisheries' economic impacts
- Even if catches and allocations stay the same, economic impacts can change significantly from year to year
- Economic impacts aren't necessarily proportional to fish catches

4. What policy conclusions can we draw?

3. How accurate and reliable are the estimates?

5. Comparison of reports, estimates of economic importance

1. Comparison of report methodologies

Outline of presentation

Comparing Commercial and Sport Fishing Economic Impacts and Values How to Misuse Economics

(from my testimony to the Committee on May 22 2008 in Soldotna)

- Present economic information that isn't relevant to the policy issue under consideration
- Assume that economic impacts are proportional to fish catches
- Present irrelevant information about economic impacts in other areas
- Overstate the accuracy of estimated impacts or values

Cook Inlet sport fisheries combined

- The sport fishing report estimated the economic importance of all

Cook Inlet salmon

- Neither report specifically estimated the economic importance of

sport-commercial allocation issues for Cook Inlet salmon.

What policy conclusions can we draw from the report about

What policy conclusions can we draw from the report about sport-commercial allocation issues for Cook Inlet salmon?

- Neither report specifically estimated the economic importance of Cook Inlet salmon
 - The sport fishing report estimated the economic importance of all Cook Inlet sport fisheries combined
- It seems reasonable to conclude that the average economic contribution and impact per harvested salmon is considerably higher for Cook Inlet sport fisheries than for Cook Inlet commercial fisheries.
- Nevertheless, I believe the studies provide relatively little if any useful policy guidance on sport-commercial allocation issues for Cook Inlet salmon.

(from my testimony to the Committee on May 25 2008 in Soldotna)

How to Misuse Economics

Comparing Commercial and Sport Fishing Economic Impacts and Values

If the average economic contribution and impact per harvested salmon is considerably higher for Cook Inlet sport fisheries than for Cook Inlet commercial fisheries, why *wouldn't* that necessarily imply that we should reallocate salmon to sport fisheries????

Here are a few potential reasons:

- There is not a one-to-one tradeoff between commercial harvests and sport harvests
- Allocating more salmon to Cook Inlet sport fisheries will not result in proportionally higher economic contributions
 - It won't give Alaska anglers more money to spend
- The potential increase in sport fishing income and jobs won't all go to Alaskans
- The commercial industry is not viable without a certain threshold level of fishing opportunities and regular openings
- Diversification of economic activities is generally a good idea
- Not everyone wants more fishermen in Cook Inlet salmon streams (and more traffic, more crowded parking, etc.)
- Other things matter besides economic impacts—for example, treating people fairly

Am I saying that there is no potential economic justification for reallocating Cook Inlet salmon from commercial to sport fisheries?

- No!
- I am saying that comparing these two studies does not provide that justification
- Economic arguments for changes in allocation should be based on analysis and clear thinking about:
 - the specific expected economic effects
 - of the specific proposed policy change
- Even if average economic effect per fish in a region is higher in the sport fishery than the commercial fishery, that does not mean that all reallocations are always economically justified!

Comparison of Recent Sport and Commercial Fisheries Economic Studies

Prepared for
Cook Inlet Salmon Task Force
January 29, 2009

- exists and does not exist for Alaska's fisheries.
- Currently preparing a report on what kinds of economic information Economics.
- Teach courses at UAA on the Alaska economy and on Fisheries
- Studied economic issues related to Alaska's fisheries for many years.
- Research (ISER) University of Alaska Anchorage
- Professor of Economics 907-786-7717
- Gunnar.Knapp@uaa.alaska.edu

Who I Am

- Professor of Economics at the UAA Institute of Social and Economic Research (ISER).
- Studied economic issues related to Alaska fisheries for many years.
- Teach courses at UAA on the Alaska Economy and on Fisheries Economics.
- Currently preparing a report on what kinds of economic information exists and does not exist for Alaska's fisheries.

Purpose of Presentation

- Two recent reports have examined economic impacts and contributions of sport fishing and commercial fishing in Alaska.
- I was invited to compare the results of these two reports.

4. What policy conclusions can we draw?
3. How accurate and reliable are the estimates?
5. Comparison of reports, estimates of economic importance
1. Comparison of report methodologies

Outline of presentation

Outline of presentation

1. Comparison of report methodologies
2. Comparison of reports' estimates of economic importance
3. How accurate and reliable are the estimates?
4. What policy conclusions can we draw?

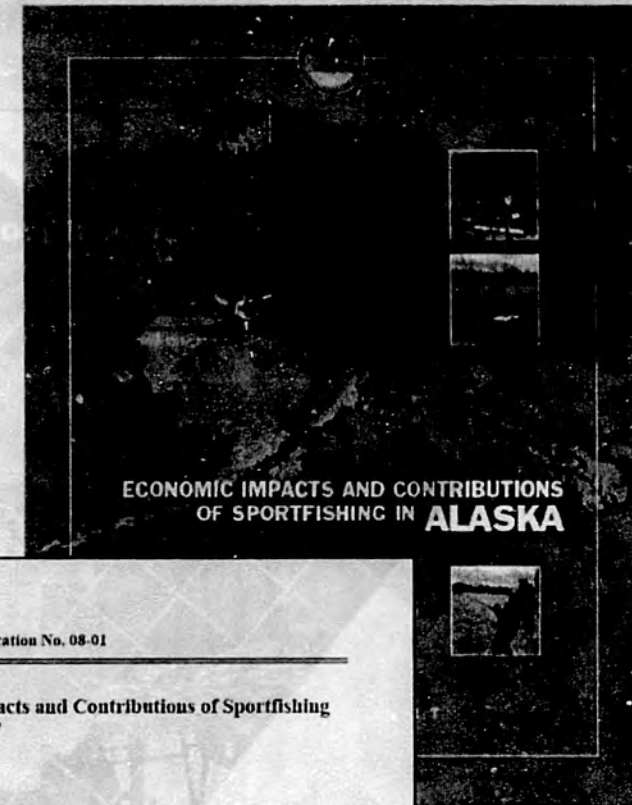
- I was invited to compare the results of these two reports' contributions of sport fishing and commercial fishing in Alaska.
- Two recent reports have examined economic impacts and

Purpose of Presentation

"Sport Fishing Report":

Economic Impacts and Contributions of Sportfishing in Alaska, 2007

- Sponsored by: Alaska Department of Fish and Game, Division of Sport Fish
- Prepared by: Southwick Associates, Inc. in cooperation with ADFG staff
- Released: December 2008
- Pages: 289; 12-page summary



Professional Publication No. 08-01

Economic Impacts and Contributions of Sportfishing in Alaska, 2007

by
Southwick Associates, Inc.
and
William J. Romberg
Allen E. Bingham
Gretchen B. Jennings
Robert A. Clark

December 2008

Alaska Department of Fish and Game

Division of Sport Fish

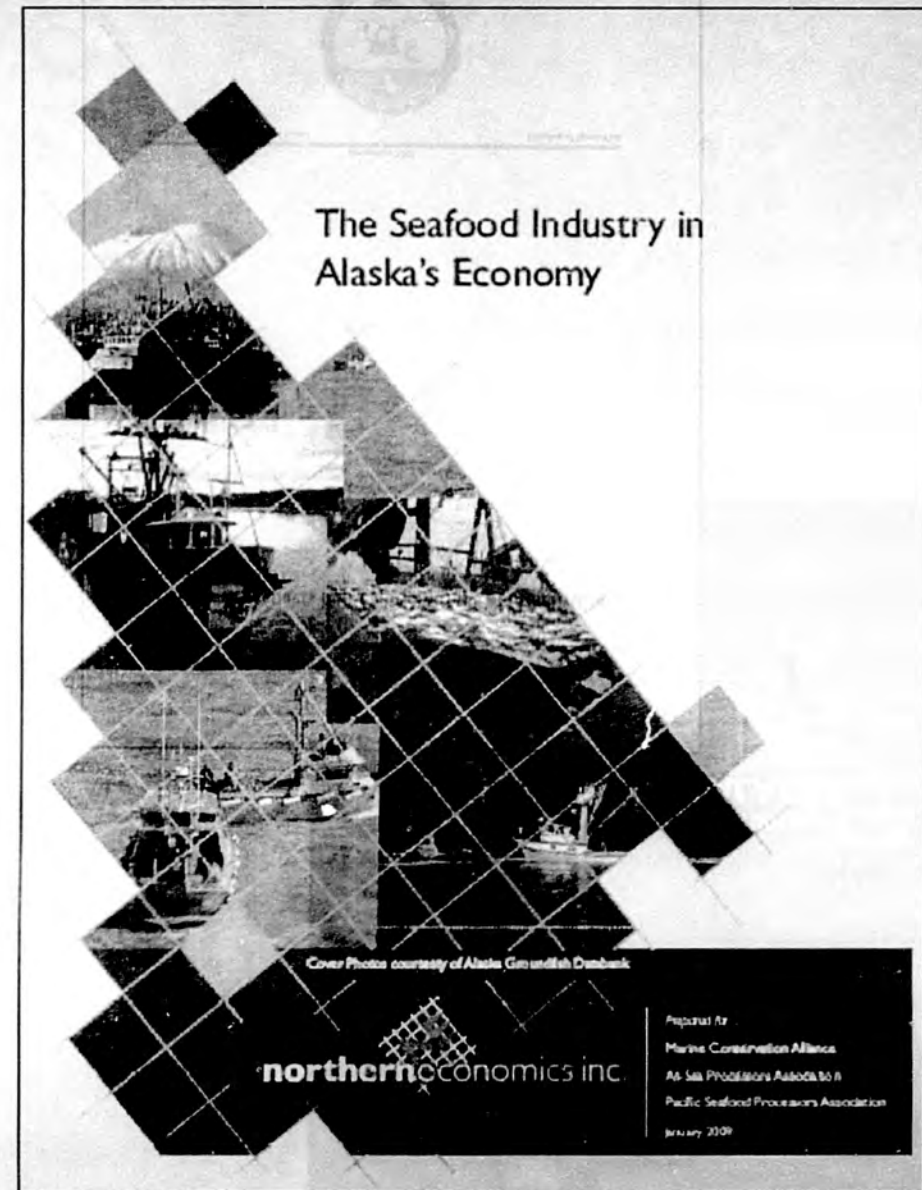


"Commercial Fishing Report"

The Seafood Industry in Alaska's Economy

www.marineconservationalliance.org

- Sponsored by: Marine Conservation Alliance; At-Sea Processors Association; Pacific Seafood Processors Association
- Prepared by: Northern Economics, Inc.
- Released January 2009
- Pages: 77



The Sport Fishing and Commercial Fishing Industries

	Commercial fisheries	Sport fisheries
What do they produce?	Fish products	Fish Angling experience Aesthetics Fishing Catching fish
Who are the consumers?	Fish consumers	Sport fishermen
Who is part of the industry?	Commercial fishermen Processors Fish transportation industries Distributors Retailers Restaurants	Charter operators Lodges Transportation industries Any other businesses supplying products or services used in sport-fishing

Purpose of the Reports

SPORT FISHING REPORT

- “to obtain current estimates of the economic contribution of sportfishing activities to the Alaska economy and to develop a consistent method for producing such estimates on a regular basis.”

(Executive summary, page 4)

Major goals were to collect new data and develop a method for estimating economic importance

COMMERCIAL FISHING REPORT

- “to describe the economic importance of Alaska’s seafood industry, focusing primarily on the industry’s significance to the state economy. The report draws on data from a wide range of sources . . .”

(Page 1)

Based on data regularly collected by the state

A starting economic principle:

- Sales of an industry to non-residents have a different effect on the Alaska economy than sales to residents.
- Sales of an industry to non-residents bring new money into the economy and increase the size of the economy
- Sales of an industry to residents don't bring new money into the economy and don't necessarily increase the size of the economy
 - Residents have only a limited amount of money to spend
 - What they spend on fish or sport-fishing reduces what they can buy from other Alaska industries
 - If they cut back on what they spend for fish or sport-fishing, they may buy more from other Alaska industries
- Economic terminology:
 - Economic contributions: Economic effects of all sales
 - Economic impacts: Economic effects of sales to non-residents only

Alaska's sport fishing and commercial fishing industries differ
in the relative mix of sales to non-residents and residents

SPORT FISHING INDUSTRY

- Sales are to both residents and non-residents

SPORT FISHING REPORT

- Distinguishes between effects of sales to residents and non-residents
- Estimates both
 - Economic contributions
 - Economic impacts

COMMERCIAL FISHING INDUSTRY

- Almost all sales are to non-residents

COMMERCIAL FISHING REPORT

- Does not distinguish between effects of sales to residents and non-residents
- Estimates are mainly economic impacts

How economists define economic impacts of an industry . . .

“Direct impacts” of the industry	“Indirect & induced impacts” in other industries created as businesses and workers in the industry spend money within Alaska	Total impacts
Sales or “output” of the industry	Sales or “output” in other industries	Total sales
Income earned in the industry	Income earned in other industries	Total income
Jobs or employment in the industry	Jobs or employment in other industries	Total jobs
Taxes paid by the industry	Taxes paid in other industries	Total taxes

Note: Economic contributions are defined in the same way.

Note: Economists estimate economic impacts of an industry:

1. Estimate "direct sales" of the industry
(= total payments to the industry)
2. Use an "input-output model" to estimate how payments to the industry translate into sales of other industries as money circulates through the economy.
3. Use the "input-output model" to estimate how sales translate into income, jobs and taxes

Direct impacts of the industry	Indirect and induced impacts in other industries	Total impacts
Direct sales	Indirect & induced sales	Total sales
Direct income	Indirect & induced income	Total income
Direct jobs	Indirect & induced jobs	Total jobs
Direct taxes	Indirect & induced taxes	Total taxes

How economists estimate economic impacts of an industry:

So Alaska economic impact analysis (simplified)

sectors requires a lot of data and a lot of work!

Making all these assumptions about payments between industry

Estimate "direct sales"
of the industry



Make input-output model
assumptions



Estimate economic
impacts

– Tax payments in Alaska, by region

– Payments to workers in Alaska, by region

– Purchases from other industry sectors, by region

How \$1 of sales translates

• Make assumptions for each industry sector and each region about

• Divide Alaska economy into geographic regions

• Divide Alaska economy into industry sectors

input-output models require lots of assumptions!

Input-output models require lots of assumptions!

- Divide Alaska economy into industry sectors
- Divide Alaska economy into geographic regions
- Make assumptions, for each industry sector and each region, about how \$1 of sales translates into:
 - Purchases from other Alaska industry sectors, by region
 - Payments to workers in Alaska, by region
 - Tax payments in Alaska, by region

Making all these assumptions about payments between industry sectors requires a lot of data and a lot of work!

So Alaska economic impact studies usually use assumptions based on national studies—which may not be very realistic for Alaska.

Typical problems with comparing economic impact studies for different Alaska industries

- They divide the Alaska economy into different industry sectors
- They use different geographic regions
- They make different assumptions about sales between industry sectors

surveys of anglers
based on multiple
of the industry
Estimate "direct sales,"

SPORT FISHING REPORT

reports of wholesale value
based on mandatory processor
of the industry
Estimate "direct sales,"

COMMERCIAL FISHING REPORT

important differences in how the reports estimated economic impacts

Important differences in how the reports estimated economic impacts

SPORT FISHING REPORT

**Estimate "direct sales"
of the industry**

Based on multiple
surveys of anglers



**Make
input-output model
assumptions**



**Estimate
economic
impacts**

Different
methods for
estimating
direct sales

COMMERCIAL FISHING REPORT

**Estimate "direct sales"
of the industry**

Based on mandatory processor
reports of wholesale value



**Make
input-output model
assumptions**



**Estimate
economic
impacts**

Different industry sectors
Different Alaska regions
Different assumptions about
payments between industries

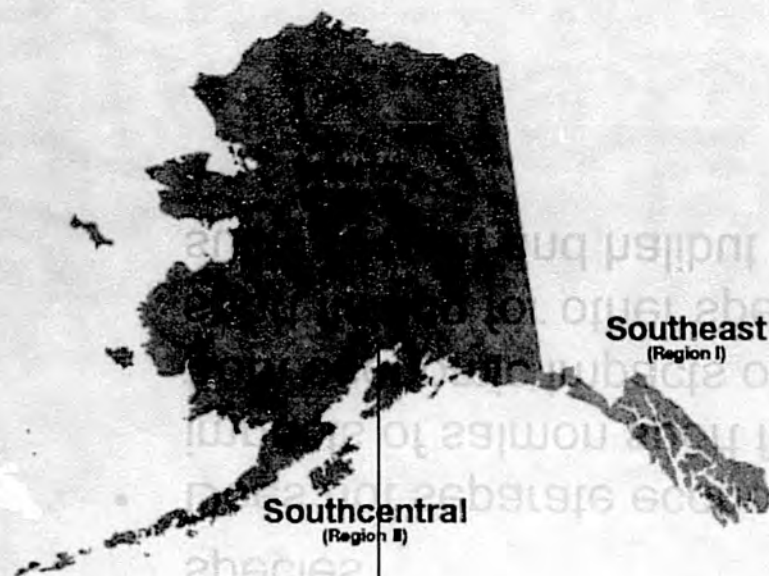
Different definitions for:

"jobs"

"income"

"taxes"

SPORT FISHING REPORT

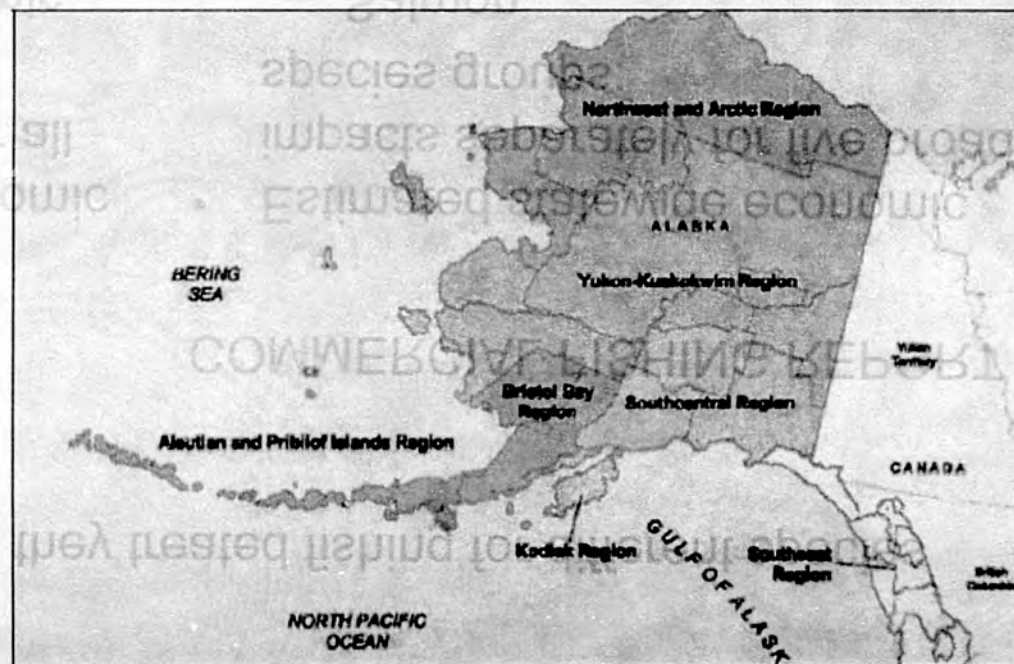


"Cook Inlet Subregion"



The reports divided Alaska into different "economic regions." which are not directly comparable. Only the statewide economic impacts are directly comparable.

COMMERCIAL FISHING REPORT



The reports differed in how they treated fishing for different species

SPORT FISHING REPORT

- Estimated combined economic impacts of sport fishing for all species
- Does not separate economic impacts of salmon sport fishing from economic impacts of sport fishing for other species such as trout and halibut

COMMERCIAL FISHING REPORT

- Estimated statewide economic impacts separately for five broad species groups:
 - Salmon
 - Shellfish
 - Groundfish
 - Halibut
 - Herring

Outline of presentation

1. Comparison of report methodologies
2. Comparison of reports' estimates of economic importance
3. How accurate and reliable are the estimates?
4. What policy conclusions can we draw?

Total sales	\$1.6 billion	\$0.9 billion	\$2.8 billion
Direct sales	\$1.4 billion	\$0.7 billion	\$3.6 billion
	(from all sales) contribution Estimated	non-residents (from sales to Estimated impact	are to non-residents) (from all sales, almost all of which Estimated contribution (= impact)
	REPORT SPORT FISHING		REPORT COMMERCIAL FISHING

Comparison of Estimated Statewide Economic Importance in 2007

Comparison of Estimated Statewide Economic Importance in 2007

10

	SPORT FISHING REPORT		COMMERCIAL FISHING REPORT
	Estimated contribution (from all sales)	Estimated impact (from sales to non-residents)	Estimated contribution (= impact) (from all sales, almost all of which are to non-residents)
Direct sales	\$1.4 billion	\$0.7 billion	\$3.6 billion
Total sales	\$1.6 billion	\$0.9 billion	\$5.8 billion
Total income	\$.54 billion	\$.32 billion	\$1.75 billion
Total jobs	15,879	9,437	78,519

Note: There are important differences between studies in the methodologies and definitions. Note in particular that sport direct sales are based on estimates of total angler expenditures; commercial direct sales are based on wholesale value of seafood processed in Alaska. Note also that port income includes payment to both labor and company owners; Commercial income includes only payments to labor.

Sources: Sport fishing report: Executive Summary, page 10; Commercial fishing report: Figures 36, 37, 38, 39

Conclusions: Statewide Economic Importance

- Both the sport fishing and commercial fishing industries are large and important industries to Alaska
- If we assume that both studies estimates are correct, then for all fisheries statewide:
 - Commercial fishing has about three times the economic contribution of sport fishing
 - Commercial fishing has about six times the economic impact of sport fishing
 - These conclusions are highly approximate and depend on numerous assumptions!!!!

An important caveat!!!

An important caveat!!!

The studies do not tell us what share of the income and jobs created by sport fishing and commercial fishing go to Alaska residents!

- Many of the jobs in commercial fish harvesting and processing are held by non-residents
- Many of the jobs in sport fish guiding and tourism services (seasonal hotels, restaurants, etc.) are held by non-residents
- Commercial fishing has about three times the
- But doesn't the Sport Fishing study distinguish between residents and non-residents?
- In who spends the money: YES
- — In who gets the money: NO

Conclusions: Statewide Economic Importance

What about the economic importance of Cook Inlet fisheries?

- We can't compare the reports
- The commercial report didn't estimate the economic importance of Cook Inlet fisheries

Direct sales	\$135 million	\$135 million	first wholesale value*
	(all sales)	residents	\$163 million in
	contribution	(sales to non-	are to non-residents)
	economic	economic impact	(all sales, most of which
	sales driving	sales driving	contribution & impact
	REPORT		sales driving economic
	SPORT FISHING		(ADFC data)

Estimated Direct Sales of Cook Inlet Fisheries in 2007
 something we can compare:

Something we can compare:
Estimated Direct Sales of Cook Inlet Fisheries in 2007

	SPORT FISHING REPORT		(ADFG data)
	Sales driving economic contribution (all sales)	Sales driving economic impact (sales to non- residents)	Sales driving economic contribution & impact (all sales, most of which are to non-residents)
Direct sales	\$732 million	\$275 million	\$163 million in first wholesale value*

*Source is annual Commercial Operator Annual Reports to ADFG. Wholesale value by species group: Salmon \$77 million; Halibut \$51 million; Groundfish \$33 million; Shellfish & Herring \$1 million.

What about the economic importance of Cook Inlet fisheries?

Conclusions: Economic Importance of Cook Inlet Fisheries

- Both the sport fishing and commercial fishing industries are large and important industries in the Cook Inlet Region
- If we assume that the Sport Fishing Report's estimates of angler expenditures for Cook Inlet fisheries are correct, then:
 - The economic contribution of sport fishing may have been about 4½ times that of commercial fishing
 - The economic impact of sport fishing may have been about 50% greater than that for commercial fishing.
 - The difference is because about 2/3 of sales for Cook Inlet sport fisheries are from residents—and don't bring new money into the economy
 - If all Cook Inlet sport fisheries disappeared, those residents would still spend a lot of that money in Alaska, in other ways
 - These conclusions are highly approximate and depend on numerous assumptions!!!!

Outline of presentation

Outline of presentation

1. Comparison of report methodologies
2. Comparison of reports' estimates of economic importance
3. How accurate and reliable are the estimates?
4. What policy conclusions can we draw?

— The difference is because about 2/3 of sales for Cook Inlet sport fisheries are from residents—and don't bring new money into the economy.

— The economic impact of sport fishing may have been about 20% greater than that for commercial fishing.

— The economic contribution of sport fishing may have been about 41% greater than that of commercial fishing.

expenditures for Cook Inlet fisheries are correct, then:

- If we assume that the Sport Fishing Report's estimates of angler expenditures for Cook Inlet fisheries are correct, then:
- Both the sport fishing and commercial fishing industries are large and

Conclusions: Economic Importance of Cook Inlet Fisheries

How accurate and reliable are the estimates???

SPORT FISHING REPORT

Estimate "direct sales" of the industry

Based on multiple surveys
of anglers

Potentially large margin of error
Potential for biased estimates



**Make
input-output model
assumptions**



**Estimate
economic
impacts**

COMMERCIAL FISHING REPORT

Estimate "direct sales" of the industry

Based on mandatory processor
reports of wholesale value

Not perfect but probably
reasonably reliable



**Make
input-output model
assumptions**



**Estimate
economic
impacts**

Different
methods for
estimating
direct sales

Different industry sectors
Different Alaska regions
Different assumptions about
payments between industries
Different definitions for:
"jobs," "income," "taxes"
Numerous assumptions mean that
estimates for both fisheries are
approximate at best. No reason to
assume that either study's
assumptions are more or less
reliable.

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In judging the reliability of the sport fishing report, it's important to be aware of potential sources of error or bias in the estimation of angler expenditures.

- My point is not to criticize the report or its methodology.
- The report was done carefully and attempted to minimize errors and bias
- The report followed standard procedures used by economists to collect data about and estimate expenditures of anglers, tourists, and other similar groups
- It is inherently difficult and expensive to estimate expenditures for sport fishing because:
 - There are many different kinds of fishermen
 - They do many kinds of fishing
 - A lot of their spending (travel, food, etc.) is only partly for sport-fishing but is also partly attributable to other activities
 - Not everyone answers surveys
 - People may not answer surveys accurately

How the sport fishing report estimated angler expenditures

30

Step	Selected potential sources of error or bias
Sent surveys to samples of resident and non-resident anglers	Samples may not be representative Anglers who returned surveys may not be representative
Used survey results to estimate <u>average trip-related expenditures per angler day</u> , by residency, region, type of water fished, and use of guides	Anglers may not have answered the questions accurately Only asked about one trip per angler
Used survey results to estimate <u>average annual expenditures for equipment and angling-related real estate</u> per licensed angler	Difficult to accurately attribute how much of certain kinds of expenditures (travel, cars, etc.) are for sport-fishing
Estimated annual angler days based on the annual Statewide Harvest Survey of anglers.	Samples may not be representative Anglers who returned surveys may not be representative
Estimated expenditures as (Angler days x Average trip expenditure per day) + (Licensed anglers x Average equipment & RE expenditure per year)	

Note: Details of methodology are very complex and can only be understood by reading the report carefully!

Examples of survey questions (from resident survey) . . .

14. When was the last time you went sportfishing in Alaska between JULY 1st AND OCTOBER 31st, 2007?

(Check one)

☐ July

☐ August

☐ September

☐ October

☐ I did not fish between July 1st and Oct 31st (Skip to section C, page 6)

15. Fishing trips often include time for fishing, travel and non-fishing activities. How long was this fishing trip including fishing days, travel days and non-fishing days? Note that single-day trips do not need to take a whole day. For example, if the last time you went fishing JULY thru OCTOBER you only fished for a few hours after work, this would be counted as "1" day.

Total number of days involved in last fishing trip: _____

16. How many days did you actually fish during this last time that you went fishing in Alaska between JULY 1st AND OCTOBER 31st? (Count partial days of fishing as "1" day)

Number of days actually fished: _____

17. Would you have taken this trip even if you were unable to go fishing? (check one)

☐ Yes

☐ No

18. Was this trip primarily... (check one)

☐ rod & reel sportfishing

☐ dipnetting (personal use)

☐ shellfish fishing

19. Was this trip primarily... (check one)

☐ in freshwater

☐ in saltwater

☐ in both freshwater & saltwater

Examples of survey questions (from resident survey) . . .

23. As best as possible, please tell us how much you spent and where you bought the following **TRIP-RELATED** items ON THE TRIP DESCRIBED ABOVE. Please write in the amount you spent and, referring to the included map, please circle the letter of the region or regions where you made the purchase(s). We will ask about your equipment purchases in later questions.

Items purchased on last trip
(between JULY 1ST AND OCTOBER 31ST, 2007).

Total
Amount
Spent

Region or regions where you
bought the item(s)

EXAMPLE:

Licenses and stamps.....
Fuel and oil for your car, RV, boat, airplane, etc.....
Guide and charter fees.....
Airline tickets.....
Commercial transportation (air taxi, ferry, shuttle, etc.).....
Fish processing & shipping.....
Rentals (boats, equipment, autos, etc.).....
Derby tickets.....
Boat launch and dockage fees.....
Ice.....
Bait (natural bait only, do not include lures).....
Groceries, food, liquor bought in stores.....
Restaurants, bars, and take-out food purchases.....
Overnight lodging (hotels, campgrounds, cabins).....
Souvenirs and gifts.....
Other entertainment expenses during fishing trip.....
Other (please specify):.....

\$ 25
\$
\$
\$
\$
\$
\$
\$
\$
\$
\$
\$
\$
\$
\$
\$
\$
\$

A	(B)	C	D	(E)	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F
A	B	C	D	E	F

Examples of survey questions (from resident survey) . . .

31

24. As best as possible, please tell us how much YOU spent and where you bought the following fishing equipment and fishing related gear in the last 12 months. Only report purchases made in Alaska – exclude purchases from catalogs and web sites of out-of-state companies. Include purchases YOU made for yourself and for others. Write in the amount spent and, referring to the included map, circle the letter of the region or regions where you made the purchase(s). Since some items can be used for non-fishing activities, please estimate the percentage that the purchased fishing related gear is used for sportfishing.

	Total amount spent	Region or regions where you bought the item(s)	% Used for sport fishing:
EXAMPLE: Clothing	\$ 40	A (B) C (D) E F	65 %
FISHING EQUIPMENT:			
Licenses and stamps	\$	A B C D E F	100 %
Rods, reels, & components	\$	A B C D E F	100 %
Fishing tackle (lines, leaders, lures, creels, stringers etc)	\$	A B C D E F	100 %
Tackle boxes, cases to protect fishing equipment	\$	A B C D E F	100 %

etc.

FISHING-RELATED GEAR OR OTHER NON-FISHING PURCHASES:

Items to store/preserve fish (smoker, vacuum sealer, etc.)	\$	A B C D E F	%
Coolers, fish boxes	\$	A B C D E F	%
Clothing (fishing vest, raingear, head net, etc.)	\$	A B C D E F	%
Boots, shoes, waders and other footwear	\$	A B C D E F	%
Life jackets, survival suits or other PFDs	\$	A B C D E F	%
Boats, canoes, rafts, kayaks and other watercraft	\$	A B C D E F	%
Boat motors	\$	A B C D E F	%

etc.

Camping trailer (pop-up, self-contained, 5 th wheel)	\$	A B C D E F	%
Other camping equipment (stoves, grills, lanterns, etc.)	\$	A B C D E F	%
Vehicles (trucks, SUVs, motorhomes, etc.)	\$	A B C D E F	%
Airplanes and related equipment	\$	A B C D E F	%

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Example of expenditure estimates for the southcentral region

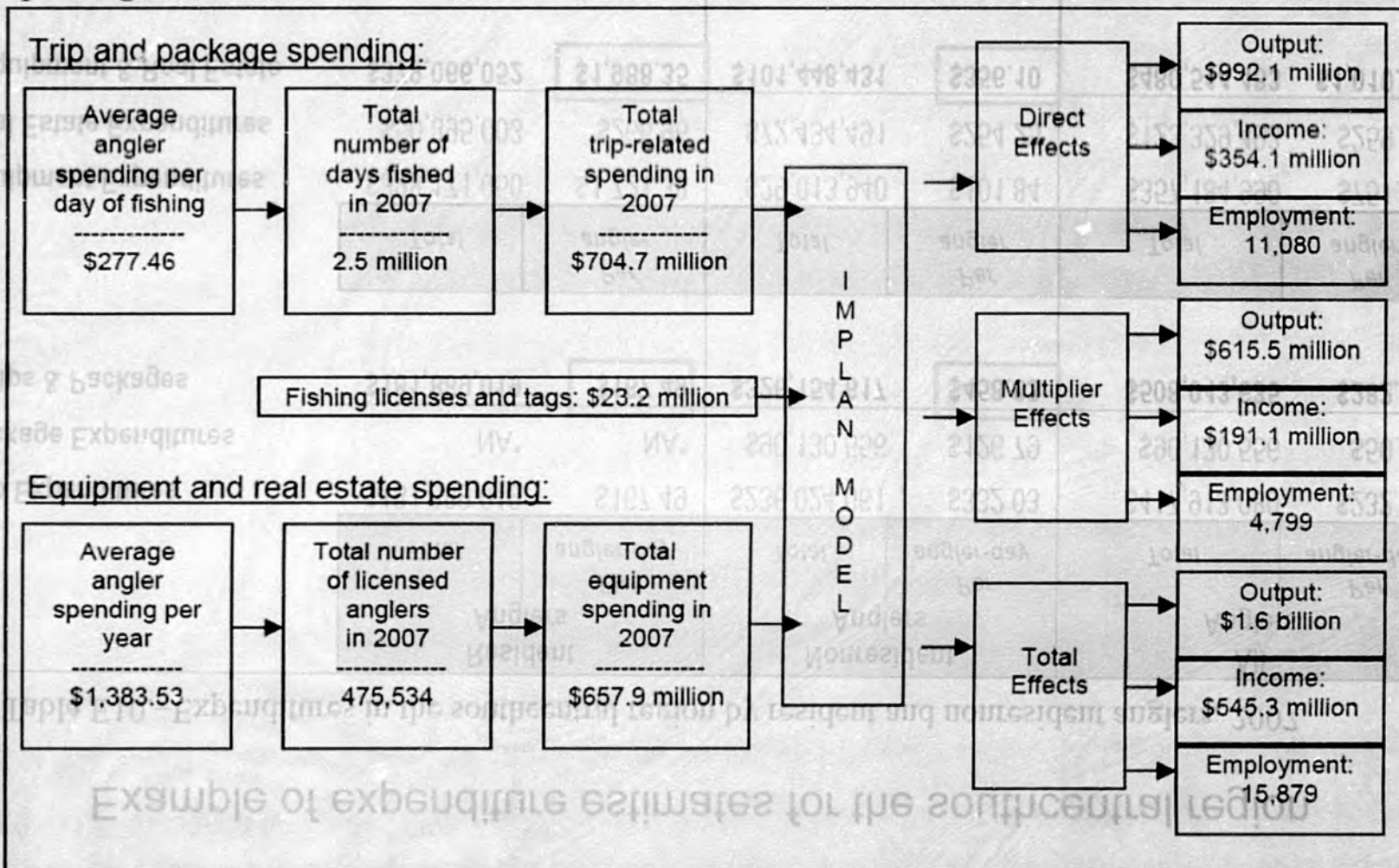
Table E10.—Expenditures in the southcentral region by resident and nonresident anglers, 2007.

	Resident Anglers		Nonresident Anglers		All Anglers	
	Total	Per angler-day	Total	Per angler-day	Total	Per angler-day
Trip Expenditures	\$181,889,019	\$167.49	\$236,024,061	\$332.03	\$417,913,080	\$232.59
Package Expenditures	NA*	NA*	\$90,130,556	\$126.79	\$90,130,556	\$50.16
Trips & Packages	\$181,889,019	\$167.49	\$326,154,617	\$458.83	\$508,043,635	\$282.75
	Total	Per angler	Total	Per angler	Total	Per angler
Equipment Expenditures	\$328,171,050	\$1,721.38	\$29,013,940	\$101.84	\$357,184,990	\$751.12
Real Estate Expenditures	\$50,895,003	\$266.96	\$72,434,491	\$254.25	\$123,329,493	\$259.35
Equipment & Real Estate	\$379,066,052	\$1,988.35	\$101,448,431	\$356.10	\$480,514,483	\$1,010.47
Total Expenditures	\$560,955,071		\$427,603,048		\$988,558,119	

*Package expenditures refer specifically to travel packages purchased by nonresidents prior to departing on their trip to Alaska.

Conceptual framework for how expenditure estimates were used to estimate economic contributions

Figure E2.—Conceptual framework for estimation of the economic contributions of angler spending in Alaska.



How reliable are the sport-fishing expenditure estimates?

- We don't know
 - They are based on a very large number of assumptions
 - Clearly they are not precise estimates
 - The margin of error may be large
 - There is no obvious reason to conclude that they are too high or low
- They appear to be generally comparable with other studies
 - But other studies could have similar biases
- It only means they have a greater margin of error
- That doesn't mean they are too high or too low

reliable than for commercial fishing
The economic importance estimates for sport fishing are probably less

The economic importance estimates for sport fishing are probably less reliable than for commercial fishing

- That doesn't mean they are too high or too low
- It only means they have a greater margin of error
 - But other studies could have similar biases
- They appear to be generally comparable with other studies
 - There is no obvious reason to conclude that they are too high or too low
 - The margin of error may be large
 - Clearly they are not precise estimates
 - They are based on a very large number of assumptions
- We don't know

How reliable are the sport-fishing expenditure estimates?

Outline of presentation

1. Comparison of report methodologies
2. Comparison of reports' estimates of economic importance
3. How accurate and reliable are the estimates?
4. What policy conclusions can we draw?

- Economic impacts aren't necessarily proportional to fish catches can change significantly from year to year
- Even if catches and allocations stay the same, economic impacts
- Public investments affect fisheries, economic impacts
- How fisheries are managed affects their economic impacts

(from my testimony to the Committee on May 22 2008 in Goidoma)
economic impacts of commercial and sport fisheries:

Here are some important things to keep in mind when comparing

Here are some important things to keep in mind when comparing economic impacts of commercial and sport fisheries:
(from my testimony to the Committee on May 22 2008 in Soldotna)

- How fisheries are managed affects their economic impacts
- Public investments affect fisheries' economic impacts
- Even if catches and allocations stay the same, economic impacts can change significantly from year to year
- Economic impacts aren't necessarily proportional to fish catches

4. What policy conclusions can we draw?

3. How accurate and reliable are the estimates?

2. Comparison of reports, estimates of economic importance

1. Comparison of report methodologies

Outline of presentation

Comparing Commercial and Sport Fishing Economic Impacts and Values How to Misuse Economics

(from my testimony to the Committee on May 22 2008 in Soldotna)

- Present economic information that isn't relevant to the policy issue under consideration
- Assume that economic impacts are proportional to fish catches
- Present irrelevant information about economic impacts in other areas
- Overstate the accuracy of estimated impacts or values

Cook Inlet sport fisheries combined

– The sport fishing report estimated the economic importance of all

Cook Inlet salmon

- Neither report specifically estimated the economic importance of

sport-commercial allocation issues for Cook Inlet salmon?

What policy conclusions can we draw from the report about

What policy conclusions can we draw from the report about sport-commercial allocation issues for Cook Inlet salmon?

- Neither report specifically estimated the economic importance of Cook Inlet salmon
 - The sport fishing report estimated the economic importance of all Cook Inlet sport fisheries combined
- It seems reasonable to conclude that the average economic contribution and impact per harvested salmon is considerably higher for Cook Inlet sport fisheries than for Cook Inlet commercial fisheries.
- Nevertheless, I believe the studies provide relatively little if any useful policy guidance on sport-commercial allocation issues for Cook Inlet salmon.

(from my testimony to the Committee on May 22 2008 in 2010/11)

How to Misuse Economics

Comparing Commercial and Sport Fishing Economic Impacts and Values

If the average economic contribution and impact per harvested salmon is considerably higher for Cook Inlet sport fisheries than for Cook Inlet commercial fisheries, why *wouldn't* that necessarily imply that we should reallocate salmon to sport fisheries????

Here are a few potential reasons:

- There is not a one-to-one tradeoff between commercial harvests and sport harvests
- Allocating more salmon to Cook Inlet sport fisheries will not result in proportionally higher economic contributions
 - It won't give Alaska anglers more money to spend
- The potential increase in sport fishing income and jobs won't all go to Alaskans
- The commercial industry is not viable without a certain threshold level of fishing opportunities and regular openings
- Diversification of economic activities is generally a good idea
- Not everyone wants more fishermen in Cook Inlet salmon streams (and more traffic, more crowded parking, etc.)
- Other things matter besides economic impacts—for example, treating people fairly

Am I saying that there is no potential economic justification for reallocating Cook Inlet salmon from commercial to sport fisheries?

- No!
- I am saying that comparing these two studies does not provide that justification
- Economic arguments for changes in allocation should be based on analysis and clear thinking about:
 - the specific expected economic effects
 - of the specific proposed policy change
- Even if average economic effect per fish in a region is higher in the sport fishery than the commercial fishery, that does not mean that all reallocations are always economically justified!

Professional Publication No. 08-01

Economic Impacts and Contributions of Sportfishing in Alaska, 2007

by

Southwick Associates, Inc.

and

William J. Romberg

Allen E. Bingham

Gretchen B. Jennings

Robert A. Clark

December 2008

Alaska Department of Fish and Game

Division of Sport Fish



Weights and measures (metric)		General		Measures (fisheries)	
centimeter	cm	Alaska Administrative		fork length	FL
deciliter	dL	Code	AAC	mid-eye to fork	MEF
gram	g	all commonly accepted		mid-eye to tail fork	METF
hectare	ha	abbreviations	e.g., Mr., Mrs.,	standard length	SL
kilogram	kg		AM, PM, etc.	total length	TL

Weights and measures (metric)		General		Measures (fisheries)	
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hectare	ha			standard length	SL
kilogram	kg			total length	TL
kilometer	km	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.		
liter	L			Mathematics, statistics	
meter	m			<i>all standard mathematical signs, symbols and abbreviations</i>	
milliliter	mL	at	@	alternate hypothesis	H _a
millimeter	mm	compass directions:		base of natural logarithm	e
		east	E	catch per unit effort	CPUE
		north	N	coefficient of variation	CV
		south	S	common test statistics	(F, t, χ^2 , etc.)
		west	W	confidence interval	CI
		copyright	©	correlation coefficient	
		corporate suffixes:		(multiple)	R
		Company	Co.	correlation coefficient	r
		Corporation	Corp.	(simple)	cov
		Incorporated	Inc.	covariance	cov
		Limited	Ltd.	degree (angular)	°
		District of Columbia	D.C.	degrees of freedom	df
		et alii (and others)	et al.	expected value	E
		et cetera (and so forth)	etc.	greater than	>
		exempli gratia	e.g.	greater than or equal to	≥
		(for example)		harvest per unit effort	HPUE
		Federal Information Code	FIC	less than	<
		id est (that is)	i.e.	less than or equal to	≤
		latitude or longitude	lat. or long.	logarithm (natural)	ln
		monetary symbols		logarithm (base 10)	log
		(U.S.)	\$, ¢	logarithm (specify base)	log ₂ , etc.
		months (tables and figures): first three letters	Jan., ..., Dec	minute (angular)	'
		registered trademark	®	not significant	NS
		trademark	™	null hypothesis	H ₀
		United States (adjective)	U.S.	percent	%
		United States of America (noun)	USA	probability	P
		U.S.C.	United States Code	probability of a type I error (rejection of the null hypothesis when true)	α
		U.S. state	use two-letter abbreviations (e.g., AK, WA)	probability of a type II error (acceptance of the null hypothesis when false)	β
				second (angular)	"
				standard deviation	SD
				standard error	SE
				variance	
				population	Var
				sample	var

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PROFESSIONAL PUBLICATION NO. 08-01

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Alaska Department of Fish and Game
Division of Sport Fish, Research and Technical Services
333 Raspberry Road, Anchorage, Alaska, 99518-1565

December 2008

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Anchorage Alaska, USA

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EXECUTIVE SUMMARY

In 2007, 475,534 resident and nonresident licensed anglers fished 2.5 million days in Alaska and spent nearly \$1.4 billion on licenses and stamps, trip-related expenditures, pre-purchased packages, and equipment and real estate used for fishing. An input-output model of Alaska and the study regions was used to estimate the total economic contributions that the spending created through the economic multiplier effect. The \$1.4 billion of angler spending in Alaska supported 15,879 jobs in Alaska and provided \$545 million of income (Table E1). As the anglers' dollars moved from business to business in the Alaska economy, government revenues were generated through personal income taxes, local property taxes, sales taxes, business taxes, and excise taxes. In total, \$123 million in tax revenues were generated for state and local governments in Alaska and \$123 million for the Federal government.

Table E1.—Economic contributions of sportfishing in Alaska, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Licensed anglers	190,644	284,890	475,534
Days fished*	1,459,380	1,080,438	2,539,818
Angler purchases:			
<i>Licenses and Fees</i>	\$6,627,558	\$16,536,955	\$23,164,513
<i>Trip-related (non-package)</i>	\$219,829,151	\$347,358,999	\$567,188,150
<i>Packages</i>	NA**	\$137,519,700	\$137,519,700
<i>Equipment</i>	\$433,693,104	\$41,385,450	\$475,078,554
<i>Real Estate (construction & repair)</i>	\$73,139,537	\$109,697,619	\$182,837,156
Total dollars spent	\$733,289,349	\$652,498,723	\$1,385,788,072
Total economic contribution, including multiplier effects:			
<i>Industry output</i>	\$668,729,829	\$938,863,856	\$1,607,593,685
<i>Income provided</i>	\$223,373,937	\$321,882,151	\$545,256,088
<i>Jobs supported</i>	6,442	9,437	15,879
<i>Taxes contributed</i>	\$123,142,404	\$123,172,709	\$246,315,114

* Totals reported here do not exactly match published statewide and regional totals from the 2007 SWHS due to the fact that it is not possible to identify the water type or guided/unguided status of some Statewide Harvest Survey (SWHS) responses. The totals reported in this table reflect the summary of all days fished within a region that could be assigned to a specific residency, water type, and guided/unguided category. Approximately 4,177 days fished (0.16% of 2.5 million days) could not be assigned to a stratum and were not included in these totals.

** Package expenditures refer specifically to purchases of travel packages made by nonresidents prior to departing on their trip to Alaska.

These findings are the result of a study undertaken in 2007 and 2008 to measure the economic contribution that sportfishing makes to the state of Alaska and its regional economies. The development and management of sustainable recreational fisheries requires decision-makers to integrate both biological and socio-economic information associated with use of fishery

resources. In late 2006, the Alaska Department of Fish and Game's Division of Sport Fish (DSF) issued a request for proposals to conduct a study of the economic impact of sportfishing in Alaska that would cover the 2007 calendar year. This report presents the detailed results of that assessment, including estimates of angler spending and the associated economic activity that provides jobs and income for the residents of Alaska. The results are presented for the entire state of Alaska, with regional breakdowns for the three primary DSF management regions (Southeast, Southcentral and Interior) and for two subregions (Cook Inlet and Southeast marine¹). The locations of the primary study regions are shown in Figure E1.

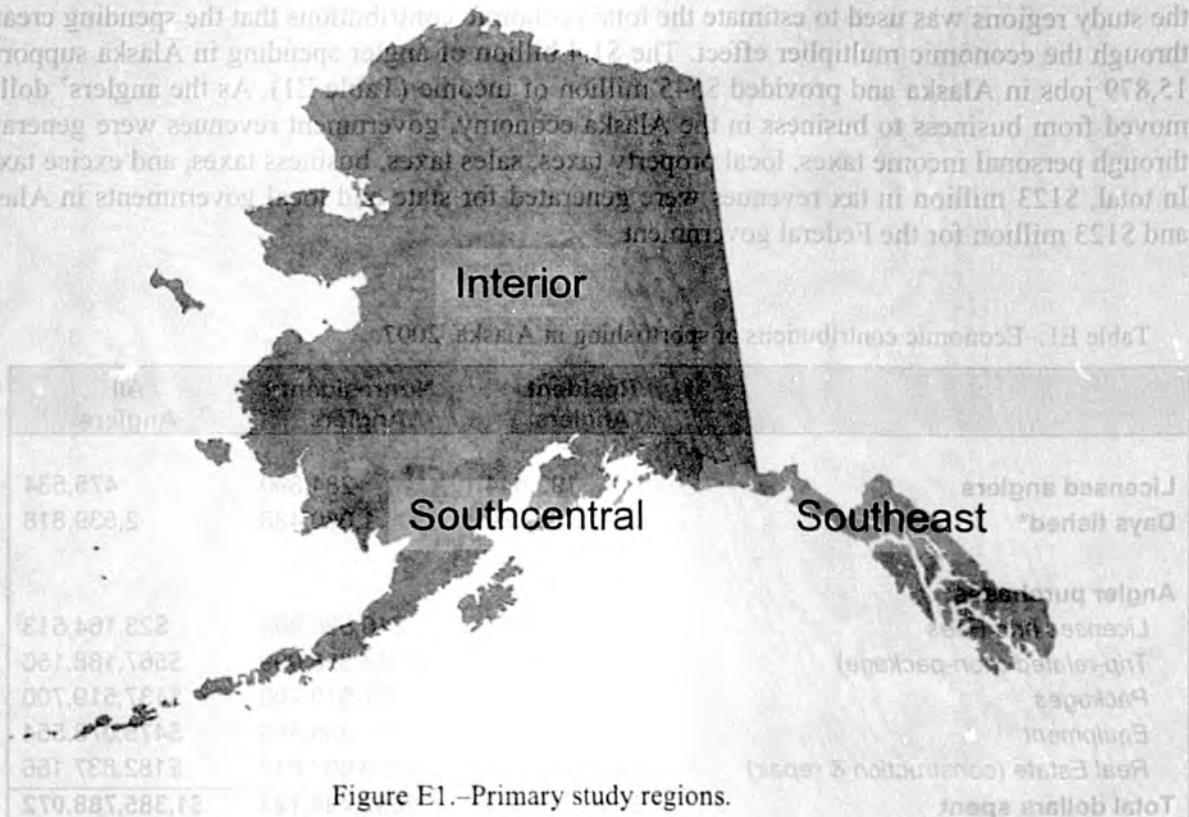
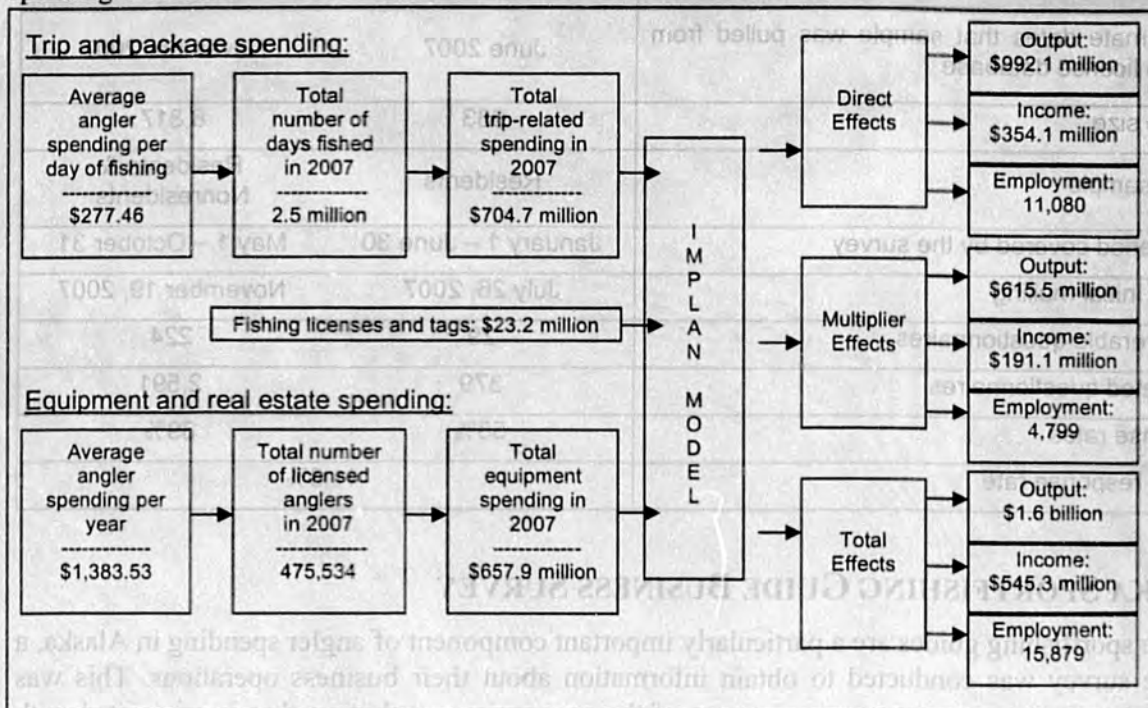


Figure E1.—Primary study regions.

The objectives of the study were accomplished by conducting mail surveys of anglers and sportfishing guide businesses. During 2007 and 2008, licensed resident and nonresident recreational anglers were surveyed to estimate the expenditures that they made related to their sportfishing activities in 2007. The results of that survey were coupled with counts of licensed anglers and estimates of fishing activity (angler-days) provided by the DSF Statewide Harvest Survey (SWHS) to estimate the total amount of fishing-related spending by anglers, the specific goods and services purchased, and the regional locations of the spending. A survey of sportfishing guide businesses was done to accurately account for the money spent by anglers on guided fishing trips. Input-output models of the regional and statewide Alaska economies were then used to estimate the economic multiplier effects of anglers' spending (Figure E2).

¹ Defined as all saltwater sportfishing areas within ADF&G-DSF's Southeast region.

Figure E2.—Conceptual framework for estimation of the economic contributions of angler spending in Alaska.



ANGLER SURVEY

A mail survey was used to collect the information about angler spending. An online questionnaire option was also provided to sampled anglers as an alternative method for completing the expenditure questionnaire. In all, 7,500 names were drawn from the pool of residents and nonresidents who bought a fishing license in 2007. The angler expenditure survey was conducted in two waves. In each wave, nonrespondents were sent up to two additional follow-up surveys, for a total of three mailings within each wave. The first wave of surveys (Wave I) included a random sample of 683 Alaska residents who purchased a sportfishing license or were issued a PID/DAV² between January 1 and April 30, 2007. The second wave of surveys (Wave II) was sent to a random sample of 2,517 resident anglers and 4,300 nonresident anglers who purchased a sportfishing license or were issued a PID/DAV between January 1 and October 31, 2007 (Table E2). Overall, 2,970 completed, usable surveys were returned.

². These are lifetime hunting, fishing, and trapping licenses valid for the remainder of the recipient's life. DAVs are Alaskan Disabled American Veteran permits. Both PIDs and DAVs are provided free of charge to eligible applicants.

Table E2.—Angler survey timeline and highlights.

Survey Attribute	WAVE I	WAVE II
Approximate dates that sample was pulled from ADF&G license database	June 2007	November 2007
Sample size	683	6,817
Target sample	Residents	Residents & Nonresidents
Time period covered by the survey	January 1 – June 30	May 1 – October 31
Date of initial mailing	July 26, 2007	November 19, 2007
Undeliverable questionnaires	29	224
Completed questionnaires	379	2,591
Response rates	58%	39%
Overall response rate	41.0%	

ALASKA SPORTFISHING GUIDE BUSINESS SURVEY

Because sportfishing guides are a particularly important component of angler spending in Alaska, a separate survey was conducted to obtain information about their business operations. This was necessary to ensure an accurate assessment of the economic contribution that is associated with anglers' spending on guided fishing trips. A brief survey was mailed to 500 sportfishing guide businesses. Three mailings of the guide business surveys were made beginning with the first mailing on December 3, 2007. Of the 500 surveys that were mailed, 29 were returned as undeliverable and 162 were completed for an overall response rate of 34.4%. The information collected in the surveys was used to adjust the IMPLAN economic models that were used in the study to better reflect the actual expenditure patterns of guide businesses in Alaska.

ECONOMIC ANALYSIS/MODELING

The expenditures made by anglers for sportfishing activities generated additional economic benefits throughout the Alaska economy beyond the initial angler spending. These additional economic benefits were estimated with IMPLAN regional input-output models that relate changes in specific industries to impacts in other industries within the regional economy. For this study, separate regional models were created to estimate the economic contributions for the statewide Alaska economy and in each of the study regions and subregions. The models produced estimates of the total economic multiplier effects (indirect and induced) from the spending by sport anglers. The **direct effect** of angler spending refers to the dollars that are captured by Alaska business that provide the goods and services purchased by anglers. Much of the equipment purchased by anglers was manufactured outside of the state and did not have a direct effect on the Alaska economy. In that case, the direct effect consists primarily of retail trade margins and typically is less than the total amount spent by anglers. **Indirect effect** refers to the economic activity (e.g., output, employment, income) that occurred in the industries that supply those businesses that were stimulated by the direct effect. The **induced effect** measures the economic activity that resulted from the household spending of salaries and wages by employees whose jobs were supported by the direct and indirect effects.

INDUSTRY SECTOR ASSIGNMENT

Interpretation of the model results depends on the spending under consideration. The term "economic impact" is normally reserved to describe some level of economic activity that would not occur but for the economic stimulus. In the case of recreational activities like sportfishing, it is generally agreed that economic impact comes from spending by visitors to the region. If not for their presence, their spending would never occur in Alaska. If quality sportfishing was no longer available in Alaska for example, nonresident anglers might choose to fish and spend their money elsewhere and thus not generate economic activity in the Alaskan economy. Most resident anglers, on the other hand, choose fishing as an activity on which to spend their recreational dollars locally. If quality sportfishing was no longer available, an unknown portion of residents would likely choose some other local recreational activity on which to spend their money in place of fishing and their spending would still remain in the Alaska economy. This study focused on the total economic contribution from spending by residents and nonresidents. However, the analysis presents the results of angler spending separately for resident and nonresidents to distinguish the total economic impact of sportfishing from its total economic contribution. Additional breakdowns by type of water fished and use of guides are also provided in the full report.

ECONOMIC CONTRIBUTIONS OF SPORTFISHING

In 2007, nearly 476,000 anglers were licensed for recreational fishing in Alaska, including residents and nonresidents who purchased a fishing license, and residents who were issued a fishing privilege at no cost (PIDs and DAVs). Approximately 60% of all sportfishing licenses were purchased by nonresidents and 40% were issued to residents of Alaska. Nearly three-quarters of all resident licenses were issued to people who lived in the Southcentral region (Table E3).

Table E3.—Number and percentage of licensed sport anglers in Alaska, by residence, 2007*.

	# Licensed Anglers*	% of Total
Southeast	22,370	4.7%
Southcentral	134,415	28.3%
Interior	33,859	7.1%
<i>Subtotal of Alaska residents</i>	<i>190,644</i>	<i>40.1%</i>
Nonresidents	284,890	59.9%
Statewide Total	475,534	100.0%

Source: Alaska Department of Fish and Game.

*Includes purchased licenses and issued PIDs (Personal Identification cards) and DAVs (Alaska Disabled American Veteran permits).

In 2007, resident anglers accounted for 57.5% of the total angler days of fishing in Alaska, while nonresident anglers accounted for 42.5% of total angler days in the state (Table E4). Two-thirds (66%) of all nonresident fishing effort (in angler-days) occurred in the Southcentral region, followed by Southeast Alaska (30%) and then the Interior Region (4%). The distribution of resident fishing effort by region is similar with approximately 74% of resident angler days occurring in the Southcentral region, followed by the Southeast region (15%) and then the Interior region (11%). In Alaska overall, and in the Southcentral and Interior regions, residents accounted for the majority of angler days. However, in the Southeast region, nonresidents accounted for nearly 60% of the total angler days.

Table E4.—Estimated number and percent distribution of angler days, by residency*, by region and subregion, 2007.

	RESIDENT		NONRESIDENT		TOTAL	
	Angler-Days	% of Region	Angler-Days	% of Region	Angler-Days	% of Region
Southeast	219,115	40.6%	321,148	59.4%	540,263	100.0%
Southcentral	1,085,962	60.4%	710,843	39.6%	1,796,805	100.0%
Interior	154,303	76.1%	48,447	23.9%	202,750	100.0%
Statewide Total	1,459,380	57.5%	1,080,438	42.5%	2,539,818	100.0%
Subregions						
Southeast Marine	179,873	41.3%	255,465	58.7%	435,338	100.0%
Cook Inlet	761,221	61.2%	481,877	38.8%	1,243,098	100.0%

Source: 2007 Statewide Harvest Survey, Alaska Department of Fish and Game.

* Totals reported here do not exactly match published statewide and regional totals from the 2007 SWHS due to the fact that it is not possible to identify the water type or guided/unguided status of some SWHS survey responses. The totals reported in this table reflect the summary of all days fished within a region that could be assigned to a specific residency, water type, and guided/unguided category. Approximately 4,177 days fished (0.16% of 2.5 million days) could not be assigned to a strata category and thus were not included in these totals.

Sportfishing was an important part of the Alaska economy in 2007, providing jobs and income to many of Alaska's residents. Including the economic multiplier effects, sportfishing supported 15,879 jobs and provided \$545 million of income. By these measures, sportfishing accounted for 2.6% of all income earned in the state and 3.6% of all jobs. The relative contribution of sportfishing to the regional economies varied. It made the greatest relative contribution in the Southeast region where it accounted for approximately 4.8% of the total income and 6.4% of all jobs in the region. In the Interior region, it provided only 0.6% and 1.0% of all income and jobs, respectively (Table E5).

Table E5.—Economic contributions from sportfishing in Alaska compared to total economic activity in each region.

		Total Economic Contribution			
		Angler Spending	Output	Income	Employment
Southeast					
Sportfishing-related		\$273,504,80	\$295,260,010	\$99,141,694	3,063
All economic activity**			\$4,927,726,000	\$2,047,290,000	47,799
% sportfishing-related			6.0%	4.8%	6.4%
Southcentral					
Sportfishing-related		\$988,558,11	\$1,165,545,513	\$386,463,733	11,535
All economic activity**			\$38,271,608,000	\$14,289,604,000	300,535
% sportfishing-related			3.0%	2.7%	3.8%
Interior					
Sportfishing-related		\$100,560,63	\$86,712,709	\$28,563,882	923
All economic activity**			\$12,568,651,000	\$4,784,721,000	88,667
% sportfishing-related			0.7%	0.6%	1.0%
Statewide Total					
Sportfishing-related		\$1,385,788,07	\$1,607,593,685	\$545,256,088	15,879
All economic activity**			\$55,766,476,000	\$21,121,616,000	437,001
% sportfishing-related			2.9%	2.6%	3.6%

*Including direct and multiplier effects.

**Source: 2006 IMPLAN economic models (for comparison purposes only).

Statewide Spending and Economic Contributions

In total, residents and nonresidents spent nearly \$1.4 billion on sportfishing activities, including licenses, trip and package spending, fishing and fishing-related equipment, and real estate construction and maintenance used primarily for sportfishing. More than one-third (\$567 million) of the total was non-package trip spending. When combined with fishing packages, trip-related spending accounted for one-half (\$705 million) of all sportfishing expenditures. Spending on fishing equipment and fishing-related equipment was \$475 million, and anglers spent a total of \$183 million on maintenance and construction of real estate that was used primarily for sportfishing (Table E6).

Table E6.—Statewide expenditures by resident and nonresident anglers, 2007.

	Resident Anglers		Nonresident Anglers		All Anglers	
	Total	Per angler-day	Total	Per angler-day	Total	Per angler-day
Licenses and stamps	\$6,627,558	\$4.54	\$16,536,955	\$15.31	\$23,164,513	\$9.12
Trip Expenditures	\$219,829,151	\$150.63	\$347,358,999	\$321.50	\$567,188,150	\$223.32
Package Expenditures	NA*	NA*	\$137,519,700	\$127.28	\$137,519,700	\$54.15
Trips & Packages	\$219,829,151	\$150.63	\$484,878,699	\$448.78	\$704,707,849	\$277.46
	Total	Per angler	Total	Per angler	Total	Per angler
Equipment Expenditures	\$433,693,104	\$2,274.88	\$41,385,450	\$145.27	\$475,078,554	\$999.04
Real Estate Expenditures	\$73,139,537	\$383.64	\$109,697,619	\$385.05	\$182,837,156	\$384.49
Equipment & Real Estate	\$506,832,641	\$2,658.53	\$151,083,069	\$530.32	\$657,915,710	\$1,383.53
Total Expenditures	\$733,289,349		\$652,498,723		\$1,385,788,072	

*Package expenditures refer specifically to travel packages purchased by nonresidents prior to departing on their trip to Alaska.

Generally, residents spent a higher proportion of their fishing dollars on equipment, compared to nonresidents, while nonresidents spent more of their money on trip-related purchases. This is true both in total dollars and on average. Overall, residents accounted for \$733 million of sportfishing spending in Alaska in 2007, compared to \$652 million of spending by nonresidents.

The nearly \$1.4 billion of spending by anglers in Alaska in 2007 directly generated \$354 million of income to 11,080 full and part time employees and proprietors who worked in the Alaska businesses whose products were purchased by anglers. Spending by nonresidents accounted for 6,549 of the jobs and \$208 million of income (Table E7). In addition to the economic activity directly attributable to spending by anglers are the economic multiplier effects (indirect plus induced effects) of that consumer spending. Including both direct and multiplier effects, the nearly \$1.4 billion of spending by anglers produced \$545 million of income, supported 15,879 full and part-time jobs, and provided \$246 million of tax revenues to local, state and federal governments.

Table E7.—Statewide economic contributions of all spending for sportfishing, by residency, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Income	\$146,134,921	\$208,000,960	\$354,135,881
Employment	4,531	6,549	11,080
Multiplier effects			
Income	\$77,239,016	\$113,881,191	\$191,120,207
Employment	1,911	2,888	4,799
Total effects			
Income	\$223,373,937	\$321,882,151	\$545,256,088
Employment	6,442	9,437	15,879
Tax revenues	\$107,433,532	\$138,881,581	\$246,315,114
Local and state	\$56,509,573	\$66,632,831	\$123,142,404
Federal	\$50,923,959	\$72,248,750	\$123,172,709

Angler Spending and Economic Contributions in the Southeast Region

Residents and nonresidents visiting Alaska spent nearly \$274 million in the Southeast region on sportfishing activities (these numbers do not include spending on license and stamps because those purchases are made from state government and are not attributed to any specific place). Approximately 41% (\$112 million) of the total spending in the region was non-package trip spending. When combined with fishing packages, trip-related spending accounted for more than one-half (55.6%) of all sportfishing expenditures. Spending on fishing equipment and fishing-related equipment was \$68 million, and anglers spent a total of \$54 million on maintenance and construction of real estate that was used primarily for sportfishing (Table E8).

Generally, residents spent a higher proportion of their fishing dollars on equipment, compared to nonresidents, while nonresidents spent more of their money on trip-related purchases. This is true both in total dollars and on average. Nonresident fishing is especially important in the Southeast region where they accounted for more than 85% of all trip-related spending. Overall, nonresidents spent \$175 million for sportfishing in the Southeast region in 2007, compared to \$99 million of spending by residents.

Table E8.—Expenditures in the southeast region by resident and nonresident anglers, 2007.

	Resident Anglers		Nonresident Anglers		All Anglers	
	Total	Per angler-day	Total	Per angler-day	Total	Per angler-day
Trip Expenditures	\$22,467,571	\$102.54	\$89,857,056	\$279.80	\$112,324,626	\$207.91
Package Expenditures	NA*	NA*	\$39,866,502	\$124.14	\$39,866,502	\$73.79
Trips & Packages	\$22,467,571	\$102.54	\$129,723,558	\$403.94	\$152,191,129	\$281.70
	Total	Per angler	Total	Per angler	Total	Per angler
Equipment Expenditures	\$56,606,233	\$296.92	\$10,871,728	\$38.16	\$67,477,961	\$141.90
Real Estate Expenditures	\$19,540,190	\$102.50	\$34,295,525	\$120.38	\$53,835,714	\$113.21
Equipment & Real Estate	\$76,146,422	\$399.42	\$45,167,253	\$158.54	\$121,313,675	\$255.11
Total Expenditures	\$98,613,993		\$174,890,811		\$273,504,804	

*Package expenditures refer specifically to travel packages purchased by nonresidents prior to departing on their trip to Alaska.

The \$274 million of spending by anglers in the Southeast region in 2007 directly generated \$71 million of income to 2,243 full and part time employees and proprietors who worked in the Alaska businesses whose products were purchased by anglers. Spending by nonresidents accounted for 1,662 of the jobs and \$51 million of income (Table E9). In addition to the economic activity directly attributable to spending by anglers are the economic multiplier effects (indirect plus induced effects) of that consumer spending. Including both direct and multiplier effects, the \$274 million of spending by anglers produced \$99 million of income, supported 3,063 full and part-time jobs, and provided \$44 million of tax revenues to local, state and federal governments.

Marine recreational fishing is particularly important in the Southeast region, where 80.6% of all angler-days were in saltwater. Equipment and real estate spending were not allocated by type of water fished, but 86.5% of all trip and package spending in the Southeast region was geared toward saltwater fishing trips. Trip and package spending for saltwater fishing in the Southeast region contributed \$54 million of income, supported 1,897 jobs, and contributed \$26 million of tax revenues. These represent 54.3%, 61.9%, and 60.6% of angler-supported income, jobs and tax revenues in the Southeast region, respectively.

Table E9.—Economic contributions of angler spending in the southeast region, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Income	\$20,284,669	\$50,987,336	\$71,272,005
Employment	582	1,662	2,243
Multiplier effects			
Income	\$7,031,339	\$20,838,350	\$27,869,689
Employment	209	611	820
Total effects			
Income	\$27,316,008	\$71,825,686	\$99,141,694
Employment	791	2,273	3,063
Tax revenues	\$12,227,368	\$31,368,564	\$43,595,932
Local and state	\$6,376,236	\$15,686,783	\$22,063,019
Federal	\$5,851,132	\$15,681,782	\$21,532,913

Angler Spending and Economic Contributions in the Southcentral Region

Residents and nonresidents visiting Alaska spent \$989 million in the Southcentral region on sportfishing activities (these numbers do not include spending on license and stamps because those purchases are made from state government and are not attributed to any specific place). Approximately 42% (\$418 million) of the total spending in the region was non-package trip spending. When combined with fishing packages, trip-related spending accounted for slightly more than one-half (51.4%) of all sportfishing expenditures. Spending on fishing equipment and fishing-related equipment was \$357 million, and anglers spent a total of \$123 million on maintenance and construction of real estate that was used primarily for sportfishing (Table E10).

Table E10.—Expenditures in the southcentral region by resident and nonresident anglers, 2007.

	Resident Anglers		Nonresident Anglers		All Anglers	
	Total	Per angler-day	Total	Per angler-day	Total	Per angler-day
Trip Expenditures	\$181,889,019	\$167.49	\$236,024,061	\$332.03	\$417,913,080	\$232.59
Package Expenditures	NA*	NA*	\$90,130,556	\$126.79	\$90,130,556	\$50.16
Trips & Packages	\$181,889,019	\$167.49	\$326,154,617	\$458.83	\$508,043,635	\$282.75
	Total	Per angler	Total	Per angler	Total	Per angler
Equipment Expenditures	\$328,171,050	\$1,721.38	\$29,013,940	\$101.84	\$357,184,990	\$751.12
Real Estate Expenditures	\$50,895,003	\$266.96	\$72,434,491	\$254.25	\$123,329,493	\$259.35
Equipment & Real Estate	\$379,066,052	\$1,988.35	\$101,448,431	\$356.10	\$480,514,483	\$1,010.47
Total Expenditures	\$560,955,071		\$427,603,048		\$988,558,119	

*Package expenditures refer specifically to travel packages purchased by nonresidents prior to departing on their trip to Alaska.

Generally, residents spent a higher proportion of their fishing dollars on equipment, compared to nonresidents, while nonresidents spent more of their money on trip-related purchases. This is true both in total dollars and on average. Overall, nonresidents spent \$175 million for sportfishing in the Southcentral region in 2007, compared to \$99 million of spending by residents.

The \$989 million of spending in the Southcentral region in 2007 directly generated \$240 million of income to 7,897 full and part time employees and proprietors who worked in the Alaska businesses whose products were purchased by anglers. Spending by nonresidents accounted for 4,329 of the jobs and \$131 million of income (Table E11). In addition to the economic activity directly attributable to spending by anglers are the economic multiplier effects (indirect plus induced effects) of that consumer spending. Including both direct and multiplier effects, the \$989 million of spending by anglers produced \$386 million of income, supported 11,535 full and part-time jobs, and provided \$180 million of tax revenues to local, state and federal governments.

The Cook Inlet subregion is a key fishing and economic component of the Southcentral region. Fishing in the Cook Inlet subregion accounts for 69.2% of all angler-days and 74.1% of all spending that takes place in the Southcentral region. Spending by anglers within the Cook Inlet subregion contributed \$279 million of income and 8,056 jobs to the larger Southcentral region economy, including the economic multiplier effects. That spending also provided \$111 million of the tax revenues generated by angler spending. These represented 72.1%, 69.8%, and 61.9% of all angler-supported income, jobs and tax revenues in the Southcentral region, respectively.

Table E11.—Economic contributions of angler spending in the southcentral region, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Income	\$109,015,231	\$130,743,922	\$239,759,153
Employment	3,569	4,329	7,897
Multiplier effects			
Income	\$65,814,765	\$80,889,815	\$146,704,580
Employment	1,601	2,036	3,637
Total effects			
Income	\$174,829,996	\$211,633,737	\$386,463,733
Employment	5,170	6,365	11,535
Tax revenues			
Local and state	\$45,612,530	\$45,187,101	\$90,799,631
Federal	\$40,950,668	\$48,504,967	\$89,455,636

Angler Spending and Economic Contributions in the Interior Region

Residents and nonresidents visiting Alaska spent \$101 million in the Interior region on sportfishing activities (these numbers do not include spending on licenses and stamps because those purchases are made from state government and are not attributed to any specific place). Approximately 37% (\$37 million) of the total spending in the region was non-package trip spending. When combined with fishing packages, trip-related spending accounted for less than one-half (44.2%) of all sportfishing expenditures. This is compared to slightly more than one-half of total spending statewide that is due to trip and package spending. The substantial difference is largely a result of the lower proportion of nonresident anglers who fish in the Interior region (23.9% of angler-days in the Interior compared to 42.5% statewide). Spending on fishing equipment and fishing-related equipment was \$50 million, and anglers spent less than \$8 million on maintenance and construction of real estate that was used primarily for sportfishing (Table E12).

Table E12.—Expenditures in the interior region by resident and nonresident anglers, 2007.

	Resident Anglers		Nonresident Anglers		All Anglers	
	Total	Per angler-day	Total	Per angler-day	Total	Per angler-day
Trip Expenditures	\$15,472,561	\$100.27	\$ 21,477,883	\$443.33	\$ 36,950,444	\$182.25
Package Expenditures	NA*	NA*	\$ 7,522,641	\$155.28	\$ 7,522,641	\$37.10
Trips & Packages	\$15,472,561	\$100.27	\$ 29,000,524	\$598.60	\$ 44,473,085	\$219.35
	Total	Per angler	Total	Per angler	Total	Per angler
Equipment Expenditures	\$48,915,821	\$256.58	\$1,499,781	\$5.26	\$50,415,603	\$106.02
Real Estate Expenditures	\$2,704,345	\$14.19	\$2,967,604	\$10.42	\$5,671,949	\$11.93
Equipment & Real Estate	\$51,620,166	\$270.77	\$4,467,386	\$15.68	\$56,087,552	\$117.95
Total Expenditures	\$67,092,727		\$33,467,910		\$100,560,637	

* Package expenditures refer specifically to travel packages purchased by nonresidents prior to departing on their trip to Alaska.

Generally, residents spent a higher proportion of their fishing dollars on equipment, compared to nonresidents, while nonresidents spent more of their money on trip-related purchases. This is true both in total dollars and on average. Overall, nonresidents spent \$33 million for sportfishing in the Interior region in 2007, compared to \$67 million of spending by residents.

The \$101 million of spending in the Interior region in 2007 directly generated \$21 million of income to 720 full and part time employees and proprietors who worked in the Alaska businesses whose products were purchased by anglers. Spending by nonresidents accounted for 407 of the jobs and \$11 million of income (Table E13). In addition to the economic activity directly attributable to spending by anglers are the economic multiplier effects (indirect plus induced effects) of that consumer spending. Including both direct and multiplier effects, the \$101 million of spending by anglers produced \$29 million of income, supported 923 full and part-time jobs, and provided \$13 million of tax revenues to local, state and federal governments.

Table E13.—Economic contributions of angler spending in the interior region, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Income	\$9,940,774	\$10,605,086	\$20,545,860
Employment	313	407	720
Multiplier effects			
Income	\$3,322,932	\$4,695,090	\$8,018,022
Employment	\$86	\$117	203
Total effects			
Income	\$13,263,706	\$15,300,176	\$28,563,882
Employment	399	524	923
Tax revenues	\$6,710,270	\$6,708,875	\$13,419,146
Local and state	\$3,825,310	\$3,396,831	\$7,222,141
Federal	\$2,884,961	\$3,312,044	\$6,197,005

ECONOMIC IMPACTS AND CONTRIBUTIONS OF SPORTFISHING IN ALASKA, 2007

ABSTRACT

The economic contribution of sportfishing in Alaska is an important consideration for natural resource managers who must evaluate fishery projects, assist in planning for land and water resource management, and provide input to regulatory or policy decision-makers regarding management or allocation of aquatic resources. This report presents the results of a detailed assessment contracted by the Alaska Department of Fish and Game to measure the economic contribution that sportfishing makes to the state of Alaska and its regional economies. During 2007 and 2008, licensed resident and nonresident recreational anglers were surveyed to estimate the expenditures that they made related to their sportfishing activities in 2007. The results of that survey were coupled with counts of licensed anglers and estimates of fishing activity (angler-days) provided by the ADF&G Statewide Harvest Survey (SWHS) to estimate the total amount of fishing-related spending by anglers, the specific goods and services purchased, and the regional locations of the spending. A survey of sportfishing guide businesses was also conducted to accurately account for the money spent by anglers on guided fishing trips. Input-output models of the regional and statewide Alaska economies were then used to estimate the economic multiplier effects of anglers' spending.

In 2007, 475,534 resident and nonresident licensed anglers fished 2.5 million days in Alaska and spent nearly \$1.4 billion on licenses and stamps, trip-related expenditures, pre-purchased packages, and equipment and real estate used for fishing. The \$1.4 billion of angler spending in Alaska resulted in economic activity that supported 15,879 jobs in Alaska, provided \$545 million of income, and resulted in \$123 million in state/local tax revenues. Nonresident angler spending in Alaska in 2007 (economic impact) was \$653 million, and this supported 9,437 jobs and \$67 million in state/local tax revenues.

The regional distribution of spending by anglers generally followed the distribution of total days fished, with most angler spending occurring in the Southcentral region (72%), followed by the Southeast and the Interior regions with 20% and 7% of total angler spending respectively. Total expenditures on guided sportfishing activities in 2007 totaled \$416 million, which resulted in \$641 million in total economic activity and supported 7,183 jobs. Resident anglers spent an average of \$150 per day of sportfishing activity on trip-related expenses in 2007, while nonresident anglers spent an average of \$448 per day in Alaska on trip-related expenses in 2007.

Keywords: Alaska, sportfishing, economic impact, economic contribution, jobs, income, expenditures, IMPLAN models, angler days, economic survey, guide-business survey, Southwick Associates

INTRODUCTION

The development and management of sustainable recreational fisheries requires fishery decision-makers to integrate both biological and socio-economic information associated with the use of fishery resources. This report provides estimates of direct expenditures for sportfishing activities in Alaska in 2007 and the associated economic effects of such spending on the Alaska economy. Up to date information is needed by natural resource managers and policy-makers to make informed fishery management decisions. Statewide estimates of the economic impact of sportfishing in Alaska are available every five to seven years as part of the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (FHWAR)². However, the FHWAR

² U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

economic estimates are based upon a relatively small sample of Alaskan households that cannot provide the level of precision desired by the Division of Sport Fish (DSF). Moreover, the FHWAR does not provide estimates of economic impact at the region or subregion level within Alaska as needed by managers and regulatory or policy decision-makers. The last detailed economic impact assessment conducted by the Alaska Department of Fish and Game (ADF&G) DSF was completed in 1999 with estimates for 1993 fishing activity.

In late 2006, DSF issued a request for proposals to conduct a study of the economic impact of sportfishing in Alaska that would cover the 2007 calendar year, and would establish a repeatable protocol to provide periodically-updated estimates of these impacts. The request for proposals was limited to an assessment of the economic impacts and contribution of licensed anglers to Alaska's regional and state economies. Although other types of economic information could have been estimated with additional resources and a different focus for the study, the emphasis on economic impact and economic contribution was directed at providing managers, regulators, or policy makers with basic economic expenditure data and associated economic effects for sportfishing in Alaska. This report presents the detailed results of this assessment, including estimates of the following economic measures (see Figure 1 for definitions) corresponding to sportfishing activities in Alaska on a statewide basis, within the primary DSF management regions (Southeast, Southcentral, and Interior), and for two subregions (Cook Inlet and Southeast marine³) in 2007⁴:

1. **The total resident and nonresident expenditures;**
2. **The total direct, indirect and induced economic effects of resident and nonresident expenditures** for sportfishing by sector on the Alaska economy in terms of economic output, income, employment, and government revenues
3. **The mean trip-related expenditures per angler-day and mean annual equipment expenditures per angler in Alaska for residents and nonresidents** for the purpose of approximating changes in economic activity related to changes in fishery participation over time.

Moreover, this assessment sought to establish a consistent and repeatable methodology for collecting and reporting estimates of the economic contribution of sportfishing in Alaska on a periodic basis (every 3-5 years) at the statewide, regional, and subregional level for the purposes of tracking and comparing such estimates over time, as well as making reasonably current estimates available to planning and regulatory decision-makers.

The objectives of the study were accomplished by conducting a survey of resident and nonresident recreational anglers in 2007 and 2008 to estimate the expenditures made by anglers related to their sportfishing activities in 2007. That survey was the basis for estimating the total amount of fishing-related spending by anglers, the specific goods and services purchased, and the regional locations of the spending. Input-output models of the regional and statewide Alaska economies were then used to estimate the multiplier effects of the angler spending. The following sections provide details of the angler survey, the analytical procedures used to estimate statewide and regional angler expenditures from the results of the survey, and the statewide and regional economic models that were developed to estimate the total economic contributions that arose from the angler expenditures.

³ Defined as all saltwater sportfishing areas within ADF&G-DSF's Southeast region (Figure 3).

⁴ The specific region and subregion boundaries are defined in the Questionnaire Design section (Figures 2 and 3).

Figure 1.—Key terms and concepts used throughout this report.

Angler: anyone who holds a current Alaska sportfishing license to engage in sportfishing and/or personal use fishing in 2007, dipnetters and shellfish fishermen included. Only the economic effects of sport and personal use fishing (e.g., dipnetting) are captured in this study.

PID: Alaska residents 60 or older are not required to purchase sportfishing licenses, but can apply for an ADF&G Permanent Identification Card (PID). These are free lifetime hunting, fishing, and trapping licenses valid for the remainder of the recipient's life.

DAV: a disabled American veteran license allowing participation in sport and personal use fishing, hunting, and trapping in Alaska

Economic contribution: the total economic activity resulting from expenditures made by resident and nonresident anglers. In other studies, this is sometime termed economic significance or economic importance.

Economic impacts: the effects from nonresident anglers whose expenditures within Alaska represent new dollars or dollars that would otherwise be lost to the state economy.

Economic impacts versus economic contribution: in many circles, there is a difference between these terms. Economic impact typically refers to the new economic activity created within a defined region from dollars originating from outside the region. This includes the dollars brought into Alaska by nonresident anglers, or the dollars brought in by businesses from sales to people and businesses outside of the region. Economic contribution relates to the total economic activity within a region. This would include expenditures by residents and businesses selling to people within the region. In theory, if these dollars were not spent on sportfishing within the region, they would be spent on other activities within the region and therefore would still stimulate economic activity. It is not possible to accurately predict if people would spend dollars within or outside of the region if sportfishing were not available. This study includes both economic impact estimates (nonresidents) as well as economic significance (resident-based) estimates.

Angler Expenditures: the dollars spent for the primary reason of sportfishing. Such expenditures include travel-related expenses for fishing, fishing tackle and other fishing equipment, ancillary equipment that may have multiple uses including supporting the angler's sportfishing activities (e.g., coolers, binoculars), and development and management expenditures for real estate used primarily for the pursuit of sportfishing.

Economic Multipliers: the response of a regional economy to some economic stimulus, such as spending by anglers.

Direct effect: the changes in the businesses that are directly affected by angler spending. In the case of consumer purchases, some products are supplied by businesses and industries from outside of the region and the direct effect does not necessarily equal total consumer spending. These direct expenditures initiate other rounds of activity within the economy.

Indirect effect: the changes in inter-industry purchases as suppliers respond to the new demands of those businesses that are directly affected by the angler spending.

Induced effect: the economic activity that results from household spending of labor income associated with the economic activity generated by the direct and indirect effects.

Economic Activity: the various metrics that are used to represent the ways in which angler expenditures affect a regional economy. Each of the metrics can be used as measures of the direct, indirect or induced effects.

Output: the total value of an industry's production. Included in output is the value of an industry's inputs plus value added by the industry (payroll, profits, and indirect business taxes).

Income: total payroll, including salaries and wages, as well as benefits such as insurances, retirement benefits paid to employees and business proprietors.

Employment: the total number of both full-time and part-time jobs.

Tax revenues: estimates of all local, state and federal taxes paid by individuals and business (e.g., income taxes, excise taxes, business profits taxes, payroll taxes).

STUDY DESIGN AND METHODS

An accurate assessment of the economic impacts and significance of Alaskan sportfishing requires estimates of all sportfishing activity in Alaska and the spending by anglers that is associated with that activity. The total expenditures made by anglers are then analyzed with a model of the Alaska and regional economies to determine the total contribution that angler spending has on the respective economies, including the multiplier effect. The overall process utilized in this study is depicted in Figure 2.

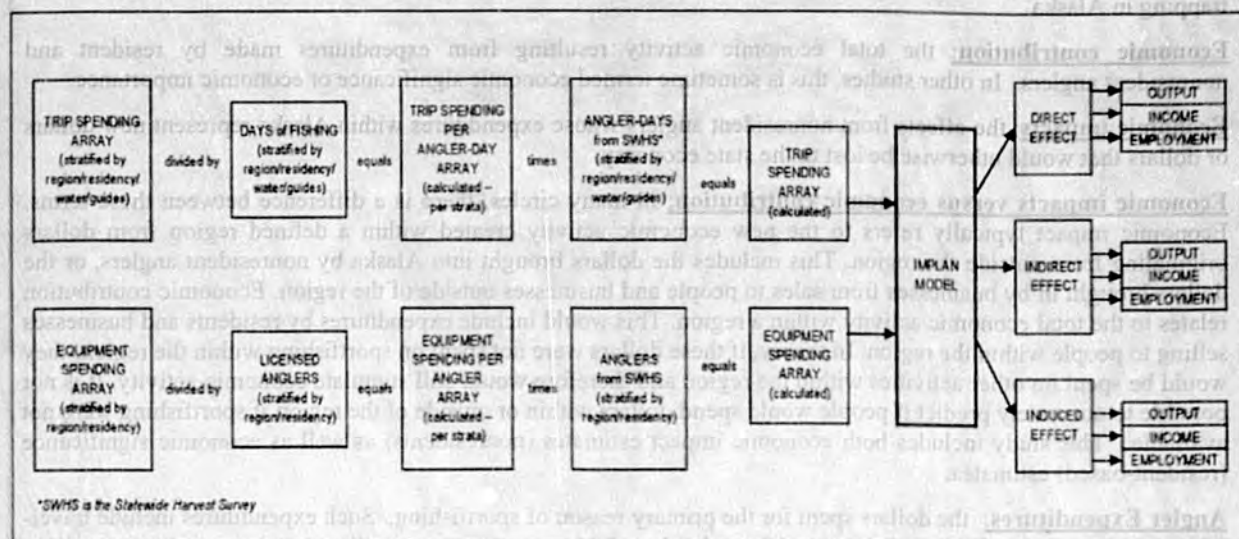


Figure 2.—Generalized process used to estimate the total economic contribution of sportfishing in Alaska.

Several independent sources of angler expenditures are available, such as the FHWAR and previous ADF&G economic studies of sportfishing in Alaska. All of these studies are either several years old, do not provide the requisite data at the regional or subregional level, and/or do not describe the full range of expenditures made by Alaskan anglers. To obtain current and regionally detailed information needed for a full assessment of the economic contributions of Alaska sportfishing, a survey was conducted of people who obtained some form of resident or nonresident Alaska recreational fishing license in 2007.

The angler survey was conducted in two waves. The first wave surveyed resident anglers for fishing activity and expenditures made during the Winter and Spring fisheries in 2007. The second wave measured fishing activity and expenditures made by residents and nonresidents during late Spring and Summer in 2007. Both surveys were structured so that statewide and regional expenditures could be estimated for guided and unguided fishing trips, in fresh and salt water, by resident and nonresidents. The analysis of the survey data provided detailed estimates

for trip-related spending on an angler-day basis, and for annual equipment and real estate⁵ expenditures on a per licensed angler basis.

The estimated number of total licensed anglers in 2007 was obtained independently from the DSF license database. Estimates of total days of fishing activity by region and strata were provided by the DSF Statewide Harvest Survey (SWHS), an annual survey administered to a stratified random sample of resident and nonresident households containing at least one licensed Alaska angler. It provides estimates of the days of fishing at detailed regional levels and by residency, water type (fresh and salt water), and use of guides (guided/unguided).

Total annual trip-related expenditure estimates by residency, water type, and use of guides were calculated by multiplying the average trip-related expenditures from the angler surveys by the estimates of days of fishing from the SWHS. Equipment and real estate can be associated with multiple types of sportfishing and are not easily assigned by anglers to a particular type of water or guided/unguided fishing. For that reason, annual equipment and real estate spending was estimated by multiplying the average annual expenditure per angler by the total number of licensed anglers.

The detailed estimates of total annual expenditures were then analyzed with regional and statewide input-output models to estimate total economic significance. The input-output models used in the study are IMPLAN models provided by MIG, Inc. of Stillwater, Minnesota. IMPLAN economic models are widely used for economic impact analyses. These models trace the flow of dollars within an economy to measure how an initial change in one or several economic activities affects an entire economy. The difference between the initial economic change and overall effect across the entire economy is the result of the multiplier effects (known as indirect and induced effects). These multiplier effects are measured in several ways including economic output, employment, and income. In this study, the initial economic change (angler expenditures), coupled with the multiplier effect, represents the total economic contribution of sportfishing.

DATA COLLECTION

A mail survey of anglers was conducted to collect information on fishing activity and expenditures sufficient to provide reliable estimates of total expenditures in the study regions by residency, water type, and guided/unguided fishing. The following sections describe the development of the survey instruments, the implementation of the survey, and the compilation and treatment of the collected data.

SURVEY DESIGN

A mail survey and a phone survey were initially considered for the angler survey. However, recognizing the need for survey participants to identify the regions where they fished and spent money, a map was needed to define regional boundaries. This prevented the use of a telephone survey. Another reason favoring the use of a mail survey was the lack of phone numbers in the Alaska sportfishing license database and the uncertainty associated with accurately matching addresses to phone numbers using third party data sources. Therefore, a mail survey approach was selected. An online questionnaire option was also provided, with mail survey recipients told

⁵ The economic assessment includes expenditures for construction and maintenance of real estate (e.g., cabins, docks, sheds) used primarily for sportfishing, but does not include any purchases or leasing of real estate.

of the online questionnaire option if they preferred to respond via the internet⁶. Each survey recipient was provided a unique access code to prevent others from taking the survey and compromising the project's scientific random sampling framework. Key dates and sample highlights are shown in Table 1.

Table 1.—Angler survey sample size, target sample and time period, mailing timeline, and overall response rate by survey wave.

	WAVE I	WAVE II
Dates that sample was pulled from ADF&G license database	June 2007	November 2007
Sample size	683	6,817
Target sample	Residents	Residents & Nonresidents
Time period covered by the survey	January 1 – June 30	May 1 – October 31
Date of initial mailing	July 26	November 19
Date of 1 st follow-up mailing	August 27	December 26
Date of 2 nd follow-up mailing	September 27	January 25
Overall response rate	58%	39%

The angler expenditure survey was conducted in two waves. In each wave, nonrespondents were sent up to two additional follow-up surveys, for a total of three mailings of each wave. The first wave of surveys (Wave I) included a random sample of 683 Alaska residents who purchased a sportfishing license or were issued a PID/DAV between January 1 and April 30, 2007. This first wave of surveys were sent out on July 26, 2007, with follow-up mailings to nonrespondents on August 27, 2007 and September 27, 2007. The second wave of surveys (Wave II) were sent to a random sample of 2,517 resident anglers and 4,300 nonresident anglers who purchased a sportfishing license or were issued a PID/DAV between January 1 and October 31, 2007. The first mailing of the second wave of surveys was sent out over a three-day period (November 19-21, 2007) due to the large volume of surveys. Follow-up mailings to second wave nonrespondents took place on December 26, 2007 and January 25, 2008. A shorter recall period was not possible due to a significant lag time between the date of license purchase and when license records become available in the state license database for sampling purposes.

⁶ Foreign anglers were provided only with the online option for responding to the survey.

There were two major reasons to not use a single wave of surveys:

1. **Seasonal variations in average trip expenditures:** The amount spent by anglers can vary depending on the time of year. For example, winter fisheries in many places are oriented towards ice fishing and a different mix of gear is required. Even during the summer fishing season, expenditures for early season Chinook salmon *Oncorhynchus tshawytscha* fisheries were expected to possibly differ from later season fisheries which range from river to lake fisheries for salmon *Oncorhynchus* spp., rainbow trout *Oncorhynchus mykiss*, Arctic grayling *Thymallus arcticus*, and other species, to saltwater fishing for salmon, Pacific halibut *Hippoglossus stenolepis* and other groundfish (e.g., lingcod *Ophiodon elongates*). To capture these differences, anglers were asked to report their expenditures for a specific trip within defined time periods. This was expected to result in greater recall accuracy of the final expenditure estimates. The time periods covered in the surveys were:
 - a. January 1 through April 30 - for residents only, recognizing that few nonresidents participate in fishing in Alaska during this time of year.
 - b. May 1 through June 30 - for residents and nonresidents. This period covers early season fisheries for Chinook salmon, steelhead, groundfish and other species.
 - c. July 1 through October 31 - for residents and nonresidents.
2. **Recall Error** – an annual survey may force some anglers to report expenses for trips that occurred 12 or more months earlier. Research⁷ has shown that anglers can have significant difficulty recalling specific amounts spent a year earlier. This problem is more severe for items with lower prices and/or items that are purchased frequently such as terminal tackle, gasoline and other similar items. Sending two waves of surveys, each with recall periods shorter than annual recall, was expected to help reduce recall error.

Wave I inquired about fishing activity and expenditures for trips taken January 1 through April 30 and May 1 through June 30. Only residents who were issued a sportfishing license or PID/DAV between January 1 and April 30, 2007 were included in the first wave as few nonresidents typically fish in the winter months. To aid in properly assigning expenditures to 2007 resident trips, the Wave I resident survey inquired about the number of trips residents took from January 1 through April 30. The May 1 through June 30 period was included in the Wave I survey to ensure that sufficient responses were received for the early summer fishing time periods, particularly in the event that a survey participant who bought a license between January and April did not actually fish during the January through April time frame. The expenditure profile from this wave was used to estimate expenditure profiles for all winter fisheries, including the November 1 through December 31, 2007 period.⁸ The Wave I survey was initiated on July 26, 2007 based on the expected availability of angler mailing lists from the license database and the time required for surveys to be prepared for mailing.

⁷ Stynes, Daniel J. and Eric M. White, "Reflections on Measuring Recreation and Travel Spending". *Journal of Travel Research*, Vol. 45, No. 1, 8-16 (2006)

⁸ The expenditure of anglers fishing in November and December are assumed to be very similar to angler expenditures made January through April.

The Wave II survey inquired about fishing activity and expenditures for May 1 through October 31. Residents and nonresidents were sampled in this wave. Separate resident and nonresident survey instruments (questionnaires) were produced. The trip-related questions asked about the expenditures made for the respondent's most recent trip taken in two time periods: May 1 through June 30 and July 1 through October 31. The Wave II survey was initiated on November 19 based on the expected availability of angler mailing lists from the license database. It was expected that the majority of sportfishing licenses issued during January 1 through October 31 would be entered into the license database by that date. As a result of the timing of the mailing, the Wave II survey likely missed some November and December 2007 fishing trips. To remedy this situation, survey participants were asked about their days of fishing in November through December of 2006. These data from 2006 were used to estimate anglers' distribution of fishing effort in November and December of 2007.

Both survey waves requested anglers report trip-related expenditures by type of angler trip (i.e., guided/unguided), type of water fished (fresh or saltwater) and by region for three key reasons:

1. To better capture the differences in angler expenditures for specific types of fishing days.
2. To better pair the survey results to the estimates of days of fishing from the SWHS,
3. To ensure adequate responses to meet objective criteria for accuracy and precision of expenditure data.

The second wave included nonresident anglers, including foreign anglers. Based on problems associated with sending surveys overseas, non-Canadian foreign anglers were sent a single postcard inviting them to take the survey online. Not knowing the nationalities and languages of people drawn, all surveys and postcards were provided only in English. This approach was taken based on several uncertainties associated with mailing surveys overseas:

- Non-Canadian foreign nonresidents represent a small portion of the nonresident angler population (3-4%)⁹,
- Very high and variable postage costs for 8.5 x 11 mailing envelopes,
- Additional weeks required between survey mailings to send and receive surveys via postal services of other nations with the exception of Canada.

Surveying foreign anglers presented other unique challenges. First, asking respondents to report expenditures in U.S. dollars might dissuade some anglers from completing the questionnaire due to the added burden of making the currency conversion. Second, changes in currency exchange rates during 2007 create uncertainty in the then-current value of the reported expenditures. Finally, fishing trips for non-Canadian foreign anglers are often a part of a larger travel package and it may be difficult for foreign anglers to identify their fishing-related expenditures. For these reasons, it was expected that non-Canadian foreign anglers would not respond at rates comparable to other nonresident anglers who fished in Alaska. Expenditures made by non-Canadian foreign anglers can be expected to be somewhat higher than expenditures made by U.S. anglers based on the additional attention needed by many to overcome language and cultural differences. Therefore, there is potential for underestimating total nonresident spending if foreign anglers are under-represented in the nonresident sample. However, foreign anglers

⁹ DSF License Database

represent approximately three percent of all nonresident anglers and any potential underestimation of their expenditures was not expected to have a significant impact on the final results.

SAMPLING FRAME AND SAMPLE SIZES

The 2007 ADF&G sportfishing license database was used as the sampling frame for the expenditure surveys. PIDs and DAVs were included in the license database.¹⁰ To reduce the probability of sampling individuals who may not have fished in 2007, only persons that applied for a PID or DAV license in 2007 were included in the sample frame. There were about 3,800 PIDs and DAVs issued in 2007 and they were proportionally represented in the final sample lists drawn for each survey wave.

From year to year, the percentage of annual license sales entered into the license database by any specific date varies based on the delivery of license sales records by vendors and the workload within the Licensing Section of ADF&G. An analysis was conducted by DSF to examine when 2001-2006 licenses were entered into the license database. Specifically, Table 2 shows the percentage of licenses sold prior to April 30 that were entered into the database by June 21. The results were used as a general guideline as to when licenses were expected to be entered in 2007. Based on trends regarding license data entry dates, a sample selected on June 21 of licenses issued by April 30 was regarded as sufficiently complete for the first wave of resident surveys.

Table 2.—Percentage of sportfishing licenses sold prior to April 30 that had been entered into the license database by June 21, 2001-2006.

Year	Residents	Nonresidents
2001	49.1%	29.7%
2002	66.2%	53.1%
2003	50.2%	44.5%
2004	93.1%	86.4%
2005	75.2%	69.4%
2006	97.4%	89.7%

To help ensure the final sample was representative of the population of anglers active in Alaska in terms of residency (e.g., resident/nonresident), spatial distribution of effort (i.e., fishing regions), water type (salt versus freshwater), and time of fishing (i.e., fishing seasons); and, to help ensure the size of the initial sampling draw (7,500) would result in cell sizes large enough for analyses of specific angler strata, ADF&G licensing and response rate data were used to design the sampling strategy. Details of the data used and of the calculations made are presented in Appendix K.

¹⁰ Limited survey data indicates residents holding PIDs may be less likely to go sportfishing in a given year than residents who purchase a license (59% vs. 90%), but it is assumed that those who apply for a PID in a given year are similar in terms of likelihood of going sportfishing as residents who purchase a license.

Using response rates from the past five years of the SWHS and results showing where fishing activity occurred, (including response rates for early and late survey periods), the following sample sizes were allocated by wave:

Wave I = 683 surveys

Wave II = 6,817 surveys

Total N = 7,500 surveys

Based on experience from the SWHS during 2001-2006 and the recommended sample sizes for Waves I and II, surveys sent to randomly-selected licensed anglers in Alaska were expected to generate the distribution of responses presented in Table 3. Even though fewer numbers of responses were expected for the lesser-fished regions and subregions, and recognizing that the Southcentral region may be a major source of fishing by anglers from Southeast and Interior, stratifying the sample to under-sample Southcentral and over sample Southeast and Interior was not recommended as information needed to further stratify the sample was not available.

Table 3.—Expected number of responses by region and residency strata based upon sampling scheme and response rates to the ADF&G Statewide Harvest Survey.

Study Region	Residents	Nonresidents
Southeast	164	595
Southeast Marine	124	497
Southcentral	928	1,324
Cook Inlet	480	669
Interior	129	80

Without the information to accurately estimate the response rate for a survey of the size and complexity of the planned economic survey, the response rates from previous SWHS efforts were considered the best measure available. The response rates that were obtained from the resident and nonresident angler surveys are presented in Appendix F.

Prior to drawing the resident-only sample for Wave I survey from the June 21 incomplete¹¹ sportfishing license file, we conducted a general evaluation of the coverage quality of this file compared to previous years' complete sportfishing license files. This general evaluation involved a comparison of the distribution of license sales by geographic groupings of license vendors between the incomplete file with complete files in previous years. This comparison for the Wave I sampling involved only license sales to Alaska residents prior to May 1. The grouped vendor location categories used for the comparison were the same groupings used by the annual SWHS¹². We tested for differences with a chi-square contingency test for the independence of

¹¹ The sportfishing license file is termed "incomplete" because not all licenses that are purchased Jan 1-Jun 21 actually appear in the license database due to a lag time that exists between the sale of license, delivery of license books to ADF&G from vendor, and data entry by the Division of Licensing.

¹² For the purposes of SWHS sampling, fishing and hunting license vendors in Alaska are placed into one of 15 geographic groups that correspond to collections of SWHS reporting areas (A-Z).

license sales among years by grouped license vendor location ($\alpha = 0.10$). The incomplete license file at the time of sampling was determined to be representative of expected license sales by location of license vendors. The coverage quality was acceptable and the sample draw from the incomplete file was a simple random sample, with equal probability for all licenses to be drawn.

Similar evaluations and determinations were conducted for the Alaska resident and the nonresident Wave II sample draws in November 2007. The samples were drawn using a constrained¹³ stratified random approach based on residency.

In addition to the pre-survey coverage quality determination, we tested the sample for coverage errors. This was done recognizing some level of bias could have been introduced by excluding records from vendors who were late in submitting their licensing sales books. This test was conducted starting on November 1 for the Wave I sample when most of the early period licenses (January 1–April 30) had been entered into the license database. The tests on the version of the license file that was to be used for Wave II sampling were completed by the end of January 2008. They consisted of comparing the license samples drawn June 21 to the complete list (completed by November) to determine the percentage that were actually available on June 21. In addition, the grouped vendor locations (noted in the pre-survey coverage evaluation above) that were used to draw the sample in June were compared to the vendor distribution in the complete 2007 file provided by ADF&G in February 2008 to identify any potential gaps or biases caused by late-reporting vendors. The same tasks were conducted again for the Wave II sample. In both cases, the observed differences were minor and no changes were necessary. If significant differences existed, weights would have been developed and applied to the data post-survey by region.

Three complete mailings (survey, map and cover letter) within each survey wave were conducted to maximize survey response rates. Past experience with the SWHS has shown that total survey response rate is increased by this survey protocol. Responses from the third mailing were used to help identify the presence of non-response bias (described later in this section). Dates associated with each mailing were:

Wave I:

Mailing 1 = July 26, 2007

Mailing 2 = August 27, 2007

Mailing 3 = September 27, 2007

Wave II:

Mailing 1 = November 19–21, 2007

Mailing 2 = December 26–27, 2007

Mailing 3 = January 25, 2008

¹³As noted earlier any residents selected for sampling during the first wave were excluded from the sampling frame used for the second wave sample selection, accordingly the sampling approach was not completely random.

QUESTIONNAIRE DESIGN

The Wave I resident questionnaire and Wave II resident and nonresident questionnaires and corresponding cover letters are presented in Appendices A, B and C, respectively. The maps that accompanied each questionnaire are presented in Appendix D. The questionnaire was designed to provide data on a per angler-day basis, versus a household basis. The SWHS is household-based, but the results are reported 'per angler-day,' so it was necessary to pair the survey expenditure data with SWHS effort data as accurately as possible to develop estimates of Alaska's total sportfishing-related expenditures.

Due to the sampling frame utilized, the sample was limited to licensed anglers only. However, economic impacts are also generated from purchases associated with unlicensed youth anglers under 16 years of age. To account for some youth-related purchases, recognizing youth under 16 years of age do not need a license, survey respondents were asked to report their total expenditures, which could include purchases made for unlicensed youth anglers in their fishing party.

Many trip-related expenditures are made at the group level versus individual level. Examples include a family's restaurant or hotel bills, and fuel for transportation. Economic research by the U.S. Forest Service indicates that it is difficult for many people to separate their share of group expenditures and will report the group's total expenditures rather than their own share¹⁴. Based on this experience, the survey questionnaires inquired about total expenditures made by the survey respondent (i.e. what they actually spent), without regard to the size of the group or whether the expenditure covered one person or multiple people. Coming from a random sample of licensed anglers, the respondents include a representative sample of people who made expenditures that covered others in a group as well as anglers with few expenditures to report because their costs were paid by someone else.

For subsistence fishers, only expenditures they made for sportfishing trips within the periods noted in each survey were included in the estimation of sportfishing expenditures. Their trips regarded as subsistence fishing were excluded. Persons who purchased a sportfishing license, but may have engaged in both subsistence and sportfishing activities were only asked to report expenditures for sportfishing-related trips and equipment expenditures.

The study questionnaires were designed to collect sportfishing trip and equipment expenditures that could be used to estimate the economic impacts and contributions of sportfishing within each of the three DSF management regions: Southeast, Southcentral, and Interior (Figure 3). In addition to these three regions of the state, the survey was designed to provide data for two additional areas that are subsets of the primary study regions: Cook Inlet – a subregion of Southcentral; and, Southeast marine – based solely on saltwater fishing in the Southeast.

¹⁴ Styne, Daniel and White, Eric. Spending Profiles of National Forest Visitors, NVUM Four Year Report, May 2005

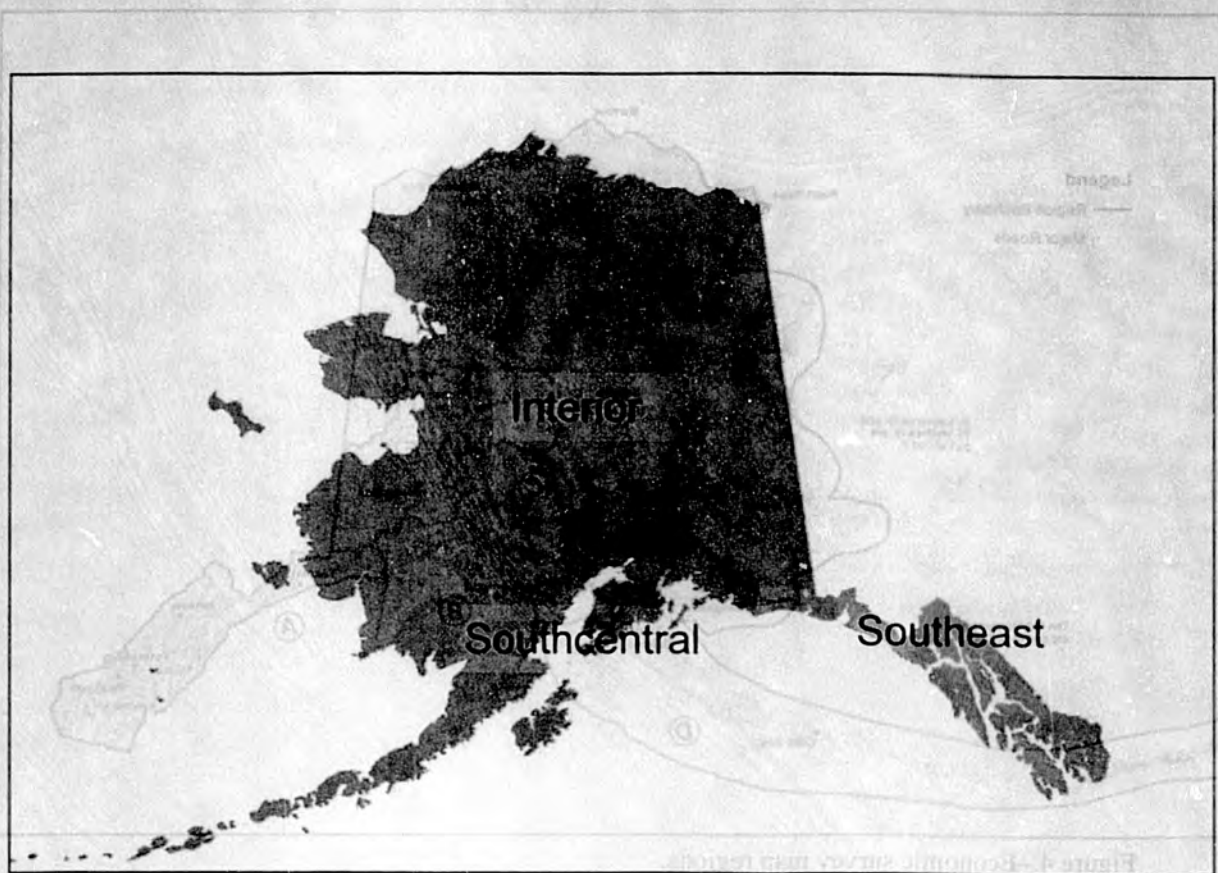


Figure 3.—Primary study regions.

For purposes of collecting data, the state was divided into six areas and survey participants were asked to report trip and equipment expenditures incurred in one or more of the six geographic areas. The six data collection areas were defined as (Figure 4):

- A= Southeast
- B= Prince William Sound/North Gulf Coast
- C= Cook Inlet
- D= Bristol Bay/Aleutians
- E= Tanana/Copper River Valleys
- F= Arctic-Yukon-Kuskokwim

Based on expected sample sizes and response rates, economic impact and contribution estimates were tabulated and reported only for the three DSF management regions plus the Cook Inlet and Southeast marine subregions. The six data collection areas were included in the survey and shown on the map that accompanied the questionnaires primarily to help survey respondents more easily identify where they fished and spent money.

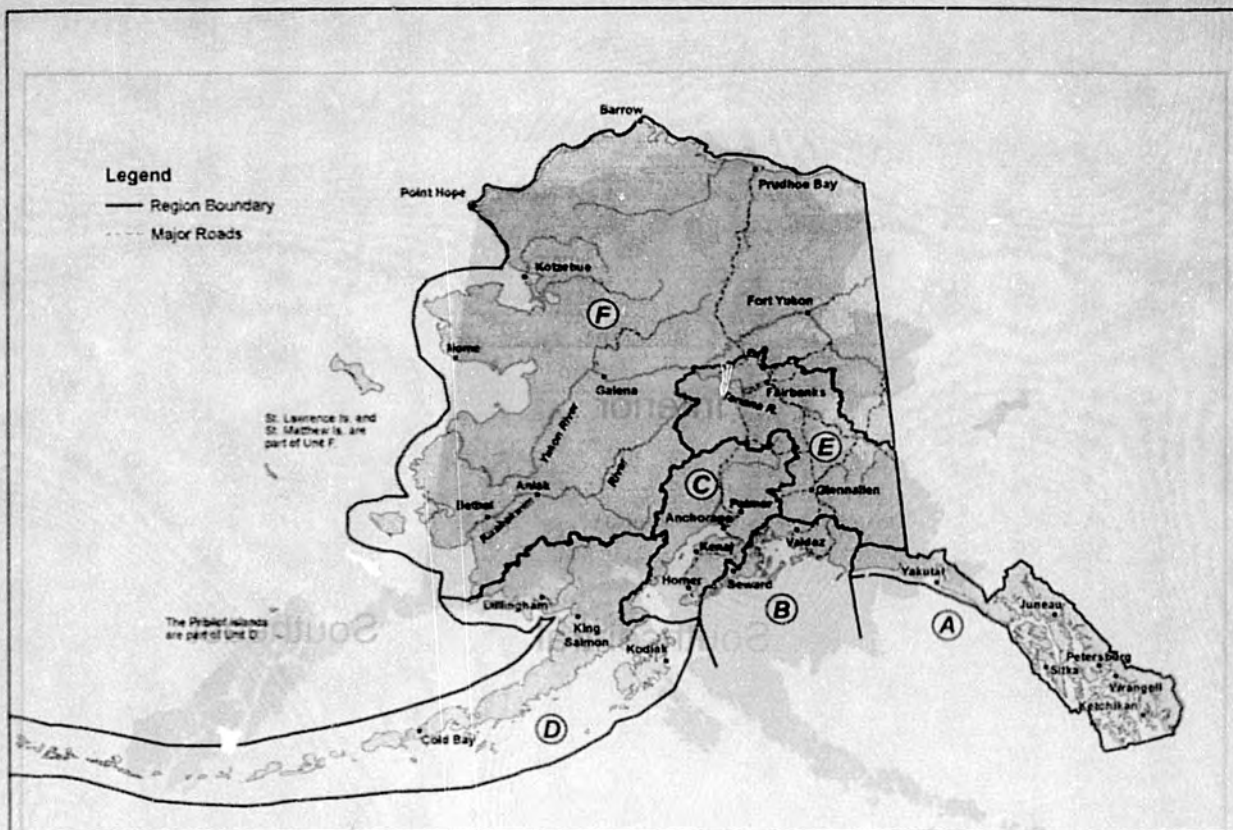


Figure 4.—Economic survey map regions.

Figure 3.—Primary study regions.

For purposes of collecting data, the state was divided into six areas and survey participants were asked to report trip and equipment expenditures incurred in one or more of the six geographic areas. The six data collection areas were defined as (Figure 4):

- A = Southeast
- B = Prince William Sound/North Gulf Coast
- C = Cook Inlet
- D = Bristol Bay/Aleutians
- E = Tanana/Copper River/Valley
- F = Arctic/Yukon-Kuskokwim

Based on expected sample sizes and response rates, economic impact and contribution estimates were tabulated and reported only for the three DSR management regions plus the Cook Inlet and Southeast marine subregions. The six data collection areas were included in the survey and shown on the map that accompanied the questionnaire primarily to help survey respondents more easily identify where they fished and spent money.

The Wave I and II study questionnaires were constructed to collect a variety of expenditure and fishing-related information needed to meet the project objectives. The following categories of questions were included (see Appendices A, B and C for example questionnaires):

1. *Demographics* – age and gender data already captured in the ADF&G license database were also collected in the survey. The results were used to help ensure that respondents adequately represented the statewide licensed population. If the survey responses did not adequately match the demographics of all license holders, then the demographic data would have been used to weight the survey data. Statistical tests indicated no bias in the sample on the demographic measures.
2. *Total number of trips & days for each survey time period* (Jan 1-April 30, May 1-June 30, and July 1-October 31) per stratum (resident/nonresident, freshwater/saltwater, guided/charter or unguided, and per region/subregion). These items were critical in creating seasonal weights for the calculation of annual expenditures for each stratum.
3. *Whether a fishing license was purchased primarily for sportfishing activities* (“Did you purchase your license primarily so that you could participate in ‘personal use’ fisheries?”). This was required to separate types of fishing during the data analysis stage.
4. *Whether fishing was the primary purpose of trip reported on* (“Would you have taken this trip even if you were unable to go fishing?”) This question was used to determine whether certain non-fishing expenditures (e.g., restaurants, souvenirs) should be attributed to the fishing trip.
5. *Trip-related information* was also sought for the respondent’s most recent trip within the specified time periods, including:
 - a. The trip’s subregion (where fishing took place, and where expenditures took place)
 - b. Guided/chartered or unguided
 - c. Freshwater or saltwater
 - d. Targeted species
 - e. Number of days in the trip & number of days actually fished
 - f. Region where the last trip occurred
 - g. Was the trip for personal use or subsistence fishing?
6. *Detailed trip expenditures (fuel, travel costs, ice, bait, guide/charter fees, etc.)* Respondents were asked to indicate the amount spent on and regions(s) of purchase for a range of consumable, trip-related goods and services.
7. *Travel package spending:* To include fishing expenditures in Alaska that some nonresident anglers make prior to visiting the state, nonresidents were asked to report any pre-arranged fishing trips they may have purchased and to indicate the amenities that were included in the package price. Because this question focused specifically on expenditures made prior to visiting Alaska, it was not included in the resident survey.
8. *Annual equipment expenditures:* Equipment can be used during more than one trip. Therefore, equipment expenditures were not included in the ‘most recent trip’ questions.

Equipment expenditures over the past 12 months were requested in both survey waves. For multi-purpose equipment, respondents were asked to indicate the percentage of time the equipment item was used for sportfishing, and only that percentage of the item's cost was used in the equipment expenditure analysis. Nonresidents were asked to report their expenditures for equipment only purchased in Alaska; all respondents were asked to indicate the region in which the equipment was purchased. The list of items included in the survey was reviewed with industry representatives and ADF&G staff in June of 2007 to help ensure items commonly used in Alaska by anglers were properly listed.

9. *Real estate:* Respondents were asked to report expenses related to real estate in Alaska that was used primarily for sportfishing purposes. Expense categories included purchase, lease, maintenance and construction of real estate.¹⁵

10. *Satisfaction:* a question about the respondent's satisfaction with Alaska's sportfishing was added to assist ADF&G staff in assessing satisfaction as a measure of performance. This question was not included in the analysis of economic contribution.

In June 2007, the draft resident angler questionnaires were pre-tested in-person with anglers and industry representatives. A pre-testing session with anglers was scheduled at an Anchorage tackle retailer, Sportsmen's Warehouse. During the night of the pre-test, several anglers did not show and others were recruited directly from the store's sales floor. A private meeting room was used. Each angler was given a \$50 gift certificate from the hosting retailer for participating. Two sessions were held that night, one at 5:30 and the other at 7:00 pm. The session was led by Southwick Associates with assistance by ADF&G staff.

The Wave I and Wave II surveys were both pre-tested. The anglers first took the survey without any input or background provided by the session hosts besides being told they were helping to test and refine an upcoming survey. Once anglers completed the test survey, they were gathered to discuss their impressions in a focus group style setting. The review included:

1. Did they have difficulty understanding any of the specific questions?
2. How did they interpret any questions suspected as being problematic?
3. Did any of the response mechanisms to any specific questions not allow the respondent to provide a full response? In other words, did they feel there was something more we should know about their response that the survey did not record?

Based on feedback received during the pre-test phase, the survey questionnaires were revised as necessary.

The nonresident questionnaires were tested using a different format. Nonresident anglers were recruited in-person by Southwick Associates. One participating nonresident was recruited from the retail floor during the resident pre-test sessions and sent a survey to complete. For the others, the survey was administered in person, then the respondent was interviewed to gain the same type of feedback collected in the resident pre-test sessions. The nonresident recruited from the sales floor was interviewed by phone. Four nonresident pre-test surveys were conducted; three of the participants were Florida residents and one was a resident of Michigan. When the nonresident surveys were revised, feedback from the resident pre-tests was also considered.

¹⁵ Data analysis revealed that the lack of specificity in the purchase and lease questions yielded unreliable data. Subsequently, expenditures for purchase or lease of real estate were omitted from the estimation of angler expenditures.)

After the final written questionnaires were developed and pre-tested, an online version was developed presenting the same questions, wording and order. In the mailed cover letter and at the beginning of the mail questionnaire, survey recipients were offered the opportunity to take the survey online. The online survey was offered as a convenience that could potentially help boost response rates. The draft online survey was pre-tested internally by Southwick Associates and ADF&G staff and made available for review prior to the mail survey's first mailing. The online survey was activated upon the distribution of the mail survey. Each survey was assigned a code to track responses for the second and third round mailings, and survey respondents were required to use this code to access the survey and prevent from taking it again. This code also prevented survey recipients from encouraging friends to take the survey and potentially biasing the results.

After the survey instruments were complete, they were reviewed and approved by the ADF&G Commissioner, as is done for all public surveys issued by the ADF&G.

Questionnaire Mailing and Response Processing Protocols

Recognizing some residents may be more likely to respond to a survey sent from Alaska and returned to an Alaska address, a mail house in Alaska was used to mail out and receive the mailed survey questionnaires. The mail house was hired by Southwick Associates using a competitive bid process. Criteria for selection included comments from current and past clients, availability to handle the workload during the specified timeframes, the ability to handle complex surveys requiring unique codes and tracking mechanisms per survey, business reply mail capabilities, and printing capabilities. In May, mail houses were identified and contacted by Southwick Associates and provided with desired project specifications. The mail houses that appeared capable were visited in June 2007 by Southwick Associates during a scheduled project trip to Anchorage and the final selection of the mail house contractor was made during this visit. Initial mailing instructions and arrangements were discussed with the selected mail house during this same visit, including contract issues, arrangements for delivery of master copies and more.

For each survey wave, the following protocols were used to administer the questionnaires:

1. A complete survey packet consisting of cover letter and questionnaire with map insert was mailed to survey participants by the mail house. Advance notice postcards or letters were not used.
2. First class outbound mail and business reply mail was used for all three mailings.
3. Three complete mailings (cover letter, questionnaire and map insert) were conducted with a 30-day lag between each mailing.
4. First, second and third mailings were distinguished by using different colors of paper stock.
5. Unique cover letters were used for each mailing. The cover letters are presented in Appendices A, B and C.
6. A survey response incentive was used. All survey participants were notified that their name would be entered into a random drawing for a \$1,000 gift certificate upon receipt of a completed questionnaire.
7. Surveys completed online were tracked to prevent mailing a second or third survey to online respondents.

8. The mail house received all returned surveys and forwarded them to Southwick Associates, Inc. for processing. Each returned survey had the respondent's unique code on the envelope to track who responded. This code was only used to determine who was not to receive a second or third mailing.

Questionnaires were returned to the mail house. Returned questionnaires were sorted into two categories: "deliverables" and "undeliverables". "Deliverables" were defined as questionnaires successfully delivered by the U.S. Postal Service (total mailed surveys minus undeliverable surveys). "Undeliverables" were defined as questionnaires the U.S. Postal Service was unable to deliver to the addressee and were returned to the mail house. First class postage was used to ensure undeliverable surveys were returned by the U.S. Postal Service. "Undeliverables" were ultimately sent to Southwick Associates to aid in determining final response rates.

When a questionnaire was received, the unique code on the return mailing label was checked and entered into a database by the mail house. This was used to determine who not to send a second or third mailing. When possible, the mail label database was updated with correct addresses for those questionnaires forwarded by the Post Office personnel as undeliverable. Periodic reports of response numbers were provided to Southwick Associates by the mail house. To ensure confidentiality, no surveys were opened by the mail house. The logged-in and still unopened surveys, as well as the undeliverable surveys, were then packed and shipped on a regular basis to Southwick Associates for data entry. Surveys were sent in batches via overnight delivery services to prevent significant impact if a package was lost in transit. Once received, the surveys were re-checked to ensure proper mail lists were being used by the mail house for the second and third mailings of surveys.

The sampling frame was developed based on historical response rates obtained by the ADF&G of the annual Statewide Harvest Survey (SWHS). Utilizing those surveys as a guide, the expected response rate for this survey was estimated to be 42.9%. The overall response rate achieved by the Alaska Sportfishing Economic Survey was 41.0%. Details of the response rate, broken down by wave and target group, are provided in Appendix F.

An issue developed during the Wave II mailings that may have affected response rates to an unknown degree. In the development of the mailing lists, unique, random alphanumeric ID codes were generated by the online survey contractor and assigned to each recipient of the survey. The codes were required for access to the online version of the questionnaire to ensure that only members of the survey sample had access to the online survey and no person could complete more than one online questionnaire. The same ID numbers were included on each return envelope as the mechanism for tracking mail respondents. Unknown to the survey administrators, every resident was assigned an ID code with a duplicate counterpart in the nonresident sample. As a result, some surveys from the mailing of the Wave II surveys were returned to the mail house with an ID code on the envelope that provided no way for the mail house to determine whether the respondent was from the resident or nonresident mailing list. In many cases, the postmark provided an indication of residency. When no postmark appeared on the envelope, the mail house was instructed to send the unopened surveys to Southwick Associates to be opened and examined to determine the residency of the respondent. This information was then sent to the mail house to adjust the mailing list for the second mailing. However, the duplicate ID issue was not detected until well after the first mailing of Wave II had occurred and it was later determined that not all surveys were correctly logged.

Prior to the second mailing, a prefix was added to the ID code on the return envelopes to distinguish resident and nonresident returns from the second and third mailings. Nevertheless, some respondents received a second or third survey mailing despite having responded to the first mailing. It is also likely that an unknown number of people who did not respond to the first survey were not given a second or third opportunity to respond.

Data Entry and Quality Controls

Data entry was completed by Southwick Associates personnel. Microsoft Access was used to build the data entry screens and manage the data entry tasks. Data entry instructions were developed and provided to each data entry clerk explaining the parameters to use for each variable including:

1. Format – alpha, numeric or alphanumeric, including when to use symbols such as “\$” and other seldom-used characters.
2. Zeros and blank – proper values to enter if no response (typically -999) or if a zero is provided as a response.
3. Out-of-bounds and text responses – how to handle response to questions that do not fit the specific format, such as text replies to numeric questions, responses that are clearly out-of-bounds, protest responses, etc.
4. Special cases – instructions were provided about how to handle surveys that required close examination by a project statistician or economist.
5. Comments – when the respondent provides comments outside of established response areas, the capability for these to be entered was provided.

Multiple steps were taken to ensure data quality:

Account for multiple surveys received from the same individual: Due to the initial confusion that resulted from the duplicate IDs, an unknown number of anglers were included in the second and third rounds of the Wave II mailings despite having responded to the first mailings. This is not unusual in most mail surveys due to time lags in adjusting mailing lists while mail is in transit. In this case, 127 people returned a second completed survey. These were identified by the ID code and survey type (resident or nonresident). In each case, the first survey received was retained and subsequent surveys were removed from the data base entirely.

Out-of-Bounds Checks: Microsoft® Access routines and Excel procedures were used to review each variable in the data files to ensure each response fit within an acceptable range. For example, it would not be possible for someone to have fished 62 days within the May to June period. Data entry validation was employed in the data entry screens to block responses that fell outside of accepted parameters. Results that were within accepted parameters but of questionable validity were marked for review by the project statistician and economists. Each was adjusted accordingly, or deleted if a proper response could not be reasonably deduced. Acceptable parameters were reviewed in-person by ADF&G and Southwick Associates prior to finalization. Upon completion of the data entry process, all variables were sorted to examine the upper range of values. All upper level values were compared against the original survey questionnaires to ensure they were not the result of manual data entry error. The resulting maximum values used in the analyses are reported in Appendix I with the detailed mean expenditure estimates.

Outliers: Some responses, while plausible, had a significant impact on the resulting estimates. For example, boats are produced that cost hundreds of thousands of dollars and more. It is reasonable to assume that, while rare, some of these boats were purchased primarily for sportfishing. However, including a survey response that reports a purchase in the hundreds of thousands of dollars has a significant effect on the calculated average expenditures reported in this report and can greatly skew the results upward. Adjustments were needed for these outlier observations.

Several steps were taken to identify and adjust outliers. The first was a sort of all variables to identify high values. ADF&G and Southwick Associates conducted a joint examination of the high values to assess plausibility based on personal knowledge of fishing in Alaska and considering additional data provided by individual respondents. For example, a high expenditure for lodging by itself may appear as a potential outlier, but considered in concert with high values for length of trip and other trip spending such as groceries and meals, then the high lodging value appears reasonable. Finally, each remaining potential outlier was tested to determine its effect on the overall mean. If any single observation increased the statewide mean for that variable by 25 percent or more then it was deemed an outlier and the observed value for that observation was dropped from the analysis to prevent skewing the average. The outliers that were removed from the data as a result of this step are listed in Appendix H.

Assignment of "Other" expenses: In addition to explicit categories of trip and equipment expenses, the questionnaires included an "other" write-in blank to allow respondents to include fishing-related expenses that were not included in the list of specific expenditure items. Every write-in response was individually reviewed for proper categorization in the data set. In most cases, a write-in response could be appropriately assigned to an existing category of trip or equipment expense. For example, several respondents listed items of clothing as "other" trip expenses. These were assigned to the equipment clothing category. Likewise, some items listed as "other" equipment were more properly counted as trip expenses (e.g., groceries) and assigned accordingly. In each case, care was taken to ensure that any expenses were not double-counted (e.g., assigning a write-in expense for groceries to the groceries trip category if an identical value was already entered as a groceries trip expense. This was a particular issue with respect to package expenditures. Several respondents wrote-in "package" as an "other" expense while also including an identical value in the package section of the questionnaire. In each case of potential double-counting, the write-in value was set to missing. In all, 250 of 271 "other" trip expenses were assigned to more appropriate categories and 110 of 127 "other" equipment expenses were assigned to a more appropriate category prior to calculating economic estimates.

Non-response bias: To the extent possible, the survey responses were examined for non-response bias. In any survey, there is always the possibility that the persons who chose to respond are systematically different from the persons who did not respond. If such is the case, then extrapolating the results obtained from the sample to the survey population may produce inaccurate results unless appropriate adjustments are made. Tests for such bias can be made by comparing the responses of people who respond to the first mailing to those who respond to later mailings under the assumption that later responders are more like non-responders. The surveys for each mailing were to be

printed on different colored paper as the means for determining to which mailing people responded. In the Wave II survey, the mail house incorrectly printed both the second and third mailings on the same color paper. The resulting inability to distinguish between responses to the second and third mailings limited our statistical test to comparing only the first mailing responders to all other later responders. An analysis of variance on all expenditure variables found a statistically significant difference (at the 95% confidence level) in the mean expenditure between mailings for only two expenditure categories among the more than 60 expenditure variables in the surveys (ice purchased between May and June, and equipment expenditures for rods and reels). The lack of extensive differences between mailings, especially for expensive items such as boats and vehicles, indicates there was no systematic bias in the mean expenditures of anglers who responded to the first mailing compared to those who responded to subsequent mailings.

DATA ANALYSIS

There were three main categories of fishing expenditures used in this study: trip expenditures,¹⁶ equipment expenditures and real estate expenditures. Trip expenditures are the most complicated to calculate because they are based upon expenditures made during the most recent fishing trip taken during one of three fishing seasons (winter: January through end of April; spring: May/June; and summer/fall: July through end of October).¹⁷ Because average trip expenditures by anglers in November and December are likely to be similar to those in January through April, total trip expenditures during November and December were estimated based on the number of trips reported during those months and the average trip expenditures reported by those who reported fishing January through April. As a result, trip expenditures needed to be summed across seasons. Equipment and real estate estimates are based on annual expenditures and do not need to be summed across seasons.

Separate analyses were conducted for resident and nonresident anglers, freshwater and saltwater, guided and unguided trips, for each geographic region. These analyses were performed after data manipulations as described below were completed. Resident and nonresident analyses were determined by the residency of the license holder.¹⁸

Further complicating the analysis of trip expenditures was that these expenditures could vary depending upon: whether the trip was guided or unguided, whether the trip was purchased as part of a package, whether the type of water being fished was saltwater or freshwater, and the subregion of the state being fished. As a result, trip expenditures were analyzed at each relevant combination of factors and then aggregated. The next several subsections explain each procedure for estimating expenditures in greater detail.

NON-PACKAGE TRIP EXPENDITURES

Trip expenditures were calculated on a per-fishing-day basis. These per-day trip expenditures¹⁹ were calculated based upon specific types of fishing trips (e.g., saltwater versus freshwater).

¹⁶ Trip expenditures include both package (trip expenditures bundled together as a 'package trip') and non-package spending.

¹⁷ Data to derive expenditure estimates for November/December fishing trips were not collected because 1) these responses to the first wave survey would likely suffer from recall bias and 2) the second wave survey was fielded before November/December.

¹⁸ The guided and unguided analyses were determined by responses to questions 13 (Appendix A), 10, 20 (Appendix B), 9 and 20 (Appendix C). Analyses by subregion were based upon responses to questions 14 (Appendix A), 11 and 21 (Appendix B), and 10 and 21 (Appendix C).

¹⁹ The trip expenditure question is question 17 in Appendix A, questions 13 and 23 in Appendix B, and questions 13 and 24 in Appendix C.

Because of this, the average per-day trip expenditures could be multiplied by the total number of specific types of fishing days²⁰ to arrive at regional and state aggregates. In addition to waters fished, type of trip included whether the trip was guided or unguided, whether the trip was purchased as part of a package, and the subregion of the state being fished. Separate analyses were made for each type combination.

The procedures used to calculate per-day trip expenditures were the same across all three time periods/seasons referred to in the angler survey (Jan-Apr, May-June, July-October). The procedure described below uses a resident angler fishing during the Spring season time period as an example.

The first step was to allocate fishing days²¹ to type of water (freshwater or saltwater). The survey asked anglers about the types of water they fished on their last spring fishing trip.²² Anglers were allowed three responses: 'saltwater', 'freshwater' or 'both'. Fishing days were allocated to freshwater or saltwater if the angler stated the trip was either fresh or saltwater. Expenditures for survey responses that identified 'both' water types had to be apportioned to either freshwater or saltwater because later we need to multiply our per-day trip expenditures by the total number of anglers days taken in Alaska during 2007, and angler days are collected by ADF&G as being either freshwater or saltwater days.

To allocate fishing days to freshwater or saltwater for those anglers who stated 'both', the following procedure was used. For each observation, the number of freshwater and saltwater fishing days the angler stated they took in Alaska *during the spring fishing season* was summed.²³ Then, for each 'both' observation, freshwater (F/T) and saltwater (S/T) fishing-day ratios were calculated:

$$(1a) \quad F/T = \frac{\text{(total number of spring freshwater fishing days)}}{\text{(total number of spring fishing days)}}$$

$$(1b) \quad S/T = \frac{\text{(total number of spring saltwater fishing days)}}{\text{(total number of spring fishing days)}}$$

These ratios were then multiplied by the total number of days (DAYS)²⁴ the angler fished *during their last spring fishing trip* to allocate these 'both' fishing days to either fresh (FRESHDAYS) or saltwater (SALTDAYS).

$$(2a) \quad \text{FRESHDAYS} = F/T * \text{DAYS}$$

$$(2b) \quad \text{SALTDAYS} = S/T * \text{DAYS}$$

Once days of 'both' fishing were allocated to either freshwater or saltwater, any observations where freshwater days or saltwater days were missing or zero were deleted from further analysis.²⁵ This was done for two reasons. First, the above variables begin to form the

²⁰ The number of fishing days for each specific type of fishing by data analysis region was provided by the State of Alaska, Department of Fish and Game from the 2007 Statewide Harvest Survey (SWHS).

²¹ Based on responses to question 6, Appendix B.

²² Based on responses to question 9, Appendix B.

²³ Based on responses to question 3, Appendix B. This question was also used to calculate similar ratios for summer/fall fishing.

²⁴ Based on responses to question 6, Appendix B.

²⁵ Zero or missing responses for days fished for a specific season are valid since a person could have 1) not fished during a particular season but did fish during another season, or 2) may not have fished at all during 2007 yet made non-trip expenditures (e.g. equipment, real estate) and they filled out the survey.

denominator that will be used to divide trip expenditures to generate a per-day trip expenditure. Second, per-day trip expenditures will be later multiplied by the total number of fishing days to generate total trip spending during 2007; the total number of fishing days includes, by definition, only anglers active²⁶ during 2007. In turn, any non-active anglers in the above calculation were eliminated. However, if trip expenditure information was missing but the angler did fish, the missing expenditures were converted to zero.

The next step was to allocate each trip expenditure line item (e.g., bait, fuel, etc.) to either freshwater or saltwater fishing. To do this, for each observation, two ratios were calculated: one to measure the percent of fishing days on the trip allocated to freshwater (FRAT), and another to measure the percent of fishing days on the trip allocated to saltwater (SRAT).

$$(3a) \quad \text{FRAT} = \text{FRESHDAYS}/\text{DAYS}$$

$$(3b) \quad \text{SRAT} = \text{SALTDAYS}/\text{DAYS}$$

Note that FRESHDAYS and SALTDAYS in equations 3a and 3b include all of the observations whereas FRESHDAYS and SALTDAYS in equations 2a and 2b only include 'both' fishing days.

Each expenditure line item was then multiplied by FRAT and SRAT to allocate the expenditure to fresh and saltwater fishing:

$$(4a) \quad \text{FEXP} = \text{EXP} * \text{FRAT}$$

$$(4b) \quad \text{SEXP} = \text{EXP} * \text{SRAT};$$

where EXP denotes one of the expenditure line items.

The next step in constructing per-day trip expenditures was to allocate total fishing days (freshwater or saltwater) to the subregions fished (using question 11, Appendix B)²⁷. First, for each observation, the total number of subregions fished during the trip (RGDAYS) was calculated. To calculate a per subregion number of freshwater days (PRFDAYS), the number of freshwater days was divided by the total subregions fished during the trip. Similarly, to calculate a per subregion number of saltwater days (PRSDAYS) the number of saltwater days was divided by the total subregions fished.

$$(5a) \quad \text{PRFDAYS} = \text{FRESHDAYS}/\text{RGDAYS};$$

$$(5b) \quad \text{PRSDAYS} = \text{SALTDAYS}/\text{RGDAYS};$$

The total number of per-subregion freshwater or saltwater fishing days was allocated to the subregions visited by multiplying the per-subregion days by a series of binary (0/1) variables that represented whether the respondent indicated fishing in that subregion. The end result of these calculations is an allocation of the number of per-subregion freshwater or saltwater fishing days occurring in each subregion.

Although fishing could occur in a subregion, it does not mean that was the subregion where the expenditures took place. For example, an angler could have fished in subregion B but bought fuel for the trip in subregion C.²⁸ Thus, a fishing day in subregion B could have a spillover

²⁶ Active anglers are those who stated they actually fished at least one day (question 9, Appendix A; questions 6 and 16, Appendix B; questions 5 and 16, Appendix C).

²⁷ Based on responses to question 11, Appendix B.

²⁸ Anglers were asked to report the subregion(s) they made each of their purchases (question 13, Appendix B)

economic impact into subregion C – and we wanted to capture all of these impacts. Thus, the next step of the analysis was to allocate each trip expenditure line item to the subregion where the purchase occurred. To do this, the number of subregions (RGEXP) where each expenditure took place (if no location information was available we deleted the observation from further analysis) was calculated. Freshwater and saltwater trip expenditures were then divided by the total number of subregions where the expenditure took place. For example the per-region salt and freshwater expenditures were calculated as:

$$(6a) \quad PRFEXP = FEXP / RGEXP$$

$$(6b) \quad PRSEXP = SEXP / RGEXP$$

The next calculation was to use a set of binary variables to allocate per-subregion fresh (PRFEXP) and saltwater (PRSEXP) expenditures to the specific subregion where the expenditures took place. These location-specific freshwater and saltwater expenditures were then divided by the per-subregion number of freshwater or saltwater fishing days (PRFDAYS, PRSDAYS) to arrive at final location-specific, per-subregion, per-day, freshwater and saltwater fishing estimates for each expenditure line item.

Because fishing trips can include non-fishing activities, and non-fishing trips may include fishing, it was important when performing this impact analysis to focus the trip-expenditure analysis to only include expenditures where fishing was the primary purpose of the trip, and exclude expenditures when the trip was not primarily taken to fish. Otherwise, the end result would have been an overestimate of the economic impact of sportfishing. In other words, non-fishing expenditures (e.g., *fuel, airfare, travel, rentals, ice, groceries, meals, lodging, gifts, and amusements*) of any trip that would have occurred even if the angler was unable to go fishing were not included. To exclude non-fishing expenditures from trips that would have been taken if the person would not have been able to go fishing, positive responses to question 7 (Appendix B) were used to eliminate the following expenditure categories: *fuel, airfare, travel, rentals, ice, groceries, meals, lodging, gifts, amusements, and other expenditures*. Specifically, when the angler stated they would have taken the trip even if they were unable to go fishing, then the above expenditures were converted to zeros.

PACKAGE TRIP EXPENDITURES

Package spending refers specifically to pre-arranged travel packages that nonresidents purchased prior to departing on their trip to Alaska. Package trip expenditures were calculated using procedures similar to that used for non-package expenditures with several important differences. First, package trip expenditure information was only collected from nonresidents²⁹ (question 12, Appendix C) because, in general, nonresidents are much more likely to purchase a travel package for sportfishing than residents. Second, it was not known where the expenditures were actually made; however, it was known which subregions of the state were visited by the angler on their package trip. Third, it was not known how much money was spent for specific line items; only the total amount spent on the package was known. Finally, a change to the treatment of package trip expenditures when the trip was not taken primarily to fish (question 6, Appendix C) was made. How the latter three items impact the calculation procedures is explained below.

²⁹ Based on responses to question 12, Appendix C.

With respect to estimating the distribution of expenditures across subregions, the 'subregion visited' variable was used the same way the 'subregion of trip expenditure' variable (RGEXP) was used. That is, the number of subregions visited was used to calculate the number of subregions (RGEXP).

With respect to estimating expenditures by line item, total package spending (TOTPKGEXP) was allocated to individual line items (spending on transportation to or from Alaska, transportation once the angler arrived in Alaska, guide fees, lodging, and food) in the following manner. First, for both the spring and summer/fall time seasons/periods,³⁰ the average spending patterns on these expenditure items for nonresident, non-package, guided fishing trips was calculated (Table 4). The nonresident, non-package, guided spending profile was used as it was assumed it most closely reflected the spending structure of a nonresident package trip.

Table 4.—Average spending profile for specific non-package trip expenditures for nonresident, guided trips by time period, 2007.

	Spring	Summer/Fall
Transportation to or from Alaska	\$583	\$594
Transportation within Alaska	\$122	\$78
Fishing guides &/or charter boats	\$485	\$502
Lodging	\$377	\$387
Meals	\$223	\$246
Total of profile	\$1,790	\$1,807

A set of variables (PEXPTMP) were calculated by multiplying the averages above (EXPAVG) by the set of binary variables (BINEXP) that indicate whether the respondent checked the boxes associated with the spending categories in the package expenditure question.

$$(7) \quad \text{PEXPTMP} = \text{EXPAVG} * \text{BINEXP}$$

For each of the five expenditure categories above, PEXPTMP was either equal to the average noted in Table 5 (if the category box was checked) or was equal to zero (if the category box was not checked). Next, for each observation, the five variables were summed to obtain a total (TOTTMP). If TOTTMP was zero (meaning the angler did not check any category boxes) then the percent of package spending (PCNTEXP) allocated to each expenditure category reflected the percent of spending indicated by the averages shown in Table 4. If TOTTMP = 0 then:

$$(8a) \quad \text{PCNTEXP} = \text{EXPAVG} / \text{TOTAVG};$$

where TOTAVG = 1,790 (the sum of column labeled 'Spring' in Table 4) for spring fishing and TOTAVG = 1,807 (the sum of column labeled 'Summer/Fall' in Table 4) for summer/fall fishing.

If TOTTMP was greater than zero, (meaning the angler did check at least one of the category boxes) then the percent of package spending (PCNTEXP) allocated to each expenditure category

³⁰ Note: We asked about three fishing seasons for residents but only two for nonresidents; we did not ask nonresidents any questions about their winter fishing since relatively few nonresidents fish in Alaska during the winter months (source: DSF).

reflected the percent of spending indicated by the averages shown in Table 4, taking into account that some of the categories are zero:

$$(8b) \quad PCNTEXP = PEXPTMP / TOTTMP.$$

The total spent on package expenditures (TOTPKGEXP) was then allocated to each expenditure category as:

$$(9) \quad PCKGEXP = PCNTEXP * TOTPKGEXP.$$

Finally, all of the package trip expenditures for any trip that would have occurred if the angler was unable to go fishing were excluded. Otherwise, the end result would be an overestimate of the economic impact of sportfishing. This is similar to the procedure used for non-package trip expenditures except with non-package expenditures guide fees were not excluded; here all of the package trip expenditures, including the guide fee portion were excluded.

FISHING EQUIPMENT EXPENDITURES

Fishing equipment expenditures³¹ (expenditures for fishing equipment and fishing-related equipment) were calculated based on all observations of the data; that is, any missing fishing equipment expenditure observations were assumed to be equal to zero. Similarly, the missing location-of-purchase codes for these observations were also coded to zero. This allowed the mean per-angler estimates to be multiplied by the total number of licensed anglers in Alaska to represent total fishing-related equipment expenditures. Separate analyses were conducted for nonresident and resident anglers.

Fishing equipment expenditures were allocated to the separate subregions by multiplying the respondent's expenditure by a set of binary variables reflecting the stated location of purchase. If a respondent denoted that their purchase was located in multiple subregions, then the relevant expenditures were divided equally across the subregions. Expenditures from respondents who did not provide a location for their purchase were not included in the analysis.

There were two main types of fishing equipment (Table 5); those that are only used for fishing (e.g. fishing tackle) and those that can be used for fishing and other activities (e.g., boats or other watercraft). One-hundred percent of the stated expenditure for the former type of equipment (hereafter, fishing equipment) was allocated to fishing and used in the estimation procedures. For the latter type of expenditure (hereafter, fishing-related equipment), the respondent's stated expenditure for each line item was multiplied by the relevant stated "percent used for sportfishing" provided by respondent³² (e.g., question 24, Appendix B).

³¹ The fishing equipment questions are listed as question 17 in Appendix A, question 24 in Appendix B and 25 in Appendix C.

³² For example, using responses to question 24, Appendix B.

Table 5.—Categories of fishing and fishing-related equipment.

Fishing Equipment:

Licenses and stamps
 Rods, reels, & components
 Fishing tackle (lines, leaders, lures, creels, stringers etc)
 Tackle boxes, cases to protect fishing equipment
 Depth finders, fish finders, other electronics
 Landing nets, dipnets & gillnets
 Miscellaneous fishing equipment (knives, scales, etc.)
 Shellfish fishing equipment (shovels, pots, buckets, etc.)
 Fish mounting (taxidermy)
 Books and magazines devoted to fishing

Fishing-related Equipment:

Items to store/preserve fish (smoker, vacuum sealer, etc.)
 Coolers, fish boxes
 Outdoor Clothing (fishing vest, raingear, head net, etc.)
 Boots, shoes, waders and other footwear
 Life jackets, survival suits or other PFDs
 Boats, canoes, rafts, kayaks and other watercraft
 Boat motors
 Trailers, hitches, and accessories
 Other boat parts and accessories
 Bear spray, bug spray, sun screen
 Firearms for personal protection
 Cameras, binoculars, sun glasses
 Tents, screen rooms, tarps, backpacks, sleeping bags
 Camping trailer (pop-up, self-contained, 5th wheel)
 Other camping equipment (stoves, grills, lanterns, etc.)
 Vehicles (trucks, SUVs, motorhomes, etc.)
 Airplanes and related equipment
 ATVs, snowmachines
 Boat/camper registrations and excise taxes
 Vehicle, boat or airplane repair/maintenance

However, many of the respondents who provided a fishing-related equipment expenditure did not provide an answer to the "percent used for sportfishing" question. For each missing line item, the average response for the "percent used for sportfishing" part of the question was calculated based upon responses from those who did complete the question (Table 6). Separate calculations were made for residents and nonresidents. These average percentages were then substituted for the missing data. That is, for each observation, when the respondent provided a fishing-related expenditure but the "percent used for sportfishing" was missing, the missing value was replaced with the appropriate average percentage across all respondents in that group (e.g., residents). Finally, the stated fishing-related expenditure was multiplied by the new "percent used for sportfishing" variable.

Table 6.—Estimates of the average percent allocation to fishing activities for fishing-related equipment expenditures, 2007.

Items	Resident Anglers	Nonresident Anglers
Items to store/preserve fish	77.5%	72.9%
Coolers, fish boxes	76.6%	67.4%
Outdoor Clothing	70.2%	58.6%
Boots, shoes, waders	75.4%	65.9%
Life jackets, survival suits	76.6%	87.8%
Boats, canoes, other watercraft	73.6%	50.0%
Boat motors	78.1%	71.4%
Trailers, hitches, and accessories	66.4%	55.1%
Other boat parts and accessories	79.9%	80.0%
Bear spray, bug spray, etc.	58.9%	59.8%
Firearms	51.8%	33.3%
Cameras, binoculars	50.5%	52.4%
Tents, backpacks, sleeping bags	53.2%	24.6%
Camping trailer	53.8%	1.2%
Other camping equipment	57.1%	44.4%
Vehicles (trucks, SUVs, etc.)	45.1%	46.6%
Airplanes and related equipment	51.2%	57.9%
ATVs, snowmachines	36.1%	0.0%
Boat/camper registrations	76.2%	64.7%
Vehicle, boat or airplane repair	62.5%	57.5%
Other	66.7%	35.4%

REAL ESTATE EXPENDITURES

Fishing-related real estate expenditures³³ (expenditures for owning or leasing real estate and maintenance or construction expenditures) were calculated based on the entire data set; where any missing real estate expenditure observations were assumed to be equal to zero. Similarly, the missing location codes for these observations were also coded to zero. This allowed the average per-angler estimates to be multiplied by the total number of licensed anglers in Alaska to represent total angler-related real estate expenditures. Separate analyses were conducted for resident and nonresident anglers.

Real estate expenditures were allocated to the separate subregions by multiplying the respondent's stated real estate expenditure by a set of binary variables reflecting the location of the real estate. If a respondent denoted that their real estate was located in more than one subregion, then the relevant expenditures were divided equally across subregions. Real estate expenditures from respondents who did not provide a location for their real estate were not included in the analysis.

³³ The real estate questions are listed as question 18 in Appendix A, 25 in B and 26 in C. The respondent was asked to only report expenditures for real estate used primarily for fishing.

Although information on four types of real estate expenditures was collected, the IMPLAN modeling treats ownership and leasing of real estate similarly; in turn these two expenditures were added together. However, after examining the lease/ownership data collected in the surveys, additional discussion revolved around two key issues: 1) the reliability of the data reported in the surveys to these questions; and, 2) the appropriateness of attributing 100% of real estate spending to sportfishing activity.

With regard to the first issue, the intent of the question was to ascertain average annual costs associated with owned or leased properties. As examples, the question included parenthetical references to mortgage payments, insurance, property taxes, etc. A review of the responses made it clear that many respondents included full purchase prices for real estate. With no way to deduce the true intent of the respondents, there was no mechanism for estimating annual costs associated with real estate or determine the appropriate IMPLAN sectors for analyzing the impacts of those expenditures. Given the lack of specificity in the question and resulting data, it was decided to take a more conservative approach and eliminate entirely any purchase or lease costs from the estimates of angler spending and their multiplier effects. It should be noted a purchase of real estate, while producing a large spending figure, has little impact on the regional economy because it represents simply a transfer of existing assets from one owner to another. The economic impact in such transactions generally derives from the fees paid for the services of intermediaries such as a real estate brokers, lawyers or financial institutions.

The second issue relates to the allocation of real estate construction and maintenance costs to go sportfishing when a portion of that spending might have other attributions. People reported purchasing real estate, constructing structures and maintaining the property for the primary purpose of sportfishing. However, it is reasonable to assume that an unknown portion of these expenditures would not have been made if the survey respondents were not allowed to sell their property for a profit at some later time. Some properties are likely purchased in part for investment purposes.

To find a solution, other economists outside of the project were consulted to discuss options. This included posting the issue and questions on the IMPLAN internet forum, reviewing previous economic studies, and direct phone conversations with IMPLAN economists. No clear solutions were identified from any source. An adjustment to reduce the reported amounts of real estate maintenance and construction attributed to sportfishing by some arbitrary percentage was considered, however, the project team agreed that: 1) the wording of the question asking participants to record real estate maintenance and construction expenditures primarily for sportfishing was sufficiently clear; 2) that actual expenditures reported seemed appropriate and easy to interpret; and, 3) that such expenditures were more likely made to facilitate use of the property for sport fishing activities (than to maintain future profit) and to occur within Alaska. Thus, for the purposes of this analysis and report, we assumed that 100% of the reported real estate maintenance and construction expenses were related to sportfishing and total real estate maintenance and construction expenditures were included in the IMPLAN analysis.

AGGREGATION OF SEASONAL PER-DAY TRIP EXPENDITURES TO REFLECT TOTAL ANGLER DAYS.

There were three fishing time periods (seasons) included in the trip expenditure analyses: winter fishing (January to the end of April); spring fishing (May-June) and summer/fall fishing (July through the end of October). The survey collected expenditure data on winter fishing trips only

from resident anglers. Spring and summer/fall trip data were collected from both resident and nonresident anglers.

For Wave I, information about the number and types of trips the angler took between January 1 and the end of June was collected for each subregion.³⁴ Information about the last trip (number of days fishing, spending amount and location, subregions visited, types of water fished, etc.) the angler took in this time period was also collected. Similar information was collected in Wave II concerning the number and types of trips the angler took between May 1 and the end of October, was collected for each region³⁵ as was information about the last trip the angler took in both the spring and summer/fall seasons.

In the analyses of trip data, January through April information from Wave I was treated as one unit of analysis; May-June information from Waves I and II were pooled as a unit of analysis, and July-October information from Wave II was a unit of analysis.

After generating all of the various combinations (e.g., resident, saltwater, guided in subregion A) of season-specific trip expenditure estimates, these estimates were aggregated to represent annual fishing-related activity. Estimates of the total number of fishing days occurring during 2007 from the SWHS were obtained from ADF&G, for the following combinations: saltwater/freshwater, guided/unguided, resident/nonresident, for each subregion. The distributions of season-specific fishing days for each possible freshwater/saltwater, resident/nonresident, and subregion trip combination were then calculated using the responses from specific questions in the survey instrument.³⁶ These distributions were then applied to the appropriate ADF&G estimate of angler-days to calculate the number of fishing days occurring during each fishing season (Table 7). Since the survey information about the seasonal distribution of guided/unguided trips was not available, the distributions in Table 7 were applied equally to guided and unguided trips.

³⁴ For example, see questions 5 and 6, Appendix A.

³⁵ For example, question 3, Appendix B and question 2, Appendix C.

³⁶ Using the responses from questions 5 and 6, Appendix A, question 3, Appendix B and question 2, Appendix C.

Table 7.—Estimated percent of fishing days from angler responses, by season, residency, watertype and area of the state, during 2007.

Residency and Water Type	Winter	Spring	Summer/Fall
Resident freshwater	%	%	%
Southeast	16	51	33
Prince William Sound /N. Gulf Coast	5	50	45
Cook Inlet	9	45	46
Bristol Bay/Aleutians	5	51	44
Tanana/Copper River Valleys	8	47	46
Arctic-Yukon-Kuskokwim Areas	11	42	47
Resident saltwater			
Southeast	9	51	40
Prince William Sound /N. Gulf Coast	4	40	56
Cook Inlet	8	55	36
Bristol Bay/Aleutians	5	60	35
Tanana/Copper River Valleys	NA	NA	NA
Arctic-Yukon-Kuskokwim Areas	0	13	88
Nonresident freshwater			
Southeast	0	31	69
Prince William Sound /N. Gulf Coast	0	21	79
Cook Inlet	0	26	74
Bristol Bay/Aleutians	0	29	71
Tanana/Copper River Valleys	0	35	65
Arctic-Yukon-Kuskokwim Areas	0	23	77
Nonresident saltwater			
Southeast	0	39	61
Prince William Sound /N. Gulf Coast	0	27	73
Cook Inlet	0	39	61
Bristol Bay/Aleutians	0	25	75
Tanana/Copper River Valleys	NA	NA	NA
Arctic-Yukon-Kuskokwim Areas	0	100	0

NA denotes not applicable as there is no saltwater fishing available in the Tanana/Copper River Valleys.

* Winter refers to months November – April.

** Spring refers to months May – June.

*** Summer/Fall refers to month July – October.

ECONOMIC ANALYSIS/MODELING

The expenditures made by anglers for sportfishing activities generate additional economic benefits throughout the Alaska economy beyond the initial angler spending. These additional economic benefits are typically estimated with regional input-output models that relate changes in some specific industry to impacts on other industries in the regional economy. The IMPLAN input-output software provides a flexible tool for conducting economic impact analyses at various geographic levels and was used in this study to estimate the additional economic benefits to the Alaska economy generated by resident and nonresident direct spending on sportfishing activities in Alaska. For the purposes of this study, separate regional models were created to estimate the economic contributions generated at the regional levels and for the statewide Alaska economy. In its base form, the model includes 509 economic sectors, or industries.

Input-output models are driven by some change in economic activity, usually sales. The model produces estimates of the total multiplier effects (indirect and induced) that arise from the spending by sport anglers (the direct effect). Several measures of the economic effects are available, with the most commonly used being output, employment and income. The **direct effect** refers to the initial stimulus to the economy. In this study, it refers specifically to the dollars spent by sport anglers for trip-related purchases, fishing equipment, and other spending that is immediately attributable to their fishing activity. In the strictest sense, the direct effect does not always equate with angler spending due to economic leakages. Because much of the equipment purchased by anglers is manufactured outside of the state, some of the dollars spent by anglers in Alaska leak immediately beyond the state's borders and do not have a direct effect on the Alaska economy. In that case, angler spending may not equal direct effect in the language of input-output models (the amount of goods and services imported directly to meet the demands of angler spending is shown in Append L). In other cases, the amount of angler spending is the direct effect. For example, spending for lodging and restaurant meals represents purchases of goods and services that are produced entirely where they are bought and the entire purchase is captured in the direct effect on the regional economy. The economic figures reported in the results section include both total angler spending and its associated direct effects on the Alaska economy.

Indirect effect refers to the economic activity (e.g., output, employment, income) that result from the activity in other businesses that supply the industries stimulated by the direct effect. Those indirectly affected industries, in turn, stimulate additional activity among their local suppliers, and so on. For example, if an angler spent \$100 to purchase the services of a guide, the guide uses a portion of the \$100 paid by the angler to purchase boat fuel, equipment, bait, utilities, etc. from local sources. In addition, a portion of the \$100 pays for goods and services from out-of-state providers. In the next round, the in-state business that supplies bait to the guide (as well as all of the other in-state businesses that supply goods and services to the guide), in turn, must use part of the money that it receives from the guide to pay its own business expenses (e.g., fuel, gear, utilities). Their suppliers, in turn, also pay in-state and out-of-state suppliers to support their increased business activity. This indirect activity continues in this way until the effect becomes negligible as a portion of each round of payments for goods and services eventually leaks out of the local economy.

The **induced effect** measures the economic activity that results from the household spending of salaries and wages that were generated from the business activity associated with the direct and indirect effects.

The interpretation of the results of the economic models depends on the changes that drive the model. The term "economic impact" is normally reserved to describe some level of economic activity that would not occur except for the initial economic activity. In the case of recreational activities like sportfishing, it is generally agreed that economic impact comes from spending by visitors to the region. If not for their presence, their spending would never occur. If quality sportfishing was no longer available in Alaska for example, nonresident anglers may choose to fish elsewhere and their spending would not occur in Alaska and thus not generate additional economic effects in the Alaska economy. Most resident anglers, on the other hand, choose fishing as an activity on which to spend their recreational dollars locally. If quality sportfishing was no longer available some residents would likely choose some other local recreational activity on which to spend their money in place of fishing and their spending would still remain in the Alaska economy.

It is generally acknowledged that retained economic activity can also represent a real economic impact. For example, the quality of fishing opportunities in Alaska is such that some anglers choose to fish in Alaska rather than go elsewhere. If the quality of Alaska fishing were to decline, then some dedicated resident anglers may choose to travel outside of the state for sportfishing and their dollars would be lost to the Alaska economy. It is unclear what portion of resident anglers would fall into that category. In another retention scenario, it may be the case in Alaska that there are few recreational alternatives to fishing, so that if the quality of fishing as a recreational activity declined, some portion of anglers may choose to travel outside of the state to pursue an alternative recreational activity (e.g., a Caribbean vacation). It was beyond the scope of this study to investigate either of those scenarios and for purposes of this project any reference to economic impact should be based on the expenditures of nonresident anglers.

The focus of this study was on the total economic activity associated with sportfishing as a measure of its overall contribution to the state's economy. In that case, it was appropriate to include all spending for sportfishing, including both resident and nonresident anglers. That measure is alternately called "economic contribution" or "economic significance", among others. This study was concerned with measuring the economic significance of sportfishing and therefore includes resident spending as part of the direct effect. To help understand the relative contributions that residents and nonresidents make to the economy, results in this report were broken out separately by residency.

INDUSTRY SECTOR ASSIGNMENT

The economic input-output models are driven by an initial stimulus (the direct effect) to a specific sector, or combination of sectors, of the economy. Anglers make a wide range of purchases to support their fishing activity. To properly measure the effect of such purchases, each purchase must be assigned to one of the 509 specific sectors in the IMPLAN economic models. In some instances, angler purchases are allocated to more than one sector. Table 8 presents the sector assignments for each angler trip expenditure category estimated by the sportfishing survey.

Table 8.—IMPLAN sector assignments for angler trip expenditures.

Economic survey trip spending categories	IMPLAN Sector	Sector Title
Fuel and oil for vehicles, boats, planes	PCE 8140	Gasoline and oil
Guide and charter fees	478 modified	Other amusement, gambling, and recreation industries
Airfare to and from Alaska	391	Air transportation
Commercial travel within Alaska	391,393,395	Air, water, and intra-urban transportation
Fish processing and shipping	71	Seafood product preparation and packaging
Rentals (boat, equipment, autos)	435	General and consumer goods rental except video tapes
Derby tickets	493	Civic, social, professional and similar organizations
Boat launch and dock fees	478	Other amusement, gambling, and recreation industries
Ice	85	Soft drink and ice manufacturing
Bait (natural bait only)	16	Fishing
Groceries, food, liquor bought in stores	PCE1111	Food for off-premise consumption
Restaurants, bars, take-out food	481	Food services and drinking places
Lodging (hotels, campgrounds, cabins)	479, 480	Hotels, motels and other lodging; campgrounds
Souvenirs and gifts	411	Miscellaneous store retailers
Other entertainment expenses	478	Other amusement, gambling, and recreation industries

All of the angler surveys in the study included groceries as an expenditure category. Items purchased at a grocery store represent a market basket of commodities. The IMPLAN software includes a collection of predefined commodity groupings with PCE designations (Personal Consumption Expenditures) that facilitates the assignment of expenditures to a large group of commodities. PCE1111, for example, is the designation for food purchased for off-premise consumption (i.e. groceries). Estimates of spending on groceries were applied to the vector of commodity sectors defined by this grouping. In cases where spending was allocated to multiple IMPLAN sectors (non-PCE groups), the expenditures were divided evenly across the specified sectors. Table 9 presents the sector assignments for equipment expenditure reported by anglers.

Table 9.—IMPLAN sector assignments for angler equipment and real estate expenditures.

Economic survey equipment spending categories	IMPLAN Sector	Sector Title
Equipment		
Rods and reels	381	Sporting and athletic goods manufacturing
Tackle (lines, leaders, lures, etc.)	381	Sporting and athletic goods manufacturing
Tackle boxes	381	Sporting and athletic goods manufacturing
Electronics (e.g. depth finders)	314	Search, detection, and navigation instruments
Nets	381	Sporting and athletic goods manufacturing
Misc. fishing equipment	381	Sporting and athletic goods manufacturing
Shellfish fishing equip.	381	Sporting and athletic goods manufacturing
Taxidermy	473	Independent artists, writers, and performers
Books and magazines	414, 415	Book and periodical publishers
Smokers, vacuum sealers, etc.	329	Cooking and refrigeration appliances
Coolers, fish boxes	177	Plastics plumbing fixtures and all other plastics products
Clothing	107	Cut and sew apparel manufacturing
Boots, waders, other footwear	110	Footwear manufacturing
Life jackets, PFDs	101	Textile bag and canvas mills
Boats, canoes, kayaks, etc.	358	Boat building
Boat motors	286	Other engine equipment manufacturing
Trailers, hitches, etc.	350	Motor vehicle parts manufacturing
Other boat parts	361	All other transportation equipment manufacturing
Bear spray, bug spray, etc.	169	Custom compounding of purchased resins
Firearms	250	Small arms manufacturing
Cameras, binoculars	271	Optical instrument and lens manufacturing
Tents, backpacks, sleeping bags	101	Textile bag and canvas mills
Camping trailer	349	Travel trailer and camper manufacturing
Other camping equipment	381	Sporting and athletic goods manufacturing
Trucks, SUVs, RVs	344	Automobile and light truck manufacturing
Planes and related equip	351	Aircraft manufacturing
ATVs, snowmachines	361	All other transportation equipment manufacturing
Registration and excise taxes	504	State & Local Non-Education
Vehicle, boat, plane repairs	483, 484, 485, 486	Automotive, electronic, machinery and household repair
Other equipment	381	Sporting and athletic goods manufacturing
Real Estate used primarily for fishing		
Maintenance and repairs	42	Maintenance and repair of residential structures
Construction of cabins, sheds, etc.	33	New residential 1-unit structures, nonfarm

ALASKA SPORTFISHING GUIDE BUSINESS SURVEY

Sportfishing guides are a particularly important component of recreational fishing in Alaska, accounting for more than 23% of the total angler days fished in 2007 (ADF&G, SWHS 2007). It is likely an even bigger part of fishing expenditures for specific types of anglers (e.g., nonresidents on guided trips). While properly categorized in IMPLAN sector 478 (other amusement, gambling, and recreation industries), this sector includes many other types of activities and is unlikely a good representation of the fishing guide industry as it exists in Alaska. Due to its importance, it was deemed necessary to conduct a survey of Alaska fishing guides in order to produce model results that more accurately reflect the nature of their industry.

A short survey was developed to gather information that would allow the input-output model to be modified to reflect Alaska guide services. The questionnaire asked respondents to indicate how their businesses expenses are distributed across a range of industries, and what portion of each expense is made in Alaska (Appendix F). As with other industries, the proportion of the goods or services purchased by Alaska guides that was actually produced by Alaskan industries was determined internally by the model. The questionnaire intentionally did not ask guides to report their expenditure estimates in dollar terms in an effort to encourage a higher response to the survey. The resulting information was then used to modify the production function for IMPLAN sector 478 to more accurately reflect the guides' spending patterns.

The guide business survey was conducted in three mailings:

- December 3, 2007
- January 4, 2008
- February 5, 2008

The same mail house that was used to print and distribute the angler expenditure questionnaires was hired to print and distribute the Alaska Sportfishing Guide Business Survey.

A random sample, stratified by type of water guided, was drawn from the ADF&G's list of 1,420 licensed guide businesses operating in 2006. The sampling was weighted by total trips logged, to reflect the likelihood of the guide's expenditure pattern to represent the total expenditures by guides. Two hundred guides were drawn from the total pool of guides who fish primarily in freshwater; 200 guides were drawn from the total pool of guides who fish primarily in saltwater; 100 guides were drawn from the total pool of guides who fish primarily in both fresh and salt water. Prior to mailing the survey, the mailing lists were compared to the list of guides operating in 2007 to eliminate any guides who were no longer in business. Any that were no longer operating were replaced with another guide operation randomly drawn from the 2006 list. The 2007 list was not utilized for the drawing because it did not include any information at the time of sample draw about numbers of trips logged on which to base the sample weighting. Of the 500 surveys that were mailed, 162 were completed and 29 were returned as undeliverable for an overall response rate of 34.4%. Detailed response rates, by region, are presented in Appendix F.

A Microsoft Access database was created for data entry of the guide business survey. Two key vectors of responses were utilized in the modification of the IMPLAN model: 1) the percent that each category of business expense represents of the respondent's total business expenses (i.e., the production function); and, 2) the percent of each business expense category that the respondent purchased in Alaska. Summary data analysis checks were employed to check for errors. For the first response vector, the sum of responses should add to 100%. For the second response vector, no single response should exceed 100%. In several surveys, the sum of responses did not total 100% and the individual response categories were adjusted to force the sum to equal 100% under the following rule. If the sum of the response categories was less than 90% or more than 110% then the survey was discarded as unusable. If the sum fell within that range but was not equal to 100%, the each category response was proportionally adjusted to force the sum to equal 100%.

REGIONAL ECONOMIC MODELS

Because one IMPLAN sector (478 - Other amusement, gambling, and recreation industries) was modified to reflect the freshwater and saltwater guide production functions estimated from the

Alaska Sportfishing Guide Business Survey, separate regional models were necessary to estimate the economic contribution of saltwater anglers and freshwater anglers.

The following statewide, regional and subregional models were created to estimate the associated contributions of sportfishing. The economic contribution of sportfishing associated with the subregion denoted as Southeast Marine was estimated with the Southeast saltwater model.

- Statewide, total
- Statewide, freshwater
- Statewide, saltwater
- Southeast, total
- Southeast, freshwater
- Southeast, saltwater (also called Southeast marine)
- Southcentral, total
- Southcentral, freshwater
- Southcentral, saltwater
- Interior, total
- Interior, freshwater³⁷
- Cook Inlet, total
- Cook inlet, freshwater
- Cook inlet, saltwater

The IMPLAN regional models are based on 2006 economic data obtained from Minnesota IMPLAN Group, the producers of the IMPLAN modeling software. Deflators included within the modeling software were employed to account for inflation effects between the model year data (2006) and the year of reported angler expenditures (2007). Data are available for each of the boroughs in Alaska and adjacent boroughs can be combined to create custom analysis regions. In most cases, the boundaries of the analysis regions follow borough boundaries, thereby facilitating the creation of regional models that match the study regions and subregions. In one location, the boundary of a study region cuts a borough approximately in half. The choice in creating the models was whether to make Valdez-Cordova borough part of the Interior or Southcentral economic model. Upon review and discussion with the ADF&G staff, it was decided to place Valdez-Cordova in the Southcentral region. This had no effect on the estimation of angler spending for each of the study regions. Rather, it expanded the size of the Southcentral economic model slightly, which resulted in a modest overestimation of the economic contribution of sportfishing in the Southcentral region. Conversely, the economic model for the Interior region was slightly smaller than the actual region with the result that the model modestly underestimated the total economic contribution of sportfishing in that region. The extent to which the models underestimate and overestimate the impacts was examined by creating additional models with Valdez-Cordova borough moved into the Interior region and re-running the models to compare the change in total economic contribution. The results showed that any overestimation or underestimation in the models used for the study was negligible.

³⁷ no saltwater model for Interior region was created as little saltwater fishing occurs in the region.

RESULTS

ANGLER EFFORT AND ECONOMIC CONTRIBUTIONS

In the sections that follow, the economic contributions of sportfishing in Alaska and its regional economies are presented, along with a detailed accounting of where anglers fished, where they spent their money, what they purchased, and how that spending created jobs and income throughout Alaska and the study regions.

Not all angler spending represents economic activity that would not exist if there was no sportfishing in Alaska. In particular, spending by resident anglers represents dollars that already exist in the state economy. Those anglers could easily spend their recreational fishing dollars on other outdoor pursuits with little net effect of total economic activity in the state. Nonresident anglers, on the other hand, represent a source of new dollars that would not enter the Alaska economy if not for the unique fishing opportunities that attract them to the state. Although the focus of this study is on measuring the total economic activity associated with sportfishing including both resident and nonresident spending, the analyses that follow have disaggregated spending and economic contributions by residency to facilitate the identification of new economic activity represented by nonresidents.

Following a general overview of sportfishing effort and expenditures in Alaska in 2007, detailed results are presented for each of the following geographic areas:

- Statewide;
- Each DSF management region (Southeast, Southcentral and Interior); and,
- Two subregions: Cook Inlet³⁸ and Southeast marine waters.

Each regional section of the report is organized as follows:

- A summary of fishing effort in the region
- A detailed spending profile by resident/nonresident, guided/unguided, and freshwater/saltwater anglers
- An analysis of the economic contributions provided by angler spending, with detailed breakdowns for all spending, expenditures for equipment and real estate used for fishing, and trip spending including purchases of fishing packages.

³⁸ Includes both fresh and saltwater fishing that occurs within the Cook Inlet subregion

OVERVIEW

In 2007, 475,534 people were licensed for recreational fishing in Alaska, including residents and nonresidents who purchased a fishing license, and residents who were issued a fishing privilege at no cost (PIDs and DAVs). Approximately 60% of all sport fishing licenses were purchased by nonresidents and 40% were issued to residents of Alaska. Nearly three-quarters of all resident licenses were issued to people who lived in the Southcentral region (Table 10).

Table 10.—Number and percentage of licensed sport anglers in Alaska, by residence, 2007*.

	# Licensed Anglers*	% of Total
Southeast	22,370	4.7%
Southcentral	134,415	28.3%
Interior	33,859	7.1%
Subtotal of Alaska residents	190,644	40.1%
Nonresidents	284,890	59.9%
Statewide Total	475,534	100.0%

Source: Alaska Department of Fish and Game.

*Includes purchased licenses and issued PIDs (Personal Identification cards) and DAVs (Alaska Disabled American Veteran permits).

The largest portion of the 2.5 million days of fishing that took place in 2007 occurred in the Southcentral region of the state where anglers fished 1.8 million days, or 70.7% of the total (Table 11). This was followed by the Southeast region with 21.2% of the total days fished and the Interior region with 8.0% of total days.

Table 11.—Estimated number and percentage of angler days of sport fishing in Alaska, by region, 2007*.

	Total Angler Days	% of Total
Southeast	540,263	21.3%
Southcentral	1,796,305	70.7%
Interior	202,750	8.0%
Statewide Total	2,539,818	100.0%

Source: 2007 Statewide Harvest Survey (SWHS), Alaska Department of Fish and Game.

*Totals reported here do not exactly match published statewide and regional totals from the 2007 SWHS due to the fact that it is not possible to identify the water type or guided/unguided status of some SWHS survey responses. The totals reported in this table reflect the summary of all days fished within a region that could be assigned to a specific residency, water type, and guided/unguided category. Approximately 4,177 days fished (0.16% of 2.5 million days) could not be assigned to a strata category and thus were not included in these totals.

In 2007, resident anglers accounted for 57.5% of the total angler days of fishing in Alaska, while nonresident anglers accounted for 42.5% of total angler days in the state (Table 12). Two-thirds (66%) of all nonresident fishing effort (in angler days) occurred in the Southcentral region,

followed by Southeast Alaska (30%) and then the Interior Region (4%). The distribution of resident fishing effort by region is similar with approximately 74% of resident angler days occurring in the Southcentral region, followed by Southeast (15%) and then Interior region (11%) (Table 12). In Alaska overall, and in the Southcentral and Interior regions, residents accounted for the majority of angler days that were taken. However, in the Southeast region, nonresidents accounted for nearly 60% of the total angler days, while residents accounted for 40% of total angler days.

Table 12.—Estimated number and percent distribution of angler days, by residency*, by region and subregion, 2007.

	RESIDENT		NONRESIDENT		TOTAL	
	Angler-Days	% of Region	Angler-Days	% of Region	Angler-Days	% of Region
Southeast	219,115	40.6%	321,148	59.4%	540,263	100.0%
Southcentral	1,085,962	60.4%	710,843	39.6%	1,796,805	100.0%
Interior	154,303	76.1%	48,447	23.9%	202,750	100.0%
Statewide Total	1,459,380	57.5%	1,080,438	42.5%	2,539,818	100.0%
Subregions						
Southeast Marine	179,873	41.3%	255,465	58.7%	435,338	100.0%
Cook Inlet	761,221	61.2%	481,877	38.8%	1,243,098	100.0%

Source: 2007 Statewide Harvest Survey, Alaska Department of Fish and Game.

*Totals reported here do not exactly match published statewide and regional totals from the 2007 SWHS due to the fact that it is not possible to identify the water type or guided/unguided status of some SWHS survey responses. The totals reported in this table reflect the summary of all days fished within a region that could be assigned to a specific residency, water type, and guided/unguided category. Approximately 4,177 days fished (0.16% of 2.5 million days) could not be assigned to a strata category and thus were not included in these totals.

At the statewide level, approximately 58.6% of all fishing days occurred in freshwater and 41.4% occurred in saltwater (Table 13). The distribution of freshwater and saltwater fishing days varied considerably by region due largely to the geography of the state. The Southeast region was dominated by saltwater fishing which accounted for 80.6% of all angler-days fished in that region. Conversely, there is almost no saltwater fishing in the Interior region. The Southcentral region had a more balanced mix of freshwater and saltwater fishing.

Table 13.—Estimated number and percent distribution of angler-days, by water type, region and subregion, 2007*.

	FRESHWATER		SALTWATER		TOTAL	
	Angler-Days	% of Region	Angler-Days	% of Region	Angler-Days	% of Region
Southeast	104,925	19.4%	435,338	80.6%	540,263	100.0%
Southcentral	1,181,904	65.8%	614,901	34.2%	1,796,805	100.0%
Interior	202,630	99.9%	120	0.1%	202,750	100.0%
Statewide Total	1,489,459	58.6%	1,050,359	41.4%	2,539,818	100.0%
Subregions						
Southeast Marine**			435,338		435,338	
Cook Inlet	994,953	80.0%	248,145	20.0%	1,243,098	100.0%

Source: 2007 Statewide Harvest Survey, Alaska Department of fish and Game.

*Totals reported here do not exactly match published statewide and regional totals from the 2007 SWHS due to the fact that it is not possible to identify the water type or guided/unguided status of some SWHS survey responses. The totals reported in this table reflect the summary of all days fished within a region that could be assigned to a specific residency, water type, and guided/unguided category. Approximately 4,177 days fished (0.16% of 2.5 million days) could not be assigned to a strata category and thus were not included in these totals.

**This subregion includes salt water only.

In every region, more angler-days of fishing were done without the aid of a guide than with one. Overall, less than one-fourth of the angler days statewide were guided. The proportion of angler days that were guided varies by region, however, from a low of 10.3% in the Interior region, to 21.7% in Southcentral, to more than one-third of all angler days in the Southeast region (Table 14). The greatest rate of guided fishing occurred among saltwater anglers in the Southeast region where 37.3% of all angler days occurred with the help of a guide.

Table 14.—Estimated number and percent distribution of angler-days, by guided/nonguided, region and subregion, 2007*.

	GUIDED		UNGUIDED		TOTAL	
	Angler-Days	% of Region	Angler-Days	% of Region	Angler-Days	% of Region
Southeast	182,340	33.8%	357,923	66.2%	540,263	100.0%
Southcentral	389,257	21.7%	1,407,548	78.3%	1,796,805	100.0%
Interior	20,791	10.3%	181,959	89.7%	202,750	100.0%
Statewide Total	592,388	23.3%	1,947,430	76.7%	2,539,818	100.0%
Subregions						
Southeast Marine	162,185	37.3%	273,153	62.7%	435,338	100.0%
Cook Inlet	232,702	18.7%	1,010,396	81.3%	1,243,098	100.0%

Source: 2007 Statewide Harvest Survey, Alaska Department of fish and Game.

*Totals reported here do not exactly match published statewide and regional totals from the 2007 SWHS due to the fact that it is not possible to identify the water type or guided/unguided status of some SWHS survey responses. The totals reported in this table reflect the summary of all days fished within a region that could be assigned to a specific residency, water type, and guided/unguided category. Approximately 4,177 days fished (0.16% of 2.5 million days) could not be assigned to a strata category and thus were not included in these totals.

In 2007, anglers spent a total of \$1.39 billion in Alaska directly related to sportfishing. This estimate of total sportfishing-related expenditures includes licenses and stamps, trip-related spending, purchases of fishing packages by nonresidents, expenditures for fishing equipment, and the cost of constructing and maintaining cabins and other real estate that are used primarily for fishing. Generally, the regional distribution of spending by anglers follows the pattern of days fished: most spending occurred in the Southcentral region (72%), followed by the Southeast and the Interior regions, which accounted for 20% and 7% of total angler spending respectively (Table 15). Licenses and stamps are purchased from the State of Alaska, therefore that spending is not designated to any specific regions but is included in the overall, statewide total.

Table 15.—Spending by anglers on sportfishing in Alaska, 2007.

	Trip Spending	Package Spending*	Equip. ment Spending	Real Estate Spending	Total Spending
Southeast	\$112,324,626	\$39,866,503	\$67,477,961	\$53,835,714	\$273,504,804
Southcentral	\$417,913,080	\$90,130,556	\$357,184,990	\$123,329,493	\$988,558,119
Interior	\$36,950,444	\$7,522,641	\$50,415,603	\$5,671,949	\$100,560,637
All Regions	\$567,188,150	\$137,519,700	\$475,078,554	\$182,837,156	\$1,362,623,560
Licenses & stamps					\$23,164,512
Total Spending					\$1,385,788,072
Subregions					
Southeast Marine	\$94,982,568	\$36,630,880	NA***	NA***	NA***
Cook Inlet	\$280,760,879	\$23,774,541	\$313,662,850	\$114,770,705	\$732,968,975

* Nonresidents only.

** Does not include purchases of license and tags which cannot be assigned to any particular region.

***Equipment expenditures were not assigned to a particular type of water fished because most equipment is multi-purpose.

Table 16 presents the average trip and package spending per angler-day statewide and for each region and subregion based on where the spending occurred. Statewide, across all anglers (resident and nonresident), an average of \$277.46 was spent per angler-day. Because this spending is averaged across all anglers including those who did not purchase a package, the average expenditure per angler-day appears much lower for the package spending (\$54.15 per angler-day) compared to other non-package fishing trips (\$223.32 per angler-day). Spending per angler-day varies somewhat between regions, with the largest differences related to spending on fishing packages. The average spent on packages in the Southeast region (\$73.79 per angler-day) is nearly double the expenditure in the Interior (\$37.10 per angler-day). These differences are largely attributable to differential participation of resident and nonresident anglers in those regions.

Table 16.—Average trip and package spending per angler-day, by region and subregion, 2007.

	Equipment and Real Estate Spending per Angler-Day	Trip Spending per Angler-Day	Package Spending per Angler-Day	Total Trip and Package Spending per Angler-Day
Southeast	\$207.91	\$73.79	\$281.70	
Southcentral	\$232.59	\$50.16	\$282.75	
Interior	\$182.25	\$37.10	\$219.35	
Statewide	\$223.32	\$54.15	\$277.46	
Subregions				
Southeast Marine	\$218.18	\$84.14	\$302.32	
Cook Inlet	\$225.86	\$19.13	\$244.98	

*nonresidents only.

The average spending in each region by residents of Alaska and nonresidents for equipment and real estate is shown in Table 17. These figures represent the amount of spending per angler that took place in each region, regardless of where the anglers fished or where they resided. In other words, the table shows how angler spending on fishing equipment and fishing-related equipment is distributed across the state. The average angler in Alaska, including residents and nonresidents, spent \$1,385.40 on equipment and real estate throughout the state. The largest portion of spending took place in the Southcentral region where anglers spent \$1,012.09, on average, or approximately 73% of their total fishing equipment and real estate spending. The large difference between regions is due to the concentration of retail outlets in the Southcentral region compared to other places in the state. Annually, over 70% of total retail sales in Alaska (not only fishing equipment sales) occurs in the Southcentral region.³⁹ As a result, it is likely that many Alaska residents who reside outside of the region purchase much of their equipment, especially more expensive items such as boats and vehicles, from businesses in the Southcentral region.

	Equipment and Real Estate Spending per Angler-Day	Trip Spending per Angler-Day	Package Spending per Angler-Day	Total Trip and Package Spending per Angler-Day
Southeast	\$207.91	\$73.79	\$281.70	
Southcentral	\$232.59	\$50.16	\$282.75	
Interior	\$182.25	\$37.10	\$219.35	
Statewide Total	\$223.32	\$54.15	\$277.46	
Subregions				
Southeast Marine	\$218.18	\$84.14	\$302.32	
Cook Inlet	\$225.86	\$19.13	\$244.98	

³⁹ Source: "2002 Economic Census, Retail Trade, Geographic Area series, Alaska: 2002", US Census Bureau.

Table 17.—Average expenditures by anglers for equipment and real estate, by region and subregion where the spending occurred, 2007.

	Equipment Spending per Angler	Real Estate Spending per Angler	Equipment and Real Estate Spending per Angler
Southeast	\$141.75	\$113.21	\$254.97
Southcentral	\$752.74	\$259.35	\$1,012.09
Interior	\$106.41	\$11.93	\$118.34
Statewide	\$1,000.91	\$384.49	\$1,385.40
Subregions			
Southeast Marine	NA*	NA*	NA*
Cook Inlet	\$655.27	\$241.35	\$896.62

* Equipment expenditures were not assigned to a particular type of water fished because most equipment is multi-use and multi-purpose.

Underscoring the importance of nonresident anglers and their contribution to the Alaska economy, Table 18 shows that nonresidents represent a significant part of the total spending on sportfishing despite comprising only 42.5% of all fishing days. Statewide, nonresidents accounted for 46.7% of all spending; in the Southeast, they accounted for 63.9% of all spending. In the sections that follow, a more detailed analysis will show that nonresidents exhibited a marked difference in their patterns of spending compared to resident anglers.

Table 18.—Total spending on sportfishing by anglers in Alaska, by residency, region, and subregion, 2007*.

	Resident Expenditures	Nonresident Expenditures	Total Expenditures
Southeast	98,613,993	174,890,811	273,504,804
Southcentral	560,955,071	427,603,048	988,558,119
Interior	67,092,727	33,467,910	100,560,637
Statewide Total	726,661,791	635,961,769	1,362,623,560
Subregions			
Southeast Marine	na	na	131,613,448
Cook Inlet	457,938,464	275,030,511	732,968,975

*does not include purchases of license and tags which cannot be ascribed to any particular region.

**equipment expenditures were not assigned to a particular type of water fished because most equipment is multi-purpose.

STATEWIDE

This section presents the detailed expenditures and economic contributions for sportfishing in Alaska on a statewide basis. All of the spending and economic contribution totals in the following statewide tables include the expenditures made by anglers for Alaska sportfishing licenses and stamps. This expenditure amount is **not** included in the subsequent regional and subregional tables in the sections that follow because sportfishing licenses and stamps are purchased from state government and that spending cannot be assigned to a particular region of the state. Therefore, the sum of the region totals reported in the subsequent sections will not be equal to the statewide totals reported in this section.

Angler Days

Of the 2.5 million total angler days of sportfishing in 2007, nearly 1.5 million days (60%) were reported by Alaska residents (Table 19). Most angler-days (77%) were unguided, but the proportion of guided angler days was somewhat higher for saltwater fishing (33%) than freshwater fishing (17%) and varied by residency. For example, nonresidents (43%) were much more likely than residents (9%) to take guided fishing trips. For nonresident anglers fishing in saltwater, nearly 60% of saltwater angler days were guided, whereas only 13% of resident saltwater days were guided. Similarly, 32% of nonresident freshwater angler days were guided days, whereas only 7% of resident freshwater angler days were guided days (Table 19).

Table 19.—Statewide angler days by residency, water type, and guided/unguided*, 2007.

	RESIDENT		NONRESIDENT		ALL ANGLERS	
	Angler-Days	%	Angler-Days	%	Angler-Days	%
Freshwater						
Guided	56,449	6.4%	189,336	31.5%	245,785	16.5%
Unguided	831,152	93.6%	412,522	68.5%	1,243,674	83.5%
Total	887,601	100.0%	601,858	100.0%	1,489,460	100.0%
Saltwater						
Guided	71,564	12.5%	275,039	57.5%	346,603	33.0%
Unguided	500,215	87.5%	203,541	42.5%	703,756	67.0%
Total	571,779	100.0%	478,580	100.0%	1,050,359	100.0%
Total Guided	128,013	8.8%	464,375	43.0%	592,388	23.3%
Total Unguided	1,331,367	91.2%	616,063	57.0%	1,947,430	76.7%
TOTAL	1,459,380	100.0%	1,080,438	100.0%	2,539,818	100.0%

Source: 2007 Statewide Harvest Survey, Alaska Department of Fish and Game.

*Totals reported here do not exactly match published statewide and regional totals from the 2007 SWHS due to the fact that it is not possible to identify the water type or guided/unguided status of some SWHS survey responses. The totals reported in this table reflect the summary of all days fished within a region that could be assigned to a specific residency, water type, and guided/unguided category. Approximately 4,177 days fished (0.16% of 2.5 million days) could not be assigned to a strata category and thus were not included in these totals.

Expenditures

In total, residents and nonresidents spent \$1.39 billion on sportfishing activities, including licenses, trip and package spending, fishing and fishing-related equipment, and real estate construction and maintenance. More than one-third (\$567.2 million) of the total was non-package trip spending. When combined with fishing packages, trip-related spending accounted for one-half (\$704.7 million) of all sportfishing expenditures. Spending on fishing equipment and fishing-related equipment was \$475.1 million, and anglers spent a total of \$182.8 million on maintenance and construction of real estate that was used primarily for sportfishing (Table 20).

Table 20.—Total statewide spending for sportfishing by residency and expenditure category, 2007.

Expenditures	Resident Anglers		Nonresident Anglers		All Anglers	
	Spending	%	Spending	%	Spending	%
Licenses & stamps	\$6,627,558	0.9%	\$16,536,955	2.5%	\$23,164,513	1.7%
Trip	\$219,829,151	30.0%	\$347,358,999	53.2%	\$567,188,150	40.9%
Package	\$0	0.0%	\$137,519,700	21.1%	\$137,519,700	9.9%
Equipment	\$433,693,104	59.1%	\$41,385,450	6.3%	\$475,078,554	34.3%
Real Estate	\$73,139,537	10.0%	\$109,697,619	16.8%	\$182,837,156	13.2%
Total	\$733,289,349	100.0%	\$652,498,723	100.0%	\$1,385,788,072	100.0%

*spending on licenses and fees was provided by ADFG from license sales data and is not estimated from survey responses.

In keeping with their greater level of fishing effort, resident anglers spent more than nonresident anglers in total fishing expenditures. Their patterns of spending, however, vary considerably. Most resident angler spending is associated with purchases of equipment used for fishing (\$433.7 million), followed by trip expenditures (\$219.8 million), real estate (\$73.1 million), and licenses and stamps (\$6.6 million). Most nonresident spending is for trip-related expenditures (\$347.4 million), followed by pre-purchased fishing packages (\$137.5 million), real estate (\$109.7 million), fishing equipment (\$41.4 million) and licenses and stamps (\$16.5 million). It should be noted that all spending refers specifically to purchases that were made in Alaska, therefore it is expected that equipment expenditures by nonresidents is disproportionately lower than for residents since anglers typically purchase most of their fishing tackle and equipment closer to where they live.

Table 21 presents a summary of the average spending statewide by resident and nonresident anglers for the major expenditure categories. Trip and package spending is broken down to average spending per angler for each day of fishing (i.e. angler-day). Due to the durable nature of equipment and its use across many trips, equipment and real estate expenditures are shown as the average spent per angler on an annual basis. Overall, anglers spent an average of \$277.46 per day of fishing for all trip and package related purchases (fuel, groceries, bait, lodging, restaurants, etc.), and \$1,385.40 per year on fishing-related equipment and real estate (rods, reels, boats, motors, clothing, maintenance, etc.).

Table 21.—Statewide average TRIP spending per angler-day, and average annual spending for EQUIPMENT and REAL ESTATE per angler, 2007*.

	Resident Anglers	Nonresident Anglers	All Anglers
\$ per angler-day			
Licenses and Fees	\$4.54	\$15.31	\$9.12
Trip Expenditures (non-package)	\$150.63	\$321.50	\$223.32
Package Expenditures	NA**	\$127.28	54.15
Total trip & package spending	\$150.63	\$448.78	\$277.46
annual \$ per licensed angler			
Equipment Expenditures	\$2,279.55	\$145.27	\$1,000.91
Real Estate Expenditures	\$383.64	\$385.05	\$384.49
Total equipment & real estate spending	\$2,663.20	\$530.32	\$1,385.40

*Estimates of average spending for detailed trip and equipment categories are presented in Appendix L.

**Package expenditures refer specifically to purchases of travel packages made by nonresidents prior to departing on their trip to Alaska.

The patterns of spending on an average basis are similar to those on a total basis: nonresident anglers spent more per day than residents for trip-related items (\$448.78 compared to \$150.63), while the average resident angler spent more in Alaska each year for equipment than the average nonresident (\$2,279.55 compared to \$145.27). Interestingly, the average resident and nonresident angler spent approximately the same amount on real estate for fishing (approximately \$385.00 per year; Table 21).

Anglers make a wide range of purchases to support their fishing activity including fishing licenses and stamps, trip-related expenditures, fishing tackle and other fishing-related equipment, and expenses related to real estate that they use for fishing. Trip-related expenses refer to spending for temporary or consumable goods and services that anglers make while on a particular fishing trip. These range from food and lodging to travel expenses (e.g., fuel or air taxis), groceries, bait, and derby tickets. The full list of trip-related expenditure items and the amount spent by residents and nonresidents is presented in Table 22.

Some nonresident anglers opt to pre-purchase a packaged fishing expedition from one of the many outfitters, guides and lodges in Alaska. Such packages typically offer a range of services for one price including transportation, guides, food and lodging. The survey of nonresidents asked anglers to report spending for any packages that they may have purchased and to indicate which amenities were included in the package.

Equipment expenditures refer to tackle and other items that are used only for fishing, plus other equipment that might be used in other pursuits in addition to fishing. The details of statewide spending for these items is listed in the bottom half of Table 22. The dollar figures represent total amounts spent in 2007 on fishing equipment and only that portion of multi-use equipment that anglers reported was used specifically for fishing.

Table 22.—Detailed spending for sportfishing in Alaska by residency, 2007.

	Resident	Nonresident	Total
Licenses and Stamps*	\$6,627,558	\$16,536,955	\$23,164,513
Trip Expenditures			
Fuel	\$69,938,850	\$23,595,989	\$93,534,839
Guide	\$32,276,187	\$83,575,429	\$115,851,616
Air	\$3,279,065	\$51,384,030	\$54,663,094
Travel	\$814,830	\$15,044,035	\$15,858,865
Process	\$9,160,869	\$29,156,498	\$38,317,367
Rentals	\$2,304,852	\$24,664,999	\$26,969,851
Derby	\$2,335,998	\$508,735	\$2,844,733
Dock	\$13,037,221	\$2,396,347	\$15,433,567
Ice	\$3,541,733	\$1,261,152	\$4,802,885
Bait	\$6,543,527	\$2,228,259	\$8,771,786
Groceries	\$35,178,270	\$25,666,857	\$60,845,127
Meals	\$15,435,598	\$26,363,169	\$41,798,767
Lodging	\$18,549,878	\$38,394,579	\$56,944,458
Gifts	\$2,679,940	\$17,323,601	\$20,003,541
Amusements	\$4,622,500	\$5,170,488	\$9,792,988
Other	\$129,832	\$624,833	\$754,665
Sub-Total	\$219,829,151	\$347,358,999	\$567,188,150
Package Expenditures	NA	\$137,519,700	\$137,519,700
Equipment Expenditures			
Rods, reels, & components	\$19,604,973	\$5,538,508	\$25,143,481
Fishing tackle	\$12,989,758	\$6,757,985	\$19,747,744
Tackle boxes	\$1,718,940	\$366,129	\$2,085,070
Depth finders, fish finders, etc.	\$8,845,224	\$84,348	\$8,929,572
Landing nets, dipnets & gillnets	\$3,460,528	\$399,823	\$3,860,351
Misc. fishing equip	\$4,682,403	\$1,968,201	\$6,650,604
Shellfish fishing equip	\$2,429,641	\$241,400	\$2,671,041
Fish mounting (taxidermy)	\$1,454,872	\$816,222	\$2,271,094
Books and magazines	\$1,233,909	\$613,573	\$1,847,481
Items to store/preserve fish	\$7,084,928	\$2,244,231	\$9,329,159
Coolers, fish boxes	\$3,054,823	\$1,642,002	\$4,696,825
Clothing	\$6,383,662	\$3,457,840	\$9,841,502
Boots, shoes, waders	\$5,434,312	\$1,658,504	\$7,092,816
Life jackets, survival suits	\$3,620,424	\$151,791	\$3,772,215
Boats, canoes, other watercraft	\$101,074,361	\$4,096,772	\$105,171,133
Boat motors	\$37,160,536	\$722,980	\$37,883,516
Trailers, hitches, and acc	\$7,759,679	\$234,009	\$7,993,687
Other boat parts and acc	\$14,488,956	\$1,053,382	\$15,542,338
Bear spray, bug spray, etc.	\$1,284,685	\$485,861	\$1,770,546
Firearms	\$5,143,008	\$81,983	\$5,224,991
Cameras, binoculars	\$5,286,567	\$894,724	\$6,181,291
Tents, backpacks, sleeping bags	\$3,423,576	\$247,678	\$3,671,254
Camping trailer	\$31,518,386	\$15,757	\$31,534,144
Other camping equip	\$2,616,313	\$286,758	\$2,903,071
Vehicles (trucks, SUVs, etc.)	\$84,317,439	\$3,999,749	\$88,317,188
Airplanes and related equipment	\$4,118,284	\$1,469,050	\$5,587,334
ATVs, snowmachines	\$26,397,301	\$0	\$26,397,301
Boat/camper registrations	\$4,480,408	\$259,799	\$4,740,207
Vehicle, boat or airplane repair	\$22,400,506	\$1,587,726	\$23,988,232
Other	\$224,699	\$8,666	\$233,366
Sub-Total	\$433,693,104	\$41,385,450	\$475,078,554
Real Estate Expenditures			
Real estate repairs	\$19,896,212	\$30,482,285	\$50,378,496
Real estate construction	\$53,243,325	\$79,215,335	\$132,458,660
Sub-Total	\$73,139,537	\$109,697,619	\$182,837,156
TOTAL SPENDING	\$733,289,349	\$652,498,723	\$1,385,788,072

*License and stamp spending is based on actual revenues reported by ADF&G.

Table 22 presents the detailed breakdown of total spending in all categories by resident and nonresident anglers. While nonresidents spent more in total on trip related purchases than residents, it is not surprising that residents spent considerably more than nonresidents on fuel, bait, and dock/mooring fees, and groceries because those expenditures are incurred with every outing, including one-day trips that are more typical of resident anglers. Nonresidents spent considerably more than residents on those items associated with travel – guide fees, airfare and other travel, rentals, restaurant meals, lodging, and gifts/souvenirs. Since most people purchase equipment closer to where they live, and vacationers typically do not buy a significant amount of equipment while traveling, it is not surprising that residents greatly outspent nonresidents in every equipment category except for the miscellaneous “other” category.

The multi-purpose nature of many equipment items precludes a similarly detailed breakdown of equipment or real estate spending in this report. Additional detailed estimates of total and average spending by each expenditure category are presented in Appendices I and J.

Table 23.—Detailed TRIP and PACKAGE by residency, use of guides, and type of water fished, 2007.

	RESIDENT		NONRESIDENT		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	
FRESHWATER ANGLERS					
Trip Expenditures			Total spending		
Fuel and oil	\$3,129,212	\$29,480,098	\$4,922,338	\$6,757,367	\$44,289,016
Guide and charter fees	\$12,698,961	\$1,557,368	\$29,714,463	\$4,226,079	\$48,196,871
Airfare to and from Alaska	\$1,212,832	\$690,530	\$11,711,734	\$14,739,967	\$28,355,063
Travel within Alaska	\$324,786	\$217,378	\$3,049,525	\$7,231,895	\$10,823,584
Fish processing & shipping	\$319,038	\$2,809,876	\$5,848,647	\$5,389,684	\$14,367,246
Rentals (boats, equipment, etc.)	\$0	\$1,328,506	\$6,981,005	\$8,203,300	\$16,512,811
Derby tickets	\$27,953	\$370,618	\$59,905	\$74,948	\$533,425
Boat launch and dock fees	\$23,853	\$3,563,964	\$42,877	\$1,051,369	\$4,682,063
Ice	\$104,523	\$1,763,285	\$211,662	\$644,359	\$2,723,828
Bait (natural bait only)	\$23,241	\$1,806,026	\$212,766	\$687,435	\$2,729,467
Groceries bought in stores	\$2,182,531	\$18,117,450	\$5,500,681	\$9,249,282	\$35,049,944
Restaurants, bars, and take-out	\$2,290,294	\$6,345,116	\$6,770,816	\$6,846,164	\$22,823,390
Overnight accommodations	\$5,409,901	\$6,146,449	\$11,932,076	\$6,337,160	\$29,825,587
Souvenirs and gifts	\$368,755	\$861,281	\$3,975,140	\$4,362,994	\$9,568,170
Other entertainment	\$648,081	\$1,134,581	\$1,769,103	\$1,378,450	\$4,930,215
Other	\$0	\$46,262	\$222,219	\$10,913	\$279,394
Sub-Total	\$28,763,962	\$76,238,790	\$92,924,958	\$77,191,364	\$275,119,074
Package Expenditures	NA*	NA*	\$56,729,482	\$10,773,868	\$67,503,350
SALTWATER ANGLERS					
Trip Expenditures					
Fuel and oil	\$3,239,308	\$34,090,231	\$5,974,861	\$5,941,422	\$49,245,823
Guide and charter fees	\$17,227,322	\$792,536	\$49,053,787	\$581,100	\$67,654,745
Airfare to and from Alaska	\$1,345,773	\$29,930	\$18,399,826	\$6,532,503	\$26,308,032
Travel within Alaska	\$21,360	\$251,305	\$3,913,595	\$849,020	\$5,035,281
Fish processing & shipping	\$2,149,516	\$3,882,439	\$15,672,242	\$2,245,924	\$23,950,121
Rentals (boats, equipment, etc.)	\$162,890	\$813,456	\$7,759,656	\$1,721,038	\$10,457,040
Derby tickets	\$186,016	\$1,751,410	\$303,526	\$70,356	\$2,311,309
Boat launch and dock fees	\$72,770	\$9,376,634	\$67,450	\$1,234,650	\$10,751,504
Ice	\$210,336	\$1,463,590	\$237,719	\$167,412	\$2,079,056
Bait (natural bait only)	\$89,786	\$4,624,475	\$235,867	\$1,092,192	\$6,042,319
Groceries bought in stores	\$2,333,083	\$12,545,206	\$6,453,108	\$4,463,785	\$25,795,183
Restaurants, bars, and take-out	\$2,355,830	\$4,444,358	\$9,713,051	\$3,033,138	\$19,546,377
Overnight accommodations	\$2,934,412	\$4,059,116	\$16,476,630	\$3,648,713	\$27,118,871
Souvenirs and gifts	\$676,856	\$773,048	\$7,305,937	\$1,679,530	\$10,435,371
Other entertainment	\$374,483	\$2,465,355	\$1,491,367	\$531,569	\$4,862,773
Other	\$6,847	\$76,723	\$383,517	\$8,184	\$475,271
Sub-Total	\$33,386,587	\$81,439,812	\$143,442,141	\$33,800,535	\$292,069,076
Package Expenditures	NA*	NA*	\$61,194,895	\$8,821,455	\$70,016,350
ALL ANGLERS					
Trip Expenditures					
Fuel and oil	\$6,368,520	\$63,570,330	\$10,897,199	\$12,698,790	\$93,534,839
Guide and charter fees	\$29,926,283	\$2,349,904	\$78,768,250	\$4,807,179	\$115,851,616
Airfare to and from Alaska	\$2,558,605	\$720,460	\$30,111,560	\$21,272,469	\$54,663,094
Travel within Alaska	\$346,147	\$468,683	\$6,963,120	\$8,080,915	\$15,858,865
Fish processing & shipping	\$2,468,554	\$6,692,315	\$21,520,890	\$7,635,608	\$38,317,367
Rentals (boats, equipment, etc.)	\$162,890	\$2,141,962	\$14,740,661	\$9,924,338	\$26,969,851
Derby tickets	\$213,969	\$2,122,028	\$363,431	\$145,304	\$2,844,733
Boat launch and dock fees	\$96,623	\$12,940,597	\$110,327	\$2,286,019	\$15,433,567
Ice	\$314,859	\$3,226,874	\$449,381	\$811,770	\$4,802,885
Bait (natural bait only)	\$113,027	\$6,430,500	\$448,633	\$1,779,626	\$8,771,786
Groceries bought in stores	\$4,515,614	\$30,662,656	\$11,953,789	\$13,713,067	\$60,845,127
Restaurants, bars, and take-out	\$4,646,124	\$10,789,474	\$16,483,868	\$9,879,302	\$41,798,767
Overnight accommodations	\$8,344,313	\$10,205,565	\$28,408,706	\$9,985,873	\$56,944,458
Souvenirs and gifts	\$1,045,611	\$1,634,329	\$11,281,077	\$6,042,524	\$20,003,541
Other entertainment	\$1,022,564	\$3,599,936	\$3,260,470	\$1,910,019	\$9,792,988
Other	\$6,847	\$122,985	\$605,736	\$19,097	\$754,665
Sub-Total	\$62,150,549	\$157,678,602	\$236,367,099	\$110,991,900	\$567,188,150
Package Expenditures	NA*	NA*	\$117,924,377	\$19,595,323	\$137,519,700

*Package expenditures refer specifically to travel packages purchased by nonresidents prior to departing on their trip to Alaska.

Economic Contributions

Expenditures by anglers generate additional economic benefits throughout the Alaska economy. Multiplier effects have been estimated separately for trip spending and package spending, and for equipment and real estate spending combined. All economic contributions have been estimated separately for residents and nonresidents. The direct effects that are shown in the following tables reflect the economic activity associated with angler spending captured within the Alaska economy (i.e., consumer retail spending less the value of goods imported from outside of the regional economy). For that reason, the direct output values in the tables that follow are likely to be less than the reported angler spending for any specific category.

The \$1.39 billion of spending by anglers in Alaska in 2007 generated \$354.1 million of income to 11,080 full and part time employees and proprietors who worked in the Alaska businesses whose products were purchased by anglers. Spending by nonresidents accounted for 6,549 of the jobs and \$208.0 million of income (Table 24). In addition to the economic activity directly attributable to spending by anglers are the multiplier effects (indirect and induced effects) of that consumer spending. The indirect effect results from the increased economic activity among businesses that supply those businesses selling directly to the anglers. For example, the guide that sells directly to anglers, in turn, stimulates additional activity among the businesses that supply the guide's operations. The induced effect is the economic activity produced by household spending of income earned by workers in those businesses that are impacted by both the direct and indirect effects. Including both direct and multiplier effects, the \$1.39 billion of spending by anglers produced \$545.3 million of income and supported 15,879 full and part-time jobs (Table 24).

Table 24.—Statewide economic contributions of ALL spending for sportfishing, by residency, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Output	\$417,795,502	\$574,317,174	\$992,112,676
Income	\$146,134,921	\$208,000,960	\$354,135,881
Employment (jobs)	4,531	6,549	11,080
Multiplier effects			
Output	\$250,934,327	\$364,546,682	\$615,481,009
Income	\$77,239,016	\$113,881,191	\$191,120,207
Employment (jobs)	1,911	2,888	4,799
Total effects			
Output	\$668,729,829	\$938,863,856	\$1,607,593,685
Income	\$223,373,937	\$321,882,151	\$545,256,088
Employment (jobs)	6,442	9,437	15,879

The relationship between the direct effect (i.e. directly attributable to the spending by anglers) and the total economic activity that it creates is commonly presented in the form of a multiplier. In the case of Alaska sportfishing, the output multiplier of 1.62 (total effect divided by direct effect) means every dollar of activity stimulated by angler spending creates an additional \$0.62 of economic activity elsewhere in the economy. In similar fashion, the income and employment multipliers are 1.54 and 1.43, respectively. This means that for every dollar of income paid to workers in businesses that sell directly to anglers and for every job in a business that sells directly to anglers there is an additional \$0.54 of income and 0.43 additional jobs in other businesses throughout the economy that are supported by angler spending. A study of Alaska sportfishing in 1993 estimated the output, income and employment multipliers to be 1.18, 1.47 and 1.39, respectively⁴⁰. The income and employment multipliers estimated in the two studies are nearly the same. The output multiplier in the 1993 study is considerably lower because that study related total output (including total angler spending plus indirect and induced effects) to total angler spending, while this study appropriately calculates the multiplier as the ratio of total output (including direct, indirect and induced effects of angler spending) to the total direct effect of angler spending. Because some angler spending leaks immediately out of Alaska through imports and has no economic effect, total angler spending is a larger number than its estimated direct effect and the calculation of the multiplier in the 1993 study resulted in a smaller estimated multiplier.

Employment effects are of particular importance to the state and local economy. The jobs supported by angler expenditures are shown in Table 25 categorized by the industry in which the jobs occur. The jobs directly supported by angler spending largely reflect the types of expenditures made by anglers – trip expenditures for food, bait, lodging and guide services, maintenance of real estate used for sportfishing, and retail purchases of fishing and related equipment. Sector 11 in the following table includes farming and commercial fishing and hunting and is directly affected primarily through anglers' purchases of groceries and bait. The broader distribution of jobs indirectly supported by angler spending through the multiplier effect is the result of inter-industry trade flows and the expenditures of household income that comes from angler-supported jobs.

Direct effects		
Output	\$117,700,000	\$274,917,174
Income	\$190,000,000	\$274,917,174
Employment (jobs)	4,527	8,519
Multiplier effects		
Output	\$250,834,307	\$250,834,307
Income	\$217,324,016	\$217,324,016
Employment (jobs)	1,817	3,888
Total effects		
Output	\$368,534,307	\$525,751,481
Income	\$407,324,016	\$492,241,190
Employment (jobs)	6,344	12,407

⁴⁰ Haley, S.; Berman, M.; Goldsmith, S.; Hill, A., and Kim, H. 1999. *Economics of Sport Fishing in Alaska*. (Institute of Social and Economic Research, University of Alaska Anchorage). Prepared for the Alaska Dept. of Fish and Game. (copy available from UAA: <http://www.iser.uaa.alaska.edu/ResourceStudies/sportfishing.htm>).

Table 25.—Employment (jobs) directly and indirectly supported by angler expenditures statewide, by industry in which the employment occurs, 2007.

NAICS Industry Categories	Direct Effects	Multiplier Effects	Total Effects
<i>Total full and part time jobs</i>			
11 Agriculture, forestry, fishing & hunting	205	107	312
21 Mining	3	71	74
22 Utilities	-	43	43
23 Construction	1,035	54	1,088
31-33 Manufacturing	163	150	312
42 Wholesale trade	407	146	554
48-49 Transportation & warehousing	395	301	696
44-45 Retail trade	2,650	704	3,353
51 Information	-	105	105
52 Finance & insurance	-	161	161
53 Real estate & rental	334	405	738
54 Professional- scientific & technical services	-	342	342
55 Management of companies	-	40	40
56 Administrative & waste services	5	292	297
61 Educational services	-	65	65
62 Health & social services	-	565	565
71 Arts, entertainment & recreation (e.g., guides)	3,187	174	3,362
72 Accommodation & food services	2,054	472	2,526
81 Other services	259	351	610
92 Government and public administration	384	252	636
Total Employment Impact	11,080	4,799	15,879

Table 26 presents a breakdown by residency of the economic contributions that derive from anglers' spending on equipment and real estate maintenance and construction (a subtotal of all spending). Including the direct and multiplier effects, the \$475.1 million spent on equipment and \$182.8 million spent on real estate maintenance and construction related to sport fishing (Table 22) in Alaska in 2007 supported 4,483 jobs and provided \$182.7 million of income. Because resident angler spending on fishing equipment and fishing-related equipment constitutes the bulk of equipment spending in 2007, the majority of the economic contributions from equipment and real estate spending in 2007 (3,048 jobs and \$111.8 million of income) are produced by residents.

Table 26.—Statewide economic contributions of expenditures for sportfishing EQUIPMENT and REAL ESTATE in Alaska, by residency, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Output	\$198,614,132	\$125,113,775	\$323,727,907
Income	\$77,140,685	\$47,802,456	\$124,943,141
Employment	2,132	831	2,963
Multiplier effects			
Output	\$109,240,870	\$71,253,555	\$180,494,425
Income	\$34,618,938	\$23,151,352	\$57,770,290
Employment	916	604	1,520
Total effects			
Output	\$307,855,002	\$196,367,330	\$504,222,332
Income	\$111,759,623	\$70,953,808	\$182,713,431
Employment	3,048	1,435	4,483

Table 27 shows the economic contributions from spending on trips and packages, broken down by residency, use of guides, and type of water fished. The largest economic contributions come from nonresident anglers fishing in salt water with the services of a guide. Including the direct and multiplier effects, their spending supported 3,479 jobs that provided \$102.6 million of income. That represents 21.9% and 18.8% of all jobs and income supported by sportfishing anglers in Alaska, respectively.

Additional detailed estimates of the industry impacts in Alaska due to angler spending are presented in Appendices K and L.

12,879	4,798	11,080	Total Employment Impact
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Table 27.—Statewide economic contributions of combined TRIP-RELATED and PACKAGE spending for sportfishing, by residency, use of guides, and type of water.

	RESIDENT		NONRESIDENT		TOTALS		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	RESIDENT	NON RESIDENT	
FRESHWATER ANGLERS							
Direct effects							
Output	\$27,980,438	\$77,087,031	\$138,721,920	\$81,322,374	\$105,067,469	\$220,044,294	\$325,111,763
Income	\$8,801,815	\$24,603,743	\$48,086,210	\$32,165,880	\$33,405,558	\$80,252,090	\$113,657,648
Employment	377	732	1,842	914	1,108	2,756	3,865
Multiplier effects							
Output	\$18,583,846	\$49,466,965	\$93,500,027	\$54,471,236	\$68,050,811	\$147,971,263	\$216,022,074
Income	\$5,968,112	\$14,570,551	\$29,608,769	\$16,394,653	\$20,538,663	\$46,003,422	\$66,542,085
Employment	144	336	737	412	480	1,150	1,630
Total effects							
Output	\$46,564,284	\$126,553,996	\$232,221,947	\$135,793,610	\$173,118,280	\$368,015,557	\$541,133,837
Income	\$14,769,927	\$39,174,294	\$77,694,979	\$48,560,533	\$53,944,221	\$126,255,512	\$180,199,733
Employment	521	1,068	2,580	1,327	1,589	3,906	5,495
SALTWATER ANGLERS							
Direct effects							
Output	\$32,500,598	\$81,613,303	\$190,285,190	\$38,873,915	\$114,113,901	\$229,159,105	\$343,273,006
Income	\$10,326,686	\$25,261,992	\$65,459,376	\$14,487,038	\$35,588,678	\$79,946,414	\$115,535,092
Employment	449	841	2,530	432	1,290	2,962	4,252
Multiplier effects							
Output	\$19,798,317	\$53,844,329	\$119,728,141	\$25,593,723	\$73,642,646	\$145,321,864	\$218,964,510
Income	\$6,238,034	\$15,843,381	\$37,190,018	\$7,536,399	\$22,081,415	\$44,726,417	\$66,807,832
Employment	155	360	948	186	515	1,135	1,649
Total effects							
Output	\$52,298,915	\$135,457,632	\$310,013,331	\$64,467,638	\$187,756,547	\$374,480,969	\$562,237,516
Income	\$16,564,720	\$41,105,373	\$102,649,394	\$22,023,437	\$57,670,093	\$124,672,831	\$182,342,924
Employment	604	1,200	3,479	618	1,805	4,097	5,901
ALL ANGLERS							
Direct effects							
Output	\$60,481,036	\$158,700,334	\$329,007,110	\$120,196,289	\$219,181,370	\$449,203,399	\$668,384,769
Income	\$19,128,501	\$49,865,735	\$113,545,586	\$46,652,918	\$68,994,236	\$160,198,504	\$229,192,740
Employment	826	1,572	4,372	1,346	2,399	5,718	8,117
Multiplier effects							
Output	\$38,382,163	\$103,311,294	\$213,228,168	\$80,064,959	\$141,693,457	\$293,293,127	\$434,986,584
Income	\$12,206,146	\$30,413,932	\$66,798,787	\$23,931,052	\$42,620,078	\$90,729,839	\$133,349,917
Employment	299	696	1,686	599	995	2,284	3,279
Total effects							
Output	\$98,863,199	\$262,011,628	\$542,235,278	\$200,261,248	\$360,874,827	\$742,496,526	\$1,103,371,353
Income	\$31,334,647	\$80,279,667	\$180,344,373	\$70,583,970	\$111,614,314	\$250,928,343	\$362,542,657
Employment	1,125	2,268	6,058	1,945	3,393	8,003	11,396

* Total guided and unguided trip related and package spending.

In addition to the direct state revenue from sportfishing license and stamp sales, the economic activity directly and indirectly generated by sportfishing also produces tax revenues for local, state and federal governments. The IMPLAN model produces generalized estimates of tax revenues that are based on existing statewide ratios of output, income and employment to all tax revenues. It is estimated that sportfishing in 2007 provided \$123.1 million and \$123.2 million of state/local and federal tax revenues, respectively (Table 28). More than one-half of the tax revenues (56.4%) were the result of spending by nonresident anglers.

Table 28.—Tax revenues generated statewide from the economic contributions of sportfishing, 2007.

	State and Local Tax Revenues	Federal Tax Revenues	Total tax Revenues
RESIDENT ANGLERS			
Trip Expenditures (non-package)	\$30,284,825	\$26,527,639	\$56,812,464
Package Expenditures	NA*	NA*	NA*
Equipment & Real Estate Expenditures	\$26,224,749	\$24,396,320	\$50,621,069
Subtotal	\$56,509,573	\$50,923,959	\$107,433,533
NONRESIDENT ANGLERS			
Trip Expenditures (non-package)	\$41,238,975	\$42,456,857	\$83,695,831
Package Expenditures	\$15,672,762	\$15,080,606	\$30,753,368
Equipment & Real Estate Expenditures	\$9,721,095	\$14,711,407	\$24,432,502
Subtotal	\$66,632,831	\$72,248,870	\$138,881,701
ALL ANGLERS			
Trip Expenditures (non-package)	\$71,523,799	\$68,984,495	\$140,508,295
Package Expenditures	\$15,672,762	\$15,080,606	\$30,753,368
Equipment & Real Estate Expenditures	\$37,688,079	\$40,316,522	\$78,004,601
Total	\$123,142,404	\$123,172,709	\$246,315,114

**Package expenditures refer specifically to purchases of travel packages made by nonresidents prior to departing on their trip to Alaska.

SOUTHEAST REGION

This section presents the detailed expenditures and economic contributions for sportfishing in the Southeast Region. The spending and contribution totals in the following Southeast Region tables do not include the cost of fishing licenses and stamps because licenses and stamps are purchased from state government and the angler expenditure cannot be assigned to a particular region. However, it is included in the statewide analysis above (Table 20).

Angler Days

Of the total 540,263 days of sportfishing in Southeast Alaska in 2007, more than one-half (321,148) were reported by Alaska residents. Overall, most sportfishing is unguided although nonresidents (51%) are much more likely than residents (8%) to take guided fishing trips. Both resident and nonresident anglers in the Southeast Region are more likely to fish saltwater than freshwater (Table 29).

Table 29.—Southeast Region angler days, by residency, water type, and guided/unguided*, 2007.

	RESIDENT		NONRESIDENT		ALL ANGLERS	
	Angler-Days	%	Angler-Days	%	Angler-Days	%
Freshwater						
Guided	2,303	5.9%	17,852	27.2%	20,155	19.2%
Unguided	36,939	94.1%	47,831	72.8%	84,770	80.8%
Total	39,242	100.0%	65,683	100.0%	104,925	100.0%
Saltwater						
Guided	14,853	8.3%	147,332	57.7%	162,185	37.3%
Unguided	165,020	91.7%	108,133	42.3%	273,153	62.7%
Total	179,873	100.0%	255,465	100.0%	435,338	100.0%
Total Guided	17,156	7.8%	165,184	51.4%	182,340	33.8%
Total Unguided	201,959	92.2%	155,964	48.6%	357,923	66.2%
TOTAL	219,115	100.0%	321,148	100.0%	540,263	100.0%

Source: 2007 Statewide Harvest Survey, Alaska Department of Fish and Game.

*Totals reported here do not exactly match published statewide and regional totals from the 2007 SWHS due to the fact that it is not possible to identify the water type or guided/unguided status of some SWHS survey responses. The totals reported in this table reflect the summary of all days fished within a region that could be assigned to a specific residency, water type, and guided/unguided category. Approximately 4,177 days fished (0.16% of 2.5 million days) could not be assigned to a strata category and thus were not included in these totals.

Expenditures

Where anglers spend their money is not necessarily tied to where they fish or where they live. In actuality, an angler on a one-day or multi-day fishing trip might start from their home, purchase fuel, food, or other supplies on the way to their destination, and then make additional purchases such as bait, ice, or guide services, closer to where they fish. The following expenditure tables take this into account by reporting total expenditures in the Southeast region made by all Alaska resident anglers, regardless of where they fished or the region where they live, and by all nonresident anglers who live outside of Alaska regardless of where they fished. In total, resident and nonresident anglers spent \$273.5 million in the Southeast region on trip and package spending, fishing and fishing-related equipment, and real estate construction and maintenance. Forty-one percent (\$112.3 million) of the total is non-package trip spending. When combined with fishing packages, all trip-related spending accounts for 55.7% (\$152.2 million) of all sportfishing expenditures in the region. Spending on fishing and fishing-related equipment (\$67.5 million) represents one-quarter of all spending, while spending for maintenance and construction of real estate that is used primarily for sportfishing represents approximately 19.7% of the total (Table 30).

Table 30.—Southeast Region spending for sportfishing, by expenditure category and residency, 2007.

Expenditures	Resident Anglers		Nonresident Anglers		All Anglers	
	Spending	%	Spending	%	Spending	%
Trip	\$22,467,571	22.8%	\$89,857,056	51.4%	\$112,324,626	41.1%
Package	\$0	0.0%	\$39,866,502	22.8%	\$39,866,502	14.6%
Equipment	\$56,606,233	57.4%	\$10,871,728	6.2%	\$67,477,961	24.7%
Real Estate	\$19,540,190	19.8%	\$34,295,525	19.6%	\$53,835,714	19.7%
Total	\$98,613,993	100.0%	\$174,890,811	100.0%	\$273,504,804	100.0%

*Package expenditures refer specifically to travel packages purchased by nonresidents prior to departing on their trip to Alaska.

Unlike the overall spending in the state, more spending in the Southeast region comes from nonresidents (\$174.9 million) than residents (\$98.6 million). Most resident spending is associated with purchases of equipment used for fishing (\$56.6 million), followed by trip expenditures (\$22.5 million), and real estate (\$19.5 million). The largest amount of spending by nonresidents is for trip-related spending (\$89.9 million) followed by pre-purchased packages (\$39.9 million). Nonresident anglers spent \$34.3 million on real estate and \$10.9 million on fishing equipment (Table 30). It should be noted that all spending refers specifically to purchases that were made in the Southeast region, therefore it is not surprising that equipment expenditures by nonresidents are disproportionately lower than for residents since anglers typically purchase most of their fishing tackle and equipment closer to where they live.

Table 31 presents a summary of the average spending that took place in the Southeast region for the major expenditure categories. Trip and package spending is based on total spending in the region and is averaged across all days of fishing that took place in the region, regardless of where individual resident anglers lived or fished. Due to the durable nature of equipment and its use across many trips, equipment and real estate expenditures are shown as the average spent in the region across all resident and nonresident anglers in Alaska on an annual basis. Overall, anglers fishing in Alaska spent an average of \$281.70 in the Southeast region per day of fishing for all trip and package related purchases (fuel, groceries, bait, lodging, restaurants, etc.) regardless of where they fished. The average angler spent \$254.97 per year in the Southeast region on fishing and related equipment and real estate (rods, reels, boats, motors, clothing, maintenance, etc., Table 31).

Table 31.—Average expenditures in the Southeast region made by Alaska resident and nonresident anglers, 2007*.

	Resident Anglers	Nonresident Anglers	All Anglers
<i>\$ per angler-day</i>			
Trip Expenditures	\$102.54	\$279.80	\$207.91
Package Expenditures	NA**	\$124.14	\$73.79
Total trip spending	\$102.54	\$403.94	\$281.70
<i>annual \$ per licensed angler</i>			
Equipment Expenditures	\$296.61	\$38.13	\$141.75
Real Estate Expenditures	\$102.50	\$120.38	\$113.21
Total equipment & real estate spending	\$399.11	\$158.51	\$254.97

*Estimates of average spending for detailed trip and equipment categories are presented in Appendix L.

**Package expenditures refer specifically to purchases of travel packages made by nonresidents prior to departing on their trip to Alaska.

As with total spending, nonresidents, on average, spent more per day on trip-related purchases in the Southeast region than Alaska residents, (\$403.94 compared to \$102.54). Conversely, the average Alaska resident angler spent more in the Southeast for equipment than the average nonresident (\$296.61 compared to \$38.13). The average resident and nonresident angler spent approximately the same amount in the region on real estate used for fishing (approximately \$100 to \$120 per year).

Anglers make a wide range of purchases to support their fishing activity including trip-related expenditures, fishing tackle and other fishing-related equipment, and expenses related to real estate that they use for fishing. Trip-related expenses refer to spending for temporary or consumable goods and services that anglers make while on a particular fishing trip. These range from food and lodging to travel expenses (e.g., fuel, air taxis, etc.), groceries, bait, and derby tickets. The full list of trip items and the amount spent by resident and nonresidents in Southeast Alaska is presented in Table 32.

Some nonresident anglers opt to pre-purchase a packaged fishing expedition from one of the many outfitters, guides and lodges in Alaska. Such packages typically offer a range of services for one price including transportation, guides, food and lodging. The survey of nonresidents asked anglers to report spending for any packages that they may have purchased and to indicate which amenities were included in the package.

Equipment expenditures refer to a list of tackle and other items that are used only for fishing, plus other equipment that might be used in other pursuits in addition to fishing. The details of

total spending for these items in the Southeast region is listed in the bottom half of Table 32. The dollar figures represent total amounts spent in 2007 on fishing equipment and only that portion of multi-use equipment that anglers reported was used specifically for fishing.

Table 32.—Detailed spending for sportfishing in Southeast Alaska, by residency, 2007.

	Resident	Nonresident	Total
Trip Expenditures			
Fuel	\$7,947,106	\$6,390,155	\$14,337,262
Guide	\$2,116,465	\$24,814,632	\$26,931,097
Air	\$0	\$17,160,414	\$17,160,414
Travel	\$58,390	\$3,907,885	\$3,966,275
Process	\$1,865,731	\$6,837,990	\$8,703,721
Rentals	\$125,956	\$2,269,645	\$2,395,601
Derby	\$815,848	\$89,229	\$905,077
Dock	\$4,166,501	\$759,127	\$4,925,627
Ice	\$233,917	\$123,965	\$357,882
Bait	\$1,601,827	\$739,505	\$2,341,333
Groceries	\$3,031,000	\$5,695,799	\$8,726,800
Meals	\$261,832	\$5,647,443	\$5,909,275
Lodging	\$104,796	\$9,454,174	\$9,558,970
Gifts	\$44,489	\$4,701,743	\$4,746,231
Amusements	\$93,712	\$1,057,630	\$1,151,342
Other	\$0	\$207,720	\$207,720
Sub-Total	\$22,467,571	\$89,857,056	\$112,324,626
Package Expenditures			
	NA*	\$39,866,502	\$39,866,502
Equipment Expenditures			
Rods, reels, & components	\$2,474,141	\$1,092,737	\$3,566,878
Fishing tackle	\$2,105,712	\$1,591,577	\$3,697,289
Tackle boxes	\$165,490	\$59,418	\$224,907
Depth finders, fish finders, etc.	\$1,712,509	\$39,415	\$1,751,924
Landing nets, dipnets & gillnets	\$432,132	\$144,573	\$576,705
Misc. fishing equip	\$924,324	\$679,980	\$1,604,304
Shellfish fishing equip	\$786,118	\$101,634	\$887,752
Fish mounting (taxidermy)	\$0	\$425,444	\$425,444
Books and magazines	\$124,512	\$165,290	\$289,802
Items to store/preserve fish	\$944,379	\$232,835	\$1,177,214
Coolers, fish boxes	\$442,770	\$253,360	\$696,130
Clothing	\$812,730	\$1,447,241	\$2,259,971
Boots, shoes, waders	\$752,157	\$266,267	\$1,018,424
Life jackets, survival suits	\$634,385	\$56,057	\$690,442
Boats, canoes, other watercraft	\$12,356,617	\$1,943,148	\$14,299,765
Boat motors	\$9,369,522	\$15,766	\$9,385,288
Trailers, hitches, and acc	\$2,780,594	\$35,473	\$2,816,067
Other boat parts and acc	\$2,669,856	\$527,557	\$3,197,413
Bear spray, bug spray, etc	\$195,089	\$71,697	\$266,786
Firearms	\$436,087	\$0	\$436,087
Cameras, binoculars	\$618,768	\$196,333	\$815,101
Tents, backpacks, sleeping bags	\$232,173	\$11,800	\$243,973
Camping trailer	\$0	\$0	\$0
Other camping equip	\$366,935	\$48,014	\$414,949
Vehicles (trucks, SUVs, etc)	\$7,055,405	\$53,797	\$7,109,202
Airplanes and related equipment	\$946,030	\$358,214	\$1,304,243
ATVs, snowmachines	\$1,307,325	\$0	\$1,307,325
Boat/camper registrations	\$948,429	\$10,201	\$958,630
Vehicle, boat or airplane repair	\$4,999,739	\$1,043,900	\$6,043,640
Other	\$12,305	\$0	\$12,305
Sub-Total	\$56,606,233	\$10,871,728	\$67,477,961
Real Estate Expenditures			
Real estate repairs	\$6,037,607	\$20,823,127	\$26,860,734
Real estate construction	\$13,502,583	\$13,472,398	\$26,974,980
Sub-Total	\$19,540,190	\$34,295,525	\$53,835,714
TOTAL SPENDING	\$98,613,993	\$174,890,811	\$273,504,804

*Package expenditures refer specifically to purchases of travel packages made by nonresidents prior to departing on their trip to Alaska.

The detailed breakdown of total spending in all categories by resident and nonresident anglers in Table 32 shows the differences in their specific purchases. Generally, nonresidents spent more than resident on trip-related items with the exception of fuel, bait and dock/mooring fees. Owing to the enhanced role that nonresidents play in Southeast fishing, it is only in the category of dock/mooring fees that residents spent more. Especially in those categories associated with travel, nonresidents spent considerably more than residents (e.g., guide fees, airfare and other travel, fish processing, rentals, restaurant meals, lodging, gifts/souvenirs, etc.). Since most people purchase equipment closer to where they live, and vacationers typically do not buy a significant amount of equipment while traveling, it is not surprising that residents outspent nonresidents in nearly every equipment category. However, reflecting the prominence of nonresidents in this region, they outspent residents for clothing, footwear, and other equipment, and nearly match resident in several other categories.

The multi-purpose nature of many equipment items precludes a similarly detailed breakdown of equipment or real estate spending in the Southeast Region for this report. Additional detailed estimates of total and average spending by expenditure category are presented in Appendices I and J.

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Table 33.—Detailed TRIP and PACKAGE spending in the Southeast Region, by residency, use of guides, and type of water fished, 2007.

	RESIDENT		NONRESIDENT		ALL ANGLERS
	Guided*	Unguided	Guided	Unguided	
FRESHWATER ANGLERS					
Trip Expenditures					
Fuel and oil		\$383,676	\$219,286	\$512,747	\$1,139,224
Guide and charter fees		\$0	\$2,414,749	\$588,639	\$3,169,947
Airfare to and from Alaska		\$0	\$1,080,118	\$1,758,496	\$2,838,613
Travel within Alaska		\$16,226	\$535,243	\$841,813	\$1,393,282
Fish processing & shipping		\$91,673	\$488,682	\$455,557	\$1,035,912
Rentals (boats, equipment, etc.)		\$0	\$169,494	\$354,121	\$523,615
Derby tickets		\$69,656	\$0	\$4,081	\$73,737
Boat launch and dock fees		\$8,687	\$0	\$263,239	\$277,805
Ice		\$10,216	\$8,488	\$26,661	\$45,364
Bait (natural bait only)		\$108,566	\$48,740	\$177,223	\$334,529
Groceries bought in stores		\$226,283	\$386,069	\$816,755	\$1,446,743
Restaurants, bars, and take-out		\$0	\$466,441	\$692,006	\$1,158,448
Overnight accommodations		\$0	\$1,564,947	\$1,386,011	\$2,950,958
Souvenirs and gifts		\$21,429	\$186,409	\$430,943	\$638,782
Other entertainment		\$49,299	\$124,968	\$140,832	\$315,099
Other		\$0	\$0	\$0	\$0
Sub-Total		\$985,711	\$7,693,634	\$8,449,125	\$17,342,058
Package Expenditures		NA*	\$2,070,725	\$1,164,897	\$3,235,622
SALTWATER ANGLERS					
Trip Expenditures					
Fuel and oil		\$7,232,882	\$1,532,460	\$4,125,662	\$13,198,038
Guide and charter fees		\$84,305	\$21,505,868	\$305,377	\$23,761,150
Airfare to and from Alaska		\$0	\$9,469,274	\$4,852,526	\$14,321,800
Travel within Alaska		\$42,165	\$1,780,545	\$750,283	\$2,572,992
Fish processing & shipping		\$1,265,507	\$5,191,906	\$701,845	\$7,667,809
Rentals (boats, equipment, etc.)		\$58,241	\$740,166	\$1,005,864	\$1,871,986
Derby tickets		\$746,192	\$47,683	\$37,464	\$831,340
Boat launch and dock fees		\$4,126,563	\$2,686	\$493,202	\$4,647,823
Ice		\$223,702	\$21,528	\$67,288	\$312,518
Bait (natural bait only)		\$1,482,050	\$47,906	\$465,636	\$2,006,804
Groceries bought in stores		\$2,676,679	\$1,888,464	\$2,604,512	\$7,280,057
Restaurants, bars, and take-out		\$235,603	\$2,333,949	\$2,155,046	\$4,750,827
Overnight accommodations		\$104,796	\$4,109,380	\$2,393,836	\$6,608,012
Souvenirs and gifts		\$23,059	\$3,002,209	\$1,082,181	\$4,107,450
Other entertainment		\$44,412	\$537,568	\$254,262	\$836,243
Other		\$0	\$199,537	\$8,184	\$207,720
Sub-Total		\$18,346,157	\$52,411,128	\$21,303,169	\$94,982,568
Package Expenditures		NA*	\$32,652,353	\$3,978,528	\$36,630,880
ALL ANGLERS					
Trip Expenditures					
Fuel and oil		\$7,616,558	\$1,751,746	\$4,638,409	\$14,337,262
Guide and charter fees		\$84,305	\$23,920,617	\$894,016	\$26,931,097
Airfare to and from Alaska		\$0	\$10,549,392	\$6,611,022	\$17,160,414
Travel within Alaska		\$58,390	\$2,315,788	\$1,592,097	\$3,966,275
Fish processing & shipping		\$1,357,181	\$5,680,588	\$1,157,402	\$8,703,721
Rentals (boats, equipment, etc.)		\$58,241	\$909,660	\$1,359,985	\$2,395,601
Derby tickets		\$815,848	\$47,683	\$41,546	\$905,077
Boat launch and dock fees		\$4,135,250	\$2,686	\$756,441	\$4,925,627
Ice		\$233,917	\$30,016	\$93,949	\$357,882
Bait (natural bait only)		\$1,590,616	\$96,647	\$642,859	\$2,341,333
Groceries bought in stores		\$2,902,963	\$2,274,532	\$3,421,267	\$8,726,800
Restaurants, bars, and take-out		\$235,603	\$2,800,391	\$2,847,052	\$5,909,275
Overnight accommodations		\$104,796	\$5,674,327	\$3,779,846	\$9,558,970
Souvenirs and gifts		\$44,489	\$3,188,618	\$1,513,125	\$4,746,231
Other entertainment		\$93,712	\$662,536	\$395,094	\$1,151,342
Other		\$0	\$199,537	\$8,184	\$207,720
Sub-Total		\$19,331,868	\$60,104,762	\$29,752,294	\$112,324,625
Package Expenditures		NA*	\$34,723,078	\$5,143,425	\$39,866,502

*estimates are not reported due to small sample size.

Economic Contributions

Expenditures by anglers generate additional economic benefits throughout the Southeast Alaska economy. Multiplier effects have been estimated separately for trip spending and package spending, and for equipment and real estate spending combined. All economic contributions have been estimated separately for residents and nonresidents. The direct effects that are shown in the following tables reflect the economic activity associated with angler spending captured within the regional economy (i.e. consumer retail spending less the value of goods imported from outside of the regional economy). For that reason, the direct output values in the tables that follow are likely to be less than the reported angler spending for any specific category.

The \$273.5 million of spending by anglers in the Southeast region in 2007 generated \$71.3 million of income to 2,243 full and part time employees and proprietors who worked in the Southeast businesses whose products were purchased by anglers. Spending by nonresidents accounted for 1,662 of the jobs and \$51.0 million of income (Table 34). In addition to the economic activity directly attributable to spending by anglers are the multiplier effects (indirect and induced effects) of that consumer spending. The indirect effect results from the increased economic activity among businesses that supply those businesses selling directly to the anglers. For example, the guide that sells directly to anglers, in turn, stimulates additional activity among the businesses that supply the guide's operations. The induced effect is the economic activity produced by household spending of income earned by workers in those businesses that are impacted by both the direct and indirect effects. Including both direct and multiplier effects, the \$273.5 million of spending in the region by anglers produced \$99.1 million of income and supported 3,063 full and part-time jobs (Table 34).

Table 34.—Southeast Region economic contributions of ALL spending for sportfishing, by residency, 2007*.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Output	\$57,516,133	\$152,306,732	\$209,822,865
Income	\$20,284,669	\$50,987,336	\$71,272,005
Employment (jobs)	582	1,662	2,243
Multiplier effects			
Output	\$21,868,892	\$63,568,253	\$85,437,145
Income	\$7,031,339	\$20,838,350	\$27,869,689
Employment (jobs)	209	611	820
Total effects			
Output	\$79,385,025	\$215,874,985	\$295,260,010
Income	\$27,316,008	\$71,825,686	\$99,141,694
Employment (jobs)	791	2,273	3,063

*Includes contributions of trip, package, equipment and real estate spending.

The relationship between the direct effect (i.e. directly attributable to the spending by anglers) and the total economic activity that it creates is commonly presented in the form of a multiplier. Typically, smaller regional economies will exhibit smaller multipliers due to the reduced opportunities to retain economic activity within the region. In the case of Southeast sportfishing, the output multiplier of 1.41 (total effect divided by direct effect) means every dollar of activity stimulated by angler spending creates an additional \$0.41 of economic activity elsewhere in the economy (compared to a statewide output multiplier of 1.62). In similar fashion, the income and employment multipliers are 1.39 and 1.37, respectively. This means that for every dollar of income paid to workers in businesses that sell directly to anglers and for every job in a business that sells directly to anglers there is an additional \$0.39 of income and 0.37 additional jobs in other businesses throughout the region that are supported by angler spending.

Employment effects are of particular importance to the state and local economy. The jobs supported by angler expenditures are shown in Table 35 categorized by the industry in which the jobs occur. The jobs directly supported by angler spending largely reflect the types of expenditures made by anglers – trip expenditures for food, bait, lodging and guide services, maintenance of real estate used for sportfishing, and retail purchases of fishing and related equipment. Sector 11 in the following table includes farming and commercial fishing and hunting and is directly affected primarily through anglers' purchases of groceries and bait. The broader distribution of jobs indirectly supported by angler spending through the multiplier effect is the result of inter-industry trade flows and the expenditures of household income that comes from angler-supported jobs.

Table 35.—Employment (jobs) directly and indirectly supported by angler expenditures in the Southeast region, by industry in which the employment occurs, 2007.

NAICS Industry Categories	Direct Effects	Multiplier Effects	Total Effects
11 Agriculture, forestry, fishing & hunting	53	35	88
21 Mining	7	1	8
22 Utilities	-	5	5
23 Construction	319	7	326
31-33 Manufacturing	22	13	35
42 Wholesale trade	68	16	84
48-49 Transportation & warehousing	124	65	189
44-45 Retail trade	418	135	553
51 Information	-	23	23
52 Finance & insurance	-	23	23
53 Real estate & rental	40	55	95
54 Professional- scientific & technical services	-	46	46
55 Management of companies	-	1	1
56 Administrative & waste services	2	59	60
61 Educational services	-	9	9
62 Health & social services	-	88	88
71 Arts- entertainment & recreation (e.g., guides)	638	27	665
72 Accommodation & food services	464	97	561
81 Other services	79	67	146
92 Government and public administration	10	48	58
Total Employment Impact	2,243	818	3,063

Table 36 presents a breakdown by residency of the economic contributions that derive from anglers' spending on equipment and real estate in the Southeast region (a subset of total spending). Including the direct and multiplier effects, the \$67.5 million spent on equipment and \$53.8 million spent on real estate (Table 30) supported 873 jobs and provided \$37.0 million of income (Table 36). Due to the different mix of equipment purchased by residents and nonresidents the relative effects of their spending is slightly different than their actual spending. Residents spent more on equipment and real estate (\$76.1 million by residents compared to \$45.2 million by nonresidents), but the nonresident spending produced slightly more income (\$19.3 million compared to \$17.7 million produced by resident spending), while resident spending supported more jobs (472 jobs compared to 401 jobs).

Table 36.—Economic contributions of expenditures for sportfishing EQUIPMENT and REAL ESTATE in the Southeast region, by residency, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Output	\$36,096,142	\$38,683,245	\$74,779,387
Income	\$13,355,478	\$14,703,471	\$28,058,949
Employment (jobs)	343	265	608
Multiplier effects			
Output	\$13,472,916	\$14,142,004	\$27,614,920
Income	\$4,305,972	\$4,598,336	\$8,904,308
Employment (jobs)	128	136	265
Total effects			
Output	\$49,569,058	\$52,825,249	\$102,394,307
Income	\$17,661,450	\$19,301,807	\$36,963,257
Employment (jobs)	472	401	873

Table 37 shows the economic contributions from spending on trips and packages, broken down by residency, use of guides, and type of water fished. Similar to angler spending, the largest economic contributions come from nonresident anglers fishing in salt water with the services of a guide. Including the direct and multiplier effects, their spending supported 1,274 jobs that provided \$35.2 million of income. That represents 41.6% and 35.5%, respectively, of all jobs and income in the region supported by sportfishing anglers.

Additional detailed estimates of the industry impacts in Southeast Alaska due to angler spending are presented in Appendices K and L.

Table 37.—Southeast Region economic contributions of combined TRIP-RELATED and PACKAGE spending for sportfishing, by residency, use of guides, and type of water.

	RESIDENT		NONRESIDENT		TOTAL*		ALL ANGLERS
	Guided**	Unguided	Guided	Unguided	Resident	Nonresident	
FRESHWATER ANGLERS							
Direct effects							
Output		\$907,746	\$8,727,750	\$7,962,183	\$1,115,661	\$16,689,933	\$17,805,594
Income		\$305,200	\$2,759,416	\$2,558,197	\$372,515	\$5,317,613	\$5,690,128
Employment		11	107	95	13	203	216
Multiplier effects							
Output		\$352,723	\$4,084,964	\$3,480,698	\$455,895	\$7,565,662	\$8,021,557
Income		\$112,597	\$1,378,099	\$1,135,496	\$149,823	\$2,513,595	\$2,663,418
Employment		3	39	34	4	73	78
Total effects							
Output		\$1,260,469	\$12,812,714	\$11,442,881	\$1,571,556	\$24,255,595	\$25,827,151
Income		\$417,797	\$4,137,515	\$3,693,693	\$522,338	\$7,831,208	\$8,353,546
Employment		14	147	129	18	276	293
SALTWATER ANGLERS							
Direct effects							
Output		\$17,416,421	\$75,930,757	\$21,002,797	\$20,304,330	\$96,933,554	\$117,237,884
Income		\$5,641,068	\$24,148,749	\$6,817,503	\$6,556,676	\$30,966,252	\$37,522,928
Employment		192	953	241	226	1,194	1,419
Multiplier effects							
Output		\$6,665,412	\$33,423,682	\$8,436,905	\$7,940,081	\$41,860,587	\$49,800,668
Income		\$2,150,884	\$11,048,563	\$2,677,856	\$2,575,544	\$13,726,419	\$16,301,963
Employment		63	321	80	76	402	478
Total effects							
Output		\$24,081,833	\$109,354,439	\$29,439,702	\$28,244,411	\$138,794,141	\$167,038,552
Income		\$7,791,952	\$35,197,312	\$9,495,359	\$9,132,220	\$44,692,671	\$53,824,891
Employment		255	1,274	321	301	1,595	1,897
ALL ANGLERS							
Direct effects							
Output		\$18,324,167	\$84,658,507	\$28,964,980	\$21,419,991	\$113,623,487	\$135,043,478
Income		\$5,946,268	\$26,908,165	\$9,375,700	\$6,929,191	\$36,283,865	\$43,213,056
Employment		202	1,060	336	239	1,396	1,635
Multiplier effects							
Output		\$7,018,135	\$37,508,646	\$11,917,603	\$8,395,976	\$49,426,249	\$57,822,225
Income		\$2,263,481	\$12,426,662	\$3,813,352	\$2,725,367	\$16,240,014	\$18,965,381
Employment		67	361	114	80	475	555
Total effects							
Output		\$25,342,302	\$122,167,153	\$40,882,583	\$29,815,967	\$163,049,736	\$192,865,703
Income		\$8,209,749	\$39,334,827	\$13,189,052	\$9,654,558	\$52,523,879	\$62,178,437
Employment		269	1,421	451	319	1,871	2,190

* Total guided and unguided trip related and package spending.

**Estimates are not reported due to small sample size.

The economic activity directly and indirectly generated by sportfishing also produces tax revenues for local, state and federal governments. The IMPLAN model produces generalized estimates of tax revenues that are based on existing statewide ratios of output, income and employment to all tax revenues. It is estimated that sportfishing expenditures in Southeast Alaska in 2007 provided \$22.1 million and \$21.5 million of state/local and federal tax revenues, respectively (Table 38). Nearly three-fourths of the tax revenues (72.0%) were the result of spending by nonresident anglers.

Table 38.—Tax revenues generated in the Southeast Region from the economic contributions of sportfishing, 2007.

	State and Local Tax Revenues	Federal Tax Revenues	Total tax Revenues
RESIDENT ANGLERS			
Trip Expenditures (non-package)	\$2,861,336	\$2,193,793	\$5,055,129
Package Expenditures			\$0
Equipment & Real Estate Expenditures	\$3,514,900	\$3,657,338	\$7,172,239
Subtotal	\$6,376,236	\$5,851,132	\$12,227,368
NONRESIDENT ANGLERS			
Trip Expenditures (non-package)	\$9,237,295	\$8,056,263	\$17,293,558
Package Expenditures	\$4,135,685	\$3,791,372	\$7,927,057
Equipment & Real Estate Expenditures	\$2,313,802	\$3,834,147	\$6,147,950
Subtotal	\$15,686,783	\$15,681,782	\$31,368,564
ALL ANGLERS			
Trip Expenditures (non-package)	\$12,098,631	\$10,250,056	\$22,348,687
Package Expenditures	\$4,135,685	\$3,791,372	\$7,927,057
Equipment & Real Estate Expenditures	\$5,828,703	\$7,491,486	\$13,320,188
Total	\$22,063,019	\$21,532,913	\$43,595,932

SOUTHCENTRAL REGION

This section presents the detailed expenditures and economic contributions for sportfishing in the Southcentral Region. The spending and contribution totals in the following Southcentral Region tables do not include the cost of fishing licenses and stamps. This expenditure is not included in the subsequent regional tables because licenses and stamps are purchased from state government and cannot be assigned to a particular region. However, it is included in the statewide analysis (Table 20).

Angler Days

Of the total 2.5 million days of sportfishing in Alaska in 2007, 1.8 million days of fishing occurred in Southcentral Alaska. Approximately 1.1 million (61%) of those days were taken by Alaska residents, while nonresidents accounted for 0.7 million anglers days (39%). The majority of the angler days of fishing were unguided although nonresidents (40%) were much more likely than residents (10%) to take guided fishing trips. Both resident and nonresident anglers in the Southcentral Region were more likely to fish freshwater than saltwater (Table 39).

Table 39.—Southcentral Region angler days, by residency, water type, and guided/unguided*, 2007.

	RESIDENT		NONRESIDENT		ALL ANGLERS	
	Angler-Days	%	Angler-Days	%	Angler-Days	%
Freshwater						
Guided	46,653	6.7%	158,300	32.4%	204,953	17.3%
Unguided	647,403	93.3%	329,548	67.6%	976,951	82.7%
Total	694,056	100.0%	487,848	100.0%	1,181,904	100.0%
Saltwater						
Guided	56,711	14.5%	127,593	57.2%	184,304	30.0%
Unguided	335,195	85.5%	95,402	42.8%	430,597	70.0%
Total	391,906	100.0%	222,995	100.0%	614,901	100.0%
Total Guided	103,364	9.5%	285,893	40.2%	389,257	21.7%
Total Unguided	982,598	90.5%	424,950	59.8%	1,407,548	78.3%
TOTAL	1,085,962	100.0%	710,843	100.0%	1,796,805	100.0%

Source: 2007 Statewide Harvest Survey, Alaska Department of Fish and Game.

*Totals reported here do not exactly match published statewide and regional totals from the 2007 SWHS due to the fact that it is not possible to identify the water type or guided/unguided status of some SWHS survey responses. The totals reported in this table reflect the summary of all days fished within a region that could be assigned to a specific residency, water type, and guided/unguided category. Approximately 4,177 days fished (0.16% of 2.5 million days) could not be assigned to a strata category and thus were not included in these totals.

Expenditures

Where anglers spend their money is not necessarily tied to where they fish or where they live. In actuality, an angler on a one-day or multi-day fishing trip might start from their home, purchase fuel, food, or other supplies on the way to their destination, and then make additional purchases such as bait, ice, or guide services, closer to where they fish. The following expenditure tables take this into account by reporting total expenditures made in the Southcentral region made by all Alaska resident anglers, regardless of where they fished or the region where they live, and by all nonresident anglers who live outside of Alaska regardless of where they fished. Together, resident and nonresident anglers spent \$988.6 million in Southcentral Alaska related to sportfishing, not including their purchases of licenses and stamps. Of that total, 42.3% (\$417.9 million) was non-package trip spending. When combined with fishing packages, all trip-related spending accounted for 51.4% (\$508.0 million) of all sportfishing expenditures in the region. Spending on fishing and fishing-related equipment (\$357.2 million) represented more than one-third (36.1%) of all spending in the region, while spending for maintenance and construction of real estate that is used primarily for sportfishing was 12.5% of the total. (Table 40).

Table 40.—Southcentral Region total spending for sportfishing by expenditure category and residency, 2007.

Expenditures	Resident Anglers		Nonresident Anglers		All Anglers	
	Spending	%	Spending	%	Spending	%
Trip	\$181,889,019	32.4%	\$236,024,061	55.2%	\$417,913,080	42.3%
Package	\$0	0.0%	\$90,130,556	21.1%	\$90,130,556	9.1%
Equipment	\$328,171,050	58.5%	\$29,013,940	6.8%	\$357,184,990	36.1%
Real Estate	\$50,895,003	9.1%	\$72,434,491	16.9%	\$123,329,493	12.5%
Total	\$560,955,071	100.0%	\$427,603,048	100.0%	\$988,558,119	100.0%

*Package expenditures refer specifically to travel packages purchased by nonresidents prior to departing on their trip to Alaska.

Similar to statewide spending, more money was spent in the Southcentral region by residents (\$561.0 million) than nonresidents (\$427.6 million). Most resident spending was associated with purchases of equipment used for fishing (\$328.2 million), followed by trip expenditures (\$181.9 million), and real estate (\$50.9 million). More than one-half of spending by nonresidents in the Southcentral region was trip-related (\$236.0 million) followed by pre-purchased packages (\$90.1 million). Nonresident anglers spent \$72.4 million on real estate and \$29.0 million on fishing equipment (Table 40). It should be noted that all spending refers specifically to purchases that were made in the Southcentral region; therefore it is not surprising that equipment expenditures by nonresidents were disproportionately lower than residents since anglers typically purchase most of their fishing tackle and equipment closer to where they live.

Table 41 presents a summary of the average spending that took place in the Southcentral region for the major expenditure categories. Trip and package spending is based on total spending in the region and is averaged across all days of fishing that took place in the region, regardless of where individual resident anglers lived or fished. Due to the durable nature of equipment and its use across many trips, equipment and real estate expenditures are shown as the average spent in the region across all resident and nonresident anglers in Alaska. Overall, anglers fishing in Alaska spent an average of \$282.75 in the Southcentral region per day of fishing for all trip and package related purchases (fuel, groceries, bait, lodging, restaurants, etc.). The average angler spent \$1,012.09 per year in the Southcentral region on fishing and related equipment and real estate (rods, reels, boats, motors, clothing, maintenance, etc.; Table 41).

Table 41.—Average expenditures in the Southcentral region made by Alaska resident and nonresident anglers, 2007*

	Resident Anglers	Nonresident Anglers	All Anglers
<i>\$ per angler-day</i>			
Trip Expenditures	\$167.49	\$332.03	\$232.59
Package Expenditures	NA**	\$126.79	\$50.16
Total trip spending	\$167.49	\$458.83	\$282.75
<i>annual \$ per licensed angler</i>			
Equipment Expenditures	\$1,725.87	\$101.55	\$752.74
Real Estate Expenditures	\$266.96	\$254.25	\$259.35
Total equipment & real estate spending	\$1,992.83	\$355.80	\$1,012.09

*Estimates of average spending for detailed trip and equipment categories are presented in Appendix L.

**Package expenditures refer specifically to purchases of travel packages made by nonresidents prior to departing on their trip to Alaska.

The patterns of spending on an average basis are similar to those on a total basis: nonresidents, on average, spent more per day for trip-related purchases in the Southcentral region than Alaska residents (\$458.83 per day compared to \$167.49 per day). Conversely, the average Alaska resident spent more in the Southcentral region than the average nonresident for equipment (\$1,725.87 compared to \$101.55). Interestingly, the average expenditure on real estate for fishing (approximately \$260.) was the same for both resident and nonresident anglers.

Anglers make a wide range of purchases to support their fishing activity including trip-related expenditures, fishing tackle and other fishing-related equipment, and expenses related to real estate that they use for fishing. Trip-related expenses refer to spending for temporary or consumable goods and services that anglers make while on a particular fishing trip. These range from food and lodging to travel expenses (e.g., fuel, air taxis, etc.), groceries, bait, and derby tickets. The full list of trip items and the amount spent by resident and nonresidents in Southcentral Alaska is presented in Table 42.

Some nonresident anglers opt to pre-purchase a packaged fishing expedition from one of the many outfitters, guides and lodges in Alaska. Such packages typically offer a range of services for one price including transportation, guides, food and lodging. The survey of nonresidents asked anglers to report spending for any packages that they may have purchased and to indicate which amenities were included in the package.

Equipment expenditures refer to a list of tackle and other items that are used only for fishing, plus other equipment that might be used in other pursuits in addition to fishing. The details of total spending in the Southcentral region for these items is listed in the bottom half of Table 42. The dollar figures represent total amounts spent in 2007 on fishing equipment and only that portion of multi-use equipment that anglers reported was used specifically for fishing.

The real estate spending in Table 42 shows the annual costs of construction and maintenance that anglers reported was associated with real estate that is used primarily for sportfishing purposes. These numbers do not include any spending that anglers may have made to purchase or lease real estate used for sportfishing. An effort was made in the survey to capture lease/purchase spending for real estate, but the information that was collected was deemed too unreliable to provide an accurate estimation of that spending and is not included here.

The detailed breakdown of total spending in all categories by resident and nonresident anglers in Table 42 shows the differences in their specific purchases. Generally, nonresidents spent more than residents on trip-related items. However, in the Southcentral region, residents spent considerably more than nonresidents on those items associated with every outing, including one-day trips that are more typical of resident anglers (fuel, dock/mooring fees, ice, bait, and groceries). Nonresidents spent considerably more than residents on those items associated with extended travel (e.g., airfare and other travel, lodging, restaurant meals, gifts/souvenirs) and fishing related expenses that they cannot reasonably accommodate on their own (guide fees, fish processing, equipment rentals). Since most people purchase equipment closer to where they live, and vacationers typically do not buy a significant amount of equipment while traveling, it is not surprising that residents outspent nonresidents in nearly every equipment category except the miscellaneous "other" equipment category.

Further breakdowns of trip and package spending are presented in Table 43 which shows total spending by residency, type of water fished, and use of guides. In this breakdown, the greatest amount of trip spending came from nonresident anglers on guided trips fishing in salt water (\$86.1 million). Those anglers accounted for 20.6% of all trip spending. Nonresident anglers on guided fishing trips in fresh water spent the most on package trips (\$49.2 million), or 54.6% of all package spending in the region.

The multi-purpose nature of many equipment items precludes a similarly detailed breakdown of equipment or real estate spending in the Southcentral Region for this report. Detailed estimates of total and average spending by expenditure category are presented in Appendices I and J.

Table 42.—Detailed spending for sportfishing in Southcentral Alaska, by residency, 2007.

	Resident	Nonresident	Total
Trip Expenditures			
Fuel	\$54,295,081	\$15,323,766	\$69,618,847
Guide	\$29,089,167	\$53,828,140	\$82,917,307
Air	\$2,397,597	\$32,448,467	\$34,846,064
Travel	\$751,980	\$6,403,613	\$7,155,593
Process	\$7,099,744	\$22,245,717	\$29,345,461
Rentals	\$2,144,824	\$21,886,874	\$24,031,699
Derby	\$1,518,191	\$379,589	\$1,897,780
Dock	\$8,742,469	\$1,624,618	\$10,367,086
Ice	\$3,082,403	\$900,241	\$3,982,644
Bait	\$4,761,052	\$1,432,653	\$6,193,705
Groceries	\$29,025,822	\$18,948,371	\$47,974,193
Meals	\$14,061,048	\$18,656,438	\$32,717,487
Lodging	\$17,953,173	\$27,251,408	\$45,204,580
Gifts	\$2,569,424	\$10,663,926	\$13,233,350
Amusements	\$4,309,182	\$3,636,888	\$7,946,070
Other	\$87,862	\$393,353	\$481,215
Sub-Total	\$181,889,019	\$236,024,061	\$417,913,080
Package Expenditures			
	NA*	\$90,130,556	\$90,130,556
Equipment Expenditures			
Rods, reels, & components	\$15,269,246	\$4,245,931	\$19,515,177
Fishing tackle	\$9,379,640	\$4,837,907	\$14,217,547
Tackle boxes	\$1,306,540	\$289,359	\$1,595,900
Depth finders, fish finders, etc.	\$6,622,578	\$44,933	\$6,667,511
Landing ne's, dipnets & gillnets	\$2,782,113	\$255,250	\$3,037,363
Misc. fishing equip	\$3,283,959	\$1,204,103	\$4,488,062
Shellfish fishing equip	\$1,502,762	\$136,615	\$1,639,377
Fish mounting (taxidermy)	\$1,454,872	\$390,778	\$1,845,650
Books and magazines	\$939,037	\$428,995	\$1,368,032
Items to store/preserve fish	\$5,643,839	\$1,984,562	\$7,628,401
Coolers, fish boxes	\$2,296,735	\$1,313,396	\$3,610,131
Clothing	\$5,056,318	\$1,875,674	\$6,931,992
Boots, shoes, waders	\$4,256,400	\$1,307,575	\$5,563,975
Life jackets, survival suits	\$2,732,546	\$79,968	\$2,812,514
Boats, canoes, other watercraft	\$84,377,363	\$2,153,623	\$86,530,986
Boat motors	\$26,321,397	\$707,214	\$27,028,611
Trailers, hitches, and acc	\$4,498,567	\$198,535	\$4,697,102
Other boat parts and acc	\$10,469,616	\$517,946	\$10,987,563
Bear spray, bug spray, etc	\$894,892	\$370,319	\$1,265,211
Firearms	\$4,249,236	\$81,983	\$4,331,218
Cameras, binoculars	\$4,078,028	\$624,609	\$4,702,636
Tents, backpacks, sleeping bags	\$2,775,877	\$221,010	\$2,996,888
Camping trailer	\$27,400,300	\$15,757	\$27,416,058
Other camping equip	\$1,930,562	\$186,481	\$2,117,042
Vehicles (trucks, SUVs, etc)	\$58,528,989	\$3,914,402	\$62,443,391
Airplanes and related equipment	\$2,697,880	\$874,940	\$3,572,819
ATVs, snowmachines	\$18,649,536	\$0	\$18,649,536
Boat/camper registrations	\$2,937,391	\$246,644	\$3,184,035
Vehicle, boat or airplane repair	\$15,626,970	\$496,764	\$16,123,734
Other	\$207,861	\$8,666	\$216,528
Sub-Total	\$328,171,050	\$29,013,940	\$357,184,990
Real Estate Expenditures			
Real estate repairs	\$13,095,701	\$9,265,228	\$22,360,928
Real estate construction	\$37,799,302	\$63,169,263	\$100,968,565
Sub-Total	\$50,895,003	\$72,434,491	\$123,329,493
TOTAL SPENDING	\$560,955,071	\$427,603,048	\$988,558,119

*Package expenditures refer specifically to purchases of travel packages made by nonresidents prior to departing on their trip to Alaska.

Table 43.—Detailed total TRIP and PACKAGE spending in Southcentral Alaska, by residency, use of guides, and type of water fished, 2007.

	RESIDENT		NONRESIDENT		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	
FRESHWATER ANGLERS					
Trip Expenditures					
Fuel and oil	\$2,742,460	\$24,366,478	\$4,101,499	\$5,517,436	\$36,727,873
Guide and charter fees	\$12,038,032	\$1,478,417	\$24,892,052	\$2,837,944	\$41,246,447
Airfare to and from Alaska	\$1,212,832	\$690,530	\$9,752,250	\$12,659,783	\$24,315,395
Travel within Alaska	\$324,786	\$196,692	\$2,379,647	\$1,794,963	\$4,696,089
Fish processing & shipping	\$319,038	\$2,543,272	\$5,334,817	\$4,931,189	\$13,128,316
Rentals (boats, equipment, etc.)	\$0	\$1,294,435	\$6,482,627	\$7,759,341	\$15,536,403
Derby tickets	\$27,953	\$299,004	\$59,905	\$40,267	\$427,129
Boat launch and dock fees	\$14,288	\$3,435,880	\$42,488	\$778,927	\$4,271,582
Ice	\$85,119	\$1,588,106	\$191,731	\$412,875	\$2,277,831
Bait (natural bait only)	\$16,343	\$1,546,166	\$157,931	\$465,618	\$2,186,057
Groceries bought in stores	\$1,954,615	\$15,657,441	\$4,750,100	\$8,274,104	\$30,636,260
Restaurants, bars, and take-out	\$2,209,260	\$5,617,101	\$5,752,102	\$5,076,313	\$18,654,776
Overnight accommodations	\$5,376,485	\$5,805,912	\$9,808,358	\$4,628,686	\$25,619,442
Souvenirs and gifts	\$368,755	\$788,293	\$3,212,855	\$3,368,461	\$7,738,364
Other entertainment	\$559,685	\$1,001,071	\$1,475,496	\$997,645	\$4,033,897
Other	\$0	\$46,262	\$212,375	\$6,930	\$265,567
Sub-Total	\$27,249,652	\$66,355,060	\$78,606,235	\$59,550,482	\$231,761,428
Package Expenditures	NA*	NA*	\$49,239,651	\$9,308,656	\$58,548,307
SALTWATER ANGLERS					
Trip Expenditures					
Fuel and oil	\$2,446,003	\$24,740,140	\$4,043,535	\$1,661,296	\$32,890,974
Guide and charter fees	\$14,864,487	\$708,231	\$25,822,420	\$275,723	\$41,670,860
Airfare to and from Alaska	\$494,235	\$0	\$8,356,457	\$1,679,976	\$10,530,669
Travel within Alaska	\$21,360	\$209,141	\$2,131,894	\$97,109	\$2,459,503
Fish processing & shipping	\$1,640,966	\$2,596,468	\$10,435,633	\$1,544,079	\$16,217,145
Rentals (boats, equipment, etc.)	\$95,175	\$755,215	\$6,929,732	\$715,174	\$8,495,296
Derby tickets	\$186,016	\$1,005,218	\$255,843	\$23,574	\$1,470,651
Boat launch and dock fees	\$47,398	\$5,244,902	\$64,765	\$738,438	\$6,095,504
Ice	\$193,116	\$1,216,061	\$206,545	\$89,090	\$1,704,813
Bait (natural bait only)	\$74,389	\$3,124,154	\$182,548	\$626,556	\$4,007,647
Groceries bought in stores	\$2,079,320	\$9,334,446	\$4,364,441	\$1,559,726	\$17,337,933
Restaurants, bars, and take-out	\$2,283,589	\$3,951,099	\$7,005,022	\$823,001	\$14,062,711
Overnight accommodations	\$2,901,035	\$3,869,740	\$11,674,359	\$1,140,004	\$19,585,139
Souvenirs and gifts	\$676,856	\$735,520	\$3,584,090	\$498,519	\$5,494,985
Other entertainment	\$374,483	\$2,373,944	\$904,726	\$259,021	\$3,912,174
Other	\$6,847	\$34,753	\$174,048	\$0	\$215,647
Sub-Total	\$28,385,275	\$59,899,032	\$86,136,056	\$11,731,288	\$186,151,652
Package Expenditures	NA*	NA*	\$26,739,321	\$4,842,927	\$31,582,248
ALL ANGLERS					
Trip Expenditures					
Fuel and oil	\$5,188,462	\$49,106,619	\$8,145,034	\$7,178,732	\$69,618,847
Guide and charter fees	\$26,902,519	\$2,186,648	\$50,714,472	\$3,113,668	\$82,917,307
Airfare to and from Alaska	\$1,707,067	\$690,530	\$18,108,707	\$14,339,760	\$34,846,064
Travel within Alaska	\$346,147	\$405,833	\$4,511,541	\$1,892,072	\$7,155,593
Fish processing & shipping	\$1,960,004	\$5,139,740	\$15,770,450	\$6,475,268	\$29,345,461
Rentals (boats, equipment, etc.)	\$95,175	\$2,049,649	\$13,412,359	\$8,474,515	\$24,031,699
Derby tickets	\$213,969	\$1,304,222	\$315,748	\$63,841	\$1,897,780
Boat launch and dock fees	\$61,686	\$8,680,782	\$107,252	\$1,517,365	\$10,367,086
Ice	\$278,236	\$2,804,167	\$398,276	\$501,965	\$3,982,644
Bait (natural bait only)	\$90,732	\$4,670,319	\$340,479	\$1,092,174	\$6,193,705
Groceries bought in stores	\$4,033,935	\$24,991,887	\$9,114,541	\$9,833,830	\$47,974,193
Restaurants, bars, and take-out	\$4,492,849	\$9,568,200	\$12,757,124	\$5,899,314	\$32,717,487
Overnight accommodations	\$8,277,521	\$9,675,652	\$21,482,717	\$5,768,691	\$45,204,580
Souvenirs and gifts	\$1,045,611	\$1,523,813	\$6,796,946	\$3,866,980	\$13,233,350
Other entertainment	\$934,167	\$3,375,015	\$2,380,222	\$1,256,665	\$7,946,070
Other	\$6,847	\$81,015	\$386,423	\$6,930	\$481,215
Sub-Total	\$55,634,927	\$126,254,092	\$164,742,291	\$71,281,770	\$417,913,080
Package Expenditures	NA*	NA*	\$75,978,972	\$14,151,584	\$90,130,556

*Package expenditures refer specifically to travel packages purchased by nonresidents prior to departing on their trip to Alaska.

Economic Contributions

Expenditures by anglers generate additional economic benefits throughout the Southcentral Alaska economy. Multiplier effects have been estimated separately for trip spending and package spending, and for equipment and real estate spending combined. All economic contributions have been estimated separately for residents and nonresidents. The direct effects that are shown in the following tables reflect the economic activity associated with angler spending captured within the regional economy (i.e. consumer retail spending less the value of goods imported from outside of the regional economy). For that reason, the direct output values in the tables that follow are likely to be less than the reported angler spending for any specific category.

The \$988.6 million of spending by anglers in the Southcentral region in 2007 generated \$239.8 million of income to 7,897 full and part time employees and proprietors who worked in the Southcentral businesses whose products were purchased by anglers (Table 44). Spending by nonresidents accounted for 4,329 of the jobs and \$130.7 million of income (Table 44). In addition to the economic activity directly attributable to spending by anglers are the multiplier effects (indirect and induced effects) of that consumer spending. The indirect effect results from the increased economic activity among businesses that supply those businesses selling directly to the anglers. For example, the guide that sells directly to anglers, in turn, stimulates additional activity among the businesses that supply the guide's operations. The induced effect is the economic activity produced by household spending of income earned by workers in those businesses that are impacted by both the direct and indirect effects. Including both direct and multiplier effects, the \$988.6 million of spending in the region by anglers produced \$386.5 million of income and supported 11,535 full and part-time jobs (Table 44).

Table 44.—Southcentral Region economic contributions of ALL spending for sportfishing, by residency, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Output	\$322,078,119	\$374,524,615	\$696,602,734
Income	\$109,015,231	\$130,743,922	\$239,759,153
Employment (jobs)	3,569	4,329	7,897
Multiplier effects			
Output	\$212,759,887	\$256,182,892	\$468,942,779
Income	\$65,814,765	\$80,889,815	\$146,704,580
Employment (jobs)	1,601	2,036	3,637
Total effects			
Output	\$534,838,006	\$630,707,507	\$1,165,545,513
Income	\$174,829,996	\$211,633,737	\$386,463,733
Employment (jobs)	5,170	6,365	11,535

The relationship between the direct effect (i.e. directly attributable to the spending by anglers) and the total economic activity that it creates is commonly presented in the form of a multiplier. Typically, smaller regional economies will exhibit smaller multipliers due to the reduced opportunities to retain economic activity within the region. In the case of Southcentral sportfishing, the output multiplier of 1.67 (total effect divided by direct effect) means every dollar of activity stimulated by angler spending creates an additional \$0.67 of economic activity elsewhere in the economy (this is compared to a statewide output multiplier of 1.62). The

slightly larger regional output multiplier suggests that expenditures within this region are slightly concentrated in sectors that have a higher multiplier. In similar fashion, the income and employment multipliers are 1.61 and 1.46, respectively. This means that for every dollar of income paid to workers in businesses that sell directly to anglers and for every job in a business that sells directly to anglers there is an additional \$0.61 of income and 0.46 additional jobs in other businesses throughout the region that are supported by angler spending.

Employment effects are of particular importance to the state and local economy. The jobs supported by angler expenditures are shown in Table 45 categorized by the industry in which the jobs occur. The jobs directly supported by angler spending largely reflect the types of expenditures made by anglers – trip expenditures for food, bait, lodging and guide services, maintenance of real estate used for sportfishing, and retail purchases of fishing and related equipment. Sector 11 in the following table includes farming and commercial fishing and hunting and is directly affected primarily through anglers' purchases of groceries and bait. The broader distribution of jobs indirectly supported by angler spending through the multiplier effect is the result of inter-industry trade flows and the expenditures of household income that comes from angler-supported jobs.

Table 45.—Employment (jobs) directly and indirectly supported by angler expenditures in the Southcentral region, by industry in which the employment occurs, 2007.

NAICS Industry Categories	Direct Effects	Multiplier Effects	Total Effects
11 Agriculture, forestry, fishing & hunting	145	68	213
21 Mining	3	59	62
22 Utilities	-	34	34
23 Construction	695	40	736
31-33 Manufacturing	133	118	251
42 Wholesale trade	302	104	406
48-49 Transportation & warehousing	231	210	440
44-45 Retail trade	1,964	526	2,490
51 Information	-	75	75
52 Finance & insurance	-	137	137
53 Real estate & rental	308	325	634
54 Professional- scientific & technical services	-	280	280
55 Management of companies	-	42	42
56 Administrative & waste services	3	216	219
61 Educational services	-	51	51
62 Health & social services	-	436	436
71 Arts- entertainment & recreation (e.g., guides)	2,330	130	2,459
72 Accommodation & food services	1,567	352	1,919
81 Other services	173	271	445
92 Government and public administration	44	163	207
Total Employment Impact	7,897	3,638	11,535

Table 46 presents a breakdown by residency of the economic contributions that derive from anglers' spending on equipment and real estate in the Southcentral region (a subset of total spending). Including the direct and multiplier effects, the \$357.2 million spent on equipment and \$123.3 million spent on real estate in Southcentral (Table 40) supported 3,317 jobs and provided \$132.2 million of income. Spending on equipment and real estate by residents supported 2,330 jobs and provided \$84.2 million of income while nonresident angler spending on these items supported 987 jobs and \$48.0 million of income.

Table 46.—Economic contributions of expenditures for sportfishing EQUIPMENT and REAL ESTATE in the Southcentral region, by residency, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Output	\$146,123,710	\$82,846,695	\$228,970,405
Income	\$56,592,405	\$31,248,169	\$87,840,574
Employment (jobs)	1,597	548	2,145
Multiplier effects			
Output	\$86,806,104	\$51,071,762	\$137,877,866
Income	\$27,641,437	\$16,772,094	\$44,413,531
Employment (jobs)	732	439	1,172
Total effects			
Output	\$232,929,814	\$133,918,457	\$366,848,271
Income	\$84,233,842	\$48,020,263	\$132,254,105
Employment (jobs)	2,330	987	3,317

Table 47 shows the economic contributions from spending on trips and packages, broken down by residency, use of guides, and type of water fished. Similar to angler spending in Southeast Alaska, the largest economic contributions come from nonresident anglers fishing with the services of a guide. Including the direct and multiplier effects, nonresident spending on guided fishing supported 4,197 jobs that provided \$122.7 million of income. That represents 51.1% and 48.3% of all jobs and income supported by sportfishing anglers in the region, respectively. Additional detailed estimates of the industry impacts in Southcentral Alaska due to angler spending are presented in Appendices K and L.

Table 47.—Southcentral Region economic contributions of combined TRIP-RELATED and PACKAGE spending for sportfishing, by residency, use of guides, and type of water.

	RESIDENT		NONRESIDENT		TOTAL*		ALL ANGLERS*
	Guided	Unguided	Guided	Unguided	Resident	Nonresident	
FRESHWATER ANGLERS							
Direct effects							
Output	\$26,235,805	\$63,718,045	\$116,412,556	\$57,793,487	\$89,953,850	\$174,206,043	\$264,159,893
Income	\$8,089,164	\$18,556,535	\$39,082,125	\$20,849,225	\$26,645,699	\$59,931,350	\$86,577,049
Employment	367	606	1,592	645	973	2,237	3,210
Multiplier effects							
Output	\$18,707,451	\$46,090,614	\$83,691,281	\$41,819,471	\$64,798,065	\$125,510,752	\$190,308,817
Income	\$6,028,334	\$13,691,946	\$26,697,665	\$12,673,171	\$19,720,280	\$39,370,836	\$59,091,116
Employment	144	305	658	314	449	972	1,421
Total effects							
Output	\$44,943,256	\$109,808,659	\$200,103,837	\$99,612,958	\$154,751,915	\$299,716,795	\$454,468,710
Income	\$14,117,498	\$32,248,481	\$65,779,790	\$33,522,396	\$46,365,979	\$99,302,186	\$145,668,165
Employment	511	911	2,251	958	1,422	3,209	4,631
SALTWATER ANGLERS							
Direct effects							
Output	\$27,657,787	\$58,342,772	\$103,915,685	\$13,556,192	\$86,000,559	\$117,471,877	\$203,472,436
Income	\$8,656,289	\$17,120,838	\$35,081,095	\$4,483,308	\$25,777,127	\$39,564,403	\$65,341,530
Employment	403	596	1,393	151	998	1,544	2,542
Multiplier effects							
Output	\$17,875,434	\$43,280,284	\$69,721,064	\$9,879,314	\$61,155,718	\$79,600,378	\$140,756,096
Income	\$5,669,935	\$12,783,113	\$21,808,842	\$2,938,043	\$18,453,048	\$24,746,885	\$43,199,933
Employment	140	280	554	72	420	625	1,045
Total effects							
Output	\$45,533,221	\$101,623,056	\$173,636,749	\$23,435,506	\$147,156,277	\$197,072,255	\$344,228,532
Income	\$14,326,224	\$29,903,951	\$56,889,937	\$7,421,351	\$44,230,175	\$64,311,288	\$108,541,463
Employment	543	875	1,947	223	1,418	2,169	3,587
ALL ANGLERS							
Direct effects							
Output	\$53,893,592	\$122,060,817	\$220,328,241	\$71,349,679	\$175,954,409	\$291,677,920	\$467,632,329
Income	\$16,745,453	\$35,677,373	\$74,163,220	\$25,332,533	\$52,422,826	\$99,495,753	\$151,918,579
Employment	769	1,202	2,985	796	1,971	3,781	5,752
Multiplier effects							
Output	\$36,582,885	\$89,370,898	\$153,412,345	\$51,698,785	\$125,953,783	\$205,111,130	\$331,064,913
Income	\$11,698,269	\$26,475,059	\$48,506,507	\$15,611,214	\$38,173,328	\$64,117,721	\$102,291,049
Employment	284	584	1,212	385	869	1,597	2,466
Total effects							
Output	\$90,476,477	\$211,431,715	\$373,740,586	\$123,048,464	\$301,908,192	\$496,789,050	\$798,697,242
Income	\$28,443,722	\$62,152,432	\$122,669,727	\$40,943,747	\$90,596,154	\$163,613,474	\$254,209,628
Employment	1,054	1,786	4,197	1,181	2,840	5,378	8,218

* Total guided and unguided trip related and package spending.

The economic activity directly and indirectly generated by sportfishing also produces tax revenues for local, state and federal governments. The IMPLAN model produces generalized estimates of tax revenues that are based on existing statewide ratios of output, income and employment to all tax revenues. It is estimated that sportfishing expenditures in Southcentral Alaska in 2007 provided \$90.8 million and \$89.5 million of state/local and federal tax revenues, respectively (Table 48). Slightly more than one-half of the tax revenues (51.9%) were the result of spending by nonresident anglers.

Table 48.—Tax revenues generated in the Southcentral Region from the economic contributions of sportfishing, 2007.

	State and Local Tax Revenues	Federal Tax Revenues	Total tax Revenues
RESIDENT ANGLERS			
Trip Expenditures (non-package)	\$25,622,563	\$22,157,351	\$47,779,914
Package Expenditures	\$0	\$0	\$0
Equipment & Real Estate Expenditures	\$19,989,967	\$18,793,317	\$38,783,285
Subtotal	\$45,612,530	\$40,950,668	\$86,563,199
NONRESIDENT ANGLERS			
Trip Expenditures (non-package)	\$27,922,445	\$28,050,063	\$55,972,508
Package Expenditures	\$10,432,039	\$10,252,542	\$20,684,581
Equipment & Real Estate Expenditures	\$6,832,617	\$10,202,363	\$17,034,979
Subtotal	\$45,187,101	\$48,504,967	\$93,692,068
ALL ANGLERS			
Trip Expenditures (non-package)	\$53,545,007	\$50,207,414	\$103,752,422
Package Expenditures	\$10,432,039	\$10,252,542	\$20,684,581
Equipment & Real Estate Expenditures	\$26,822,584	\$28,995,680	\$55,818,264
Total	\$90,799,631	\$89,455,636	\$180,255,267

INTERIOR REGION

This section presents the detailed expenditures and economic contributions for sportfishing in the Interior Region. The spending and contribution totals in the following Interior Region tables do not include the cost of fishing licenses and stamps. This expenditure is not included in the subsequent regional tables because licenses and stamps are purchased from state government and cannot be ascribed to a particular region. However, it is included in the statewide analysis (Table 20).

Angler Days

A total 202,750 days of sportfishing occurred in the Interior region in 2007, and over three-fourths of the angler days fished (154,303) were taken by Alaska residents. Overall, nearly 9 of every 10 days in the Interior were unguided, although nonresident anglers (27%) were more likely than residents (5%) to take guided fishing trips in the region. There was almost no saltwater sportfishing in the Interior region except for a few days reported by nonresidents (Table 49).

Table 49.—Interior Region angler days, by residency, water type, and guided/unguided*, 2007.

	RESIDENT		NONRESIDENT		ALL ANGLERS	
	Angler-Days	%	Angler-Days	%	Angler-Days	%
Freshwater						
Guided	7,493	4.9%	13,184	27.3%	20,677	10.2%
Unguided	146,810	95.1%	35,143	72.7%	181,953	89.8%
Total	154,303	100.0%	48,327	100.0%	202,630	100.0%
Saltwater						
Guided	0	0.0%	114	95.0%	114	95.0%
Unguided	0	0.0%	6	5.0%	6	5.0%
Total	0	0.0%	120	100.0%	120	100.0%
Total Guided	7,493	4.9%	13,298	27.4%	20,791	10.3%
Total Unguided	146,810	95.1%	35,149	72.6%	181,959	89.7%
TOTAL	154,303	100.0%	48,447	100.0%	202,750	100.0%

Source: 2007 Statewide Harvest Survey, Alaska Department of Fish and Game.

*Totals reported here do not exactly match published statewide and regional totals from the 2007 SWHS due to the fact that it is not possible to identify the water type or guided/unguided status of some SWHS survey responses. The totals reported in this table reflect the summary of all days fished within a region that could be assigned to a specific residency, water type, and guided/unguided category. Approximately 4,177 days fished (0.16% of 2.5 million days) could not be assigned to a strata category and thus were not included in these totals.

Expenditures

Where anglers spend their money is not necessarily tied to where they fish or where they live. In actuality, an angler on a one-day or multi-day fishing trip might start from their home, purchase fuel, food, or other supplies on the way to their destination, and then make additional purchases such as bait, ice, or guide services, closer to where they fish. The following expenditure tables take this into account by reporting total expenditures in the Interior region made by all Alaska resident anglers, regardless of where they fished or the region where they live, and by all nonresident anglers who live outside of Alaska regardless of where they fished. Resident anglers spent \$67.1 million for sportfishing in the Interior Region in 2007, while nonresident anglers spent approximately \$33.5 million for a combined total of \$100.6 million for trips, packages, equipment and real estate (regional totals do not include the purchase of licenses and stamps.). Thirty-seven percent (\$36.9 million) of the total spending in Interior region is non-package trip spending. When combined with fishing packages, all trip-related spending accounts for 44.2% (\$44.5 million) of all sportfishing expenditures in the region. Spending on fishing and fishing-related equipment (\$50.4 million) represents one-half (50.1%) of all spending in the region, while expenditures for maintenance and construction of real estate used primarily for sportfishing represents 5.6% of the total (Table 50).

Table 50.—Interior Region spending for sportfishing, by expenditure category and residency, 2007.

Expenditures	Resident Anglers		Nonresident Anglers		All Anglers	
	Spending	%	Spending	%	Spending	%
Trip	\$15,472,561	23.1%	\$21,477,883	64.2%	\$36,950,444	36.7%
Package	\$0	0.0%	\$7,522,641	22.5%	\$7,522,641	7.5%
Equipment	\$48,915,821	72.9%	\$1,499,781	4.5%	\$50,415,603	50.1%
Real Estate	\$2,704,345	4.0%	\$2,967,604	8.9%	\$5,671,949	5.6%
Total	\$67,092,727	100.0%	\$33,467,910	100.0%	\$100,560,637	100.0%

*Package expenditures refer specifically to travel packages purchased by nonresidents prior to departing on their trip to Alaska.

Similar to statewide spending, more money was spent in the Interior region by residents (\$67.1 million) than nonresidents (\$33.5 million). Nearly three-fourths of resident spending was associated with purchases of equipment used for fishing (\$48.9 million), followed by trip expenditures (\$15.5 million), and fishing-related real estate maintenance and construction (\$2.7 million). Most spending by nonresidents was trip-related (\$21.5 million) followed by pre-purchased packages (\$7.5 million). Nonresident anglers spent \$3.0 million on real estate and \$1.5 million on fishing equipment (Table 50). It should be noted that all spending refers specifically to purchases that were made in the Interior region, therefore it is not surprising that equipment expenditures by nonresidents were disproportionately lower than residents since anglers typically purchase most of their fishing tackle and equipment closer to where they live.

Table 51 presents a summary of the average spending that took place in the Interior region for the major expenditure categories. Trip and package spending is based on total spending in the region and is averaged across all days of fishing that took place in the region, regardless of where individual resident anglers lived or fished. Due to the durable nature of equipment and its use across many trips, equipment and real estate expenditures are shown as the average spent in the region across all resident and nonresident anglers in Alaska Overall, the average angler fishing in Alaska spent of \$219.35 in the Interior per day of fishing for all trip and package related purchases (fuel, groceries, bait, lodging, restaurants, etc.). The average angler spent \$118.34 per year in the Interior region on fishing and related equipment and real estate (rods, reels, boats, motors, clothing, maintenance, etc.; Table 51).

Table 51.—Average expenditures in the Interior region made by Alaska resident and nonresident anglers, 2007*.

	Resident Anglers	Nonresident Anglers	All Anglers
<i>\$ per angler-day</i>			
Trip Expenditures	\$100.27	\$443.33	\$182.25
Package Expenditures	NA**	\$155.28	\$37.10
Total trip spending	\$100.27	\$598.60	\$219.35
<i>annual \$ per licensed angler</i>			
Equipment Expenditures	\$257.07	\$5.60	\$106.41
Real Estate Expenditures	\$14.19	\$10.42	\$11.93
Total equipment & real estate spending	\$271.26	\$16.01	\$118.34

*Estimates of average spending for detailed trip and equipment categories are presented in Appendix L.

**Package expenditures refer specifically to purchases of travel packages made by nonresidents prior to departing on their trip to Alaska.

As with total spending, nonresidents, on average, spent more per day on trip-related purchases in the Interior region than Alaska residents, (\$598.60 compared to \$100.27). Conversely, the average Alaska resident angler spent more in the Interior for equipment than the average nonresident (\$271.26 compared to \$16.01). The average resident and nonresident angler spent approximately the same small amount in the region on real estate used for fishing (approximately \$10 to \$15 per year).

Anglers make a wide range of purchases to support their fishing activity including trip-related expenditures, fishing tackle and other equipment, and expenses related to real estate that they use for fishing. Trip-related expenses refer to spending for temporary or consumable goods and services that anglers make while on a particular fishing trip. These range from food and lodging to travel expenses (e.g., fuel, air taxis, etc.), groceries, bait, and derby tickets. The full list of trip items and the amount spent by resident and nonresident anglers in Interior Alaska is presented in Table 52.

Some nonresident anglers opt to pre-purchase a packaged fishing expedition from one of the many outfitters, guides and lodges in Alaska. Such packages typically offer a range of services for one price including transportation, guides, food and lodging. The survey of nonresidents asked anglers to report spending for any packages that they may have purchased and to indicate which amenities were included in the package.

Equipment expenditures refer to a list of tackle and other items that are used only for fishing, plus other equipment that might be used in other pursuits in addition to fishing. The details of total spending in the Interior region for these items is listed in the bottom half of Table 52. The dollar figures represent total amounts spent in 2007 on fishing equipment and only that portion of multi-use equipment that anglers reported was used specifically for fishing.

The real estate amounts shown in Table 52 shows the annual costs of construction and maintenance that Interior anglers reported was associated with real estate that is used primarily for sportfishing purposes. These numbers do not include any spending that anglers may have made to purchase or lease real estate used for sportfishing. An effort was made in the survey to capture lease/purchase spending for real estate, but the information that was collected was deemed too unreliable to provide an accurate estimation of that spending and is not included here.

The detailed breakdown of total spending in all categories by resident and nonresident anglers in Table 52 shows the differences in their specific purchases. Generally, nonresidents spent more than residents on trip-related items. However, in the Interior region, residents spent considerably more than nonresidents on those items associated with every outing, especially fuel and groceries. These are expenditures required of even one-day trips that are more typical of resident anglers. Surprisingly, residents also spent more on fish processing. Nonresidents spent considerably more than residents on those items associated with extended travel (e.g., airfare and other travel, lodging, restaurant meals, gifts/souvenirs) and fishing related expenses that they cannot reasonably accommodate on their own (guide fees, processing, equipment rentals). Since most people purchase equipment closer to where they live, and vacationers typically do not buy a significant amount of equipment while traveling, it is not surprising that residents outspent nonresidents in nearly every equipment category except the miscellaneous "other" equipment category.

Further breakdowns of trip and package spending are presented in Table 53 which shows total spending by residency, type of water fished, and use of guides. This breakdown shows that unguided fishing accounted for approximately 70% of all trip-related spending in the region and that total trip-related spending by residents and nonresidents were roughly the same (approximately \$9 million each). Guided fishing accounted for \$6.6 million. Due to a small sample of saltwater anglers in this region, reliable estimates of spending and impacts are not reported. The SWHS reported that there were only 120 anglers-days of saltwater fishing in the entire region compared to 202,750 total fishing days, rendering any spending by saltwater anglers an insignificant part of the total economic contribution. Similarly, few residents of the Interior region used guides so there is an insufficient number of observations in the sample to report a reliable estimate of spending or impacts and their contribution is likely quite small.

The multi-purpose nature of many equipment items precludes a similarly detailed breakdown of equipment or real estate spending in the Interior Region for this report. Detailed estimates of total and average spending are presented in Appendices I and J.

Table 52.—Detailed spending for sportfishing in Interior Alaska, by residency, 2007.

	Resident	Nonresident	Total
Trip Expenditures			
Fuel	\$7,696,662	\$1,882,068	\$9,578,730
Guide	\$1,070,555	\$4,932,657	\$6,003,212
Air	\$881,467	\$1,775,149	\$2,656,617
Travel	\$4,460	\$4,732,537	\$4,736,998
Process	\$195,395	\$72,790	\$268,185
Rentals	\$34,072	\$508,480	\$542,552
Derby	\$1,959	\$39,918	\$41,876
Dock	\$128,252	\$12,602	\$140,854
Ice	\$225,413	\$236,946	\$462,359
Bait	\$180,648	\$56,101	\$236,749
Groceries	\$3,121,448	\$1,022,687	\$4,144,134
Meals	\$1,112,718	\$2,059,288	\$3,172,006
Lodging	\$491,909	\$1,688,998	\$2,180,908
Gifts	\$66,028	\$1,957,933	\$2,023,960
Amusements	\$219,606	\$475,970	\$695,576
Other	\$41,970	\$23,759	\$65,730
Sub-Total	\$15,472,561	\$21,477,883	\$36,950,444
Package Expenditures			
	\$0	\$7,522,641	\$7,522,641
Equipment Expenditures			
Rods, reels, & components	\$1,861,586	\$199,840	\$2,061,425
Fishing tackle	\$1,504,407	\$328,501	\$1,832,908
Tackle boxes	\$246,910	\$17,352	\$264,263
Depth finders, fish finders, etc.	\$510,137	\$0	\$510,137
Landing nets, dipnets & gillnets	\$246,283	\$0	\$246,283
Misc. fishing equip	\$474,119	\$84,118	\$558,237
Shellfish fishing equip	\$140,760	\$3,151	\$143,912
Fish mounting (taxidermy)	\$0	\$0	\$0
Books and magazines	\$170,359	\$19,288	\$189,647
Items to store/preserve fish	\$496,710	\$26,834	\$523,544
Coolers, fish boxes	\$315,319	\$75,245	\$390,564
Clothing	\$514,614	\$134,926	\$649,539
Boots, shoes, waders	\$425,755	\$84,663	\$510,418
Life jackets, survival suits	\$253,493	\$15,766	\$269,259
Boats, canoes, other watercraft	\$4,340,381	\$0	\$4,340,381
Boat motors	\$1,469,616	\$0	\$1,469,616
Trailers, hitches, and acc	\$480,518	\$0	\$480,518
Other boat parts and acc	\$1,349,484	\$7,879	\$1,357,363
Bear spray, bug spray, etc	\$194,704	\$43,845	\$238,549
Firearms	\$457,685	\$0	\$457,685
Cameras, binoculars	\$589,771	\$73,782	\$663,553
Tents, backpacks, sleeping bags	\$415,526	\$14,868	\$430,394
Camping trailer	\$4,118,086	\$0	\$4,118,086
Other camping equip	\$318,817	\$52,263	\$371,080
Vehicles (trucks, SUVs, etc)	\$18,733,046	\$31,549	\$18,764,595
Airplanes and related equipment	\$474,375	\$235,897	\$710,272
ATVs, snowmachines	\$6,440,441	\$0	\$6,440,441
Boat/camper registrations	\$594,588	\$2,954	\$597,542
Vehicle, boat or airplane repair	\$1,773,797	\$47,061	\$1,820,858
Other	\$4,533	\$0	\$4,533
Sub-Total	\$48,915,821	\$1,499,781	\$50,415,603
Real Estate Expenditures			
Real estate repairs	\$762,904	\$393,930	\$1,156,834
Real estate construction	\$1,941,441	\$2,573,674	\$4,515,115
Sub-Total	\$2,704,345	\$2,967,604	\$5,671,949
TOTAL SPENDING	\$67,092,727	\$33,467,910	\$100,560,637

*Package expenditures refer specifically to purchases of travel packages made by nonresidents prior to departing on their trip to Alaska.

Table 53.—Detailed total TRIP and PACKAGE spending in the Interior Region, by residency, use of guides, and type of water fished.

	RESIDENT		NONRESIDENT		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	
FRESHWATER ANGLERS					
Trip Expenditures					
Fuel and oil		\$4,729,944	\$601,553	\$727,184	\$6,421,919
Guide and charter fees		\$78,951	\$2,407,661	\$799,496	\$3,780,477
Airfare to and from Alaska		\$0	\$879,366	\$321,688	\$1,201,054
Travel within Alaska		\$4,460	\$134,634	\$4,595,118	\$4,734,213
Fish processing & shipping		\$174,931	\$25,148	\$2,938	\$203,018
Rentals (boats, equipment, etc.)		\$34,072	\$328,884	\$89,838	\$452,793
Derby tickets		\$1,959	\$0	\$30,600	\$32,559
Boat launch and dock fees		\$119,396	\$389	\$9,204	\$132,676
Ice		\$164,963	\$11,444	\$204,823	\$400,633
Bait (natural bait only)		\$151,294	\$6,095	\$44,594	\$208,881
Groceries bought in stores		\$2,233,726	\$364,512	\$158,422	\$2,966,941
Restaurants, bars, and take-out		\$728,015	\$552,272	\$1,077,845	\$2,439,167
Overnight accommodations		\$340,537	\$558,771	\$322,463	\$1,255,187
Souvenirs and gifts		\$51,559	\$575,876	\$563,590	\$1,191,024
Other entertainment		\$84,211	\$168,639	\$239,973	\$581,219
Other		\$0	\$9,844	\$3,983	\$13,827
Sub-Total		\$8,898,018	\$6,625,089	\$9,191,758	\$26,015,588
Package Expenditures		NA*	\$2,070,725	\$1,164,897	\$3,235,622
SALTWATER ANGLERS					
Trip Expenditures					
Fuel and oil					
Guide and charter fees					
Airfare to and from Alaska					
Travel within Alaska					
Fish processing & shipping					
Rentals (boats, equipment, etc.)					
Derby tickets					
Boat launch and dock fees					
Ice					
Bait (natural bait only)					
Groceries bought in stores					
Restaurants, bars, and take-out					
Overnight accommodations					
Souvenirs and gifts					
Other entertainment					
Other					
Sub-Total					
Package Expenditures					
ALL ANGLERS					
Trip Expenditures					
Fuel and oil		\$4,729,944	\$601,553	\$727,184	\$6,421,919
Guide and charter fees		\$78,951	\$2,407,661	\$799,496	\$3,780,477
Airfare to and from Alaska		\$0	\$879,366	\$321,688	\$1,201,054
Travel within Alaska		\$4,460	\$134,634	\$4,595,118	\$4,734,213
Fish processing & shipping		\$174,931	\$25,148	\$2,938	\$203,018
Rentals (boats, equipment, etc.)		\$34,072	\$328,884	\$89,838	\$452,793
Derby tickets		\$1,959	\$0	\$30,600	\$32,559
Boat launch and dock fees		\$119,396	\$389	\$9,204	\$132,676
Ice		\$164,963	\$11,444	\$204,823	\$400,633
Bait (natural bait only)		\$151,294	\$6,095	\$44,594	\$208,881
Groceries bought in stores		\$2,233,726	\$364,512	\$158,422	\$2,966,941
Restaurants, bars, and take-out		\$728,015	\$552,272	\$1,077,845	\$2,439,167
Overnight accommodations		\$340,537	\$558,771	\$322,463	\$1,255,187
Souvenirs and gifts		\$51,559	\$575,876	\$563,590	\$1,191,024
Other entertainment		\$84,211	\$168,639	\$239,973	\$581,219
Other		\$0	\$9,844	\$3,983	\$13,827
Sub-Total		\$8,898,018	\$6,625,089	\$9,191,758	\$26,015,588
Package Expenditures		NA*	\$2,070,725	\$1,164,897	\$3,235,622

Shaded cells indicate estimates that were not produced due to small sample size.

Economic Contributions

Expenditures by anglers generate additional economic benefits throughout the Interior region. Multiplier effects have been estimated separately for trip spending and package spending, and for equipment and real estate spending combined. All economic contributions have been estimated separately for residents and nonresidents. The direct effects that are shown in the following tables reflect the economic activity associated with angler spending captured within the regional economy (i.e. consumer retail spending less the value of goods imported from outside of the regional economy). For that reason, the direct output values in the tables that follow are likely to be less than the reported angler spending for any specific category.

The \$100.6 million of spending by anglers in the Interior region in 2007 generated \$20.6 million of income to 720 full and part time employees and proprietors who worked in the Interior businesses whose products were purchased by anglers (Table 54). Spending by nonresidents accounted for 407 of the jobs and \$10.6 million of income. In addition to the economic activity directly attributable to spending by anglers are the multiplier effects (indirect and induced effects) of that consumer spending. The indirect effect results from the increased economic activity among businesses that supply those businesses selling directly to the anglers. For example, the guide that sells directly to anglers, in turn, stimulates additional activity among the businesses that supply the guide's operations. The induced effect is the economic activity produced by household spending of income earned by workers in those businesses that are impacted by both the direct and indirect effects. Including both direct and multiplier effects, the \$100.6 million of spending in the Interior region by anglers produced \$28.6 million of income and supported 923 full and part-time jobs (Table 54).

Table 54.—Interior Region economic contributions of ALL spending for sportfishing, by residency, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Output	\$28,968,360	\$31,733,201	\$60,701,561
Income	\$9,940,774	\$10,605,086	\$20,545,860
Employment (jobs)	313	407	720
Multiplier effects			
Output	\$11,165,470	\$14,845,678	\$26,011,148
Income	\$3,322,932	\$4,695,090	\$8,018,022
Employment (jobs)	\$86	\$117	203
Total effects			
Output	\$40,133,830	\$46,578,879	\$86,712,709
Income	\$13,263,706	\$15,300,176	\$28,563,882
Employment (jobs)	399	524	923

The relationship between the direct effect (i.e. directly attributable to the spending by anglers) and the total economic activity that it creates is commonly presented in the form of a multiplier. Typically, smaller regional economies will exhibit smaller multipliers due to the reduced opportunities to retain economic activity within the region. In the case of Interior sportfishing, the output multiplier of 1.43 (total effect divided by direct effect) means every dollar of activity stimulated by angler spending creates an additional \$0.43 of economic activity elsewhere in the economy (compared to a statewide output multiplier of 1.62). Because the Interior Region is an

economically small subregion of the statewide economy, it is expected that each of the multipliers is smaller than their counterpart at the statewide level. The income and employment multipliers are 1.39 and 1.28, respectively. This means that for every dollar of income paid to workers in businesses that sell directly to anglers and for every job in a business that sells directly to anglers there is an additional \$0.39 of income and 0.28 additional jobs in other businesses throughout the region that are supported by angler spending.

Employment effects are of particular importance to the state and local economy. The jobs supported by angler expenditures are shown in Table 55 categorized by the industry in which the jobs occur. The jobs directly supported by angler spending largely reflect the types of expenditures made by anglers – trip expenditures for food, bait, lodging and guide services, maintenance of real estate used for sportfishing, and retail purchases of fishing and related equipment. Sector 11 in the following table includes farming and commercial fishing and hunting and is directly affected primarily through anglers' purchases of groceries and bait. The broader distribution of jobs indirectly supported by angler spending through the multiplier effect is the result of inter-industry trade flows and the expenditures of household income that comes from angler-supported jobs.

Table 55.—Employment (jobs) directly and indirectly supported by angler expenditures in the Interior region, by industry in which the employment occurs, 2007.

NAICS Industry Categories	Direct Effects	Multiplier Effects	Total Effects
11 Agriculture, forestry, fishing & hunting	6	5	11
21 Mining	0	2	2
22 Utilities	-	2	2
23 Construction	31	2	33
31-33 Manufacturing	3	3	6
42 Wholesale trade	34	5	39
48-49 Transportation & warehousing	47	20	67
44-45 Retail trade	243	29	272
51 Information	-	5	5
52 Finance & insurance	-	6	6
53 Real estate & rental	4	15	19
54 Professional- scientific & technical services	-	10	10
55 Management of companies	-	0	0
56 Administrative & waste services	0	14	14
61 Educational services	-	3	3
62 Health & social services	-	21	21
71 Arts- entertainment & recreation (e.g., guides)	220	8	228
72 Accommodation & food services	96	21	117
81 Other services	15	13	28
92 Government and public administration	20	21	41
Total Employment Impact	719	202	923

Table 56 presents a breakdown by residency of the economic contributions that derive from anglers' spending on equipment and real estate (a subset of total spending) in the Interior region. Including the direct and multiplier effects, the \$50.4 million spent on equipment and \$5.7 million spent on real estate (Table 56) supported 274 jobs and provided \$9.8 million of income. Equipment and real estate spending by residents supported 239 jobs and provided \$8.0 million of income in 2007 while nonresident angler spending supported 35 jobs and \$1.8 million of income.

Table 56.—Interior Region economic contributions of expenditures for sportfishing EQUIPMENT and REAL ESTATE, by residency, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Output	\$15,111,402	\$3,472,662	\$18,584,064
Income	\$6,196,345	\$1,360,237	\$7,556,582
Employment	191	23	215
Multiplier effects			
Output	\$5,877,860	\$1,348,185	\$7,226,045
Income	\$1,825,663	\$446,939	\$2,272,602
Employment	48	12	59
Total effects			
Output	\$20,989,262	\$4,820,847	\$25,810,109
Income	\$8,022,008	\$1,807,176	\$9,829,184
Employment	239	35	274

Table 57 shows the economic contributions from spending on trips and packages, broken down by residency, use of guides, and type of water fished. Due to a very small number of saltwater anglers in this region, reliable estimates of spending and impacts are not available and their contribution is likely insignificant. Additional detailed estimates of the industry impacts in the Interior region due to angler spending are presented in Appendices K and L.

Table 57.—Interior Region economic contributions of combined TRIP-RELATED and PACKAGE spending for sportfishing, by residency, use of guides, and type of water.

	RESIDENT		NONRESIDENT		TOTAL*		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	Resident	Nonresident	
FRESHWATER ANGLERS							
Direct effects							
Output		\$8,091,845	\$10,485,398	\$9,000,088	\$9,315,809	\$19,485,486	\$28,801,295
Income		\$2,202,287	\$3,424,294	\$2,982,011	\$2,554,857	\$6,406,305	\$8,961,162
Employment		68	147	99	84	246	330
Multiplier effects							
Output		\$2,993,829	\$5,088,479	\$4,605,357	\$3,519,654	\$9,693,836	\$13,213,490
Income		\$834,983	\$1,643,539	\$1,375,502	\$1,008,873	\$3,019,041	\$4,027,914
Employment		22	41	34	26	75	101
Total effects							
Output		\$11,085,674	\$15,573,877	\$13,605,445	\$12,835,463	\$29,179,322	\$42,014,785
Income		\$3,037,270	\$5,067,833	\$4,357,513	\$3,563,730	\$9,425,346	\$12,989,076
Employment		89	188	134	110	321	431
SALTWATER ANGLERS							
Direct effects							
Output							
Income							
Employment							
Multiplier effects							
Output							
Income							
Employment							
Total effects							
Output							
Income							
Employment							
ALL ANGLERS							
Direct effects							
Output		\$8,091,845	\$10,485,398	\$9,000,088	\$9,315,809	\$19,485,486	\$28,801,295
Income		\$2,202,287	\$3,424,294	\$2,982,011	\$2,554,857	\$6,406,305	\$8,961,162
Employment		68	147	99	84	246	330
Multiplier effects							
Output		\$2,993,829	\$5,088,479	\$4,605,357	\$3,519,654	\$9,693,836	\$13,213,490
Income		\$834,983	\$1,643,539	\$1,375,502	\$1,008,873	\$3,019,041	\$4,027,914
Employment		22	41	34	26	75	101
Total effects							
Output		\$11,085,674	\$15,573,877	\$13,605,445	\$12,835,463	\$29,179,322	\$42,014,785
Income		\$3,037,270	\$5,067,833	\$4,357,513	\$3,563,730	\$9,425,346	\$12,989,076
Employment		89	188	134	110	321	431

* Total guided and unguided trip related and package spending.

Shaded cells indicate estimates that were not produced due to small sample size.

The economic activity directly and indirectly generated in the Interior region by sportfishing also produces tax revenues for local, state and federal governments. The IMPLAN model produces generalized estimates of tax revenues that are based on existing statewide ratios of output, income and employment to all tax revenues. It is estimated that sportfishing expenditures in the Interior region in 2007 provided \$7.2 million and \$6.2 million of state/local and federal tax revenues, respectively (Table 58).

Table 58.—Tax revenues generated in the Interior Region from the economic contributions of sportfishing, 2007.

	State and Local Tax Revenues	Federal Tax Revenues	Total tax Revenues
RESIDENT ANGLERS			
Trip Expenditures (non-package)	\$1,669,964	\$1,209,844	\$2,879,807
Package Expenditures	\$0	\$0	\$0
Equipment & Real Estate Expenditures	\$2,155,346	\$1,675,117	\$3,830,463
Subtotal	\$3,825,310	\$2,884,961	\$6,710,270
NONRESIDENT ANGLERS			
Trip Expenditures (non-package)	\$2,127,807	\$2,025,776	\$4,153,583
Package Expenditures	\$1,027,724	\$930,289	\$1,958,013
Equipment & Real Estate Expenditures	\$241,300	\$355,979	\$597,279
Subtotal	\$3,396,831	\$3,312,044	\$6,708,875
ALL ANGLERS			
Trip Expenditures (non-package)	\$3,797,771	\$3,235,620	\$7,033,390
Package Expenditures	\$1,027,724	\$930,289	\$1,958,013
Equipment & Real Estate Expenditures	\$2,396,646	\$2,031,096	\$4,427,742
Total Expenditures	\$7,222,141	\$6,197,005	\$13,419,146

COOK INLET SUBREGION

This section presents the detailed expenditures and economic contributions for sportfishing in the Cook Inlet subregion. The Cook Inlet Subregion (Figure 4) is a part, or subset, of the larger Southcentral region. It was analyzed separately due to its importance as a sportfishing destination in Alaska. The spending and contribution totals in the following Cook Inlet subregion tables do not include the cost of fishing licenses and stamps. This expenditure is not included in the subsequent regional tables because licenses and stamps are purchased from state government and cannot be ascribed to a particular region. However, it is included in the statewide analysis (Table 20).

Angler Days

A total of 1.2 million days of sportfishing occurred in the Cook Inlet subregion in 2007, of which more than 60% (761,221) were reported by Alaska residents and (40%) 481,877 were taken by nonresidents. Approximately 81% of all sportfishing days in the Cook Inlet subregion in 2007 were unguided, although a higher percentage of saltwater days fished were guided (37.5%), than freshwater days (14%; Table 59). Overall nonresidents (35%) are much more likely than residents (8%) to take guided fishing trips, particularly when fishing in saltwater. Approximately 64% of nonresident angler days fished in saltwater were guided, compared to 17% of resident saltwater days. In freshwater, approximately 26.5% of nonresident days fished were guided compared to only 7% of resident angler days (Table 59).

Table 59.—Cook Inlet subregion angler days, by water type, guided/unguided, and residency*, 2007.

	RESIDENT		NONRESIDENT		ALL ANGLERS	
	Angler-Days	%	Angler-Days	%	Angler-Days	%
Freshwater						
Guided	40,699	6.6%	98,859	26.5%	139,558	14.0%
Unguided	580,559	93.4%	274,836	73.5%	855,395	86.0%
Total	621,258	100.0%	373,695	100.0%	994,953	100.0%
Saltwater						
Guided	23,450	16.8%	69,694	64.4%	93,144	37.5%
Unguided	116,513	83.2%	38,488	35.6%	155,001	62.5%
Total	139,963	100.0%	108,182	100.0%	248,145	100.0%
Total Guided	64,149	8.4%	168,553	35.0%	232,702	18.7%
Total Unguided	697,072	91.6%	313,324	65.0%	1,010,396	81.3%
TOTAL	761,221	100.0%	481,877	100.0%	1,243,098	100.0%

Source: 2007 Statewide Harvest Survey, Alaska Department of Fish and Game.

*Totals reported here do not exactly match published statewide and regional totals from the 2007 SWHS due to the fact that it is not possible to identify the water type or guided/unguided status of some SWHS survey responses. The totals reported in this table reflect the summary of all days fished within a region that could be assigned to a specific residency, water type, and guided/unguided category. Approximately 4,177 days fished (0.16% of 2.5 million days) could not be assigned to a strata category and thus were not included in these totals.

Expenditures

Where anglers spend their money is not necessarily tied to where they fish or where they live. In actuality, an angler on a one-day or multi-day fishing trip might start from their home, purchase fuel, food, or other supplies on the way to their destination, and then make additional purchases such as bait, ice, or guide services, closer to where they fish. The following expenditure tables take this into account by reporting total expenditures in the Cook Inlet region made by all Alaska resident anglers, regardless of where they fished or the region where they live, and by all nonresident anglers who live outside of Alaska regardless of where they fished. Anglers spent a total of \$733.0 million in the Cook Inlet subregion in 2007. Nonresidents accounted for \$275.0 million of the total and residents spent \$457.9 million. Thirty-eight percent (\$280.8 million) of the total is non-package trip spending. When combined with fishing packages, all trip-related spending accounts for 41.5% (\$304.5 million) of all sportfishing expenditures in the region. Spending on fishing and fishing-related equipment (\$313.7 million) represents 42.8% of all spending. This is not surprising because this region includes a large portion of the state's retail and commercial businesses and many anglers from outside the region likely make some of their purchases in the region, in addition to the purchases of local residents. Spending for maintenance and construction of real estate that is used primarily for sportfishing represents 15.7% of the total regional spending (Table 60).

Table 60.—Cook Inlet subregion spending for sportfishing, by residency and expenditure category, 2007.

Expenditures	Resident Anglers		Nonresident Anglers		All Anglers	
	Spending	%	Spending	%	Spending	%
Trip	\$123,295,328	26.9%	\$157,465,551	57.3%	\$280,760,879	38.3%
Package	\$0	0.0%	\$23,774,541	8.6%	\$23,774,541	3.2%
Equipment	\$291,710,774	63.7%	\$21,952,076	8.0%	\$313,662,850	42.8%
Real Estate	\$42,932,362	9.4%	\$71,838,343	26.1%	\$114,770,705	15.7%
Total	\$457,938,464	100.0%	\$275,030,511	100.0%	\$732,968,975	100.0%

*Package expenditures refer specifically to travel packages purchased by nonresidents prior to departing on their trip to Alaska.

Similar to statewide spending, more spending in the Cook Inlet comes from residents (\$457.9 million) than nonresidents (\$275.0 million). Nearly two-thirds of resident spending is associated with purchases of equipment used for fishing (\$291.7 million), followed by trip expenditures (\$123.3 million), and real estate (\$42.9 million). The largest amount of spending by nonresidents is trip-related (\$157.5 million) followed by pre-purchased packages (\$23.8 million). Nonresident anglers spent \$71.8 million on real estate maintenance and construction related to sportfishing in the region in 2007 and \$21.9 million on fishing equipment (Table 60). It should be noted that all spending refers specifically to purchases that were made in the Cook Inlet region, therefore it is not surprising that equipment expenditures by nonresidents are disproportionately lower than for residents since anglers typically purchase most of their fishing tackle and equipment closer to where they live.

Table 61 presents a summary of the average spending that took place in the Cook Inlet for the major expenditure categories. Trip and package spending is based on total spending in the region and is averaged across all days of fishing that took place in the region, regardless of where individual resident anglers lived or fished. Due to the durable nature of equipment and its use across many trips, equipment and real estate expenditures are shown as the average spent in the region across all resident and nonresident anglers in Alaska on an annual basis. Overall, anglers spent an average of \$244.98 in the Cook Inlet per day of fishing for all trip and package related purchases (fuel, groceries, bait, lodging, restaurants, etc.). The average angler in Alaska spent \$896.62 per year in the Cook Inlet subregion on fishing and related equipment and real estate (rods, reels, boats, motors, clothing, maintenance, etc.; Table 61).

Table 61.—Average expenditures in the Cook Inlet region made by Alaska resident and nonresident anglers, 2007*.

	Resident Anglers	Nonresident Anglers	All Anglers
	<i>\$ per angler-day</i>		
Trip Expenditures	\$161.97	\$326.78	\$225.86
Package Expenditures	NA**	\$49.34	\$19.13
Total trip spending	\$161.97	\$376.11	\$244.98
	<i>annual \$ per licensed angler</i>		
Equipment Expenditures	\$1,519.98	\$76.62	\$655.27
Real Estate Expenditures	\$225.20	\$252.16	\$241.35
Total equipment & real estate spending	\$1,745.18	\$328.78	\$896.62

*Estimates of average spending for detailed trip and equipment categories are presented in Appendix L.

**Package expenditures refer specifically to purchases of travel packages made by nonresidents prior to departing on their trip to Alaska.

As with total spending, nonresidents, on average, spent more per day on trip-related purchases in the Cook Inlet region than Alaska residents, (\$376.11 compared to \$161.97). Conversely, the average Alaska resident angler spent more in the Cook Inlet for equipment than the average nonresident (\$1,745.18 compared to \$328.78). The average resident and nonresident angler spent approximately the same amount in the region on real estate used for fishing (approximately \$225 to \$250 per year).

Anglers make a wide range of purchases to support their fishing activity including trip-related expenditures, fishing tackle and other equipment, and expenses related to real estate that they use for fishing. Trip-related expenses refer to spending for temporary or consumable goods and services that anglers make while on a particular fishing trip. These range from food and lodging to travel expenses (e.g., fuel or air taxis), groceries, bait, and derby tickets. The full list of trip items and the amount spent by resident and nonresidents in the Cook Inlet subregion is presented in Table 62.

Some nonresident anglers opt to pre-purchase a packaged fishing expedition from one of the many outfitters, guides and lodges in Alaska. Such packages typically offer a range of services for one price including transportation, guides, feed and lodging. The survey of nonresidents asked anglers to report spending for any packages that they may have purchased and to indicate which amenities were included in the package.

Equipment expenditures refer to a list of tackle and other items that are used only for fishing, plus other equipment that might be used in other pursuits in addition to fishing. The details of total spending in the Cook Inlet subregion for these items is listed in the bottom half of Table 62. The dollar figures represent total amounts spent on the fishing equipment and only that portion of multi-use equipment that anglers reported was used specifically for fishing.

The real estate spending in Table 62 shows the annual costs of construction and maintenance that anglers reported was associated with real estate that is used primarily for sportfishing purposes. These numbers do not include any spending that anglers may have made to purchase or lease real estate used for sportfishing. An effort was made in the survey to capture lease/purchase spending for real estate, but the information that was collected was deemed too unreliable to provide an accurate estimation of that spending and is not included here.

The detailed breakdown of total spending in all categories by resident and nonresident anglers in Table 62 shows the differences in their specific purchases. Overall, nonresidents spent more than residents on trip-related items, especially those categories associated with travel (e.g., guide fees, airfare and other travel, rentals, restaurant meals, lodging, gifts/souvenirs, etc.). Because most people purchase equipment closer to where they live, and vacationers typically do not buy a significant amount of equipment while traveling, it is not surprising that residents outspent nonresidents in every equipment category except the miscellaneous "other" equipment category.

Further breakdowns of trip and package spending for Cook Inlet region are presented in Table 63 which shows total spending by resident/nonresidents, guided/unguided, and by type of water fished. In this breakdown, the greatest amount of trip spending came from resident anglers fishing without guides in fresh water (\$58.7 million). However, due to the range of fishing opportunities in the region, their trip spending is nearly matched by nonresidents on guided fishing trips in fresh water (\$55.2 million), nonresidents on guided fishing trips in salt water (\$50.7 million) and nonresidents fishing in freshwater without a guide (\$45.7 million). The largest amount of package spending was by nonresidents fishing with guides in salt water (\$9.5 million) and freshwater (\$8.7 million).

The multi-purpose nature of many equipment items precludes a similarly detailed breakdown of equipment or real estate spending in the Cook Inlet subregion for this report. Additional detailed estimates of total and average spending are presented in Appendices I and J.

Table 62.—Detailed spending for sportfishing in Cook Inlet subregion, by residency, 2007.

	Resident	Nonresident	Total
Trip Expenditures			
Fuel	\$37,011,821	\$10,044,202	\$47,056,024
Guide	\$18,110,318	\$31,265,439	\$49,375,757
Air	\$1,812,166	\$21,302,467	\$23,114,633
Travel	\$589,157	\$3,030,195	\$3,619,352
Process	\$5,012,909	\$15,509,514	\$20,522,423
Rentals	\$1,478,512	\$18,137,545	\$19,616,056
Derby	\$647,639	\$243,895	\$891,534
Dock	\$4,901,916	\$1,062,002	\$5,963,918
Ice	\$2,099,702	\$696,683	\$2,796,385
Bait	\$2,870,067	\$1,104,778	\$3,974,845
Groceries	\$22,606,554	\$13,662,403	\$36,268,957
Meals	\$10,042,829	\$13,162,259	\$23,205,088
Lodging	\$12,216,060	\$17,774,950	\$29,991,010
Gifts	\$1,889,133	\$7,807,062	\$9,696,196
Amusements	\$1,946,515	\$2,497,644	\$4,444,159
Other	\$60,030	\$164,514	\$224,544
Sub-Total	\$123,295,328	\$157,465,551	\$280,760,879
Package Expenditures			
	NA*	\$23,774,541	\$23,774,541
Equipment Expenditures			
Rods, reels, & components	\$13,259,547	\$3,249,634	\$16,509,181
Fishing tackle	\$7,483,531	\$3,556,936	\$11,040,467
Tackle boxes	\$1,093,528	\$234,280	\$1,327,807
Depth finders, fish finders, etc.	\$5,551,575	\$13,401	\$5,564,976
Landing nets, dipnets & gillnets	\$2,482,010	\$196,128	\$2,678,138
Misc. fishing equip	\$2,584,018	\$868,690	\$3,452,707
Shellfish fishing equip	\$690,714	\$119,282	\$809,996
Fish mounting (taxidermy)	\$1,454,872	\$351,385	\$1,806,257
Books and magazines	\$827,718	\$302,202	\$1,129,920
Items to store/preserve fish	\$4,710,457	\$1,139,791	\$5,850,248
Coolers, fish boxes	\$1,864,918	\$983,159	\$2,848,078
Clothing	\$3,920,066	\$1,347,794	\$5,267,860
Boots, shoes, waders	\$3,591,748	\$1,150,357	\$4,742,105
Life jackets, survival suits	\$2,136,044	\$46,466	\$2,182,509
Boats, canoes, other watercraft	\$80,377,485	\$2,018,037	\$82,395,521
Boat motors	\$22,853,409	\$29,280	\$22,882,689
Trailers, hitches, and acc	\$4,217,105	\$123,647	\$4,340,753
Other boat parts and acc	\$7,662,191	\$160,244	\$7,822,435
Bear spray, bug spray, etc	\$704,412	\$287,722	\$992,134
Firearms	\$3,417,279	\$58,334	\$3,475,613
Cameras, binoculars	\$3,488,315	\$525,085	\$4,013,401
Tents, backpacks, sleeping bags	\$2,472,341	\$209,499	\$2,681,840
Camping trailer	\$23,708,102	\$13,788	\$23,721,889
Other camping equip	\$1,554,141	\$176,261	\$1,730,403
Vehicles (trucks, SUVs, etc)	\$53,115,779	\$3,550,618	\$56,666,397
Airplanes and related equipment	\$2,697,880	\$765,104	\$3,462,984
ATVs, snowmachines	\$17,109,683	\$0	\$17,109,683
Boat/camper registrations	\$2,389,419	\$138,116	\$2,527,535
Vehicle, boat or airplane repair	\$14,084,627	\$332,897	\$14,417,524
Other	\$207,861	\$3,939	\$211,800
Sub-Total	\$291,710,774	\$21,952,076	\$313,662,850
Real Estate Expenditures			
Real estate repairs	\$6,221,360	\$9,036,749	\$15,258,109
Real estate construction	\$36,711,001	\$62,801,595	\$99,512,596
Sub-Total	\$42,932,362	\$71,838,343	\$114,770,705
TOTAL SPENDING	\$457,938,464	\$275,030,511	\$732,968,975

*Package expenditures refer specifically to purchases of travel packages made by nonresidents prior to departing on their trip to Alaska.

Table 63.—Detailed total TRIP and PACKAGE spending in the Cook Inlet subregion, by residency, use of guides, and type of water fished.

	RESIDENT		NONRESIDENT		ALL
	Guided	Unguided	Guided	Unguided	ANGLERS
FRESHWATER ANGLERS					
Trip Expenditures					
Fuel and oil	\$2,173,330	\$21,901,576	\$3,186,123	\$3,263,385	\$30,524,413
Guide and charter fees	\$9,775,368	\$491,026	\$15,117,765	\$1,497,359	\$26,881,518
Airfare to and from Alaska	\$676,488	\$641,443	\$6,751,271	\$9,165,356	\$17,234,558
Travel within Alaska	\$324,265	\$196,692	\$1,359,212	\$1,224,923	\$3,105,092
Fish processing & shipping	\$211,402	\$2,416,922	\$4,186,148	\$4,389,265	\$11,203,737
Rentals (boats, equipment, etc.)	\$0	\$984,794	\$5,601,019	\$6,829,749	\$13,415,562
Derby tickets	\$19,034	\$265,911	\$44,050	\$40,009	\$369,003
Boat launch and dock fees	\$14,288	\$2,999,774	\$39,839	\$487,024	\$3,540,924
Ice	\$67,606	\$1,443,246	\$141,983	\$391,344	\$2,044,179
Bait (natural bait only)	\$14,266	\$1,415,536	\$141,380	\$400,092	\$1,971,273
Groceries bought in stores	\$1,845,644	\$14,369,144	\$3,306,773	\$6,744,856	\$26,266,417
Restaurants, bars, and take-out	\$1,878,700	\$5,004,739	\$4,354,029	\$4,436,963	\$15,674,430
Overnight accommodations	\$3,883,292	\$4,921,116	\$7,187,303	\$3,402,945	\$19,394,656
Souvenirs and gifts	\$321,053	\$695,238	\$2,594,590	\$2,752,956	\$6,363,838
Other entertainment	\$554,469	\$885,321	\$1,182,918	\$671,368	\$3,294,077
Other	\$0	\$46,262	\$59,683	\$6,930	\$112,875
Sub-Total	\$21,759,204	\$58,678,740	\$55,254,085	\$45,704,524	\$181,396,553
Package Expenditures	NA*	NA**	\$8,680,122	\$5,027,281	\$13,707,403
SALTWATER ANGLERS					
Trip Expenditures					
Fuel and oil	\$1,555,961	\$11,380,954	\$2,758,126	\$836,568	\$16,531,610
Guide and charter fees	\$7,712,767	\$131,158	\$14,444,769	\$205,546	\$22,494,239
Airfare to and from Alaska	\$494,235	\$0	\$4,506,611	\$879,229	\$5,880,075
Travel within Alaska	\$21,360	\$46,840	\$386,468	\$59,592	\$514,260
Fish processing & shipping	\$1,021,272	\$1,363,313	\$6,251,152	\$682,949	\$9,318,686
Rentals (boats, equipment, etc.)	\$95,175	\$398,542	\$5,416,541	\$290,235	\$6,200,494
Derby tickets	\$50,954	\$311,741	\$143,625	\$16,211	\$522,531
Boat launch and dock fees	\$13,165	\$1,874,689	\$55,453	\$479,686	\$2,422,993
Ice	\$77,690	\$511,160	\$132,132	\$31,224	\$752,206
Bait (natural bait only)	\$8,838	\$1,431,427	\$138,026	\$425,280	\$2,003,571
Groceries bought in stores	\$1,565,405	\$4,826,360	\$2,828,945	\$781,830	\$10,002,539
Restaurants, bars, and take-out	\$1,733,160	\$1,426,230	\$3,975,969	\$395,298	\$7,530,657
Overnight accommodations	\$2,261,977	\$1,149,674	\$6,839,466	\$345,236	\$10,596,353
Souvenirs and gifts	\$624,221	\$248,621	\$2,220,291	\$239,225	\$3,332,358
Other entertainment	\$223,875	\$282,850	\$522,260	\$121,097	\$1,150,083
Other	\$0	\$13,767	\$97,902	\$0	\$111,669
Sub-Total	\$17,460,056	\$25,397,328	\$50,717,735	\$5,789,207	\$99,364,325
Package Expenditures	NA*	NA*	\$9,452,136	\$615,002	\$10,067,138
ALL ANGLERS					
Trip Expenditures					
Fuel and oil	\$3,729,291	\$33,282,530	\$5,944,250	\$4,099,953	\$47,056,024
Guide and charter fees	\$17,488,135	\$622,183	\$29,562,533	\$1,702,905	\$49,375,757
Airfare to and from Alaska	\$1,170,723	\$641,443	\$11,257,882	\$10,044,585	\$23,114,633
Travel within Alaska	\$345,625	\$243,532	\$1,745,680	\$1,284,516	\$3,619,352
Fish processing & shipping	\$1,232,673	\$3,780,235	\$10,437,300	\$5,072,214	\$20,522,423
Rentals (boats, equipment, etc.)	\$95,175	\$1,383,337	\$11,017,560	\$7,119,985	\$19,616,056
Derby tickets	\$69,987	\$577,652	\$187,675	\$56,220	\$891,534
Boat launch and dock fees	\$27,453	\$4,874,463	\$95,292	\$966,709	\$5,963,918
Ice	\$145,296	\$1,954,406	\$274,115	\$422,568	\$2,796,385
Bait (natural bait only)	\$23,104	\$2,846,963	\$279,406	\$825,372	\$3,974,845
Groceries bought in stores	\$3,411,050	\$19,195,504	\$6,135,717	\$7,526,686	\$36,268,957
Restaurants, bars, and take-out	\$3,611,859	\$6,430,970	\$8,329,998	\$4,832,261	\$23,205,088
Overnight accommodations	\$6,145,270	\$6,070,790	\$14,026,769	\$3,748,181	\$29,991,010
Souvenirs and gifts	\$945,274	\$943,859	\$4,814,882	\$2,992,181	\$9,696,196
Other entertainment	\$778,344	\$1,168,171	\$1,705,178	\$792,466	\$4,444,159
Other	\$0	\$60,030	\$157,584	\$6,930	\$224,544
Sub-Total	\$39,219,260	\$84,076,068	\$105,971,820	\$51,493,731	\$280,760,879
Package Expenditures	NA*	NA*	\$18,132,258	\$5,642,283	\$23,774,541

Economic Contributions

Expenditures by anglers generate additional economic benefits throughout the Cook Inlet subregion. Multiplier effects have been estimated separately for trip spending and package spending, and for equipment and real estate spending combined. All economic contributions have been estimated separately for residents and nonresidents. The direct effects that are shown in the following tables reflect the economic activity associated with angler spending captured within the regional economy (i.e., consumer retail spending less the value of goods imported from outside of the regional economy). For that reason, the direct output values in the tables that follow are likely to be less than the reported angler spending for any specific category.

The \$733.0 million in spending by anglers in the Cook Inlet subregion in 2007 generated \$171.5 million of income to 5,282 full and part time employees and proprietors who worked in the Cook Inlet businesses whose products were purchased by anglers (Table 64). Spending by nonresidents accounted for 2,583 of the jobs and \$87.3 million of income, while resident spending in the subregion supported 2,699 jobs and \$84.2 million of income. In addition to the economic activity directly attributable to spending by anglers are the multiplier effects (indirect and induced effects) of that consumer spending. The indirect effect results from the increased economic activity among businesses that supply those businesses selling directly to the anglers. For example, the guide that sells directly to anglers, in turn, stimulates additional activity among the businesses that supply the guide's operations. The induced effect is the economic activity produced by household spending of income earned by workers in those businesses that are impacted by both the direct and indirect effects. Including both direct and multiplier effects, the \$733.0 million of spending in the region by anglers produced \$278.8 million of income and supported 8,056 full and part-time jobs (Table 64).

Table 64.—Cook Inlet subregion economic contributions of ALL spending for sportfishing, by residency, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Output	\$246,005,477	\$242,415,467	\$488,420,944
Income	\$84,239,661	\$87,274,061	\$171,513,722
Employment (jobs)	2,699	2,583	5,282
Multiplier effects			
Output	\$167,282,135	\$172,186,759	\$339,468,894
Income	\$52,410,475	\$54,850,355	\$107,260,830
Employment (jobs)	1,311	1,463	2,774
Total effects			
Output	\$413,287,612	\$414,602,226	\$827,889,838
Income	\$136,650,136	\$142,124,416	\$278,774,552
Employment (jobs)	4,010	4,046	8,056

The relationship between the direct effect (i.e. directly attributable to the spending by anglers) and the total economic activity that it creates is commonly presented in the form of a multiplier. Typically, smaller regional economies will exhibit smaller multipliers due to the reduced opportunities to retain economic activity within the region. In the case of Cook Inlet sportfishing, the output multiplier of 1.70 (total effect divided by direct effect) means every dollar of activity stimulated by angler spending creates an additional \$0.70 of economic activity

elsewhere in the regional economy (compared to a statewide output multiplier of 1.62). The income and employment multipliers are 1.63 and 1.53, respectively. This means that for every dollar of income paid to workers in businesses that sell directly to anglers and for every job in a business that sells directly to anglers there is an additional \$0.63 of income and 0.53 additional jobs in other businesses throughout the region that are supported by angler spending. Generally, the economic multipliers for any given sector in a subregion will be smaller than the multiplier for that same sector in the statewide economy because there are fewer businesses to capture and re-circulate the original dollars that are spent. However, different sectors have different multipliers and in the case of anglers' spending in the Cook Inlet their mix of purchases includes more of those sectors with higher multipliers resulting in an overall multiplier that is slightly larger than the statewide multiplier.

Employment effects are of particular importance to the state and local economy. The jobs supported by angler expenditures are shown in Table 65 categorized by the industry in which the jobs occur. The jobs directly supported by angler spending largely reflect the types of expenditures made by anglers – trip expenditures for food, bait, lodging and guide services, maintenance of real estate used for sportfishing, and retail purchases of fishing and related equipment. Sector 11 in the following table includes farming and commercial fishing and hunting and is directly affected primarily through anglers' purchases of groceries and bait. The broader distribution of jobs indirectly supported by angler spending through the multiplier effect is the result of inter-industry trade flows and the expenditures of household income that comes from angler-supported jobs.

Table 65. Employment (jobs) directly and indirectly supported by angler expenditures in the Cook Inlet subregion, by industry in which the employment occurs, 2007.

NAICS Industry Categories	Direct Effects	Multiplier Effects	Total Effects
11 Agriculture, forestry, fishing & hunting	100	172	272
21 Mining	3	39	42
22 Utilities	-	21	21
23 Construction	645	32	676
31-33 Manufacturing	103	87	190
42 Wholesale trade	217	78	295
48-49 Transportation & warehousing	122	148	270
44-45 Retail trade	1,592	412	2,004
51 Information	-	55	55
52 Finance & insurance	-	102	102
53 Real estate & rental	252	234	486
54 Professional- scientific & technical services	-	215	215
55 Management of companies	-	45	45
56 Administrative & waste services	1	152	153
61 Educational services	-	37	37
62 Health & social services	-	320	320
71 Arts- entertainment & recreation (e.g., guides)	1,214	95	1,309
72 Accommodation & food services	868	246	1,114
81 Other services	136	188	324
92 Government and public administration	30	98	128
Total Employment Impact	5,282	2,773	8,056

Table 66 presents a breakdown by residency of the economic contributions that derive from anglers' spending on equipment and real estate (a subset of total spending) in the Cook Inlet subregion. Including the direct and multiplier effects, the \$313.7 million spent by anglers on equipment and \$114.8 million spent on real estate maintenance and construction for sportfishing (Table 60) supported 3,015 jobs and provided \$120.9 million of income. Equipment and real estate spending by residents supported 2,067 jobs and provided \$74.3 million of income in 2007 while nonresident angler spending supported 948 jobs and \$46.6 million of income (Table 66).

Table 66.—Cook Inlet Subregion economic contributions of expenditures for sportfishing EQUIPMENT and REAL ESTATE, by residency, 2007.

	Resident Anglers	Nonresident Anglers	All Anglers
Direct effects			
Output	\$127,153,461	\$79,645,976	\$206,799,437
Income	\$49,018,559	\$29,960,787	\$78,979,346
Employment (jobs)	1,400	511	1,911
Multiplier effects			
Output	\$78,501,170	\$50,475,633	\$128,976,803
Income	\$25,283,399	\$16,681,108	\$41,964,507
Employment (jobs)	666	437	1,104
Total effects			
Output	\$205,654,631	\$130,121,609	\$335,776,240
Income	\$74,301,958	\$46,641,895	\$120,943,853
Employment (jobs)	2,067	948	3,015

Table 67 shows the economic contributions from spending on trips and packages, broken down by residency, use of guides, and type of water fished. The largest economic contribution came from nonresident anglers fishing in fresh water with the services of a guide. Including the direct and multiplier effects, their spending supported 1,148 jobs that provided \$34.4 million of income. That represents 14.3% and 12.4% of all jobs and income supported by sportfishing anglers in the region, respectively.

Additional detailed estimates of the industry impacts in Cook Inlet subregion due to angler spending are presented in Appendices K and L.

8,056	2,773	5,283	Total Employment Impact
128	98	20	92 Government and public administration
324	188	136	81 Other services
1,114	345	868	73 Accommodation & food services
1,309	95	1,214	71 Arts, entertainment & recreation (e.g., guides)
150	95	50	62 Health & social services
37	37	0	61 Educational services
153	1	152	56 Administrative & waste services
153	1	152	55 Management of companies
153	1	152	54 Real estate & rental

Table 67.—Cook Inlet subregion economic contributions of combined TRIP-RELATED and PACKAGE spending for sportfishing, by residency, use of guides, and type of water.

	RESIDENT		NONRESIDENT		TOTAL*		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	Resident	Nonresident	
FRESHWATER ANGLERS							
Direct effects							
Output	\$21,062,669	\$56,284,227	\$58,391,376	\$42,992,979	\$77,346,896	\$101,384,355	\$178,731,251
Income	\$6,524,363	\$16,313,969	\$20,328,757	\$15,900,343	\$22,838,332	\$36,229,100	\$59,067,432
Employment	296	529	780	484	825	1,264	2,089
Multiplier effects							
Output	\$15,405,485	\$42,545,387	\$44,212,275	\$32,886,849	\$57,950,872	\$77,099,124	\$135,049,996
Income	\$5,005,585	\$12,748,328	\$14,113,443	\$10,083,634	\$17,753,913	\$24,197,077	\$41,950,990
Employment	121	298	369	273	419	642	1,061
Total effects							
Output	\$36,468,154	\$98,829,614	\$102,603,651	\$75,879,828	\$135,297,768	\$178,483,479	\$313,781,247
Income	\$11,529,948	\$29,062,297	\$34,442,200	\$25,983,977	\$40,592,245	\$60,426,177	\$101,018,422
Employment	417	827	1,148	757	1,244	1,905	3,149
SALTWATER ANGLERS							
Direct effects							
Output	\$16,816,852	\$24,688,268	\$55,784,453	\$5,600,683	\$41,505,120	\$61,385,136	\$102,890,256
Income	\$5,285,729	\$7,097,041	\$19,269,061	\$1,815,113	\$12,382,770	\$21,084,174	\$33,466,944
Employment	237	236	742	67	473	809	1,282
Multiplier effects							
Output	\$11,468,710	\$19,361,383	\$40,247,611	\$4,364,391	\$30,830,093	\$44,612,002	\$75,442,095
Income	\$3,626,328	\$5,746,835	\$12,643,368	\$1,328,802	\$9,373,163	\$13,972,170	\$23,345,333
Employment	94	132	349	35	226	384	610
Total effects							
Output	\$28,285,562	\$44,049,651	\$96,032,064	\$9,965,074	\$72,335,213	\$105,997,138	\$178,332,351
Income	\$8,912,057	\$12,843,876	\$31,912,429	\$3,143,915	\$21,755,933	\$35,056,344	\$56,812,277
Employment	332	368	1,091	102	700	1,193	1,892
ALL ANGLERS							
Direct effects							
Output	\$37,879,521	\$80,972,495	\$114,175,829	\$48,593,662	\$118,852,016	\$162,769,491	\$281,621,507
Income	\$11,810,092	\$23,411,010	\$39,597,818	\$17,715,456	\$35,221,102	\$57,313,274	\$92,534,376
Employment	533	765	1,522	551	1,298	2,073	3,371
Multiplier effects							
Output	\$26,874,195	\$61,906,770	\$84,459,886	\$37,251,240	\$88,780,965	\$121,711,126	\$210,492,091
Income	\$8,631,913	\$18,495,163	\$26,756,811	\$11,412,436	\$27,127,076	\$38,169,247	\$65,296,323
Employment	216	430	717	308	645	1,026	1,671
Total effects							
Output	\$64,753,716	\$142,879,265	\$198,635,715	\$85,844,902	\$207,632,981	\$284,480,617	\$492,113,598
Income	\$20,442,005	\$41,906,173	\$66,354,629	\$29,127,892	\$62,348,178	\$95,482,521	\$157,830,699
Employment	749	1,195	2,239	859	1,943	3,098	5,042

* Total guided and unguided trip related and package spending.

The economic activity directly and indirectly generated in the Cook Inlet subregion by sportfishing also produces tax revenues for local, state and federal governments. The IMPLAN model produces generalized estimates of tax revenues that are based on existing statewide ratios of output, income and employment to all tax revenues. It is estimated that sportfishing expenditures in the Cook Inlet subregion in 2007 provided \$55.3 million and \$56.3 million of state/local and federal tax revenues, respectively (Table 68). Approximately forty percent of sportfishing tax revenues (50.0%) were the result of spending by nonresident anglers.

Table 68.—Tax revenues generated in the Cook Inlet subregion from the economic contributions of sportfishing, 2007.

	State and Local Tax Revenues	Federal Tax Revenues	Total tax Revenues
RESIDENT ANGLERS			
Trip Expenditures (non-package)	\$17,542,003	\$15,263,172	\$32,805,175
Package Expenditures	\$0	\$0	\$0
Equipment & Real Estate Expenditures	\$17,647,441	\$16,644,408	\$34,291,849
Subtotal	\$35,189,444	\$31,907,580	\$67,097,024
NONRESIDENT ANGLERS			
Trip Expenditures (non-package)	\$11,961,038	\$12,378,025	\$24,339,063
Package Expenditures	\$1,748,741	\$2,070,565	\$3,819,306
Equipment & Real Estate Expenditures	\$6,382,147	\$9,904,980	\$16,287,127
Subtotal	\$20,091,926	\$24,353,570	\$44,445,496
ALL ANGLERS			
Trip Expenditures (non-package)	\$29,503,041	\$27,641,197	\$57,144,237
Package Expenditures	\$1,748,741	\$2,070,565	\$3,819,306
Equipment & Real Estate Expenditures	\$24,029,587	\$26,549,388	\$50,578,976
Total	\$55,281,369	\$56,261,150	\$111,542,520

SOUTHEAST MARINE SUBREGION

This section presents the detailed expenditures and economic contributions for saltwater sportfishing in the Southeast Region. Total fishing activity in this region was described in an earlier section. This section focuses specifically on saltwater fishing in the Southeast region due to its importance to sportfishing in Alaska. The spending and contribution totals in the following Southeast Marine subregion tables do not include the cost of fishing licenses and stamps. This expenditure is not included in the subsequent subregional tables because licenses and stamps are purchased from state government and cannot be ascribed to a particular region. Also, because fishing equipment can be used for both freshwater and saltwater fishing, equipment expenditures cannot be allocated solely to saltwater and are not included in the following tables. Total fishing expenditures and economic contributions therefore are not directly comparable to other regions.

Angler Days

By definition, all of the fishing in this subregion occurred in salt water. Of the total 435,338 days of fishing in Southeast marine waters in 2007, more than one-half (255,465) were taken by nonresidents. Most angler-days fished in the subregion (62.7%) were unguided, but among nonresidents over half of all saltwater days fished (57.7%) were guided days (Table 69). Due to a relatively small sample size, the exact proportion of guided days fished by resident anglers in Southeast marine waters is unknown, but it appears to be relatively small compared to nonresidents.

Table 69.—Total angler days, by residency and guided/unguided for Southeast marine waters*, 2007.

	RESIDENT		NONRESIDENT		ALL ANGLERS	
	Angler-Days	%	Angler-Days	%	Angler-Days	%
Saltwater						
Guided			147,332	57.7%	162,185	37.3%
Unguided			108,133	42.3%	273,153	62.7%
Total	179,873	100.0%	255,465	100.0%	435,338	100.0%

Shaded cells represent estimates that are not reported due to small sample size.

Source: 2007 Statewide Harvest Survey, Alaska Department of Fish and Game.

*Totals reported here do not exactly match published statewide and regional totals from the 2007 SWHS due to the fact that it is not possible to identify the water type or guided/unguided status of some SWHS survey responses. The totals reported in this table reflect the summary of all days fished within a region that could be assigned to a specific residency, water type, and guided/unguided category. Approximately 4,177 days fished (0.16% of 2.5 million days) could not be assigned to a strata category and thus were not included in these totals.

Expenditures

Where anglers spend their money is not necessarily tied to where they fish or where they live. In actuality, an angler on a one-day or multi-day fishing trip might start from their home, purchase fuel, food, or other supplies on the way to their destination, and then make additional purchases such as bait, ice, or guide services, closer to where they fish. The following expenditure tables take this into account by reporting total trip expenditures associated with Southeast marine fishing made by all Alaska resident anglers, regardless of where they fished or the region where

they live, and by all nonresident anglers who live outside of Alaska regardless of where they fished. In addition to fishing more days, nonresidents spent considerably more than residents for sportfishing in Southeast marine waters. Because equipment and real estate are not included in estimates of spending by type of water and pre-purchased package spending relates only to nonresidents, all resident angler spending is associated with trip-related expenditures (\$21.3 million). Nonresident anglers split their spending between pre-purchased package trips (\$36.6 million) and non-package trip expenditures (\$73.7 million; Table 70).

Table 70.—Total spending for sportfishing, by expenditure category and residency for Southeast marine waters, 2007.

Expenditures	Resident Anglers		Nonresident Anglers		All Anglers	
	Spending	%	Spending	%	Spending	%
Trip	\$21,268,271	100.0%	\$73,714,297	66.8%	\$94,982,568	72.2%
Package	NA**	NA**	\$36,630,880	33.2%	\$36,630,880	27.8%
Equipment	NA*	NA*	NA*	NA*	NA*	NA*
Real Estate	NA*	NA*	NA*	NA*	NA*	NA*
Total	\$21,268,271	100.0%	\$110,345,177	100.0%	\$131,613,448	100.0%

*Equipment and real estate expenditures cannot be ascribed to a particular type of water.

**Package expenditures refer specifically to travel packages purchased by nonresidents prior to departing on their trip to Alaska.

Table 71 presents a summary of the average trip spending that took place in the Southeast region for saltwater fishing for the major expenditure categories. Trip and package spending is based on total spending in the region and is averaged across all days of saltwater fishing that took place in the region, regardless of where individual resident anglers lived or fished. By definition, this subregion includes only saltwater fishing. As a result, no equipment or real estate expenditures are included because multi-purpose, multi-use spending is not assigned to fishing activity by type of water. Overall, anglers fishing Southeast marine waters spent an average of \$302.32 per day of fishing on trip and package expenditures. Alaska residents fishing saltwater in the Southeast an average of \$118.24 in the region, compared to \$431.94 spent in the region by the average nonresident (Table 71).

Table 71.—Average TRIP spending per angler-day for Southeast marine waters, 2007*.

	Resident Anglers	Nonresident Anglers	All Anglers
	\$ per angler-day		
Trip Expenditures	\$118.24	\$288.55	\$218.18
Package Expenditures	NA**	\$143.39	\$84.14
Total trip spending	\$118.24	\$431.94	\$302.32
	annual \$ per licensed angler		
	NA***	NA***	NA***
Equipment Expenditures	NA***	NA***	NA***
Real Estate Expenditures	NA***	NA***	NA***

*Estimates of average spending for detailed trip and equipment categories are presented in Appendix L.

**Package expenditures refer specifically to purchases of travel packages made by nonresidents prior to departing on their trip to Alaska.

***Equipment and real estate expenditures cannot be ascribed to a particular type of water.

Anglers make a wide range of purchases to support their fishing activity including, trip-related expenditures and pre-purchased packages. Trip-related expenses refer to spending for temporary or consumable goods and services that anglers make while on a particular fishing trip. These range from food and lodging to travel expenses (e.g., fuel or air taxis), groceries, bait, and derby tickets. The full list of trip-related expenditure items and the amount spent by residents and nonresidents for Southeast marine sportfishing in 2007 is presented in Table 72.

Some nonresident anglers opt to pre-purchase a packaged fishing expedition from one of the many outfitters, guides and lodges in Alaska. Such packages typically offer a range of services for one price including transportation, guides, food and lodging. The survey of nonresidents asked anglers to report spending for any packages that they may have purchased and to indicate which amenities were included in the package.

A further breakdown of trip and package spending is presented in Table 72 which shows total spending by resident/nonresidents, and by guided/unguided fishing. No reliable estimates are available for resident anglers who took guided saltwater fishing trips in the region due to the small number of observations resulting from the angler expenditure survey. In this breakdown, the greatest amount of trip spending came from nonresident anglers on guided trips (\$52.4 million). Those anglers also spent the most on packages (\$32.6 million). Nonresident guided anglers accounted for 55.2% of all saltwater trip spending in the region in 2007 and 89.1% of all package spending. Similar detailed breakdowns of angler spending on a "per day" basis are provided in Appendix L.

Table 72.—Detailed total TRIP and PACKAGE spending by anglers fishing saltwater in Southeast Alaska, by residency and use of guides, 2007.

	RESIDENT		NONRESIDENT		ALL ANGLERS
	Guided*	Unguided	Guided	Unguided	
SALTWATER ANGLERS					
Trip Expenditures					
Fuel and oil		\$7,232,882	\$1,532,460	\$4,125,662	\$13,198,038
Guide and charter fees		\$84,305	\$21,505,868	\$305,377	\$23,761,150
Airfare to and from Alaska		\$0	\$9,469,274	\$4,852,526	\$14,321,800
Travel within Alaska		\$42,165	\$1,780,545	\$750,283	\$2,572,992
Fish processing & shipping		\$1,265,507	\$5,191,906	\$701,845	\$7,667,809
Rentals (boats, equipment, etc.)		\$58,241	\$740,166	\$1,005,864	\$1,871,986
Derby tickets		\$746,192	\$47,683	\$37,464	\$831,340
Boat launch and dock fees		\$4,126,563	\$2,686	\$493,202	\$4,647,823
Ice		\$223,702	\$21,528	\$67,288	\$312,518
Bait (natural bait only)		\$1,482,050	\$47,906	\$465,636	\$2,006,804
Groceries bought in stores		\$2,676,679	\$1,888,464	\$2,604,512	\$7,280,057
Restaurants, bars, and take-out		\$235,603	\$2,333,949	\$2,155,046	\$4,750,827
Overnight accommodations		\$104,796	\$4,109,380	\$2,393,836	\$6,608,012
Souvenirs and gifts		\$23,059	\$3,002,209	\$1,082,181	\$4,107,450
Other entertainment		\$44,412	\$537,568	\$254,262	\$836,243
Other		\$0	\$199,537	\$8,184	\$207,720
Total		\$18,346,157	\$52,411,128	\$21,303,169	\$94,982,568
Package Expenditures					
		NA	\$32,652,353	\$3,978,528	\$36,630,880

*estimates are not reported due to small sample size.

Economic Contributions

Expenditures by anglers generate additional economic benefits throughout the Southeast Alaska regional economy. Multiplier effects have been estimated separately for trip spending and package spending, and for equipment and real estate spending combined. All economic contributions have been estimated separately for residents and nonresidents. The direct effects that are shown in the following tables reflect the economic activity associated with angler spending on saltwater sportfishing captured within the regional economy (i.e. consumer retail spending less the value of goods imported from outside of the regional economy). For that reason, the direct output values in the tables that follow are likely to be less than the reported angler spending for any specific category.

Table 73 presents economic contributions from trip and package spending by residency for sportfishing in Southeast Alaska marine waters. Since it is generally not possible to ascribe sportfishing equipment and real estate spending to a particular water type, the following estimates of the economic contribution of sportfishing in Southeast marine waters do not include the economic contributions from equipment and real estate spending occurring in the region. The economic contribution estimates shown in Table 73 represent only the trip and package expenditure economic effects, not a full representation of economic activity in the region from saltwater fishing. The \$131.6 million spent in the region by saltwater anglers generated \$37.5 million of income to 1,419 full and part time workers and proprietors who worked in the Southeast businesses that sold directly to those anglers. Spending by nonresidents accounted for 1,194 of the jobs and \$30.9 million of income, while resident saltwater sportfishing in Southeast Alaska accounted for 226 jobs and \$6.6 million in income (Table 73). Additional detailed estimates of the industry impacts in Southeast marine waters due to angler spending are presented in Appendices K and L.

Table 73.—Economic contributions of combined TRIP-RELATED and PACKAGE expenditures by anglers for sportfishing in Southeast marine waters, by residency, and guided/unguided, 2007.

	RESIDENT		NONRESIDENT		TOTAL*		ALL ANGLERS
	Guided**	Unguided	Guided	Unguided	Resident	Nonresident	
SALTWATER ANGLERS							
Direct effects							
Output		\$17,416,421	\$75,930,757	\$21,002,797	\$20,304,330	\$96,933,554	\$117,237,884
Income		\$5,641,068	\$24,148,749	\$6,817,503	\$6,556,676	\$30,966,252	\$37,522,928
Employment		192	953	241	226	1,194	1,419
Multiplier effects							
Output		\$6,665,412	\$33,423,682	\$8,436,905	\$7,940,081	\$41,860,587	\$49,800,668
Income		\$2,150,884	\$11,048,563	\$2,677,856	\$2,575,544	\$13,726,419	\$16,301,963
Employment		63	321	80	76	402	478
Total effects							
Output		\$24,081,833	\$109,354,439	\$29,439,702	\$28,244,411	\$138,794,141	\$167,038,552
Income		\$7,791,952	\$35,197,312	\$9,495,359	\$9,132,220	\$44,692,671	\$53,824,891
Employment		255	1,274	321	301	1,595	1,897

* Total guided and unguided trip related and package spending

**Estimates are not reported due to small sample size.

In addition to the economic activity directly attributable to spending by anglers are the multiplier effects (indirect and induced effects) of that consumer spending. The indirect effect results from the increased economic activity among businesses that supply those businesses selling directly to the anglers. For example, the guide that sells directly to anglers, in turn, stimulates additional activity among the businesses that supply the guide's operations. The induced effect is the economic activity produced by household spending of income earned by workers in those businesses that are impacted by both the direct and indirect effects. Including both direct and multiplier effects, the \$131.6 million of spending by anglers fishing saltwater in Southeast Alaska produced \$53.8 million of income and supported 1,897 full and part-time jobs (Table 73).

The relationship between the direct effect (i.e. directly attributable to the spending by anglers) and the total economic activity that it creates is commonly presented in the form of a multiplier. In the case of saltwater sportfishing in Southeast Alaska, the output multiplier of 1.42 (total effect divided by direct effect) means every dollar of activity stimulated by angler spending creates an additional \$0.42 of economic activity elsewhere in the regional economy. In similar fashion, the income and employment multipliers are 1.43 and 1.34, respectively. This means that for every dollar of income paid to workers in businesses that sell directly to anglers and for every job in a business that sells directly to anglers there is an additional \$0.43 of income and 0.34 additional jobs in other businesses throughout the regional economy that are supported by angler spending.

Employment effects are of particular importance to the state and local economy. The jobs supported by angler expenditures are shown in Table 74 categorized by the industry in which the jobs occur. The jobs directly supported by angler spending largely reflect the types of expenditures made by anglers – trip expenditures for food, bait, lodging and guide services, maintenance of real estate used for sportfishing, and retail purchases of fishing and related equipment. Sector 11 in the following table includes farming and commercial fishing and hunting and is directly affected primarily through anglers' purchases of groceries and bait. The broader distribution of jobs indirectly supported by angler spending through the multiplier effect is the result of inter-industry trade flows and the expenditures of household income that comes from angler-supported jobs.

43	38	8
1,897	437	1,412
Total Employment Impact		

The economic activity directly and indirectly generated in the 2 counties by saltwater anglers also produces tax revenue for local, state and federal governments. The IMPLA model produces generalized estimates of tax revenues that are based on existing statewide ratios of output, income and employment to all tax revenues. It is estimated that saltwater sportfishing expenditures in Southeast Alaska in 2007 provided \$14.2 million and \$12.2 million in state and federal tax revenues, respectively (Table 75). Nonresidents accounted for 11% of all tax revenues in the Southeast region attributed to saltwater anglers.

Table 74.—Employment (jobs) directly and indirectly supported by angler trip expenditures associated with saltwater fishing in Southeast Alaska in the Southeast region, by industry in which the employment occurs, 2007.

NAICS Industry Categories	Direct Effects	Multiplier Effects	Total Effects
11 Agriculture, forestry, fishing & hunting	46	30	76
21 Mining	6	1	7
22 Utilities	0	3	3
23 Construction	0	5	5
31-33 Manufacturing	18	7	25
42 Wholesale trade	57	8	65
48-49 Transportation & warehousing	97	37	134
44-45 Retail trade	174	56	230
51 Information	0	13	13
52 Finance & insurance	0	14	14
53 Real estate & rental	31	34	65
54 Professional- scientific & technical services	0	24	24
55 Management of companies	0	1	1
56 Administrative & waste services	2	38	39
61 Educational services	0	5	5
62 Health & social services	0	48	48
71 Arts- entertainment & recreation (e.g., guides)	574	16	590
72 Accommodation & food services	388	59	448
81 Other services	21	43	65
92 Government and public administration	6	36	42
Total Employment Impact	1,419	477	1,897

The economic activity directly and indirectly generated in the Southeast by saltwater anglers also produces tax revenues for local, state and federal governments. The IMPLAN model produces generalized estimates of tax revenues that are based on existing statewide ratios of output, income and employment to all tax revenues. It is estimated that saltwater sportfishing expenditures in Southeast Alaska in 2007 provided \$14.2 million and \$12.2 million of state/local and federal tax revenues, respectively (Table 75). Nonresidents accounted for 81.8% of all tax revenues in the Southeast region attributed to saltwater anglers.

Table 75.—Tax revenues generated by saltwater sportfishing trip spending in Southeast Alaska, 2007.

	State and Local Tax Revenues	Federal Tax Revenues	Total tax Revenues
RESIDENT ANGLERS			
Trip Expenditures (non-package)	\$2,713,584	\$2,077,440	\$4,791,024
Package Expenditures			\$0
Equipment & Real Estate Expenditures	NA	NA	NA
Subtotal	\$2,713,584	\$2,077,440	\$4,791,024
NONRESIDENT ANGLERS			
Trip Expenditures (non-package)	\$7,624,199	\$6,583,477	\$14,207,676
Package Expenditures	\$3,849,158	\$3,520,701	\$7,369,858
Equipment & Real Estate Expenditures	NA	NA	NA
Subtotal	\$11,473,357	\$10,104,178	\$21,577,534
ALL ANGLERS			
Trip Expenditures (non-package)	\$10,337,783	\$8,660,917	\$18,998,700
Package Expenditures	\$3,849,158	\$3,520,701	\$7,369,858
Equipment & Real Estate Expenditures	NA	NA	NA
Total	\$14,186,941	\$12,181,618	\$26,368,559

SUMMARY AND DISCUSSION

This study was conducted to provide current information regarding the economic contributions made by sportfishing to Alaska and its regional economies. Natural resource managers typically need to include economic considerations when planning land and water resource management or providing input to regulatory and policy decision-makers. Effective management requires accurate information at a level of analysis that enables decision-makers to address specific issues that affect a particular population or region. This study (ADF&G Sportfishing Economic Study, 2007, by Southwick Associates Inc, subsequently referred to as ADF&G Economic Study 2007) addresses that need by measuring the economic contributions of sportfishing in key regions of Alaska, broken down by residency of the anglers, the type of water they fished, and whether the fishing was guided or unguided.

MAJOR FINDINGS

In 2007, a total of 475,534 resident and nonresident licensed anglers fished 2.5 million days in Alaska and spent \$1.39 billion on licenses and stamps, trip-related expenditures, pre-purchased packages, and equipment and real estate used for fishing. An input-output model of Alaska and the study regions was used to estimate the total economic contributions that the spending created through the economic multiplier effect. The \$1.39 billion of angler spending in Alaska supported 15,879 jobs in Alaska and provided \$545.3 million of income (Table 76). Although residents spent more than nonresidents (\$733.3 million compared to \$652.5 million), it was the nonresident spending that made a larger economic contribution (more jobs and income). This was the result of differences in the kinds of expenditures made by residents and nonresidents. Resident anglers spent more of their money on equipment that is manufactured primarily outside of Alaska while nonresidents spent most their money on trip-related purchases and pre-arranged packages that include services such as guides, lodging and meals produced by Alaska businesses.

As anglers' dollars move from business to business in the Alaska economy, government revenues are generated by local property taxes, sales taxes, business taxes, excise taxes, etc. In total, \$123.1 million in tax revenues were generated for state and local governments in Alaska and \$123.2 million for the Federal government.

Detailed fishing activity, spending and economic contributions are provided in the report for each study region. Some of the highlights include:

- Approximately three-quarters of all fishing and spending in Alaska took place in the Southcentral region. The \$988.6 million spent by anglers in that region:
 - Provided \$386.5 million of income
 - Supported 11,535 jobs
- In Cook Inlet, located within the Southcentral region, anglers spent \$733.0 million that:
 - Provided \$278.8 million of income
 - Supported 8,056 jobs
- Approximately one-fifth of all fishing and spending took place in the Southeast region. The \$273.5 million spent by anglers in that region:
 - Provided \$99.1 million of income
 - Supported 3,063 jobs
- Saltwater fishing is particularly important in the Southeast region. The \$131.6 million that was spent by marine anglers in that region:
 - Provided \$53.8 million of income
 - Supported 1,897 jobs
- Approximately 8% of all fishing and spending took place in the Interior region. The \$100.6 million spent by anglers in that region:
 - Provided \$28.6 million of income
 - Supported 923 jobs
- The regions of Alaska vary markedly in the types of fishing that they offer:
 - The Southeast region is dominated by saltwater fishing – 81% of all fishing days were in saltwater.
 - The Interior region is dominated by freshwater fishing – over 99% of all fishing days were in freshwater.
 - The Southcentral region offers a more balanced mix of fishing – 66% freshwater and 34% saltwater.
- Most fishing in Alaska is unguided, although the use of guides ranges from 10% of angler days in the Interior to 34% in the Southeast.
- Guides are more likely to be used by nonresidents (43% of nonresident angler days compared to 9% of residents), and by anglers who fish saltwater (33% of angler days in saltwater compared to 16% in freshwater).

Table 76 summarizes the fishing activity in Alaska broken down by residents and nonresidents, along with their total spending by major category. More licenses are sold to nonresidents than residents, but not surprisingly, residents account for more of the total fishing activity in the state (days fished) since most nonresident fishing occurs during short-term visits. Residents spent more money in Alaska for fishing than nonresidents, but the nonresident spending makes a bigger contribution to the state's economy. This is due to the larger proportion of nonresident spending that is focused on goods and services that are provided directly by Alaskan businesses; whereas Alaska residents spend a larger percentage of their money on equipment manufactured outside of Alaska, resulting in less direct impact on the in-state economy.

Since little of the fishing equipment that Alaskans bought is produced within the state, much of that spending leaks quickly out of the Alaska economy and has a multiplier effect that is limited only to those in-state business that are involved in making the goods available to consumers in Alaska. That is why it is possible for industry output to be less than actual angler spending, as is the case with resident expenditures. The only industry output in Alaska that is associated with the purchase of goods produced elsewhere (e.g., boats, motors, vehicles, fishing tackle, etc.) is the wholesale and retail margin retained by those businesses in Alaska, and the transportation sector that moves the goods within the state.

Table 76.—Summary of economic contributions of sportfishing in Alaska, 2007

	Resident Anglers	Nonresident Anglers	All Anglers
Licensed anglers*	190,644	284,890	475,534
Days fished**	1,459,380	1,080,438	2,539,818
Angler purchases:			
Licenses and Fees	\$6,627,558	\$16,536,955	\$23,164,513
Trip-related (non-package)	\$219,829,151	\$347,358,999	\$567,188,150
Packages	NA***	\$137,519,700	\$137,519,700
Equipment	\$433,693,104	\$41,385,450	\$475,078,554
Real Estate (construction & repair)	\$73,139,537	\$109,697,619	\$182,837,156
Total dollars spent	\$733,289,349	\$652,498,723	\$1,385,788,072
Total economic contribution, including multiplier effects:			
Industry output	\$668,729,829	\$938,863,856	\$1,607,593,685
Income provided	\$223,373,937	\$321,882,151	\$545,256,088
Jobs supported	6,442	9,437	15,879

* Source: Alaska Department of Fish and Game. Includes purchased licenses and issued PIDs (Personal Identification cards) and DAVs (Alaska Disabled American Veteran permits).

**Totals reported here do not exactly match published statewide and regional totals from the 2007 SWHS due to the fact that it is not possible to identify the water type or guided/unguided status of some SWHS survey responses. The totals reported in this table reflect the summary of all days fished within a region that could be assigned to a specific residency, water type, and guided/unguided category. Approximately 4,177 days fished (0.16% of 2.5 million days) could not be assigned to a stratum and were not included in these totals.

***Package expenditures refer specifically to purchases of travel packages made by nonresidents prior to departing on their trip to Alaska.

STUDY LIMITATIONS

The results presented in this report are based on a survey of anglers who obtained an Alaska sportfishing license in 2007, including Alaska residents and nonresidents. The estimates that were produced are subject to limitations that are inherent in survey research, including sampling errors, nonsampling errors, and response bias.

Sampling Errors

Within the limits of the project budget, an effort was made to obtain a sufficient number of responses from a representative sample of licensed anglers to produce reliable estimates at the desired levels of analysis (guided/unguided by residency by water type within each geographic region). Estimates were not reported for any level of disaggregation where the number of observations was deemed insufficient (see Appendix J for a description of the usable responses within each analysis strata and the specific strata for which estimates are not reported in the study). Summary statistics, including standard deviation, for all data elements collected in the angler surveys are presented in Appendix G although they are not necessarily indicative of the margins of error associated with the final estimates contained in the report. This is due to the additional calculations required to estimate total spending in Alaska based on the survey responses. The procedures for estimating the economic contributions of angler spending included a number of steps and data transformations which made it prohibitively difficult to calculate the sampling error associated with each of the many estimates. For example, estimates of annual trip expenditures are the result of pooling survey estimates across multiple time periods, each with its own margin of error. The regional annual means for residents and nonresidents were disaggregated by type of water fished and whether or not the fishing was guided. The resulting mean expenditure estimates per angler-day for each time period were then multiplied by estimates of total annual angler-days in each region, which were derived from a separate survey conducted by ADF&G with its own set of sampling and nonsampling errors. The estimates of total spending for each data collection region were then aggregated into the study regions. The resulting annual expenditure totals were then processed through input-output models that introduce an additional layer of potential, but unknown estimation errors. The end result is a valid estimation of the economic contribution of sportfishing in Alaska, albeit with an unknown margin of error. Ultimately, the study design, survey methodology and sample sizes were developed carefully in consideration of the study objectives and the estimates produced by the study can be considered an accurate representation of the economic contributions of sportfishing to the Alaska economy.

Nonsampling Errors

Potential nonsampling errors can arise from several sources that are unrelated to the precision of the estimates produced by the study but have the potential to introduce bias in the study results. These errors generally derive from the overall study design and implementation procedures. They can include the sample frame from which the mailing list was drawn, omission of important expenditure categories, data entry/coding/cleaning, the wording of questions in the survey instrument, and recall bias. Considerable care was taken in the design of the study to minimize these sources of error; however the following may have affected the results. Unlike sampling errors, their effects are not measurable.

Potential sources of nonsampling errors include:

- The survey instruments attempted to include all expenditures that are reasonably associated with fishing. However, in the compromise between collecting large amounts of detailed data and limiting the size of the questionnaire to encourage respondents to complete the survey, it is possible that some fishing related expenditures have not been included in the total estimates of anglers' spending. In an effort to ensure that the key types of expenditures were included in the study, development of the survey instrument included the participation and careful scrutiny by staff of ADF&G who are familiar with fishing activity in Alaska.
- A respondent's misinterpretation of survey questions can lead to the inclusion of inaccurate or inappropriate responses. In addition to the multiple layers of review and editing, the survey questionnaire was pre-tested by Alaska residents and nonresidents in a procedure that included both in-person and telephone feedback. Following completion of the survey, the responses were carefully reviewed to remove illogical responses as part of the process of identifying outlier values.
- The data entry procedures included a screening process for out-of-bound values to minimize data entry errors. In addition, all upper-bound values were compared to the original source questionnaires for verification. Final decisions regarding outlier values were made in conjunction with ADF&G staff.
- The sample frame for the study was defined as all anglers who were issued licenses to sport fishing in 2007, including those that were purchased, PIDs or DAVs in 2007. However, the sportfishing population includes other nonlicensed anglers who may also spend money as a result of their fishing activity. This includes primarily youth age 15 and younger who are not required to purchase a license. To an unknown extent, they are included in the survey when a respondent's expenditures include spending on meals, lodging, bait, equipment, etc. for an unlicensed angler. As a snapshot of all anglers' spending, the sample also includes respondents whose fishing expenses were paid by someone else and would report \$0.00 of spending. On the other hand, unlicensed anglers, such as youth, were not given an opportunity to complete their own survey. It is currently not possible to directly estimate the economic contribution of unlicensed anglers on the Alaska economy given how the DSF Statewide Harvest Survey is currently conducted and the difficulty of reaching the unlicensed population.
- The estimate of total angler days used in calculating estimated trip expenditures is based on the DSF Statewide Harvest Survey—which is a household survey used to estimate all sportfishing catch, effort and harvest in Alaska whether by licensed anglers or those who are not required to have a license (e.g., youth under age 15). It is not possible under the current study design to produce separate estimates of licensed and unlicensed angling effort (days fished) from the SWHS, so the total estimate of days fished in Alaska was used. The inclusion of unlicensed effort in the total expenditure calculation would have the impact of inflating the trip expenditure estimates by a small amount. However, this effect is likely balanced out by the fact that unlicensed angler expenditures were not captured as part of the angler survey used in this study due to the difficulty of reaching the unlicensed population of anglers.

Response Bias

The results of the survey could be affected by the ability of respondents to accurately recall information regarding their past fishing activity, and from the decision by specific types of respondents within the sample to forego participating in the survey altogether. Potential sources of response bias errors include:

- Recall error is an issue in any survey that asks respondents to report information from an event that took place at some previous point in time. This study tried to limit this source of error by conducting two waves of survey mailings (in the Summer and Fall/Winter) to restrict the amount of time between receipt of the survey and the fishing trip on which respondents were asked to report.
- Telescoping error is the tendency of respondents to report significant events as having occurred more recently than they actually did. In the angler survey, this type of error might have led some respondents to reference a bigger or more expensive fishing trip as being the last one taken within the surveys' reference periods while forgetting about a smaller trip that might have occurred later. If this occurred, it could bias the reported expenditures upward. Telescoping is more often associated with shorter recall periods, so the survey recall periods were designed as a compromise to minimize both recall errors and telescoping errors.
- The ability of respondents to allocate expenditures for multi-purpose items to a specific use is a particular concern when it involves expensive items because small differences in the percent allocated to fishing might produce unexpected results. In the equipment category, purchases of boats is an example of this type of equipment expenditure, and at \$101.1 million spending by residents it is also the largest equipment expenditure (\$530 per angler). For comparison, total retail boat sales in 2002 (the latest year for which government statistics are available) were \$391 for every adult male age 18-64 living in Alaska that year (adjusted for inflation to 2007 dollars)⁴¹. By that comparison, \$530 per angler, for individuals who are more likely to buy a boat than the average resident, does not seem unreasonable.
- Surveys are subject to the possibility that the persons who choose to respond are systematically different from persons who do not respond and extrapolating the survey results may not accurately reflect the study population. Tests for such nonresponse bias can be made by comparing the responses of people who respond to the first mailing to those who respond to later mailings under the assumption that later responders are more like non-responders. An analysis of variance on all expenditure variables found a statistically significant difference (at the 95% confidence level) in the mean expenditure between mailings for only two of the more than 60 expenditure categories in the survey (ice purchased between May and June, and equipment expenditures for rods and reels). The lack of extensive differences between mailings, especially for expensive items such as boats and vehicles, suggests that there was no systematic nonresponse bias in the survey.

⁴¹ United States Census Bureau. 2005. Alaska: 2002 Economic census, retail trade geographic area series. U.S. Department of Commerce Economics and Statistics Administration, Washington, D. C.

- The study experienced unexpected problems in data collection due to the occurrence of duplicate identification numbers and a printing error. This is discussed in detail elsewhere in the report and summarized here, however, it is believed that the results of the study were not adversely impacted to a significant degree.

- During the first mailing of the Wave II surveys, respondents on the resident mailing list were issued the same set of identification numbers that were also issued to nonresidents. When completed surveys were returned, the mail house that received the surveys was not always able to identify the appropriate respondent (i.e., in cases where there was no postmark to distinguish resident from nonresidents). The problem was mitigated by having employees of Southwick Associates open the envelopes to make the resident-nonresident determination, and distinct identification numbers were issued for the second and third mailings. Still, an unknown number of anglers who did not respond to the first mailing were not sent additional mailings, while some anglers who responded to the first mailing received additional mailings.
- In the third mailing of the Wave II surveys, the questionnaires were printed on the same color paper as the second mailing. Since the paper color was intended to be the means for determining to which mailings the anglers responded, this limited the ability to measure overall response bias. This did not affect the first mailing and no response bias was detected between the first mailing and the subsequent (second and third) mailings.

INTERPRETING THE RESULTS

Sportfishing was an important part of the Alaska economy in 2007, providing jobs and income to many of Alaska's residents. Including the multiplier effects, sportfishing supported nearly 16,000 jobs and provided \$545.3 million of income. Table 77 places this into perspective by comparing the economic contribution of sportfishing to the total economic activity in each of the study regions. The table shows that sportfishing's relative contribution varies, by region. It is of greatest relative importance in the Southeast region where it accounted for approximately 4.8% of the total income and 6.4% of all jobs in the region. Conversely, it is of less relative importance in the Interior, where it provided 0.6% and 1.0% of all income and jobs, respectively (to maintain comparability, the estimates of output, income and employment due to sportfishing that were generated by using the IMPLAN models are compared to similar measures for all economic activity as reported by the IMPLAN models; the latest available IMPLAN economic data for Alaska is 2006).

Table 77.—Economic contributions from sportfishing in Alaska compared to total economic activity in each region.

	Angler Spending	Total Economic Contribution*		
		Output	Income	Employment
Southeast				
Sportfishing-related	\$273,504,804	\$295,260,010	\$99,141,694	3,063
All economic activity**		\$4,927,726,000	\$2,047,290,000	47,799
% sportfishing-related		6.0%	4.8%	6.4%
Southcentral				
Sportfishing-related	\$988,558,119	\$1,165,545,513	\$386,463,733	11,535
All economic activity**		\$38,271,608,000	\$14,289,604,000	300,535
% sportfishing-related		3.0%	2.7%	3.8%
Interior				
Sportfishing-related	\$100,560,637	\$86,712,709	\$28,563,882	923
All economic activity**		\$12,568,651,000	\$4,784,721,000	88,667
% sportfishing-related		0.7%	0.6%	1.0%
Statewide Total				
Sportfishing-related	\$1,385,788,072	\$1,607,593,685	\$545,256,088	15,879
All economic activity**		\$55,766,476,000	\$21,121,616,000	437,001
% sportfishing-related		2.9%	2.6%	3.6%

*Including direct and multiplier effects.

**Source: 2006 IMPLAN economic models.

The number of jobs supported by sportfishing statewide in 2007 (15,879) is essentially the same as the total number of jobs in the state's entire manufacturing sector in 2006 (approximately 15,900⁴²). The economic importance of the two sources of economic activity are not directly

⁴² Source: IMPLAN economic data for the state of Alaska, 2006.

comparable because the contribution of sportfishing includes the multiplier effect of angler spending (some of which is included in the manufacturing sector). Nevertheless, it is useful as a context for assessing the number of jobs directly and indirectly associated with sportfishing.

It also is useful to compare the results of the current survey to other studies of sportfishing in Alaska. The most comparable study was conducted by the Institute of Social and Economic Research at the University of Alaska Anchorage (ISER)⁴³. That study was completed in 1999 and based on surveys of anglers conducted primarily in 1993. It found that anglers spent \$540 million on sportfishing activities during the 1993 fishing season, while this study (Southwick) estimates total spending at \$1.39 billion in 2007 (Table 78). To account for differences in the number of anglers, the totals are converted to expenditures per angler based on total license sales in the respective years. Finally, to account for inflation during the period between 1993 and 2007, the ISER average expenditures per angler are converted to 2007 dollars based on the U.S. Department of Labor's Consumer Price Index. The result shows that this study's estimates are 36.2% higher than the inflation-adjusted ISER estimate. Trends in angler expenditures have shown a steady rise in the purchases made by the average angler. This increased spending can be estimated by comparing the results of national angler surveys conducted by the U.S. Fish and Wildlife Service in 1991 and 2006^{44, 45}. Using the same procedures that were employed to compare the 1993 ISER study to the current study, the results show that the average angler in the U.S. spent 40.6% more in 2006 than in 1991, after adjusting for inflation. On that basis, the estimates of total spending produced by the current study appear to be comparable to the estimates of the earlier ISER study.

Table 78.—Comparison of spending estimates in the current study to an earlier study of sportfishing in Alaska, with adjustments for inflation, participation, and trends in angler spending.

Study	Year	TOTAL spending	# anglers	\$/angler	Inflation- adjusted \$/angler
ALASKA					
ISER	1993	\$540,000,000	362,093	\$1,491	\$2,140
ADF&G Economic Study 2007	2007	\$1,385,788,072	475,534		\$2,914
<i>difference</i>					36.2%
US					
USFWS	1991	\$24,000,000,000	35,578,000	\$675	\$997
USFWS	2006	\$42,000,000,000	29,952,000		\$1,402
<i>difference</i>					40.6%

⁴³ Haley, Sharman, et al. *The Economics of Sportfishing in Alaska*, Institute of Social and Economic Research, University of Alaska Anchorage, December 1999.

⁴⁴ U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

⁴⁵ U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

More recently, the National Marine Fisheries Service (NMFS) released its state-level estimates of the economic contribution of recreational marine fishing⁴⁶. The NMFS study estimates that saltwater anglers in Alaska spent \$499.1 million in 2006, including trip and equipment expenditures, but not including expenditures for fishing packages. The ADF&G 2007 study did not allocate equipment expenditures by type of water fished, but an approximate allocation can be made on the basis of angler-days attributed to saltwater (41.4%). Using that allocation, equipment and real estate spending in this study that can be attributed to salt water is \$272.1 million. As a result, the NMFS study estimates of trip and equipment spending are consistently 11%-12% lower, and suggests that the estimates of total saltwater spending in both studies are somewhat similar (Table 79).

Table 79.—Comparison of spending for saltwater fishing in the current study to expenditure estimates from 2006 NMFS Marine Expenditure Survey.

	ADF&G Economic Study 2007	NMFS Study 2006*	Difference
Angler-Days	1,050,359	NA	
Percent of Total Fishing	41.4%		
Trip spending (non-package)	292,069,076	257,572,000	11.8%
Equipment & real estate spending	272,085,515	241,544,000	11.2%
Total spending	564,154,590	499,116,000	11.5%

* Gentner, Brad, and Scott Steinbeck. 2008. *The economic contribution of marine angler expenditures in the United States, 2006*.

Table 80 shows which industries in Alaska were affected by the expenditures made by sportfishing anglers in Alaska in 2007 (additional details of the industry impacts are provided in Appendix O). These figures represent the total contribution of angler spending, including the direct effect of spending and the multiplier effects. The largest employment impacts occur in sector 71 (arts, entertainment & recreation – e.g., guides), sector 44-45 (retail trade), and sector 72 (accommodation & food services). Sportfishing contributed 9,332 jobs in these three sectors, combined. That is more than 58% of the total number of jobs supported by sportfishing. These sectors are characterized by a significant level of seasonal and part-time employment which generally leads to lower average annual wages. Because average wages in these sectors are among the lowest of the major industry sectors, it is not surprising that the relative contribution of sportfishing to total income is less than its contribution to total jobs. This is made clear in Table 81 where it shows that sportfishing accounts for 3.7% of all jobs statewide, but only 2.6% of total income. This is a pattern that holds true for each of the regions, as well. The highest average wages in Alaska occur in the state's mining (primarily oil and gas), utilities, management, and construction industries and with the exception of construction, sportfishing contributes little to the economic activity in these high wage sectors.

⁴⁶ Gentner, Brad, and Scott Steinbeck. 2008. *The Economic Contribution of Marine Angler Expenditures in the United States, 2006*. U.S. Dep. Commerce, NOAA Tech. Memo. NMFSF/SPO-94, 301 p.

Table 80.—Statewide industries affected by sportfishing anglers' expenditures in Alaska (including multiplier effects).

NAICS Industry Categories	Output	Income	Jobs
11 Ag, Forestry, Fish & Hunting	\$11,505,704	\$3,286,760	312
21 Mining	\$54,942,427	\$14,212,919	74
22 Utilities	\$18,749,962	\$4,251,608	43
23 Construction	\$190,667,861	\$73,329,024	1,089
31-33 Manufacturing	\$146,622,482	\$12,148,088	314
42 Wholesale Trade	\$80,807,105	\$30,540,597	561
48-49 Transportation & Warehousing	\$104,367,201	\$36,150,850	699
44-45 Retail trade	\$231,341,569	\$97,083,148	3,493
51 Information	\$22,910,578	\$5,290,195	107
52 Finance & insurance	\$32,419,273	\$9,357,746	162
53 Real estate & rental	\$79,230,449	\$26,247,581	744
54 Professional- scientific & tech services	\$39,361,393	\$17,073,359	345
55 Management of companies	\$7,403,223	\$3,193,217	41
56 Administrative & waste services	\$22,204,906	\$8,509,106	300
61 Educational services	\$3,309,539	\$1,537,386	66
62 Health & social services	\$49,750,195	\$27,119,391	571
71 Arts, entertainment, recreation (e.g., guides)	\$197,450,887	\$62,808,215	3,363
72 Accommodation & food services	\$182,588,793	\$61,785,118	2,530
81 Other services	\$50,645,014	\$18,680,740	612
92 Government & non NAICs	\$95,377,191	\$38,007,196	639
Total Angler Expenditures	\$1,621,655,731	\$550,612,229	16,065

The spending by nonresident anglers impacts somewhat different industries than those affected by resident anglers. Because nonresidents are more likely to employ guides, stay in temporary accommodations and eat meals in restaurants, a larger proportion of their impact affects those industries compared to residents. A larger proportion of residents' spending, on the other hand, is focused on purchasing equipment. As a result, resident spending has a relatively greater association with jobs and income in the retail trade sector than does spending by nonresidents. Interestingly, while the distribution of industries affected by anglers' spending varies significantly between residents and nonresidents, the total proportions represented by the three major sectors (retail trade; arts, entertainment & recreation; accommodation & food services) are nearly the same for both residents and nonresidents.

Table 81.—Statewide industry impacts due to resident and nonresident sportfishing anglers' expenditures in Alaska (including multiplier effects).

NAICS Industry Categories	RESIDENT ANGLERS		NONRESIDENT ANGLERS	
	Income	Employment	Income	Employment
44-45 Retail trade	27.4%	33.7%	10.8%	13.5%
71 Arts, entertainment & recreation	7.6%	14.0%	14.1%	25.7%
72 Accommodation & food services	6.9%	10.0%	14.2%	19.7%
<i>Subtotal</i>	41.9%	57.7%	39.1%	58.9%
All other industries	58.1%	42.3%	60.9%	41.1%
Total Angler Expenditures	100.0%	100.0%	100.0%	100.0%

Finally, the unique quality of Alaska's fishing experience attracts a large number of sport anglers from outside its borders. Almost 60% of the jobs and income attributed to sportfishing activity can be considered an economic impact to the state's economy that would not exist if not for sportfishing. In the Southeast region, nonresidents account for nearly three-fourths of the total economic contribution of sport anglers. Over 9,400 jobs and \$321.9 million of income are the result of the people that travelled to Alaska and subsequently went sportfishing. Directly comparable studies of other visitor activity in Alaska are not readily available, however, a recent study of visitors commissioned by the Alaska Department of Commerce found that people visiting Alaska for vacation/pleasure spent \$1.5 billion during the 2006/2007 tourism season (not including the cost of transportation to enter or exit the state.)⁴⁷ Based on this measure, the \$741 million spent by nonresident sport anglers in 2007 represents approximately 50% of all visitor spending, underscoring the importance of fishing to Alaska's tourism industry.

⁴⁷ Alaska Visitor Statistics Program V: Fall/Winter 2006-2007 McDowell Group, Inc.

- Questionnaire
- 1st mailing cover letter
- 2nd mailing cover letter
- 3rd mailing cover letter



Alaska SportFishing Economic Survey

INTRODUCTION: Thank you for participating in this survey. The purpose of the survey is to quantify the economic contributions of sportfishing to Alaska's economy. "Sportfishing" is defined as the taking of fish and shellfish (clams, crabs, shrimp, etc) under Alaska sportfishing license and regulations, including personal use fishing (e.g. dipnetting). Please do not report activities and expenditures associated with subsistence fishing, which is defined as the taking or possession of fish, shellfish, or other fisheries resources for subsistence uses.

Section A - GENERAL: In this section, we are interested in learning some general information about your sportfishing activities in Alaska.

1. How often do you go sportfishing in Alaska? (check only one)

- ☐ Every year
- ☐ Almost every year
- ☐ Every few years
- ☐ Infrequently, once in several years
- ☐ This is my first year

2. Did you buy an Alaska sportfishing license in 2007 primarily to go personal use fishing (e.g., dipnetting, gill netting, etc.)?

- ☐ Yes
- ☐ No

3. As best as possible, please report the number of days you went sportfishing in November and December, 2006. (Please enter "0" if you did not fish in this period.)

Number of saltwater fishing days _____ Number of freshwater fishing days _____

4. Did you go sportfishing in Alaska between January 1st and June 30th, 2007? (check one)

- ☐ Yes
- ☐ No → PLEASE SKIP TO SECTION D - PAGE 5

Section B. SPORTFISHING ACTIVITY: In this section, we want to know how often you went sport fishing in Alaska between January 1st and April 30th 2007 and between May 1st and June 30th, 2007.

*** PLEASE REFER TO THE ENCLOSED MAP TO ANSWER THESE QUESTIONS ***

-continued-

Section B. SPORTFISHING ACTIVITY: In this section, we want to know how often you went sport fishing in Alaska between January 1st and April 30th 2007 and between May 1st and June 30th, 2007.

*** PLEASE REFER TO THE ENCLOSED MAP TO ANSWER THESE QUESTIONS ***

5. JANUARY through APRIL: How many days did you go freshwater and saltwater fishing in each region between January 1st and April 30th, 2007? Please fill in an answer for each region. (Enter "0" if you did not fish in that region.)

	Number of days of freshwater fishing (January thru April)	Number of days of saltwater fishing (January thru April)
EXAMPLE	3	0
Region A		
Region B		
Region C		
Region D		
Region E		No saltwater in region E
Region F		

6. MAY through JUNE: How many days did you go freshwater and saltwater fishing in each region between May 1st and June 30th, 2007? Please fill in an answer for each region. (Enter "0" if you did not fish in that region.)

	Number of days of freshwater fishing MAY thru JUNE	Number of days of saltwater fishing MAY thru JUNE
EXAMPLE	4	2
Region A		
Region B		
Region C		
Region D		
Region E		No saltwater in region E
Region F		

Section C - LAST TIME YOU WENT SPORTFISHING: Now we would like to know about the last time you went sportfishing in Alaska between January 1st and June 30th, 2007. Please remember, "sportfishing" includes personal use (e.g., dipnetting) and shellfish fishing, but does not include subsistence fishing.

***** ALL OF THESE QUESTIONS REFER TO THE LAST TIME YOU WENT SPORTFISHING IN ALASKA *****

***** BETWEEN JANUARY 1ST AND JUNE 30TH, 2007 *****

7. When was the last time you went sportfishing in Alaska between JANUARY 1ST AND JUNE 30TH, 2007?

(Check one.)

☐ January ☐ February ☐ March ☐ April ☐ May ☐ June

8. Fishing trips often include time for fishing, travel and non-fishing activities. How long was this last fishing trip including fishing days, travel days and non-fishing days? Note that single-day trips do not need to take a whole day. For example, if the last time you went fishing you only fished for a few hours after work, this would be counted as "1" day.

Total number of days involved in last fishing trip: _____

9. How many days did you actually fish during this last time that you went fishing in Alaska? (Count partial days of fishing as "1" day.)

Number of days actually fished: _____

10. Would you have taken this trip even if you were unable to go fishing? (check one)

☐ Yes ☐ No

11. Was this trip primarily... (check one)

☐ rod & reel sportfishing ☐ dipnetting (personal use) ☐ shellfish fishing

12. Was this trip primarily... (check one)

☐ in freshwater ☐ in saltwater ☐ in both freshwater & saltwater

13. Did you pay for a guide or a charter boat on this trip? (check one)

☐ Yes ☐ No

14. Where did this trip occur? Please refer to the map included with this survey. (Check all that apply.)

☐ Region A ☐ Region B ☐ Region C
☐ Region D ☐ Region E ☐ Region F

15. Which species did you target the last time you went sportfishing in Alaska between JANUARY 1ST AND JUNE 30TH, 2007? Please note the species you targeted may not necessarily be the fish actually caught on your trip. (Check all that apply.)

- | | |
|--|---|
| ☐ King Salmon (Chinook) | ☐ Steelhead |
| ☐ Silver Salmon (Coho) | ☐ Trout (rainbow, cutthroat, lake trout, etc.) |
| ☐ Red Salmon (Sockeye) | ☐ Halibut |
| ☐ Other Salmon (Pink, Chum) | ☐ Shellfish (clams, crab, shrimp, etc.) |
| ☐ Other freshwater (Dolly Varden, char, burbot, Arctic grayling, northern pike, sheefish, etc.) | ☐ Other saltwater (lingcod, rockfish, shark, etc.) |

16. As best as possible, please tell us how much you spent and where you bought the following TRIP-RELATED items ON THE TRIP DESCRIBED ABOVE. Please write in the amount you spent and, referring to the included map, please circle the letter of the region or regions where you made the purchase(s). We will ask about your equipment purchases in later questions.

Items purchased on last trip (between JANUARY 1 ST AND JUNE 30 TH , 2007).	Total Amount Spent	Region or regions where you bought the item
EXAMPLE	\$ 25	A (B) C D (E) F
Licenses and stamps	\$	A B C D E F
Fuel and oil for your car, truck, boat, airplane, ATV & other transportation	\$	A B C D E F
Guide and charter fees	\$	A B C D E F
Transportation services (air taxis, boat ferries, shuttle vans, taxi, etc.)	\$	A B C D E F
Boat launch and dockage fees	\$	A B C D E F
Ice	\$	A B C D E F
Bait (natural bait only, do not include lures)	\$	A B C D E F
Groceries, food, liquor bought in stores (not in restaurants or bars)	\$	A B C D E F
Restaurants, bars, and take-out food purchases	\$	A B C D E F
Heating and cooking fuels	\$	A B C D E F
Fish processing & shipping	\$	A B C D E F
Rentals (boats, equipment, autos, etc.)	\$	A B C D E F
Overnight accommodations (hotels/motels, B&B's, campgrounds, cabin rental, etc.)	\$	A B C D E F
Derby tickets	\$	A B C D E F
Souvenirs and gifts	\$	A B C D E F
Other entertainment expenses during fishing trip (movies, etc.)	\$	A B C D E F
Other (please specify): _____	\$	A B C D E F

Section D. FISHING EQUIPMENT EXPENDITURES: In this section, we want to know about sportfishing and related equipment you bought **IN ALASKA during the last 12 months**, including equipment purchased for personal use (e.g., dipnet) and/or shellfish fishing.

17. As best as possible, please tell us how much you spent and where you bought the following fishing equipment and fishing related gear in the last 12 months. Only report purchases made in Alaska - exclude purchases from catalogs and web sites of out-of-state companies. Include purchases you made for yourself and for others. Write in the amount spent and, referring to the included map, circle the letter of the region or regions where you made the purchase(s). Since some items can be used for non-fishing activities, please estimate the percentage that the purchased fishing related gear is used for sportfishing.

Items purchased <u>WITHIN THE LAST 12 MONTHS</u> :	Total amount spent	Region or regions where you bought the item	% Used for sport fishing:
EXAMPLE	\$ 40	A (B) C (D) E F	65 %
FISHING EQUIPMENT:			
Licenses and stamps	\$	A B C D E F	100 %
Rods, reels, & components	\$	A B C D E F	100 %
Fishing tackle (lines, leaders, lures, creels, stringers etc)	\$	A B C D E F	100 %
Tackle boxes, cases to protect fishing equipment	\$	A B C D E F	100 %
Depth finders, fish finders, other electronics	\$	A B C D E F	100 %
Landing nets, dipnets & gillnets	\$	A B C D E F	100 %
Miscellaneous fishing equipment (knives, scales, etc.)	\$	A B C D E F	100 %
Shellfish fishing equipment (shovels, pots, buckets, etc.)	\$	A B C D E F	100 %
Fish mounting (taxidermy)	\$	A B C D E F	100 %
Books and magazines devoted to fishing	\$	A B C D E F	100 %
FISHING-RELATED GEAR:			
Items to store/preserve fish (smoker, vacuum sealer, etc.)	\$	A B C D E F	%
Coolers, fish boxes	\$	A B C D E F	%
Clothing (fishing vest, raingear, head net, etc.)	\$	A B C D E F	%
Boots, shoes, waders and other footwear	\$	A B C D E F	%
Life jackets, survival suits or other PFDs	\$	A B C D E F	%
Boats, canoes, rafts, kayaks and other watercraft	\$	A B C D E F	%
Boat motors	\$	A B C D E F	%
Trailers, hitches, and accessories	\$	A B C D E F	%
Other boat parts and accessories	\$	A B C D E F	%
Bear spray, bug spray, sun screen	\$	A B C D E F	%
Firearms for personal protection	\$	A B C D E F	%
Cameras, binoculars, sun glasses	\$	A B C D E F	%
Tents, screen rooms, tarps, backpacks, sleeping bags	\$	A B C D E F	%
Camping trailer (pop-up, self-contained, 5th wheel)	\$	A B C D E F	%
Other camping equipment (stoves, grills, lanterns, etc.)	\$	A B C D E F	%
Vehicles (trucks, SUVs, motorhomes, etc.)	\$	A B C D E F	%
Airplanes and related equipment	\$	A B C D E F	%
ATVs, snowmachines	\$	A B C D E F	%
Boat/camper registrations and excise taxes	\$	A B C D E F	%
Vehicle, boat or airplane repair/maintenance	\$	A B C D E F	%
Other (please specify):	\$	A B C D E F	%

18. Please report how much you spent IN THE PAST 12 MONTHS related to any Alaska real estate that was purchased or used primarily for sportfishing purposes. (If you spent nothing, enter "0".)

Real estate spending for fishing within the last 12 months:	Amount spent	Please circle where the property is located
EXAMPLE	\$ 25,000	A B C D E F
Expenses related to real estate <u>owned</u> or <u>shared</u> for fishing (including mortgage payments, insurance, property taxes, etc.)	\$	A B C D E F
Expenses related to land, cabins and/or other real estate property <u>leased</u> or <u>rented</u> for fishing, including boat slips and storage	\$	A B C D E F
Maintenance and repairs to real estate property	\$	A B C D E F
Construction of cabins, sheds, and other buildings	\$	A B C D E F

Section E. BACKGROUND INFORMATION: To help us learn more about who fishes in Alaska, please answer these final questions. All answers you provide will be kept fully confidential. Your answers will help us evaluate the survey to best represent ALL Alaska anglers, even those not surveyed.

19. In which region is your primary residence? (Using the map included with this survey, (check one.)

☐ Region A

☐ Region B

☐ Region C

☐ Region D

☐ Region E

☐ Region F

20. What is your gender?

☐ Male

☐ Female

21. What year were you born?

19_____

22. Which category best describes the highest level of education you have completed? (Check one)

☐ Did not graduate from high school

☐ High school graduate or GED

☐ 1-3 years college (some college)

☐ College graduate (bachelor degree or equivalent)

☐ Postgraduate, master's degree, doctorate, law degree, other professional degree

23. Which best describes your household's annual, before-tax income? (Check one)

☐ Less than \$9,999

☐ \$60,000 - \$69,999

☐ \$10,000 - \$19,999

☐ \$70,000 - \$79,999

☐ \$20,000 - \$29,999

☐ \$80,000 - \$89,999

☐ \$30,000 - \$39,999

☐ \$90,000 - \$99,999

☐ \$40,000 - \$49,999

☐ \$100,000 - \$249,999

☐ \$50,000 - \$59,999

☐ \$250,000 or more

If you have any additional comments you wish to share about this study please provide them here:

-continued-

If you have any additional comments you wish to share about this study please provide them here:

SARAH PALIN, GOVERNOR

P.O. BOX 11528
JUNEAU, AK 99811-5208
PHONE 907-586-1100
FAX 907-586-1100

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
OFFICE OF THE COMMISSIONER

(DATE)

Dear Alaska Angler:

You have been selected to participate in a study aimed at measuring the economic significance of sport fishing in Alaska. You were selected to be part of this study as a result of having purchased an Alaska sport fishing license in 2007. Even if you did not fish in Alaska last year or do not really care about these issues, we would still like to hear from you. You are one of a small group of people that have been selected to represent the interests of all Alaska anglers, so it is very important that we hear from you. The entire survey should only take you about 10 minutes to complete.

In appreciation for your help, our project manager, Southwest Associates, Inc., will enter the names of all those who return a completed survey into a drawing for a \$1,000 gift certificate redeemable at a local sporting goods retailer of your choice. When you have completed the survey, please return it in the enclosed postage-paid envelope. If you prefer, you can take the survey online at TO BE DETERMINED. Your user code for the online survey is XXXXXX.

The information you provide will be kept confidential and will only be used by ADFG and the project manager, Southwest Associates, Inc. (www.SouthwestAssociates.com) to produce summary statistics of the economic significance of sport fishing in Alaska. If you have any questions, comments or concerns about the study, you may contact the project manager, Bill Romberg, at 907-586-1330, or by e-mail at william.romberg@alaska.gov.

Thank you for your help and participation!

Please return the survey in the self-addressed, postage paid envelope. Even if you did not fish, your returned survey is very important to us.

By returning your completed survey, you are automatically entered into a drawing for a \$1,000 gift certificate redeemable at a local sporting goods retailer of your choice!

We wish you the best of success and safety in your future fishing efforts!

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

SARAH PALIN, GOVERNOR

P.O. BOX 115526
JUNEAU, AK 99811-5526
PHONE (907) 465-4100
FAX (907) 465-2332

{DATE}

Dear Alaska angler:

You have been selected to participate in a study aimed at measuring the economic significance of sport fishing in Alaska. You were selected to be part of this study as a result of having purchased an Alaska sport fishing license in 2007. Even if you did not fish in Alaska last year or do not really care about these issues, we would still like to hear from you. You are one of a small group of people that have been selected to represent the activities of all Alaskan anglers, so it is very important that we hear from you. The entire survey should only take you about 10 minutes to complete.

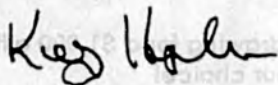
In appreciation for your help, our project contractor, Southwick Associates, Inc. will enter the names of all those who return a completed survey into a drawing for a \$1,000 gift certificate redeemable at a local sporting goods retailer of your choice.

When you have completed the survey, please return it in the enclosed postage-paid envelope. If you prefer, you can take the survey online at [TO BE DETERMINED]. Your user code for the online survey is XXYZZZ.

The information you provide will be kept confidential and will only be used by ADF&G and the project contractor, Southwick Associates, Inc. (www.SouthwickAssociates.com) to produce summary estimates of the economic significance of sport fishing in Alaska. If you have any questions, comments or concerns about the study, you may contact the project manager, Bill Romberg, at 907-267-2366, or by e-mail at william.romberg@alaska.gov.

I'd like to thank you again for agreeing to participate in this important study.

Sincerely,



Kelly Hepler,
Director,
Division of Sport Fish

STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

P.O. BOX 115526
JUNEAU, AK 99811-5526
PHONE (907) 465-4100
FAX (907) 465-2332

{Date}

Dear Alaska Angler,

In July, we sent you a survey about your sportfishing activities in Alaska during the first six months of 2007. Many of the other anglers who received the survey have already responded, but we have not yet received your completed questionnaire. The Alaska Department of Fish and Game is conducting the survey to better understand the economic importance of sportfishing to the state's economy. Information about your experience is very valuable to this study because you have been chosen to represent many other sport anglers in Alaska. Therefore, it is very important that we hear from you.

Enclosed is a replacement questionnaire. Please take a few minutes to respond to the survey and return it in the postage-paid envelope. If you prefer, you can take the survey online at www.southwickassociates.com/alaskasurvey. Your user code for the online survey is XXYYZZ. *Your responses to the survey questions will be kept strictly confidential* and will only be used by the research team to develop statistically-valid estimates of economic activity associated with sportfishing in Alaska.

In appreciation for your help, our project contractor, Southwick Associates, Inc. will enter the names of all those who return a completed survey into a drawing for a \$1,000 gift certificate redeemable at a local sporting goods retailer of your choice.

If you have any questions about the survey, you may contact the project manager, Bill Romberg, at 907-267-2366, or by e-mail at william.romberg@alaska.gov.

I'd like to thank you again for agreeing to participate in this important study.

Sincerely,



Charlie O. Swanton
Director,
Division of Sport Fish

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

SARAH PALIN, GOVERNOR

P.O. BOX 115526
JUNEAU, AK 99811-5526
PHONE (907) 465-4100
FAX (907) 465-2332

{Date}

Dear Alaska Angler,

Approximately four weeks ago, we sent you a second questionnaire as part of our study to learn about sportfishing activities in Alaska. So far, we have received responses from many of the other anglers who were sent the survey, but your completed questionnaire has not been returned. We are sending you another questionnaire since it is important that we obtain information from as many people in our sample as possible. Because your fishing experiences and expenditures are representative of many other anglers, the information that you provide will be invaluable for making an accurate assessment of sportfishing's economic impact to the state. Please take a few minutes to complete the survey and return it in the postage-paid envelope. If you prefer, you can take the survey online at www.southwickassociates.com/alaskasurvey. Your user code for the online survey is XXYZZZ.

We realize that confidentiality is important to you, and it is important to us. *Your survey will not be shared with anyone outside of the research team.*

Upon receiving your completed survey, our project contractor, Southwick Associates, Inc. will enter your name into a drawing for a \$1,000 gift certificate to be used at a local sporting goods store of your choice. If you have any questions about the survey, you may contact the project manager, Bill Romberg, at 907-267-2366, or by e-mail at william.romberg@alaska.gov.

I'd like to thank you again for agreeing to participate in this important study.

Sincerely,



Charlie O. Swanton
Director,
Division of Sport Fish



Alaska Sportfishing Economic Survey

Completing the survey online* or by mail will enter your name into a drawing for a \$1,000 gift certificate redeemable at the local sporting-goods retailer of your choice.

INTRODUCTION: Thank you for participating in this survey. The purpose of the survey is to quantify the economic contributions of sportfishing to Alaska's economy. "Sportfishing" is defined as the taking of fish and shellfish (clams, crabs, shrimp, etc.) under an Alaska sportfishing license and regulations, including personal use fishing (e.g. dipnetting). Please do not report activities and expenditures associated with subsistence fishing, which is defined as the taking or possession of fish, shellfish, or other fisheries resources for subsistence uses.

APPENDIX B: WAVE II RESIDENT SURVEY MATERIALS

Wave II – Resident Survey

- Questionnaire
- 1st mailing cover letter
- 2nd mailing cover letter
- 3rd mailing cover letter

MAY 1 st thru JUNE 30 th 2007		Region A	Region B	Region C	Region D	Region E	Region F
Saltwater days							
Freshwater days							
JULY 1 st thru OCTOBER 31 st 2007		Region A	Region B	Region C	Region D	Region E	Region F
Saltwater days							
Freshwater days							

*If you prefer to take this survey online, please refer to the enclosed letter for your unique access code and web link.

-continued-

Appendix B1 - Page 2 of 8



Alaska Sportfishing Economic Survey

Completing the survey online* or by mail will enter your name into a drawing for a \$1,000 gift certificate redeemable at the local sporting-goods retailer of your choice!

INTRODUCTION: Thank you for participating in this survey. The purpose of the survey is to quantify the economic contributions of sportfishing to Alaska's economy. "Sportfishing" is defined as the taking of fish and shellfish (clams, crabs, shrimp, etc) under an Alaska sportfishing license and regulations, including personal use fishing (e.g. dipnetting). Please do not report activities and expenditures associated with subsistence fishing, which is defined as the taking or possession of fish, shellfish, or other fisheries resources for subsistence uses.

Section A – GENERAL: In this section, we are interested in learning some general information about your sportfishing activities in Alaska.

1. Did you buy an Alaska sportfishing license in 2007 primarily to go personal use fishing (e.g., dipnetting, gill netting, etc.)?

☐ Yes ☐ No

2. As best as possible, please report the number of days you went sportfishing in Alaska during November and December, 2006. (Enter "0" if you did not fish in this period.)

Number of saltwater fishing days _____ Number of freshwater fishing days _____

3. As best as possible, please report the number of days you went freshwater or saltwater fishing in each region of Alaska from May through June and from July through October, 2007. See the enclosed map for the locations of the regions. (Enter "0" if you did not fish in a region. If you did not do any sport fishing between May 1st and October 31st of this year, then skip to Section C on page 6.)

MAY 1 st thru JUNE 30 th 2007	Region A	Region B	Region C	Region D	Region E	Region F
Freshwater days.....						
Saltwater days.....					No Saltwater in Region E	
JULY 1 st thru OCTOBER 31 st 2007	Region A	Region B	Region C	Region D	Region E	Region F
Freshwater days.....						
Saltwater days.....					No Saltwater in Region E	

*If you prefer to take this survey online, please refer to the enclosed letter for your unique access code and web link.

-continued-

Section B1 – LAST TIME YOU WENT SPORTFISHING IN MAY THRU JUNE: Now we would like to know about the last time you went sportfishing in Alaska between May 1st and June 30th, 2007. Please remember, "sportfishing" includes personal use (e.g., dipnetting) and clamming/shellfish harvesting (e.g., crabs, shrimps), but does not include subsistence fishing.

ALL OF THESE QUESTIONS REFER TO THE LAST TIME YOU WENT SPORTFISHING IN ALASKA

***** BETWEEN MAY 1ST AND JUNE 30TH, 2007 *****

4. When was the last time you went sportfishing in Alaska between MAY 1st AND JUNE 30th, 2007? (Check one.)

☐ May

☐ June

☐ I did not fish between May 1st and June 30th (Skip to section B2, page 4)

5. Fishing trips often include time for fishing, travel and non-fishing activities. How long was this fishing trip including fishing days, travel days and non-fishing days? Note that single-day trips do not need to take a whole day. For example, if the last time you went fishing MAY thru JUNE you only fished for a few hours after work, this would be counted as "1" day.

Total number of days involved in last fishing trip: _____

6. How many days did you actually fish during this last time that you went fishing in Alaska between MAY 1st AND JUNE 30th? (Count partial days of fishing as "1" day).

Number of days actually fished: _____

7. Would you have taken this trip even if you were unable to go fishing? (check one)

☐ Yes

☐ No

8. Was this trip primarily... (check one)

☐ rod & reel sportfishing

☐ dipnetting (personal use)

☐ shellfish fishing

9. Was this trip primarily... (check one)

☐ in freshwater

☐ in saltwater

☐ in both freshwater & saltwater

10. Did you pay for a guide or a charter boat on this trip? (check one)

☐ Yes

☐ No

11. Where did this trip occur? Please refer to the map included with this survey. (Check all that apply.)

☐ Region A

☐ Region B

☐ Region C

☐ Region D

☐ Region E

☐ Region F

12. Which species did you target the last time you went sportfishing in Alaska between **MAY 1ST** and **JUNE 30TH, 2007**? Please note the species you targeted may not necessarily be the fish actually caught on your trip. (Check all that apply.)

- | | |
|--|---|
| ☐ King Salmon (Chinook) | ☐ Steelhead |
| ☐ Silver Salmon (Coho) | ☐ Trout (rainbow, cutthroat, lake trout, etc.) |
| ☐ Red Salmon (Sockeye) | ☐ Halibut |
| ☐ Other Salmon (Pink, Chum) | ☐ Shellfish (clams, crab, shrimp, etc.) |
| ☐ Other freshwater (Dolly Varden, char, burbot, Arctic grayling, northern pike, sheefish, etc.) | ☐ Other saltwater (lingcod, rockfish, shark, etc.) |

TRIP RELATED SPENDING IN MAY THRU JUNE

13. As best as possible, please tell us how much you spent and where you bought the following TRIP-RELATED items **ON THE FISHING TRIP DESCRIBED ABOVE**. Please write in the amount you spent and, referring to the included map, please circle the letter of the region or regions where you made the purchase(s). We will ask about your equipment purchases in later questions.

Items purchased on last trip (between MAY 1 ST AND JUNE 30 TH , 2007).	Total Amount Spent	Region or regions where you bought the item(s)
EXAMPLE:	\$ 25	A (B) C D (E) F
Licenses and stamps.....	\$	A B C D E F
Fuel and oil for your car, RV, boat, airplane, etc.....	\$	A B C D E F
Guide and charter fees.....	\$	A B C D E F
Airline tickets.....	\$	A B C D E F
Commercial transportation (air taxi, ferry, shuttle, etc.).....	\$	A B C D E F
Fish processing & shipping.....	\$	A B C D E F
Rentals (boats, equipment, autos, etc.).....	\$	A B C D E F
Derby tickets.....	\$	A B C D E F
Boat launch and dockage fees.....	\$	A B C D E F
Ice.....	\$	A B C D E F
Bait (natural bait only, do not include lures).....	\$	A B C D E F
Groceries, food, liquor bought in stores.....	\$	A B C D E F
Restaurants, bars, and take-out food purchases.....	\$	A B C D E F
Overnight lodging (hotels, campgrounds, cabins).....	\$	A B C D E F
Souvenirs and gifts.....	\$	A B C D E F
Other entertainment expenses during fishing trip.....	\$	A B C D E F
Other (please specify):.....	\$	A B C D E F

Section B2 – LAST TIME YOU WENT SPORTFISHING IN JULY THRU OCTOBER: In this section, we would like to know about the last time you went sportfishing in Alaska between July 1st and October 31st, 2007. Please remember, "sportfishing" includes personal use (e.g., dipnetting) and clamming/shellfish fishing including crab, but does not include subsistence fishing.

ALL OF THESE QUESTIONS REFER TO THE LAST TIME YOU WENT SPORTFISHING IN ALASKA

***** BETWEEN July 1st AND October 31st, 2007 *****

14. When was the last time you went sportfishing in Alaska between JULY 1st AND OCTOBER 31st, 2007?

(Check one.)

☐ July

☐ August

☐ September

☐ October

☐ I did not fish between July 1st and Oct 31st (Skip to section C, page 6)

15. Fishing trips often include time for fishing, travel and non-fishing activities. How long was this fishing trip including fishing days, travel days and non-fishing days? Note that single-day trips do not need to take a whole day. For example, if the last time you went fishing JULY thru OCTOBER you only fished for a few hours after work, this would be counted as "1" day.

Total number of days involved in last fishing trip: _____

16. How many days did you actually fish during this last time that you went fishing in Alaska between JULY 1st AND OCTOBER 31st? (Count partial days of fishing as "1" day).

Number of days actually fished: _____

17. Would you have taken this trip even if you were unable to go fishing? (check one)

☐ Yes

☐ No

18. Was this trip primarily... (check one)

☐ rod & reel sportfishing

☐ dipnetting (personal use)

☐ shellfish fishing

19. Was this trip primarily... (check one)

☐ in freshwater

☐ in saltwater

☐ in both freshwater & saltwater

20. Did you pay for a guide or a charter boat on this trip? (check one)

☐ Yes

☐ No

21. Where did this trip occur? Please refer to the map included with this survey. (Check all that apply.)

☐ Region A

☐ Region B

☐ Region C

☐ Region D

☐ Region E

☐ Region F

22. Which species did you target the last time you went sportfishing in Alaska between JULY 1ST AND OCTOBER 31ST, 2007? Please note the species you targeted may not necessarily be the fish actually caught on your trip. (Check all that apply.)

- | | |
|--|---|
| ☐ King Salmon (Chinook) | ☐ Steelhead |
| ☐ Silver Salmon (Coho) | ☐ Trout (rainbow, cutthroat, lake trout, etc.) |
| ☐ Red Salmon (Sockeye) | ☐ Halibut |
| ☐ Other Salmon (Pink, Chum) | ☐ Shellfish (clams, crab, shrimp, etc.) |
| ☐ Other freshwater (Dolly Varden, char, burbot, Arctic grayling, northern pike, sheefish, etc.) | ☐ Other saltwater (lingcod, rockfish, shark, etc.) |

TRIP RELATED SPENDING IN JULY THRU OCTOBER

23. As best as possible, please tell us how much you spent and where you bought the following TRIP-RELATED items ON THE TRIP DESCRIBED ABOVE. Please write in the amount you spent and, referring to the included map, please circle the letter of the region or regions where you made the purchase(s). We will ask about your equipment purchases in later questions.

Items purchased on last trip (between JULY 1 ST AND OCTOBER 31 ST , 2007).	Total Amount Spent	Region or regions where you bought the item(s)
EXAMPLE:	\$ 25	A (B) C D (E) F
Licenses and stamps	\$	A B C D E F
Fuel and oil for your car, RV, boat, airplane, etc.	\$	A B C D E F
Guide and charter fees	\$	A B C D E F
Airline tickets	\$	A B C D E F
Commercial transportation (air taxi, ferry, shuttle, etc.)	\$	A B C D E F
Fish processing & shipping	\$	A B C D E F
Rentals (boats, equipment, autos, etc.)	\$	A B C D E F
Derby tickets	\$	A B C D E F
Boat launch and dockage fees	\$	A B C D E F
Ice	\$	A B C D E F
Bait (natural bait only, do not include lures)	\$	A B C D E F
Groceries, food, liquor bought in stores	\$	A B C D E F
Restaurants, bars, and take-out food purchases	\$	A B C D E F
Overnight lodging (hotels, campgrounds, cabins)	\$	A B C D E F
Souvenirs and gifts	\$	A B C D E F
Other entertainment expenses during fishing trip	\$	A B C D E F
Other (please specify):	\$	A B C D E F

Section C. FISHING EQUIPMENT EXPENDITURES: In this section, we want to know about sportfishing and related equipment you bought IN ALASKA during the last 12 months, including equipment purchased for personal use (e.g., dipnet) and/or shellfish fishing.

24. As best as possible, please tell us how much **YOU** spent and **where** you bought the following fishing equipment and fishing related gear in the last 12 months. Only report purchases made in Alaska – exclude purchases from catalogs and web sites of out-of-state companies. Include purchases YOU made for yourself and for others. Write in the amount spent and, referring to the included map, circle the letter of the region or regions where you made the purchase(s). Since some items can be used for non-fishing activities, please estimate the percentage that the purchased fishing related gear is used for sportfishing.

	Total amount spent	Region or regions where you bought the item(s)	% Used for sport fishing:
EXAMPLE: Clothing	\$ 40	A (B) C (D) E F	65 %
FISHING EQUIPMENT:			
Licenses and stamps	\$	A B C D E F	100 %
Rods, reels, & components	\$	A B C D E F	100 %
Fishing tackle (lines, leaders, lures, creels, stringers etc)	\$	A B C D E F	100 %
Tackle boxes, cases to protect fishing equipment	\$	A B C D E F	100 %
Depth finders, fish finders, other electronics	\$	A B C D E F	100 %
Landing nets, dipnets & gillnets	\$	A B C D E F	100 %
Miscellaneous fishing equipment (knives, scales, etc.)	\$	A B C D E F	100 %
Shellfish fishing equipment (shovels, pots, buckets, etc.)	\$	A B C D E F	100 %
Fish mounting (taxidermy)	\$	A B C D E F	100 %
Books and magazines devoted to fishing	\$	A B C D E F	100 %
FISHING-RELATED GEAR OR OTHER NON-FISHING PURCHASES:			
Items to store/preserve fish (smoker, vacuum sealer, etc.)	\$	A B C D E F	%
Coolers, fish boxes	\$	A B C D E F	%
Clothing (fishing vest, raingear, head net, etc.)	\$	A B C D E F	%
Boots, shoes, waders and other footwear	\$	A B C D E F	%
Life jackets, survival suits or other PFDs	\$	A B C D E F	%
Boats, canoes, rafts, kayaks and other watercraft	\$	A B C D E F	%
Boat motors	\$	A B C D E F	%
Trailers, hitches, and accessories	\$	A B C D E F	%
Other boat parts and accessories	\$	A B C D E F	%
Bear spray, bug spray, sun screen	\$	A B C D E F	%
Firearms for personal protection	\$	A B C D E F	%
Cameras, binoculars, sun glasses	\$	A B C D E F	%
Tents, screen rooms, tarps, backpacks, sleeping bags	\$	A B C D E F	%
Camping trailer (pop-up, self-contained, 5 th wheel)	\$	A B C D E F	%
Other camping equipment (stoves, grills, lanterns, etc.)	\$	A B C D E F	%
Vehicles (trucks, SUVs, motorhomes, etc.)	\$	A B C D E F	%
Airplanes and related equipment	\$	A B C D E F	%
ATVs, snowmachines	\$	A B C D E F	%
Boat/camper registrations and excise taxes	\$	A B C D E F	%
Vehicle, boat or airplane repair/maintenance	\$	A B C D E F	%
Other, including non-fishing related purchases (please specify):	\$	A B C D E F	%

25. Please report how much you spent **IN THE PAST 12 MONTHS** related to any Alaska real estate that was purchased or used **primarily for sportfishing purposes**.

	Amount spent	Please circle where the property is located
EXAMPLE: Maintenance and repairs.....	\$ 2,500	A B C D E F
Expenses related to real estate owned or shared for fishing (including mortgage payments, insurance, property taxes, etc.)	\$	A B C D E F
Expenses related to land, cabins and/or other real estate property leased or rented for fishing, including boat slips and storage	\$	A B C D E F
Maintenance and repairs to real estate property	\$	A B C D E F
Construction of cabins, sheds, and other buildings	\$	A B C D E F

Section D. BACKGROUND INFORMATION: To help us learn more about who fishes in Alaska, please answer these final questions. All answers you provide will be kept fully confidential. Your answers will help ensure that the survey represents ALL Alaska anglers, even those not surveyed.

26. In which region is your primary residence? (Please use the map included with this survey -- *check one*)

- ☐ Region A
 ☐ Region B
 ☐ Region C
☐ Region D
 ☐ Region E
 ☐ Region F

27. What is your gender?

- ☐ Male
 ☐ Female

28. What year were you born?

19_____

29. Which category best describes the highest level of education you have completed? (*Check one*)

- ☐ Did not graduate from high school
☐ High school graduate or GED
☐ 1-3 years college (some college)
☐ College graduate (bachelor degree or equivalent)
☐ Postgraduate, master's degree, doctorate, law degree, other professional degree

30. Which best describes your household's annual, before-tax income? (*Check one*)

- ☐ Less than \$9,999
 ☐ \$60,000 - \$69,999
☐ \$10,000 - \$19,999
 ☐ \$70,000 - \$79,999
☐ \$20,000 - \$29,999
 ☐ \$80,000 - \$89,999
☐ \$30,000 - \$39,999
 ☐ \$90,000 - \$99,999
☐ \$40,000 - \$49,999
 ☐ \$100,000 - \$249,999
☐ \$50,000 - \$59,999
 ☐ \$250,000 or more

31. How satisfied are you with your overall sportfishing experiences in Alaska in 2007? (Check one.)

☐ Very
Dissatisfied

☐ Generally
Dissatisfied

☐ Neutral

☐ Generally
Satisfied

☐ Very
Satisfied

If you have any additional comments you wish to share about this study please provide them here:

(DATE) _____
Don Alaskan Angler

You have been selected to participate in a study aimed at measuring the economic significance of sport fishing in Alaska. You were selected to be part of this study as a result of having purchased an Alaska sport fishing license in 2007. Even if you did not fish in Alaska this year or do not really care about these issues, we would still like to learn from you. You are one of a small group of people that have been selected to represent the activities of all Alaskan anglers, so it is very important that we hear from you.

In appreciation for your help, our project contractor, Southwick Associates, Inc. will enter the names of all those who return a completed survey into a drawing for a \$1,000 gift certificate redeemable at a local sporting goods retailer of your choice.

When you have completed the survey, please return it in the enclosed postage-paid envelope. If you prefer, you can take the survey online at www.southwickassociates.com/alaskasurvey. Your user code for the online survey is XXXVXX.

The information you provide will be kept confidential and will only be used by ADF&G and the project contractor, Southwick Associates, Inc. (www.southwickassociates.com) to produce summary estimates of the economic significance of sport fishing in Alaska. If you have any questions, comments or concerns about the study, you may contact the project manager, Bill Homberg, at 907-267-2366, or by e-mail at william.homberg@alaska.gov.

Thank you again for agreeing to participate in this important study.

Thank you for your help and participation!

Please return the survey in the self-addressed, postage paid envelope. Even if you did not fish, your returned survey is very important to us.

We wish you the best of success and safety in your future fishing efforts!

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

SARAH PALIN, GOVERNOR

P.O. BOX 115526
JUNEAU, AK 99811-5526
PHONE (907) 465-4100
FAX (907) 465-2332

{DATE}

Dear Alaska Angler:

You have been selected to participate in a study aimed at measuring the economic significance of sport fishing in Alaska. You were selected to be part of this study as a result of having purchased an Alaska sport fishing license in 2007. Even if you did not fish in Alaska this year or do not really care about these issues, we would still like to hear from you. You are one of a small group of people that have been selected to represent the activities of all Alaskan anglers, so it is very important that we hear from you.

In appreciation for your help, our project contractor, Southwick Associates, Inc. will enter the names of all those who return a completed survey into a drawing for a \$1,000 gift certificate redeemable at a local sporting goods retailer of your choice.

When you have completed the survey, please return it in the enclosed postage-paid envelope. If you prefer, you can take the survey online at www.southwickassociates.com/alaskasurvey. Your user code for the online survey is XXYZZZ.

The information you provide will be kept confidential and will only be used by ADF&G and the project contractor, Southwick Associates, Inc. (www.SouthwickAssociates.com) to produce summary estimates of the economic significance of sport fishing in Alaska. If you have any questions, comments or concerns about the study, you may contact the project manager, Bill Romberg, at 907-267-2366, or by e-mail at william.romberg@alaska.gov.

Thank you again for agreeing to participate in this important study.

Sincerely,



Charlie O. Swanton
Director, Division of Sport Fish

Thank you for your help and participation.

We wish you the best of success and safety in your future fishing efforts.
Your returned survey is very important to us.
Please return the survey in the self-addressed, postage paid envelope. Even if you did not fish.

STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

P.O. BOX 115526
JUNEAU, AK 99811-5526
PHONE (907) 465-4100
FAX (907) 465-2332

{Date}

Dear Alaska Angler,

In November, we sent you a survey about your sportfishing activities in Alaska during May through October of 2007. Many of the other anglers who received the survey have already responded, but we have not yet received your completed questionnaire.

The Alaska Department of Fish and Game is conducting the survey to better understand the economic importance of sportfishing to the state's economy. Information about your experience is very valuable to this study because you have been selected at random to represent many other sport anglers in Alaska.

Therefore, it is very important that we hear from you.

Enclosed is a replacement questionnaire. Please take a few minutes to respond to the survey and return it in the postage-paid envelope. If you prefer, you can take the survey online at www.southwickassociates.com/alaskasurvey1. Your user code for the online survey is XXYZZZ.

Your responses to the survey questions will be kept strictly confidential and will only be used by the research team to develop statistically-valid estimates of economic activity associated with sportfishing in Alaska.

In appreciation for your help, our project contractor, Southwick Associates, Inc. will enter the names of all those who return a completed survey into a drawing for a \$1,000 gift certificate redeemable at a local sporting goods retailer of your choice.

If you have any questions about the survey, you may contact the project manager, Bill Romberg, at 907-267-2366, or by e-mail at william.romberg@alaska.gov.

I'd like to thank you again for agreeing to participate in this important study.

Sincerely,



Charlie O. Swanton
Director, Sport Fish Division

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

SARAH PALIN, GOVERNOR

P.O. BOX 11,5526
JUNEAU, AK 99811-5526
PHONE (907) 465-4100
FAX (907) 465-2332

{Date}

Dear Alaska Angler,

Approximately four weeks ago, we sent you a second questionnaire as part of our study to learn about sportfishing activities in Alaska. So far, many of the other anglers who were sent the survey have returned a completed questionnaire, but we have not yet received yours.

We are sending you another questionnaire because it is important that we obtain information from as many people in our sample as possible. Your fishing experiences and expenditures are representative of many other anglers, therefore the information that you provide will be invaluable for making an accurate assessment of sportfishing's economic impact to the state.

Please take a few minutes to complete the survey and return it in the postage-paid envelope. If you prefer, you can take the survey online at www.southwickassociates.com/alaskasurvey1. Your user code for the online survey is XXYZZZ.

We realize that confidentiality is important to you, and it is important to us. *Your survey will not be shared with anyone outside of the research team.*

Upon receiving your completed survey, our project contractor, Southwick Associates, Inc. will enter your name into a drawing for a \$1,000 gift certificate to be used at a local sporting goods store of your choice. If you have any questions about the survey, you may contact the project manager, Bill Romberg, at 907-267-2366, or by e-mail at william.romberg@alaska.gov.

I'd like to thank you again for agreeing to participate in this important study.

Sincerely,



Charlie O. Swanton
Director, Sport Fish Division



Alaska Sportfishing Economic Survey

Completing the survey online, or by mail will enter your name into a drawing for a \$1,000 gift certificate redeemable at the local sporting-goods retailer of your choice.

INTRODUCTION: Thank you for participating in this survey. The purpose of the survey is to quantify the economic contributions of sportfishing to Alaska's economy. "Sportfishing" is defined as the taking of fish and shellfish (clams, crabs, shrimp, etc.) under an Alaska sportfishing license and regulations.

APPENDIX C: WAVE II NONRESIDENT SURVEY MATERIALS

Wave II – Nonresident Survey

- Questionnaire

- 1st mailing cover letter

- 2nd mailing cover letter

- 3rd mailing cover letter

- Foreign respondent postcard

2. As best as possible, please record the number of days you went freshwater or saltwater fishing in each region of Alaska from May through June and from July through October 2007. See the enclosed map for the locations of the regions. (Enter "0" if you did not fish in a region. If you did not go anywhere between May 1st and October 31st of this year, then skip to Section C on page 6.)

MAY 1 st thru JUNE 30 th 2007		JULY 1 st thru OCTOBER 31 st 2007	
Region A	Region B	Region A	Region B
Region C	Region D	Region C	Region D
Region E	Region F	Region E	Region F
Freshwater days	Freshwater days	Freshwater days	Freshwater days
Saltwater days	Saltwater days	Saltwater days	Saltwater days

If you prefer to take this survey online, please refer to the enclosed letter for your unique access code and web link.

-continued-



Alaska Sportfishing Economic Survey

Completing the survey online* or by mail will enter your name into a drawing for a \$1,000 gift certificate redeemable at the local sporting-goods retailer of your choice!

INTRODUCTION: Thank you for participating in this survey. The purpose of the survey is to quantify the economic contributions of sportfishing to Alaska's economy. "Sportfishing" is defined as the taking of fish and shellfish (clams, crabs, shrimp, etc) under an Alaska sportfishing license and regulations.

Section A – GENERAL: In this section, we are interested in learning some general information about your sportfishing activities in Alaska.

1. As best as possible, please report the number of days you went sportfishing in Alaska for each of the two time periods listed below. (Please enter "0" if you did not fish in this period.)

	Number of saltwater fishing days:	Number of freshwater fishing days:
November through December, <u>2006</u> :		
January through April, <u>2007</u>		

2. As best as possible, please report the number of days you went freshwater or saltwater fishing in each region of Alaska from May through June and from July through October, 2007. See the enclosed map for the locations of the regions. (Enter "0" if you did not fish in a region. If you did not do any sport fishing between May 1st and October 31st of this year, then skip to Section C on page 6.)

MAY 1 st thru JUNE 30 th 2007	Region A	Region B	Region C	Region D	Region E	Region F
Freshwater days.....						
Saltwater days.....					No Saltwater in Region E	
JULY 1 st thru OCTOBER 31 st 2007	Region A	Region B	Region C	Region D	Region E	Region F
Freshwater days.....						
Saltwater days.....					No Saltwater in Region E	

*If you prefer to take this survey online, please refer to the enclosed letter for your unique access code and web link.

-continued-

Section B1 – LAST TIME YOU WENT SPORTFISHING IN MAY THRU JUNE: Now we would like to know about your last trip to Alaska between May 1st and June 30th, 2007 in which you went fishing.

ALL OF THESE QUESTIONS REFER TO YOUR LAST TRIP IN ALASKA

DURING WHICH YOU FISHED AT LEAST ONCE

***** BETWEEN MAY 1ST AND JUNE 30TH, 2007 *****

3. When was the last time you went sportfishing in Alaska between MAY 1st AND JUNE 30th, 2007?

(Check one.)

☐ May

☐ June

☐ I did not fish between May 1st and June 30th (Skip to section B2, page 4)

4. How long was this trip to Alaska including fishing days, travel days and non-fishing days?

Total number of days involved in last trip to Alaska (that included fishing): _____ days

5. How many days did you actually fish during this last trip to Alaska between MAY 1st AND JUNE 30th?

(Count partial days of fishing as "1" day).

Number of days actually fished: _____ days

6. Would you have taken this trip even if you were unable to go fishing? (check one)

☐ Yes

☐ No

7. Was your fishing during this trip primarily... (check one)

☐ rod & reel sportfishing

☐ shellfish fishing

8. Was your fishing during this trip primarily... (check one)

☐ in freshwater

☐ in saltwater

☐ in both freshwater & saltwater

9. Did you pay for a guide or a charter boat at any time during this trip? (check one)

☐ Yes

☐ No

10. Where did you fish during this trip? Please refer to the map included with this survey. (Check all that apply.)

☐ Region A

☐ Region B

☐ Region C

☐ Region D

☐ Region E

☐ Region F

11. Which species did you target during your last trip to Alaska between MAY 1ST and JUNE 30TH, 2007?
Please note the species you targeted may not necessarily be the fish actually caught on your trip.
(Check all that apply.)

- | | | |
|--|---|--|
| ☐ King Salmon (Chinook) | ☐ Steelhead | ☐ Halibut |
| ☐ Silver Salmon (Coho) | ☐ Trout (all types) | ☐ Shellfish (clams, shrimp, etc) |
| ☐ Red Salmon (Sockeye) | ☐ Other freshwater (char, Dolly Varden, butbot, pike, sheefish, etc) | ☐ Other saltwater fish (lingcod, rockfish, shark, etc.) |
| ☐ Other Salmon (Pink, Chum) | | |

12. TRAVEL PACKAGE SPENDING: As best as possible, please tell us how much you spent PRIOR TO DEPARTING ON YOUR TRIP for any pre-purchased travel packages such as cruises, travel tours, guided trips, etc. Referring to the included map, please circle the letter of the region(s) you visited as part of your trip. (Enter "0" if none.)

	Total cost	Region or regions you visited
EXAMPLE:	\$ 2500	A B <u>C</u> D E F
Pre-arranged cruise, package tour or chartered trip (including fishing excursions purchased through a cruise line)	\$	A B C D E F
Which of the following were included in the pre-arranged package:		
Transportation to or from Alaska	☐ Yes ☐ No	Do not include any of these expenditures when completing question #13 below
Transportation once you arrived in Alaska	☐ Yes ☐ No	
Fishing guides &/or charter boats	☐ Yes ☐ No	
Lodging (mark "yes" if you were on a cruise)	☐ Yes ☐ No	
Meals	☐ Yes ☐ No	
Fishing License	☐ Yes ☐ No	

13. NON-PACKAGE SPENDING: As best as possible, please tell us how much you spent while in Alaska and where you bought the following TRIP-RELATED items NOT INCLUDED AS PART OF ANY TRAVEL PACKAGE. Please write the amount you spent and, referring to the included map, circle the letter of the region or regions where you made the purchase(s). If you already reported a purchase in question #12 above, please do not report it again below.

	Total amount spent	Region or regions where you bought the item(s)	Purchased outside of Alaska
EXAMPLE:	\$ 250	A <u>B</u> C D E F	☒
Licenses and stamps	\$	A B C D E F	
Fuel and oil for your car, RV, boat, airplane, etc.	\$	A B C D E F	
Guide and charter fees	\$	A B C D E F	
Airline tickets to and from Alaska	\$	A B C D E F	
Commercial travel within Alaska (air, ferry, shuttle, etc.)	\$	A B C D E F	
Fish processing & shipping	\$	A B C D E F	
Rentals (boats, equipment, autos, etc.)	\$	A B C D E F	
Derby tickets	\$	A B C D E F	
Boat launch and dockage fees	\$	A B C D E F	
Bait (natural bait only, do not include lures)	\$	A B C D E F	
Groceries, food, liquor bought in stores	\$	A B C D E F	
Restaurants, bars, and take-out food purchases	\$	A B C D E F	
Overnight lodging (hotels, campgrounds, cabins)	\$	A B C D E F	
Souvenirs and gifts	\$	A B C D E F	
Other entertainment expenses during fishing trip	\$	A B C D E F	
Other (please specify):	\$	A B C D E F	

Section B2 – LAST TIME YOU WENT SPORTFISHING IN JULY THRU OCTOBER: Now we would like to know about your last trip to Alaska between July 1st and October 31st, 2007 in which you went fishing.

ALL OF THESE QUESTIONS REFER TO YOUR LAST TRIP IN ALASKA
DURING WHICH YOU FISHED AT LEAST ONCE

***** BETWEEN JULY 1ST AND OCTOBER 31ST, 2007 *****

14. When was the last time you went sportfishing in Alaska between JULY 1st AND OCTOBER 31st, 2007?
(Check one.)

- ☐ July ☐ August ☐ September ☐ October ☐ I did not fish between July 1st and Oct 31st (Skip to section C, page 6)

15. How long was this trip to Alaska including fishing days, travel days and non-fishing days?

Total number of days involved in last trip to Alaska (that included fishing): _____ days

16. How many days did you actually fish during this last trip to Alaska between MAY 1st AND JUNE 30th?
(Count partial days of fishing as "1" day).

Number of days actually fished: _____ days

17. Would you have taken this trip even if you were unable to go fishing? (check one)

- ☐ Yes ☐ No

18. Was your fishing during this trip primarily... (check one)

- ☐ rod & reel sportfishing ☐ shellfish fishing

19. Was your fishing during this trip primarily... (check one)

- ☐ in freshwater ☐ in saltwater ☐ in both freshwater & saltwater

20. Did you pay for a guide or a charter boat at any time during this trip? (check one)

- ☐ Yes ☐ No

21. Where did you fish during this trip?? Please refer to the map included with this survey. (Check all that apply.)

- ☐ Region A ☐ Region B ☐ Region C
☐ Region D ☐ Region E ☐ Region F

22. Which species did you target during your last trip to Alaska between JULY 1ST AND OCTOBER 31ST 2007? Please note the species you targeted may not necessarily be the fish actually caught on your trip. (Check all that apply.)

- | | | |
|--|---|--|
| ☐ King Salmon (Chinook) | ☐ Steelhead | ☐ Halibut |
| ☐ Silver Salmon (Coho) | ☐ Trout (all types) | ☐ Shellfish |
| ☐ Red Salmon (Sockeye) | ☐ Other freshwater (char, Dolly Varden, butbot, pike, sheefish, etc) | ☐ Other saltwater fish (lingcod, rockfish, shark, etc.) |
| ☐ Other Salmon (Pink, Chum) | | |

23. TRAVEL PACKAGE SPENDING: As best as possible, please tell us how much you spent PRIOR TO DEPARTING ON YOUR TRIP TO ALASKA for any pre-purchased travel packages such as cruises, travel tours, etc. Referring to the included map, please circle the letter of the region(s) you visited as part of your trip. (Enter "0" if none.)

	Total cost	Region or regions you visited
EXAMPLE:	\$ 2500	A B C D E F
Pre-arranged cruise, package tour or chartered trip (including fishing excursions purchased through a cruise line)	\$	A B C D E F
Which of the following were included in the pre-arranged package:		
Transportation to or from Alaska	☐ Yes ☐ No	Do not include any of these expenditures when completing question #24 below
Transportation once you arrived in Alaska	☐ Yes ☐ No	
Fishing guides &/or charter boats	☐ Yes ☐ No	
Lodging & accommodations	☐ Yes ☐ No	
Meals	☐ Yes ☐ No	
Fishing License	☐ Yes ☐ No	

24. NON-PACKAGE SPENDING: As best as possible, please tell us how much you spent while in Alaska and where you bought the following TRIP-RELATED items NOT INCLUDED AS PART OF ANY TRAVEL PACKAGE. Please write in the amount you spent and, referring to the included map, please circle the letter of the region or regions where you made the purchase(s). If you already reported a purchase in question #23 above, please do not report it again below.

	Total amount spent	Region or regions where you bought the item(s)	Purchased outside of Alaska
EXAMPLE:	\$ 250	A B C D E F	✓
Licenses and stamps	\$	A B C D E F	
Fuel and oil for your car, RV, boat, airplane, etc.	\$	A B C D E F	
Guide and charter fees	\$	A B C D E F	
Airline tickets to and from Alaska	\$	A B C D E F	
Commercial travel within Alaska (taxi, ferry, shuttle, etc.)	\$	A B C D E F	
Fish processing & shipping	\$	A B C D E F	
Rentals (boats, equipment, autos, etc.)	\$	A B C D E F	
Derby tickets	\$	A B C D E F	
Boat launch and dockage fees	\$	A B C D E F	
Ice	\$	A B C D E F	
Bait (natural bait only, do not include lures)	\$	A B C D E F	
Groceries, food, liquor bought in stores	\$	A B C D E F	
Restaurants, bars, and take-out food purchases	\$	A B C D E F	
Overnight lodging (hotels, campgrounds, cabins)	\$	A B C D E F	
Souvenirs and gifts	\$	A B C D E F	
Other entertainment expenses during fishing trip	\$	A B C D E F	
Other (please specify):	\$	A B C D E F	

Section C. FISHING EQUIPMENT EXPENDITURES: In this section, we want to know about sportfishing and related equipment you bought IN ALASKA during the last 12 months.

25. As best as possible, please tell us how much YOU spent and where you bought the following fishing equipment and fishing related gear in the last 12 months. Only report purchases made in Alaska - exclude purchases made prior to arriving in Alaska. Include purchases YOU made for yourself and for others. Write in the amount spent and, referring to the included map, circle the letter of the region or regions where you made the purchase(s). Since some items can be used for non-fishing activities, please estimate the percentage that the purchased fishing related gear is used for sportfishing.

	Total amount spent	Region or regions where you bought the item(s)	% Used for sport fishing:
EXAMPLE: Clothing	\$ 40	A B C D E F	65 %
FISHING EQUIPMENT:			
Licenses and stamps	\$	A B C D E F	100 %
Rods, reels, & components	\$	A B C D E F	100 %
Fishing tackle (lines, leaders, lures, creels, stringers etc)	\$	A B C D E F	100 %
Tackle boxes, cases to protect fishing equipment	\$	A B C D E F	100 %
Depth finders, fish finders, other electronics	\$	A B C D E F	100 %
Landing nets, dipnets & gillnets	\$	A B C D E F	100 %
Miscellaneous fishing equipment (knives, scales, etc.)	\$	A B C D E F	100 %
Shellfish fishing equipment (shovels, pots, buckets, etc.)	\$	A B C D E F	100 %
Fish mounting (taxidermy)	\$	A B C D E F	100 %
Books and magazines devoted to fishing	\$	A B C D E F	100 %
FISHING-RELATED GEAR OR OTHER NON-FISHING PURCHASES:			
Items to store/preserve fish (smoker, vacuum sealer, etc.)	\$	A B C D E F	%
Coolers, fish boxes	\$	A B C D E F	%
Clothing (fishing vest, raingear, head net, etc.)	\$	A B C D E F	%
Boots, shoes, waders and other footwear	\$	A B C D E F	%
Life jackets, survival suits or other PFDs	\$	A B C D E F	%
Boats, canoes, rafts, kayaks or other watercraft	\$	A B C D E F	%
Boat motors	\$	A B C D E F	%
Trailers, hitches, and accessories	\$	A B C D E F	%
Other boat parts and accessories	\$	A B C D E F	%
Bear spray, bug spray, sun screen	\$	A B C D E F	%
Firearms for personal protection	\$	A B C D E F	%
Cameras, binoculars, sun glasses	\$	A B C D E F	%
Tents, screen rooms, tarps, backpacks, sleeping bags	\$	A B C D E F	%
Camping trailer (pop-up, self-contained, 5 th wheel)	\$	A B C D E F	%
Other camping equipment (stoves, grills, lanterns, etc.)	\$	A B C D E F	%
Vehicles (trucks, SUVs, motorhomes, etc.)	\$	A B C D E F	%
Airplanes and related equipment	\$	A B C D E F	%
ATVs, snowmachines	\$	A B C D E F	%
Boat/camper registrations and excise taxes	\$	A B C D E F	%
Vehicle, boat or airplane repair/maintenance	\$	A B C D E F	%
Other, including non-fishing related purchases (please specify):	\$	A B C D E F	%

26. Please report how much you spent **IN THE PAST 12 MONTHS** related to any **Alaska real estate** that was purchased or used **primarily for sportfishing purposes**.

	Amount spent	Please circle where the property is located
EXAMPLE: Maintenance and repairs.....	\$ 25,000	A B C D E F
Expenses related to real estate owned or shared for fishing (including mortgage payments, insurance, property taxes, etc.)	\$	A B C D E F
Expenses related to land, cabins and/or other real estate property leased or rented for fishing, including boat slips and storage	\$	A B C D E F
Maintenance and repairs to real estate property	\$	A B C D E F
Construction of cabins, sheds, and other buildings	\$	A B C D E F

Section D. BACKGROUND INFORMATION: To help us learn more about who fishes in Alaska, please answer these final questions. All answers you provide will be kept fully confidential. Your answers will help ensure that the survey represents ALL Alaska anglers, even those not surveyed.

27. What is your gender?

☐ Male

☐ Female

28. What year were you born?

19_____

29. Which category best describes the highest level of education you have completed? (Check one)

☐ Did not graduate from high school

☐ High school graduate or GED

☐ 1-3 years college (some college)

☐ College graduate (bachelor degree or equivalent)

☐ Postgraduate, master's degree, doctorate, law degree, other professional degree

30. Which best describes your household's annual, before-tax income? (Check one)

☐ Less than \$9,999

☐ \$10,000 - \$19,999

☐ \$20,000 - \$29,999

☐ \$30,000 - \$39,999

☐ \$40,000 - \$49,999

☐ \$50,000 - \$59,999

☐ \$60,000 - \$69,999

☐ \$70,000 - \$79,999

☐ \$80,000 - \$89,999

☐ \$90,000 - \$99,999

☐ \$100,000 - \$249,999

☐ \$250,000 or more

31. How satisfied are you with your overall sportfishing experiences in Alaska in 2007? (Check one.)

☐ Very Dissatisfied ☐ Generally Dissatisfied ☐ Neutral ☐ Generally Satisfied ☐ Very Satisfied

If you have any additional comments you wish to share about this study please provide them here:

(DATE) _____
Dear Alaska Angler:

You have been selected to participate in a study aimed at measuring the economic significance of sport fishing in Alaska. You were selected to be part of this study as a result of having purchased an Alaska sport fishing license in 2007. Even if you did not fish in Alaska this year or do not really care about these issues, we would still like to hear from you. You are one of a small group of people that have been selected to represent the views of all anglers who visit Alaska to fish, so it is very important that we receive your completed survey.

In appreciation for your help, our project contractor, Southwick Associates, Inc. will enter the names of all those who return a completed survey into a drawing for a \$1,000 gift certificate redeemable at a local sporting goods retailer of your choice.

When you have completed the survey, please return it in the enclosed postage-paid envelope. If you prefer, you can fax the survey online at www.southwickassociates.com/alaskansurvey. Your next code for the online survey is XXYZZ.

The information you provide will be kept confidential and will only be used by the ADFG and the project contractor, Southwick Associates, Inc. (www.southwickassociates.com) to produce summary estimates of the economic significance of sport fishing in Alaska. If you have any questions, comments or concerns about the study, you may contact the project manager, Bill Komberly, at 907-267-2500, or by e-mail at william.komberly@alaska.gov.

Thank you again for agreeing to participate in this important study.

Sincerely,

Thank you for your help and participation!

Please return the survey in the self-addressed, postage paid envelope. Even if you did not fish, your returned survey is very important to us.

We wish you the best of success and safety in your future fishing efforts!

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

SARAH PALIN, GOVERNOR

P.O. BOX 115526
JUNEAU, AK 99811-5326
PHONE (907) 465-4100
FAX (907) 465-2332

{DATE}

Dear Alaska Angler:

You have been selected to participate in a study aimed at measuring the economic significance of sport fishing in Alaska. You were selected to be part of this study as a result of having purchased an Alaska sport fishing license in 2007. Even if you did not fish in Alaska this year or do not really care about these issues, we would still like to hear from you. You are one of a small group of people that have been selected to represent the views of all anglers who visit Alaska to fish, so it is very important that we receive your completed survey.

In appreciation for your help, our project contractor, Southwick Associates, Inc. will enter the names of all those who return a completed survey into a drawing for a \$1,000 gift certificate redeemable at a local sporting goods retailer of your choice.

When you have completed the survey, please return it in the enclosed postage-paid envelope. If you prefer, you can take the survey online at www.southwickassociates.com/alaskasurvey2. Your user code for the online survey is XXYZZZ.

The information you provide will be kept confidential and will only be used by the ADF&G and the project contractor, Southwick Associates, Inc. (www.SouthwickAssociates.com) to produce summary estimates of the economic significance of sport fishing in Alaska. If you have any questions, comments or concerns about the study, you may contact the project manager, Bill Romberg, at 907-267-2366, or by e-mail at william.romberg@alaska.gov.

Thank you again for agreeing to participate in this important study.

Sincerely,



Charlie O. Swanton
Director, Sport Fish Division

STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

P.O. BOX 115526
JUNEAU, AK 99811-5526
PHONE: (907) 465-4100
FAX: (907) 465-2332

{Date}

Dear Alaska Angler,

In November, we sent you a survey about your sportfishing activities in Alaska during May through October of 2007. Many of the other anglers who received the survey have already responded, but we have not yet received your completed questionnaire.

The Alaska Department of Fish and Game is conducting the survey to better understand the economic importance of sportfishing to the state's economy. Information about your experience is very valuable to this study because you have been selected at random to represent many other sport anglers who visit Alaska to fish. Therefore, it is very important that we hear from you.

Enclosed is a replacement questionnaire. Please take a few minutes to respond to the survey and return it in the postage-paid envelope. If you prefer, you can take the survey online at www.southwickassociates.com/alaskasurvey2. Your user code for the online survey is XXYYZZ.

Your responses to the survey questions will be kept strictly confidential and will only be used by the research team to develop statistically-valid estimates of economic activity associated with sportfishing in Alaska.

In appreciation for your help, our project contractor, Southwick Associates, Inc. will enter the names of all those who return a completed survey into a drawing for a \$1,000 gift certificate redeemable at a local sporting goods retailer of your choice.

If you have any questions about the survey, you may contact the project manager, Bill Romberg, at 907-267-2366, or by e-mail at william.romberg@alaska.gov.

I'd like to thank you again for agreeing to participate in this important study.

Sincerely,



Charlie O. Swanton
Director, Sport Fish Division

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

SARAH PALIN, GOVERNOR

P.O. BOX 115526
JUNEAU, AK 99811-5526
PHONE (907) 465-4100
FAX (907) 465-2332

{Date}

Dear Alaska Angler,

Approximately four weeks ago, we sent you a second questionnaire as part of our study to learn about sportfishing activities in Alaska. So far, many of the other anglers who were sent the survey have returned a completed questionnaire, but we have not yet received yours.

We are sending you another questionnaire because it is important that we obtain information from as many people in our sample as possible. Your fishing experiences and expenditures are representative of many other anglers, therefore the information that you provide will be invaluable for making an accurate assessment of sportfishing's economic impact to the state.

Please take a few minutes to complete the survey and return it in the postage-paid envelope. If you prefer, you can take the survey online at www.southwickassociates.com/alaskasurvey2. Your user code for the online survey is XYYZZ.

We realize that confidentiality is important to you, and it is important to us. *Your survey will not be shared with anyone outside of the research team.*

Upon receiving your completed survey, our project contractor, Southwick Associates, Inc. will enter your name into a drawing for a \$1,000 gift certificate to be used at a local sporting goods store of your choice. If you have any questions about the survey, you may contact the project manager, Bill Romberg, at 907-267-2366, or by e-mail at william.romberg@alaska.gov.

I'd like to thank you again for agreeing to participate in this important study.

Sincerely,



Charlie O. Swanton
Director, Sport Fish Division

Appendix C5.—Foreign respondent postcard.

Dear Alaska Angler:

You have been selected to participate in a study aimed at measuring the economic significance of sport fishing in Alaska. Your name was randomly drawn from the list people who purchased an Alaska fishing license in 2007. Even if you did not fish in Alaska this year, we would still like to hear from you.

To participate in the study, we are asking you complete an online survey that will ask about your fishing experience in Alaska during 2007. In appreciation, our project contractor, Southwick Associates, Inc. will enter the names of all those who complete a survey into a drawing for a \$1,000 gift certificate redeemable at a sporting goods retailer of your choice.

The survey can be completed online at www.southwickassociates.com/alaskasurvey2. Your user code for the online survey is XXYZZZ.

Your responses will be kept confidential and will be used only to produce summary estimates of the economic significance of sport fishing in Alaska. If you have questions about the study, you may contact Bill Romberg of the Alaska Department of Fish and Game at 907-267-2366, or by e-mail at william.romberg@alaska.gov.

Thank you again for agreeing to participate in this important study.

Sincerely,



Charlie O. Swanton
Director, Division of Sport Fish

Dear Alaska Angler,

You have been selected to participate in a study aimed at measuring the economic significance of sport fishing in Alaska. Your name was randomly drawn from the list of people who purchased an Alaska fishing license in 2007. Even if you did not fish in Alaska this year, we would still like to hear from you.

To participate in the study, we are asking you to complete an online survey that will ask about your fishing experience in Alaska during 2007. In appreciation, our project contractor, Southwick Associates, Inc. will enter the names of all those who complete a survey into a drawing for a \$1,000 gift certificate redeemable at a sporting goods retailer of your choice.

The survey can be completed online at www.southwickassociates.com/alaskasurvey2. Your track code for the online survey is XXXXXX.

Your responses will be kept confidential and will be used only to produce summary estimates of the economic significance of sport fishing in Alaska. If you have questions about the study, you may contact Bill Lombard of the Alaska Department of Fish and Game at (907) 266-2500.

APPENDIX D: ECONOMIC SURVEY MAP INSERTS

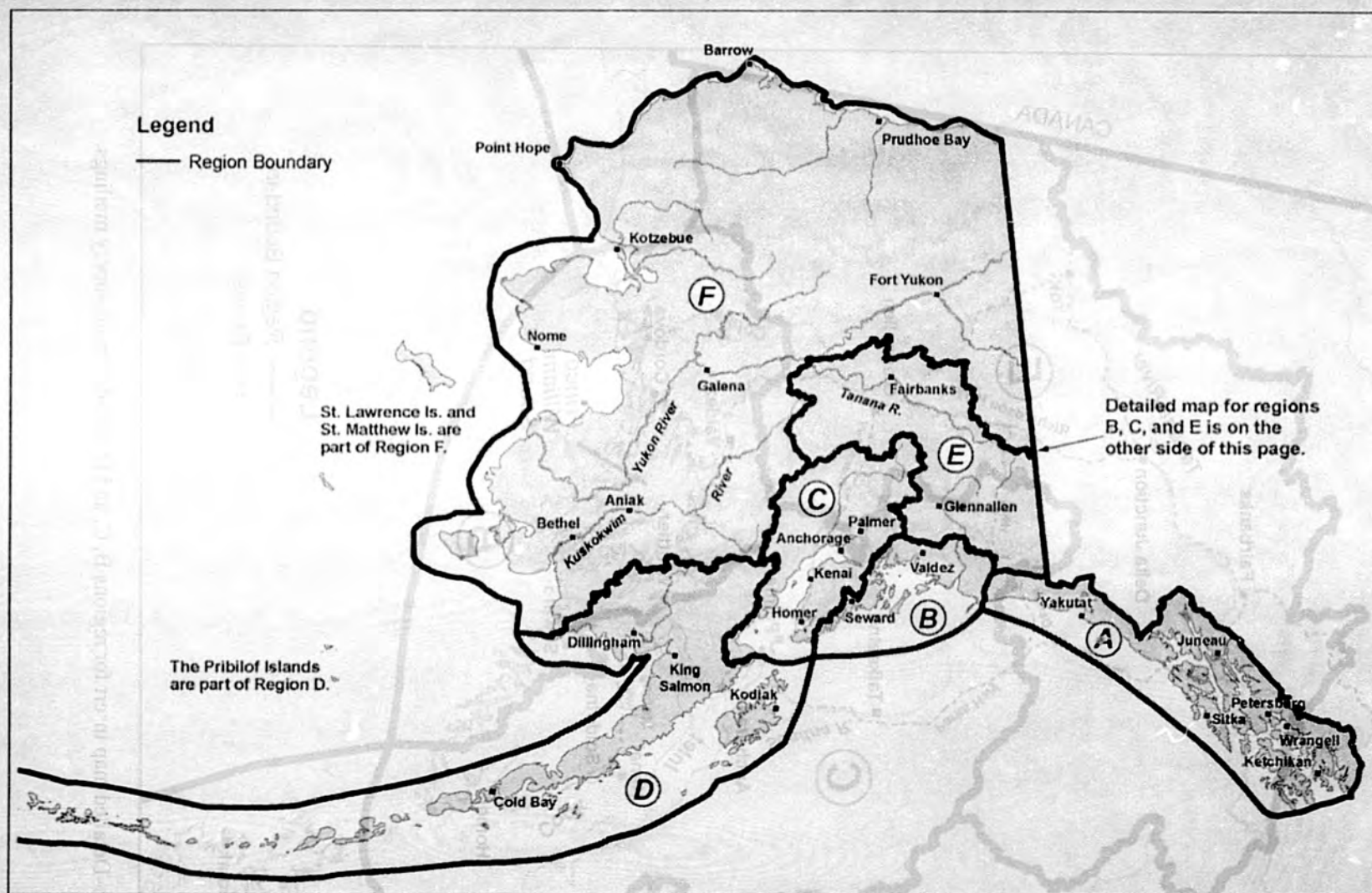
Thank you again for agreeing to participate in this important study.

Map inserts included in all survey mailings.

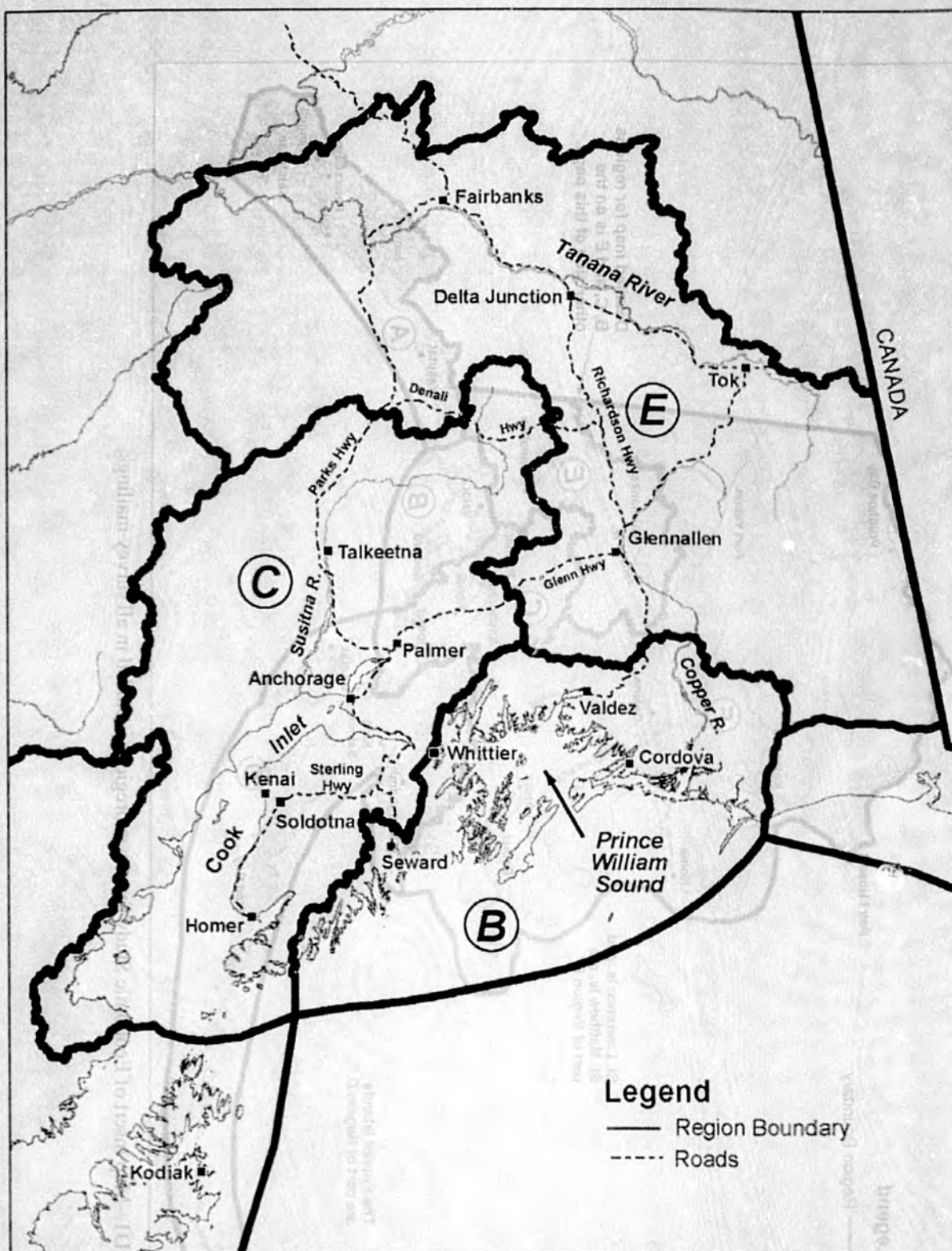
Sincerely,



Charles O. Swenson
Director, Division of Sport Fish



Appendix D1.—Map insert of Economic Study Survey subregions included in all survey mailings.



Appendix D2.—Detailed map insert for regions B, C, and D included in all survey mailings.



Alaska Sportfishing Guide Business Survey

INTRODUCTION: Thank you for participating in this survey. This is part of a broader effort to estimate the contribution that sportfishing makes to the Alaska economy. A separate survey is underway to learn about the expenditures made by anglers in 2007. Because guiding services are such an integral part of sportfishing in Alaska, it is important that we have a clear understanding of the services that guide businesses provide, and how guide businesses revenue benefit the state and regional economies.

APPENDIX E: SPORTFISHING GUIDE BUSINESS SURVEY MATERIALS

Alaska Sportfishing Guide Business Survey

- Questionnaire
- 1st mailing cover letter
- 2nd mailing cover letter
- 3rd mailing cover letter

2. What types of services do you provide for your clients on a typical guided sportfishing trip? Provide "means your business arranged and paid for the service on behalf of your client." (Check all that apply)

Service Type	Yes	No
Fishing licenses		
Lodging		
Meals		
Fish Processing (our business cleans and packages fish for the client, not subcontracted to another)		
Transportation to and from Alaska		
Transportation within Alaska		
Other (please specify)		

-continued-



Alaska Sportfishing Guide Business Survey

INTRODUCTION: Thank you for participating in this survey. This is part of a broader effort to estimate the contribution that sportfishing makes to the Alaska economy. A separate survey is underway to learn about the expenditures made by anglers in 2007. Because guiding services are such an integral part of sportfishing in Alaska, it is important that we have a clear understanding of the services that guide businesses provide, and how guide business revenues benefit the state and regional economies.

If you have any questions about this survey, please call Bill Romberg of the Alaska Department of Fish and Game, Sport Fish Division at 907-267-2366. If you want a copy of the study results (available in late 2008), please email Bill Romberg at william.romberg@alaska.gov.

GENERAL: In this section, we are interested in learning some general information about your guiding activities in Alaska.

1. Approximately how many years has your company been providing sportfishing guide services for hire in Alaska?

_____ years

2. What types of services do you provide for your clients on a typical guided sportfishing trip?
"Provide" means your business arranged and paid for the service on behalf of your client.
(Check all that apply)

	Freshwater Trips	Saltwater Trips
EXAMPLE:	☒	☐
Fishing licenses	☐	☐
Lodging	☐	☐
Meals.....	☐	☐
Fish Processing (your business cleans and packages fish for the client, <u>not</u> subcontracted to another).....	☐	☐
Transportation to and from Alaska	☐	☐
Transportation within Alaska.....	☐	☐
Other (please specify)	☐	☐

BUSINESS EXPENSES: In order to determine the contribution of sportfishing guide business activities to the Alaska economy, we need to know general information about how your business expenses were distributed in 2007 and where those expenses occur.

3. We do not need to know your actual business expenses. In the first column of the table write in the **PERCENT** that each category represents of your total businesses expenses in 2007. Include expenses you incur for the business and on behalf of your clients (e.g., licenses, lodging, meals, etc.) The total for the first column should add to 100%. In the second column, report the approximate percentage of each business expense that you purchase from sources within the state of Alaska. These are business expenses incurred by you as the owner, not expenses incurred by your clients.

BUSINESS EXPENSES	Percent of Total	Percentage purchased in Alaska
EXAMPLE: Business services	3%	75%
Business and guide licenses & permits	%	100%
Licenses purchased for your paying anglers	%	100%
Fuel and oil (boat, plane, car/truck, etc.)	%	%
Restaurants and prepared meals	%	100%
Wages, salaries and payments to owners (hired labor and your own pay)	%	%
Equipment purchases (boats, motors, vehicles, trailers, gear, etc.)	%	%
Equipment rental	%	%
Equipment maintenance and repair	%	%
Bait	%	%
Groceries	%	%
Lodging (for you, employees and provided to clients)	%	%
Airline tickets	%	%
Other public transportation	%	%
Business services (accounting, advertising, legal, etc.)	%	%
Real estate located in Alaska	%	100%
Utilities	%	%
Taxes	%	%
Insurance	%	%
Other (please specify) _____	%	%
TOTAL	100 %	

If you have any additional comments about the survey or the information you provided, please provide them here.

STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

P.O. BOX 115526
JUNEAU, AK 99811-5526
PHONE (907) 465-4100
FAX (907) 465-2332

{DATE}

Your business has been randomly selected to participate in a study aimed at measuring the economic significance of sport fishing in Alaska. You were selected to be part of this study as a result of having purchased an Alaska Sportfishing Guide Business license in 2007. The purpose of this study is to better understand the kinds of services that guide businesses and outfitters provide as part of the overall sportfishing industry in our state.

The enclosed survey is confidential, very brief, and does not ask you to provide any private information about the revenues that you receive from your guiding operations. An estimate of what sportfishing anglers spend on guide services is being developed from a separate survey of anglers that is currently underway. Instead, this survey asks you to tell us the kinds of services that you provide and the distribution of your business expenses. When you have completed the survey, please return it in the enclosed postage-paid envelope. The information you provide will only be used by ADF&G and the project contractor, Southwick Associates, Inc. (www.SouthwickAssociates.com) to more accurately estimate the economic significance of sport fishing in Alaska. If you have any questions, comments or concerns about the study, you may contact the project manager, Bill Romberg, at 907-267-2366, or by e-mail at william.romberg@alaska.gov.

Thank you again for agreeing to participate in this important study.

Sincerely,



Charlie O. Swanton
Director, Sport Fish Division

STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

P.O. BOX 115526
JUNEAU, AK 99811-5526
PHONE (907) 465-4100
FAX (907) 465-2332

{DATE}

In December, we sent you a survey asking about your sportfishing guide business. Many of the other guide businesses that were surveyed have responded, but we have not yet received your completed questionnaire. Enclosed is a replacement questionnaire. Please take a few minutes to respond to the survey and return it in the postage-paid envelope. The survey is very brief and does not ask you to provide any private information about the revenues that you receive from your guiding operations. It asks you to tell us about the kinds of services that you provide and the distribution of your business expenses.

The Alaska Department of Fish and Game is conducting the survey as part of a larger study of the economic importance of sportfishing to the state's economy. Your business was among a sample that was randomly selected to represent all Alaska sportfishing guide businesses. Therefore, it is very important that we hear from you.

When you have completed the survey, please return it in the enclosed postage-paid envelope. The information you provide will only be used by ADF&G and the project contractor, Southwick Associates, Inc. (www.SouthwickAssociates.com). If you have any questions, comments or concerns about the study, you may contact the project manager, Bill Romberg, at 907-267-2366, or by e-mail at william.romberg@alaska.gov.

Thank you again for agreeing to participate in this important study.

Sincerely,



Charlie O. Swanton
Director, Sport Fish Division

STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPARTMENT OF FISH AND GAME OFFICE OF THE COMMISSIONER

P.O. BOX 115526
JUNEAU, AK 99811-5526
PHONE (907) 465-4100
FAX (907) 465-2332

{Date}

Approximately four weeks ago, we sent you a second questionnaire as part of our study of sportfishing activities in Alaska. So far, many of the other guide businesses that were surveyed have responded, but we have not yet received your completed questionnaire.

We are sending you another questionnaire because it is important that we obtain information from as many guide businesses in our sample as possible. The survey is very brief and does not ask you to provide any private information about the revenues that you receive from your guide business operations. However, data about the kinds of services that you provide and the distribution of your business expenses are important for making an accurate assessment of sportfishing's economic impact to the state.

Please take a few minutes to complete the survey and return it in the postage-paid envelope. We realize that confidentiality is important to you, and it is important to us. *Your survey will not be shared with anyone outside of the research team.*

Upon receiving your completed survey, our project contractor, Southwick Associates, Inc. will enter your name into a drawing for a \$1,000 gift certificate to be used at a local sporting goods store of your choice. If you have any questions about the survey, you may contact the project manager, Bill Romberg, at 907-267-2366, or by e-mail at william.romberg@alaska.gov.

I'd like to thank you again for agreeing to participate in this important study.

Sincerely,



Charlie O. Swanton
Director, Sport Fish Division

	Resident	Nonresident Lower 48	Nonresident Canada	Nonresident Foreign	TOTAL
Wave I					
Mailed:	683	0	0	0	683
Undeliverable:	20	0	0	0	20
Returns:	378	0	0	0	378
Response rate:	58.0%				58.0%
Wave II					
Mailed:	2,517	4,029	119	182	6,847
Undeliverable:	98	87	19	0	204
Returns:	784	1,781	20	22	2,587
Response rate:	32.4%	44.7%	19.4%	17.1%	38.3%
TOTAL MAILED:	3,200	4,029	119	182	7,530
TOTAL RETURNED:	1,183	1,781	20	22	2,906
OVERALL RESPONSE:	37.8%	44.7%	19.4%	17.1%	41.0%

APPENDIX F: SURVEY RESPONSE RATES AND GUIDE BUSINESS SURVEY SUMMARY RESULTS

This appendix presents the response rates from the angler survey, by wave, and the response rates to the guide's business survey, by region.

- Alaska Sportfishing Economic Survey response rates
- Alaska Sportfishing Guide Business Survey response rates by region
- Guides business survey IMPLAN sector assignments and business expenditure distributions by guided water type

Appendix F1.-Alaska Sportfishing Economic Survey response rates.

	Resident	Nonresident Lower 49	Nonresident Canada	Nonresident Foreign	TOTAL
Wave I					
Mailed:	683	0	0	0	683
Undeliverable:	29	0	0	0	29
Returns:	379	0	0	0	379
Response rate:	58.0%				58.0%
Wave II					
Mailed:	2,517	4,029	119	152	6,817
Undeliverable:	98	87	16	0	224
Returns:	784	1,761	20	26	2,591
Response rate:	32.4%	44.7%	19.4%	17.1%	39.3%
TOTAL MAILED:	3,200	4,029	119	152	7,500
TOTAL RETURNED:	1,163	1,761	20	26	2,970
OVERALL RESPONSE:	37.8%	44.7%	19.4%	17.1%	41.0%

APPENDIX F: SURVEY RESPONSE RATES AND GUIDE BUSINESS SURVEY SUMMARY RESULTS

This appendix presents the response rates from the angler survey, by wave, and the response rates to the guide's business survey, by region.

Alaska Sportfishing Economic Survey response rates

Alaska Sportfishing Guide Business Survey response rates by region

Guides business survey IMP/AN sector assignments and business expenditure distributions by guided water type

Appendix F2.-Alaska Sportfishing Guide Business Survey response rates by region.

Region	Returned	Mailed	Response Rate
A - Southeast	51	160	31.9%
B - Prince Wm. Sound / N. Gulf Coast	3	11	27.3%
C - Cook Inlet	61	238	25.6%
D - Bristol Bay / Aleutians	31	72	43.1%
E - Tanana/Copper River Valleys	2	8	25.0%
F - Arctic-Yukon-Kuskokwim Areas	7	11	63.6%
Sub-total	155*	500	31.0%
Undeliverable		29**	
Unidentified respondent	7		
Total	162	471	34.4%

*Does not include 7 surveys with regions that could not be identified.

**A minimum of 29 known surveys were returned as undeliverable.

Appendix F3.—Guide Business survey IMPLAN sector assignments and business expenditure distributions by guided water type, 2007.

Business Expense Category	IMPLAN Sector	Sector title	Freshwater Guides		Saltwater Guides	
			Mean % of Total	Mean % Purchased in Alaska	Mean % of Total	Mean % Purchased in Alaska
Business licenses	504	State & Local Non-Education	5.5%	100.0%	2.0%	100.0%
Anglers licenses	504	State & Local Non-Education	0.5%	100.0%	1.1%	100.0%
Fuel and oil	PCE8140	Gasoline and oil	11.1%	93.3%	22.3%	96.4%
Meals	481	Food services and drinking places	3.0%	100.0%	1.6%	100.0%
Payroll	5001	Households	20.1%	83.6%	17.0%	91.5%
Equipment	286, 344, 349, 358, 381	Boats, motors, trailers, vehicles, fishing equip	9.5%	68.3%	12.6%	80.3%
Rental	434	Machinery and equipment rental and leasing	0.6%	100.0%	0.6%	85.1%
Maintenance	483, 484, 485, 486	Automotive, electronic, machinery and household repair	5.6%	90.3%	9.5%	91.3%
Bait	16	Fishing	1.3%	88.1%	3.0%	79.2%
Groceries	PCE1111	Food for off-premise consumption	7.8%	90.4%	4.0%	94.4%
Airline tickets	391	Air transportation	2.9%	86.1%	1.3%	69.6%
Lodging	479, 480	Hotels, motels and other lodging	2.9%	94.4%	2.9%	100.0%
Local transportation	391, 393, 395, 437, 438, 447, 455, 456, 459	Air, water and ground transportation	4.3%	82.7%	0.2%	100.0%
Business services	431	Business services	5.7%	72.5%	3.7%	77.9%
Real estate	431	Real estate	2.2%	100.0%	2.1%	100.0%
Utilities	32, 30	Water, sewer and electrical utilities	2.9%	92.2%	2.5%	95.1%
Taxes	504	State & Local Non-Education	4.0%	90.6%	4.1%	94.6%
Insurance	427	Insurance carriers	6.7%	69.2%	6.0%	59.8%
Other business expenses	459	Other business services	3.6%	78.6%	3.4%	77.0%
Total			100.00%		100.00%	

NOTE: Summary statistics of raw survey data. The mean values reported here do not necessarily represent average spending by all Alaska anglers; the standard deviations do not apply to final spending estimates. This table includes raw survey data that underwent numerous transformations to produce the final study estimates.

Appendix G presents summary statistics for each response variable for the three angler surveys. The summary statistics include: variable name assigned to the question; descriptive label; number of non-missing responses; mean response value; minimum response value; maximum response value; and standard deviation of the response values.

These summary statistics should not be confused with the mean values reported elsewhere in this report or as measures of the reliability of the final study estimates, and should not be used as estimates of average spending by Alaska anglers. The raw data on which these summaries are based underwent numerous transformations including final adjustments for missing observations, pooling across time periods, disaggregation by type of water fished and use of guides, aggregation across regions, and derivation of population estimates by applying estimates of total angler-days among others. For a full description of the procedures used to produce the study estimates, see the methodology section of the report.

APPENDIX G: STATISTICAL SUMMARY OF SURVEY RESPONSES

The tables in this appendix include:

- Wave 1 resident survey summary statistics
- Wave 2 resident survey summary statistics
- Wave 2 nonresident survey summary statistics

NOTE: Summary statistics of raw survey data. The mean values reported here do not necessarily represent average spending by all Alaska anglers; the standard deviations do not apply to final spending estimates. This table includes raw survey data that underwent numerous transformations to produce the final study estimates.

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The tables in this appendix include:

- Wave 1 resident survey summary statistics
- Wave 2 resident survey summary statistics
- Wave 2 nonresident survey summary statistics

NOTE: Summary statistics of raw survey data. The mean values reported here do not necessarily represent average spending by all Alaska anglers; the standard deviations do not apply to final spending estimates. This table includes raw survey data that underwent numerous transformations to produce the final study estimates.

Appendix G1.— Summary statistics for survey response variables: Wave 1 resident respondents.

Variable	Label	N	Mean	Min	Max	Std Dev
NovDec_salt	Number of days fishing in Saltwater, November Thru December, 2006	378	1.02	0	40	3.78
NovDec_fresh	Number of days fishing in Freshwater, November Thru December, 2006	378	1.60	0	45	4.53
JanApr_salt	Number of days fishing in Saltwater, January Thru April, 2007	0	.	.	.	.
JanApr_fresh	Number of days fishing in Freshwater, January Thru April, 2007	0	.	.	.	.
MayJun_frsh_A	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region A	307	0.73	0	45	3.66
MayJun_frsh_B	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region B	307	0.41	0	30	2.42
MayJun_frsh_C	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region C	307	3.10	0	45	6.26
MayJun_frsh_D	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region D	307	0.35	0	20	2.04
MayJun_frsh_E	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region E	307	0.59	0	25	2.16
MayJun_frsh_F	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region F	307	0.15	0	15	1.23
MayJun_salt_A	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region A	307	2.15	0	50	6.08
MayJun_salt_B	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region B	307	0.86	0	27	3.02
MayJun_salt_C	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region C	307	1.39	0	50	4.66
MayJun_salt_D	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region D	307	0.28	0	15	1.68
MayJun_salt_F	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region F	307	0.00	0	1	0.06
JulOct_frsh_A	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region A	0	.	.	.	.
JulOct_frsh_B	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region B	0	.	.	.	.
JulOct_frsh_C	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region C	0	.	.	.	.
JulOct_frsh_D	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region D	0	.	.	.	.
JulOct_frsh_E	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region E	0	.	.	.	.
JulOct_frsh_F	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region F	0	.	.	.	.
JulOct_salt_A	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region A	0	.	.	.	.
JulOct_salt_B	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region B	0	.	.	.	.
JulOct_salt_C	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region C	0	.	.	.	.
JulOct_salt_D	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region D	0	.	.	.	.
JulOct_salt_F	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region F	0	.	.	.	.
LastMo_MayJun	1=May; 2=June; 3=Did not fish between May 1st and June 30st	0	.	.	.	.
tripdays_1	Total days involved in last trip to Alaska	303	2.29	0	30	2.79
fishdays_1	Number of days actually fished in Alaska between May 1st and June 30th	304	3.31	0	60	9.67
commit_1	1=Yes; 0=No	306	0.30	0	1	0.46

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Variable	Label	N	Mean	Min	Max	Std Dev
fish_type_1	1=Rod&Reel; 2=Shellfish Fishing	303	1.12	1	3	0.39
water_type_1	1=In Freshwater; 2=In Saltwater; 3=In Both	306	1.61	1	3	0.63
charter_1	1=Yes; 0=No	305	0.10	0	1	0.30
trip1_A	Did you fish in Region A 1=Yes; 0=No	310	0.23	0	1	0.42
trip1_B	Did you fish in Region B 1=Yes; 0=No	310	0.15	0	1	0.36
trip1_C	Did you fish in Region C 1=Yes; 0=No	310	0.46	0	1	0.50
trip1_D	Did you fish in Region D 1=Yes; 0=No	310	0.05	0	1	0.21
trip1_E	Did you fish in Region E 1=Yes; 0=No	310	0.12	0	1	0.32
trip1_F	Did you fish in Region F 1=Yes; 0=No	310	0.02	0	1	0.14
King_1	King Salmon 1=Yes; 0=No	309	0.54	0	1	0.50
Silver_1	Silver Salmon 1=Yes; 0=No	309	0.10	0	1	0.31
Red_1	Red Salmon 1=Yes; 0=No	309	0.17	0	1	0.37
OtherSalm_1	Other Salmon 1=Yes; 0=No	309	0.07	0	1	0.26
OtherFresh_1	Other Freshwater 1=Yes; 0=No	309	0.16	0	1	0.36
Steel_1	Steelhead 1=Yes; 0=No	309	0.03	0	1	0.18
Trout_1	Trout 1=Yes; 0=No	309	0.24	0	1	0.43
Halibut_1	Halibut 1=Yes; 0=No	309	0.35	0	1	0.48
Shell_1	Shellfish 1=Yes; 0=No	309	0.08	0	1	0.27
PtherSalt_1	Other Saltwater 1=Yes; 0=No	309	0.09	0	1	0.29
pkg_1	Total Cost of pre-arranged cruise, package tour, or charter trip	0				
pkg_1_A	Visited 1=Yes; 0=No	0				
pkg_1_B	Visited 1=Yes; 0=No	0				
pkg_1_C	Visited 1=Yes; 0=No	0				
pkg_1_D	Visited 1=Yes; 0=No	0				
pkg_1_E	Visited 1=Yes; 0=No	0				
pkg_1_F	Visited 1=Yes; 0=No	0				
pkg_1_air	Transportation to/from Alaska 1=Yes; 0=No	0				
pkg_1_trans	Transportation in Alaska 1=Yes; 0=No	0				
pkg_1_guide	Guides &/or charter boat 1=Yes; 0=No	0				
pkg_1_lodge	Lodging 1=Yes; 0=No	0				
pkg_1_food	Meals 1=Yes; 0=No	0				
pkg_1_lic	Fishing License 1=Yes; 0=No	0				
Lic_1	Total Amount Spent on License and Stamp	303	29.23	0	300	37.49
Lic_1_A	Purchased in region A: 1=Yes; 0=No	197	0.23	0	1	0.42
Lic_1_B	Purchased in region B: 1=Yes; 0=No	197	0.06	0	1	0.24
Lic_1_C	Purchased in region C: 1=Yes; 0=No	197	0.53	0	1	0.50
Lic_1_D	Purchased in region D: 1=Yes; 0=No	197	0.06	0	1	0.23
Lic_1_E	Purchased in region E: 1=Yes; 0=No	197	0.15	0	1	0.36
Lic_1_F	Purchased in region F: 1=Yes; 0=No	197	0.03	0	1	0.16
Lic_1_out	Purchased Outside Alaska 1=Yes; 0=No	0				
Fuel_1	Total Amount Spent on Fuel	303	127.59	0	3,500	276.77
Fuel_1_A	Purchased in region A: 1=Yes; 0=No	252	0.21	0	1	0.41
Fuel_1_B	Purchased in region B: 1=Yes; 0=No	252	0.11	0	1	0.31
Fuel_1_C	Purchased in region C: 1=Yes; 0=No	252	0.55	0	1	0.50
Fuel_1_D	Purchased in region D: 1=Yes; 0=No	252	0.05	0	1	0.22
Fuel_1_E	Purchased in region E: 1=Yes; 0=No	252	0.18	0	1	0.38
Fuel_1_F	Purchased in region F: 1=Yes; 0=No	252	0.03	0	1	0.16
Fuel_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Guide_1	Total Amount Spent on Guide	303	48.33	0	6,000	359.08
Guide_1_A	Purchased in region A: 1=Yes; 0=No	32	0.09	0	1	0.30
Guide_1_B	Purchased in region B: 1=Yes; 0=No	32	0.34	0	1	0.48
Guide_1_C	Purchased in region C: 1=Yes; 0=No	32	0.56	0	1	0.50
Guide_1_D	Purchased in region D: 1=Yes; 0=No	32	0	0	0	0
Guide_1_E	Purchased in region E: 1=Yes; 0=No	32	0	0	0	0
Guide_1_F	Purchased in region F: 1=Yes; 0=No	32	0	0	0	0

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Variable	Label	N	Mean	Min	Max	Std Dev
Guide_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Air_1	Total Amount Spent on Airfare	0				
Air_1_A	Region A 1=Yes; 0=No	0				
Air_1_B	Region B 1=Yes; 0=No	0				
Air_1_C	Region C 1=Yes; 0=No	0				
Air_1_D	Region D 1=Yes; 0=No	0				
Air_1_E	Region E 1=Yes; 0=No	0				
Air_1_F	Region F 1=Yes; 0=No	0				
Air_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Travel_1	Total Amount Spent on Commercial Travel Within Alaska	303	10.29	0	650	57.15
Travel_1_A	Purchased in region A: 1=Yes; 0=No	25	0.16	0	1	0.37
Travel_1_B	Purchased in region B: 1=Yes; 0=No	25	0.08	0	1	0.28
Travel_1_C	Purchased in region C: 1=Yes; 0=No	25	0.64	0	1	0.49
Travel_1_D	Purchased in region D: 1=Yes; 0=No	25	0	0	0	0
Travel_1_E	Purchased in region E: 1=Yes; 0=No	25	0.04	0	1	0.20
Travel_1_F	Purchased in region F: 1=Yes; 0=No	25	0	0	0	0
Travel_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Process_1	Total Amount Spent on Fish Processing	303	12.73	0	350	46.84
Process_1_A	Purchased in region A: 1=Yes; 0=No	35	0.17	0	1	0.38
Process_1_B	Purchased in region B: 1=Yes; 0=No	35	0.29	0	1	0.46
Process_1_C	Purchased in region C: 1=Yes; 0=No	35	0.51	0	1	0.51
Process_1_D	Purchased in region D: 1=Yes; 0=No	35	0	0	0	0
Process_1_E	Purchased in region E: 1=Yes; 0=No	35	0	0	0	0
Process_1_F	Purchased in region F: 1=Yes; 0=No	35	0	0	0	0
Process_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Rentals_1	Total Amount Spent on Rentals (boats, auto, etc...)	303	2.26	0	400	24.88
Rentals_1_A	Purchased in region A: 1=Yes; 0=No	7	0	0	0	0
Rentals_1_B	Purchased in region B: 1=Yes; 0=No	7	0.14	0	1	0.38
Rentals_1_C	Purchased in region C: 1=Yes; 0=No	7	0.57	0	1	0.53
Rentals_1_D	Purchased in region D: 1=Yes; 0=No	7	0.14	0	1	0.38
Rentals_1_E	Purchased in region E: 1=Yes; 0=No	7	0	0	0	0
Rentals_1_F	Purchased in region F: 1=Yes; 0=No	7	0	0	0	0
Rentals_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Derby_1	Total Amount Spent on Derby Tickets	303	3.87	0	300	20.26
Derby_1_A	Purchased in region A: 1=Yes; 0=No	32	0.44	0	1	0.50
Derby_1_B	Purchased in region B: 1=Yes; 0=No	32	0.16	0	1	0.37
Derby_1_C	Purchased in region C: 1=Yes; 0=No	32	0.28	0	1	0.46
Derby_1_D	Purchased in region D: 1=Yes; 0=No	32	0	0	0	0
Derby_1_E	Purchased in region E: 1=Yes; 0=No	32	0	0	0	0
Derby_1_F	Purchased in region F: 1=Yes; 0=No	32	0	0	0	0
Derby_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Dock_1	Total Amount Spent on Dockage	303	27.41	0	1,795	148.67
Dock_1_A	Purchased in region A: 1=Yes; 0=No	82	0.24	0	1	0.43
Dock_1_B	Purchased in region B: 1=Yes; 0=No	82	0.20	0	1	0.40
Dock_1_C	Purchased in region C: 1=Yes; 0=No	82	0.48	0	1	0.50
Dock_1_D	Purchased in region D: 1=Yes; 0=No	82	0.04	0	1	0.19
Dock_1_E	Purchased in region E: 1=Yes; 0=No	82	0.01	0	1	0.11
Dock_1_F	Purchased in region F: 1=Yes; 0=No	82	0	0	0	0
Dock_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Ice_1	Total Amount Spent on Ice	303	7.89	0	350	28.07
Ice_1_A	Purchased in region A: 1=Yes; 0=No	121	0.15	0	1	0.36
Ice_1_B	Purchased in region B: 1=Yes; 0=No	121	0.18	0	1	0.39
Ice_1_C	Purchased in region C: 1=Yes; 0=No	121	0.60	0	1	0.49
Ice_1_D	Purchased in region D: 1=Yes; 0=No	121	0.02	0	1	0.13
Ice_1_E	Purchased in region E: 1=Yes; 0=No	121	0.15	0	1	0.36

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Variable	Label	N	Mean	Min	Max	Std Dev
Ice_1_F	Purchased in region F: 1=Yes; 0=No	121	0.02	0	1	0.13
Ice_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Bait_1	Total Amount Spent on Bait	303	9.08	0	250	20.73
Bait_1_A	Purchased in region A: 1=Yes; 0=No	119	0.29	0	1	0.45
Bait_1_B	Purchased in region B: 1=Yes; 0=No	119	0.12	0	1	0.32
Bait_1_C	Purchased in region C: 1=Yes; 0=No	119	0.48	0	1	0.50
Bait_1_D	Purchased in region D: 1=Yes; 0=No	119	0.03	0	1	0.16
Bait_1_E	Purchased in region E: 1=Yes; 0=No	119	0.09	0	1	0.29
Bait_1_F	Purchased in region F: 1=Yes; 0=No	119	0	0	0	0
Bait_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Groceries_1	Total Amount Spent on Groceries, Food, and Liquor	304	74.89	0	2,500	179.77
Groceries_1_A	Purchased in region A: 1=Yes; 0=No	227	0.19	0	1	0.39
Groceries_1_B	Purchased in region B: 1=Yes; 0=No	227	0.11	0	1	0.31
Groceries_1_C	Purchased in region C: 1=Yes; 0=No	227	0.55	0	1	0.50
Groceries_1_D	Purchased in region D: 1=Yes; 0=No	227	0.04	0	1	0.18
Groceries_1_E	Purchased in region E: 1=Yes; 0=No	227	0.16	0	1	0.37
Groceries_1_F	Purchased in region F: 1=Yes; 0=No	227	0.02	0	1	0.15
Groceries_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Meals_1	Total Amount Spent on Restaurants, bars, and Take-Out	303	34.80	0	1,500	108.32
Meals_1_A	Purchased in region A: 1=Yes; 0=No	105	0.08	0	1	0.27
Meals_1_B	Purchased in region B: 1=Yes; 0=No	105	0.19	0	1	0.39
Meals_1_C	Purchased in region C: 1=Yes; 0=No	105	0.64	0	1	0.48
Meals_1_D	Purchased in region D: 1=Yes; 0=No	105	0.03	0	1	0.17
Meals_1_E	Purchased in region E: 1=Yes; 0=No	105	0.14	0	1	0.35
Meals_1_F	Purchased in region F: 1=Yes; 0=No	105	0.01	0	1	0.10
Meals_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Lodging_1	Total Amount Spent on Lodging	303	26.65	0	700	93.04
Lodging_1_A	Purchased in region A: 1=Yes; 0=No	55	0.02	0	1	0.13
Lodging_1_B	Purchased in region B: 1=Yes; 0=No	55	0.27	0	1	0.45
Lodging_1_C	Purchased in region C: 1=Yes; 0=No	55	0.67	0	1	0.47
Lodging_1_D	Purchased in region D: 1=Yes; 0=No	55	0.02	0	1	0.13
Lodging_1_E	Purchased in region E: 1=Yes; 0=No	55	0.13	0	1	0.34
Lodging_1_F	Purchased in region F: 1=Yes; 0=No	55	0.02	0	1	0.13
Lodge_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Gifts_1	Total Amount Spent on Souvenirs and Gifts	303	5.59	0	400	33.11
Gifts_1_A	Purchased in region A: 1=Yes; 0=No	18	0.06	0	1	0.24
Gifts_1_B	Purchased in region B: 1=Yes; 0=No	18	0.33	0	1	0.49
Gifts_1_C	Purchased in region C: 1=Yes; 0=No	18	0.67	0	1	0.49
Gifts_1_D	Purchased in region D: 1=Yes; 0=No	18	0	0	0	0
Gifts_1_E	Purchased in region E: 1=Yes; 0=No	18	0.11	0	1	0.32
Gifts_1_F	Purchased in region F: 1=Yes; 0=No	18	0.06	0	1	0.24
Gifts_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Amusement_1	Total Amount Spent on Other Entertainment	304	5.83	0	300	32.43
Amusement_1_A	Purchased in region A: 1=Yes; 0=No	23	0.17	0	1	0.39
Amusement_1_B	Purchased in region B: 1=Yes; 0=No	23	0.22	0	1	0.42
Amusement_1_C	Purchased in region C: 1=Yes; 0=No	23	0.39	0	1	0.50
Amusement_1_D	Purchased in region D: 1=Yes; 0=No	23	0.09	0	1	0.29
Amusement_1_E	Purchased in region E: 1=Yes; 0=No	23	0.13	0	1	0.34
Amusement_1_F	Purchased in region F: 1=Yes; 0=No	23	0	0	0	0
Amusement_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Other_1	Total Amount Spent on Other	303	0	0	0	0
Other_1_A	Purchased in region A: 1=Yes; 0=No	22	0.14	0	1	0.35
Other_1_B	Purchased in region B: 1=Yes; 0=No	22	0.09	0	1	0.29
Other_1_C	Purchased in region C: 1=Yes; 0=No	22	0.50	0	1	0.51
Other_1_D	Purchased in region D: 1=Yes; 0=No	22	0.05	0	1	0.21

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Variable	Label	N	Mean	Min	Max	Std Dev
Other_1_E	Purchased in region E: 1=Yes; 0=No	22	0.14	0	1	0.35
Other_1_F	Purchased in region F: 1=Yes; 0=No	22	0	0	0	0
Other_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
LastMo_JulOct	1=July; 2=August; 3=September; 4=October; 5=Did not fish	0				
tripdays_2	Total number of days in last trip to Alaska	0				
fishdays_2	Number of days fishing in Alaska between July 1st and Oct. 31st, 2007	0				
commit_2	Purchased in region A: 1=Yes; 0=No	0				
fish_type_2	1=Rod&Reel; 2=Shellfishing	0				
water_type_2	1=In Freshwater; 2=In Saltwater; 3=In Both	0				
charter_2	Purchased in region B: 1=Yes; 0=No	0				
trip2_A	Region A: 1=Yes; 0=No	0				
trip2_B	Region B: 1=Yes; 0=No	0				
trip2_C	Region C: 1=Yes; 0=No	0				
trip2_D	Region D: 1=Yes; 0=No	0				
trip2_E	Region E: 1=Yes; 0=No	0				
trip2_F	Region F: 1=Yes; 0=No	0				
King_2	King Salmon 1=Yes; 0=No	0				
Silver_2	Silver Salmon 1=Yes; 0=No	0				
Red_2	Red Salmon 1=Yes; 0=No	0				
OtherSalm_2	Other Salmon 1=Yes; 0=No	0				
OtherFresh_2	Other Freshwater 1=Yes; 0=No	0				
Steel_2	Steelhead 1=Yes; 0=No	0				
Trout_2	Trout 1=Yes; 0=No	0				
Halibut_2	Halibut 1=Yes; 0=No	0				
Shell_2	Shellfish 1=Yes; 0=No	0				
PtherSalt_2	Other Saltwater 1=Yes; 0=No	0				
pkg_2	Total Cost of Pre-arranged cruise, package tour, or charter trip	0				
pkg_2_A	Visited 1=Yes; 0=No	0				
pkg_2_B	Visited 1=Yes; 0=No	0				
pkg_2_C	Visited 1=Yes; 0=No	0				
pkg_2_D	Visited 1=Yes; 0=No	0				
pkg_2_E	Visited 1=Yes; 0=No	0				
pkg_2_F	Visited 1=Yes; 0=No	0				
pkg_2_air	Transportation to/from Alaska 1=Yes; 0=No	0				
pkg_2_trans	Transportation in Alaska 1=Yes; 0=No	0				
pkg_2_guide	Guides &/or charter boat 1=Yes; 0=No	0				
pkg_2_lodge	Lodging 1=Yes; 0=No	0				
pkg_2_food	Meals 1=Yes; 0=No	0				
pkg_2_lic	Fishing License 1=Yes; 0=No	0				
Lic_2	Total Amount Spent on License and Stamp	0				
Lic_2_A	Purchased in region A: 1=Yes; 0=No	0				
Lic_2_B	Purchased in region B: 1=Yes; 0=No	0				
Lic_2_C	Purchased in region C: 1=Yes; 0=No	0				
Lic_2_D	Purchased in region D: 1=Yes; 0=No	0				
Lic_2_E	Purchased in region E: 1=Yes; 0=No	0				
Lic_2_F	Purchased in region F: 1=Yes; 0=No	0				
Lic_2_out	Purchased Outside Alaska 1=Yes; 0=No	0				
Fuel_2	Total Amount Spent on Fuel	2	625.00	50	1,200	813.17
Fuel_2_A	Purchased in region A: 1=Yes; 0=No	2	0.50	0	1	0.71
Fuel_2_B	Purchased in region B: 1=Yes; 0=No	2	0.50	0	1	0.71
Fuel_2_C	Purchased in region C: 1=Yes; 0=No	2	0.50	0	1	0.71
Fuel_2_D	Purchased in region D: 1=Yes; 0=No	2	0	0	0	0
Fuel_2_E	Purchased in region E: 1=Yes; 0=No	2	0.50	0	1	0.71
Fuel_2_F	Purchased in region F: 1=Yes; 0=No	2	0	0	0	0

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Variable	Label	N	Mean	Min	Max	Std Dev
Fuel_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Guide_2	Total Amount Spent on Guide	0				
Guide_2_A	Purchased in region A: 1=Yes; 0=No	0				
Guide_2_B	Purchased in region B: 1=Yes; 0=No	0				
Guide_2_C	Purchased in region C: 1=Yes; 0=No	0				
Guide_2_D	Purchased in region D: 1=Yes; 0=No	0				
Guide_2_E	Purchased in region E: 1=Yes; 0=No	0				
Guide_2_F	Purchased in region F: 1=Yes; 0=No	0				
Guide_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Air_2	Total Amount Spent on Airfare	0				
Air_2_A	Purchased in region A: 1=Yes; 0=No	0				
Air_2_B	Purchased in region B: 1=Yes; 0=No	0				
Air_2_C	Purchased in region C: 1=Yes; 0=No	0				
Air_2_D	Purchased in region D: 1=Yes; 0=No	0				
Air_2_E	Purchased in region E: 1=Yes; 0=No	0				
Air_2_F	Purchased in region F: 1=Yes; 0=No	0				
Air_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Travel_2	Total Amount Spent on Commercial Travel Within Alaska	0				
Travel_2_A	Purchased in region A: 1=Yes; 0=No	0				
Travel_2_B	Purchased in region B: 1=Yes; 0=No	0				
Travel_2_C	Purchased in region C: 1=Yes; 0=No	0				
Travel_2_D	Purchased in region D: 1=Yes; 0=No	0				
Travel_2_E	Purchased in region E: 1=Yes; 0=No	0				
Travel_2_F	Purchased in region F: 1=Yes; 0=No	0				
Travel_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Process_2	Total Amount Spent on Fish Processing	0				
Process_2_A	Purchased in region A: 1=Yes; 0=No	0				
Process_2_B	Purchased in region B: 1=Yes; 0=No	0				
Process_2_C	Purchased in region C: 1=Yes; 0=No	0				
Process_2_D	Purchased in region D: 1=Yes; 0=No	0				
Process_2_E	Purchased in region E: 1=Yes; 0=No	0				
Process_2_F	Purchased in region F: 1=Yes; 0=No	0				
Process_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Rentals_2	Total Amount Spent on Rentals (boats, auto, etc...)	0				
Rentals_2_A	Purchased in region A: 1=Yes; 0=No	0				
Rentals_2_B	Purchased in region B: 1=Yes; 0=No	0				
Rentals_2_C	Purchased in region C: 1=Yes; 0=No	0				
Rentals_2_D	Purchased in region D: 1=Yes; 0=No	0				
Rentals_2_E	Purchased in region E: 1=Yes; 0=No	0				
Rentals_2_F	Purchased in region F: 1=Yes; 0=No	0				
Rentals_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Derby_2	Total Amount Spent on Derby Tickets	0				
Derby_2_A	Purchased in region A: 1=Yes; 0=No	0				
Derby_2_B	Purchased in region B: 1=Yes; 0=No	0				
Derby_2_C	Purchased in region C: 1=Yes; 0=No	0				
Derby_2_D	Purchased in region D: 1=Yes; 0=No	0				
Derby_2_E	Purchased in region E: 1=Yes; 0=No	0				
Derby_2_F	Purchased in region F: 1=Yes; 0=No	0				
Derby_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Dock_2	Total Amount Spent on Dockage	0				
Dock_2_A	Purchased in region A: 1=Yes; 0=No	0				
Dock_2_B	Purchased in region B: 1=Yes; 0=No	0				
Dock_2_C	Purchased in region C: 1=Yes; 0=No	0				
Dock_2_D	Purchased in region D: 1=Yes; 0=No	0				
Dock_2_E	Purchased in region E: 1=Yes; 0=No	0				

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Variable	Label	N	Mean	Min	Max	Std Dev
Dock_2_F	Purchased in region F: 1=Yes; 0=No	0				
Dock_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Ice_2	Total Amount Spent on Ice	0				
Ice_2_A	Purchased in region A: 1=Yes; 0=No	0				
Ice_2_B	Purchased in region B: 1=Yes; 0=No	0				
Ice_2_C	Purchased in region C: 1=Yes; 0=No	0				
Ice_2_D	Purchased in region D: 1=Yes; 0=No	0				
Ice_2_E	Purchased in region E: 1=Yes; 0=No	0				
Ice_2_F	Purchased in region F: 1=Yes; 0=No	0				
Ice_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Bait_2	Total Amount Spent on Bait	0				
Bait_2_A	Purchased in region A: 1=Yes; 0=No	0				
Bait_2_B	Purchased in region B: 1=Yes; 0=No	0				
Bait_2_C	Purchased in region C: 1=Yes; 0=No	0				
Bait_2_D	Purchased in region D: 1=Yes; 0=No	0				
Bait_2_E	Purchased in region E: 1=Yes; 0=No	0				
Bait_2_F	Purchased in region F: 1=Yes; 0=No	0				
Bait_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Groceries_2	Total Amount Spent on Groceries, Food, and Liquor	0				
Groceries_2_A	Purchased in region A: 1=Yes; 0=No	0				
Groceries_2_B	Purchased in region B: 1=Yes; 0=No	0				
Groceries_2_C	Purchased in region C: 1=Yes; 0=No	0				
Groceries_2_D	Purchased in region D: 1=Yes; 0=No	0				
Groceries_2_E	Purchased in region E: 1=Yes; 0=No	0				
Groceries_2_F	Purchased in region F: 1=Yes; 0=No	0				
Groceries_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Meals_2	Total Amount Spent on Restaurants, bars, and Take-Out	0				
Meals_2_A	Purchased in region A: 1=Yes; 0=No	0				
Meals_2_B	Purchased in region B: 1=Yes; 0=No	0				
Meals_2_C	Purchased in region C: 1=Yes; 0=No	0				
Meals_2_D	Purchased in region D: 1=Yes; 0=No	0				
Meals_2_E	Purchased in region E: 1=Yes; 0=No	0				
Meals_2_F	Purchased in region F: 1=Yes; 0=No	0				
Meals_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Lodging_2	Total Amount Spent on Lodging	0				
Lodging_2_A	Purchased in region A: 1=Yes; 0=No	0				
Lodging_2_B	Purchased in region B: 1=Yes; 0=No	0				
Lodging_2_C	Purchased in region C: 1=Yes; 0=No	0				
Lodging_2_D	Purchased in region D: 1=Yes; 0=No	0				
Lodging_2_E	Purchased in region E: 1=Yes; 0=No	0				
Lodging_2_F	Purchased in region F: 1=Yes; 0=No	0				
Lodge_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Gifts_2	Total Amount Spent on Souvenirs and Gifts	0				
Gifts_2_A	Purchased in region A: 1=Yes; 0=No	0				
Gifts_2_B	Purchased in region B: 1=Yes; 0=No	0				
Gifts_2_C	Purchased in region C: 1=Yes; 0=No	0				
Gifts_2_D	Purchased in region D: 1=Yes; 0=No	0				
Gifts_2_E	Purchased in region E: 1=Yes; 0=No	0				
Gifts_2_F	Purchased in region F: 1=Yes; 0=No	0				
Gifts_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Amusement_2	Total Amount Spent on Other Entertainment	0				
Amusement_2_A	Purchased in region A: 1=Yes; 0=No	0				
Amusement_2_B	Purchased in region B: 1=Yes; 0=No	0				
Amusement_2_C	Purchased in region C: 1=Yes; 0=No	0				
Amusement_2_D	Purchased in region D: 1=Yes; 0=No	0				

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Variable	Label	N	Mean	Min	Max	Std Dev
Amusement_2_E	Purchased in region E: 1=Yes; 0=No	0				
Amusement_2_F	Purchased in region F: 1=Yes; 0=No	0				
Amusement_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Other_2	Total Amount Spent on Other	0				
Other_2_A	Purchased in region A: 1=Yes; 0=No	0				
Other_2_B	Purchased in region B: 1=Yes; 0=No	0				
Other_2_C	Purchased in region C: 1=Yes; 0=No	0				
Other_2_D	Purchased in region D: 1=Yes; 0=No	0				
Other_2_E	Purchased in region E: 1=Yes; 0=No	0				
Other_2_F	Purchased in region F: 1=Yes; 0=No	0				
Other_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Eq_Lic	Total Amount Spent on License and Stamps	353	41.97	0	300	32.66
Eq_Lic_A	Purchased in region A: 1=Yes; 0=No	315	0.20	0	1	0.40
Eq_Lic_B	Purchased in region B: 1=Yes; 0=No	315	0.06	0	1	0.24
Eq_Lic_C	Purchased in region C: 1=Yes; 0=No	315	0.53	0	1	0.50
Eq_Lic_D	Purchased in region D: 1=Yes; 0=No	315	0.28	0	75	4.23
Eq_Lic_E	Purchased in region E: 1=Yes; 0=No	315	0.17	0	1	0.37
Eq_Lic_F	Purchased in region F: 1=Yes; 0=No	315	0.03	0	1	0.16
Eq_RodReel	Total Amount Spent on Rods, Reels, and Components	353	127.86	0	2,500	257.69
Eq_Rods_A	Purchased in region A: 1=Yes; 0=No	186	0.17	0	1	0.38
Eq_Rods_B	Purchased in region B: 1=Yes; 0=No	186	0.05	0	1	0.23
Eq_Rods_C	Purchased in region C: 1=Yes; 0=No	186	0.56	0	1	0.50
Eq_Rods_D	Purchased in region D: 1=Yes; 0=No	186	0.04	0	1	0.20
Eq_Rods_E	Purchased in region E: 1=Yes; 0=No	186	0.16	0	1	0.36
Eq_Rods_F	Purchased in region F: 1=Yes; 0=No	186	0.02	0	1	0.15
Eq_Tackle	Total Amount Spent on Fishing Tackle	353	88.59	0	3,170	208.56
Eq_Tackle_A	Purchased in region A: 1=Yes; 0=No	258	0.20	0	1	0.40
Eq_Tackle_B	Purchased in region B: 1=Yes; 0=No	258	0.08	0	1	0.27
Eq_Tackle_C	Purchased in region C: 1=Yes; 0=No	258	0.53	0	1	0.50
Eq_Tackle_D	Purchased in region D: 1=Yes; 0=No	258	0.05	0	1	0.22
Eq_Tackle_E	Purchased in region E: 1=Yes; 0=No	258	0.16	0	1	0.37
Eq_Tackle_F	Purchased in region F: 1=Yes; 0=No	258	0.02	0	1	0.12
Eq_Tacklebox	Total Amount Spent on Tackle Boxes	353	10.25	0	400	32.56
Eq_Tacklebox_A	Purchased in region A: 1=Yes; 0=No	79	0.16	0	1	0.37
Eq_Tacklebox_B	Purchased in region B: 1=Yes; 0=No	79	0.04	0	1	0.19
Eq_Tacklebox_C	Purchased in region C: 1=Yes; 0=No	79	0.57	0	1	0.50
Eq_Tacklebox_D	Purchased in region D: 1=Yes; 0=No	79	0.06	0	1	0.25
Eq_Tacklebox_E	Purchased in region E: 1=Yes; 0=No	79	0.09	0	1	0.29
Eq_Tacklebox_F	Purchased in region F: 1=Yes; 0=No	79	0.01	0	1	0.11
Eq_Electronics	Total Amount Spent on Fish/Depth Finder	353	72.72	0	5,412	391.56
Eq_Elec_A	Purchased in region A: 1=Yes; 0=No	43	0.30	0	1	0.46
Eq_Elec_B	Purchased in region B: 1=Yes; 0=No	43	0.07	0	1	0.26
Eq_Elec_C	Purchased in region C: 1=Yes; 0=No	43	0.35	0	1	0.48
Eq_Elec_D	Purchased in region D: 1=Yes; 0=No	43	0.02	0	1	0.15
Eq_Elec_E	Purchased in region E: 1=Yes; 0=No	43	0.07	0	1	0.26
Eq_Elec_F	Purchased in region F: 1=Yes; 0=No	43	0	0	0	0
Eq_Nets	Total Amount Spent on Dip/Gill Nets	353	20.89	0	1,000	69.38
Eq_Nets_A	Purchased in region A: 1=Yes; 0=No	85	0.14	0	1	0.35
Eq_Nets_B	Purchased in region B: 1=Yes; 0=No	84	0.07	0	1	0.26
Eq_Nets_C	Purchased in region C: 1=Yes; 0=No	85	0.55	0	1	0.50
Eq_Nets_D	Purchased in region D: 1=Yes; 0=No	85	0.02	0	1	0.15
Eq_Nets_E	Purchased in region E: 1=Yes; 0=No	85	0.12	0	1	0.32
Eq_Nets_F	Purchased in region F: 1=Yes; 0=No	85	0.04	0	1	0.19
Eq_Misc	Total Amount Spent on Miscellaneous Fishing Equipment	353	26.93	0	500	54.07
Eq_Misc_A	Purchased in region A: 1=Yes; 0=No	151	0.21	0	1	0.41

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Variable	Label	N	Mean	Min	Max	Std Dev
Eq_Misc_B	Purchased in region B: 1=Yes; 0=No	151	0.09	0	1	0.28
Eq_Misc_C	Purchased in region C: 1=Yes; 0=No	151	0.55	0	1	0.50
Eq_Misc_D	Purchased in region D: 1=Yes; 0=No	151	0.05	0	1	0.21
Eq_Misc_E	Purchased in region E: 1=Yes; 0=No	151	0.12	0	1	0.33
Eq_Misc_F	Purchased in region F: 1=Yes; 0=No	151	0.01	0	1	0.08
Eq_Shellfish	Total Amount Spent on	352	11.26	0	600	55.73
Eq_Shellfish_A	Purchased in region A: 1=Yes; 0=No	44	0.32	0	1	0.47
Eq_Shellfish_B	Purchased in region B: 1=Yes; 0=No	44	0.05	0	1	0.21
Eq_Shellfish_C	Purchased in region C: 1=Yes; 0=No	44	0.45	0	1	0.50
Eq_Shellfish_D	Purchased in region D: 1=Yes; 0=No	43	0	0	0	0
Eq_Shellfish_E	Purchased in region E: 1=Yes; 0=No	43	0.02	0	1	0.15
Eq_Shellfish_F	Purchased in region F: 1=Yes; 0=No	44	0	0	0	0
Eq_Taxidermy	Total Amount Spent on Taxidermy	353	13.60	0	4,500	240.00
Eq_Taxidermy_A	Purchased in region A: 1=Yes; 0=No	11	0	0	0	0
Eq_Taxidermy_B	Purchased in region B: 1=Yes; 0=No	11	0	0	0	0
Eq_Taxidermy_C	Purchased in region C: 1=Yes; 0=No	11	0.36	0	1	0.50
Eq_Taxidermy_D	Purchased in region D: 1=Yes; 0=No	11	0	0	0	0
Eq_Taxidermy_E	Purchased in region E: 1=Yes; 0=No	11	0	0	0	0
Eq_Taxidermy_F	Purchased in region F: 1=Yes; 0=No	11	0	0	0	0
Eq_Books	Total Amount Spent on	353	8.54	0	350	28.79
Eq_Books_A	Purchased in region A: 1=Yes; 0=No	76	0.13	0	1	0.34
Eq_Books_B	Purchased in region B: 1=Yes; 0=No	76	0.07	0	1	0.25
Eq_Books_C	Purchased in region C: 1=Yes; 0=No	76	0.62	0	1	0.49
Eq_Books_D	Purchased in region D: 1=Yes; 0=No	76	0.03	0	1	0.16
Eq_Books_E	Purchased in region E: 1=Yes; 0=No	76	0.11	0	1	0.31
Eq_Books_F	Purchased in region F: 1=Yes; 0=No	76	0.03	0	1	0.16
Eq_Preserve	Total Amount Spent on Preserving/Smoking	353	47.28	0	600	92.84
Eq_Preserve_A	Purchased in region A: 1=Yes; 0=No	142	0.18	0	1	0.39
Eq_Preserve_B	Purchased in region B: 1=Yes; 0=No	141	0.08	0	1	0.27
Eq_Preserve_C	Purchased in region C: 1=Yes; 0=No	142	1.09	0	75	6.27
Eq_Preserve_D	Purchased in region D: 1=Yes; 0=No	142	0.04	0	1	0.20
Eq_Preserve_E	Purchased in region E: 1=Yes; 0=No	142	0.10	0	1	0.30
Eq_Preserve_F	Purchased in region F: 1=Yes; 0=No	142	0.02	0	1	0.14
Eq_PreservePct	% used for sportfishing	62	84.19	0	100	27.64
Eq_Coolers	Total Amount Spent on Coolers	353	21.64	0	300	48.50
Eq_Coolers_A	Purchased in region A: 1=Yes; 0=No	115	0.17	0	1	0.38
Eq_Coolers_B	Purchased in region B: 1=Yes; 0=No	115	0.09	0	1	0.28
Eq_Coolers_C	Purchased in region C: 1=Yes; 0=No	115	0.59	0	1	0.49
Eq_Coolers_D	Purchased in region D: 1=Yes; 0=No	115	0.03	0	1	0.18
Eq_Coolers_E	Purchased in region E: 1=Yes; 0=No	115	0.09	0	1	0.28
Eq_Coolers_F	Purchased in region F: 1=Yes; 0=No	115	0	0	0	0
Eq_CoolersPct	% used for sportfishing	59	80.34	20	100	27.68
Eq_Clothing	Total Amount Spent on Clothing	353	50.08	0	1,200	120.96
Eq_Clothing_A	Purchased in region A: 1=Yes; 0=No	125	0.19	0	1	0.40
Eq_Clothing_B	Purchased in region B: 1=Yes; 0=No	125	0.06	0	1	0.23
Eq_Clothing_C	Purchased in region C: 1=Yes; 0=No	125	0.55	0	1	0.50
Eq_Clothing_D	Purchased in region D: 1=Yes; 0=No	125	0.07	0	1	0.26
Eq_Clothing_E	Purchased in region E: 1=Yes; 0=No	125	0.10	0	1	0.31
Eq_Clothing_F	Purchased in region F: 1=Yes; 0=No	124	0.01	0	1	0.09
Eq_ClothingPct	% used for sportfishing	60	77.58	0	100	32.03
Eq_Boots	Total Amount Spent on Boots, and Shoes	353	43.31	0	550	77.21
Eq_Boots_A	Purchased in region A: 1=Yes; 0=No	144	0.17	0	1	0.38
Eq_Boots_B	Purchased in region B: 1=Yes; 0=No	144	0.05	0	1	0.22
Eq_Boots_C	Purchased in region C: 1=Yes; 0=No	144	0.57	0	1	0.50
Eq_Boots_D	Purchased in region D: 1=Yes; 0=No	144	0.06	0	1	0.24

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Variable	Label	N	Mean	Min	Max	Std Dev
Eq_Boots_E	Purchased in region E: 1=Yes; 0=No	144	0.09	0	1	0.29
Eq_Boots_F	Purchased in region F: 1=Yes; 0=No	144	0.01	0	1	0.08
Eq_BootsPct	% used for sportfishing	70	84.64	5	100	25.98
Eq_LJackets	Total Amount Spent on Life Jackets, and Survival Suits	353	22.38	0	1,000	81.58
Eq_LJackets_A	Purchased in region A: 1=Yes; 0=No	66	0.17	0	1	0.38
Eq_LJackets_B	Purchased in region B: 1=Yes; 0=No	65	0.05	0	1	0.21
Eq_LJackets_C	Purchased in region C: 1=Yes; 0=No	65	0.51	0	1	0.50
Eq_LJackets_D	Purchased in region D: 1=Yes; 0=No	66	0.05	0	1	0.21
Eq_LJackets_E	Purchased in region E: 1=Yes; 0=No	66	0.14	0	1	0.35
Eq_LJackets_F	Purchased in region F: 1=Yes; 0=No	66	0.02	0	1	0.12
Eq_LJacketsPct	% used for sportfishing	29	83.97	10	100	30.66
Eq_Boats	Total Amount Spent on Boats, Canoes, Watercraft, etc...	352	920.23	0	78,000	6,185.37
Eq_Boats_A	Purchased in region A: 1=Yes; 0=No	45	0.13	0	1	0.34
Eq_Boats_B	Purchased in region B: 1=Yes; 0=No	45	0.02	0	1	0.15
Eq_Boats_C	Purchased in region C: 1=Yes; 0=No	45	0.58	0	1	0.50
Eq_Boats_D	Purchased in region D: 1=Yes; 0=No	45	0	0	0	0
Eq_Boats_E	Purchased in region E: 1=Yes; 0=No	45	0.11	0	1	0.32
Eq_Boats_F	Purchased in region F: 1=Yes; 0=No	45	0	0	0	0
Eq_BoatsPct	% used for sportfishing	21	85.95	25	100	24.17
Eq_Motors	Total Amount Spent on Boat Motors	353	641.44	0	38,000	3,399.75
Eq_Motors_A	Purchased in region A: 1=Yes; 0=No	44	0.23	0	1	0.42
Eq_Motors_B	Purchased in region B: 1=Yes; 0=No	44	0.02	0	1	0.15
Eq_Motors_C	Purchased in region C: 1=Yes; 0=No	44	0.50	0	1	0.51
Eq_Motors_D	Purchased in region D: 1=Yes; 0=No	44	0	0	0	0
Eq_Motors_E	Purchased in region E: 1=Yes; 0=No	44	0.09	0	1	0.29
Eq_Motors_F	Purchased in region F: 1=Yes; 0=No	44	0	0	0	0
Eq_MotorsPct	% used for sportfishing	19	88.16	50	100	19.38
Eq_Trailers	Total Amount Spent on Boat Trailers	352	105.53	0	6,700	573.78
Eq_Trailers_A	Purchased in region A: 1=Yes; 0=No	64	0.19	0	1	0.39
Eq_Trailers_B	Purchased in region B: 1=Yes; 0=No	65	0.03	0	1	0.17
Eq_Trailers_C	Purchased in region C: 1=Yes; 0=No	65	0.55	0	1	0.50
Eq_Trailers_D	Purchased in region D: 1=Yes; 0=No	65	0.03	0	1	0.17
Eq_Trailers_E	Purchased in region E: 1=Yes; 0=No	65	0.06	0	1	0.24
Eq_Trailers_F	Purchased in region F: 1=Yes; 0=No	65	0.03	0	1	0.17
Eq_TrailersPct	% used for sportfishing	32	69.22	0	100	35.45
Eq_OtherParts	Total Amount Spent on Other Boat Parts	353	118.92	0	5,000	502.38
Eq_OtherParts_A	Purchased in region A: 1=Yes; 0=No	85	0.21	0	1	0.41
Eq_OtherParts_B	Purchased in region B: 1=Yes; 0=No	85	0.04	0	1	0.19
Eq_OtherParts_C	Purchased in region C: 1=Yes; 0=No	85	0.47	0	1	0.50
Eq_OtherParts_D	Purchased in region D: 1=Yes; 0=No	85	0.04	0	1	0.19
Eq_OtherParts_E	Purchased in region E: 1=Yes; 0=No	85	0.18	0	1	0.38
Eq_OtherParts_F	Purchased in region F: 1=Yes; 0=No	85	0	0	0	0
Eq_OtherPartsPct	% used for sportfishing	43	86.86	10	100	24.66
Eq_BearSpray	Total Amount Spent on Bear Spray, Bug Spray, etc...	353	14.11	0	650	41.96
Eq_BearSpray_A	Purchased in region A: 1=Yes; 0=No	141	0.16	0	1	0.36
Eq_BearSpray_B	Purchased in region B: 1=Yes; 0=No	141	0.08	0	1	0.27
Eq_BearSpray_C	Purchased in region C: 1=Yes; 0=No	141	0.53	0	1	0.50
Eq_BearSpray_D	Purchased in region D: 1=Yes; 0=No	140	0.05	0	1	0.22
Eq_BearSpray_E	Purchased in region E: 1=Yes; 0=No	140	0.17	0	1	0.38
Eq_BearSpray_F	Purchased in region F: 1=Yes; 0=No	141	0.02	0	1	0.14
Eq_BearSprayPct	% used for sportfishing	75	63.75	0	100	32.61
Eq_Firearms	Total Amount Spent on Firearms	353	64.75	0	2,000	218.66
Eq_Firearms_A	Purchased in region A: 1=Yes; 0=No	50	0.10	0	1	0.30
Eq_Firearms_B	Purchased in region B: 1=Yes; 0=No	50	0.06	0	1	0.24
Eq_Firearms_C	Purchased in region C: 1=Yes; 0=No	50	0.56	0	1	0.50

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Variable	Label	N	Mean	Min	Max	Std Dev
Eq_Firearms_D	Purchased in region D: 1=Yes; 0=No	50	0.06	0	1	0.24
Eq_Firearms_E	Purchased in region E: 1=Yes; 0=No	50	0.12	0	1	0.33
Eq_Firearms_F	Purchased in region F: 1=Yes; 0=No	50	0	0	0	0
Eq_FirearmsPct	% used for sportfishing	29	52.07	0	100	36.63
Eq_Cameras	Total Amount Spent on Camera, Binoculars, Sun Glasses	353	55.97	0	2,600	200.18
Eq_Cameras_A	Purchased in region A: 1=Yes; 0=No	96	0.20	0	1	0.40
Eq_Cameras_B	Purchased in region B: 1=Yes; 0=No	96	0.06	0	1	0.24
Eq_Cameras_C	Purchased in region C: 1=Yes; 0=No	96	0.54	0	1	0.50
Eq_Cameras_D	Purchased in region D: 1=Yes; 0=No	96	0.04	0	1	0.20
Eq_Cameras_E	Purchased in region E: 1=Yes; 0=No	96	0.14	0	1	0.34
Eq_Cameras_F	Purchased in region F: 1=Yes; 0=No	96	0	0	0	0
Eq_CamerasPct	% used for sportfishing	49	53.88	5	100	31.95
Eq_Tents	Total Amount Spent on Tents, etc...	353	31.73	0	1,000	95.74
Eq_Tents_A	Purchased in region A: 1=Yes; 0=No	70	0.04	0	1	0.20
Eq_Tents_B	Purchased in region B: 1=Yes; 0=No	70	0.09	0	1	0.28
Eq_Tents_C	Purchased in region C: 1=Yes; 0=No	70	0.67	0	1	0.47
Eq_Tents_D	Purchased in region D: 1=Yes; 0=No	70	0.01	0	1	0.12
Eq_Tents_E	Purchased in region E: 1=Yes; 0=No	70	0.10	0	1	0.30
Eq_Tents_F	Purchased in region F: 1=Yes; 0=No	70	0.03	0	1	0.17
Eq_TentsPct	% used for sportfishing	36	58.33	0	100	35.09
Eq_Campers	Total Amount Spent on Camping Trailer	353	303.97	0	25,000	2,162.64
Eq_Campers_A	Purchased in region A: 1=Yes; 0=No	27	0	0	0	0
Eq_Campers_B	Purchased in region B: 1=Yes; 0=No	27	0.07	0	1	0.27
Eq_Campers_C	Purchased in region C: 1=Yes; 0=No	27	0.52	0	1	0.51
Eq_Campers_D	Purchased in region D: 1=Yes; 0=No	27	0.04	0	1	0.19
Eq_Campers_E	Purchased in region E: 1=Yes; 0=No	27	0.15	0	1	0.36
Eq_Campers_F	Purchased in region F: 1=Yes; 0=No	27	0	0	0	0
Eq_CampersPct	% used for sportfishing	9	53.33	5	100	36.14
Eq_Other_Camp	Total Amount Spent on Other Camping Equipment	353	20.89	0	1,400	95.40
Eq_Other_Camp_A	Purchased in region A: 1=Yes; 0=No	50	0.12	0	1	0.33
Eq_Other_Camp_B	Purchased in region B: 1=Yes; 0=No	50	0.08	0	1	0.27
Eq_Other_Camp_C	Purchased in region C: 1=Yes; 0=No	50	0.58	0	1	0.50
Eq_Other_Camp_D	Purchased in region D: 1=Yes; 0=No	50	0.02	0	1	0.14
Eq_Other_Camp_E	Purchased in region E: 1=Yes; 0=No	50	0.14	0	1	0.35
Eq_Other_Camp_F	Purchased in region F: 1=Yes; 0=No	50	0	0	0	0
Eq_Other_CampPct	% used for sportfishing	24	63.33	5	100	35.53
Eq_Vehicles	Total Amount Spent on Vehicles	353	1,322.28	0	61,000	6,603.80
Eq_Vehicles_A	Purchased in region A: 1=Yes; 0=No	35	0.11	0	1	0.32
Eq_Vehicles_B	Purchased in region B: 1=Yes; 0=No	35	0.09	0	1	0.28
Eq_Vehicles_C	Purchased in region C: 1=Yes; 0=No	35	0.49	0	1	0.51
Eq_Vehicles_D	Purchased in region D: 1=Yes; 0=No	35	0.03	0	1	0.17
Eq_Vehicles_E	Purchased in region E: 1=Yes; 0=No	35	0.09	0	1	0.28
Eq_Vehicles_F	Purchased in region F: 1=Yes; 0=No	35	0	0	0	0
Eq_VehiclesPct	% used for sportfishing	12	63.75	5	100	41.35
Eq_Planes	Total Amount Spent on Airplanes and Related Equipment	353	522.33	0	125,000	7,162.76
Eq_Planes_A	Purchased in region A: 1=Yes; 0=No	16	0.06	0	1	0.25
Eq_Planes_B	Purchased in region B: 1=Yes; 0=No	16	0	0	0	0
Eq_Planes_C	Purchased in region C: 1=Yes; 0=No	16	0.38	0	1	0.50
Eq_Planes_D	Purchased in region D: 1=Yes; 0=No	16	0	0	0	0
Eq_Planes_E	Purchased in region E: 1=Yes; 0=No	16	0.06	0	1	0.25
Eq_Planes_F	Purchased in region F: 1=Yes; 0=No	16	0.06	0	1	0.25
Eq_PlanesPct	% used for sportfishing	5	72.00	10	100	40.87
Eq_ATV	Total Amount Spent on ATVs, and Snowmobiles	353	681.97	0	20,000	2,390.92
Eq_ATV_A	Purchased in region A: 1=Yes; 0=No	45	0.04	0	1	0.21
Eq_ATV_B	Purchased in region B: 1=Yes; 0=No	45	0.02	0	1	0.15

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Variable	Label	N	Mean	Min	Max	Std Dev
Eq_ATV_C	Purchased in region C: 1=Yes; 0=No	45	0.40	0	1	0.50
Eq_ATV_D	Purchased in region D: 1=Yes; 0=No	45	0.04	0	1	0.21
Eq_ATV_E	Purchased in region E: 1=Yes; 0=No	45	0.20	0	1	0.40
Eq_ATV_F	Purchased in region F: 1=Yes; 0=No	45	0.09	0	1	0.29
Eq_ATVPct	% used for sportfishing	23	32.17	0	100	34.77
Eq_Registration	Total Amount Spent on Boat/Camper Registration	353	43.05	0	6,750	371.05
Eq_Registration_A	Purchased in region A: 1=Yes; 0=No	71	0.25	0	1	0.44
Eq_Registration_B	Purchased in region B: 1=Yes; 0=No	71	0.03	0	1	0.17
Eq_Registration_C	Purchased in region C: 1=Yes; 0=No	71	0.48	0	1	0.50
Eq_Registration_D	Purchased in region D: 1=Yes; 0=No	71	0.03	0	1	0.17
Eq_Registration_E	Purchased in region E: 1=Yes; 0=No	71	0.11	0	1	0.32
Eq_Registration_F	Purchased in region F: 1=Yes; 0=No	71	0	0	0	0
Eq_RegistrationPct	% used for sportfishing	33	86.06	25	100	25.82
Eq_Repair	Total Amount Spent on Vehicle Repair/Maintenance	353	305.31	0	10,000	1,064.54
Eq_Repair_A	Purchased in region A: 1=Yes; 0=No	92	0.24	0	1	0.43
Eq_Repair_B	Purchased in region B: 1=Yes; 0=No	92	0.04	0	1	0.21
Eq_Repair_C	Purchased in region C: 1=Yes; 0=No	91	0.51	0	1	0.50
Eq_Repair_D	Purchased in region D: 1=Yes; 0=No	92	0.02	0	1	0.15
Eq_Repair_E	Purchased in region E: 1=Yes; 0=No	92	0.10	0	1	0.30
Eq_Repair_F	Purchased in region F: 1=Yes; 0=No	92	0.01	0	1	0.10
Eq_RepairPct	% used for sportfishing	46	71.63	0	100	36.16
Eq_Other	Total Amount Spent on Other, including non-fishing related purchases	379	0.30	0	75	4.36
Eq_Other_A	Purchased in region A: 1=Yes; 0=No	25	0.24	0	1	0.44
Eq_Other_B	Purchased in region B: 1=Yes; 0=No	25	0.12	0	1	0.33
Eq_Other_C	Purchased in region C: 1=Yes; 0=No	25	0.36	0	1	0.49
Eq_Other_D	Purchased in region D: 1=Yes; 0=No	25	0	0	0	0
Eq_Other_E	Purchased in region E: 1=Yes; 0=No	25	0.08	0	1	0.28
Eq_Other_F	Purchased in region F: 1=Yes; 0=No	25	0	0	0	0
Eq_OtherPct	% used for sportfishing	12	83.33	0	100	32.57
Own	Amount Spent on Real Estate Owned/Shared for Fishing	286	2,778.95	0	150,000	15,085.13
Own_A	Region A 1=Yes; 0=No	47	0.19	0	1	0.40
Own_B	Region B 1=Yes; 0=No	47	0.06	0	1	0.25
Own_C	Region C 1=Yes; 0=No	47	0.40	0	1	0.50
Own_D	Region D 1=Yes; 0=No	46	0.02	0	1	0.15
Own_E	Region E 1=Yes; 0=No	47	0.09	0	1	0.28
Own_F	Region F 1=Yes; 0=No	47	0.02	0	1	0.15
Lease	Amount Spent on Real Estate Leased/Rented for Fishing	286	35.10	0	2,000	202.53
Lease_A	Region A 1=Yes; 0=No	28	0.25	0	1	0.44
Lease_B	Region B 1=Yes; 0=No	28	0.11	0	1	0.31
Lease_C	Region C 1=Yes; 0=No	28	0.21	0	1	0.42
Lease_D	Region D 1=Yes; 0=No	28	0	0	0	0
Lease_E	Region E 1=Yes; 0=No	28	0.07	0	1	0.26
Lease_F	Region F 1=Yes; 0=No	28	0	0	0	0
Maintain	Amount Spent on Repairs/Maintenance for Real Estate	286	156.49	0	17,000	1,123.90
Maint_A	Region A 1=Yes; 0=No	34	0.26	0	1	0.45
Maint_B	Region B 1=Yes; 0=No	34	0	0	0	0
Maint_C	Region C 1=Yes; 0=No	34	0.32	0	1	0.47
Maint_D	Region D 1=Yes; 0=No	34	0.03	0	1	0.17
Maint_E	Region E 1=Yes; 0=No	34	0.06	0	1	0.24
Maint_F	Region F 1=Yes; 0=No	34	0.06	0	1	0.24
Cabin	Amount Spent on Construction of Buildings, Cabins, Etc...	286	559.18	0	75,000	5,026.44
Cabin_A	Region A 1=Yes; 0=No	24	0.17	0	1	0.38
Cabin_B	Region B 1=Yes; 0=No	24	0	0	0	0
Cabin_C	Region C 1=Yes; 0=No	24	0.38	0	1	0.49

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Variable	Label	N	Mean	Min	Max	Std Dev
Cabin_D	Region D 1=Yes; 0=No	24	0	0	0	0
Cabin_E	Region E 1=Yes; 0=No	24	0.04	0	1	0.20
Cabin_F	Region F 1=Yes; 0=No	24	0	0	0	0
Sex	1=Male; 2=Female	373	1.19	1	2	0.39
B_year	Year of Birth	372	1,962.66	1,934	1,991	11.35
Educ	1=Did not Graduate H.S.; 2=H.S. Graduate or GED; 3=1-3 Years of College; 4=College Graduate; 5=Postgraduate, Masters, Ph.D	367	3.26	1	5	1.05
HH_Income	1=Less Than 9,999; 2=10k-19,999; 3=20k-29,999; 4=30k-39,999; 5=40k-49,999; 6=50k-59,999; 7=60k-69,999; 8=70k-79,999; 9=80k-89,999; 10=90k-99,999; 11=100k-249,999; 12=250k or More	359	7.65	1	12	3.13
Satis	1=Very Dissatisfied; 2=Generally Dissatisfied; 3=Neutral; 4=Generally Satisfied; 5=Very Satisfied	0				

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Appendix G2- Summary statistics for survey response variables: Wave 2 resident respondents.

Variable	Label	N	Mean	Min	Max	StdDev
NovDec_salt	Number of days fishing in Saltwater, November Thru December, 2006	769	1.77	0	60	7.34
NovDec_fresh	Number of days fishing in Freshwater, November Thru December, 2006	769	3.01	0	60	8.66
JanApr_salt	Number of days fishing in Saltwater, January Thru April, 2007	0				
JanApr_fresh	Number of days fishing in Freshwater, January Thru April, 2007	0				
MayJun_fresh_A	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region A	733	0.29	0	40	2.10
MayJun_fresh_B	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region B	733	0.29	0	20	1.62
MayJun_fresh_C	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region C	733	2.67	0	45	6.19
MayJun_fresh_D	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region D	733	0.20	0	30	1.67
MayJun_fresh_E	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region E	733	0.93	0	40	3.86
MayJun_fresh_F	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region F	733	0.04	0	10	0.51
MayJun_salt_A	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region A	733	1.09	0	60	4.71
MayJun_salt_B	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region B	733	0.66	0	20	2.54
MayJun_salt_C	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region C	733	0.77	0	20	2.25
MayJun_salt_D	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region D	733	0.13	0	19	1.20
MayJun_salt_F	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region F	733	0	0	0	0
JulOct_fresh_A	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region A	733	0.38	0	25	2.17
JulOct_fresh_B	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region B	733	0.42	0	32	2.36
JulOct_fresh_C	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region C	733	4.09	0	120	11.23
JulOct_fresh_D	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region D	733	0.30	0	24	1.99
JulOct_fresh_E	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region E	733	1.15	0	60	4.60
JulOct_fresh_F	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region F	733	0.11	0	20	1.03
JulOct_salt_A	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region A	733	1.56	0	90	7.37
JulOct_salt_B	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region B	733	1.44	0	90	5.32
JulOct_salt_C	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region C	733	0.89	0	30	2.66
JulOct_salt_D	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region D	733	0.15	0	20	1.17
JulOct_salt_F	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region F	733	0.01	0	5	0.20
LastMo_MayJun	1=May; 2=June; 3=Did not fish between May 1st and June 30st	691	2.20	1	3	0.54
tripdays_1	Total days involved in last trip to Alaska	523	2.98	0	60	5.13
fishdays_1	Number of days actually fished in Alaska between May 1st and June 30th	527	3.53	0	45	5.83
commit_1	1=Yes; 0=No	523	0.32	0	1	0.47

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NOTE: Summary statistics of raw survey data. The mean values reported here do not necessarily represent average spending by all Alaska anglers; the standard deviations do not apply to final spending estimates. This table includes raw survey data that underwent numerous transformations to produce the final study estimates.

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Variable	Label	N	Mean	Min	Max	StdDev
fish_type_1	1=Rod&Reel; 2=Shellfish Fishing	514	1.11	1	3	0.41
water_type_1	1=In Freshwater; 2=In Saltwater; 3=In Both	516	1.50	1	3	0.62
charter_1	1=Yes; 0=No	525	0.09	0	1	0.29
trip1_A	Did you fish in Region A 1=Yes; 0=No	540	0.16	0	1	0.37
trip1_B	Did you fish in Region B 1=Yes; 0=No	540	0.13	0	1	0.34
trip1_C	Did you fish in Region C 1=Yes; 0=No	540	0.51	0	1	0.50
trip1_D	Did you fish in Region D 1=Yes; 0=No	540	0.04	0	1	0.20
trip1_E	Did you fish in Region E 1=Yes; 0=No	540	0.13	0	1	0.34
trip1_F	Did you fish in Region F 1=Yes; 0=No	540	0.01	0	1	0.11
King_1	King Salmon 1=Yes; 0=No	539	0.48	0	1	0.50
Silver_1	Silver Salmon 1=Yes; 0=No	539	0.13	0	1	0.33
Red_1	Red Salmon 1=Yes; 0=No	540	0.22	0	1	0.41
OtherSalm_1	Other Salmon 1=Yes; 0=No	539	0.05	0	1	0.21
OtherFresh_1	Other Freshwater 1=Yes; 0=No	539	0.14	0	1	0.35
Steel_1	Steelhead 1=Yes; 0=No	539	0.01	0	1	0.07
Trout_1	Trout 1=Yes; 0=No	539	0.18	0	1	0.38
Halibut_1	Halibut 1=Yes; 0=No	539	0.27	0	1	0.44
Shell_1	Shellfish 1=Yes; 0=No	539	0.08	0	1	0.27
PtherSalt_1	Other Saltwater 1=Yes; 0=No	539	0.06	0	1	0.24
pkg_1	Total Cost of pre-arranged cruise, package tour, or charter trip	0	.	.	.	.
pkg_1_A	Visited 1=Yes; 0=No	0	.	.	.	.
pkg_1_B	Visited 1=Yes; 0=No	0	.	.	.	.
pkg_1_C	Visited 1=Yes; 0=No	0	.	.	.	.
pkg_1_D	Visited 1=Yes; 0=No	0	.	.	.	.
pkg_1_E	Visited 1=Yes; 0=No	0	.	.	.	.
pkg_1_F	Visited 1=Yes; 0=No	0	.	.	.	.
pkg_1_air	Transportation to/from Alaska 1=Yes; 0=No	0	.	.	.	.
pkg_1_trans	Transportation in Alaska 1=Yes; 0=No	0	.	.	.	.
pkg_1_guide	Guides &/or charter boat 1=Yes; 0=No	0	.	.	.	.
pkg_1_lodge	Lodging 1=Yes; 0=No	0	.	.	.	.
pkg_1_food	Meals 1=Yes; 0=No	0	.	.	.	.
pkg_1_lic	Fishing License 1=Yes; 0=No	0	.	.	.	.
Lic_1	Total Amount Spent on License and Stamp	525	30.78	0	200	27.87
Lic_1_A	1=Yes; 0=No	411	0.15	0	1	0.35
Lic_1_B	1=Yes; 0=No	411	0.08	0	1	0.28
Lic_1_C	1=Yes; 0=No	411	0.55	0	1	0.50
Lic_1_D	1=Yes; 0=No	411	0.03	0	1	0.16
Lic_1_E	1=Yes; 0=No	411	0.14	0	1	0.34
Lic_1_F	1=Yes; 0=No	411	0.01	0	1	0.10
Lic_1_out	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Fuel_1	Total Amount Spent on Fuel	525	136.55	0	3,500	271.00
Fuel_1_A	1=Yes; 0=No	461	0.14	0	1	0.35
Fuel_1_B	1=Yes; 0=No	461	0.10	0	1	0.31
Fuel_1_C	1=Yes; 0=No	460	0.57	0	1	0.50
Fuel_1_D	1=Yes; 0=No	461	0.03	0	1	0.16
Fuel_1_E	1=Yes; 0=No	460	0.16	0	1	0.37
Fuel_1_F	1=Yes; 0=No	460	0.01	0	1	0.09
Fuel_out_1	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Guide_1	Total Amount Spent on Guide	525	34.14	0	2,000	148.18
Guide_1_A	1=Yes; 0=No	77	0.03	0	1	0.16
Guide_1_B	1=Yes; 0=No	77	0.19	0	1	0.40
Guide_1_C	1=Yes; 0=No	77	0.47	0	1	0.50
Guide_1_D	1=Yes; 0=No	77	0.01	0	1	0.11
Guide_1_E	1=Yes; 0=No	77	0.03	0	1	0.16
Guide_1_F	1=Yes; 0=No	77	0	0	0	0

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Variable	Label	N	Mean	Min	Max	StdDev
Guide_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Air_1	Total Amount Spent on Airfare	525	8.74	0	2,300	107.56
Air_1_A	Region A 1=Yes; 0=No	32	0.06	0	1	0.25
Air_1_B	Region B 1=Yes; 0=No	32	0	0	0	0
Air_1_C	Region C 1=Yes; 0=No	32	0.19	0	1	0.40
Air_1_D	Region D 1=Yes; 0=No	32	0.03	0	1	0.18
Air_1_E	Region E 1=Yes; 0=No	32	0	0	0	0
Air_1_F	Region F 1=Yes; 0=No	32	0.03	0	1	0.18
Air_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Travel_1	Total Amount Spent on Commercial Travel Within Alaska	526	6.98	0	2,000	94.85
Travel_1_A	1=Yes; 0=No	38	0.05	0	1	0.23
Travel_1_B	1=Yes; 0=No	38	0.13	0	1	0.34
Travel_1_C	1=Yes; 0=No	38	0.18	0	1	0.39
Travel_1_D	1=Yes; 0=No	38	0	0	0	0
Travel_1_E	1=Yes; 0=No	38	0	0	0	0
Travel_1_F	1=Yes; 0=No	38	0.03	0	1	0.16
Travel_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Process_1	Total Amount Spent on Fish Processing	525	10.66	0	300	38.03
Process_1_A	1=Yes; 0=No	83	0.14	0	1	0.35
Process_1_B	1=Yes; 0=No	83	0.08	0	1	0.28
Process_1_C	1=Yes; 0=No	83	0.48	0	1	0.50
Process_1_D	1=Yes; 0=No	83	0.01	0	1	0.11
Process_1_E	1=Yes; 0=No	83	0.04	0	1	0.19
Process_1_F	1=Yes; 0=No	83	0	0	0	0
Process_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Rentals_1	Total Amount Spent on Rentals (boats, auto, etc...)	525	2.65	0	400	27.10
Rentals_1_A	1=Yes; 0=No	30	0.03	0	1	0.18
Rentals_1_B	1=Yes; 0=No	30	0.07	0	1	0.25
Rentals_1_C	1=Yes; 0=No	30	0.13	0	1	0.35
Rentals_1_D	1=Yes; 0=No	30	0	0	0	0
Rentals_1_E	1=Yes; 0=No	30	0.07	0	1	0.25
Rentals_1_F	1=Yes; 0=No	30	0	0	0	0
Rentals_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Derby_1	Total Amount Spent on Derby Tickets	525	3.40	0	100	11.80
Derby_1_A	1=Yes; 0=No	79	0.23	0	1	0.42
Derby_1_B	1=Yes; 0=No	79	0.14	0	1	0.35
Derby_1_C	1=Yes; 0=No	79	0.35	0	1	0.48
Derby_1_D	1=Yes; 0=No	79	0.03	0	1	0.16
Derby_1_E	1=Yes; 0=No	79	0	0	0	0
Derby_1_F	1=Yes; 0=No	79	0	0	0	0
Derby_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Dock_1	Total Amount Spent on Dockage	524	23.57	0	1,800	117.48
Dock_1_A	1=Yes; 0=No	165	0.16	0	1	0.37
Dock_1_B	1=Yes; 0=No	165	0.17	0	1	0.38
Dock_1_C	1=Yes; 0=No	165	0.50	0	1	0.50
Dock_1_D	1=Yes; 0=No	165	0.02	0	1	0.13
Dock_1_E	1=Yes; 0=No	165	0.05	0	1	0.22
Dock_1_F	1=Yes; 0=No	165	0	0	0	0
Dock_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
Ice_1	Total Amount Spent on Ice	525	5.98	0	150	12.74
Ice_1_A	1=Yes; 0=No	235	0.09	0	1	0.28
Ice_1_B	1=Yes; 0=No	235	0.13	0	1	0.33
Ice_1_C	1=Yes; 0=No	235	0.57	0	1	0.50
Ice_1_D	1=Yes; 0=No	235	0.02	0	1	0.13
Ice_1_E	1=Yes; 0=No	235	0.13	0	1	0.33

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Variable	Label	N	Mean	Min	Max	StdDev
Ice_1_F	1=Yes; 0=No	235	0.00	0	1	0.07
Ice_out_1	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Bait_1	Total Amount Spent on Bait	525	9.97	0	250	26.16
Bait_1_A	1=Yes; 0=No	195	0.27	0	1	0.44
Bait_1_B	1=Yes; 0=No	195	0.17	0	1	0.38
Bait_1_C	1=Yes; 0=No	195	0.42	0	1	0.49
Bait_1_D	1=Yes; 0=No	195	0.02	0	1	0.14
Bait_1_E	1=Yes; 0=No	195	0.06	0	1	0.23
Bait_1_F	1=Yes; 0=No	195	0	0	0	0
Bait_out_1	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Groceries_1	Total Amount Spent on Groceries, Food, and Liquor	525	88.98	0	2,000	159.52
Groceries_1_A	1=Yes; 0=No	416	0.13	0	1	0.34
Groceries_1_B	1=Yes; 0=No	416	0.11	0	1	0.31
Groceries_1_C	1=Yes; 0=No	416	0.56	0	1	0.50
Groceries_1_D	1=Yes; 0=No	416	0.03	0	1	0.17
Groceries_1_E	1=Yes; 0=No	416	0.15	0	1	0.36
Groceries_1_F	1=Yes; 0=No	416	0.01	0	1	0.10
Groceries_out_1	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Meals_1	Total Amount Spent on Restaurants, bars, and Take-Out	525	30.25	0	1,000	73.97
Meals_1_A	1=Yes; 0=No	214	0.04	0	1	0.19
Meals_1_B	1=Yes; 0=No	214	0.16	0	1	0.37
Meals_1_C	1=Yes; 0=No	214	0.57	0	1	0.50
Meals_1_D	1=Yes; 0=No	214	0.01	0	1	0.12
Meals_1_E	1=Yes; 0=No	214	0.14	0	1	0.34
Meals_1_F	1=Yes; 0=No	214	0.00	0	1	0.07
Meals_out_1	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Lodging_1	Total Amount Spent on Lodging	526	29.30	0	1,568	114.17
Lodging_1_A	1=Yes; 0=No	143	0.02	0	1	0.14
Lodging_1_B	1=Yes; 0=No	143	0.15	0	1	0.36
Lodging_1_C	1=Yes; 0=No	143	0.61	0	1	0.49
Lodging_1_D	1=Yes; 0=No	143	0.01	0	1	0.12
Lodging_1_E	1=Yes; 0=No	143	0.10	0	1	0.31
Lodging_1_F	1=Yes; 0=No	143	0	0	0	0
Lodge_out_1	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Gifts_1	Total Amount Spent on Souvenirs and Gifts	525	8.95	0	1,500	73.57
Gifts_1_A	1=Yes; 0=No	61	0.02	0	1	0.13
Gifts_1_B	1=Yes; 0=No	61	0.15	0	1	0.36
Gifts_1_C	1=Yes; 0=No	61	0.44	0	1	0.50
Gifts_1_D	1=Yes; 0=No	61	0.03	0	1	0.18
Gifts_1_E	1=Yes; 0=No	61	0.05	0	1	0.22
Gifts_1_F	1=Yes; 0=No	61	0	0	0	0
Gifts_out_1	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Amusement_1	Total Amount Spent on Other Entertainment	525	10.94	0	1,500	75.95
Amusement_1_A	1=Yes; 0=No	77	0.06	0	1	0.25
Amusement_1_B	1=Yes; 0=No	77	0.10	0	1	0.31
Amusement_1_C	1=Yes; 0=No	77	0.40	0	1	0.49
Amusement_1_D	1=Yes; 0=No	78	0.01	0	1	0.11
Amusement_1_E	1=Yes; 0=No	77	0.14	0	1	0.35
Amusement_1_F	1=Yes; 0=No	77	0.01	0	1	0.11
Amusement_out_1	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Other_1	Total Amount Spent on Other	525	0.38	0	200	8.73
Other_1_A	1=Yes; 0=No	57	0.04	0	1	0.19
Other_1_B	1=Yes; 0=No	57	0.07	0	1	0.26
Other_1_C	1=Yes; 0=No	57	0.40	0	1	0.49
Other_1_D	1=Yes; 0=No	57	0.05	0	1	0.23

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Variable	Label	N	Mean	Min	Max	StdDev
Other_1_E	1=Yes; 0=No	57	0.07	0	1	0.26
Other_1_F	1=Yes; 0=No	57	0	0	0	0
Other_out_1	Purchased Outside Alaska 1=Yes; 0=No	0				
LastMo_JulOct	1=July; 2=August; 3=September; 4=October; 5=Did not fish	644	2.53	1	5	1.26
tripdays_2	Total number of days in last trip to Alaska	644	3.57	0	90	6.57
fishdays_2	Number of days fishing in Alaska between July 1st and Oct. 31st, 2007	643	3.83	0	95	7.99
commit_2	1=Yes; 0=No	644	0.34	0	1	0.47
fish_type_2	1=Rod&Reel; 2=Shellfishing	641	1.16	1	3	0.43
water_type_2	1=In Freshwater; 2=In Saltwater; 3=In Both	644	1.59	1	3	0.64
charter_2	1=Yes; 0=No	647	0.11	0	1	0.31
trip2_A	Region A; 1=Yes; 0=No	647	0.16	0	1	0.36
trip2_B	Region B; 1=Yes; 0=No	648	0.23	0	1	0.42
trip2_C	Region C; 1=Yes; 0=No	648	0.47	0	1	0.50
trip2_D	Region D; 1=Yes; 0=No	647	0.05	0	1	0.21
trip2_E	Region E; 1=Yes; 0=No	647	0.11	0	1	0.31
trip2_F	Region F; 1=Yes; 0=No	647	0.02	0	1	0.13
King_2	King Salmon 1=Yes; 0=No	645	0.18	0	1	0.38
Silver_2	Silver Salmon 1=Yes; 0=No	645	0.47	0	1	0.50
Red_2	Red Salmon 1=Yes; 0=No	645	0.24	0	1	0.43
OtherSalm_2	Other Salmon 1=Yes; 0=No	646	0.07	0	1	0.26
OtherFresh_2	Other Freshwater 1=Yes; 0=No	646	0.14	0	1	0.35
Steel_2	Steelhead 1=Yes; 0=No	645	0.02	0	1	0.14
Trout_2	Trout 1=Yes; 0=No	645	0.18	0	1	0.39
Halibut_2	Halibut 1=Yes; 0=No	645	0.24	0	1	0.43
Shell_2	Shellfish 1=Yes; 0=No	646	0.06	0	1	0.23
PtherSalt_2	Other Saltwater 1=Yes; 0=No	646	0.08	0	1	0.27
pkg_2	Total Cost of Pre-arranged cruise, package tour, or charter trip	0				
pkg_2_A	Visited 1=Yes; 0=No	0				
pkg_2_B	Visited 1=Yes; 0=No	0				
pkg_2_C	Visited 1=Yes; 0=No	0				
pkg_2_D	Visited 1=Yes; 0=No	0				
pkg_2_E	Visited 1=Yes; 0=No	0				
pkg_2_F	Visited 1=Yes; 0=No	0				
pkg_2_air	Transportation to/from Alaska 1=Yes; 0=No	0				
pkg_2_trans	Transportation in Alaska 1=Yes; 0=No	0				
pkg_2_guide	Guides &/or charter boat 1=Yes; 0=No	0				
pkg_2_lodge	Lodging 1=Yes; 0=No	0				
pkg_2_food	Meals 1=Yes; 0=No	0				
pkg_2_lic	Fishing License 1=Yes; 0=No	0				
Lic_2	Total Amount Spent on License and Stamp	647	15.09	0	650	34.24
Lic_2_A	1=Yes; 0=No	251	0.13	0	1	0.33
Lic_2_B	1=Yes; 0=No	251	0.12	0	1	0.33
Lic_2_C	1=Yes; 0=No	251	0.50	0	1	0.50
Lic_2_D	1=Yes; 0=No	251	0.04	0	1	0.19
Lic_2_E	1=Yes; 0=No	251	0.17	0	1	0.38
Lic_2_F	1=Yes; 0=No	251	0.01	0	1	0.09
Lic_2_out	Purchased Outside Alaska 1=Yes; 0=No	0				
Fuel_2	Total Amount Spent on Fuel	647	151.58	0	8,000	400.62
Fuel_2_A	1=Yes; 0=No	522	0.14	0	1	0.35
Fuel_2_B	1=Yes; 0=No	522	0.20	0	1	0.40
Fuel_2_C	1=Yes; 0=No	522	0.54	0	1	0.50
Fuel_2_D	1=Yes; 0=No	522	0.03	0	1	0.17
Fuel_2_E	1=Yes; 0=No	522	0.16	0	1	0.37
Fuel_2_F	1=Yes; 0=No	522	0.01	0	1	0.12

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Variable	Label	N	Mean	Min	Max	StdDev
Fuel_out_2	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Guide_2	Total Amount Spent on Guide	647	58.41	0	5,000	312.93
Guide_2_A	1=Yes; 0=No	73	0.04	0	1	0.20
Guide_2_B	1=Yes; 0=No	73	0.36	0	1	0.48
Guide_2_C	1=Yes; 0=No	73	0.32	0	1	0.47
Guide_2_D	1=Yes; 0=No	73	0.05	0	1	0.23
Guide_2_E	1=Yes; 0=No	73	0.10	0	1	0.30
Guide_2_F	1=Yes; 0=No	73	0	0	0	0
Guide_out_2	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Air_2	Total Amount Spent on Airfare	647	17.96	0	2,000	136.19
Air_2_A	1=Yes; 0=No	29	0.03	0	1	0.19
Air_2_B	1=Yes; 0=No	29	0.03	0	1	0.19
Air_2_C	1=Yes; 0=No	29	0.38	0	1	0.49
Air_2_D	1=Yes; 0=No	29	0.14	0	1	0.35
Air_2_E	1=Yes; 0=No	29	0.03	0	1	0.19
Air_2_F	1=Yes; 0=No	29	0.03	0	1	0.19
Air_out_2	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Travel_2	Total Amount Spent on Commercial Travel Within Alaska	646	13.98	0	4,300	194.12
Travel_2_A	1=Yes; 0=No	29	0.10	0	1	0.31
Travel_2_B	1=Yes; 0=No	29	0.24	0	1	0.44
Travel_2_C	1=Yes; 0=No	29	0.31	0	1	0.47
Travel_2_D	1=Yes; 0=No	29	0	0	0	0
Travel_2_E	1=Yes; 0=No	29	0.03	0	1	0.19
Travel_2_F	1=Yes; 0=No	29	0	0	0	0
Travel_out_2	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Process_2	Total Amount Spent on Fish Processing	647	16.00	0	1,000	72.19
Process_2_A	1=Yes; 0=No	91	0.11	0	1	0.31
Process_2_B	1=Yes; 0=No	91	0.31	0	1	0.46
Process_2_C	1=Yes; 0=No	91	0.44	0	1	0.50
Process_2_D	1=Yes; 0=No	91	0.01	0	1	0.10
Process_2_E	1=Yes; 0=No	91	0.03	0	1	0.18
Process_2_F	1=Yes; 0=No	91	0	0	0	0
Process_out_2	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Rentals_2	Total Amount Spent on Rentals (boats, auto, etc...)	647	6.02	0	700	49.53
Rentals_2_A	1=Yes; 0=No	26	0.04	0	1	0.20
Rentals_2_B	1=Yes; 0=No	26	0.19	0	1	0.40
Rentals_2_C	1=Yes; 0=No	26	0.27	0	1	0.45
Rentals_2_D	1=Yes; 0=No	26	0.04	0	1	0.20
Rentals_2_E	1=Yes; 0=No	26	0.19	0	1	0.40
Rentals_2_F	1=Yes; 0=No	26	0	0	0	0
Rentals_out_2	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Derby_2	Total Amount Spent on Derby Tickets	647	2.91	0	300	15.30
Derby_2_A	1=Yes; 0=No	63	0.16	0	1	0.37
Derby_2_B	1=Yes; 0=No	63	0.41	0	1	0.50
Derby_2_C	1=Yes; 0=No	63	0.24	0	1	0.43
Derby_2_D	1=Yes; 0=No	63	0.03	0	1	0.18
Derby_2_E	1=Yes; 0=No	63	0.02	0	1	0.13
Derby_2_F	1=Yes; 0=No	63	0	0	0	0
Derby_out_2	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Dock_2	Total Amount Spent on Dockage	647	20.00	0	1,800	112.19
Dock_2_A	1=Yes; 0=No	151	0.13	0	1	0.33
Dock_2_B	1=Yes; 0=No	151	0.32	0	1	0.47
Dock_2_C	1=Yes; 0=No	151	0.45	0	1	0.50
Dock_2_D	1=Yes; 0=No	151	0.01	0	1	0.11
Dock_2_E	1=Yes; 0=No	151	0.03	0	1	0.16

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Variable	Label	N	Mean	Min	Max	StdDev
Dock_2_F	1=Yes; 0=No	151	0	0	0	0
Dock_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Ice_2	Total Amount Spent on Ice	647	7.69	0	200	15.73
Ice_2_A	1=Yes; 0=No	276	0.09	0	1	0.29
Ice_2_B	1=Yes; 0=No	276	0.26	0	1	0.44
Ice_2_C	1=Yes; 0=No	276	0.51	0	1	0.50
Ice_2_D	1=Yes; 0=No	276	0.02	0	1	0.15
Ice_2_E	1=Yes; 0=No	276	0.13	0	1	0.33
Ice_2_F	1=Yes; 0=No	276	0	0	0	0
Ice_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Bait_2	Total Amount Spent on Bait	648	10.39	0	500	32.42
Bait_2_A	1=Yes; 0=No	207	0.23	0	1	0.42
Bait_2_B	1=Yes; 0=No	207	0.30	0	1	0.46
Bait_2_C	1=Yes; 0=No	207	0.37	0	1	0.48
Bait_2_D	1=Yes; 0=No	207	0.01	0	1	0.10
Bait_2_E	1=Yes; 0=No	207	0.08	0	1	0.28
Bait_2_F	1=Yes; 0=No	207	0	0	0	0
Bait_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Groceries_2	Total Amount Spent on Groceries, Food, and Liquor	647	95.37	0	2,500	218.04
Groceries_2_A	1=Yes; 0=No	463	0.13	0	1	0.33
Groceries_2_B	1=Yes; 0=No	463	0.20	0	1	0.40
Groceries_2_C	1=Yes; 0=No	463	0.53	0	1	0.50
Groceries_2_D	1=Yes; 0=No	463	0.03	0	1	0.17
Groceries_2_E	1=Yes; 0=No	463	0.14	0	1	0.35
Groceries_2_F	1=Yes; 0=No	463	0.00	0	1	0.07
Groceries_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Meals_2	Total Amount Spent on Restaurants, bars, and Take-Out	647	38.68	0	2,000	108.65
Meals_2_A	1=Yes; 0=No	274	0.04	0	1	0.20
Meals_2_B	1=Yes; 0=No	274	0.30	0	1	0.46
Meals_2_C	1=Yes; 0=No	274	0.50	0	1	0.50
Meals_2_D	1=Yes; 0=No	274	0.03	0	1	0.18
Meals_2_E	1=Yes; 0=No	274	0.14	0	1	0.34
Meals_2_F	1=Yes; 0=No	274	0.00	0	1	0.06
Meals_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Lodging_2	Total Amount Spent on Lodging	647	49.04	0	3,800	221.85
Lodging_2_A	1=Yes; 0=No	169	0.04	0	1	0.19
Lodging_2_B	1=Yes; 0=No	169	0.37	0	1	0.48
Lodging_2_C	1=Yes; 0=No	169	0.45	0	1	0.50
Lodging_2_D	1=Yes; 0=No	169	0.03	0	1	0.17
Lodging_2_E	1=Yes; 0=No	169	0.08	0	1	0.27
Lodging_2_F	1=Yes; 0=No	169	0.01	0	1	0.08
Lodge_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Gifts_2	Total Amount Spent on Souvenirs and Gifts	647	8.45	0	1,500	65.75
Gifts_2_A	1=Yes; 0=No	59	0.03	0	1	0.18
Gifts_2_B	1=Yes; 0=No	59	0.32	0	1	0.47
Gifts_2_C	1=Yes; 0=No	59	0.37	0	1	0.49
Gifts_2_D	1=Yes; 0=No	59	0.05	0	1	0.22
Gifts_2_E	1=Yes; 0=No	59	0.07	0	1	0.25
Gifts_2_F	1=Yes; 0=No	59	0	0	0	0
Gifts_out_2	Purchased Outside Alaska 1=Yes; 0=No	0				
Amusement_2	Total Amount Spent on Other Entertainment	647	12.86	0	600	60.70
Amusement_2_A	1=Yes; 0=No	80	0.09	0	1	0.28
Amusement_2_B	1=Yes; 0=No	80	0.24	0	1	0.43
Amusement_2_C	1=Yes; 0=No	80	0.36	0	1	0.48
Amusement_2_D	1=Yes; 0=No	80	0.03	0	1	0.16

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Variable	Label	N	Mean	Min	Max	StdDev
Amusement_2_E	1=Yes; 0=No	80	0.16	0	1	0.37
Amusement_2_F	1=Yes; 0=No	80	0.01	0	1	0.11
Amusement_out_2	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Other_2	Total Amount Spent on Other	647	0.23	0	50	2.95
Other_2_A	1=Yes; 0=No	46	0.07	0	1	0.25
Other_2_B	1=Yes; 0=No	46	0.17	0	1	0.38
Other_2_C	1=Yes; 0=No	46	0.48	0	1	0.51
Other_2_D	1=Yes; 0=No	45	0	0	0	0
Other_2_E	1=Yes; 0=No	46	0.11	0	1	0.31
Other_2_F	1=Yes; 0=No	46	0	0	0	0
Other_out_2	Purchased Outside Alaska 1=Yes; 0=No	0	.	.	.	.
Eq_Lic	Total Amount Spent on License and Stamps	704	40.35	0	1,000	47.42
Eq_Lic_A	1=Yes; 0=No	608	0.15	0	1	0.36
Eq_Lic_B	1=Yes; 0=No	608	0.09	0	1	0.28
Eq_Lic_C	1=Yes; 0=No	608	0.56	0	1	0.50
Eq_Lic_D	1=Yes; 0=No	608	0.04	0	1	0.20
Eq_Lic_E	1=Yes; 0=No	608	0.15	0	1	0.36
Eq_Lic_F	1=Yes; 0=No	608	0.01	0	1	0.10
Eq_RodReel	Total Amount Spent on Rods, Reels, and Components	704	107.89	0	6,000	311.42
Eq_Rods_A	1=Yes; 0=No	342	0.15	0	1	0.35
Eq_Rods_B	1=Yes; 0=No	342	0.11	0	1	0.31
Eq_Rods_C	1=Yes; 0=No	342	0.62	0	1	0.49
Eq_Rods_D	1=Yes; 0=No	342	0.04	0	1	0.18
Eq_Rods_E	1=Yes; 0=No	342	0.13	0	1	0.34
Eq_Rods_F	1=Yes; 0=No	342	0.01	0	1	0.08
Eq_Tackle	Total Amount Spent on Fishing Tackle	704	69.58	0	2,358	135.96
Eq_Tackle_A	1=Yes; 0=No	485	0.16	0	1	0.36
Eq_Tackle_B	1=Yes; 0=No	485	0.13	0	1	0.33
Eq_Tackle_C	1=Yes; 0=No	485	0.59	0	1	0.49
Eq_Tackle_D	1=Yes; 0=No	485	0.04	0	1	0.20
Eq_Tackle_E	1=Yes; 0=No	485	0.15	0	1	0.36
Eq_Tackle_F	1=Yes; 0=No	485	0.01	0	1	0.10
Eq_Tacklebox	Total Amount Spent on Tackle Boxes	704	10.07	0	300	29.50
Eq_Tacklebox_A	1=Yes; 0=No	148	0.10	0	1	0.30
Eq_Tacklebox_B	1=Yes; 0=No	148	0.11	0	1	0.32
Eq_Tacklebox_C	1=Yes; 0=No	148	0.63	0	1	0.48
Eq_Tacklebox_D	1=Yes; 0=No	148	0.02	0	1	0.14
Eq_Tacklebox_E	1=Yes; 0=No	149	0.15	0	1	0.36
Eq_Tacklebox_F	1=Yes; 0=No	148	0.01	0	1	0.08
Eq_Electronics	Total Amount Spent on Fish/Depth Finder	703	44.59	0	5,000	300.55
Eq_Elec_A	1=Yes; 0=No	54	0.17	0	1	0.38
Eq_Elec_B	1=Yes; 0=No	54	0.13	0	1	0.34
Eq_Elec_C	1=Yes; 0=No	54	0.57	0	1	0.50
Eq_Elec_D	1=Yes; 0=No	54	0.06	0	1	0.23
Eq_Elec_E	1=Yes; 0=No	54	0.09	0	1	0.29
Eq_Elec_F	1=Yes; 0=No	54	0	0	0	0
Eq_Nets	Total Amount Spent on Dip/Gill Nets	503	28.90	0	500	61.23
Eq_Nets_A	1=Yes; 0=No	186	0.08	0	1	0.27
Eq_Nets_B	1=Yes; 0=No	186	0.09	0	1	0.29
Eq_Nets_C	1=Yes; 0=No	186	0.55	0	1	0.50
Eq_Nets_D	1=Yes; 0=No	186	0.02	0	1	0.13
Eq_Nets_E	1=Yes; 0=No	186	0.09	0	1	0.28
Eq_Nets_F	1=Yes; 0=No	186	0.01	0	1	0.07
Eq_Misc	Total Amount Spent on Miscellaneous Fishing Equipment	706	28.50	0	1,000	75.80
Eq_Misc_A	1=Yes; 0=No	273	0.15	0	1	0.36

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Variable	Label	N	Mean	Min	Max	StdDev
Eq_Misc_B	1=Yes; 0=No	273	0.13	0	1	0.33
Eq_Misc_C	1=Yes; 0=No	273	0.55	0	1	0.50
Eq_Misc_D	1=Yes; 0=No	273	0.03	0	1	0.17
Eq_Misc_E	1=Yes; 0=No	273	0.15	0	1	0.36
Eq_Misc_F	1=Yes; 0=No	273	0	0	0	0
Eq_Shellfish	Total Amount Spent on	704	16.07	0	2,000	118.73
Eq_Shellfish_A	1=Yes; 0=No	69	0.20	0	1	0.41
Eq_Shellfish_B	1=Yes; 0=No	69	0.14	0	1	0.35
Eq_Shellfish_C	1=Yes; 0=No	69	0.62	0	1	0.49
Eq_Shellfish_D	1=Yes; 0=No	69	0.01	0	1	0.12
Eq_Shellfish_E	1=Yes; 0=No	69	0.06	0	1	0.24
Eq_Shellfish_F	1=Yes; 0=No	70	0	0	0	0
Eq_Taxidermy	Total Amount Spent on Taxidermy	704	5.85	0	1,500	72.45
Eq_Taxidermy_A	1=Yes; 0=No	9	0	0	0	0
Eq_Taxidermy_B	1=Yes; 0=No	9	0	0	0	0
Eq_Taxidermy_C	1=Yes; 0=No	9	0.67	0	1	0.50
Eq_Taxidermy_D	1=Yes; 0=No	9	0	0	0	0
Eq_Taxidermy_E	1=Yes; 0=No	9	0	0	0	0
Eq_Taxidermy_F	1=Yes; 0=No	9	0	0	0	0
Eq_Books	Total Amount Spent on	704	7.19	0	240	22.87
Eq_Books_A	1=Yes; 0=No	125	0.09	0	1	0.28
Eq_Books_B	1=Yes; 0=No	125	0.12	0	1	0.33
Eq_Books_C	1=Yes; 0=No	125	0.64	0	1	0.48
Eq_Books_D	1=Yes; 0=No	125	0	0	0	0
Eq_Books_E	1=Yes; 0=No	125	0.16	0	1	0.37
Eq_Books_F	1=Yes; 0=No	125	0	0	0	0
Eq_Preserve	Total Amount Spent on Preserving/Smoking	704	55.87	0	3,500	183.69
Eq_Preserve_A	1=Yes; 0=No	269	0.14	0	1	0.35
Eq_Preserve_B	1=Yes; 0=No	269	0.09	0	1	0.29
Eq_Preserve_C	1=Yes; 0=No	269	0.61	0	1	0.49
Eq_Preserve_D	1=Yes; 0=No	269	0.03	0	1	0.17
Eq_Preserve_E	1=Yes; 0=No	269	0.11	0	1	0.31
Eq_Preserve_F	1=Yes; 0=No	269	0.01	0	1	0.09
Eq_PreservePct	% used for sportfishing	163	75.14	0	150	35.88
Eq_Coolers	Total Amount Spent on Coolers	704	24.47	0	1,000	62.36
Eq_Coolers_A	1=Yes; 0=No	222	0.09	0	1	0.29
Eq_Coolers_B	1=Yes; 0=No	222	0.12	0	1	0.33
Eq_Coolers_C	1=Yes; 0=No	222	0.64	0	1	0.48
Eq_Coolers_D	1=Yes; 0=No	222	0.02	0	1	0.15
Eq_Coolers_E	1=Yes; 0=No	222	0.11	0	1	0.31
Eq_Coolers_F	1=Yes; 0=No	222	0	0	0	0
Eq_CoolersPct	% used for sportfishing	128	74.70	0	100	36.03
Eq_Clothing	Total Amount Spent on Clothing	704	59.96	0	1,500	129.97
Eq_Clothing_A	1=Yes; 0=No	271	0.11	0	1	0.32
Eq_Clothing_B	1=Yes; 0=No	271	0.13	0	1	0.33
Eq_Clothing_C	1=Yes; 0=No	271	0.63	0	1	0.48
Eq_Clothing_D	1=Yes; 0=No	271	0.04	0	1	0.19
Eq_Clothing_E	1=Yes; 0=No	271	0.11	0	1	0.31
Eq_Clothing_F	1=Yes; 0=No	271	0.01	0	1	0.09
Eq_ClothingPct	% used for sportfishing	172	67.73	0	100	36.37
Eq_Boots	Total Amount Spent on Boots, and Shoes	704	43.33	0	1,150	90.70
Eq_Boots_A	1=Yes; 0=No	259	0.11	0	1	0.31
Eq_Boots_B	1=Yes; 0=No	259	0.11	0	1	0.31
Eq_Boots_C	1=Yes; 0=No	259	0.64	0	1	0.48
Eq_Boots_D	1=Yes; 0=No	259	0.03	0	1	0.17

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Variable	Label	N	Mean	Min	Max	StdDev
Eq_Boots_E	1=Yes; 0=No	259	0.09	0	1	0.29
Eq_Boots_F	1=Yes; 0=No	259	0.01	0	1	0.09
Eq_BootsPct	% used for sportfishing	164	71.41	0	100	37.44
Eq_LJackets	Total Amount Spent on Life Jackets, and Survival Suits	704	30.80	0	3,000	140.27
Eq_LJackets_A	1=Yes; 0=No	126	0.19	0	1	0.39
Eq_LJackets_B	1=Yes; 0=No	126	0.12	0	1	0.33
Eq_LJackets_C	1=Yes; 0=No	126	0.53	0	1	0.50
Eq_LJackets_D	1=Yes; 0=No	126	0.06	0	1	0.23
Eq_LJackets_E	1=Yes; 0=No	126	0.10	0	1	0.31
Eq_LJackets_F	1=Yes; 0=No	126	0.01	0	1	0.09
Eq_LJacketsPct	% used for sportfishing	79	73.90	0	100	34.81
Eq_Boats	Total Amount Spent on Boats, Canoes, Watercraft, etc...	703	727.80	0	60,000	4,098.25
Eq_Boats_A	1=Yes; 0=No	87	0.15	0	1	0.36
Eq_Boats_B	1=Yes; 0=No	87	0.11	0	1	0.32
Eq_Boats_C	1=Yes; 0=No	87	0.60	0	1	0.49
Eq_Boats_D	1=Yes; 0=No	87	0.02	0	1	0.15
Eq_Boats_E	1=Yes; 0=No	87	0.09	0	1	0.29
Eq_Boats_F	1=Yes; 0=No	87	0.01	0	1	0.11
Eq_BoatsPct	% used for sportfishing	47	68.63	0	100	37.44
Eq_Motors	Total Amount Spent on Boat Motors	703	183.79	0	20,000	1,144.80
Eq_Motors_A	1=Yes; 0=No	49	0.16	0	1	0.37
Eq_Motors_B	1=Yes; 0=No	49	0.16	0	1	0.37
Eq_Motors_C	1=Yes; 0=No	49	0.47	0	1	0.50
Eq_Motors_D	1=Yes; 0=No	49	0.04	0	1	0.20
Eq_Motors_E	1=Yes; 0=No	49	0.08	0	1	0.28
Eq_Motors_F	1=Yes; 0=No	49	0.02	0	1	0.14
Eq_MotorsPct	% used for sportfishing	30	71.95	0	100	36.25
Eq_Trailers	Total Amount Spent on Boat Trailers	704	41.95	0	5,000	243.25
Eq_Trailers_A	1=Yes; 0=No	111	0.15	0	1	0.36
Eq_Trailers_B	1=Yes; 0=No	111	0.14	0	1	0.35
Eq_Trailers_C	1=Yes; 0=No	111	0.51	0	1	0.50
Eq_Trailers_D	1=Yes; 0=No	111	0.02	0	1	0.13
Eq_Trailers_E	1=Yes; 0=No	111	0.18	0	1	0.39
Eq_Trailers_F	1=Yes; 0=No	111	0	0	0	0
Eq_TrailersPct	% used for sportfishing	68	65.67	0	100	35.76
Eq_OtherParts	Total Amount Spent on Other Boat Parts	704	101.03	0	10,000	509.02
Eq_OtherParts_A	1=Yes; 0=No	141	0.22	0	1	0.42
Eq_OtherParts_B	1=Yes; 0=No	141	0.13	0	1	0.34
Eq_OtherParts_C	1=Yes; 0=No	141	0.50	0	1	0.50
Eq_OtherParts_D	1=Yes; 0=No	141	0.04	0	1	0.20
Eq_OtherParts_E	1=Yes; 0=No	141	0.10	0	1	0.30
Eq_OtherParts_F	1=Yes; 0=No	141	0.01	0	1	0.08
Eq_OtherPartsPct	% used for sportfishing	85	76.37	0	100	36.13
Eq_BearSpray	Total Amount Spent on Bear Spray, Bug Spray, etc...	704	12.82	0	300	26.62
Eq_BearSpray_A	1=Yes; 0=No	296	0.11	0	1	0.32
Eq_BearSpray_B	1=Yes; 0=No	296	0.11	0	1	0.32
Eq_BearSpray_C	1=Yes; 0=No	296	0.57	0	1	0.50
Eq_BearSpray_D	1=Yes; 0=No	296	0.04	0	1	0.21
Eq_BearSpray_E	1=Yes; 0=No	296	0.17	0	1	0.38
Eq_BearSpray_F	1=Yes; 0=No	296	0.00	0	1	0.06
Eq_BearSprayPct	% used for sportfishing	185	58.03	0	100	36.67
Eq_Firearms	Total Amount Spent on Firearms	704	54.34	0	2,085	209.07
Eq_Firearms_A	1=Yes; 0=No	78	0.13	0	1	0.34
Eq_Firearms_B	1=Yes; 0=No	78	0.13	0	1	0.34
Eq_Firearms_C	1=Yes; 0=No	78	0.63	0	1	0.49

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NOTE: Summary statistics of raw survey data. The mean values reported here do not necessarily represent average spending by all Alaska anglers; the standard deviations do not apply to final spending estimates. This table includes raw survey data that underwent numerous transformations to produce the final study estimates.

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Variable	Label	N	Mean	Min	Max	StdDev
Eq_Firearms_D	1=Yes; 0=No	78	0.01	0	1	0.11
Eq_Firearms_E	1=Yes; 0=No	78	0.13	0	1	0.34
Eq_Firearms_F	1=Yes; 0=No	78	0	0	0	0
Eq_FirearmsPct	% used for sportfishing	49	51.63	0	100	36.65
Eq_Cameras	Total Amount Spent on Camera, Binoculars, Sun Glasses	704	68.76	0	3,100	213.10
Eq_Cameras_A	1=Yes; 0=No	224	0.12	0	1	0.33
Eq_Cameras_B	1=Yes; 0=No	224	0.08	0	1	0.27
Eq_Cameras_C	1=Yes; 0=No	224	0.63	0	1	0.48
Eq_Cameras_D	1=Yes; 0=No	224	0.04	0	1	0.19
Eq_Cameras_E	1=Yes; 0=No	224	0.14	0	1	0.35
Eq_Cameras_F	1=Yes; 0=No	224	0.00	0	1	0.07
Eq_CamerasPct	% used for sportfishing	142	49.64	0	100	36.25
Eq_Tents	Total Amount Spent on Tents, etc...	704	43.94	0	1,000	123.91
Eq_Tents_A	1=Yes; 0=No	153	0.10	0	1	0.31
Eq_Tents_B	1=Yes; 0=No	153	0.07	0	1	0.26
Eq_Tents_C	1=Yes; 0=No	153	0.65	0	1	0.48
Eq_Tents_D	1=Yes; 0=No	153	0.03	0	1	0.16
Eq_Tents_E	1=Yes; 0=No	153	0.16	0	1	0.36
Eq_Tents_F	1=Yes; 0=No	153	0.01	0	1	0.08
Eq_TentsPct	% used for sportfishing	100	51.32	0	100	37.50
Eq_Campers	Total Amount Spent on Camping Trailer	704	425.52	0	39,000	3,008.03
Eq_Campers_A	1=Yes; 0=No	33	0	0	0	0
Eq_Campers_B	1=Yes; 0=No	33	0.06	0	1	0.24
Eq_Campers_C	1=Yes; 0=No	33	0.76	0	1	0.44
Eq_Campers_D	1=Yes; 0=No	33	0.03	0	1	0.17
Eq_Campers_E	1=Yes; 0=No	33	0.12	0	1	0.33
Eq_Campers_F	1=Yes; 0=No	33	0	0	0	0
Eq_CampersPct	% used for sportfishing	20	56.25	0	100	35.39
Eq_Other_Camp	Total Amount Spent on Other Camping Equipment	704	29.54	0	3,000	136.63
Eq_Other_Camp_A	1=Yes; 0=No	130	0.12	0	1	0.33
Eq_Other_Camp_B	1=Yes; 0=No	130	0.10	0	1	0.30
Eq_Other_Camp_C	1=Yes; 0=No	130	0.59	0	1	0.49
Eq_Other_Camp_D	1=Yes; 0=No	130	0.02	0	1	0.15
Eq_Other_Camp_E	1=Yes; 0=No	130	0.19	0	1	0.40
Eq_Other_Camp_F	1=Yes; 0=No	130	0	0	0	0
Eq_Other_CampPct	% used for sportfishing	85	56.41	0	100	37.38
Eq_Vehicles	Total Amount Spent on Vehicles	704	1,248.15	0	58,000	5,959.79
Eq_Vehicles_A	1=Yes; 0=No	53	0.08	0	1	0.27
Eq_Vehicles_B	1=Yes; 0=No	53	0.09	0	1	0.30
Eq_Vehicles_C	1=Yes; 0=No	53	0.57	0	1	0.50
Eq_Vehicles_D	1=Yes; 0=No	53	0.02	0	1	0.14
Eq_Vehicles_E	1=Yes; 0=No	53	0.15	0	1	0.36
Eq_Vehicles_F	1=Yes; 0=No	53	0	0	0	0
Eq_VehiclesPct	% used for sportfishing	40	40.13	0	100	34.94
Eq_Planes	Total Amount Spent on Airplanes and Related Equipment	704	110.44	0	63,000	2,405.16
Eq_Planes_A	1=Yes; 0=No	9	0.22	0	1	0.44
Eq_Planes_B	1=Yes; 0=No	9	0	0	0	0
Eq_Planes_C	1=Yes; 0=No	9	0.44	0	1	0.53
Eq_Planes_D	1=Yes; 0=No	9	0	0	0	0
Eq_Planes_E	1=Yes; 0=No	9	0	0	0	0
Eq_Planes_F	1=Yes; 0=No	9	0	0	0	0
Eq_PlanesPct	% used for sportfishing	3	16.67	0	50	28.87
Eq_ATV	Total Amount Spent on ATVs, and Snowmobiles	704	459.38	0	22,000	2,209.55
Eq_ATV_A	1=Yes; 0=No	63	0.02	0	1	0.13
Eq_ATV_B	1=Yes; 0=No	63	0.05	0	1	0.21

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Variable	Label	N	Mean	Min	Max	StdDev
Eq_ATV_C	1=Yes; 0=No	63	0.63	0	1	0.49
Eq_ATV_D	1=Yes; 0=No	63	0.02	0	1	0.13
Eq_ATV_E	1=Yes; 0=No	63	0.19	0	1	0.40
Eq_ATV_F	1=Yes; 0=No	63	0.03	0	1	0.18
Eq_ATVPct	% used for sportfishing	41	36.34	0	100	31.62
Eq_Registration	Total Amount Spent on Boat/Camper Registration	704	37.32	0	3,000	212.48
Eq_Registration_A	1=Yes; 0=No	143	0.19	0	1	0.39
Eq_Registration_B	1=Yes; 0=No	143	0.10	0	1	0.30
Eq_Registration_C	1=Yes; 0=No	143	0.56	0	1	0.50
Eq_Registration_D	1=Yes; 0=No	143	0.02	0	1	0.14
Eq_Registration_E	1=Yes; 0=No	143	0.13	0	1	0.33
Eq_Registration_F	1=Yes; 0=No	143	0	0	0	0
Eq_RegistrationPct	% used for sportfishing	88	72.45	0	100	40.22
Eq_Repair	Total Amount Spent on Vehicle Repair/Maintenance	704	202.83	0	16,000	1,044.99
Eq_Repair_A	1=Yes; 0=No	169	0.21	0	1	0.41
Eq_Repair_B	1=Yes; 0=No	169	0.08	0	1	0.27
Eq_Repair_C	1=Yes; 0=No	169	0.52	0	1	0.50
Eq_Repair_D	1=Yes; 0=No	169	0.02	0	1	0.15
Eq_Repair_E	1=Yes; 0=No	169	0.15	0	1	0.36
Eq_Repair_F	1=Yes; 0=No	169	0.01	0	1	0.08
Eq_RepairPct	% used for sportfishing	114	59.18	0	100	42.20
Eq_Other	Total Amount Spent on Other, including non-fishing related purchases	783	2.55	0	700	36.99
Eq_Other_A	1=Yes; 0=No	46	0.11	0	1	0.31
Eq_Other_B	1=Yes; 0=No	46	0.09	0	1	0.28
Eq_Other_C	1=Yes; 0=No	46	0.59	0	1	0.50
Eq_Other_D	1=Yes; 0=No	46	0.04	0	1	0.21
Eq_Other_E	1=Yes; 0=No	46	0.11	0	1	0.31
Eq_Other_F	1=Yes; 0=No	46	0	0	0	0
Eq_OtherPct	% used for sportfishing	26	62.50	0	100	46.27
Own	Amount Spent on Real Estate Owned/Shared for Fishing	418	1,117.63	0	230,000	11,889.91
Own_A	Region A 1=Yes; 0=No	78	0.05	0	1	0.22
Own_B	Region B 1=Yes; 0=No	78	0.05	0	1	0.22
Own_C	Region C 1=Yes; 0=No	78	0.38	0	1	0.49
Own_D	Region D 1=Yes; 0=No	78	0.03	0	1	0.16
Own_E	Region E 1=Yes; 0=No	78	0.04	0	1	0.19
Own_F	Region F 1=Yes; 0=No	78	0	0	0	0
Lease	Amount Spent on Real Estate Leased/Rented for Fishing	420	123.02	0	8,400	609.00
Lease_A	Region A 1=Yes; 0=No	82	0.17	0	1	0.38
Lease_B	Region B 1=Yes; 0=No	82	0.05	0	1	0.22
Lease_C	Region C 1=Yes; 0=No	82	0.30	0	1	0.46
Lease_D	Region D 1=Yes; 0=No	82	0.01	0	1	0.11
Lease_E	Region E 1=Yes; 0=No	82	0.04	0	1	0.19
Lease_F	Region F 1=Yes; 0=No	82	0	0	0	0
Maintain	Amount Spent on Repairs/Maintenance for Real Estate	415	184.61	0	40,000	2,017.10
Maint_A	Region A 1=Yes; 0=No	67	0.09	0	1	0.29
Maint_B	Region B 1=Yes; 0=No	67	0.03	0	1	0.17
Maint_C	Region C 1=Yes; 0=No	67	0.27	0	1	0.45
Maint_D	Region D 1=Yes; 0=No	67	0.01	0	1	0.12
Maint_E	Region E 1=Yes; 0=No	51	0.06	0	1	0.24
Maint_F	Region F 1=Yes; 0=No	67	0	0	0	0
Cabin	Amount Spent on Construction of Buildings, Cabins, Etc...	414	470.29	0	80,000	4,515.73
Cabin_A	Region A 1=Yes; 0=No	59	0.07	0	1	0.25
Cabin_B	Region B 1=Yes; 0=No	59	0.03	0	1	0.18
Cabin_C	Region C 1=Yes; 0=No	59	0.24	0	1	0.43

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Variable	Label	N	Mean	Min	Max	StdDev
Cabin_D	Region D 1=Yes; 0=No	59	0.02	0	1	0.13
Cabin_E	Region E 1=Yes; 0=No	59	0.03	0	1	0.18
Cabin_F	Region F 1=Yes; 0=No	59	0.02	0	1	0.13
Sex	1=Male; 2=Female	757	1.30	1	2	0.46
B_year	Year of Birth	751	1,963.11	1,922	1,991	11.89
Educ	1=Did not Graduate H.S.; 2=H.S. Graduate or GED; 3=1-3 Years of College; 4=College Graduate; 5=Postgraduate, Masters, Ph.D	749	3.31	1	5	1.10
HH_Income	1=Less Than 9,999; 2=10k-19,999; 3=20k-29,999; 4=30k-39,999; 5=40k-49,999; 6=50k-59,999; 7=60k-69,999; 8=70k-79,999; 9=80k-89,999; 10=90k-99,999; 11=100k-249,999; 12=250k or More	717	7.72	1	12	3.12
Satis	1=Very Dissatisfied; 2=Generally Dissatisfied; 3=Neutral; 4=Generally Satisfied; 5=Very Satisfied	753	3.87	1	5	1.01

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NOTE: Summary statistics of raw survey data. The mean values reported here do not necessarily represent average spending by all Alaska anglers; the standard deviations do not apply to final spending estimates. This table includes raw survey data that underwent numerous transformations to produce the final study estimates.

Appendix G3.—Summary statistics for survey response variables: Wave 2 nonresident respondents.

Variable	Label	N	Mean	Min	Max	StdDev
NovDec_salt	Number of days fishing in Saltwater, November Thru December, 2006	1632	0.03	0	7	0.36
NovDec_fresh	Number of days fishing in Freshwater, November Thru December, 2006	1632	0.04	0	14	0.59
JanApr_salt	Number of days fishing in Saltwater, January Thru April, 2007	1632	0.14	0	12	0.81
JanApr_fresh	Number of days fishing in Freshwater, January Thru April, 2007	1632	0.16	0	14	0.96
MayJun_frsh_A	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region A	1735	0.07	0	10	0.61
MayJun_frsh_B	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region B	1735	0.04	0	7	0.40
MayJun_frsh_C	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region C	1735	0.46	0	23	1.79
MayJun_frsh_D	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region D	1735	0.12	0	13	0.83
MayJun_frsh_E	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region E	1735	0.08	0	15	0.79
MayJun_frsh_F	Number of days fishing in Freshwater, May 1st Thru June 30th, 2007; Region F	1735	0.06	0	22	0.80
MayJun_salt_A	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region A	1735	0.59	0	60	2.85
MayJun_salt_B	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region B	1735	0.12	0	30	1.13
MayJun_salt_C	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region C	1735	0.23	0	20	1.00
MayJun_salt_D	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region D	1735	0.02	0	5	0.25
MayJun_salt_F	Number of days fishing in Saltwater, May 1st Thru June 30th, 2007; Region F	1735	0.00	0	2	0.05
JulOct_frsh_A	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region A	1735	0.16	0	17	0.95
JulOct_frsh_B	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region B	1735	0.16	0	28	1.20
JulOct_frsh_C	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region C	1735	1.33	0	80	4.27
JulOct_frsh_D	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region D	1735	0.29	0	50	2.14
JulOct_frsh_E	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region E	1735	0.14	0	30	1.20
JulOct_frsh_F	Number of days fishing in Freshwater, July 1st Thru October 31st, 2007; Region F	1735	0.20	0	60	2.25
JulOct_salt_A	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region A	1735	0.93	0	60	3.35
JulOct_salt_B	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region B	1735	0.33	0	26	1.26
JulOct_salt_C	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region C	1735	0.36	0	30	1.27
JulOct_salt_D	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region D	1735	0.06	0	10	0.54
JulOct_salt_F	Number of days fishing in Saltwater, July 1st Thru October 31st, 2007; Region F	1735	0	0	0	0
LastMo_MayJun	1=May; 2=June; 3=Did not fish between May 1st and June 30st	1490	2.49	1	3	0.63
tripdays_1	Total days involved in last trip to Alaska	691	14.79	0	180	20.94
fishdays_1	Number of days actually fished in Alaska between May 1st and June 30th	687	4.59	0	60	5.71
commit_1	1=Yes; 0=No	688	0.56	0	1	0.50

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Variable	Label	N	Mean	Min	Max	StdDev
fish_type_1	1=Rod&Reel; 2=Shellfish Fishing	680	1.00	1	2	0.04
water_type_1	1=In Freshwater; 2=In Saltwater; 3=In Both	684	1.83	1	3	0.68
charter_1	1=Yes; 0=No	684	0.69	0	1	0.46
trip1_A	Did you fish in Region A 1=Yes; 0=No	819	0.32	0	1	0.47
trip1_B	Did you fish in Region B 1=Yes; 0=No	820	0.11	0	1	0.32
trip1_C	Did you fish in Region C 1=Yes; 0=No	820	0.37	0	1	0.48
trip1_D	Did you fish in Region D 1=Yes; 0=No	822	0.06	0	1	0.25
trip1_E	Did you fish in Region E 1=Yes; 0=No	820	0.04	0	1	0.21
trip1_F	Did you fish in Region F 1=Yes; 0=No	821	0.02	0	1	0.14
King_1	King Salmon 1=Yes; 0=No	818	0.56	0	1	0.50
Silver_1	Silver Salmon 1=Yes; 0=No	816	0.17	0	1	0.37
Red_1	Red Salmon 1=Yes; 0=No	816	0.16	0	1	0.37
OtherSalm_1	Other Salmon 1=Yes; 0=No	817	0.06	0	1	0.25
OtherFresh_1	Other Freshwater 1=Yes; 0=No	817	0.07	0	1	0.25
Steel_1	Steelhead 1=Yes; 0=No	816	0.04	0	1	0.20
Trout_1	Trout 1=Yes; 0=No	817	0.13	0	1	0.33
Halibut_1	Halibut 1=Yes; 0=No	816	0.47	0	1	0.50
Shell_1	Shellfish 1=Yes; 0=No	816	0.04	0	1	0.20
PtherSalt_1	Other Saltwater 1=Yes; 0=No	818	0.10	0	1	0.30
pkg_1	Total Cost of pre-arranged cruise, package tour, or charter trip	577	2,198.43	0	50,000	3,654.65
pkg_1_A	Visited 1=Yes; 0=No	636	0.27	0	1	0.44
pkg_1_B	Visited 1=Yes; 0=No	637	0.11	0	1	0.32
pkg_1_C	Visited 1=Yes; 0=No	636	0.23	0	1	0.42
pkg_1_D	Visited 1=Yes; 0=No	637	0.05	0	1	0.22
pkg_1_E	Visited 1=Yes; 0=No	637	0.06	0	1	0.24
pkg_1_F	Visited 1=Yes; 0=No	637	0.01	0	1	0.12
pkg_1_air	Transportation to/from Alaska 1=Yes; 0=No	488	0.36	0	1	0.48
pkg_1_trans	Transportation in Alaska 1=Yes; 0=No	484	0.44	0	1	0.50
pkg_1_guide	Guides &/or charter boat 1=Yes; 0=No	495	0.57	0	1	0.50
pkg_1_lodge	Lodging 1=Yes; 0=No	487	0.51	0	1	0.50
pkg_1_food	Meals 1=Yes; 0=No	483	0.47	0	1	0.50
pkg_1_lic	Fishing License 1=Yes; 0=No	491	0.31	0	1	0.46
Lic_1	Total Amount Spent on License and Stamp	669	82.77	0	667	98.93
Lic_1_A	1=Yes; 0=No	604	0.23	0	1	0.42
Lic_1_B	1=Yes; 0=No	605	0.06	0	1	0.25
Lic_1_C	1=Yes; 0=No	604	0.39	0	1	0.49
Lic_1_D	1=Yes; 0=No	605	0.04	0	1	0.19
Lic_1_E	1=Yes; 0=No	604	0.04	0	1	0.19
Lic_1_F	1=Yes; 0=No	605	0.00	0	1	0.07
Lic_1_out	Purchased Outside Alaska 1=Yes; 0=No	414	0.07	0	1	0.25
Fuel_1	Total Amount Spent on Fuel	669	261.09	0	19,651	1,028.05
Fuel_1_A	1=Yes; 0=No	454	0.16	0	1	0.37
Fuel_1_B	1=Yes; 0=No	454	0.15	0	1	0.36
Fuel_1_C	1=Yes; 0=No	454	0.48	0	1	0.50
Fuel_1_D	1=Yes; 0=No	454	0.03	0	1	0.17
Fuel_1_E	1=Yes; 0=No	453	0.13	0	1	0.33
Fuel_1_F	1=Yes; 0=No	454	0.02	0	1	0.13
Fuel_out_1	Purchased Outside Alaska 1=Yes; 0=No	329	0.04	0	1	0.20
Guide_1	Total Amount Spent on Guide	670	332.40	0	6,000	739.20
Guide_1_A	1=Yes; 0=No	412	0.18	0	1	0.39
Guide_1_B	1=Yes; 0=No	412	0.10	0	1	0.30
Guide_1_C	1=Yes; 0=No	412	0.35	0	1	0.48
Guide_1_D	1=Yes; 0=No	412	0.03	0	1	0.18
Guide_1_E	1=Yes; 0=No	412	0.05	0	1	0.22
Guide_1_F	1=Yes; 0=No	412	0.00	0	1	0.05

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Variable	Label	N	Mean	Min	Max	StdDev
Guide_out_1	Purchased Outside Alaska 1=Yes; 0=No	299	0.04	0	1	0.19
Air_1	Total Amount Spent on Airfare	669	581.13	0	8,000	820.56
Air_1_A	Region A 1=Yes; 0=No	463	0.20	0	1	0.40
Air_1_B	Region B 1=Yes; 0=No	463	0.03	0	1	0.18
Air_1_C	Region C 1=Yes; 0=No	463	0.24	0	1	0.43
Air_1_D	Region D 1=Yes; 0=No	463	0.02	0	1	0.15
Air_1_E	Region E 1=Yes; 0=No	463	0.02	0	1	0.15
Air_1_F	Region F 1=Yes; 0=No	463	0	0	0	0
Air_out_1	Purchased Outside Alaska 1=Yes; 0=No	432	0.42	0	1	0.49
Travel_1	Total Amount Spent on Commercial Travel Within Alaska	669	112.73	0	5,000	405.76
Travel_1_A	1=Yes; 0=No	283	0.16	0	1	0.37
Travel_1_B	1=Yes; 0=No	283	0.07	0	1	0.26
Travel_1_C	1=Yes; 0=No	283	0.26	0	1	0.44
Travel_1_D	1=Yes; 0=No	283	0.04	0	1	0.19
Travel_1_E	1=Yes; 0=No	283	0.02	0	1	0.14
Travel_1_F	1=Yes; 0=No	283	0.01	0	1	0.08
Travel_out_1	Purchased Outside Alaska 1=Yes; 0=No	232	0.05	0	1	0.21
Process_1	Total Amount Spent on Fish Processing	671	81.31	0	2,000	167.41
Process_1_A	1=Yes; 0=No	385	0.17	0	1	0.37
Process_1_B	1=Yes; 0=No	385	0.09	0	1	0.28
Process_1_C	1=Yes; 0=No	385	0.37	0	1	0.48
Process_1_D	1=Yes; 0=No	385	0.02	0	1	0.13
Process_1_E	1=Yes; 0=No	385	0.01	0	1	0.09
Process_1_F	1=Yes; 0=No	385	0.00	0	1	0.05
Process_out_1	Purchased Outside Alaska 1=Yes; 0=No	281	0.01	0	1	0.10
Rentals_1	Total Amount Spent on Rentals (boats, auto, etc...)	670	138.30	0	6,000	482.38
Rentals_1_A	1=Yes; 0=No	268	0.09	0	1	0.29
Rentals_1_B	1=Yes; 0=No	268	0.03	0	1	0.17
Rentals_1_C	1=Yes; 0=No	268	0.34	0	1	0.47
Rentals_1_D	1=Yes; 0=No	268	0.01	0	1	0.11
Rentals_1_E	1=Yes; 0=No	268	0.02	0	1	0.15
Rentals_1_F	1=Yes; 0=No	268	0	0	0	0
Rentals_out_1	Purchased Outside Alaska 1=Yes; 0=No	224	0.01	0	1	0.09
Derby_1	Total Amount Spent on Derby Tickets	669	2.91	0	300	15.61
Derby_1_A	1=Yes; 0=No	191	0.07	0	1	0.25
Derby_1_B	1=Yes; 0=No	191	0.02	0	1	0.14
Derby_1_C	1=Yes; 0=No	191	0.18	0	1	0.38
Derby_1_D	1=Yes; 0=No	191	0.01	0	1	0.07
Derby_1_E	1=Yes; 0=No	191	0.01	0	1	0.07
Derby_1_F	1=Yes; 0=No	191	0.01	0	1	0.07
Derby_out_1	Purchased Outside Alaska 1=Yes; 0=No	172	0	0	0	0
Dock_1	Total Amount Spent on Dockage	669	14.71	0	3,000	131.43
Dock_1_A	1=Yes; 0=No	183	0.03	0	1	0.18
Dock_1_B	1=Yes; 0=No	183	0.05	0	1	0.22
Dock_1_C	1=Yes; 0=No	183	0.16	0	1	0.37
Dock_1_D	1=Yes; 0=No	184	0.01	0	1	0.10
Dock_1_E	1=Yes; 0=No	183	0.01	0	1	0.07
Dock_1_F	1=Yes; 0=No	183	0	0	0	0
Dock_out_1	Purchased Outside Alaska 1=Yes; 0=No	160	0	0	0	0
Ice_1	Total Amount Spent on Ice	670	5.57	0	200	16.29
Ice_1_A	1=Yes; 0=No	279	0.11	0	1	0.31
Ice_1_B	1=Yes; 0=No	279	0.09	0	1	0.28
Ice_1_C	1=Yes; 0=No	279	0.34	0	1	0.47
Ice_1_D	1=Yes; 0=No	279	0.01	0	1	0.08
Ice_1_E	1=Yes; 0=No	279	0.03	0	1	0.18

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Variable	Label	N	Mean	Min	Max	StdDev
Ice_1_F	1=Yes; 0=No	279	0.01	0	1	0.10
Ice_out_1	Purchased Outside Alaska 1=Yes; 0=No	221	0.00	0	1	0.07
Bait_1	Total Amount Spent on Bait	669	8.04	0	400	28.61
Bait_1_A	1=Yes; 0=No	246	0.13	0	1	0.34
Bait_1_B	1=Yes; 0=No	246	0.05	0	1	0.22
Bait_1_C	1=Yes; 0=No	246	0.24	0	1	0.43
Bait_1_D	1=Yes; 0=No	246	0	0	0	0
Bait_1_E	1=Yes; 0=No	246	0.02	0	1	0.13
Bait_1_F	1=Yes; 0=No	246	0.00	0	1	0.06
Bait_out_1	Purchased Outside Alaska 1=Yes; 0=No	198	0.01	0	1	0.10
Groceries_1	Total Amount Spent on Groceries, Food, and Liquor	669	213.34	0	5,000	385.83
Groceries_1_A	1=Yes; 0=No	590	0.24	0	1	0.43
Groceries_1_B	1=Yes; 0=No	590	0.14	0	1	0.35
Groceries_1_C	1=Yes; 0=No	590	0.44	0	1	0.50
Groceries_1_D	1=Yes; 0=No	590	0.03	0	1	0.17
Groceries_1_E	1=Yes; 0=No	982	0.04	0	1	0.20
Groceries_1_F	1=Yes; 0=No	589	0.02	0	1	0.13
Groceries_out_1	Purchased Outside Alaska 1=Yes; 0=No	396	0.01	0	1	0.11
Meals_1	Total Amount Spent on Restaurants, bars, and Take-Out	670	213.69	0	4,000	313.57
Meals_1_A	1=Yes; 0=No	610	0.25	0	1	0.43
Meals_1_B	1=Yes; 0=No	610	0.15	0	1	0.36
Meals_1_C	1=Yes; 0=No	610	0.45	0	1	0.50
Meals_1_D	1=Yes; 0=No	610	0.03	0	1	0.17
Meals_1_E	1=Yes; 0=No	610	0.11	0	1	0.31
Meals_1_F	1=Yes; 0=No	610	0.02	0	1	0.13
Meals_out_1	Purchased Outside Alaska 1=Yes; 0=No	411	0.01	0	1	0.09
Lodging_1	Total Amount Spent on Lodging	670	318.80	0	12,285	768.93
Lodging_1_A	1=Yes; 0=No	424	0.17	0	1	0.38
Lodging_1_B	1=Yes; 0=No	424	0.15	0	1	0.36
Lodging_1_C	1=Yes; 0=No	424	0.43	0	1	0.50
Lodging_1_D	1=Yes; 0=No	424	0.04	0	1	0.18
Lodging_1_E	1=Yes; 0=No	424	0.11	0	1	0.31
Lodging_1_F	1=Yes; 0=No	424	0.02	0	1	0.14
Lodge_out_1	Purchased Outside Alaska 1=Yes; 0=No	305	0.02	0	1	0.14
Gifts_1	Total Amount Spent on Souvenirs and Gifts	674	171.77	0	3,000	301.24
Gifts_1_A	1=Yes; 0=No	585	0.29	0	1	0.45
Gifts_1_B	1=Yes; 0=No	583	0.13	0	1	0.33
Gifts_1_C	1=Yes; 0=No	583	0.41	0	1	0.49
Gifts_1_D	1=Yes; 0=No	582	0.02	0	1	0.15
Gifts_1_E	1=Yes; 0=No	583	0.10	0	1	0.31
Gifts_1_F	1=Yes; 0=No	583	0.02	0	1	0.14
Gifts_out_1	Purchased Outside Alaska 1=Yes; 0=No	528	0.00	0	1	0.06
Amusement_1	Total Amount Spent on Other Entertainment	669	53.28	0	1,000	132.42
Amusement_1_A	1=Yes; 0=No	299	0.15	0	1	0.36
Amusement_1_B	1=Yes; 0=No	299	0.10	0	1	0.30
Amusement_1_C	1=Yes; 0=No	299	0.33	0	1	0.47
Amusement_1_D	1=Yes; 0=No	299	0.03	0	1	0.18
Amusement_1_E	1=Yes; 0=No	299	0.09	0	1	0.28
Amusement_1_F	1=Yes; 0=No	299	0.01	0	1	0.12
Amusement_out_1	Purchased Outside Alaska 1=Yes; 0=No	228	0	0	0	0
Other_1	Total Amount Spent on Other	667	3.26	0	1,425	57.51
Other_1_A	1=Yes; 0=No	201	0.09	0	1	0.29
Other_1_B	1=Yes; 0=No	200	0.03	0	1	0.16
Other_1_C	1=Yes; 0=No	200	0.14	0	1	0.35
Other_1_D	1=Yes; 0=No	200	0.02	0	1	0.14

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Variable	Label	N	Mean	Min	Max	StdDev
Other_1_E	1=Yes; 0=No	201	0.02	0	1	0.14
Other_1_F	1=Yes; 0=No	200	0	0	0	0
Other_out_1	Purchased Outside Alaska 1=Yes; 0=No	557	0.01	0	1	0.10
LastMo_JulOct	1=July; 2=August; 3=September; 4=October; 5=Did not fish	1571	2.26	1	5	1.50
tripdays_2	Total number of days in last trip to Alaska	1253	14.77	0	180	19.60
fishdays_2	Number of days fishing in Alaska between July 1st and Oct. 31st, 2007	1253	5.65	0	90	8.14
commit_2	1=Yes; 0=No	1251	0.51	0	1	0.50
fish_type_2	1=Rod&Reel; 2=Shellfishing	1248	1.00	1	2	0.07
water_type_2	1=In Freshwater; 2=In Saltwater; 3=In Both	1246	1.87	1	3	0.73
charter_2	1=Yes; 0=No	1252	0.66	0	1	0.48
trip2_A	Region A; 1=Yes; 0=No	1307	0.32	0	1	0.47
trip2_B	Region B; 1=Yes; 0=No	1307	0.21	0	1	0.41
trip2_C	Region C; 1=Yes; 0=No	1309	0.44	0	1	0.50
trip2_D	Region D; 1=Yes; 0=No	1308	0.08	0	1	0.26
trip2_E	Region E; 1=Yes; 0=No	1307	0.05	0	1	0.21
trip2_F	Region F; 1=Yes; 0=No	1308	0.03	0	1	0.17
King_2	King Salmon 1=Yes; 0=No	1327	0.41	0	1	0.49
Silver_2	Silver Salmon 1=Yes; 0=No	1327	0.55	0	1	0.50
Red_2	Red Salmon 1=Yes; 0=No	1327	0.29	0	1	0.45
OtherSalm_2	Other Salmon 1=Yes; 0=No	1328	0.19	0	1	0.39
OtherFresh_2	Other Freshwater 1=Yes; 0=No	1327	0.10	0	1	0.30
Steel_2	Steelhead 1=Yes; 0=No	1327	0.04	0	1	0.20
Trout_2	Trout 1=Yes; 0=No	1327	0.15	0	1	0.36
Halibut_2	Halibut 1=Yes; 0=No	1327	0.53	0	1	0.50
Shell_2	Shellfish 1=Yes; 0=No	1327	0.04	0	1	0.20
PtherSalt_2	Other Saltwater 1=Yes; 0=No	1328	0.14	0	1	0.34
pkg_2	Total Cost of Pre-arranged cruise, package tour, or charter trip	991	1,989.10	0	60,000	3,432.90
pkg_2_A	Visited 1=Yes; 0=No	598	0.41	0	1	0.49
pkg_2_B	Visited 1=Yes; 0=No	597	0.25	0	1	0.43
pkg_2_C	Visited 1=Yes; 0=No	597	0.39	0	1	0.49
pkg_2_D	Visited 1=Yes; 0=No	597	0.07	0	1	0.26
pkg_2_E	Visited 1=Yes; 0=No	597	0.11	0	1	0.31
pkg_2_F	Visited 1=Yes; 0=No	600	0.04	0	1	0.20
pkg_2_air	Transportation to/from Alaska 1=Yes; 0=No	829	0.32	0	1	0.47
pkg_2_trans	Transportation in Alaska 1=Yes; 0=No	817	0.41	0	1	0.49
pkg_2_guide	Guides &/or charter boat 1=Yes; 0=No	835	0.52	0	1	0.50
pkg_2_lodge	Lodging 1=Yes; 0=No	833	0.53	0	1	0.50
pkg_2_food	Meals 1=Yes; 0=No	820	0.44	0	1	0.50
pkg_2_lic	Fishing License 1=Yes; 0=No	820	0.26	0	1	0.44
Lic_2	Total Amount Spent on License and Stamp	1190	75.92	0	1,000	89.83
Lic_2_A	1=Yes; 0=No	919	0.26	0	1	0.44
Lic_2_B	1=Yes; 0=No	918	0.13	0	1	0.34
Lic_2_C	1=Yes; 0=No	918	0.45	0	1	0.50
Lic_2_D	1=Yes; 0=No	918	0.04	0	1	0.20
Lic_2_E	1=Yes; 0=No	919	0.04	0	1	0.19
Lic_2_F	1=Yes; 0=No	918	0.01	0	1	0.11
Lic_2_out	Purchased Outside Alaska 1=Yes; 0=No	610	0.14	0	1	0.35
Fuel_2	Total Amount Spent on Fuel	1191	217.72	0	10,000	556.09
Fuel_2_A	1=Yes; 0=No	666	0.17	0	1	0.38
Fuel_2_B	1=Yes; 0=No	666	0.24	0	1	0.42
Fuel_2_C	1=Yes; 0=No	666	0.62	0	1	0.49
Fuel_2_D	1=Yes; 0=No	667	0.04	0	1	0.21
Fuel_2_E	1=Yes; 0=No	665	0.15	0	1	0.35
Fuel_2_F	1=Yes; 0=No	666	0.03	0	1	0.16

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Variable	Label	N	Mean	Min	Max	StdDev
Fuel_out_2	Purchased Outside Alaska 1=Yes; 0=No	444	0.06	0	1	0.24
Guide_2	Total Amount Spent on Guide	1190	340.69	0	9,300	822.83
Guide_2_A	1=Yes; 0=No	528	0.23	0	1	0.42
Guide_2_B	1=Yes; 0=No	528	0.20	0	1	0.40
Guide_2_C	1=Yes; 0=No	528	0.43	0	1	0.50
Guide_2_D	1=Yes; 0=No	528	0.04	0	1	0.20
Guide_2_E	1=Yes; 0=No	528	0.07	0	1	0.26
Guide_2_F	1=Yes; 0=No	528	0.01	0	1	0.11
Guide_out_2	Purchased Outside Alaska 1=Yes; 0=No	326	0.05	0	1	0.22
Air_2	Total Amount Spent on Airfare	1191	600.52	0	8,000	738.41
Air_2_A	1=Yes; 0=No	637	0.21	0	1	0.41
Air_2_B	1=Yes; 0=No	636	0.04	0	1	0.21
Air_2_C	1=Yes; 0=No	636	0.27	0	1	0.45
Air_2_D	1=Yes; 0=No	636	0.03	0	1	0.17
Air_2_E	1=Yes; 0=No	636	0.02	0	1	0.14
Air_2_F	1=Yes; 0=No	637	0.01	0	1	0.09
Air_out_2	Purchased Outside Alaska 1=Yes; 0=No	659	0.66	0	1	0.47
Travel_2	Total Amount Spent on Commercial Travel Within Alaska	1190	86.31	0	7,000	339.75
Travel_2_A	1=Yes; 0=No	318	0.31	0	1	0.46
Travel_2_B	1=Yes; 0=No	318	0.10	0	1	0.31
Travel_2_C	1=Yes; 0=No	318	0.32	0	1	0.47
Travel_2_D	1=Yes; 0=No	318	0.07	0	1	0.25
Travel_2_E	1=Yes; 0=No	318	0.04	0	1	0.21
Travel_2_F	1=Yes; 0=No	318	0.02	0	1	0.15
Travel_out_2	Purchased Outside Alaska 1=Yes; 0=No	214	0.08	0	1	0.27
Process_2	Total Amount Spent on Fish Processing	1190	90.30	0	2,000	173.19
Process_2_A	1=Yes; 0=No	554	0.23	0	1	0.42
Process_2_B	1=Yes; 0=No	554	0.19	0	1	0.40
Process_2_C	1=Yes; 0=No	553	0.44	0	1	0.50
Process_2_D	1=Yes; 0=No	554	0.03	0	1	0.17
Process_2_E	1=Yes; 0=No	554	0.01	0	1	0.08
Process_2_F	1=Yes; 0=No	554	0	0	0	0
Process_out_2	Purchased Outside Alaska 1=Yes; 0=No	347	0.00	0	1	0.05
Rentals_2	Total Amount Spent on Rentals (boats, auto, etc...)	1190	184.74	0	10,000	551.08
Rentals_2_A	1=Yes; 0=No	353	0.10	0	1	0.30
Rentals_2_B	1=Yes; 0=No	353	0.11	0	1	0.32
Rentals_2_C	1=Yes; 0=No	353	0.55	0	1	0.50
Rentals_2_D	1=Yes; 0=No	353	0.03	0	1	0.16
Rentals_2_E	1=Yes; 0=No	353	0.05	0	1	0.21
Rentals_2_F	1=Yes; 0=No	353	0.01	0	1	0.11
Rentals_out_2	Purchased Outside Alaska 1=Yes; 0=No	243	0.04	0	1	0.20
Derby_2	Total Amount Spent on Derby Tickets	1190	1.87	0	200	10.17
Derby_2_A	1=Yes; 0=No	135	0.04	0	1	0.19
Derby_2_B	1=Yes; 0=No	135	0.18	0	1	0.38
Derby_2_C	1=Yes; 0=No	135	0.33	0	1	0.47
Derby_2_D	1=Yes; 0=No	135	0.01	0	1	0.09
Derby_2_E	1=Yes; 0=No	134	0	0	0	0
Derby_2_F	1=Yes; 0=No	135	0.01	0	1	0.12
Derby_out_2	Purchased Outside Alaska 1=Yes; 0=No	107	0.01	0	1	0.10
Dock_2	Total Amount Spent on Dockage	1190	5.96	0	600	36.05
Dock_2_A	1=Yes; 0=No	144	0.10	0	1	0.30
Dock_2_B	1=Yes; 0=No	144	0.09	0	1	0.29
Dock_2_C	1=Yes; 0=No	144	0.35	0	1	0.48
Dock_2_D	1=Yes; 0=No	144	0.02	0	1	0.14
Dock_2_E	1=Yes; 0=No	144	0.01	0	1	0.08

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Variable	Label	N	Mean	Min	Max	StdDev
Dock_2_F	1=Yes; 0=No	144	0.01	0	1	0.08
Dock_out_2	Purchased Outside Alaska 1=Yes; 0=No	120	0	0	0	0
Ice_2	Total Amount Spent on Ice	1190	7.61	0	550	24.70
Ice_2_A	1=Yes; 0=No	323	0.13	0	1	0.33
Ice_2_B	1=Yes; 0=No	323	0.20	0	1	0.40
Ice_2_C	1=Yes; 0=No	323	0.53	0	1	0.50
Ice_2_D	1=Yes; 0=No	323	0.02	0	1	0.12
Ice_2_E	1=Yes; 0=No	323	0.08	0	1	0.27
Ice_2_F	1=Yes; 0=No	323	0.01	0	1	0.11
Ice_out_2	Purchased Outside Alaska 1=Yes; 0=No	215	0.01	0	1	0.10
Bait_2	Total Amount Spent on Bait	1189	8.04	0	800	33.64
Bait_2_A	1=Yes; 0=No	229	0.24	0	1	0.43
Bait_2_B	1=Yes; 0=No	229	0.15	0	1	0.36
Bait_2_C	1=Yes; 0=No	229	0.33	0	1	0.47
Bait_2_D	1=Yes; 0=No	229	0.01	0	1	0.09
Bait_2_E	1=Yes; 0=No	229	0.02	0	1	0.13
Bait_2_F	1=Yes; 0=No	229	0	0	0	0
Bait_out_2	Purchased Outside Alaska 1=Yes; 0=No	161	0.01	0	1	0.08
Groceries_2	Total Amount Spent on Groceries, Food, and Liquor	1191	215.13	0	5,340	356.49
Groceries_2_A	1=Yes; 0=No	882	0.24	0	1	0.43
Groceries_2_B	1=Yes; 0=No	882	0.19	0	1	0.39
Groceries_2_C	1=Yes; 0=No	882	0.54	0	1	0.50
Groceries_2_D	1=Yes; 0=No	882	0.05	0	1	0.22
Groceries_2_E	1=Yes; 0=No	1090	0.04	0	1	0.20
Groceries_2_F	1=Yes; 0=No	882	0.02	0	1	0.14
Groceries_out_2	Purchased Outside Alaska 1=Yes; 0=No	556	0.04	0	1	0.19
Meals_2	Total Amount Spent on Restaurants, bars, and Take-Out	1191	218.48	0	3,000	306.82
Meals_2_A	1=Yes; 0=No	911	0.27	0	1	0.44
Meals_2_B	1=Yes; 0=No	911	0.23	0	1	0.42
Meals_2_C	1=Yes; 0=No	911	0.57	0	1	0.50
Meals_2_D	1=Yes; 0=No	911	0.05	0	1	0.22
Meals_2_E	1=Yes; 0=No	911	0.13	0	1	0.34
Meals_2_F	1=Yes; 0=No	911	0.02	0	1	0.14
Meals_out_2	Purchased Outside Alaska 1=Yes; 0=No	556	0.02	0	1	0.15
Lodging_2	Total Amount Spent on Lodging	1190	323.28	0	10,500	696.25
Lodging_2_A	1=Yes; 0=No	611	0.18	0	1	0.39
Lodging_2_B	1=Yes; 0=No	611	0.25	0	1	0.43
Lodging_2_C	1=Yes; 0=No	611	0.55	0	1	0.50
Lodging_2_D	1=Yes; 0=No	611	0.06	0	1	0.23
Lodging_2_E	1=Yes; 0=No	611	0.14	0	1	0.35
Lodging_2_F	1=Yes; 0=No	611	0.03	0	1	0.16
Lodge_out_2	Purchased Outside Alaska 1=Yes; 0=No	395	0.04	0	1	0.20
Gifts_2	Total Amount Spent on Souvenirs and Gifts	1190	194.07	0	7,000	414.51
Gifts_2_A	1=Yes; 0=No	815	0.30	0	1	0.46
Gifts_2_B	1=Yes; 0=No	815	0.20	0	1	0.40
Gifts_2_C	1=Yes; 0=No	815	0.53	0	1	0.50
Gifts_2_D	1=Yes; 0=No	815	0.05	0	1	0.21
Gifts_2_E	1=Yes; 0=No	815	0.12	0	1	0.33
Gifts_2_F	1=Yes; 0=No	814	0.02	0	1	0.15
Gifts_out_2	Purchased Outside Alaska 1=Yes; 0=No	746	0.01	0	1	0.10
Amusement_2	Total Amount Spent on Other Entertainment	1190	52.93	0	3,000	176.50
Amusement_2_A	1=Yes; 0=No	314	0.19	0	1	0.39
Amusement_2_B	1=Yes; 0=No	314	0.17	0	1	0.37
Amusement_2_C	1=Yes; 0=No	314	0.47	0	1	0.50
Amusement_2_D	1=Yes; 0=No	314	0.04	0	1	0.21

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Variable	Label	N	Mean	Min	Max	StdDev
Amusement_2_E	1=Yes; 0=No	314	0.09	0	1	0.28
Amusement_2_F	1=Yes; 0=No	314	0.02	0	1	0.13
Amusement_out_2	Purchased Outside Alaska 1=Yes; 0=No	208	0.01	0	1	0.10
Other_2	Total Amount Spent on Other	1185	7.41	0	2,750	101.51
Other_2_A	1=Yes; 0=No	160	0.18	0	1	0.39
Other_2_B	1=Yes; 0=No	160	0.09	0	1	0.28
Other_2_C	1=Yes; 0=No	160	0.29	0	1	0.46
Other_2_D	1=Yes; 0=No	160	0.03	0	1	0.16
Other_2_E	1=Yes; 0=No	160	0.06	0	1	0.24
Other_2_F	1=Yes; 0=No	160	0.01	0	1	0.08
Other_out_2	Purchased Outside Alaska 1=Yes; 0=No	119	0.07	0	1	0.25
Eq_Lic	Total Amount Spent on License and Stamps	1542	72.29	0	1,000	91.11
Eq_Lic_A	1=Yes; 0=No	1077	0.28	0	1	0.45
Eq_Lic_B	1=Yes; 0=No	1077	0.12	0	1	0.32
Eq_Lic_C	1=Yes; 0=No	1078	0.51	0	1	0.50
Eq_Lic_D	1=Yes; 0=No	1077	0.04	0	1	0.20
Eq_Lic_E	1=Yes; 0=No	1077	0.04	0	1	0.21
Eq_Lic_F	1=Yes; 0=No	1077	0.01	0	1	0.09
Eq_RodReel	Total Amount Spent on Rods, Reels, and Components	1542	24.17	0	1,500	98.24
Eq_Rods_A	1=Yes; 0=No	225	0.16	0	1	0.36
Eq_Rods_B	1=Yes; 0=No	225	0.12	0	1	0.32
Eq_Rods_C	1=Yes; 0=No	225	0.59	0	1	0.49
Eq_Rods_D	1=Yes; 0=No	225	0.04	0	1	0.20
Eq_Rods_E	1=Yes; 0=No	225	0.04	0	1	0.21
Eq_Rods_F	1=Yes; 0=No	225	0	0	0	0
Eq_Tackle	Total Amount Spent on Fishing Tackle	1542	29.40	0	1,500	86.67
Eq_Tackle_A	1=Yes; 0=No	514	0.20	0	1	0.40
Eq_Tackle_B	1=Yes; 0=No	514	0.16	0	1	0.36
Eq_Tackle_C	1=Yes; 0=No	514	0.55	0	1	0.50
Eq_Tackle_D	1=Yes; 0=No	514	0.04	0	1	0.21
Eq_Tackle_E	1=Yes; 0=No	514	0.06	0	1	0.24
Eq_Tackle_F	1=Yes; 0=No	514	0.01	0	1	0.12
Eq_Tacklebox	Total Amount Spent on Tackle Boxes	1542	1.59	0	200	11.11
Eq_Tacklebox_A	1=Yes; 0=No	81	0.15	0	1	0.36
Eq_Tacklebox_B	1=Yes; 0=No	81	0.10	0	1	0.30
Eq_Tacklebox_C	1=Yes; 0=No	81	0.42	0	1	0.50
Eq_Tacklebox_D	1=Yes; 0=No	81	0.01	0	1	0.11
Eq_Tacklebox_E	1=Yes; 0=No	81	0.05	0	1	0.22
Eq_Tacklebox_F	1=Yes; 0=No	81	0	0	0	0
Eq_Electronics	Total Amount Spent on Fish/Depth Finder	1542	6.54	0	200	242.03
Eq_Elec_A	1=Yes; 0=No	33	0.12	0	1	0.33
Eq_Elec_B	1=Yes; 0=No	33	0.03	0	1	0.17
Eq_Elec_C	1=Yes; 0=No	33	0.03	0	1	0.17
Eq_Elec_D	1=Yes; 0=No	33	0.03	0	1	0.17
Eq_Elec_E	1=Yes; 0=No	34	0	0	0	0
Eq_Elec_F	1=Yes; 0=No	33	0	0	0	0
Eq_Nets	Total Amount Spent on Dip/Gill Nets	1542	1.67	0	300	12.90
Eq_Nets_A	1=Yes; 0=No	77	0.16	0	1	0.37
Eq_Nets_B	1=Yes; 0=No	77	0.10	0	1	0.31
Eq_Nets_C	1=Yes; 0=No	78	0.36	0	1	0.48
Eq_Nets_D	1=Yes; 0=No	77	0.03	0	1	0.16
Eq_Nets_E	1=Yes; 0=No	77	0	0	0	0
Eq_Nets_F	1=Yes; 0=No	78	0	0	0	0
Eq_Misc	Total Amount Spent on Miscellaneous Fishing Equipment	1542	10.33	0	1,825	64.86
Eq_Misc_A	1=Yes; 0=No	202	0.23	0	1	0.42

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Variable	Label	N	Mean	Min	Max	StdDev
Eq_Misc_B	1=Yes; 0=No	203	0.14	0	1	0.35
Eq_Misc_C	1=Yes; 0=No	203	0.44	0	1	0.50
Eq_Misc_D	1=Yes; 0=No	203	0.04	0	1	0.21
Eq_Misc_E	1=Yes; 0=No	203	0.03	0	1	0.17
Eq_Misc_F	1=Yes; 0=No	203	0	0	0	0
Eq_Shellfish	Total Amount Spent on	1542	1.04	0	300	10.24
Eq_Shellfish_A	1=Yes; 0=No	59	0.14	0	1	0.35
Eq_Shellfish_B	1=Yes; 0=No	59	0.03	0	1	0.18
Eq_Shellfish_C	1=Yes; 0=No	59	0.34	0	1	0.48
Eq_Shellfish_D	1=Yes; 0=No	59	0	0	0	0
Eq_Shellfish_E	1=Yes; 0=No	59	0.02	0	1	0.13
Eq_Shellfish_F	1=Yes; 0=No	59	0	0	0	0
Eq_Taxidermy	Total Amount Spent on Taxidermy	1542	4.53	0	1,500	67.81
Eq_Taxidermy_A	1=Yes; 0=No	39	0.13	0	1	0.34
Eq_Taxidermy_B	1=Yes; 0=No	38	0.03	0	1	0.16
Eq_Taxidermy_C	1=Yes; 0=No	38	0.11	0	1	0.31
Eq_Taxidermy_D	1=Yes; 0=No	38	0	0	0	0
Eq_Taxidermy_E	1=Yes; 0=No	38	0	0	0	0
Eq_Taxidermy_F	1=Yes; 0=No	39	0	0	0	0
Eq_Books	Total Amount Spent on	1542	2.70	0	200	13.62
Eq_Books_A	1=Yes; 0=No	139	0.21	0	1	0.41
Eq_Books_B	1=Yes; 0=No	139	0.13	0	1	0.34
Eq_Books_C	1=Yes; 0=No	139	0.40	0	1	0.49
Eq_Books_D	1=Yes; 0=No	139	0.05	0	1	0.22
Eq_Books_E	1=Yes; 0=No	139	0.04	0	1	0.19
Eq_Books_F	1=Yes; 0=No	139	0	0	0	0
Eq_Preserve	Total Amount Spent on Preserving/Smoking	1542	12.79	0	1,500	67.98
Eq_Preserve_A	1=Yes; 0=No	163	0.15	0	1	0.36
Eq_Preserve_B	1=Yes; 0=No	163	0.13	0	1	0.34
Eq_Preserve_C	1=Yes; 0=No	163	0.49	0	1	0.50
Eq_Preserve_D	1=Yes; 0=No	163	0.03	0	1	0.17
Eq_Preserve_E	1=Yes; 0=No	163	0.04	0	1	0.19
Eq_Preserve_F	1=Yes; 0=No	163	0	0	0	0
Eq_PreservePct	% used for sportfishing	107	72.64	0	100	43.54
Eq_Coolers	Total Amount Spent on Coolers	1542	11.08	0	400	29.78
Eq_Coolers_A	1=Yes; 0=No	355	0.15	0	1	0.36
Eq_Coolers_B	1=Yes; 0=No	355	0.13	0	1	0.33
Eq_Coolers_C	1=Yes; 0=No	355	0.56	0	1	0.50
Eq_Coolers_D	1=Yes; 0=No	355	0.05	0	1	0.21
Eq_Coolers_E	1=Yes; 0=No	355	0.02	0	1	0.14
Eq_Coolers_F	1=Yes; 0=No	356	0.00	0	1	0.05
Eq_CoolersPct	% used for sportfishing	236	67.25	0	100	44.68
Eq_Clothing	Total Amount Spent on Clothing	1542	24.92	0	2,750	108.44
Eq_Clothing_A	1=Yes; 0=No	319	0.25	0	1	0.43
Eq_Clothing_B	1=Yes; 0=No	319	0.12	0	1	0.32
Eq_Clothing_C	1=Yes; 0=No	319	0.45	0	1	0.50
Eq_Clothing_D	1=Yes; 0=No	320	0.04	0	1	0.20
Eq_Clothing_E	1=Yes; 0=No	319	0.03	0	1	0.17
Eq_Clothing_F	1=Yes; 0=No	319	0.01	0	1	0.08
Eq_ClothingPct	% used for sportfishing	206	58.62	0	100	43.26
Eq_Boots	Total Amount Spent on Boots, and Shoes	1542	12.18	0	400	38.43
Eq_Boots_A	1=Yes; 0=No	236	0.11	0	1	0.31
Eq_Boots_B	1=Yes; 0=No	236	0.08	0	1	0.27
Eq_Boots_C	1=Yes; 0=No	236	0.58	0	1	0.50
Eq_Boots_D	1=Yes; 0=No	235	0.03	0	1	0.17

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Variable	Label	N	Mean	Min	Max	StdDev
Eq_Boots_E	1=Yes; 0=No	236	0.05	0	1	0.22
Eq_Boots_F	1=Yes; 0=No	236	0	0	0	0
Eq_BootsPct	% used for sportfishing	149	65.70	0	100	45.72
Eq_LJackets	Total Amount Spent on Life Jackets, and Survival Suits	1542	0.69	0	200	8.85
Eq_LJackets_A	1=Yes; 0=No	40	0.13	0	1	0.33
Eq_LJackets_B	1=Yes; 0=No	40	0.05	0	1	0.22
Eq_LJackets_C	1=Yes; 0=No	40	0.15	0	1	0.36
Eq_LJackets_D	1=Yes; 0=No	40	0	0	0	0
Eq_LJackets_E	1=Yes; 0=No	40	0.03	0	1	0.16
Eq_LJackets_F	1=Yes; 0=No	40	0	0	0	0
Eq_LJacketsPct	% used for sportfishing	9	87.78	0	100	33.08
Eq_Boats	Total Amount Spent on Boats, Canoes, Watercraft, etc...	1541	44.29	0	27,000	906.70
Eq_Boats_A	1=Yes; 0=No	45	0.20	0	1	0.40
Eq_Boats_B	1=Yes; 0=No	45	0.02	0	1	0.15
Eq_Boats_C	1=Yes; 0=No	45	0.13	0	1	0.34
Eq_Boats_D	1=Yes; 0=No	45	0.02	0	1	0.15
Eq_Boats_E	1=Yes; 0=No	45	0	0	0	0
Eq_Boats_F	1=Yes; 0=No	45	0	0	0	0
Eq_BoatsPct	% used for sportfishing	8	50.00	0	100	53.45
Eq_Motors	Total Amount Spent on Boat Motors	1542	3.21	0	3,000	83.72
Eq_Motors_A	1=Yes; 0=No	34	0.09	0	1	0.29
Eq_Motors_B	1=Yes; 0=No	34	0.06	0	1	0.24
Eq_Motors_C	1=Yes; 0=No	34	0.06	0	1	0.24
Eq_Motors_D	1=Yes; 0=No	34	0.03	0	1	0.17
Eq_Motors_E	1=Yes; 0=No	34	0	0	0	0
Eq_Motors_F	1=Yes; 0=No	34	0	0	0	0
Eq_MotorsPct	% used for sportfishing	7	71.43	0	100	48.80
Eq_Trailers	Total Amount Spent on Boat Trailers	1542	1.51	0	500	22.85
Eq_Trailers_A	1=Yes; 0=No	40	0.08	0	1	0.27
Eq_Trailers_B	1=Yes; 0=No	40	0.05	0	1	0.22
Eq_Trailers_C	1=Yes; 0=No	40	0.23	0	1	0.42
Eq_Trailers_D	1=Yes; 0=No	40	0	0	0	0
Eq_Trailers_E	1=Yes; 0=No	40	0	0	0	0
Eq_Trailers_F	1=Yes; 0=No	40	0	0	0	0
Eq_TrailersPct	% used for sportfishing	10	55.10	0	100	49.60
Eq_OtherParts	Total Amount Spent on Other Boat Parts	1542	5.04	0	1,000	60.16
Eq_OtherParts_A	1=Yes; 0=No	57	0.21	0	1	0.41
Eq_OtherParts_B	1=Yes; 0=No	57	0.07	0	1	0.26
Eq_OtherParts_C	1=Yes; 0=No	57	0.21	0	1	0.41
Eq_OtherParts_D	1=Yes; 0=No	57	0.04	0	1	0.19
Eq_OtherParts_E	1=Yes; 0=No	57	0.02	0	1	0.13
Eq_OtherParts_F	1=Yes; 0=No	57	0	0	0	0
Eq_OtherPartsPct	% used for sportfishing	19	79.00	0	100	41.78
Eq_BearSpray	Total Amount Spent on Bear Spray, Bug Spray, etc...	1542	3.85	0	200	13.16
Eq_BearSpray_A	1=Yes; 0=No	245	0.17	0	1	0.37
Eq_BearSpray_B	1=Yes; 0=No	245	0.12	0	1	0.33
Eq_BearSpray_C	1=Yes; 0=No	245	0.51	0	1	0.50
Eq_BearSpray_D	1=Yes; 0=No	245	0.04	0	1	0.20
Eq_BearSpray_E	1=Yes; 0=No	245	0.10	0	1	0.30
Eq_BearSpray_F	1=Yes; 0=No	245	0.00	0	1	0.06
Eq_BearSprayPct	% used for sportfishing	155	59.85	0	100	43.51
Eq_Firearms	Total Amount Spent on Firearms	1542	0.69	0	450	14.30
Eq_Firearms_A	1=Yes; 0=No	34	0.12	0	1	0.33
Eq_Firearms_B	1=Yes; 0=No	34	0.03	0	1	0.17
Eq_Firearms_C	1=Yes; 0=No	34	0.15	0	1	0.36

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Variable	Label	N	Mean	Min	Max	StdDev
Eq_Firearms_D	1=Yes; 0=No	34	0	0	0	0
Eq_Firearms_E	1=Yes; 0=No	34	0	0	0	0
Eq_Firearms_F	1=Yes; 0=No	34	0	0	0	0
Eq_FirearmsPct	% used for sportfishing	6	33.33	0	100	51.64
Eq_Cameras	Total Amount Spent on Camera, Binoculars, Sun Glasses	1542	7.52	0	1,000	48.25
Eq_Cameras_A	1=Yes; 0=No	125	0.22	0	1	0.41
Eq_Cameras_B	1=Yes; 0=No	125	0.06	0	1	0.23
Eq_Cameras_C	1=Yes; 0=No	125	0.42	0	1	0.50
Eq_Cameras_D	1=Yes; 0=No	125	0.02	0	1	0.15
Eq_Cameras_E	1=Yes; 0=No	125	0.04	0	1	0.20
Eq_Cameras_F	1=Yes; 0=No	125	0.01	0	1	0.09
Eq_CamerasPct	% used for sportfishing	73	52.41	0	100	40.59
Eq_Tents	Total Amount Spent on Tents, etc...	1542	3.23	0	500	28.28
Eq_Tents_A	1=Yes; 0=No	60	0.12	0	1	0.32
Eq_Tents_B	1=Yes; 0=No	60	0.08	0	1	0.28
Eq_Tents_C	1=Yes; 0=No	60	0.28	0	1	0.45
Eq_Tents_D	1=Yes; 0=No	60	0.07	0	1	0.25
Eq_Tents_E	1=Yes; 0=No	60	0.05	0	1	0.22
Eq_Tents_F	1=Yes; 0=No	60	0	0	0	0
Eq_TentsPct	% used for sportfishing	25	24.60	0	100	40.87
Eq_Campers	Total Amount Spent on Camping Trailer	1543	13.33	0	17,000	437.38
Eq_Campers_A	1=Yes; 0=No	32	0.09	0	1	0.30
Eq_Campers_B	1=Yes; 0=No	32	0.03	0	1	0.18
Eq_Campers_C	1=Yes; 0=No	32	0.06	0	1	0.25
Eq_Campers_D	1=Yes; 0=No	32	0.03	0	1	0.18
Eq_Campers_E	1=Yes; 0=No	32	0	0	0	0
Eq_Campers_F	1=Yes; 0=No	32	0	0	0	0
Eq_CampersPct	% used for sportfishing	4	1.25	0	5	2.50
Eq_Other_Camp	Total Amount Spent on Other Camping Equipment	1542	2.99	0	400	21.56
Eq_Other_Camp_A	1=Yes; 0=No	77	0.13	0	1	0.34
Eq_Other_Camp_B	1=Yes; 0=No	77	0.03	0	1	0.16
Eq_Other_Camp_C	1=Yes; 0=No	77	0.40	0	1	0.49
Eq_Other_Camp_D	1=Yes; 0=No	77	0.03	0	1	0.16
Eq_Other_Camp_E	1=Yes; 0=No	77	0.09	0	1	0.29
Eq_Other_Camp_F	1=Yes; 0=No	77	0	0	0	0
Eq_Other_CampPct	% used for sportfishing	37	44.35	0	100	45.05
Eq_Vehicles	Total Amount Spent on Vehicles	1542	47.71	0	17,000	522.28
Eq_Vehicles_A	1=Yes; 0=No	72	0.08	0	1	0.28
Eq_Vehicles_B	1=Yes; 0=No	72	0.10	0	1	0.30
Eq_Vehicles_C	1=Yes; 0=No	72	0.36	0	1	0.48
Eq_Vehicles_D	1=Yes; 0=No	72	0.03	0	1	0.17
Eq_Vehicles_E	1=Yes; 0=No	72	0.01	0	1	0.12
Eq_Vehicles_F	1=Yes; 0=No	72	0	0	0	0
Eq_VehiclesPct	% used for sportfishing	28	46.61	0	100	47.45
Eq_Planes	Total Amount Spent on Airplanes and Related Equipment	1542	12.56	0	2,000	112.65
Eq_Planes_A	1=Yes; 0=No	53	0.15	0	1	0.36
Eq_Planes_B	1=Yes; 0=No	53	0.02	0	1	0.14
Eq_Planes_C	1=Yes; 0=No	53	0.23	0	1	0.42
Eq_Planes_D	1=Yes; 0=No	53	0.04	0	1	0.19
Eq_Planes_E	1=Yes; 0=No	53	0.02	0	1	0.14
Eq_Planes_F	1=Yes; 0=No	53	0.04	0	1	0.19
Eq_PlanesPct	% used for sportfishing	19	57.89	0	100	50.73
Eq_ATV	Total Amount Spent on ATVs, and Snowmobiles	1542	0.16	0	150	4.45
Eq_ATV_A	1=Yes; 0=No	29	0.07	0	1	0.26
Eq_ATV_B	1=Yes; 0=No	29	0.03	0	1	0.19

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Variable	Label	N	Mean	Min	Max	StdDev
Eq_ATV_C	1=Yes; 0=No	29	0	0	0	0
Eq_ATV_D	1=Yes; 0=No	29	0	0	0	0
Eq_ATV_E	1=Yes; 0=No	29	0	0	0	0
Eq_ATV_F	1=Yes; 0=No	29	0	0	0	0
Eq_ATVPct	% used for sportfishing	2	0	0	0	0
Eq_Registration	Total Amount Spent on Boat/Camper Registration	1542	1.65	0	500	18.31
Eq_Registration_A	1=Yes; 0=No	51	0.10	0	1	0.30
Eq_Registration_B	1=Yes; 0=No	51	0.08	0	1	0.27
Eq_Registration_C	1=Yes; 0=No	51	0.24	0	1	0.43
Eq_Registration_D	1=Yes; 0=No	51	0.04	0	1	0.20
Eq_Registration_E	1=Yes; 0=No	51	0.02	0	1	0.14
Eq_Registration_F	1=Yes; 0=No	51	0	0	0	0
Eq_RegistrationPct	% used for sportfishing	19	64.74	0	100	46.71
Eq_Repair	Total Amount Spent on Vehicle Repair/Maintenance	1542	13.23	0	4,000	143.92
Eq_Repair_A	1=Yes; 0=No	83	0.22	0	1	0.41
Eq_Repair_B	1=Yes; 0=No	83	0.06	0	1	0.24
Eq_Repair_C	1=Yes; 0=No	83	0.29	0	1	0.46
Eq_Repair_D	1=Yes; 0=No	83	0.02	0	1	0.15
Eq_Repair_E	1=Yes; 0=No	83	0.04	0	1	0.19
Eq_Repair_F	1=Yes; 0=No	83	0.02	0	1	0.15
Eq_RepairPct	% used for sportfishing	36	57.50	0	100	45.19
Eq_Other	Total Amount Spent on Other, including non-fishing related purchases	1807	0.21	0	200	5.23
Eq_Other_A	1=Yes; 0=No	106	0.25	0	1	0.43
Eq_Other_B	1=Yes; 0=No	106	0.09	0	1	0.29
Eq_Other_C	1=Yes; 0=No	107	0.30	0	1	0.46
Eq_Other_D	1=Yes; 0=No	106	0.01	0	1	0.10
Eq_Other_E	1=Yes; 0=No	106	0.05	0	1	0.21
Eq_Other_F	1=Yes; 0=No	106	0.01	0	1	0.10
Eq_OtherPct	% used for sportfishing	69	35.35	0	100	43.39
Own	Amount Spent on Real Estate Owned/Shared for Fishing	1094	945.11	0	400,000	14,752.32
Own_A	Region A 1=Yes; 0=No	84	0.05	0	1	0.21
Own_B	Region B 1=Yes; 0=No	85	0.02	0	1	0.15
Own_C	Region C 1=Yes; 0=No	85	0.14	0	1	0.35
Own_D	Region D 1=Yes; 0=No	86	0.05	0	1	0.21
Own_E	Region E 1=Yes; 0=No	85	0.02	0	1	0.15
Own_F	Region F 1=Yes; 0=No	85	0.01	0	1	0.11
Lease	Amount Spent on Real Estate Leased/Rented for Fishing	1085	383.40	0	310,000	9,447.68
Lease_A	Region A 1=Yes; 0=No	122	0.14	0	1	0.35
Lease_B	Region B 1=Yes; 0=No	122	0.02	0	1	0.16
Lease_C	Region C 1=Yes; 0=No	122	0.32	0	1	0.47
Lease_D	Region D 1=Yes; 0=No	122	0.04	0	1	0.20
Lease_E	Region E 1=Yes; 0=No	122	0.01	0	1	0.09
Lease_F	Region F 1=Yes; 0=No	122	0	0	0	0
Maintain	Amount Spent on Repairs/Maintenance for Real Estate	1069	186.72	0	125,000	4,000.74
Maint_A	Region A 1=Yes; 0=No	83	0.06	0	1	0.24
Maint_B	Region B 1=Yes; 0=No	83	0	0	0	0
Maint_C	Region C 1=Yes; 0=No	83	0.13	0	1	0.34
Maint_D	Region D 1=Yes; 0=No	83	0.04	0	1	0.19
Maint_E	Region E 1=Yes; 0=No	83	0.01	0	1	0.11
Maint_F	Region F 1=Yes; 0=No	83	0	0	0	0
Cabin	Amount Spent on Construction of Buildings, Cabins, Etc...	1071	466.69	0	200,000	8,280.96
Cabin_A	Region A 1=Yes; 0=No	80	0.08	0	1	0.27
Cabin_B	Region B 1=Yes; 0=No	80	0	0	0	0
Cabin_C	Region C 1=Yes; 0=No	80	0.11	0	1	0.32

-continued-

NOTE: Summary statistics of raw survey data. The mean values reported here do not necessarily represent average spending by all Alaska anglers; the standard deviations do not apply to final spending estimates. This table includes raw survey data that underwent numerous transformations to produce the final study estimates.

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Variable	Label	N	Mean	Min	Max	StdDev
Cabin_D	Region D 1=Yes; 0=No	80	0.01	0	1	0.11
Cabin_E	Region E 1=Yes; 0=No	80	0.01	0	1	0.11
Cabin_F	Region F 1=Yes; 0=No	80	0	0	0	0
Sex	1=Male; 2=Female	1749	1.21	1	2	0.41
B_year	Year of Birth	1745	1,954	1,909	1,992	14.34
Educ	1=Did not Graduate H.S.; 2=H.S. Graduate or GED; 3=1-3 Years of College; 4=College Graduate; 5=Postgraduate, Masters, Ph.D	1745	3.51	1	5	1.12
HH_Income	1=Less Than 9,999; 2=10k-19,999; 3=20k-29,999; 4=30k-39,999; 5=40k-49,999; 6=50k-59,999; 7=60k-69,999; 8=70k-79,999; 9=80k-89,999; 10=90k-99,999; 11=100k-249,999; 12=250k or More	1660	8.84	1	12	2.79
Satis	1=Very Dissatisfied; 2=Generally Dissatisfied; 3=Neutral; 4=Generally Satisfied; 5=Very Satisfied	1774	4.23	1	5	1.12

NOTE: Summary statistics of raw survey data. The mean values reported here do not necessarily represent average spending by all Alaska anglers; the standard deviations do not apply to final spending estimates. This table includes raw survey data that underwent numerous transformations to produce the final study estimates.

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Variable	Label	N	Mean	Min	Max	StdDev
State	1=Very Dissatisfied, 2=Generally Dissatisfied, 3=Neutral, 4=Generally Satisfied, 5=Very Satisfied	1774	4.23	1	5	1.15
Htt Income	1<=250K or More	1680	8.84	1	12	2.78
Educ	1=Less Than 8.999, 2=10K-19.999, 3=20K-29.999, 4=30K-39.999, 5=40K-49.999, 6=50K-59.999, 7=60K-69.999, 8=70K-79.999, 9=80K-89.999, 10=90K-99.999, 11=100K-249.999					
	12=250K or More					
	1=Did not Graduate H.S., 2=H.S. Graduate or GED, 3=1-3 Years of College, 4=College Graduate, 5=Postgraduate, Master's Ph.D.	1748	3.61	1	6	1.12
	1=Male, 2=Female	1748	1.21	1	2	0.41
	1=Male, 2=Female	1748	1.21	1	2	0.41
Sex	1=Male, 2=Female	1748	1.21	1	2	0.41
Year of Birth		1748	1.98	1.98	1.98	14.34
Region	Region D=Yes, 0=No	80	0.01	0	1	0.11
Region E	Region E=Yes, 0=No	80	0.01	0	1	0.11
Region F	Region F=Yes, 0=No	80	0	0	0	0
Cabin D	Region D=Yes, 0=No	80	0.01	0	1	0.11
Cabin E	Region E=Yes, 0=No	80	0.01	0	1	0.11
Cabin F	Region F=Yes, 0=No	80	0	0	0	0

APPENDIX H: OUTLIER VALUES DELETED FROM THE ANALYSIS

Appendix H1.—Steps taken to identify and adjust outliers, ADF&G Economic Study, 2007.

Several steps were taken to identify and adjust outliers. The first was an ordering of all variables by value to identify extreme values. ADF&G, with Southwick Associates, conducted a joint examination of the extreme values to assess plausibility based on personal knowledge of fishing in Alaska and considering additional data provided by individual respondents. For example, a large expenditure for lodging by itself may appear as a potential outlier, but considered in concert with large values for length of trip and other trip spending such as groceries and meals, the large lodging value appears reasonable. Finally, each remaining potential outlier was tested to determine its effect on the mean value across all other responses within the same survey wave. If any single observation increased the statewide mean by 25 percent or more then it was deemed an outlier and replaced by a missing value.

The following observations were identified as outliers and the value set to missing. The removal of these outliers is reflected in the summary statistics presented in Appendix G.

Wave I Resident Survey:

- Question 17: \$4,000 for shellfish fishing equipment
- Question 17: \$17,000 for trailers, hitches and accessories
- Question 17: \$300,000 for boats, canoes, kayaks, etc.

Wave II Resident Survey:

- Question 13: \$3,000 for boat launch
- Question 23: \$3,000 for commercial transportation
- Question 24: \$15,000 for depth finders and electronics
- Question 24: \$200,000 for boats, canoes, kayaks, etc.
- Question 24: \$40,000 for boat motors
- Question 25: \$230,000 for real estate

Wave II Nonresident Survey:

- Question 24: \$4,000 for bait
- Question 25: \$100,000 for boats, canoes, kayaks, etc.
- Question 25: \$9,500 for electronics

Appendix H1—Steps taken to identify and adjust outliers. ADF&G Economic Study, 2007.

Several steps were taken to identify and adjust outliers. The first was an ordering of all variables by value to identify extreme values. ADF&G, with Southwick Associates, conducted a joint examination of the extreme values to assess plausibility based on personal knowledge of fishing in Alaska and considering additional data provided by individual respondents. For example, a large expenditure for lodging by itself may appear as a potential outlier, but considered in context with large values for length of trip and other trip spending such as groceries and meals, the large lodging value appears reasonable. Finally, each remaining potential outlier was tested to determine its effect on the mean value across all other responses within the same survey wave. If any single observation increased the statewide mean by 25 percent or more then it was deemed an outlier and replaced by a missing value.

The following observations were identified as outliers and the value set to missing. The removal of these outliers is reflected in the summary statistics presented in Appendix G.

APPENDIX I: ESTIMATED DAYS OF SPORTFISHING EFFORT AND ASSOCIATED STANDARD DEVIATIONS, 2007

- Question 17: \$17,000 for trailers, hitchhikes and accessories
- Question 17: \$300,000 for boats, canoes, kayaks, etc.

Wave II Resident Survey:

- Question 13: \$3,000 for boat launch
- Question 23: \$3,000 for commercial transportation
- Question 24: \$15,000 for depth finders and electronics
- Question 24: \$200,000 for boats, canoes, kayaks, etc.
- Question 24: \$40,000 for boat motors
- Question 25: \$230,000 for real estate

Wave II Nonresident Survey:

- Question 24: \$4,000 for bait
- Question 25: \$100,000 for boats, canoes, kayaks, etc.
- Question 25: \$9,500 for electronics

Appendix II.-Estimation procedures for standard errors, guided/non-guided angler days fished.

ADF&G, Division of Sport Fish (DSF) generates estimates and standard errors annually for guided/non-guided estimates of anglers days fished at the survey area/resident type/water type level by apportioning the ratios of guided/non-guided estimates from the supplemental Statewide Harvest Survey (SWHS) into estimates from the combined supplemental and standard SWHS survey. DSF uses these guided/non-guided estimates as the starting point for nearly all guided/non-guided data requests.

The DSF standard approach would have worked for the final set of days fished aggregations for this economic study, however, the Southwick Associates project team had already summed the detailed point estimates of days fished provided by DSF September 10, 2008 up to the new aggregations. Considering that guided/non-guided proportions change with each level of aggregation and that the original point estimates needed to be matched in the bootstrap process, the bootstrap approach needed to be changed to reflect the original aggregations.

The final 2007 SAS program for providing bootstrapped estimates of days fished was titled `Bootstrap_DF_condensed.sas`. The guided/non-guided point estimates for days fished were calculated at the original, detailed levels, and bootstrapped at that level, using 1,000 iterations. Standard errors were calculated by applying summary statistics to the bootstrap data set at the region/resident type and water type level, the state/water type/resident type level, and Cook Inlet at the resident type and water type level.

This detailed approach rather than the DSF standard method of estimating guided/non-guided standard errors and point estimates will need to be employed if the study is repeated in order to maintain historic continuity with the results contained in this report.

Appendix I2.-Estimated standard errors for anglers' days fished in 2007 by residency, water type, and guided/unguided fishing within regions, ADFG Statewide Harvest Survey.

Table Legend

Non	=	Nonresident
Res	=	Resident
F	=	Freshwater
S	=	Saltwater
Tot	=	Total
Est	=	Estimated total days fished (2007 SWHS)
Mean	=	Bootstrap mean of total days fished
%Bias	=	% difference in Total and bootstrap mean
STD	=	Standard Error of estimated total days fished from bootstrap mean
LCL	=	Lower 95% confidence level
UCL	=	Upper 95% confidence level
OUT	=	output bin: equal to "1" if bootstrap mean outside 95% confidence interval

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Table I2.-Estimated standard errors for anglers' days fished in 2007 by residency, water type, and guided/unguided fishing within regions, ADFG Statewide Harvest Survey., Appendix I2.-Page 2 of 5

region	RESTYPE	WATERTYP	type	DF estimates		
				guided	private	total
Southeast	NON	F	0 EST	17,853	47,830	65,683
Southeast	NON	F	1 MEAN	17,887	47,566	65,453
Southeast	NON	F	2 %BIAS	0	1	0
Southeast	NON	F	3 STD	1,956	2,941	3,282
Southeast	NON	F	4 LCL	14,309	41,942	59,136
Southeast	NON	F	5 UCL	21,971	53,487	72,059
Southeast	NON	F	6 OUT			
Southeast	NON	S	0 EST	147,333	108,133	255,466
Southeast	NON	S	1 MEAN	147,337	108,044	255,381
Southeast	NON	S	2 %BIAS	0	0	0
Southeast	NON	S	3 STD	4,710	5,044	5,976
Southeast	NON	S	4 LCL	138,229	98,332	244,312
Southeast	NON	S	5 UCL	156,633	118,018	267,464
Southeast	NON	S	6 OUT			
Southeast	NON	Tot	0 EST	165,186	155,963	321,149
Southeast	NON	Tot	1 MEAN	165,224	155,610	320,834
Southeast	NON	Tot	2 %BIAS	0	0	0
Southeast	NON	Tot	3 STD	5,175	5,808	6,964
Southeast	NON	Tot	4 LCL	155,357	144,257	306,808
Southeast	NON	Tot	5 UCL	175,702	166,445	334,418
Southeast	NON	Tot	6 OUT			
Southeast	RES	F	0 EST	2,303	36,948	39,251
Southeast	RES	F	1 MEAN	2,058	36,860	39,184
Southeast	RES	F	2 %BIAS	11	0	0
Southeast	RES	F	3 STD	1,004	4,071	4,062
Southeast	RES	F	4 LCL	334	29,432	31,805
Southeast	RES	F	5 UCL	4,269	45,174	47,414
Southeast	RES	F	6 OUT			
Southeast	RES	S	0 EST	14,857	165,033	179,890
Southeast	RES	S	1 MEAN	14,777	165,905	180,683
Southeast	RES	S	2 %BIAS	1	-1	0
Southeast	RES	S	3 STD	3,208	9,548	9,751
Southeast	RES	S	4 LCL	8,795	148,110	162,621
Southeast	RES	S	5 UCL	21,357	184,613	199,443
Southeast	RES	S	6 OUT			
Southeast	RES	Tot	0 EST	17,159	201,982	219,141
Southeast	RES	Tot	1 MEAN	16,835	202,765	219,866
Southeast	RES	Tot	2 %BIAS	2	0	0
Southeast	RES	Tot	3 STD	3,386	10,510	10,733
Southeast	RES	Tot	4 LCL	10,683	183,644	199,929
Southeast	RES	Tot	5 UCL	23,817	223,215	241,656
Southeast	RES	Tot	6 OUT			
Southcentral	NON	F	0 EST	158,300	330,008	488,308
Southcentral	NON	F	1 MEAN	157,980	329,670	487,690
Southcentral	NON	F	2 %BIAS	0	0	0
Southcentral	NON	F	3 STD	7,616	13,050	15,793
Southcentral	NON	F	4 LCL	143,732	305,715	456,588
Southcentral	NON	F	5 UCL	173,761	356,078	520,064
Southcentral	NON	F	6 OUT			
Southcentral	NON	S	0 EST	127,592	95,403	222,995
Southcentral	NON	S	1 MEAN	127,716	95,185	222,909
Southcentral	NON	S	2 %BIAS	0	0	0

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region	RESTYPE	WATERTYP	type	DF estimates		
				guided	private	total
Southcentral	NON	S	3 STD	4,272	4,673	5,159
Southcentral	NON	S	4 LCL	119,518	86,420	212,900
Southcentral	NON	S	5 UCL	136,058	104,785	233,004
Southcentral	NON	S	6 OUT			
Southcentral	NON	Tot	0 EST	285,892	425,411	711,303
Southcentral	NON	Tot	1 MEAN	285,696	424,855	710,599
Southcentral	NON	Tot	2 %BIAS	0	0	0
Southcentral	NON	Tot	3 STD	8,507	13,846	16,416
Southcentral	NON	Tot	4 LCL	269,030	399,565	679,128
Southcentral	NON	Tot	5 UCL	302,963	451,967	744,502
Southcentral	NON	Tot	6 OUT			
Southcentral	RES	F	0 EST	46,661	648,398	695,059
Southcentral	RES	F	1 MEAN	46,259	648,549	695,152
Southcentral	RES	F	2 %BIAS	1	0	0
Southcentral	RES	F	3 STD	4,081	16,385	16,676
Southcentral	RES	F	4 LCL	38,591	615,939	661,620
Southcentral	RES	F	5 UCL	54,894	681,327	726,703
Southcentral	RES	F	6 OUT			
Southcentral	RES	S	0 EST	56,715	336,206	392,990
Southcentral	RES	S	1 MEAN	56,891	335,729	392,884
Southcentral	RES	S	2 %BIAS	0	0	0
Southcentral	RES	S	3 STD	3,574	12,288	12,608
Southcentral	RES	S	4 LCL	50,368	312,451	368,811
Southcentral	RES	S	5 UCL	64,692	360,260	417,469
Southcentral	RES	S	6 OUT			
Southcentral	RES	Tot	0 EST	103,376	984,604	1,088,049
Southcentral	RES	Tot	1 MEAN	103,150	984,278	1,088,035
Southcentral	RES	Tot	2 %BIAS	0	0	0
Southcentral	RES	Tot	3 STD	5,446	19,524	19,685
Southcentral	RES	Tot	4 LCL	93,039	946,148	1,048,586
Southcentral	RES	Tot	5 UCL	114,597	1,021,380	1,125,893
Southcentral	RES	Tot	6 OUT			
Interior	NON	F	0 EST	13,183	35,144	48,422
Interior	NON	F	1 MEAN	13,340	34,983	48,418
Interior	NON	F	2 %BIAS	-1	0	0
Interior	NON	F	3 STD	1,779	3,526	3,585
Interior	NON	F	4 LCL	10,113	28,754	41,865
Interior	NON	F	5 UCL	16,942	42,483	55,638
Interior	NON	F	6 OUT			
Interior	NON	S	0 EST	114	0	114
Interior	NON	S	1 MEAN	88	0	114
Interior	NON	S	2 %BIAS	23	0	0
Interior	NON	S	3 STD	86	0	70
Interior	NON	S	4 LCL	0	0	0
Interior	NON	S	5 UCL	274	0	277
Interior	NON	S	6 OUT			
Interior	NON	Tot	0 EST	13,297	35,144	48,536
Interior	NON	Tot	1 MEAN	13,429	34,983	48,532
Interior	NON	Tot	2 %BIAS	-1	0	0
Interior	NON	Tot	3 STD	1,778	3,526	3,580
Interior	NON	Tot	4 LCL	10,191	28,754	41,961
Interior	NON	Tot	5 UCL	17,034	42,483	55,687
Interior	NON	Tot	6 OUT			
Interior	RES	F	0 EST	7,479	147,342	154,821
Interior	RES	F	1 MEAN	7,498	147,059	154,879
Interior	RES	F	2 %BIAS	0	0	0
Interior	RES	F	3 STD	2,200	7,942	7,923

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region	RESTYPE	WATERTYP	type	DF estimates		
				guided	private	total
Interior	RES	F	4 LCL	3,745	132,137	140,110
Interior	RES	F	5 UCL	12,294	163,233	171,665
Interior	RES	F	6 OUT			
Interior	RES	S	0 EST	0	33	675
Interior	RES	S	1 MEAN	0	34	675
Interior	RES	S	2 %BIAS	0	-3	0
Interior	RES	S	3 STD	0	34	267
Interior	RES	S	4 LCL	0	0	245
Interior	RES	S	5 UCL	0	102	1,263
Interior	RES	S	6 OUT			
Interior	RES	Tot	0 EST	7,479	147,375	155,496
Interior	RES	Tot	1 MEAN	7,498	147,094	155,553
Interior	RES	Tot	2 %BIAS	0	0	0
Interior	RES	Tot	3 STD	2,200	7,943	7,953
Interior	RES	Tot	4 LCL	3,745	132,171	140,790
Interior	RES	Tot	5 UCL	12,294	163,267	172,185
Interior	RES	Tot	6 OUT			
Cook Inlet	NON	F	0 EST	98,859	274,835	373,694
Cook Inlet	NON	F	1 MEAN	98,780	274,475	373,256
Cook Inlet	NON	F	2 %BIAS	0.08	0.13	0.12
Cook Inlet	NON	F	3 STD	5,825	12,407	14,378
Cook Inlet	NON	F	4 LCL	87,850	251,260	345,795
Cook Inlet	NON	F	5 UCL	110,628	299,934	402,946
Cook Inlet	NON	F	6 OUT			
Cook Inlet	NON	S	0 EST	69,694	38,488	108,182
Cook Inlet	NON	S	1 MEAN	69,762	38,417	108,179
Cook Inlet	NON	S	2 %BIAS	-0.10	0.18	0.00
Cook Inlet	NON	S	3 STD	2,913	2,699	3,338
Cook Inlet	NON	S	4 LCL	63,992	33,335	101,224
Cook Inlet	NON	S	5 UCL	75,364	43,649	114,813
Cook Inlet	NON	S	6 OUT			
Cook Inlet	RES	F	0 EST	40,706	580,628	621,334
Cook Inlet	RES	F	1 MEAN	40,677	580,309	620,986
Cook Inlet	RES	F	2 %BIAS	0.07	0.05	0.06
Cook Inlet	RES	F	3 STD	3,739	15,862	16,123
Cook Inlet	RES	F	4 LCL	33,446	549,734	589,571
Cook Inlet	RES	F	5 UCL	48,070	612,355	651,933
Cook Inlet	RES	F	6 OUT			
Cook Inlet	RES	S	0 EST	23,452	117,414	140,918
Cook Inlet	RES	S	1 MEAN	23,474	117,499	141,145
Cook Inlet	RES	S	2 %BIAS	-0.09	-0.07	-0.16
Cook Inlet	RES	S	3 STD	1,988	6,112	6,089
Cook Inlet	RES	S	4 LCL	19,703	105,827	129,441
Cook Inlet	RES	S	5 UCL	27,591	129,681	152,683
Cook Inlet	RES	S	6 OUT			
State	NON	F	0 EST	189,336	412,982	602,413
State	NON	F	1 MEAN	189,207	412,219	601,561
State	NON	F	2 %BIAS	0	0	0
State	NON	F	3 STD	7,995	13,418	16,033
State	NON	F	4 LCL	173,413	387,796	571,064
State	NON	F	5 UCL	204,908	439,652	632,495
State	NON	F	6 OUT			
State	NON	S	0 EST	275,038	203,537	478,575
State	NON	S	1 MEAN	275,141	203,229	478,403
State	NON	S	2 %BIAS	0	0	0
State	NON	S	3 STD	6,106	6,704	7,043
State	NON	S	4 LCL	263,244	190,922	464,666

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region	RESTYPE	WATERTYP	type	DF estimates		
				guided	private	total
State	NON	S	5 UCL	287,676	216,320	492,033
State	NON	S	6 OUT			
State	NON	Tot	0 EST	464,375	616,518	1,080,988
State	NON	Tot	1 MEAN	164,348	615,448	1,079,964
State	NON	Tot	2 %BIAS	0	0	0
State	NON	Tot	3 STD	9,519	14,508	16,321
State	NON	Tot	4 LCL	44,123	585,874	1,048,914
State	NON	Tot	5 UCL	48,082	644,151	1,111,739
State	NON	Tot	6 OUT			
State	RES	F	0 EST	56,443	832,688	889,131
State	RES	F	1 MEAN	55,815	832,469	889,214
State	RES	F	2 %BIAS	1	0	0
State	RES	F	3 STD	4,685	18,082	18,152
State	RES	F	4 LCL	46,709	798,501	854,634
State	RES	F	5 UCL	65,572	867,952	924,425
State	RES	F	6 OUT			
State	RES	S	0 EST	71,572	501,272	573,555
State	RES	S	1 MEAN	71,668	501,668	574,241
State	RES	S	2 %BIAS	0	0	0
State	RES	S	3 STD	4,889	14,854	15,046
State	RES	S	4 LCL	63,136	474,096	546,086
State	RES	S	5 UCL	81,383	530,146	603,300
State	RES	S	6 OUT			
State	RES	Tot	0 EST	128,015	1,333,960	1,462,686
State	RES	Tot	1 MEAN	127,484	1,334,137	1,463,455
State	RES	Tot	2 %BIAS	0	0	0
State	RES	Tot	3 STD	6,780	21,733	21,452
State	RES	Tot	4 LCL	114,639	1,294,044	1,421,760
State	RES	Tot	5 UCL	141,432	1,375,794	1,504,416
State	RES	Tot	6 OUT			

Table J1 presents the number of survey respondents who reported fishing activity by analysis strata, including region of residence, type of water fished, and whether or not the reported fishing trip was guided. Cells highlighted in red indicate those analysis strata for which estimates are not reported due to small sample size.

Appendix J1 - Number of survey respondents reporting fishing activity by analysis strata

Analysis region		Survey Respondents' Region of Residence				
		Map area	Southwest	Southcentral	Interior	
Resident - guided						
FRESHWATER						
SALTWATER						
Resident - unguided						
FRESHWATER						
Nonresident - unguided						
FRESHWATER						
SALTWATER						
Nonresident - guided						
FRESHWATER						
SALTWATER						
Resident guided and unguided						
FRESHWATER						
SALTWATER						
Nonresident guided and unguided						
FRESHWATER						
SALTWATER						

less than 50 respondents

less than 10

Estimates not available

Table J1 presents the number of survey respondents who reported fishing activity, by analysis strata, including region of residence, type of water fished, and whether or not the reported fishing trip was guided. Cells highlighted in red indicate those analysis strata for which estimates are not reported due to small sample size.

Appendix J1.—Number of survey respondents reporting fishing activity by analysis strata.

Analysis region Map area	Survey Respondents' Region of Residency					
	Southeast	Southcentral			Interior	
	a	b	c	d	e	f
Resident - guided						
FRESHWATER	2	14	34	4	4	0
SALTWATER	4	43	50	2	1	0
Resident - unguided						
FRESHWATER	37	56	438	31	146	19
SALTWATER	186	157	171	31	5	0
Nonresident - unguided						
FRESHWATER	36	51	205	36	42	26
SALTWATER	160	63	87	6	5	1
Nonresident - guided						
FRESHWATER	66	122	378	73	40	20
SALTWATER	413	185	316	24	22	1
Resident guided and unguided						
FRESHWATER	39	70	472	35	150	19
SALTWATER	190	200	221	33	6	0
Nonresident guided and unguided						
FRESHWATER	102	173	583	109	82	46
SALTWATER	573	248	403	30	27	2

less than 50 respondents

less than 70

Estimates not reportable

The following tables present five separate spreadsheets (SAMPLING STRATEGY, RESERVES SPLIT, EARLY/LATE RESPONSES, and FISHALL). We provide two versions of each spreadsheet: one provides the numerical results (denoted as the results version) while the other presents the formula and links used (denoted as the formula version). The SAMPLING STRATEGY spreadsheet contains all of the calculations, and the links to the other four spreadsheets, used to allocate the draw of 1,500 to individual strata. The RESERVES SPLIT spreadsheet contains the data and calculations to derive a five-year average of the proportion of anglers that are Alaska residents and those that are nonresidents. The EARLY/LATE spreadsheet contains the data and calculations to derive a six-year average of the proportion of fishing licenses that were issued early (before May 1st) or late (after May 1st). The RESPONSES spreadsheet contains the data and calculations used to estimate the likely response rate for each of the three survey mailings (across residency and time of license sale); these mailing-specific response rate calculations are based upon actual mailing-specific response rates to a similar length fishing survey administered by ADFG during 2004. The FISHALL spreadsheet provides the calculations used to determine the percent distribution of angler effort across the various fishing regions and by type of water fished (freshwater).

ALLOCATION OF RESIDENT AND NON-RESIDENT FISHING TO REGION FOR SAMPLING STRATEGY

APPENDIX K: ALLOCATION PROCEDURES FOR GENERATION OF THE ANGLER SURVEY SAMPLE

The table's purpose is to allocate the 2003 angler expenditure survey by residency and season of year to provide representative survey results for sportfishing expenditures by licensed anglers in Alaska. The sampling strategy developed was based on a number of ADFG Division of Sport Fish data sources which are described below.

ADFG Data Sources for Sampling Strategy.xls

Angler Data_Split_06.xls - A Division of Sport Fish spreadsheet file containing historical angling statistics by year and month (e.g., license sales, number of licenses, angler counts, estimated number of anglers, etc.) from a variety of ADFG research projects and databases which is updated annually.

(a) **BIDS spreadsheet** contains number of Alaska Permanent Identification cards (PIIDs) issued in a given year.

(b) **Licensed Anglers (Lic File)** spreadsheet contains a summary of unique individuals who purchased an Alaska sportfishing in a given year by residency. Data source: ADFG Historical License Database.

SalesByMonthAndRes_KeonStudy2007_5yr average.xls - A Division of Sport Fish spreadsheet file containing results of an ad hoc analysis conducted to show the distribution of Alaska sport fishing license sales by month within residency groups for the years 1990-2006, and the distribution of license sales by month for the 5-year average from 2003-2008.

2006-2010 Sample Size Allocation.xls - A Division of Sport Fish spreadsheet file that contains the detailed sample allocation strategy and mailing dates for the 2006 DSE Statewide Harvest Survey. The split between ASSETS (Other) spreadsheet contains the relative size of the nonresident angler strata in Alaska based on recent three-year average (2003-2005).

NT DE 2005 subregion strata comp regression.xls - A Division of Sport Fish spreadsheet file that contains a summary of the estimated total number of trips and total number of angler days fished in Alaska within each of the primary economic study regions by residency, water type (freshwater/saltwater) fished, and whether guided or unguided, based upon the 2003 DSE Statewide Harvest Survey.

The following tables present five separate spreadsheets (SAMPLING STRATEGY, RESNRES SPLIT, EARLYLATE, RESPONSERATES, and FISHALL). We provide two versions of each spreadsheet; one provides the numerical results (denoted as the results version) while the other presents the formula and links used (denoted as the formula version). The SAMPLING STRATEGY spreadsheet contains all of the calculations, and the links to the other four spreadsheets, used to allocate the draw of 7,500 to individual strata. The RESNRES SPLIT spreadsheet contains the data and calculations to derive a five-year average of the proportion of anglers that are Alaska residents and those that are nonresidents. The EARLYLATE spreadsheet contains the data and calculations to derive a six-year average of the proportion of fishing licenses that were issued early (before May 1st) or late (after May 1st). The RESPONSERATES spreadsheet contains the data and calculations used to estimate the likely response rate for each of the three survey mailings (across residency and time of license sale); these mailing-specific response rate calculations are based upon actual mailing-specific response rates to a similar length fishing survey administered by ADF&G during 2004. The FISHALL spreadsheet provides the calculations used to determine the percent distribution of angler effort across the various fishing regions and by type of water fished (fresh/salt).

ALLOCATION OF RESIDENT AND NON-RESIDENT FISHING TO REGION FOR SAMPLING STRATEGY

Filename: Sampling Strategy.xls

The tables included in this Appendix provided detailed information on how the survey sample for the 2007 angler expenditure survey was allocated by residency and season of year to provide generalizable survey results for sportfishing expenditures by licensed anglers in Alaska. The sampling strategy developed was based on a number of ADF&G, Division of Sport Fish data sources which are described below.

ADF&G Data Sources for Sampling Strategy.xls

Angler Data_SF11_06.xls: A Division of Sport Fish spreadsheet file containing historical angling statistics by year and strata (e.g., licenses sales, unique licensed angler counts, estimated number of anglers, etc.) from a variety of ADF&G research projects and databases which is updated annually.

- a) PIDs spreadsheet contains number of Alaska Permanent Identification cards (PIDs) issued in a given year
- b) Licensed Anglers (Lic File) spreadsheet contains a summary of unique individuals who purchased an Alaska sportfishing in a given year by residency. Data source: ADF&G Historical License Database

SalesByMonthAndRes_EconStudy2007_5yr_average.xls: A Division of Sport Fish spreadsheet file containing results of an ad hoc analysis conducted to show the distribution of Alaska sport fishing license sales by month within residency groups for the years 1996-2006, and the distribution of license sales by month for the 5-year average from 2002-2006.

2006SWHS-SampleSizeANDCalendar.xls: A Division of Sport Fish spreadsheet file that contains the detailed sample allocation strategy and mailing dates for the 2006 DSF Statewide Harvest Survey. The 'split between ASSETS-Other' spreadsheet contains the relative size of the nonresident angler strata in Alaska based on recent three-year average (2002-2004).

NT_DF_2005_subregion_strata_comg_resregion_ed.xls: A Division of Sport Fish spreadsheet file that contains a summary of the estimated total number of trips and total number of angler days fished in Alaska within each of the primary economic study regions by residency, water type (freshwater, saltwater) fished, and whether guided or unguided based upon the 2005 DSF Statewide Harvest Survey.

Appendix K1.—Sampling Strategy, results version.

RESULTS VERSION

D	E	F	G	H	I	J	L
12	INITIAL DRAW OF 7500						ESTIMATED NUMBER OF OBSERVATIONS BY RESIDENCY, FISHING LOCATION AND EARLY-LATE SPLITS
13							
14					RESIDENCY	REGION AND WATER TYPE OF FISHING	
15	RESIDENT & PIDS ^A		EARLY ^B	ESTIMATED RESPONSE RATE ^C	SOUTHEAST ^D	SE-FRESH ^E	
16	0.43		0.21	0.45	0.13	0.23	9
17						SE-SALT	
18						0.74	29
19						SC-1	
20						0.01	0
21						SC-COOK	
22						0.01	0
23						INTER	
24						0.01	0
25			LATE			SE-FRESH	
26			0.79	0.36		0.23	27
27						SE-SALT	
28						0.74	85
29						SC-1	
30						0.01	1
31						SC-COOK	
32						0.01	1
33						INTER	
34						0.01	1
35					SOUTH CENTRAL		
36			EARLY		0.70	SE-FRESH	
37						0.00	1
38						SE-SALT	
39						0.01	2
40						SC-1	

-continued-

D	E	F	G	H	I	J	K
41						0.43	93
42						SC-COOK	
43						0.53	113
44						INTER	
45						0.03	7
46			LATE			SE-FRESH	
47						0.00	3
48						SE-SALT	
49						0.01	6
50						SC-1	
51						0.43	277
52						SC-COOK	
53						0.53	338
54						INTER	
55						0.03	20
56					INTERIOR		
57			EARLY		0.17	SE-FRESH	
58						0.00	0
59						SE-SALT	
60						0.01	1
61						SC-1	
62						0.37	19
63						SC-COOK	
64						0.13	7
65						INTER	
66						0.49	25
67			LATE			SE-FRESH	
68						0.00	0
69						SE-SALT	
70						0.01	2
71						SC-1	
72						0.37	57
73						SC-COOK	
74						0.13	21
75						INTER	

Appendix K1.-Page 3 of 4.

D	E	F	G	H	I	J	L
76						0.49	76
77	NONRESIDENTS	OTHER US RESIDENTS ^F	LATE			SE-FRESH	
78	0.57	0.94	1.00	0.47		0.04	84
79						SE-SALT	
80						0.25	476
81						SC-1	
82						0.33	629
83						SC-COOK	
84						0.33	630
85						INTER	
86						0.04	74
87		CANADIAN	LATE			SE-FRESH	
88		0.03	1.00	0.50		0.13	8
89						SE-SALT	
90						0.20	12
91						SC-1	
92						0.25	15
93						SC-COOK	
94						0.37	22
95						INTER	
96						0.06	3
97		OTHER FOREIGN	LATE			SE-FRESH	
98		0.04	1.00	0.29		0.13	6
99						SE-SALT	
100						0.20	9
101						SC-1	
102						0.25	11
103						SC-COOK	
104						0.37	16
105						INTER	
106						0.06	2

-continued-

N	O	P	Q
10	SUMMARY		
11			
12			
13	ESTIMATED TOTAL OBSERVATIONS BY RESIDENCY AND LOCATION OF FISHING		
14		RES	NRES
15	SE-FRESH	40	98
16	SE-SALT	124	497
17			
18	SC-1	448	655
19	SC-COOK	480	669
20			
21	INTERIOR	129	80
22			
23	TOTAL, by residency	1221	1998
24	GROSS:	3219	

- A Resident and non-resident split based upon a five-year average (2001-05) split between resident licensed anglers plus PIDS issued and non-resident licensed anglers. These data are from the 'PIDS' spreadsheet and the 'Licensed Anglers (Lic File)' spreadsheet located in the "Angler Data_SF11_06" excel file. Data used for the calculation recreated in the RESNRES SPLIT spreadsheet in Sampling Strategy.xls.
- B Early late splits for residents based upon those presented in the 'salesbymonth table' spreadsheet located in the "SalesByMonthAndRes_EconStudy2007_5yr_average.xls" file. Calculated split is based on a five-year average (2002-06). November & December sales allocated to Early. Weight for non-residents is equal to one since we only survey them in the late season. Data used for the calculation recreated in the EARLYLATE spreadsheet in Sampling Strategy.xls.
- C Response rate estimates are calculated based upon data presented in the "2006SWHS-SampleSizeANDCalendar.xls" file. Calculations are shown in the RESPONSERATES spreadsheet in Sampling Strategy.xls.
- D Resident split by region based upon a five-year average (2001-05). These data are from the 'Licensed Anglers (Lic File)' spreadsheet located in the "Angler Data_SF11_06.xls" file.
- E Allocation of resident and non-resident fishing to region based on the "NT_DF_2005_subregion_strata_comb_resregion_ed.xls" spreadsheet. Calculations shown in FISHALL spreadsheet in Sampling Strategy.xls. Note: unknown residency is not allocated to any group.
- F Calculations to split non-resident by type based upon two data series: 1) 'Split between ASSETS-OTHER' spreadsheet in the "2006SWHS-SampleSizeANDCalendar.xls" file and 2) 'Total Anglers(SWHS)' spreadsheet in the "Angler Data_SF11_06.xls" file. In the first, a three-year average (2002-04) split is provided between all three non-resident angler types. In the second, a five-year average (2001-05) split between other US and Foreign (it is assumed that Foreign here includes both Canadian and Foreign anglers). The numbers here use the second data series to calculate the split between the 'other US non-residents' and the 'Canadian/Foreign combined non-residents'. The first data series is used to split the 'Canadian/Foreign combined non-residents' into its individual components

Appendix K2.-Sampling Strategy, formula version.

FORMULA VERSION.

D	E	F	G	H	I	J	L
12	INITIAL DRAW OF 7500						
13							
14						REGION AND WATER TYPE OF FISHING	ESTIMATED NUMBER OF OBSERVATIONS BY RESIDENCY, FISHING LOCATION AND EARLY- LATE SPLITS
15	RESIDENT & PIDS ^A		EARLY	ESTIMATED RESPONSE RATE ^C	SOUTHEAST ^D	SE-FRESH ^E	
16	=resnres split!I8		=earlylate!G10	=responserates! E15	0.13	=fishall!J33	=E\$12*E\$16*G\$16*H\$16*I\$1 6*J16
17	=ROUND(\$E\$12*E16,0)		=ROUND(E\$17*G16,0)			SE-SALT	
18						=fishall!K33	=E\$12*E\$16*G\$16*H\$16*I\$1 6*J18
19						SC-1	
20						=fishall!L33	=E\$12*E\$16*G\$16*H\$16*I\$1 6*J20
21						SC-COOK	
22						=fishall!M33	=E\$12*E\$16*G\$16*H\$16*I\$1 6*J22
23						INTERIOR	
24						=fishall!N33	=E\$12*E\$16*G\$16*H\$16*I\$1 6*J24
25			LATE			SE-FRESH	
26			=earlylate!H10	=responserates! 15		=J16	=E\$12*E\$16*G\$26*H\$26*I\$1 6*J26
27			=ROUND(E\$17*G26,0)			SE-SALT	
28						=J18	=E\$12*E\$16*G\$26*H\$26*I\$1 6*J28
29						SC-1	
30						=J20	=E\$12*E\$16*G\$26*H\$26*I\$1 6*J30
31						SC-COOK	
32						=J22	=E\$12*E\$16*G\$26*H\$26*I\$1 6*J32
33						INTER	

-continued-

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D	E	F	G	H	I	J	L
34						=J24	=E\$12*E\$16*G\$26*H\$26*I\$16*J34
35					SC RES		
36			EARLY		0.70	SE-FRESH	
37						=fishall!J42	=E\$12*E\$16*G\$16*H\$16*I\$36*J37
38						SE-SALT	
39						=fishall!K42	=E\$12*E\$16*G\$16*H\$16*I\$36*J39
40						SC-1	
41						=fishall!L42	=E\$12*E\$16*G\$16*H\$16*I\$36*J41
42						SC-COOK	
43						=fishall!M42	=E\$12*E\$16*G\$16*H\$16*I\$36*J43
44						INTERIOR	
45						=fishall!N42	=E\$12*E\$16*G\$16*H\$16*I\$36*J45
46			LATE			SE-FRESH	
47						=J37	=E\$12*E\$16*G\$26*H\$26*I\$36*J47
48						SE-SALT	
49						=J39	=E\$12*E\$16*G\$26*H\$26*I\$36*J49
50						SC-1	
51						=J41	=E\$12*E\$16*G\$26*H\$26*I\$36*J51
52						SC-COOK	
53						=J43	=E\$12*E\$16*G\$26*H\$26*I\$36*J53
54						INTER	
55						=J45	=E\$12*E\$16*G\$26*H\$26*I\$36*J55
56					INTERIOR		
57			EARLY		0.17	SE-FRESH	
58						=fishall!J51	=E\$12*E\$16*G\$16*H\$16*I\$55*J58
59						SE-SALT	

-continued-

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D	E	F	G	H	I	J	L
60						=fishall!K51	=E\$12*E\$16*G\$16*H\$16*I\$5 7*J60
61						SC-1	
62						=fishall!L51	=E\$12*E\$16*G\$16*H\$16*I\$5 7*J62
63						SC-COOK	
64						=fishall!M51	=E\$12*E\$16*G\$16*H\$16*I\$5 7*J64
65						INTER	
66						=fishall!N51	=E\$12*E\$16*G\$16*H\$16*I\$5 7*J66
67			LATE			SE-FRESH	
68						=J58	=E\$12*E\$16*G\$26*H\$26*I\$5 7*J68
69						SE-SALT	
70						=J60	=E\$12*E\$16*G\$26*H\$26*I\$5 7*J70
71						SC-1	
72						=J62	=E\$12*E\$16*G\$26*H\$26*I\$5 7*J72
73						SC-COOK	
74						=J64	=E\$12*E\$16*G\$26*H\$26*I\$5 7*J74
75						INTER	
76						=J66	=E\$12*E\$16*G\$26*H\$26*I\$5 7*J76
77	NONRESIDENTS	OTHER US	LATE			SE-FRESH	
78	=resnres split!J8	0.94	1	=responserates! Q15		=fishall!J22	=E\$12*E\$78*F\$78*G\$78*H\$7 8*J78
79	=ROUND(\$E\$12*E78,0)		=ROUND(E\$79*F78,0)			SE-SALT	
80						=fishall!K22	=E\$12*E\$78*F\$78*G\$78*H\$7 8*J80
81						SC-1	
82						=fishall!L22	=E\$12*E\$78*F\$78*G\$78*H\$7 8*J82
83						SC-COOK	
84						=fishall!M22	=E\$12*E\$78*F\$78*G\$78*H\$7 8*J84
85						INTER	

-continued-

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D	E	F	G	H	I	J	K	L
86						=fishall!N22		=E\$12*E\$78*F\$78*G\$78*H\$78*J86
87		CANADIAN	LATE			SE-FRESH		
88		0.03	1	=responserates! 41		=fishall!J11		=E\$12*E\$78*F\$88*G\$88*H\$88*J88
89			=ROUND(E\$79*F88,0)			SE-SALT		
90						=fishall!K11		=E\$12*E\$78*F\$88*G\$88*H\$88*J90
91						SC-1		
92						=fishall!L11		=E\$12*E\$78*F\$88*G\$88*H\$88*J92
93						SC-COOK		
94						=fishall!M11		=E\$12*E\$78*F\$88*G\$88*H\$88*J94
95						INTER		
96						=fishall!N11		=E\$12*E\$78*F\$88*G\$88*H\$88*J96
97		OTHER FOREIGN	LATE			SE-FRESH		
98		0.04	1	=responserates! Q41		=J88		=E\$12*E\$78*F\$98*G\$98*H\$98*J98
99			=ROUND(E\$79*F98,0)			SE-SALT		
100						=J90		=E\$12*E\$78*F\$98*G\$98*H\$98*J90
101						SC-1		
102						=J92		=E\$12*E\$78*F\$98*G\$98*H\$98*J92
103						SC-COOK		
104						=J94		=E\$12*E\$78*F\$98*G\$98*H\$98*J94
105						INTER		
106						=J96		=E\$12*E\$78*F\$98*G\$98*H\$98*J96

Appendix K2.-Page 5 of 5.

N	O	Q
10	SUMMARY	
11	ESTIMATED TOTAL OBSERVATIONS BY RESIDENCY AND LOCATION OF FISHING	
12		
13		
14		RES NRES
15	SE-FRESH	=L16+L26+L37+L47+L58+L68 =L78+L88+L98
16	SE-SALT	=L18+L28+L39+L49+L60+L70 =L80+L90+L100
17		
18	SC-1	=L20+L30+L41+L51+L62+L72 =L82+L92+L102
19	SC-COOK	=L22+L32+L43+L53+L64+L74 =L84+L94+L104
20		
21	INTERIOR	=L24+L34+L45+L55+L66+L76 =L86+L96+L106
22		
23	TOTAL, by residency	=SUM(P15:P21) =SUM(Q15:Q21)
24	GROSS:	=P23+Q23

Appendix K3.—Generation of resident/nonresident split for sampling strategy, **RESNRES SPLIT**.

RESULTS VERSION

	B	C	D	E	F	G	H	I	J
		DAV/PIDS ISSUED	RESIDENT LICENSES ISSUED	TOTAL RESIDENT LICENSES ISSUED	NONRESIDENT LICENSES ISSUED	TOTAL RESIDENT & NONRESIDENT ISSUED		PERCENT RESIDENT	PERCENT NONRESIDENT
3	2001	3,976	178,947	182,923	236,488	419,411		0.436	0.564
4	2002	4,253	178,422	182,675	241,419	424,094		0.431	0.569
5	2003	4,934	184,575	189,509	235,515	425,024		0.446	0.554
6	2004	4,637	189,552	194,189	272,377	466,566		0.416	0.584
7	2005	4,052	189,089	193,141	284,154	477,295		0.405	0.595
								0.427 ^A	0.573 ^B

FORMULA VERSION

		DAV/PIDS ISSUED	RESIDENT LICENSES ISSUED	TOTAL RESIDENT LICENSES ISSUED	NONRESIDENT LICENSES ISSUED	TOTAL RESIDENT & NONRESIDENT ISSUED		PERCENT RESIDENT	PERCENT NONRESIDENT
	2001	3,976	178,947	=SUM(B3:C3)	236,488	=SUM(D3:E3)		=D3/F3	=E3/F3
	2002	4,253	178,422	=SUM(B4:C4)	241,419	=SUM(D4:E4)		=D4/F4	=E4/F4
	2003	4,934	184,575	=SUM(B5:C5)	235,515	=SUM(D5:E5)		=D5/F5	=E5/F5
	2004	4,637	189,552	=SUM(B6:C6)	272,377	=SUM(D6:E6)		=D6/F6	=E6/F6
	2005	4,052	189,089	=SUM(B7:C7)	284,154	=SUM(D7:E7)		=D7/F7	=E7/F7
								=SUM(I3:I7)/5	=SUM(J3:J7)/5

A Used in cell E16 in the SAMPLING STRATEGY spreadsheet

B Used in cell E78 in the SAMPLING STRATEGY spreadsheet

Appendix K4.—Generation of early/late split for sampling strategy, **EARLYLATE**.

RESULTS VERSION

	B	C	D	E	F	G	H
		NUMBER OF EARLY LICENSED ISSUED	NUMBER OF LATE LICENSED ISSUED	TOTAL NUMBER OF LICENSED ISSUED		PERCENT OF LICENCED ISSUED EARLY	PERCENT OF LICENCED ISSUED LATE
4	2001	38,701	144,604	183,305		0.211	0.789
5	2002	37,757	145,108	182,865		0.206	0.794
6	2003	41,848	147,492	189,340		0.221	0.779
7	2004	38,899	155,099	193,998		0.201	0.799
8	2005	43,143	150,073	193,216		0.223	0.777
9	2006	40,396	144,980	185,376		0.218	0.782
10						0.213^A	0.787^B

FORMULA VERSION

	2001	38701	144604	=SUM(C4:D4)		=C4/E4	=D4/E4
	2002	37757	145108	=SUM(C5:D5)		=C5/E5	=D5/E5
	2003	41848	147492	=SUM(C6:D6)		=C6/E6	=D6/E6
	2004	38899	155099	=SUM(C7:D7)		=C7/E7	=D7/E7
	2005	43143	150073	=SUM(C8:D8)		=C8/E8	=D8/E8
	2006	40396	144980	=SUM(C9:D9)		=C9/E9	=D9/E9
						=SUM(G4:G9)/6	=SUM(H4:H9)/6

A Used in cell G16 in the SAMPLING STRATEGY spreadsheet

B Used in cell G26 in the SAMPLING STRATEGY spreadsheet

Appendix K5.-Generation of expected response rates for sampling strategy, **RESPONSERATES**.

RESULTS VERSION - EARLY RESIDENT

	B	C	D	E
7			t	
8				1
9	Wave 1	0.27 ^A	0.95 ^B	0.25
10				0.75
11	Wave 2	0.20	0.95	0.14
12				0.61
13	Wave 3	0.10	0.95	0.05
14				
15	Cumulative response rate			0.45 ^C
FORMULA VERSION				
	Wave 1	0.27	0.95	=C9*D9
				=E8-E9
	Wave 2	0.20	0.95	=E10*C11*D11
				=E10-E11
	Wave 3	0.10	0.95	=E12*C13*D13
				=(E9+E11+E13)

- A Wave specific response rates (for Resident and Other USA) are from the 'AK & Other USA' spreadsheet (column P); "2006SWHS-SampleSizeANDCalender.xls" file. These response rates are based on actual 2004 wave specific response rates.
- B To be conservative, all response rates discounted by 0.95
- C Used in cell H16 in the SAMPLING STRATEGY spreadsheet.

RESULTS VERSION - LATE RESIDENT

	F	G	H	I
7				
8				1
9	Wave 1	0.20 ^A	0.95 ^B	0.19
10				0.81
11	Wave 2	0.17	0.95	0.13
12				0.68
13	Wave 3	0.06	0.95	0.04
14				
15				0.36 ^C
FORMULA VERSION				
	Wave 1	0.20	0.95	=G9*H9
				=I8-I9
	Wave 2	0.17	0.95	=I10*G11*H11
				=I10-I11
	Wave 3	0.06	0.95	=I12*G13*H13
				=I9+I11+I13

A Wave specific response rates (for Resident and Other USA) are from the 'AK & Other USA' spreadsheet (column P); "2006SWHS-SampleSizeANDCalender.xls" file. These response rates are based on actual 2004 wave specific response rates.

B To be conservative, all response rates discounted by 0.95

C Used in cell H26 in the SAMPLING STRATEGY spreadsheet

RESULTS VERSION - LATE OTHER USA

	N	O	P	Q
7				
8				1
9	Wave 1	0.31 ^A	0.95 ^B	0.29
10				0.71
11	Wave 2	0.20	0.95	0.14
12				0.57
13	Wave 3	0.08	0.95	0.04
14				
15				0.47 ^C
FORMULA VERSION				
	Wave 1	0.31	0.95	=O9*P9
				=Q8-Q9
	Wave 2	0.20	0.95	=Q10*O11*P11
				=Q10-Q11
	Wave 3	0.08	0.95	=Q12*O13*P13
				=(Q9+Q11+Q13)

- A Wave specific response rates (for Resident and Other USA) are from the 'AK & Other USA' spreadsheet (column P); "2006SWHS-SampleSizeANDCalender.xls" file. These response rates are based on actual 2004 wave specific response rates.
- B To be conservative, all response rates discounted by 0.95
- C Used in cell H78 in the SAMPLING STRATEGY spreadsheet

RESULTS VERSION - LATE CANADA

	F	G	H	I
33				
34				1
35	Wave 1	0.32 ^A	0.95 ^B	0.31
36				0.69
37	Wave 2	0.23	0.95	0.15
38				0.54
39	Wave 3	0.09	0.95	0.05
40				
41				0.50 ^C
FORMULA VERSION				
	Wave 1	0.32	0.95	=I34*G35*H35
				=I34-I35
	Wave 2	0.23	0.95	=I36*G37*H37
				=I36-I37
	Wave 3	0.09	0.95	=I38*G39*H39
				=(I35+I37+I39)

- A Wave specific response rates (for Resident and Other USA) are from the 'AK & Other USA' spreadsheet (column P); "2006SWHS-SampleSizeANDCalender.xls" file. These response rates are based on actual 2004 wave specific response rates.
- B To be conservative, all response rates discounted by 0.95
- C Used in cell H88 in the SAMPLING STRATEGY spreadsheet

RESULTS VERSION - LATE FOREIGN

	N	O	P	Q
33				
34				1
35	Wave 1	0.17 ^A	0.95 ^B	0.16
36				0.84
37	Wave 2	0.13	0.95	0.11
38				0.73
39	Wave 3	0.04	0.95	0.02
40				
41				0.29 ^C
FORMULA VERSION				
	Wave 1	0.17	0.95	=Q34*O35*P35
				=Q34-Q35
	Wave 2	0.13	0.95	=Q36*O37*P37
				=Q36-Q37
	Wave 3	0.04	0.95	=Q38*O39*P39
				=(Q35+Q37+Q39)

- A Wave specific response rates (for Resident and Other USA) are from the 'AK & Other USA' spreadsheet (column P); "2006SWHS-SampleSizeANDCalender.xls" file. These response rates are based on actual 2004 wave specific response rates.
- B To be conservative, all response rates discounted by 0.95.
- C Used in cell H98 in the SAMPLING STRATEGY spreadsheet

Appendix K6.—Allocation of resident and non-resident fishing to region for sampling strategy, **FISHALL**.

RESULTS VERSION

	B	C	D	J	K	L	M	N
	RESIDENCY	WATER TYPE	TOTAL NUMBER OF ANGLERS	% FISHING				
				SE-F	SE-S	SC-other	SC-cook	INTERIOR
4	CANADIAN & FOREIGN	FRESH	2,751					
5		SALT	4,337					
6		FRESH	6,987					
7		SALT	917					
8		FRESH	1,130					
9		SALT	4,183					
10		FRESH	1,205					
11			21,510	0.128	0.202	0.247	0.367	0.056
14	OTHER US	FRESH	15,991					
15		SALT	90,230					
16		FRESH	95,349					
17		SALT	24,182					
18		FRESH	21,091					
19		SALT	98,290					
20		FRESH	13,906					
21		SALT	74					
22			359,113	0.045	0.251	0.332	0.333	0.039
26	SOUTHEAST ALASKA	FRESH	7,771					
27		SALT	24,649					
28		FRESH	239					
29		SALT	35					

-continued-

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	B	C	D	J	K	L	M	N
	RESIDENCY	WATER TYPE	TOTAL NUMBER OF ANGLERS	% FISHING				
30		FRESH	155					
31		SALT	260	0.012	0.321	0.725	0.333	0.038
32		FRESH	211					
33			33,320	0.233	0.740	0.012	0.008	0.006
	SOUTH CENTRAL ALASKA							
34		FRESH	865					
35		SALT	1,930					
36		FRESH	96,060					
37		SALT	15,709					
38		FRESH	15,413					
39		SALT	76,135	0.138	0.303	0.343	0.383	0.028
40		FRESH	6,488					
41		SALT	78					
42			212,678	0.004	0.009	0.430	0.526	0.031
	INTERIOR ALASKA							
43		FRESH	120					
44		SALT	496					
45		FRESH	4,187					
46		SALT	1,718					
47		FRESH	581					
48		SALT	15,812					
49		FRESH	21,516					
50		SALT	242					
51			44,672	0.003	0.911	0.367	0.132	0.487

Appendix K7.—Allocation of resident and non-resident fishing to region for sampling strategy, FISHALL.

FORMULA VERSION

	B	C	D	J	K	L	M	N
	RESIDENCY	WATER TYPE	TOTAL NUMBER OF ANGLERS	% FISHING				
				SE-F	SE-S	SC-other	SC-cook	INTERIOR
4	CANADIAN & FOREIGN	FRESH	2751					
5		SALT	4337					
6		FRESH	6987					
7		SALT	917					
8		FRESH	1130					
9		SALT	4183					
10		FRESH	1205					
11			=SUM(D4:D10)	=D4/D11	=D5/D11	=(D8+D9)/D11	=(D6+D7)/D11	=D10/D11
14	OTHER US	FRESH	15991					
15		SALT	90230					
16		FRESH	95349					
17		SALT	24182					
18		FRESH	21091					
19		SALT	98290					
20		FRESH	13906					
21		SALT	74					
22			=SUM(D14:D21)	=D14/\$D22	=D15/\$D22	=(D18+D19)/\$D22	=(D16+D17)/\$D22	=(D20+D21)/\$D22
26	SOUTHEAST ALASKA	FRESH	7771					
27		SALT	24649					
28		FRESH	239					
29		SALT	35					

-continued-

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	B	C	D	J	K	L	M	N
	RESIDENCY	WATER TYPE	TOTAL NUMBER OF ANGLERS	% FISHING				
30		FRESH	155					
31		SALT	260					
32		FRESH	211					
33			=SUM(D26:D32)	=D26/D33	=D27/D33	=(D30+D31)/D33	=(D28+D29)/D33	=D32/D33
34	SOUTHCENTRAL ALASKA	FRESH	865					
35		SALT	1930					
36		FRESH	96060					
37		SALT	15709					
38		FRESH	15413					
39		SALT	76135					
40		FRESH	6488					
41		SALT	78					
42			=SUM(D34:D41)	=D34/\$D42	=D35/\$D42	=(D38+D39)/\$D42	=(D36+D37)/\$D42	=(D40+D41)/\$D42
43	INTERIOR ALASKA	FRESH	120					
44		SALT	496					
45		FRESH	4187					
46		SALT	1718					
47		FRESH	581					
48		SALT	15812					
49		FRESH	21516					
50		SALT	242					
51			=SUM(D43:D50)	=D43/\$D51	=D44/\$D51	=(D47+D48)/\$D51	=(D45+D46)/\$D51	=(D49+D50)/\$D51

The following tables present detailed spending averages for each expenditure category, by region, for each analysis study. The trip expenditures are the average expenditure in each region per angler-day for residents and nonresidents, by type of water fished, and by use of guides. Average expenditures for equipment are the annual average expenditure in each region per resident and nonresident angler. All figures represent the average spending for all Alaska resident anglers, regardless of where they fished or the region where they live, and by all nonresident anglers who live outside of Alaska regardless of where they fished.

- Statewide average spending
- Southeast Region average spending
- Southcentral Region average spending
- Interior Region average spending

APPENDIX L: DETAILED ESTIMATES OF AVERAGE SPENDING

The following tables present detailed spending averages for each expenditure category, by region, for each analysis strata. The trip expenditures are the average expenditure in each region per angler-day for residents and nonresidents, by type of water fished, and by use of guides. Average expenditures for equipment are the annual average expenditure in each region per resident and nonresident angler. All figures represent the average spending for all Alaska resident anglers, regardless of where they fished or the region where they live, and by all nonresident anglers who live outside of Alaska regardless of where they fished.

- Statewide average spending
- Southeast Region average spending
- Southcentral Region average spending
- Interior Region average spending
- Cook Inlet Subregion average spending
- Southeast Marine Subregion average spending

Appendix L1.—Average spending by sportfishing anglers in Alaska statewide, 2007

	Guided & Unguided Fresh & Salt		Guided & Unguided Fresh & Salt		Resident Unguided		Resident Guided		NonResident Unguided		NonResident Guided	
	Resident & Nonresident		Resident & Nonresident		Fresh & Salt		Fresh & Salt		Fresh & Salt		Fresh & Salt	
	Resident	Nonresident	Resident	Nonresident	Fresh	Salt	Fresh	Salt	Fresh	Salt	Fresh	Salt
	\$ per angler-day											
licenses	\$ 9.12	\$ 4.54	\$ 15.31	\$ 4.54	\$ 4.54	\$ 4.54	\$ 4.54	\$ 4.54	\$ 15.31	\$ 15.31	\$ 15.31	\$ 15.31
fuel	\$ 36.83	\$ 47.92	\$ 21.84	\$ 35.47	\$ 68.15	\$ 55.43	\$ 45.26	\$ 16.38	\$ 29.19	\$ 26.00	\$ 21.72	\$ 21.72
guide	\$ 45.61	\$ 22.12	\$ 77.35	\$ 1.87	\$ 1.58	\$ 224.96	\$ 240.73	\$ 10.24	\$ 2.85	\$ 156.94	\$ 178.35	\$ 178.35
air	\$ 21.52	\$ 2.25	\$ 47.56	\$ 0.83	\$ 0.06	\$ 21.49	\$ 18.81	\$ 35.73	\$ 32.09	\$ 61.86	\$ 66.90	\$ 66.90
travel	\$ 6.24	\$ 0.56	\$ 13.92	\$ 0.26	\$ 0.50	\$ 5.76	\$ 0.30	\$ 17.53	\$ 4.17	\$ 16.11	\$ 14.23	\$ 14.23
process	\$ 15.09	\$ 6.28	\$ 26.99	\$ 3.38	\$ 7.76	\$ 5.65	\$ 30.04	\$ 13.07	\$ 11.03	\$ 30.89	\$ 56.98	\$ 56.98
rentals	\$ 10.62	\$ 1.58	\$ 22.83	\$ 1.60	\$ 1.63	\$ -	\$ 2.28	\$ 19.89	\$ 8.46	\$ 36.87	\$ 28.21	\$ 28.21
derby	\$ 1.12	\$ 1.60	\$ 0.47	\$ 0.45	\$ 3.50	\$ 0.50	\$ 2.60	\$ 0.18	\$ 0.35	\$ 0.32	\$ 1.10	\$ 1.10
dock	\$ 6.08	\$ 8.93	\$ 2.22	\$ 4.29	\$ 18.75	\$ 0.42	\$ 1.02	\$ 2.55	\$ 6.07	\$ 0.23	\$ 0.25	\$ 0.25
ice	\$ 1.89	\$ 2.43	\$ 1.17	\$ 2.12	\$ 2.93	\$ 1.85	\$ 2.94	\$ 1.56	\$ 0.82	\$ 1.12	\$ 0.86	\$ 0.86
bait	\$ 3.45	\$ 4.48	\$ 2.06	\$ 2.17	\$ 9.24	\$ 0.41	\$ 1.25	\$ 1.67	\$ 5.37	\$ 1.12	\$ 0.86	\$ 0.86
groceries	\$ 23.96	\$ 24.10	\$ 23.76	\$ 21.00	\$ 25.00	\$ 38.66	\$ 32.60	\$ 22.42	\$ 21.93	\$ 29.05	\$ 23.46	\$ 23.46
meals	\$ 16.46	\$ 10.58	\$ 24.40	\$ 7.63	\$ 8.88	\$ 40.57	\$ 32.92	\$ 16.60	\$ 14.90	\$ 35.76	\$ 33.32	\$ 33.32
lodging	\$ 22.42	\$ 12.71	\$ 35.54	\$ 7.40	\$ 8.11	\$ 95.84	\$ 41.00	\$ 15.36	\$ 17.93	\$ 63.02	\$ 59.91	\$ 59.91
gifts	\$ 7.88	\$ 1.84	\$ 16.03	\$ 1.04	\$ 1.55	\$ 6.53	\$ 9.46	\$ 10.58	\$ 8.25	\$ 21.00	\$ 26.56	\$ 26.56
amusement	\$ 3.86	\$ 3.17	\$ 4.79	\$ 1.37	\$ 4.93	\$ 11.48	\$ 5.23	\$ 3.34	\$ 2.61	\$ 9.34	\$ 5.42	\$ 5.42
other	\$ 0.30	\$ 0.09	\$ 0.58	\$ 0.06	\$ 0.15	\$ -	\$ 0.10	\$ 0.03	\$ 0.04	\$ 1.17	\$ 1.39	\$ 1.39
pkg. air	\$ 11.92	\$ -	\$ 28.02	\$ -	\$ -	\$ -	\$ -	\$ 11.68	\$ 20.80	\$ 55.71	\$ 38.83	\$ 38.83
pkg. trans	\$ 2.64	\$ -	\$ 6.21	\$ -	\$ -	\$ -	\$ -	\$ 0.79	\$ 1.11	\$ 14.43	\$ 12.47	\$ 12.47
pkg. guide	\$ 18.62	\$ -	\$ 43.78	\$ -	\$ -	\$ -	\$ -	\$ 2.51	\$ 4.53	\$ 110.89	\$ 88.52	\$ 88.52
pkg. lodge	\$ 13.55	\$ -	\$ 31.84	\$ -	\$ -	\$ -	\$ -	\$ 6.80	\$ 7.32	\$ 78.77	\$ 55.24	\$ 55.24
pkg. meals	\$ 7.41	\$ -	\$ 17.42	\$ -	\$ -	\$ -	\$ -	\$ 4.33	\$ 9.59	\$ 39.82	\$ 27.43	\$ 27.43
	Annual \$ per licensed angler											
Eq. RodReel	\$ 52.87	\$ 102.84	\$ 19.44	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Tackle	\$ 41.53	\$ 68.14	\$ 23.72	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Tacklebox	\$ 4.38	\$ 9.02	\$ 1.29	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Electronics	\$ 18.78	\$ 46.40	\$ 0.30	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Nets	\$ 8.12	\$ 18.15	\$ 1.40	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Misc	\$ 13.99	\$ 24.56	\$ 6.91	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Shellfish	\$ 5.62	\$ 12.74	\$ 0.85	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Taxidermy	\$ 4.78	\$ 7.63	\$ 2.87	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Books	\$ 3.89	\$ 6.47	\$ 2.15	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Preserve	\$ 19.62	\$ 37.16	\$ 7.88	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Coolers	\$ 9.88	\$ 16.02	\$ 5.76	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Clothing	\$ 20.70	\$ 33.48	\$ 12.14	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Boots	\$ 14.92	\$ 28.51	\$ 5.82	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Jackets	\$ 7.93	\$ 18.99	\$ 0.53	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Boats	\$ 221.16	\$ 530.17	\$ 14.38	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Motors	\$ 79.67	\$ 194.92	\$ 2.54	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Trailers	\$ 16.81	\$ 40.70	\$ 0.82	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. OtherParts	\$ 32.68	\$ 76.00	\$ 3.70	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. BearSpray	\$ 3.72	\$ 6.74	\$ 1.71	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Firearms	\$ 10.99	\$ 26.98	\$ 0.29	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Cameras	\$ 13.00	\$ 27.73	\$ 3.14	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Tents	\$ 7.72	\$ 17.96	\$ 0.87	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Campers	\$ 66.31	\$ 165.33	\$ 0.06	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Other Camp	\$ 6.10	\$ 13.72	\$ 1.01	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Vehicles	\$ 185.72	\$ 442.28	\$ 14.04	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Planes	\$ 11.75	\$ 21.60	\$ 5.16	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. ATV	\$ 55.51	\$ 138.46	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Registration	\$ 11.84	\$ 28.17	\$ 0.91	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Repair	\$ 50.44	\$ 117.50	\$ 5.57	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Eq. Other	\$ 0.49	\$ 1.18	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
RE. repair	\$ 105.94	\$ 104.36	\$ 107.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
RE. construction	\$ 278.55	\$ 279.28	\$ 278.06	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
License expenditures	\$9.12	\$4.54	\$15.31	\$4.54	\$4.54	\$4.54	\$4.54	\$4.54	\$15.31	\$15.31	\$15.31	\$15.31
Trip expenditures (non-package)	\$223.32	\$150.63	\$321.50	\$91.73	\$162.81	\$509.56	\$466.53	\$187.12	\$166.06	\$490.79	\$621.53	\$621.53
Package expenditures	\$64.16	\$0.00	\$127.28	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$26.12	\$43.34	\$299.62	\$222.50
Equipment expenditures	\$1,000.91	\$2,279.55	\$145.27	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Real estate expenditures	\$384.49	\$383.64	\$305.05	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Appendix L2.- Average spending by sportfishing anglers in Southeast Alaska, 2007.

	Guided & Unguided Fresh & Salt		Guided & Unguided Fresh & Salt		Resident Unguided		Resident Guided		NonResident Unguided		NonResident Guided	
	Resident & Nonresident		RESIDENT	NONRESIDENT	FRESH	SALT	FRESH	SALT	FRESH	SALT	FRESH	SALT
	\$ per angler-day											
license												
fuel	\$ 26.54	\$ 36.27	\$ 19.90	\$ 10.39	\$ 43.83				\$ 10.72	\$ 38.16	\$ 12.28	\$ 10.40
guide	\$ 49.85	\$ 9.66	\$ 77.27	\$ -	\$ 0.51				\$ 12.31	\$ 2.82	\$ 135.26	\$ 145.97
air	\$ 31.76	\$ -	\$ 53.43	\$ -	\$ -				\$ 36.76	\$ 44.88	\$ 60.50	\$ 64.27
travel	\$ 7.34	\$ 0.27	\$ 12.17	\$ 0.44	\$ 0.26				\$ 17.60	\$ 6.94	\$ 29.98	\$ 12.09
process	\$ 16.11	\$ 8.51	\$ 21.29	\$ 2.48	\$ 7.67				\$ 9.52	\$ 6.49	\$ 27.37	\$ 35.24
rentals	\$ 4.43	\$ 0.67	\$ 7.07	\$ -	\$ 2.36				\$ 7.40	\$ 9.30	\$ 9.49	\$ 5.02
duty	\$ 1.68	\$ 3.72	\$ 0.28	\$ 1.89	\$ 4.52				\$ 0.09	\$ 0.35	\$ -	\$ 0.32
deck	\$ 9.12	\$ 19.02	\$ 2.36	\$ 0.24	\$ 25.01				\$ 5.50	\$ 4.56	\$ -	\$ 0.02
ice	\$ 0.66	\$ 1.07	\$ 0.39	\$ 0.28	\$ 1.36				\$ 0.56	\$ 0.62	\$ 0.48	\$ 0.15
bait	\$ 4.33	\$ 7.31	\$ 2.30	\$ 2.94	\$ 9.98				\$ 3.71	\$ 4.31	\$ 2.73	\$ 0.33
groceries	\$ 16.15	\$ 13.83	\$ 17.74	\$ 6.13	\$ 16.22				\$ 17.08	\$ 24.09	\$ 21.63	\$ 12.82
meals	\$ 10.94	\$ 1.19	\$ 17.59	\$ -	\$ 1.43				\$ 14.47	\$ 19.93	\$ 26.13	\$ 15.84
lodging	\$ 17.69	\$ 0.48	\$ 29.44	\$ -	\$ 0.64				\$ 28.98	\$ 22.14	\$ 87.66	\$ 27.89
gifts	\$ 8.79	\$ 0.20	\$ 14.64	\$ 0.58	\$ 0.14				\$ 9.01	\$ 10.01	\$ 10.44	\$ 20.38
amusement	\$ 2.13	\$ 0.43	\$ 3.29	\$ 1.33	\$ 0.27				\$ 2.94	\$ 2.35	\$ 7.00	\$ 3.65
other	\$ 0.28	\$ -	\$ 0.65	\$ -	\$ -				\$ -	\$ 0.08	\$ -	\$ 1.36
pkg. air	\$ 12.66	\$ -	\$ 21.31	\$ -	\$ -				\$ 12.14	\$ 9.05	\$ 28.77	\$ 32.37
pkg. trans	\$ 4.95	\$ -	\$ 0.34	\$ -	\$ -				\$ 0.34	\$ 1.06	\$ 6.67	\$ 15.65
pkg. guide	\$ 25.61	\$ -	\$ 43.08	\$ -	\$ -				\$ -	\$ 7.80	\$ 36.31	\$ 83.77
pkg. lodge	\$ 18.98	\$ -	\$ 31.94	\$ -	\$ -				\$ 7.91	\$ 11.48	\$ 28.20	\$ 55.20
pkg. meals	\$ 11.58	\$ -	\$ 19.48	\$ -	\$ -				\$ 3.96	\$ 6.60	\$ 14.04	\$ 34.63
	Annual \$ per licensed angler											
Eq. RodReel	\$ 7.50	\$ 12.98	\$ 3.84									
Eq. Tackle	\$ 7.78	\$ 11.05	\$ 5.59									
Eq. Tacklebox	\$ 0.47	\$ 0.87	\$ 0.21									
Eq. Electronics	\$ 3.68	\$ 8.90	\$ 0.14									
Eq. Nets	\$ 1.21	\$ 2.27	\$ 0.51									
Eq. Misc	\$ 3.37	\$ 4.85	\$ 2.39									
Eq. Rhinosh	\$ 1.87	\$ 4.12	\$ 0.36									
Eq. Taxidermy	\$ 0.89	\$ -	\$ 1.49									
Eq. Hooks	\$ 0.61	\$ 0.65	\$ 0.58									
Eq. Preserve	\$ 2.48	\$ 4.95	\$ 0.82									
Eq. Coolers	\$ 1.46	\$ 2.32	\$ 0.89									
Eq. Clothing	\$ 4.75	\$ 4.26	\$ 5.08									
Eq. Boots	\$ 2.14	\$ 3.95	\$ 0.93									
Eq. Jackets	\$ 1.45	\$ 3.33	\$ 0.20									
Eq. Boots	\$ 30.07	\$ 64.82	\$ 6.82									
Eq. Motors	\$ 19.74	\$ 49.15	\$ 0.06									
Eq. Trailers	\$ 5.92	\$ 14.59	\$ 0.12									
Eq. Other Parts	\$ 6.72	\$ 14.00	\$ 1.85									
Eq. Bear Spray	\$ 0.56	\$ 1.02	\$ 0.25									
Eq. Firearms	\$ 0.92	\$ 2.29	\$ -									
Eq. Cameras	\$ 1.71	\$ 3.25	\$ 0.69									
Eq. Tents	\$ 0.51	\$ 1.22	\$ 0.04									
Eq. Campers	\$ -	\$ -	\$ -									
Eq. Other Camp	\$ 0.87	\$ 1.92	\$ 0.17									
Eq. Vehicles	\$ 14.95	\$ 37.01	\$ 0.19									
Eq. Flares	\$ 2.74	\$ 4.96	\$ 1.26									
Eq. ATVs	\$ 2.75	\$ 6.86	\$ -									
Eq. Registration	\$ 2.02	\$ 4.97	\$ 0.04									
Eq. Repair	\$ 12.71	\$ 26.23	\$ 3.66									
Eq. Other	\$ 0.03	\$ 0.06	\$ -									
RE. repair	\$ 56.49	\$ 31.67	\$ 73.09									
RE. construction	\$ 56.73	\$ 70.83	\$ 47.29									
Trip expenditures (non-package)	\$207.91	\$102.54	\$279.80	\$26.68	\$111.18	\$0.00	\$0.00	\$176.65	\$197.01	\$430.97	\$355.73	
Package expenditures	\$73.79	\$0.00	\$124.14	\$0.00	\$0.00	\$0.00	\$0.00	\$24.35	\$36.79	\$115.99	\$221.52	
Equipment expenditures	\$141.90	\$296.92	\$30.16									
Real estate expenditures	\$113.21	\$102.50	\$120.30									

*Expenditures are not reported due to small sample size.

Appendix L3.—Average spending by sportfishing anglers in Southcentral Alaska, 2007.

	Guided & Unguided Fresh & Salt		Guided & Unguided Fresh & Salt		Resident Unguided		Resident Guided		NonResident Unguided		NonResident Guided											
	Resident & Nonresident		RESIDENT		FRESH		FRESH		FRESH		FRESH											
\$ per angler-day																						
licenses	\$	38.75	\$	50.00	\$	21.56	\$	37.64	\$	73.81	\$	58.78	\$	43.13	\$	16.74	\$	17.41	\$	25.91	\$	31.69
fuel	\$	46.15	\$	26.79	\$	75.72	\$	2.28	\$	2.11	\$	258.03	\$	262.11	\$	8.61	\$	2.89	\$	157.25	\$	202.38
guide	\$	19.39	\$	2.21	\$	45.65	\$	1.07	\$	-	\$	26.00	\$	8.71	\$	38.42	\$	17.61	\$	61.61	\$	65.49
air	\$	3.98	\$	0.69	\$	9.01	\$	0.30	\$	0.62	\$	6.96	\$	0.38	\$	5.45	\$	1.02	\$	15.03	\$	16.71
travel	\$	16.33	\$	6.54	\$	31.29	\$	3.93	\$	7.75	\$	6.04	\$	28.94	\$	14.96	\$	16.18	\$	33.70	\$	81.79
process	\$	13.37	\$	1.98	\$	30.79	\$	2.00	\$	2.25	\$	-	\$	1.68	\$	23.55	\$	7.50	\$	40.95	\$	54.31
rentals	\$	1.06	\$	1.40	\$	0.53	\$	0.46	\$	3.00	\$	0.60	\$	3.28	\$	0.12	\$	0.25	\$	0.38	\$	2.01
derby	\$	5.77	\$	8.05	\$	2.29	\$	5.31	\$	15.65	\$	0.31	\$	0.84	\$	2.36	\$	7.74	\$	0.27	\$	0.51
deck	\$	2.22	\$	2.84	\$	1.27	\$	2.45	\$	3.63	\$	1.82	\$	3.41	\$	1.25	\$	0.93	\$	1.21	\$	1.62
ice	\$	3.45	\$	4.38	\$	2.02	\$	2.39	\$	9.32	\$	0.35	\$	1.31	\$	1.41	\$	6.57	\$	1.00	\$	1.43
bait	\$	26.70	\$	26.73	\$	26.66	\$	24.18	\$	27.85	\$	41.90	\$	36.67	\$	25.11	\$	16.35	\$	30.01	\$	34.21
groceries	\$	18.21	\$	12.95	\$	26.25	\$	8.68	\$	11.79	\$	47.36	\$	40.27	\$	15.40	\$	8.63	\$	36.34	\$	54.90
meals	\$	25.16	\$	16.53	\$	38.34	\$	8.97	\$	11.54	\$	115.24	\$	51.15	\$	14.05	\$	11.95	\$	61.96	\$	91.50
lodging	\$	7.36	\$	2.37	\$	15.00	\$	1.22	\$	2.19	\$	7.90	\$	11.94	\$	10.22	\$	5.23	\$	20.30	\$	28.09
gifts	\$	4.42	\$	3.97	\$	5.12	\$	1.55	\$	7.08	\$	12.00	\$	6.60	\$	3.03	\$	2.72	\$	9.32	\$	7.09
amusement	\$	0.27	\$	0.08	\$	0.55	\$	0.07	\$	0.10	\$	-	\$	0.12	\$	0.02	\$	-	\$	1.34	\$	1.36
other	\$	11.87	\$	-	\$	30.00	\$	-	\$	-	\$	-	\$	-	\$	12.50	\$	34.10	\$	54.45	\$	41.82
pkg. air	\$	2.05	\$	-	\$	5.17	\$	-	\$	-	\$	-	\$	-	\$	0.90	\$	0.27	\$	14.64	\$	8.11
pkg. trans	\$	17.12	\$	-	\$	43.27	\$	-	\$	-	\$	-	\$	-	\$	2.91	\$	0.82	\$	115.94	\$	89.07
pkg. guide	\$	12.43	\$	-	\$	31.43	\$	-	\$	-	\$	-	\$	-	\$	7.19	\$	2.60	\$	82.79	\$	61.86
pkg. lodge	\$	6.70	\$	-	\$	16.92	\$	-	\$	-	\$	-	\$	-	\$	4.74	\$	12.98	\$	43.23	\$	18.71
pkg. meals	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Annual \$ per licensed angler																						
Eq. RodReel	\$	41.04	\$	60.09	\$	14.90																
Eq. Tackle	\$	29.90	\$	49.20	\$	16.98																
Eq. Tacklebox	\$	3.36	\$	6.05	\$	1.02																
Eq. Electronics	\$	14.02	\$	34.74	\$	0.16																
Eq. Hats	\$	6.39	\$	14.59	\$	0.90																
Eq. Misc	\$	9.44	\$	17.23	\$	4.23																
Eq. Shirts	\$	3.45	\$	7.88	\$	0.48																
Eq. T-shirt	\$	3.88	\$	7.63	\$	1.37																
Eq. Boots	\$	2.88	\$	4.93	\$	1.51																
Eq. Preserve	\$	16.04	\$	29.60	\$	6.97																
Eq. Coolers	\$	7.59	\$	12.05	\$	4.61																
Eq. Clothing	\$	14.68	\$	26.52	\$	6.58																
Eq. Boots	\$	11.70	\$	22.33	\$	4.59																
Eq. Jackets	\$	5.91	\$	14.33	\$	0.28																
Eq. Boots	\$	181.97	\$	442.59	\$	7.66																
Eq. Motors	\$	56.84	\$	138.07	\$	2.48																
Eq. Trailers	\$	9.88	\$	23.60	\$	0.70																
Eq. Other Parts	\$	23.11	\$	54.92	\$	1.82																
Eq. Bear Spray	\$	2.66	\$	4.69	\$	1.30																
Eq. Firearms	\$	9.11	\$	22.29	\$	0.29																
Eq. Cameras	\$	9.89	\$	21.39	\$	2.19																
Eq. Tents	\$	6.30	\$	14.56	\$	0.78																
Eq. Campers	\$	57.55	\$	143.72	\$	0.06																
Eq. Other Camp	\$	4.45	\$	10.13	\$	0.65																
Eq. Vehicles	\$	131.31	\$	307.01	\$	13.74																
Eq. Planes	\$	7.51	\$	14.15	\$	3.07																
Eq. ATV	\$	39.22	\$	97.82	\$	-																
Eq. Registration	\$	8.32	\$	19.89	\$	0.57																
Eq. Repair	\$	33.91	\$	81.97	\$	1.74																
Eq. Other	\$	0.46	\$	1.09	\$	0.03																
RE. repair	\$	47.02	\$	68.69	\$	32.62																
RE. construction	\$	212.33	\$	198.27	\$	221.73																
Trip expenditures (non-package)	\$232.59	\$167.49	\$332.03	\$102.49	\$178.70	\$584.09	\$500.53	\$180.70	\$122.97	\$496.56	\$675.08											
Package expenditures	\$50.16	\$0.00	\$126.79	\$0.00	\$0.00	\$0.00	\$0.00	\$28.25	\$60.76	\$311.05	\$209.57											
Equipment expenditures	\$752.74	\$1,725.07	\$101.55																			
Real estate expenditures	\$259.35	\$266.96	\$254.25																			

Appendix L4.- Average spending by sportfishing anglers in Interior Region of Alaska, 2007.

Expenditure Category	Guided & Unguided Fresh & Salt		Guided & Unguided Fresh & Salt		Resident Unguided		Resident Guided		NonResident Unguided		NonResident Guided	
	Resident & Nonresident		Resident & Nonresident		Fresh & Salt		Fresh & Salt		Fresh & Salt		Fresh & Salt	
	Resident	Nonresident	Resident	Nonresident	Fresh	Salt	Fresh	Salt	Fresh	Salt	Fresh	Salt
\$ per angler-day												
licenses	\$ 47.24	\$ 49.88	\$ 35.85	\$ 32.22	^	^	^	^	\$ 20.69	^	\$ 45.63	^
fuel	\$ 29.61	\$ 6.94	\$ 101.82	\$ 0.54	^	^	^	^	\$ 22.75	^	\$ 182.62	^
guide	\$ 13.10	\$ 5.71	\$ 36.64	\$ -	^	^	^	^	\$ 9.15	^	\$ 66.70	^
air	\$ 23.36	\$ 0.03	\$ 97.68	\$ 0.03	^	^	^	^	\$ 130.75	^	\$ 10.21	^
travel	\$ 1.32	\$ 1.27	\$ 1.50	\$ 1.19	^	^	^	^	\$ 0.08	^	\$ 1.91	^
provisions	\$ 2.68	\$ 0.22	\$ 10.50	\$ 0.23	^	^	^	^	\$ 2.56	^	\$ 24.95	^
rentals	\$ 0.21	\$ 0.01	\$ 0.82	\$ 0.01	^	^	^	^	\$ 0.87	^	\$ -	^
gear	\$ 0.69	\$ 0.83	\$ 0.26	\$ 0.81	^	^	^	^	\$ 0.26	^	\$ 0.03	^
boat	\$ 2.28	\$ 1.46	\$ 4.89	\$ 1.12	^	^	^	^	\$ 5.83	^	\$ 0.87	^
ice	\$ 1.17	\$ 1.17	\$ 1.16	\$ 1.03	^	^	^	^	\$ 1.27	^	\$ 0.46	^
bait	\$ 20.44	\$ 20.23	\$ 21.11	\$ 15.22	^	^	^	^	\$ 4.51	^	\$ 27.65	^
groceries	\$ 15.64	\$ 7.21	\$ 42.51	\$ 4.96	^	^	^	^	\$ 30.67	^	\$ 41.89	^
meals	\$ 10.76	\$ 3.19	\$ 34.86	\$ 2.32	^	^	^	^	\$ 9.18	^	\$ 42.38	^
lodging	\$ 9.98	\$ 0.43	\$ 40.41	\$ 0.35	^	^	^	^	\$ 16.04	^	\$ 43.88	^
gifts	\$ 3.43	\$ 1.42	\$ 9.82	\$ 0.57	^	^	^	^	\$ 6.83	^	\$ 12.79	^
amusement	\$ 0.32	\$ 0.27	\$ 0.49	\$ -	^	^	^	^	\$ 0.11	^	\$ 0.75	^
other	\$ 10.39	\$ -	\$ 43.48	\$ -	^	^	^	^	\$ 3.40	^	\$ 107.20	^
pkg. air	\$ 1.78	\$ -	\$ 7.46	\$ -	^	^	^	^	\$ 0.33	^	\$ 19.74	^
pkg. trans.	\$ 13.37	\$ -	\$ 55.93	\$ -	^	^	^	^	\$ 2.13	^	\$ 151.21	^
pkg. guide	\$ 0.92	\$ -	\$ 37.31	\$ -	^	^	^	^	\$ 1.64	^	\$ 99.06	^
pkg. lodge	\$ 2.65	\$ -	\$ 11.09	\$ -	^	^	^	^	\$ 1.04	^	\$ 33.82	^
pkg. meals	\$ -	\$ -	\$ -	\$ -	^	^	^	^	\$ -	^	\$ -	^
Annual \$ per licensed angler												
Eq. Rod/Reel	\$ 4.33	\$ 9.76	\$ 0.70	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Tackle	\$ 3.85	\$ 7.89	\$ 1.15	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Tacklebox	\$ 0.56	\$ 1.30	\$ 0.06	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Electronics	\$ 1.07	\$ 2.68	\$ -	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Helm	\$ 0.52	\$ 1.29	\$ -	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Mtn	\$ 1.17	\$ 2.49	\$ 0.30	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Shellfish	\$ 0.30	\$ 0.74	\$ 0.01	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Tacklebox	\$ -	\$ -	\$ -	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Books	\$ 0.40	\$ 0.89	\$ 0.07	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Preserve	\$ 1.10	\$ 2.61	\$ 0.09	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Coolers	\$ 0.82	\$ 1.65	\$ 0.26	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Clothing	\$ 1.37	\$ 2.70	\$ 0.47	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Boots	\$ 1.07	\$ 2.23	\$ 0.30	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Luggage	\$ 0.57	\$ 1.33	\$ 0.06	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Gears	\$ 9.13	\$ 22.77	\$ -	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Motors	\$ 3.09	\$ 7.71	\$ -	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Trailers	\$ 1.01	\$ 2.52	\$ -	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Other Parts	\$ 2.85	\$ 7.08	\$ 0.03	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Gear Spray	\$ 0.50	\$ 1.02	\$ 0.15	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Firearms	\$ 0.96	\$ 2.40	\$ -	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Cameras	\$ 1.40	\$ 3.09	\$ 0.26	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Tents	\$ 0.91	\$ 2.18	\$ 0.05	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Campers	\$ 8.66	\$ 21.60	\$ -	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Other Camp	\$ 0.78	\$ 1.67	\$ 0.18	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Vehicles	\$ 39.46	\$ 98.26	\$ 0.11	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Planes	\$ 1.49	\$ 2.49	\$ 0.83	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. ATV	\$ 13.54	\$ 33.78	\$ -	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Registration	\$ 1.26	\$ 3.12	\$ 0.01	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Repair	\$ 3.83	\$ 9.30	\$ 0.17	\$ -	^	^	^	^	\$ -	^	\$ -	^
Eq. Other	\$ 0.01	\$ 0.02	\$ -	\$ -	^	^	^	^	\$ -	^	\$ -	^
RE. repair	\$ 2.43	\$ 4.00	\$ 1.38	\$ -	^	^	^	^	\$ -	^	\$ -	^
RE. construction	\$ 9.49	\$ 10.18	\$ 9.03	\$ -	^	^	^	^	\$ -	^	\$ -	^
Total												
Trip expenditures (non-package)	\$182.25	\$100.27	\$443.33	\$60.61	\$0.00	\$0.00	\$0.00	\$0.00	\$261.55	\$0.00	\$502.51	\$0.00
Package expenditures	\$37.10	\$0.00	\$155.28	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$8.55	\$0.00	\$411.04	\$0.00
Equipment expenditures	\$106.02	\$266.68	\$6.26	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Real estate expenditures	\$11.93	\$14.19	\$10.42	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

^Expenditures are not reported due to small sample size.

Appendix L5. Average spending by sportfishing anglers in Cook Inlet Region of Alaska, 2007.

	Guided & Unguided Fresh & Salt		Guided & Unguided Fresh & Salt		Resident Unguided		Resident Guided		NonResident Unguided		NonResident Guided	
	Resident & Nonresident		RESIDENT	NONRESIDENT	FRESH	SALT	FRESH	SALT	FRESH	SALT	FRESH	SALT
	\$ per angler-day											
license	\$ 37.85	\$ 48.62	\$ 20.84	\$ 37.72	\$ 97.68	\$ 53.40	\$ 66.35	\$ 11.87	\$ 21.74	\$ 32.23	\$ 39.57	
fuel	\$ 39.72	\$ 23.79	\$ 64.88	\$ 0.85	\$ 1.13	\$ 240.19	\$ 328.90	\$ 5.45	\$ 5.34	\$ 152.92	\$ 207.26	
guide	\$ 18.59	\$ 2.38	\$ 44.21	\$ 1.10	\$ -	\$ 16.62	\$ 21.08	\$ 33.35	\$ 22.84	\$ 68.29	\$ 64.66	
air	\$ 2.91	\$ 0.77	\$ 6.29	\$ 0.34	\$ 0.40	\$ 7.97	\$ 0.91	\$ 4.46	\$ 1.56	\$ 13.75	\$ 5.55	
travel	\$ 16.51	\$ 6.59	\$ 32.19	\$ 4.16	\$ 11.70	\$ 5.19	\$ 43.55	\$ 15.97	\$ 17.74	\$ 42.34	\$ 89.69	
process	\$ 15.78	\$ 1.94	\$ 37.64	\$ 1.70	\$ 3.42	\$ -	\$ 4.06	\$ 24.85	\$ 7.64	\$ 56.66	\$ 77.72	
rentals	\$ 0.72	\$ 0.85	\$ 0.51	\$ 0.46	\$ 2.68	\$ 0.47	\$ 2.17	\$ 0.16	\$ 0.42	\$ 0.45	\$ 2.05	
derby	\$ 4.80	\$ 6.44	\$ 2.20	\$ 5.17	\$ 16.09	\$ 0.35	\$ 0.56	\$ 1.77	\$ 12.46	\$ 0.40	\$ 0.80	
dock	\$ 2.25	\$ 2.76	\$ 1.45	\$ 2.49	\$ 4.39	\$ 1.66	\$ 3.31	\$ 1.42	\$ 0.81	\$ 1.44	\$ 1.90	
ice	\$ 3.20	\$ 3.77	\$ 2.29	\$ 2.44	\$ 12.29	\$ 0.35	\$ 0.38	\$ 1.46	\$ 11.05	\$ 1.43	\$ 1.98	
bait	\$ 29.18	\$ 29.70	\$ 28.35	\$ 24.75	\$ 41.42	\$ 45.35	\$ 66.76	\$ 24.64	\$ 20.31	\$ 33.45	\$ 40.59	
groceries	\$ 18.67	\$ 13.19	\$ 27.31	\$ 8.62	\$ 12.24	\$ 46.16	\$ 73.91	\$ 16.14	\$ 10.27	\$ 44.04	\$ 57.05	
meals	\$ 24.13	\$ 16.05	\$ 38.89	\$ 8.48	\$ 9.87	\$ 95.41	\$ 96.46	\$ 12.38	\$ 8.97	\$ 72.70	\$ 98.14	
lodging	\$ 7.80	\$ 2.48	\$ 16.20	\$ 1.20	\$ 2.13	\$ 7.89	\$ 26.62	\$ 10.02	\$ 6.22	\$ 26.25	\$ 31.86	
gas	\$ 3.58	\$ 2.56	\$ 5.18	\$ 1.52	\$ 2.43	\$ 13.62	\$ 9.55	\$ 2.44	\$ 3.15	\$ 11.97	\$ 7.49	
entertainment	\$ 0.18	\$ 0.00	\$ 0.34	\$ 0.00	\$ 0.12	\$ -	\$ -	\$ 0.03	\$ -	\$ 0.60	\$ 1.40	
other	\$ 4.48	\$ -	\$ 11.55	\$ -	\$ -	\$ -	\$ -	\$ 7.81	\$ 7.25	\$ 13.69	\$ 25.63	
pkg. air	\$ 0.69	\$ -	\$ 1.77	\$ -	\$ -	\$ -	\$ -	\$ 0.87	\$ 0.59	\$ 3.18	\$ 4.02	
pkg. train	\$ 7.26	\$ -	\$ 18.72	\$ -	\$ -	\$ -	\$ -	\$ 2.66	\$ 1.53	\$ 37.36	\$ 65.13	
pkg. guide	\$ 4.84	\$ -	\$ 12.49	\$ -	\$ -	\$ -	\$ -	\$ 4.71	\$ 4.28	\$ 23.38	\$ 32.29	
pkg. lodge	\$ 1.86	\$ -	\$ 4.80	\$ -	\$ -	\$ -	\$ -	\$ 2.25	\$ 2.32	\$ 10.19	\$ 8.56	
pkg. meals												
Annual \$ per licensed angler												
Eq. RodReel	\$ 34.72	\$ 69.55	\$ 11.41	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Tackle	\$ 23.22	\$ 39.25	\$ 12.49	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Tacklebox	\$ 2.79	\$ 5.74	\$ 0.82	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Electronics	\$ 11.70	\$ 29.12	\$ 0.05	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Holes	\$ 5.63	\$ 13.02	\$ 0.69	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Misc	\$ 7.26	\$ 13.55	\$ 3.05	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Shellfish	\$ 1.70	\$ 3.62	\$ 0.42	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Taxidermy	\$ 3.80	\$ 7.63	\$ 1.23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Books	\$ 2.38	\$ 4.34	\$ 1.06	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Pressure	\$ 12.30	\$ 24.71	\$ 4.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Coolers	\$ 5.99	\$ 9.78	\$ 3.45	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Clothing	\$ 11.08	\$ 20.56	\$ 4.73	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Boots	\$ 9.97	\$ 18.84	\$ 4.04	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Jackets	\$ 4.59	\$ 11.20	\$ 0.16	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Boats	\$ 173.27	\$ 421.61	\$ 7.08	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Motors	\$ 48.12	\$ 119.87	\$ 0.10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Trailers	\$ 9.13	\$ 22.12	\$ 0.43	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. OtherParts	\$ 16.45	\$ 40.19	\$ 0.56	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. BearSpray	\$ 2.09	\$ 3.69	\$ 1.01	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Firearms	\$ 7.31	\$ 17.92	\$ 0.20	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Cameras	\$ 8.44	\$ 18.30	\$ 1.84	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Tents	\$ 5.64	\$ 12.97	\$ 0.74	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Campers	\$ 49.88	\$ 124.36	\$ 0.05	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Other. Camp	\$ 3.64	\$ 8.15	\$ 0.62	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Vehicles	\$ 119.16	\$ 278.61	\$ 12.46	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Planes	\$ 7.28	\$ 14.15	\$ 2.69	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. ATV	\$ 35.98	\$ 89.75	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Registration	\$ 0.98	\$ 2.38	\$ 0.05	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Repair	\$ 30.32	\$ 73.88	\$ 1.17	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Eq. Other	\$ 0.45	\$ 1.09	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
RE. repair	\$ 32.09	\$ 32.63	\$ 31.72	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
RE. construction	\$ 209.26	\$ 192.56	\$ 220.44	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Trip expenditures (non-package)	\$225.86	\$161.97	\$326.78	\$101.07	\$217.98	\$534.64	\$744.57	\$166.30	\$150.42	\$558.92	\$727.72	
Package expenditures	\$19.13	\$0.00	\$49.34	\$0.00	\$0.00	\$0.00	\$0.00	\$18.29	\$15.98	\$87.80	\$135.62	
Equipment expenditures	\$655.27	\$1,519.98	\$76.62									
Real estate expenditures	\$241.35	\$225.20	\$252.16									

Appendix L6.— Average spending by saltwater sportfishing anglers in Southeast Alaska, 2007.

	SALT		SALT		Resident	Resident	NonResident	NonResident						
	Guided & Unguided		Guided & Unguided		Unguided	Guided	Unguided	Guided						
	Resident & Nonresident		Resident & Nonresident		SALT	SALT	SALT	SALT						
	\$ per angler-day													
licenses														
fuel	\$	30.32	\$	41.92	\$	22.15	\$	43.83	\$	20.67	\$	38.15	\$	10.40
guide	\$	54.58	\$	10.84	\$	85.38	\$	0.51	\$	125.60	\$	2.82	\$	145.97
air	\$	32.90	\$	-	\$	56.06	\$	-	\$	-	\$	44.88	\$	64.27
travel	\$	5.91	\$	0.23	\$	9.91	\$	0.26	\$	-	\$	6.94	\$	12.09
process	\$	17.61	\$	9.86	\$	23.07	\$	7.67	\$	34.24	\$	6.49	\$	35.24
rentals	\$	4.30	\$	0.70	\$	6.83	\$	0.35	\$	4.56	\$	9.30	\$	5.02
darry	\$	1.91	\$	4.15	\$	0.33	\$	4.52	\$	-	\$	0.35	\$	0.32
deck	\$	10.68	\$	23.08	\$	1.94	\$	25.01	\$	1.71	\$	4.56	\$	0.02
ice	\$	0.72	\$	1.24	\$	0.35	\$	1.36	\$	-	\$	0.62	\$	0.15
bait	\$	4.61	\$	8.30	\$	2.01	\$	8.98	\$	0.75	\$	4.31	\$	0.33
groceries	\$	16.72	\$	15.49	\$	17.59	\$	16.22	\$	7.43	\$	24.09	\$	12.82
meals	\$	10.91	\$	1.46	\$	17.57	\$	1.43	\$	1.77	\$	19.93	\$	15.84
lodging	\$	15.18	\$	0.58	\$	25.46	\$	0.64	\$	-	\$	22.14	\$	27.89
gifts	\$	9.44	\$	0.13	\$	15.99	\$	0.14	\$	-	\$	10.01	\$	20.38
amusement	\$	1.92	\$	0.25	\$	3.10	\$	0.27	\$	-	\$	2.35	\$	3.65
other	\$	0.48	\$	-	\$	0.81	\$	-	\$	-	\$	0.08	\$	1.35
pkg. air	\$	13.20	\$	-	\$	22.50	\$	-	\$	-	\$	9.05	\$	32.37
pkg. trans	\$	5.76	\$	-	\$	9.81	\$	-	\$	-	\$	1.86	\$	15.65
pkg. guide	\$	30.29	\$	-	\$	51.61	\$	-	\$	-	\$	7.80	\$	83.77
pkg. lodge	\$	21.53	\$	-	\$	36.70	\$	-	\$	-	\$	11.48	\$	55.20
pkg. meals	\$	13.36	\$	-	\$	22.77	\$	-	\$	-	\$	6.60	\$	34.63
Annual \$ per licensed angler														
Eq. Rod/Reel	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Tackle	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Tacklebox	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Electronics	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Hats	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Misc	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Shirts	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. T-shirts	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Boots	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Preserve	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Coolers	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Clothing	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Boots	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Lifejackets	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Boats	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Motors	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Trailers	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Other Parts	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Boat Spray	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Firearms	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Cameras	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Tents	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Campers	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Other Camp	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Vehicles	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Planes	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. ATV	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Registration	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Repair	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Eq. Other	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
RE. repair	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
RE. construction	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
Trip expenditures (non-package)	\$218.18	\$118.24	\$288.55	\$111.18	\$196.74	\$197.01	\$355.73							
Package expenditures	\$84.14	\$0.00	\$143.39	\$0.00	\$0.00	\$36.79	\$221.62							
Equipment expenditures														
Real estate expenditures														

AA Equipment and real estate expenditures are not reported because they represent multiple use equipment that cannot be assigned specifically to salt water fishing.

The following tables present detailed total annual spending for each expenditure category, by region, for each analysis state. The trip expenditures are the total annual expenditures in each region by residents and nonresidents, by type of water fished, and by use of guides. Total expenditures for equipment are the annual expenditure in each region for resident and nonresident anglers. All figures represent the total spending for all Alaska resident anglers, regardless of where they fished or the region where they live, and by all nonresident anglers who live outside of Alaska regardless of where they fished.

- Statewide Spending
- Southeast Region Spending
- Southcentral Region Spending
- Interior Region Spending
- Cook Inlet Subregion Spending

APPENDIX M: DETAILED ESTIMATES OF TOTAL SPENDING

The following tables present detailed total annual spending for each expenditure category, by region, for each analysis strata. The trip expenditures are the total annual expenditures in each region by residents and nonresidents, by type of water fished, and by use of guides. Total expenditures for equipment are the annual expenditure in each region for resident and nonresident anglers. All figures represent the total spending for all Alaska resident anglers, regardless of where they fished or the region where they live, and by all nonresident anglers who live outside of Alaska regardless of where they fished.

- Statewide Spending
- Southeast Region Spending
- Southcentral Region Spending
- Interior Region Spending
- Cook Inlet Subregion Spending
- Southeast Marine Subregion Spending

Appendix M1.—Statewide spending by sportfishing anglers in Alaska, 2007.

	Guided & Unguided Fresh & Salt Resident & Nonresident		Guided & Unguided Fresh & Salt		Resident Unguided		Resident Guided		Nonresident Unguided		Nonresident Guided	
			RESIDENT	NONRESIDENT	FRESH	SALT	FRESH	SALT	FRESH	SALT	FRESH	SALT
licenses	\$23,164,513	\$6,627,558	\$16,536,955	\$3,773,622	\$2,272,458	\$256,378	\$325,099	\$6,314,009	\$3,115,281	\$2,897,953	\$4,209,712	
fuel	\$93,534,839	\$69,938,850	\$23,595,989	\$29,480,098	\$34,090,231	\$3,129,212	\$3,239,308	\$6,757,367	\$5,941,422	\$4,922,338	\$5,974,861	
guide	\$115,851,616	\$32,276,187	\$83,575,429	\$1,557,368	\$792,536	\$12,698,961	\$17,227,322	\$4,226,079	\$581,100	\$29,714,463	\$49,053,787	
air	\$54,663,094	\$3,279,065	\$51,384,030	\$690,530	\$29,930	\$1,212,832	\$1,345,773	\$14,739,967	\$6,532,503	\$11,711,734	\$18,399,826	
travel	\$15,858,865	\$814,830	\$15,044,035	\$217,378	\$251,305	\$324,786	\$21,360	\$7,231,895	\$849,020	\$3,049,525	\$3,913,595	
process	\$38,317,367	\$9,160,869	\$29,156,498	\$2,809,876	\$3,882,439	\$319,038	\$2,149,516	\$5,389,684	\$2,245,924	\$5,848,647	\$15,672,242	
rentals	\$26,969,851	\$2,304,852	\$24,664,999	\$1,328,506	\$813,456	\$0	\$162,890	\$8,203,300	\$1,721,038	\$6,981,005	\$7,759,656	
derby	\$2,844,733	\$2,335,998	\$508,735	\$370,618	\$1,751,410	\$27,953	\$186,016	\$74,948	\$70,356	\$59,905	\$303,526	
dock	\$15,433,567	\$13,037,221	\$2,396,347	\$3,563,964	\$9,376,634	\$23,853	\$72,770	\$1,051,369	\$1,234,650	\$42,877	\$67,450	
ice	\$4,802,885	\$3,541,733	\$1,261,152	\$1,763,285	\$1,463,590	\$104,523	\$210,336	\$644,359	\$167,412	\$211,662	\$237,719	
bait	\$8,771,786	\$6,543,527	\$2,228,259	\$1,806,026	\$4,624,475	\$23,241	\$89,786	\$687,435	\$1,092,192	\$212,766	\$235,867	
groceries	\$60,845,127	\$35,178,270	\$25,666,857	\$18,117,450	\$12,545,206	\$2,182,531	\$2,333,083	\$9,249,282	\$4,463,785	\$5,500,681	\$6,453,108	
meals	\$41,798,767	\$15,435,598	\$26,363,169	\$6,345,116	\$4,444,358	\$2,290,294	\$2,355,830	\$6,846,164	\$3,033,138	\$6,770,816	\$9,713,051	
lodging	\$56,944,458	\$18,549,878	\$38,394,579	\$6,146,449	\$4,059,116	\$5,409,901	\$2,934,412	\$6,337,160	\$3,648,713	\$11,932,076	\$16,476,630	
gifts	\$20,003,541	\$2,679,940	\$17,323,601	\$861,281	\$773,048	\$368,755	\$676,856	\$4,362,994	\$1,679,530	\$3,975,140	\$7,305,937	
amusement	\$9,792,988	\$4,622,500	\$5,170,488	\$1,134,581	\$2,465,355	\$648,031	\$374,483	\$1,378,450	\$531,569	\$1,769,103	\$1,491,317	
other	\$754,665	\$129,832	\$624,833	\$46,262	\$76,723	\$0	\$6,847	\$10,913	\$8,184	\$222,219	\$383,567	
pkg. air	\$30,277,273	\$0	\$30,277,273	\$0	\$0	\$0	\$0	\$4,818,326	\$4,232,778	\$10,547,026	\$10,678,543	
pkg. trans.	\$6,714,663	\$0	\$6,714,663	\$0	\$0	\$0	\$0	\$325,816	\$226,620	\$2,732,489	\$3,429,839	
pkg. guide	\$47,300,090	\$0	\$47,300,090	\$0	\$0	\$0	\$0	\$1,035,487	\$921,833	\$20,994,972	\$24,347,798	
pkg. lodge	\$34,404,742	\$0	\$34,404,742	\$0	\$0	\$0	\$0	\$2,806,844	\$1,489,159	\$14,914,880	\$15,193,860	
pkg. meals	\$18,822,932	\$0	\$18,822,932	\$0	\$0	\$0	\$0	\$1,786,795	\$1,951,166	\$7,540,115	\$7,544,855	
Eq. RodReel	\$25,143,481	\$19,604,973	\$5,538,508	\$12,989,758	\$6,757,985							
Eq. Tackle	\$19,747,744	\$2,085,070	\$17,662,674	\$1,718,940	\$366,129							
Eq. Tacklebox	\$8,929,572	\$8,845,224	\$84,348	\$3,460,528	\$399,823							
Eq. Electronics	\$3,860,351	\$4,682,403	\$1,968,201	\$2,429,641	\$241,400							
Eq. Misc	\$2,671,041	\$2,429,641	\$241,400	\$1,454,072	\$816,222							
Eq. Shellfish	\$2,271,094	\$1,233,909	\$613,573	\$1,847,481	\$7,084,928							
Eq. Tacklebox	\$9,329,159	\$3,054,823	\$1,642,002	\$4,696,825	\$3,457,840							
Eq. Cooler	\$9,841,502	\$5,434,312	\$1,658,504	\$3,772,215	\$3,620,424							
Eq. Boots	\$7,092,816	\$3,772,215	\$151,791	\$105,171,133	\$101,074,361							
Eq. Jackets	\$3,772,215	\$3,772,215	\$0	\$37,883,516	\$37,160,536							
Eq. Motors	\$37,883,516	\$37,160,536	\$722,980	\$7,993,687	\$7,759,679							
Eq. Trailers	\$7,993,687	\$7,759,679	\$234,009	\$15,542,338	\$14,488,956							
Eq. OtherParts	\$15,542,338	\$14,488,956	\$1,053,382	\$1,770,546	\$1,204,605							
Eq. RepairSpray	\$1,770,546	\$1,204,605	\$485,061	\$5,224,991	\$5,143,008							
Eq. Firearms	\$5,224,991	\$5,143,008	\$81,983	\$6,181,291	\$5,286,567							
Eq. Cameras	\$6,181,291	\$5,286,567	\$894,724	\$3,671,254	\$3,423,576							
Eq. Tents	\$3,671,254	\$3,423,576	\$247,678	\$31,534,144	\$31,518,386							
Eq. Campers	\$31,534,144	\$31,518,386	\$15,757	\$2,903,071	\$2,616,313							
Eq. Other_Camp	\$2,903,071	\$2,616,313	\$286,758	\$88,317,188	\$84,317,439							
Eq. Vehicles	\$88,317,188	\$84,317,439	\$3,999,749	\$5,587,334	\$4,118,284							
Eq. Planes	\$5,587,334	\$4,118,284	\$1,469,050	\$26,397,301	\$26,397,301							
Eq. ATV	\$26,397,301	\$26,397,301	\$0	\$4,740,207	\$4,480,408							
Eq. Registration	\$4,740,207	\$4,480,408	\$269,799	\$23,980,232	\$22,400,506							
Eq. Repair	\$23,980,232	\$22,400,506	\$1,587,726	\$233,366	\$224,639							
Eq. Other	\$233,366	\$224,639	\$8,666	\$50,378,496	\$19,896,212							
RE. repair	\$50,378,496	\$19,896,212	\$30,482,285	\$132,458,660	\$53,243,325							
RE. construction	\$132,458,660	\$53,243,325	\$79,215,335									
License expenditures	\$23,164,513	\$6,627,558	\$16,536,955	\$3,773,622	\$2,272,458	\$256,378	\$325,099	\$6,314,009	\$3,115,281	\$2,897,953	\$4,209,712	
Trip expenditures (non-package)	\$567,188,150	\$219,829,151	\$347,358,999	\$76,238,790	\$81,439,812	\$28,763,962	\$33,386,587	\$77,191,364	\$33,800,535	\$92,924,958	\$143,442,141	
Package expenditures	\$137,519,700	\$0	\$137,519,700	\$0	\$0	\$0	\$0	\$10,773,868	\$8,821,455	\$56,729,482	\$61,194,895	
Equipment expenditures	\$475,078,554	\$433,693,104	\$41,385,450									
Real estate expenditures	\$182,837,156	\$73,139,537	\$109,697,619									
Total expenditures	\$1,385,788,072	\$733,289,349	\$652,498,723	\$80,812,412	\$83,712,269	\$29,020,340	\$33,711,687	\$94,279,241	\$45,737,271	\$152,552,383	\$288,846,748	

Appendix M2.—Spending by sportfishing anglers in Southeast Alaska, 2007.

	Guided & Unguided Fresh & Salt		Guided & Unguided Fresh & Salt		Resident Unguided		Resident Guided		NonResident Unguided		NonResident Guided	
	Resident & Nonresident		Resident	Nonresident	Fresh	Salt	Fresh	Salt	Fresh	Salt	Fresh	Salt
licenses												
fuel	\$14,337,262		\$7,947,106	\$6,390,155	\$383,676	\$7,232,882			\$512,747	\$4,125,662	\$219,286	\$1,532,460
guide	\$26,931,097		\$2,116,465	\$24,814,632	\$0	\$84,305			\$588,639	\$305,377	\$2,414,749	\$21,505,868
air	\$17,160,414		\$0	\$17,160,414	\$0	\$0			\$1,758,496	\$4,852,626	\$1,080,118	\$9,469,274
travel	\$3,966,276		\$58,390	\$3,907,885	\$16,226	\$42,165			\$841,813	\$750,283	\$535,243	\$1,780,545
process	\$8,703,721		\$1,065,731	\$6,837,990	\$91,673	\$1,265,507			\$455,557	\$701,045	\$488,682	\$5,191,906
rentals	\$2,395,601		\$125,956	\$2,269,645	\$0	\$58,241			\$354,121	\$1,005,864	\$169,494	\$740,166
derby	\$905,077		\$815,040	\$89,229	\$69,656	\$746,192			\$4,081	\$37,464	\$0	\$47,683
deck	\$4,925,627		\$4,166,501	\$759,127	\$8,687	\$4,126,563			\$263,239	\$493,202	\$0	\$2,686
ice	\$357,882		\$233,917	\$123,965	\$10,216	\$223,702			\$26,661	\$67,288	\$8,488	\$21,528
bait	\$2,341,333		\$1,601,827	\$739,505	\$108,566	\$1,482,050			\$177,223	\$465,636	\$48,740	\$47,906
groceries	\$8,726,800		\$3,031,000	\$5,695,799	\$226,283	\$2,676,679			\$816,755	\$2,604,512	\$386,069	\$1,888,464
meals	\$5,909,275		\$261,832	\$5,647,443	\$0	\$235,603			\$692,006	\$2,155,046	\$466,441	\$2,333,949
lodging	\$9,558,970		\$104,796	\$9,454,174	\$0	\$104,796			\$1,386,011	\$2,393,836	\$1,564,947	\$4,109,380
gifts	\$4,746,231		\$44,489	\$4,701,743	\$21,429	\$23,059			\$430,943	\$1,082,181	\$186,409	\$3,002,209
amusement	\$1,151,342		\$93,712	\$1,057,630	\$49,299	\$44,412			\$140,832	\$254,262	\$124,968	\$537,568
other	\$207,720		\$0	\$207,720	\$0	\$0			\$0	\$8,184	\$0	\$199,537
pkg. air	\$6,842,229		\$0	\$6,842,229	\$0	\$0			\$580,861	\$979,105	\$513,625	\$4,768,638
pkg. trans	\$2,677,572		\$0	\$2,677,572	\$0	\$0			\$16,232	\$200,766	\$154,826	\$2,305,747
pkg. guide	\$13,834,081		\$0	\$13,834,081	\$0	\$0			\$0	\$843,864	\$648,256	\$12,341,961
pkg. lodge	\$10,256,687		\$0	\$10,256,687	\$0	\$0			\$378,440	\$1,241,587	\$503,364	\$8,133,307
pkg. meals	\$6,255,933		\$0	\$6,255,933	\$0	\$0			\$189,364	\$713,206	\$250,665	\$5,102,699
Eq. RodReel	\$3,566,878		\$2,474,141	\$1,092,737								
Eq. Tackle	\$3,697,289		\$2,105,712	\$1,591,577								
Eq. Tacklebox	\$224,907		\$165,490	\$59,418								
Eq. Electronics	\$1,751,924		\$1,712,509	\$39,415								
Eq. Nets	\$576,705		\$432,132	\$144,573								
Eq. Misc	\$1,604,304		\$924,324	\$679,980								
Eq. Shellfish	\$887,752		\$786,118	\$101,634								
Eq. Taxidermy	\$425,444		\$0	\$425,444								
Eq. Books	\$289,802		\$124,512	\$165,290								
Eq. Preserve	\$1,177,214		\$944,379	\$232,835								
Eq. Cooler	\$696,130		\$442,770	\$253,360								
Eq. Clothing	\$2,259,971		\$812,730	\$1,447,241								
Eq. Boots	\$1,018,424		\$752,157	\$266,267								
Eq. Jackets	\$690,442		\$634,385	\$56,057								
Eq. Boats	\$14,299,765		\$12,356,617	\$1,943,148								
Eq. Motors	\$9,385,288		\$9,369,522	\$15,766								
Eq. Trailers	\$2,816,067		\$2,780,594	\$35,473								
Eq. Other Parts	\$3,197,413		\$2,669,856	\$527,557								
Eq. Bear Spray	\$266,786		\$195,089	\$71,697								
Eq. Firearms	\$436,087		\$436,087	\$0								
Eq. Cameras	\$815,101		\$618,768	\$196,333								
Eq. Tents	\$243,973		\$232,173	\$11,800								
Eq. Campers	\$0		\$0	\$0								
Eq. Other Camp	\$414,949		\$366,935	\$48,014								
Eq. Vehicles	\$7,109,202		\$7,055,405	\$53,797								
Eq. Planes	\$1,304,243		\$846,030	\$358,214								
Eq. ATV	\$1,307,325		\$1,307,325	\$0								
Eq. Registration	\$958,630		\$948,429	\$10,201								
Eq. Repair	\$6,043,640		\$4,999,739	\$1,043,900								
Eq. Other	\$12,305		\$12,305	\$0								
RE. repair	\$26,660,734		\$6,037,607	\$20,623,127								
RE. construction	\$26,974,980		\$13,502,583	\$13,472,398								
Trip expenditures (non-package)	\$112,324,626		\$22,467,571	\$89,857,056	\$985,711	\$18,346,157	\$0	\$0	\$8,449,125	\$21,303,169	\$7,893,634	\$52,411,128
Package expenditures	\$39,866,602		\$0	\$39,866,602	\$0	\$0	\$0	\$0	\$1,164,897	\$3,978,528	\$2,070,726	\$32,662,353
Equipment expenditures	\$67,477,561		\$56,606,233	\$10,871,328								
Real estate expenditures	\$53,835,714		\$19,540,190	\$34,295,525								
Total expenditures	\$273,504,804		\$98,613,993	\$174,890,811	\$985,711	\$18,346,157	\$0	\$0	\$9,614,022	\$25,281,696	\$9,964,359	\$85,063,481

Appendix M3.—Spending by sportfishing anglers in Southcentral Alaska, 2007.

	Guided & Unguided Fresh & Salt		Guided & Unguided Fresh & Salt		Resident Unguided		Resident Guided		Non-Resident Unguided		Non-Resident Guided	
	Resident & Nonresident		RESIDENT	NONRESIDENT	FRESH	SALT	FRESH	SALT	FRESH	SALT	FRESH	SALT
licenses												
fuel	\$69,518,847		\$54,295,081	\$15,323,766	\$24,366,478	\$24,740,140	\$2,742,460	\$2,446,003	\$5,517,436	\$1,661,296	\$4,101,499	\$4,043,535
guide	\$82,917,307		\$29,089,167	\$53,828,140	\$1,478,417	\$708,231	\$12,038,032	\$14,864,487	\$2,837,944	\$275,723	\$24,892,052	\$25,822,420
air	\$34,846,054		\$2,397,597	\$32,448,467	\$690,530	\$0	\$1,212,832	\$494,235	\$12,659,783	\$1,679,976	\$9,752,250	\$8,356,457
travel	\$7,155,593		\$751,980	\$6,403,613	\$196,692	\$209,141	\$324,786	\$21,360	\$1,794,963	\$97,109	\$2,379,647	\$2,131,894
process	\$29,345,461		\$7,099,744	\$22,245,717	\$2,543,272	\$2,596,468	\$319,038	\$1,640,966	\$4,931,189	\$1,544,079	\$5,334,817	\$10,435,633
rentals	\$24,031,699		\$2,144,824	\$21,886,874	\$1,294,435	\$755,215	\$0	\$95,175	\$7,759,341	\$715,174	\$6,482,627	\$6,929,732
derby	\$1,897,780		\$1,518,191	\$379,589	\$299,004	\$1,005,218	\$27,953	\$186,016	\$40,267	\$23,574	\$59,905	\$255,843
dock	\$10,367,086		\$8,742,469	\$1,624,618	\$3,435,880	\$5,244,902	\$14,288	\$47,398	\$778,927	\$738,438	\$42,488	\$64,765
ice	\$3,982,644		\$3,082,403	\$900,241	\$1,588,106	\$1,216,061	\$85,119	\$193,116	\$412,875	\$89,090	\$191,731	\$206,545
bait	\$6,193,705		\$4,761,052	\$1,432,653	\$1,546,166	\$3,124,154	\$16,343	\$74,389	\$465,618	\$626,556	\$157,931	\$182,548
groceries	\$47,974,193		\$29,026,822	\$18,948,371	\$15,657,441	\$9,334,446	\$1,954,615	\$2,079,320	\$8,274,104	\$1,559,726	\$4,750,100	\$4,364,441
meals	\$32,717,487		\$14,061,048	\$18,656,438	\$6,617,101	\$3,961,099	\$2,209,260	\$2,283,689	\$5,076,313	\$823,001	\$6,752,102	\$7,005,022
lodging	\$45,204,580		\$17,953,173	\$27,251,408	\$5,805,912	\$3,869,740	\$5,376,485	\$2,901,035	\$4,628,686	\$1,140,004	\$9,808,358	\$11,674,359
gifts	\$13,233,350		\$2,669,424	\$10,663,926	\$788,293	\$735,520	\$368,755	\$676,856	\$3,368,461	\$498,519	\$3,212,655	\$3,584,090
amusement	\$7,946,070		\$4,309,182	\$3,636,888	\$1,001,071	\$2,373,944	\$559,685	\$374,483	\$997,645	\$259,021	\$1,475,496	\$904,726
other	\$481,215		\$87,862	\$393,353	\$46,262	\$34,753	\$0	\$6,847	\$6,930	\$0	\$212,375	\$174,048
pkg. air	\$21,328,586		\$0	\$21,328,586	\$0	\$0	\$0	\$0	\$4,110,669	\$3,253,673	\$8,620,046	\$5,336,198
pkg. trans	\$3,675,736		\$0	\$3,675,736	\$0	\$0	\$0	\$0	\$297,949	\$25,764	\$2,317,405	\$1,034,628
pkg. guide	\$30,756,176		\$0	\$30,756,176	\$0	\$0	\$0	\$0	\$960,614	\$77,969	\$18,353,165	\$11,364,429
pkg. lodge	\$22,340,395		\$0	\$22,340,395	\$0	\$0	\$0	\$0	\$2,370,684	\$247,572	\$13,105,460	\$6,616,679
pkg. meals	\$12,029,663		\$0	\$12,029,663	\$0	\$0	\$0	\$0	\$1,560,741	\$1,237,960	\$6,843,575	\$2,387,387
Eq. Boat	\$19,510,177		\$10,269,246	\$4,245,931								
Eq. Tackle	\$14,217,547		\$9,379,640	\$4,837,907								
Eq. Tacklebox	\$1,596,900		\$1,306,540	\$289,359								
Eq. Electronics	\$6,667,511		\$6,622,578	\$44,933								
Eq. Helm	\$3,037,363		\$2,782,113	\$255,250								
Eq. Misc	\$4,488,062		\$3,283,959	\$1,204,103								
Eq. Shellfish	\$1,639,377		\$1,602,762	\$136,616								
Eq. Taxidermy	\$1,845,650		\$1,454,872	\$390,778								
Eq. Books	\$1,368,032		\$939,037	\$428,995								
Eq. Preserve	\$7,628,401		\$5,643,839	\$1,984,562								
Eq. Coolers	\$3,610,131		\$2,296,735	\$1,313,396								
Eq. Clothing	\$6,931,992		\$5,056,318	\$1,875,674								
Eq. Boots	\$5,563,975		\$4,256,400	\$1,307,575								
Eq. Jackets	\$2,812,514		\$2,732,546	\$79,968								
Eq. Boats	\$86,530,986		\$84,377,363	\$2,153,623								
Eq. Motors	\$27,028,611		\$26,321,397	\$707,214								
Eq. Trailers	\$4,697,102		\$4,498,667	\$198,435								
Eq. Other Parts	\$10,987,563		\$10,469,616	\$517,946								
Eq. Backpacks	\$1,265,211		\$894,892	\$370,319								
Eq. Firearms	\$4,331,218		\$4,249,236	\$81,983								
Eq. Cameras	\$4,702,636		\$4,078,028	\$624,609								
Eq. Tents	\$2,996,888		\$2,775,877	\$221,010								
Eq. Campers	\$27,416,058		\$27,400,300	\$15,757								
Eq. Other Camp	\$2,117,042		\$1,930,562	\$186,481								
Eq. Vehicles	\$62,443,391		\$68,528,989	\$3,514,402								
Eq. Planes	\$3,572,819		\$2,697,880	\$874,940								
Eq. ATV	\$18,649,536		\$18,649,536	\$0								
Eq. Registration	\$3,104,035		\$2,937,391	\$246,644								
Eq. Repair	\$16,123,734		\$15,626,970	\$496,764								
Eq. Other	\$216,528		\$207,861	\$8,666								
RE repair	\$22,360,928		\$13,095,701	\$9,265,228								
RE construction	\$100,968,565		\$37,799,302	\$63,169,263								
Trip expenditures (non-package)	\$417,913,080		\$181,889,019	\$236,024,061	\$66,355,060	\$59,899,032	\$27,249,652	\$28,385,275	\$59,550,482	\$11,731,288	\$78,606,235	\$86,136,056
Package expenditures	\$90,130,556		\$0	\$90,130,556	\$0	\$0	\$0	\$0	\$9,308,656	\$4,842,927	\$49,239,651	\$26,739,321
Equipment expenditures	\$357,184,990		\$328,171,050	\$29,013,940								
Real estate expenditures	\$123,329,493		\$50,895,003	\$72,434,491								
Total expenditures	\$988,558,119		\$560,955,071	\$427,603,048	\$66,355,060	\$59,899,032	\$27,249,652	\$28,385,275	\$68,859,138	\$16,574,215	\$127,845,886	\$112,875,377

Appendix M4.—Spending by sportfishing anglers in the Interior Region of Alaska, 2007

	Guided & Unguided Fresh & Salt Resident & Nonresident	Guided & Unguided Fresh & Salt		Resident Unguided		Resident Guided		Non-Resident Unguided		Non-Resident Guided	
		RESIDENT	NONRESIDENT	FRESH	SALT	FRESH	SALT	FRESH	SALT	FRESH	SALT
licenses											
fuel	\$9,578,730	\$7,696,662	\$1,882,068	\$4,729,944				\$727,184		\$601,553	
guide	\$6,003,212	\$1,070,555	\$4,932,657	\$78,951				\$799,496		\$2,407,661	
air	\$2,656,617	\$881,467	\$1,775,149	\$0				\$321,688		\$879,366	
travel	\$4,736,998	\$4,460	\$4,732,537	\$4,460				\$4,595,118		\$134,634	
process	\$268,185	\$195,395	\$72,790	\$174,931				\$2,938		\$25,148	
rentals	\$542,552	\$34,072	\$508,480	\$34,072				\$89,838		\$328,884	
derby	\$41,876	\$1,959	\$39,917	\$1,959				\$30,600		\$0	
deck	\$140,854	\$128,252	\$12,602	\$119,396				\$9,204		\$389	
ice	\$462,359	\$225,413	\$236,946	\$164,963				\$204,823		\$11,444	
boat	\$236,749	\$180,648	\$56,101	\$151,294				\$44,594		\$6,095	
groceries	\$4,144,134	\$3,121,448	\$1,022,687	\$2,233,726				\$158,422		\$364,512	
meals	\$3,172,006	\$1,112,718	\$2,059,288	\$728,015				\$1,077,845		\$552,272	
lodging	\$2,180,908	\$491,909	\$1,688,998	\$340,537				\$322,463		\$558,771	
gifts	\$2,023,960	\$66,028	\$1,957,933	\$51,559				\$563,590		\$575,876	
amusement	\$695,576	\$219,606	\$475,970	\$84,211				\$239,973		\$168,639	
other	\$65,730	\$41,970	\$23,759	\$0				\$3,983		\$9,844	
pkg. air	\$2,106,458	\$0	\$2,106,458	\$0				\$119,396		\$1,413,356	
pkg. trans.	\$361,355	\$0	\$361,355	\$0				\$11,634		\$260,258	
pkg. guide	\$2,709,832	\$0	\$2,709,832	\$0				\$74,873		\$1,993,551	
pkg. lodge	\$1,807,660	\$0	\$1,807,660	\$0				\$57,721		\$1,306,066	
pkg. meals	\$637,336	\$0	\$637,336	\$0				\$36,691		\$445,876	
Eq. RodReel	\$2,061,425	\$1,861,586	\$199,840								
Eq. Tackle	\$1,832,908	\$1,504,407	\$328,501								
Eq. Tacklebox	\$264,263	\$246,910	\$17,352								
Eq. Electronics	\$510,137	\$510,137	\$0								
Eq. Nets	\$246,283	\$246,283	\$0								
Eq. Misc	\$558,237	\$474,119	\$84,119								
Eq. Shellfish	\$143,912	\$140,760	\$3,151								
Eq. Taxidermy	\$0	\$0	\$0								
Eq. Books	\$189,647	\$170,359	\$19,288								
Eq. Preserve	\$623,644	\$496,710	\$126,934								
Eq. Coolers	\$390,564	\$315,319	\$75,245								
Eq. Clothing	\$649,539	\$514,614	\$134,926								
Eq. Boots	\$510,418	\$425,755	\$84,663								
Eq. Jackets	\$269,259	\$253,493	\$15,766								
Eq. Boats	\$4,340,381	\$4,340,381	\$0								
Eq. Motors	\$1,469,616	\$1,469,616	\$0								
Eq. Trailers	\$480,518	\$480,518	\$0								
Eq. OtherParts	\$1,357,363	\$1,349,484	\$7,879								
Eq. BearSpray	\$238,549	\$194,704	\$43,845								
Eq. Firearms	\$457,685	\$457,685	\$0								
Eq. Cameras	\$663,553	\$589,771	\$73,782								
Eq. Tents	\$430,394	\$415,526	\$14,868								
Eq. Campers	\$4,118,085	\$4,118,085	\$0								
Eq. Other Camp	\$371,080	\$318,817	\$52,263								
Eq. Vehicles	\$18,764,595	\$18,733,046	\$31,549								
Eq. Planes	\$710,272	\$474,375	\$235,897								
Eq. ATV	\$6,440,441	\$6,440,441	\$0								
Eq. Registration	\$697,542	\$594,588	\$2,954								
Eq. Repair	\$1,820,858	\$1,773,797	\$47,061								
Eq. Other	\$4,533	\$4,533	\$0								
RE_repair	\$1,156,834	\$762,904	\$393,930								
RE_construction	\$4,515,115	\$1,941,441	\$2,573,674								
Trip expenditures (non-package)	\$36,950,444	\$15,472,561	\$21,477,883	\$8,898,018	\$0	\$0	\$0	\$0,191,758	\$0	\$6,625,089	\$0
Package expenditures	\$7,522,641	\$0	\$7,522,641	\$0	\$0	\$0	\$0	\$300,314	\$0	\$5,419,106	\$0
Equipment expenditures	\$50,415,603	\$48,915,821	\$1,499,781								
Real estate expenditures	\$5,671,949	\$2,704,345	\$2,967,604								
Total expenditures	\$100,560,637	\$67,892,727	\$33,467,910	\$8,898,018	\$0	\$0	\$0	\$3,492,072	\$0	\$12,044,195	\$0

Appendix M5.—Spending by sportfishing anglers in the Cook Inlet Region of Alaska, 2007

	Guided & Unguided Fresh & Salt	Guided & Unguided Fresh & Salt		Resident Unguided		Resident Guided		Non-Resident Unguided		Non-Resident Guided	
	Resident & Nonresident	RESIDENT	NONRESIDENT	FRESH	SALT	FRESH	SALT	FRESH	SALT	FRESH	SALT
licenses											
fuel	\$47,056,024	\$37,011,821	\$10,044,202	\$21,901,576	\$11,380,954	\$2,173,330	\$1,555,961	\$3,263,385	\$836,568	\$3,186,123	\$2,758,126
guide	\$49,375,757	\$18,110,318	\$31,265,439	\$491,026	\$131,158	\$9,775,368	\$7,712,767	\$1,497,359	\$205,546	\$15,117,765	\$14,444,769
air	\$23,114,633	\$1,812,166	\$21,302,467	\$641,443	\$0	\$676,488	\$494,235	\$9,165,356	\$879,229	\$6,751,271	\$4,506,611
travel	\$3,619,352	\$589,157	\$3,030,195	\$196,692	\$46,840	\$324,265	\$21,360	\$1,224,923	\$59,592	\$1,359,212	\$386,468
process	\$20,522,423	\$5,012,909	\$15,509,514	\$2,416,922	\$1,363,313	\$211,402	\$1,021,272	\$4,389,265	\$682,949	\$4,186,148	\$6,251,152
rentals	\$19,616,056	\$1,478,512	\$18,137,545	\$984,794	\$398,542	\$0	\$95,175	\$6,829,749	\$290,235	\$5,601,019	\$5,416,541
derby	\$891,534	\$647,639	\$243,895	\$265,911	\$311,741	\$19,034	\$50,954	\$40,009	\$16,211	\$44,050	\$143,625
deck	\$5,963,918	\$4,901,916	\$1,062,002	\$2,999,774	\$1,874,689	\$14,288	\$13,165	\$487,024	\$479,686	\$39,839	\$55,453
ice	\$2,796,385	\$2,099,702	\$696,683	\$1,443,246	\$511,160	\$67,606	\$77,690	\$391,344	\$31,224	\$141,983	\$132,132
bait	\$3,974,845	\$2,870,067	\$1,104,778	\$1,415,536	\$1,431,427	\$14,266	\$8,838	\$400,092	\$425,280	\$141,380	\$138,026
groceries	\$36,268,957	\$22,606,554	\$13,662,403	\$14,369,144	\$4,826,360	\$1,845,644	\$1,565,405	\$6,744,856	\$781,830	\$3,306,773	\$2,828,945
meals	\$23,205,088	\$10,042,829	\$13,162,259	\$5,004,739	\$1,426,230	\$1,878,700	\$1,733,160	\$4,436,963	\$395,298	\$4,354,029	\$3,975,969
lodging	\$29,991,010	\$12,216,060	\$17,774,950	\$4,921,116	\$1,149,674	\$3,883,292	\$2,261,977	\$3,402,945	\$345,236	\$7,187,303	\$6,839,466
gifts	\$9,696,196	\$1,889,133	\$7,807,062	\$695,238	\$248,621	\$321,053	\$624,221	\$2,752,956	\$239,225	\$2,594,590	\$2,220,291
amusement	\$4,444,159	\$1,946,515	\$2,497,644	\$885,321	\$282,850	\$554,469	\$223,875	\$671,368	\$121,097	\$1,182,918	\$522,260
other	\$224,544	\$60,030	\$164,514	\$46,262	\$13,767	\$0	\$0	\$6,930	\$0	\$59,683	\$97,902
pkg. air	\$5,564,403	\$0	\$5,564,403	\$0	\$0	\$0	\$0	\$2,146,527	\$278,860	\$1,352,889	\$1,786,107
pkg. trans	\$855,214	\$0	\$855,214	\$0	\$0	\$0	\$0	\$238,326	\$22,810	\$314,182	\$279,897
pkg. guide	\$9,022,768	\$0	\$9,022,768	\$0	\$0	\$0	\$0	\$731,076	\$59,021	\$3,693,690	\$4,538,980
pkg. lodge	\$6,020,461	\$0	\$6,020,461	\$0	\$0	\$0	\$0	\$1,293,293	\$164,892	\$2,311,779	\$2,250,497
pkg. meals	\$2,311,695	\$0	\$2,311,695	\$0	\$0	\$0	\$0	\$618,058	\$89,400	\$1,007,583	\$596,654
Eq. Rod/Reel	\$16,509,181	\$13,269,547	\$3,249,634								
Eq. Tackle	\$11,040,467	\$7,483,531	\$3,556,936								
Eq. Tacklebox	\$1,327,807	\$1,093,528	\$234,280								
Eq. Electronics	\$5,564,976	\$5,551,575	\$13,401								
Eq. Nods	\$2,678,138	\$2,482,010	\$196,128								
Eq. Misc	\$3,452,707	\$2,684,018	\$868,690								
Eq. Shellfish	\$809,996	\$690,714	\$119,282								
Eq. Taxidermy	\$1,806,267	\$1,464,872	\$341,395								
Eq. Books	\$1,129,920	\$927,718	\$202,202								
Eq. Preserve	\$5,850,248	\$4,710,457	\$1,139,791								
Eq. Coolers	\$2,848,078	\$1,864,918	\$983,159								
Eq. Clothing	\$5,267,860	\$3,920,066	\$1,347,794								
Eq. Boots	\$4,742,105	\$3,591,748	\$1,150,357								
Eq. LJackets	\$2,182,509	\$2,136,044	\$46,466								
Eq. Boats	\$82,395,521	\$80,377,485	\$2,018,037								
Eq. Motors	\$22,882,689	\$22,853,409	\$29,280								
Eq. Trailers	\$4,340,753	\$4,217,105	\$123,647								
Eq. Other Parts	\$7,822,435	\$7,662,191	\$160,244								
Eq. Bear Spray	\$992,134	\$704,412	\$287,722								
Eq. Firearms	\$3,475,613	\$3,417,279	\$58,334								
Eq. Cameras	\$4,013,401	\$3,480,315	\$523,085								
Eq. Tents	\$2,681,840	\$2,472,341	\$209,499								
Eq. Campers	\$23,721,889	\$23,708,102	\$13,788								
Eq. Other Camp	\$1,730,403	\$1,554,141	\$176,261								
Eq. Vehicles	\$56,666,397	\$53,115,779	\$3,550,618								
Eq. Planes	\$3,462,984	\$2,697,880	\$765,104								
Eq. ATV	\$17,109,683	\$17,109,683	\$0								
Eq. Registration	\$2,527,535	\$2,389,419	\$138,116								
Eq. Repair	\$14,417,524	\$14,084,627	\$332,897								
Eq. Other	\$211,800	\$207,861	\$3,939								
RE. repair	\$15,258,109	\$6,221,360	\$9,036,749								
RE. construction	\$99,512,596	\$36,711,001	\$62,801,595								
Trip expenditures (non-package)	\$280,760,879	\$123,295,328	\$157,465,551	\$58,678,740	\$25,397,328	\$21,759,204	\$17,460,056	\$45,704,524	\$5,789,207	\$55,254,085	\$50,717,735
Package expenditures	\$23,774,541	\$0	\$23,774,541	\$0	\$0	\$0	\$0	\$8,027,281	\$615,002	\$8,680,122	\$9,452,136
Equipment expenditures	\$313,662,850	\$291,710,774	\$21,952,076								
Real estate expenditures	\$114,770,705	\$42,932,362	\$71,838,343								
Total expenditures	\$732,988,975	\$457,938,464	\$275,050,511	\$58,678,740	\$25,397,328	\$21,759,204	\$17,460,056	\$50,731,805	\$6,404,209	\$63,934,207	\$60,169,871

Appendix M6.-Spending by saltwater sportfishing anglers in Southeast Alaska, 2007.

	SALT Guided & Unguided Resident & Nonresident	SALT Guided & Unguided Resident Nonresident	Resident Unguided SALT	Resident Guided SALT	NonResident Unguided SALT	NonResident Guided SALT
licenses						
fuel	\$14,337,262	\$7,947,108	\$8,380,155	\$383,676	\$21	\$307,034
guide	\$26,831,097	\$2,116,405	\$24,814,632	\$0	\$126	\$1,865,600
air	\$17,160,414	\$0	\$17,160,414	\$0	\$0	\$1,758,486
travel	\$3,986,275	\$58,390	\$3,907,885	\$16,226	\$0	\$841,813
process	\$8,703,721	\$1,865,731	\$6,837,990	\$91,673	\$34	\$508,550
rentals	\$2,395,601	\$125,958	\$2,269,645	\$0	\$5	\$67,715
derby	\$905,077	\$815,848	\$89,229	\$69,656	\$0	\$4,081
dock	\$4,925,627	\$4,166,501	\$759,127	\$8,687	\$2	\$25,372
ice	\$367,882	\$233,917	\$133,965	\$10,216	\$0	\$26,661
bait	\$2,341,333	\$1,601,827	\$739,506	\$108,666	\$1	\$11,212
groceries	\$8,726,800	\$3,031,000	\$5,695,799	\$226,283	\$7	\$110,402
meals	\$5,808,275	\$261,832	\$5,647,443	\$0	\$2	\$682,006
lodging	\$9,568,870	\$104,796	\$9,454,174	\$0	\$0	\$1,386,011
gifts	\$4,748,231	\$44,488	\$4,703,743	\$21,429	\$0	\$430,043
amusement	\$1,151,342	\$93,712	\$1,057,630	\$49,299	\$0	\$140,832
ether	\$207,720	\$0	\$207,720	\$0	\$0	\$0
pkg. air	\$6,842,229	\$0	\$6,842,229	\$0	\$0	\$580,861
pkg. trans	\$2,677,572	\$0	\$2,677,572	\$0	\$0	\$16,232
pkg. guide	\$13,834,081	\$0	\$13,834,081	\$0	\$0	\$0
pkg. lodge	\$10,258,687	\$0	\$10,258,687	\$0	\$0	\$378,440
pkg. meals	\$6,255,933	\$0	\$6,255,933	\$0	\$0	\$189,364
Eq. Rod/Reel	\$3,566,878	\$2,474,141	\$1,092,737	\$1,591,577	\$0	\$0
Eq. Tackle	\$3,697,289	\$2,105,712	\$1,591,577	\$1,591,577	\$0	\$0
Eq. Tacklebox	\$224,907	\$165,490	\$59,418	\$59,418	\$0	\$0
Eq. Electronics	\$1,751,924	\$1,712,509	\$39,415	\$39,415	\$0	\$0
Eq. Net	\$576,705	\$432,132	\$144,573	\$144,573	\$0	\$0
Eq. Misc	\$1,604,304	\$924,324	\$679,980	\$679,980	\$0	\$0
Eq. Shallow	\$887,752	\$706,118	\$181,634	\$181,634	\$0	\$0
Eq. Tacklebox	\$425,444	\$0	\$425,444	\$425,444	\$0	\$0
Eq. Books	\$289,802	\$124,512	\$165,290	\$165,290	\$0	\$0
Eq. Preserv	\$1,177,214	\$844,379	\$332,835	\$332,835	\$0	\$0
Eq. Coolers	\$896,130	\$442,770	\$453,360	\$453,360	\$0	\$0
Eq. Clothing	\$2,258,971	\$812,730	\$1,446,241	\$1,446,241	\$0	\$0
Eq. Boots	\$1,018,424	\$752,157	\$266,267	\$266,267	\$0	\$0
Eq. Jackets	\$690,442	\$634,385	\$56,057	\$56,057	\$0	\$0
Eq. Boats	\$14,298,765	\$12,356,617	\$1,942,148	\$1,942,148	\$0	\$0
Eq. Motors	\$9,385,288	\$8,368,522	\$1,016,766	\$1,016,766	\$0	\$0
Eq. Trailers	\$2,816,067	\$2,780,594	\$35,473	\$35,473	\$0	\$0
Eq. Other Parts	\$3,197,413	\$2,668,856	\$528,557	\$528,557	\$0	\$0
Eq. Bear Spray	\$266,786	\$195,089	\$71,697	\$71,697	\$0	\$0
Eq. Firearms	\$436,087	\$436,087	\$0	\$0	\$0	\$0
Eq. Cameras	\$815,101	\$618,768	\$196,333	\$196,333	\$0	\$0
Eq. Tents	\$243,973	\$232,173	\$11,800	\$11,800	\$0	\$0
Eq. Campers	\$0	\$0	\$0	\$0	\$0	\$0
Eq. Other Camp	\$414,549	\$366,935	\$47,614	\$47,614	\$0	\$0
Eq. Vehicles	\$7,109,202	\$7,055,405	\$53,797	\$53,797	\$0	\$0
Eq. Planes	\$1,304,243	\$948,030	\$356,214	\$356,214	\$0	\$0
Eq. ATV	\$1,307,325	\$1,307,325	\$0	\$0	\$0	\$0
Eq. Registration	\$858,630	\$848,429	\$10,201	\$10,201	\$0	\$0
Eq. Repair	\$6,043,640	\$4,988,738	\$1,054,902	\$1,054,902	\$0	\$0
Eq. Other	\$12,305	\$12,305	\$0	\$0	\$0	\$0
RE. repair	\$26,860,734	\$6,037,607	\$20,823,127	\$20,823,127	\$0	\$0
RE. construction	\$26,074,980	\$13,602,583	\$12,472,398	\$12,472,398	\$0	\$0
Trip expenditures (non-package)	\$112,324,626	\$22,467,571	\$89,857,056	\$985,711	\$197	\$2,022,114
Package expenditures	\$39,866,502	\$0	\$39,866,502	\$0	\$0	\$1,184,897
Equipment expenditures						
Real estate expenditures						
Total expenditures	\$152,191,129	\$22,467,571	\$129,723,558	\$985,711	\$197	\$2,022,114

The following tables present measures of the economic contributions of trip and package expenditures made by resident and nonresident anglers, for each region, by type of water fished, and by use of guides. Figures include the direct and multiplier effects of angler spending on output, employment and income within each analysis state.

N1	Economic contributions of statewide trip-related expenditures
N2	Economic contributions of statewide package expenditures
N3	Economic contributions of Southeast Region trip-related expenditures
N4	Economic contributions of Southeast Region package expenditures
N5	Economic contributions of Southeast Region trip-related expenditures
N6	Economic contributions of Southeast Region package expenditures
N7	Economic contributions of Interior Region trip-related expenditures
N8	Economic contributions of Interior Region package expenditures
N9	APPENDIX N:
N10	DETAILED ECONOMIC CONTRIBUTIONS OF TRIP AND
N11	PACKAGE SPENDING
N12	Economic contributions of Southeast Marine Subregion trip-related expenditures
N13	Economic contributions of Southeast Marine Subregion package expenditures

The following tables present measures of the economic contributions of trip and package expenditures made by resident and nonresident anglers, for each region, by type of water fished, and by use of guides. Figures include the direct and multiplier effects of angler spending on output, employment and income within each analysis strata.

- N1. Economic contributions of Statewide trip-related expenditures
- N2. Economic contributions of Statewide package expenditures
- N3. Economic contributions of Southeast Region trip-related expenditures
- N4. Economic contributions of Southeast Region package expenditures
- N5. Economic contributions of Southcentral Region trip-related expenditures
- N6. Economic contributions of Southcentral Region package pending
- N7. Economic contributions of Interior Region trip-related expenditures
- N8. Economic contributions of Interior Region package expenditures
- N9. Economic contributions of Cook Inlet Subregion trip-related expenditures
- N10. Economic contributions of Cook Inlet Subregion package expenditures
- N11. Economic contributions of Southeast Marine Subregion trip-related expenditures
- N12. Economic contributions of Southeast Marine Subregion package expenditures

Appendix N1.—Statewide economic contributions of TRIP-RELATED expenditures for sportfishing, by residency, guided/unguided, and type of water. (excluding package spending), 2007.

	RESIDENT		NONRESIDENT		TOTAL		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	RESIDENT	NONRESIDENT	
FRESHWATER ANGLERS							
Direct effects							
Output	\$27,980,438	\$77,087,031	\$87,665,237	\$73,141,266	\$105,067,469	\$160,806,503	\$265,873,972
Income	\$8,801,815	\$24,603,743	\$31,770,969	\$29,558,666	\$33,405,558	\$61,329,635	\$94,735,193
Employment	377	732	1,148	823	1,108	1,970	3,079
Multiplier effects							
Output	\$18,583,846	\$49,466,965	\$58,854,547	\$48,756,629	\$68,050,811	\$107,611,176	\$175,661,987
Income	\$5,968,112	\$14,570,551	\$18,631,869	\$14,718,026	\$20,538,663	\$33,349,895	\$53,888,558
Employment	144	336	467	371	480	837	1,318
Total effects							
Output	\$46,564,284	\$126,553,996	\$146,519,784	\$121,897,895	\$173,118,280	\$268,417,679	\$441,535,959
Income	\$14,769,927	\$39,174,294	\$50,402,838	\$44,276,692	\$53,944,221	\$94,679,530	\$148,623,751
Employment	521	1,068	1,614	1,193	1,589	2,808	4,396
SALTWATER ANGLERS							
Direct effects							
Output	\$32,500,598	\$81,613,303	\$134,833,212	\$32,329,906	\$114,113,901	\$167,163,118	\$281,277,019
Income	\$10,326,686	\$25,261,992	\$47,759,832	\$12,376,582	\$35,588,678	\$60,136,414	\$95,725,092
Employment	449	841	1,770	356	1,290	2,125	3,416
Multiplier effects							
Output	\$19,798,317	\$53,844,329	\$84,672,427	\$21,100,411	\$73,642,646	\$105,772,838	\$179,415,484
Income	\$6,238,034	\$15,843,381	\$26,304,807	\$6,238,930	\$22,081,415	\$32,543,737	\$54,625,152
Employment	155	360	677	154	515	831	1,346
Total effects							
Output	\$52,298,915	\$135,457,632	\$219,505,639	\$53,430,317	\$187,756,547	\$272,935,956	\$460,692,503
Income	\$16,564,720	\$41,105,373	\$74,064,639	\$18,615,512	\$57,670,093	\$92,680,151	\$150,350,244
Employment	604	1,200	2,447	510	1,805	2,957	4,761
ALL ANGLERS							
Direct effects							
Output	\$60,481,036	\$158,700,334	\$222,498,449	\$105,471,172	\$219,181,370	\$327,969,621	\$547,150,991
Income	\$19,128,501	\$49,865,735	\$79,530,801	\$41,935,248	\$68,994,236	\$121,466,049	\$190,460,285
Employment	826	1,572	2,917	1,179	2,399	4,096	6,494
Multiplier effects							
Output	\$38,382,163	\$103,311,294	\$143,526,974	\$69,857,040	\$141,693,457	\$213,384,014	\$355,077,471
Income	\$12,206,146	\$30,413,932	\$44,936,676	\$20,956,956	\$42,620,078	\$65,893,632	\$108,513,710
Employment	299	696	1,144	525	995	1,669	2,663
Total effects							
Output	\$98,863,199	\$262,011,628	\$366,025,423	\$175,328,212	\$360,874,827	\$541,353,635	\$902,228,462
Income	\$31,334,647	\$80,279,667	\$124,467,477	\$62,892,204	\$111,614,314	\$187,359,681	\$298,973,995
Employment	1,125	2,268	4,061	1,703	3,393	5,764	9,158

Appendix N2.—Statewide economic contributions of PACKAGE spending for sportfishing, by residency, guided/unguided, and type of water, 2007.

	RESIDENT		NONRESIDENT		TOTAL		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	RESIDENT	NONRESIDENT	
FRESHWATER ANGLERS							
Direct effects							
Output	\$0	\$0	\$51,056,683	\$8,181,108	\$0	\$59,237,791	\$59,237,791
Income	\$0	\$0	\$16,315,241	\$2,607,214	\$0	\$18,922,455	\$18,922,455
Employment	0	0	695	92	0	786	786
Multiplier effects							
Output	\$0	\$0	\$34,645,480	\$5,714,607	\$0	\$40,360,087	\$40,360,087
Income	\$0	\$0	\$10,976,900	\$1,676,627	\$0	\$12,653,527	\$12,653,527
Employment	0	0	271	42	0	312	312
Total effects							
Output	\$0	\$0	\$85,702,163	\$13,895,715	\$0	\$99,597,878	\$99,597,878
Income	\$0	\$0	\$27,292,141	\$4,283,841	\$0	\$31,575,982	\$31,575,982
Employment	0	0	965	133	0	1,099	1,099
SALTWATER ANGLERS							
Direct effects							
Output	\$0	\$0	\$55,451,978	\$6,544,009	\$0	\$61,995,987	\$61,995,987
Income	\$0	\$0	\$17,699,544	\$2,110,456	\$0	\$19,810,000	\$19,810,000
Employment	0	0	761	76	0	836	836
Multiplier effects							
Output	\$0	\$0	\$35,055,714	\$4,493,312	\$0	\$39,549,026	\$39,549,026
Income	\$0	\$0	\$10,885,211	\$1,297,469	\$0	\$12,182,680	\$12,182,680
Employment	0	0	271	32	0	304	304
Total effects							
Output	\$0	\$0	\$90,507,692	\$11,037,321	\$0	\$101,545,013	\$101,545,013
Income	\$0	\$0	\$28,584,755	\$3,407,925	\$0	\$31,992,680	\$31,992,680
Employment	0	0	1,032	108	0	1,140	1,140
ALL ANGLERS							
Direct effects							
Output	\$0	\$0	\$106,508,661	\$14,725,117	\$0	\$121,233,778	\$121,233,778
Income	\$0	\$0	\$34,014,785	\$4,717,670	\$0	\$38,732,455	\$38,732,455
Employment	0	0	1,455	168	0	1,623	1,623
Multiplier effects							
Output	\$0	\$0	\$69,701,194	\$10,207,919	\$0	\$79,909,113	\$79,909,113
Income	\$0	\$0	\$21,862,111	\$2,974,096	\$0	\$24,836,207	\$24,836,207
Employment	0	0	542	74	0	616	616
Total effects							
Output	\$0	\$0	\$176,209,855	\$24,933,036	\$0	\$201,142,891	\$201,142,891
Income	\$0	\$0	\$55,876,896	\$7,691,766	\$0	\$63,568,662	\$63,568,662
Employment	0	0	1,997	241	0	2,239	2,239

Appendix N3.—Southeast Region economic contributions of TRIP-RELATED expenditures for sportfishing, by residency, guided/unguided, and type of water. (excluding package spending), 2007.

	RESIDENT		NONRESIDENT		TOTAL		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	RESIDENT	NONRESIDENT	
FRESHWATER ANGLERS							
Direct effects							
Output	\$207,915	\$907,746	\$6,933,285	\$7,109,834	\$1,115,661	\$14,043,119	\$15,158,780
Income	\$67,315	\$305,200	\$2,207,581	\$2,312,283	\$372,515	\$4,519,864	\$4,892,379
Employment	3	11	85	86	13	171	184
Multiplier effects							
Output	\$103,172	\$352,723	\$3,247,224	\$3,115,471	\$455,895	\$6,362,695	\$6,818,590
Income	\$37,226	\$112,597	\$1,094,164	\$1,020,719	\$149,823	\$2,114,883	\$2,264,706
Employment	1	3	31	30	4	62	66
Total effects							
Output	\$311,087	\$1,260,469	\$10,180,509	\$10,225,305	\$1,571,556	\$20,405,814	\$21,977,370
Income	\$104,541	\$417,797	\$3,301,745	\$3,333,002	\$522,338	\$6,634,747	\$7,157,085
Employment	4	14	116	116	18	233	250
SALTWATER ANGLERS							
Direct effects							
Output	\$2,887,909	\$17,416,421	\$45,842,612	\$17,550,969	\$20,304,330	\$63,393,581	\$83,697,911
Income	\$915,608	\$5,641,068	\$14,653,514	\$5,750,808	\$6,556,676	\$20,404,322	\$26,960,998
Employment	34	192	559	197	226	756	982
Multiplier effects							
Output	\$1,274,669	\$6,665,412	\$20,307,327	\$6,948,723	\$7,940,081	\$27,256,050	\$35,196,131
Income	\$424,660	\$2,150,884	\$6,726,094	\$2,198,489	\$2,575,544	\$8,924,583	\$11,500,127
Employment	13	63	200	67	76	266	342
Total effects							
Output	\$4,162,578	\$24,081,833	\$66,149,939	\$24,499,692	\$28,244,411	\$90,649,631	\$118,894,042
Income	\$1,340,268	\$7,791,952	\$21,379,608	\$7,949,297	\$9,132,220	\$29,328,905	\$38,461,125
Employment	46	255	759	264	301	1,022	1,324
ALL ANGLERS							
Direct effects							
Output	\$3,095,824	\$18,324,167	\$52,775,897	\$24,660,803	\$21,419,991	\$77,436,700	\$98,856,691
Income	\$982,923	\$5,946,268	\$16,861,095	\$8,063,091	\$6,929,191	\$24,944,186	\$31,853,377
Employment	36	202	644	283	239	927	1,165
Multiplier effects							
Output	\$1,377,841	\$7,018,135	\$23,554,551	\$10,064,194	\$8,395,976	\$33,618,745	\$42,014,721
Income	\$461,886	\$2,263,481	\$7,820,258	\$3,219,208	\$2,725,367	\$11,039,466	\$13,764,833
Employment	14	67	231	97	80	328	408
Total effects							
Output	\$4,473,665	\$25,342,302	\$76,330,448	\$34,724,997	\$29,815,967	\$111,055,445	\$140,871,412
Income	\$1,444,809	\$8,209,749	\$24,681,353	\$11,282,299	\$9,654,558	\$35,963,652	\$45,618,210
Employment	50	269	875	380	319	1,255	1,574

Appendix N4.-Southeast Region economic contributions of PACKAGE expenditures for sportfishing, by residency, guided/unguided, and type of water. (excluding package spending),2007.

	RESIDENT		NONRESIDENT		TOTAL		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	RESIDENT	NONRESIDENT	
FRESHWATER ANGLERS							
Direct effects							
Output	\$0	\$0	\$1,794,465	\$852,349	\$0	\$2,646,814	\$2,646,814
Income	\$0	\$0	\$551,835	\$245,914	\$0	\$797,749	\$797,749
Employment	0	0	22	10	0	32	32
Multiplier effects							
Output	\$0	\$0	\$837,740	\$365,227	\$0	\$1,202,967	\$1,202,967
Income	\$0	\$0	\$283,935	\$114,777	\$0	\$398,712	\$398,712
Employment	0	0	8	4	0	11	11
Total effects							
Output	\$0	\$0	\$2,632,205	\$1,217,576	\$0	\$3,849,781	\$3,849,781
Income	\$0	\$0	\$835,770	\$360,691	\$0	\$1,196,461	\$1,196,461
Employment	0	0	30	13	0	43	43
SALTWATER ANGLERS							
Direct effects							
Output	\$0	\$0	\$30,088,145	\$3,451,828	\$0	\$33,539,973	\$33,539,973
Income	\$0	\$0	\$9,495,235	\$1,066,695	\$0	\$10,561,930	\$10,561,930
Employment	0	0	394	44	0	438	438
Multiplier effects							
Output	\$0	\$0	\$13,116,355	\$1,488,182	\$0	\$14,604,537	\$14,604,537
Income	\$0	\$0	\$4,322,469	\$479,367	\$0	\$4,801,836	\$4,801,836
Employment	0	0	122	14	0	135	135
Total effects							
Output	\$0	\$0	\$43,204,500	\$4,940,010	\$0	\$48,144,510	\$48,144,510
Income	\$0	\$0	\$13,817,704	\$1,546,062	\$0	\$15,363,766	\$15,363,766
Employment	0	0	515	58	0	573	573
ALL ANGLERS							
Direct effects							
Output	\$0	\$0	\$31,882,610	\$4,304,177	\$0	\$36,186,787	\$36,186,787
Income	\$0	\$0	\$10,047,070	\$1,312,609	\$0	\$11,359,679	\$11,359,679
Employment	0	0	416	54	0	470	470
Multiplier effects							
Output	\$0	\$0	\$13,954,095	\$1,853,409	\$0	\$15,807,504	\$15,807,504
Income	\$0	\$0	\$4,606,404	\$594,144	\$0	\$5,200,548	\$5,200,548
Employment	0	0	129	17	0	147	147
Total effects							
Output	\$0	\$0	\$45,836,705	\$6,157,586	\$0	\$51,994,291	\$51,994,291
Income	\$0	\$0	\$14,653,474	\$1,906,753	\$0	\$16,560,227	\$16,560,227
Employment	0	0	546	71	0	617	617

Appendix N5.—Southcentral Region economic contributions of combined TRIP-RELATED expenditures for sportfishing, by residency, guided/unguided, and type of water, 2007.

	RESIDENT		NONRESIDENT		TOTAL		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	RESIDENT	NONRESIDENT	
FRESHWATER ANGLERS							
Direct effects							
Output	\$26,235,805	\$63,718,045	\$71,809,335	\$50,700,827	\$89,953,850	\$122,510,162	\$212,464,012
Income	\$8,089,164	\$18,556,535	\$24,843,909	\$18,559,288	\$26,645,699	\$43,403,197	\$70,048,896
Employment	367	606	961	563	973	1,524	2,497
Multiplier effects							
Output	\$18,707,451	\$46,090,614	\$51,718,626	\$36,529,397	\$64,798,065	\$88,248,023	\$153,046,088
Income	\$6,028,334	\$13,691,946	\$16,481,748	\$11,092,253	\$19,720,280	\$27,574,001	\$47,294,281
Employment	144	305	408	275	449	683	1,132
Total effects							
Output	\$44,943,256	\$109,808,659	\$123,527,961	\$87,230,224	\$154,751,915	\$210,758,185	\$365,510,100
Income	\$14,117,498	\$32,248,481	\$41,325,657	\$29,651,541	\$46,365,979	\$70,977,198	\$117,343,177
Employment	511	911	1,369	838	1,422	2,206	3,628
SALTWATER ANGLERS							
Direct effects							
Output	\$27,657,787	\$58,342,772	\$80,046,872	\$10,464,044	\$86,000,559	\$90,510,916	\$176,511,475
Income	\$8,656,289	\$17,120,838	\$27,529,521	\$3,446,694	\$25,777,127	\$30,976,215	\$56,753,342
Employment	403	596	1,055	119	998	1,174	2,172
Multiplier effects							
Output	\$17,875,434	\$43,280,284	\$53,591,945	\$7,440,167	\$61,155,718	\$61,032,112	\$122,187,830
Income	\$5,669,935	\$12,783,113	\$16,759,180	\$2,248,948	\$18,453,048	\$19,008,128	\$37,461,176
Employment	140	280	429	55	420	484	904
Total effects							
Output	\$45,533,221	\$101,623,056	\$133,638,817	\$17,904,211	\$147,156,277	\$151,543,028	\$298,699,305
Income	\$14,326,224	\$29,903,951	\$44,288,701	\$5,695,642	\$44,230,175	\$49,984,343	\$94,214,518
Employment	543	875	1,418	174	1,418	1,658	3,076
ALL ANGLERS							
Direct effects							
Output	\$53,893,592	\$122,060,817	\$151,856,207	\$61,164,871	\$175,954,409	\$213,021,078	\$388,975,487
Income	\$16,745,453	\$35,677,373	\$52,373,430	\$22,005,982	\$52,422,826	\$74,379,412	\$126,802,238
Employment	769	1,202	2,016	682	1,971	2,698	4,669
Multiplier effects							
Output	\$36,582,885	\$89,370,898	\$105,310,571	\$43,969,564	\$125,953,783	\$149,280,135	\$275,233,918
Income	\$11,693,269	\$26,475,059	\$33,240,928	\$13,341,201	\$38,173,328	\$46,582,129	\$84,755,457
Employment	284	584	837	330	869	1,167	2,035
Total effects							
Output	\$90,476,477	\$211,431,715	\$257,166,778	\$105,134,435	\$301,908,192	\$362,301,213	\$664,209,405
Income	\$28,443,722	\$62,152,432	\$85,614,358	\$35,347,183	\$90,596,154	\$120,961,541	\$211,557,695
Employment	1,054	1,786	2,852	1,012	2,840	3,864	6,704

Appendix N6.—Southcentral Region economic contributions of PACKAGE expenditures for sportfishing, by residency, guided/unguided, and type of water, 2007.

	RESIDENT		NONRESIDENT		TOTAL		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	RESIDENT	NONRESIDENT	
FRESHWATER ANGLERS							
Direct effects							
Output	\$0	\$0	\$44,603,221	\$7,092,660	\$0	\$51,695,881	\$51,695,881
Income	\$0	\$0	\$14,238,216	\$2,289,937	\$0	\$16,528,153	\$16,528,153
Employment	0	0	-2	82	0	80	80
Multiplier effects							
Output	\$0	\$0	\$31,972,655	\$5,290,074	\$0	\$37,262,729	\$37,262,729
Income	\$0	\$0	\$10,215,917	\$1,580,918	\$0	\$11,796,835	\$11,796,835
Employment	0	0	-20	39	0	19	19
Total effects							
Output	\$0	\$0	\$76,575,876	\$12,382,734	\$0	\$88,958,610	\$88,958,610
Income	\$0	\$0	\$24,454,133	\$3,870,855	\$0	\$28,324,988	\$28,324,988
Employment	0	0	-22	121	0	99	99
SALTWATER ANGLERS							
Direct effects							
Output	\$0	\$0	\$23,868,813	\$3,092,148	\$0	\$26,960,961	\$26,960,961
Income	\$0	\$0	\$7,551,574	\$1,036,614	\$0	\$8,588,188	\$8,588,188
Employment	0	0	338	32	0	370	370
Multiplier effects							
Output	\$0	\$0	\$16,129,119	\$2,439,147	\$0	\$18,568,266	\$18,568,266
Income	\$0	\$0	\$5,049,662	\$689,095	\$0	\$5,738,757	\$5,738,757
Employment	0	0	125	16	0	141	141
Total effects							
Output	\$0	\$0	\$39,997,932	\$5,531,295	\$0	\$45,529,227	\$45,529,227
Income	\$0	\$0	\$12,601,236	\$1,725,709	\$0	\$14,326,945	\$14,326,945
Employment	0	0	463	48	0	511	511
ALL ANGLERS							
Direct effects							
Output	\$0	\$0	\$68,472,034	\$10,184,808	\$0	\$78,656,842	\$78,656,842
Income	\$0	\$0	\$21,789,790	\$3,316,551	\$0	\$25,116,341	\$25,116,341
Employment	0	0	336	114	0	450	450
Multiplier effects							
Output	\$0	\$0	\$48,101,774	\$7,729,221	\$0	\$55,830,995	\$55,830,995
Income	\$0	\$0	\$15,265,579	\$2,270,013	\$0	\$17,535,592	\$17,535,592
Employment	0	0	105	55	0	160	160
Total effects							
Output	\$0	\$0	\$116,573,808	\$17,914,029	\$0	\$134,487,837	\$134,487,837
Income	\$0	\$0	\$37,055,369	\$5,596,564	\$0	\$42,651,933	\$42,651,933
Employment	0	0	441	169	0	610	610

Appendix N7.—Interior Region economic contributions of TRIP-RELATED expenditures for sportfishing, by residency, guided/unguided, and type of water, 2007.

	RESIDENT		NONRESIDENT		TOTAL		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	RESIDENT	NONRESIDENT	
FRESHWATER ANGLERS							
Direct effects							
Output	\$1,223,964	\$8,091,845	\$5,826,486	\$8,764,006	\$9,315,809	\$14,590,492	\$23,906,301
Income	\$352,570	\$2,202,287	\$1,974,906	\$2,909,178	\$2,554,857	\$4,884,084	\$7,438,941
Employment	16	68	86	96	84	182	266
Multiplier effects							
Output	\$525,825	\$2,993,829	\$2,754,129	\$4,484,336	\$3,519,654	\$7,238,465	\$10,758,119
Income	\$173,890	\$834,983	\$897,888	\$1,338,933	\$1,008,873	\$2,236,821	\$3,245,694
Employment	4	22	22	33	26	56	82
Total effects							
Output	\$1,749,789	\$11,085,674	\$8,580,615	\$13,248,342	\$12,835,463	\$21,828,957	\$34,664,420
Income	\$526,460	\$3,037,270	\$2,872,794	\$4,248,111	\$3,563,730	\$7,120,905	\$10,684,635
Employment	20	89	108	130	110	238	348
SALTWATER ANGLERS							
Direct effects							
Output	\$1,568,683	\$2,972,466	\$4,273,685	\$633,581	\$4,541,149	\$4,907,266	\$9,448,415
Income	\$419,209	\$770,363	\$1,449,497	\$212,250	\$1,189,572	\$1,661,747	\$2,851,319
Employment	16	22	67	8	38	75	113
Multiplier effects							
Output	\$717,374	\$1,050,582	\$1,830,484	\$247,204	\$1,767,956	\$2,077,688	\$3,845,644
Income	\$202,679	\$285,717	\$577,040	\$71,463	\$488,396	\$648,503	\$1,136,899
Employment	5	7	15	2	12	16	29
Total effects							
Output	\$2,286,057	\$4,023,048	\$6,104,169	\$880,785	\$6,309,105	\$6,984,954	\$13,294,059
Income	\$621,888	\$1,056,080	\$2,026,537	\$283,713	\$1,677,968	\$2,310,250	\$3,988,218
Employment	21	29	82	10	50	91	141
ALL ANGLERS							
Direct effects							
Output	\$2,792,647	\$11,064,311	\$10,100,171	\$9,397,587	\$13,856,958	\$19,497,758	\$33,354,716
Income	\$771,779	\$2,972,650	\$3,424,403	\$3,121,428	\$3,744,429	\$6,545,831	\$10,290,260
Employment	32	90	153	104	121	257	378
Multiplier effects							
Output	\$1,243,199	\$4,044,411	\$4,584,613	\$4,731,540	\$5,287,610	\$9,316,153	\$14,603,763
Income	\$376,569	\$1,120,700	\$1,474,928	\$1,410,396	\$1,497,269	\$2,885,324	\$4,382,593
Employment	9	29	37	35	39	72	111
Total effects							
Output	\$4,035,846	\$15,108,722	\$14,684,784	\$14,129,127	\$19,144,568	\$28,813,911	\$47,958,479
Income	\$1,148,348	\$4,093,350	\$4,899,331	\$4,531,824	\$5,241,698	\$9,431,155	\$14,672,853
Employment	41	119	190	139	160	329	489

Appendix N8.—Interior Region economic contributions of PACKAGE expenditures for sportfishing, by residency, guided/unguided, and type of water, 2007.

	RESIDENT		NONRESIDENT		TOTAL		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	RESIDENT	NONRESIDENT	
FRESHWATER ANGLERS							
Direct effects							
Output	\$0	\$0	\$4,658,912	\$236,082	\$0	\$4,894,994	\$4,894,994
Income	\$0	\$0	\$1,449,388	\$72,833	\$0	\$1,522,221	\$1,522,221
Employment	0	0	61	3	0	64	64
Multiplier effects							
Output	\$0	\$0	\$2,334,350	\$121,021	\$0	\$2,455,371	\$2,455,371
Income	\$0	\$0	\$745,651	\$36,569	\$0	\$782,220	\$782,220
Employment	0	0	18	1	0	19	19
Total effects							
Output	\$0	\$0	\$6,993,262	\$357,103	\$0	\$7,350,365	\$7,350,365
Income	\$0	\$0	\$2,195,039	\$109,402	\$0	\$2,304,441	\$2,304,441
Employment	0	0	79	4	0	83	83
SALTWATER ANGLERS							
Direct effects							
Output	\$0	\$0	\$3,867,787	\$0	\$0	\$3,867,787	\$3,867,787
Income	\$0	\$0	\$1,176,797	\$0	\$0	\$1,176,797	\$1,176,797
Employment	0	0	63	0	0	63	63
Multiplier effects							
Output	\$0	\$0	\$1,725,969	\$0	\$0	\$1,725,969	\$1,725,969
Income	\$0	\$0	\$580,607	\$0	\$0	\$580,607	\$580,607
Employment	0	0	14	0	0	14	14
Total effects							
Output	\$0	\$0	\$5,593,756	\$0	\$0	\$5,593,756	\$5,593,756
Income	\$0	\$0	\$1,757,404	\$0	\$0	\$1,757,404	\$1,757,404
Employment	0	0	77	0	0	77	77
ALL ANGLERS							
Direct effects							
Output	\$0	\$0	\$8,526,699	\$236,082	\$0	\$8,762,781	\$8,762,781
Income	\$0	\$0	\$2,626,185	\$72,833	\$0	\$2,699,018	\$2,699,018
Employment	0	0	124	3	0	127	127
Multiplier effects							
Output	\$0	\$0	\$4,060,319	\$121,021	\$0	\$4,181,340	\$4,181,340
Income	\$0	\$0	\$1,326,258	\$36,569	\$0	\$1,362,827	\$1,362,827
Employment	0	0	32	1	0	33	33
Total effects							
Output	\$0	\$0	\$12,587,018	\$357,103	\$0	\$12,944,121	\$12,944,121
Income	\$0	\$0	\$3,952,443	\$109,402	\$0	\$4,061,845	\$4,061,845
Employment	0	0	156	4	0	160	160

Appendix N9.-Cook Inlet Subregion economic contributions of TRIP-RELATED expenditures for sportfishing, by residency, guided/unguided, and type of water, 2007.

	RESIDENT		NONRESIDENT		TOTAL		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	RESIDENT	NONRESIDENT	
FRESHWATER ANGLERS							
Direct effects							
Output	\$21,062,669	\$56,284,227	\$50,439,008	\$39,120,565	\$77,346,896	\$89,559,573	\$166,906,469
Income	\$6,524,363	\$16,313,969	\$17,795,092	\$14,652,935	\$22,838,332	\$32,448,027	\$55,286,359
Employment	296	529	665	439	825	1,104	1,929
Multiplier effects							
Output	\$15,405,485	\$42,545,387	\$38,370,790	\$29,893,827	\$57,950,872	\$68,264,617	\$126,215,489
Income	\$5,005,585	\$12,748,328	\$12,218,613	\$9,170,001	\$17,753,913	\$21,388,614	\$39,142,527
Employment	121	298	322	251	419	573	992
Total effects							
Output	\$36,468,154	\$98,829,614	\$88,809,798	\$69,014,392	\$135,297,768	\$157,824,190	\$293,121,958
Income	\$11,529,948	\$29,062,297	\$30,013,705	\$23,822,936	\$40,592,245	\$53,836,641	\$94,428,886
Employment	417	827	987	690	1,244	1,677	2,921
SALTWATER ANGLERS							
Direct effects							
Output	\$16,816,852	\$24,688,268	\$47,293,211	\$5,135,729	\$41,505,120	\$52,428,940	\$93,934,060
Income	\$5,285,729	\$7,097,041	\$16,586,732	\$1,664,573	\$12,382,770	\$18,251,305	\$30,634,075
Employment	237	236	620	62	473	682	1,155
Multiplier effects							
Output	\$11,468,710	\$19,361,383	\$34,409,996	\$4,014,091	\$30,830,093	\$38,424,087	\$69,254,180
Income	\$3,626,328	\$5,746,835	\$10,791,375	\$1,223,957	\$9,373,163	\$12,015,332	\$21,388,495
Employment	94	132	303	33	226	336	562
Total effects							
Output	\$28,285,562	\$44,049,651	\$81,703,207	\$9,149,820	\$72,335,213	\$90,853,027	\$163,188,240
Income	\$8,912,057	\$12,843,876	\$27,378,107	\$2,888,530	\$21,755,933	\$30,266,637	\$52,022,570
Employment	332	368	923	94	700	1,017	1,717
ALL ANGLERS							
Direct effects							
Output	\$37,879,521	\$80,972,495	\$97,732,219	\$44,256,294	\$118,852,016	\$141,988,513	\$260,840,529
Income	\$11,810,092	\$23,411,010	\$34,381,824	\$16,317,508	\$35,221,102	\$50,699,332	\$85,920,434
Employment	533	765	1,285	501	1,298	1,786	3,084
Multiplier effects							
Output	\$26,874,195	\$61,906,770	\$72,780,786	\$33,907,918	\$88,780,965	\$106,688,704	\$195,469,669
Income	\$8,631,913	\$18,495,163	\$23,009,988	\$10,393,958	\$27,127,076	\$33,403,946	\$60,531,022
Employment	216	430	625	283	645	908	1,553
Total effects							
Output	\$64,753,716	\$142,879,265	\$170,513,005	\$78,164,212	\$207,632,981	\$248,677,217	\$456,310,198
Income	\$20,442,005	\$41,906,173	\$57,391,812	\$26,711,466	\$62,348,178	\$84,103,278	\$146,451,456
Employment	749	1,195	1,910	784	1,943	2,694	4,638

Appendix N10.—Cook Inlet Subregion economic contributions of PACKAGE expenditures for sportfishing, by residency, guided/unguided, and type of water, 2007.

	RESIDENT		NONRESIDENT		TOTAL		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	RESIDENT	NONRESIDENT	
FRESHWATER ANGLERS							
Direct effects							
Output	\$0	\$0	\$7,952,368	\$3,872,414	\$0	\$11,824,782	\$11,824,782
Income	\$0	\$0	\$2,533,665	\$1,247,408	\$0	\$3,781,073	\$3,781,073
Employment	0	0	115	45	0	160	160
Multiplier effects							
Output	\$0	\$0	\$5,841,485	\$2,993,022	\$0	\$8,834,507	\$8,834,507
Income	\$0	\$0	\$1,894,830	\$913,633	\$0	\$2,808,463	\$2,808,463
Employment	0	0	47	22	0	69	69
Total effects							
Output	\$0	\$0	\$13,793,853	\$6,865,436	\$0	\$20,659,289	\$20,659,289
Income	\$0	\$0	\$4,428,495	\$2,161,041	\$0	\$6,589,536	\$6,589,536
Employment	0	0	161	67	0	228	228
SALTWATER ANGLERS							
Direct effects							
Output	\$0	\$0	\$8,491,242	\$464,954	\$0	\$8,956,196	\$8,956,196
Income	\$0	\$0	\$2,682,329	\$150,540	\$0	\$2,832,869	\$2,832,869
Employment	0	0	122	5	0	128	128
Multiplier effects							
Output	\$0	\$0	\$5,837,615	\$350,300	\$0	\$6,187,915	\$6,187,915
Income	\$0	\$0	\$1,851,993	\$104,845	\$0	\$1,956,838	\$1,956,838
Employment	0	0	46	3	0	48	48
Total effects							
Output	\$0	\$0	\$14,328,857	\$815,254	\$0	\$15,144,111	\$15,144,111
Income	\$0	\$0	\$4,534,322	\$255,385	\$0	\$4,789,707	\$4,789,707
Employment	0	0	168	8	0	176	176
ALL ANGLERS							
Direct effects							
Output	\$0	\$0	\$16,443,610	\$4,337,368	\$0	\$20,780,978	\$20,780,978
Income	\$0	\$0	\$5,215,994	\$1,397,948	\$0	\$6,613,942	\$6,613,942
Employment	0	0	237	50	0	287	287
Multiplier effects							
Output	\$0	\$0	\$11,679,100	\$3,343,322	\$0	\$15,022,422	\$15,022,422
Income	\$0	\$0	\$3,746,823	\$1,018,478	\$0	\$4,765,301	\$4,765,301
Employment	0	0	92	25	0	117	117
Total effects							
Output	\$0	\$0	\$28,122,710	\$7,680,690	\$0	\$35,803,400	\$35,803,400
Income	\$0	\$0	\$8,962,817	\$2,416,426	\$0	\$11,379,243	\$11,379,243
Employment	0	0	329	75	0	404	404

Appendix N11.—Southeast Marine Subregion economic contributions of TRIP-RELATED expenditures by anglers for sportfishing, by residency and guided/unguided, 2007.

	RESIDENT		NONRESIDENT		RESIDENT	NONRESIDENT	ALL ANGLERS
	Guided	Unguided	Guided	Unguided			
SALTWATER ANGLERS							
Direct effects							
Output	\$2,887,909	\$17,416,421	\$45,842,612	\$17,550,969	\$20,304,330	\$63,393,581	\$83,697,911
Income	\$915,608	\$5,641,068	\$14,653,514	\$5,750,808	\$6,556,676	\$20,404,322	\$26,960,998
Employment	34	192	559	197	226	756	982
Multiplier effects							
Output	\$1,274,669	\$6,665,412	\$20,307,327	\$6,948,723	\$7,940,081	\$27,256,050	\$35,196,131
Income	\$424,660	\$2,150,884	\$6,726,094	\$2,198,489	\$2,575,544	\$8,924,583	\$11,500,127
Employment	13	63	200	67	76	266	342
Total effects							
Output	\$4,162,578	\$24,081,833	\$66,149,939	\$24,499,692	\$28,244,411	\$90,649,631	\$118,894,042
Income	\$1,340,268	\$7,791,952	\$21,379,608	\$7,949,297	\$9,132,220	\$29,328,905	\$38,461,125
Employment	46	255	759	264	301	1,022	1,324

Appendix N12.—Southeast Marine Subregion economic contributions of PACKAGE expenditures by anglers for sportfishing, by residency, and guided/unguided, 2007.

	RESIDENT		NONRESIDENT		TOTAL		ALL ANGLERS
	Guided	Unguided	Guided	Unguided	RESIDENT	NONRESIDENT	
SALTWATER ANGLERS							
Direct effects							
Output	\$0	\$0	\$30,088,145	\$3,451,828	\$0	\$33,539,973	\$33,539,973
Income	\$0	\$0	\$9,495,235	\$1,066,695	\$0	\$10,561,930	\$10,561,930
Employment	0	0	394	44	0	438	438
Multiplier effects							
Output	\$0	\$0	\$13,116,355	\$1,488,182	\$0	\$14,604,537	\$14,604,537
Income	\$0	\$0	\$4,322,469	\$479,367	\$0	\$4,801,836	\$4,801,836
Employment	0	0	122	14	0	135	135
Total effects							
Output	\$0	\$0	\$43,204,500	\$4,940,010	\$0	\$48,144,510	\$48,144,510
Income	\$0	\$0	\$13,817,704	\$1,546,062	\$0	\$15,363,766	\$15,363,766
Employment	0	0	515	58	0	573	573

The following tables present estimates of output, income and employment in each region's industries that are the result of angler spending. Direct, indirect and induced effects of angler spending on industry output, income and employment are reported separately for expenditures by residents and nonresidents.

01	Industry output, income and employment impacts of all angler spending statewide
02	Industry output, income and employment impacts of resident angler spending statewide
03	Industry output, income and employment impacts of nonresident angler spending statewide
04	Industry output, income and employment impacts of all angler spending in the Southeast Region
05	Industry output, income and employment impacts of resident angler spending in the Southeast Region
06	Industry output, income and employment impacts of nonresident angler spending in the Southeast Region
07	Industry output, income and employment impacts of all angler spending in the Southeast Region
08	Industry output, income and employment impacts of resident angler spending in the Southeast Region
09	Industry output, income and employment impacts of nonresident angler spending in the Southeast Region
10	Industry output, income and employment impacts of all angler spending in the Interior Region
11	Industry output, income and employment impacts of resident angler spending in the Interior Region
12	Industry output, income and employment impacts of nonresident angler spending in the Interior Region
13	Industry output, income and employment impacts of all angler spending in the Cook Inlet Subregion
14	Industry output, income and employment impacts of resident angler spending in the Cook Inlet Subregion
15	Industry output, income and employment impacts of nonresident angler spending in the Cook Inlet Subregion

APPENDIX O: DETAILED INDUSTRY IMPACTS OF ANGLER SPENDING

The following tables present estimates of output, income and employment in each region's industries that are the result of angler spending. Direct, indirect and induced effects of angler spending on industry output, income and employment are reported separately for expenditures by residents and nonresidents

- O1. Industry output, income and employment impacts of all angler spending statewide
- O2. Industry output, income and employment impacts of resident angler spending statewide
- O3. Industry output, income and employment impacts of nonresident angler spending statewide
- O4. Industry output, income and employment impacts of all angler spending in the Southeast Region
- O5. Industry output, income and employment impacts of resident angler spending in the Southeast Region
- O6. Industry output, income and employment impacts of nonresident angler spending in the Southeast Region
- O7. Industry output, income and employment impacts of all angler spending in the Southcentral Region
- O8. Industry output, income and employment impacts of resident angler spending in the Southcentral Region
- O9. Industry output, income and employment impacts of nonresident angler spending in the Southcentral Region
- O10. Industry output, income and employment impacts of all angler spending in the Interior Region
- O11. Industry output, income and employment impacts of resident angler spending in the Interior Region
- O12. Industry output, income and employment impacts of nonresident angler spending in the Interior Region
- O13. Industry output, income and employment impacts of all angler spending in the Cook Inlet Subregion
- O14. Industry output, income and employment impacts of resident angler spending in the Cook Inlet Subregion
- O15. Industry output, income and employment impacts of nonresident angler spending in the Cook Inlet Subregion

Appendix O1.-Industry output, income and employment impacts of all angler spending statewide.

Industry OUTPUT impacts STATEWIDE due to RESIDENT & NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	7,123,950.0	3,896,625.0	480,406.0	11,500,985.0
21 Mining	2,463,387.0	44,314,305.0	7,970,862.0	54,748,554.0
22 Utilities	-	10,770,826.0	7,813,240.0	18,572,066.0
23 Construction	182,837,152.0	8,993,346.0	(1,228,934.0)	190,601,573.0
31-33 Manufacturing	80,241,946.0	42,905,653.0	23,007,721.0	146,155,318.0
42 Wholesale Trade	58,694,331.0	12,304,206.0	8,742,633.0	79,741,288.0
48-49 Transportation & Warehousing	67,589,707.0	23,980,982.0	11,202,183.0	103,672,875.0
44-45 Retail trade	170,337,105.0	16,154,722.0	36,645,817.0	223,137,637.0
51 Information	19,156.0	19,612,731.0	2,822,912.0	22,574,800.0
52 Finance & insurance	-	11,758,338.0	20,393,220.0	32,151,557.0
53 Real estate & rental	28,969,855.0	40,188,781.0	11,433,869.0	78,602,514.0
54 Professional- scientific & tech svcs	-	35,680,553.0	3,333,100.0	39,013,638.0
55 Management of companies	-	7,026,732.0	217,722.0	7,244,452.0
56 Administrative & waste services	754,665.0	18,126,836.0	3,125,843.0	22,007,345.0
61 Educational svcs	-	227,697.0	3,049,005.0	3,276,702.0
62 Health & social services	-	13,754.0	49,257,887.0	49,271,641.0
71 Arts- entertainment & recreation	188,880,071.0	5,781,850.0	2,721,734.0	197,383,654.0
72 Accommodation & food services	151,970,899.0	8,291,823.0	22,063,399.0	182,326,116.0
81 Other services	26,832,964.0	6,501,463.0	17,088,897.0	50,543,317.0
92 Government & non NAICS	26,197,494.0	10,329,368.0	58,228,796.0	94,755,651.0
Imports and other non-industry sources	376,268,276.0	-	-	376,268,276.0
Total Angler Expenditures	1,368,380,952.0	327,002,702.0	288,478,307.0	1,983,861,959.0

Industry INCOME impacts STATEWIDE due to RESIDENT & NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	2,130,556.0	1,042,997.0	111,794.0	3,285,464.0
21 Mining	633,055.0	11,468,291.0	2,061,438.0	14,162,784.0
22 Utilities	-	2,272,721.0	1,943,947.0	4,216,665.0
23 Construction	68,672,076.0	4,136,159.0	(498,557.0)	73,287,674.0
31-33 Manufacturing	6,441,252.0	3,620,837.0	2,039,789.0	12,101,878.0
42 Wholesale Trade	22,183,199.0	4,650,351.0	3,304,228.0	30,137,777.0
48-49 Transportation & Warehousing	20,332,369.0	11,832,122.0	3,814,616.0	35,979,105.0
44-45 Retail trade	71,825,008.0	6,627,293.0	15,118,222.0	93,570,520.0
51 Information	5,428.0	4,783,796.0	419,114.0	5,208,338.0
52 Finance & insurance	-	3,603,186.0	5,675,807.0	9,278,993.0
53 Real estate & rental	17,669,913.0	6,430,676.0	2,041,991.0	26,022,580.0
54 Professional- scientific & tech svcs	-	15,567,060.0	1,360,081.0	16,927,139.0
55 Management of companies	-	3,030,826.0	93,909.0	3,124,735.0
56 Administrative & waste services	240,480.0	7,223,062.0	961,116.0	8,423,458.0
61 Educational svcs	-	102,374.0	1,419,764.0	1,522,139.0
62 Health & social services	-	5,466.0	26,733,060.0	26,738,526.0
71 Arts- entertainment & recreation	59,334,656.0	2,577,399.0	843,136.0	62,755,190.0
72 Accommodation & food services	50,847,026.0	3,003,496.0	7,839,376.0	61,689,901.0
81 Other services	8,945,344.0	2,648,111.0	7,035,117.0	18,628,572.0
92 Government & non NAICS	23,875,526.0	2,995,553.0	11,048,379.0	37,919,458.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	354,123,881.0	97,645,884.0	93,474,323.0	545,256,091.0

Industry EMPLOYMENT impacts STATEWIDE due to RESIDENT & NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	205	100	7	312
21 Mining	3	60	11	74
22 Utilities	-	22	21	43
23 Construction	1,035	61	(8)	1,088
31-33 Manufacturing	163	81	69	313
42 Wholesale Trade	407	85	61	554
48-49 Transportation & Warehousing	395	219	82	696
44-45 Retail trade	2,650	215	488	3,353
51 Information	-	101	4	105
52 Finance & insurance	-	64	97	161
53 Real estate & rental	334	315	90	739
54 Professional- scientific & tech svcs	-	299	44	342
55 Management of companies	-	39	1	40
56 Administrative & waste services	5	249	43	297
61 Educational svcs	-	4	61	65
62 Health & social services	-	-	565	565
71 Arts- entertainment & recreation	3,187	131	43	3,362
72 Accommodation & food services	2,054	130	342	2,526
81 Other services	259	85	266	610
92 Government & non NAICS	384	63	189	635
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	11,080	2,323	2,476	15,879

Appendix O2.—Industry output, income and employment impacts of resident angler spending statewide.

Industry OUTPUT impacts STATEWIDE due to RESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	5,061,865.0	1,207,735.0	172,100.0	6,441,700.0
21 Mining	1,841,911.0	24,216,924.0	3,216,324.0	29,275,159.0
22 Utilities	-	4,104,335.0	3,128,813.0	7,233,148.0
23 Construction	73,139,536.0	3,358,284.0	(88,135.0)	76,399,690.0
31-33 Manufacturing	46,581,730.0	15,461,203.0	8,032,073.0	70,075,006.0
42 Wholesale Trade	40,063,193.0	5,094,633.0	3,519,686.0	48,677,512.0
48-49 Transportation & Warehousing	8,719,843.0	9,365,248.0	4,184,284.0	22,269,375.0
44-45 Retail trade	123,468,407.0	6,795,753.0	14,858,988.0	145,123,148.0
51 Information	12,794.0	8,306,000.0	1,843,077.0	10,281,871.0
52 Finance & insurance	-	4,770,818.0	7,739,197.0	12,510,015.0
53 Real estate & rental	2,304,853.0	16,700,098.0	5,429,172.0	24,434,123.0
54 Professional- scientific & tech svcs	-	13,884,062.0	2,204,479.0	16,088,541.0
55 Management of companies	-	3,653,490.0	219,373.0	3,872,863.0
56 Administrative & waste services	129,832.0	6,321,002.0	1,427,114.0	7,877,948.0
61 Educational svcs	-	106,239.0	1,253,505.0	1,359,744.0
62 Health & social services	-	6,064.0	20,161,677.0	20,167,741.0
71 Arts- entertainment & recreation	50,209,077.0	2,036,391.0	1,422,852.0	53,668,320.0
72 Accommodation & food services	33,985,476.0	2,890,091.0	8,644,422.0	45,509,989.0
81 Other services	24,736,503.0	2,393,315.0	6,389,004.0	33,518,822.0
92 Government & non NAICS	7,540,480.0	3,659,698.0	22,734,818.0	33,934,996.0
Imports and other non-industry sources	301,407,028.0	-	-	301,407,028.0
Total Angler Expenditures	719,202,530.0	134,451,498.0	116,482,829.0	970,136,857.0

49%

Industry INCOME impacts STATEWIDE due to RESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	1,534,236.0	302,893.0	41,966.0	1,879,094.0
21 Mining	473,345.0	6,268,065.0	831,778.0	7,573,188.0
22 Utilities	-	861,908.0	734,174.0	1,596,082.0
23 Construction	27,861,668.0	1,547,553.0	(26,468.0)	29,382,753.0
31-33 Manufacturing	3,030,069.0	1,392,258.0	686,497.0	5,108,824.0
42 Wholesale Trade	15,141,863.0	1,925,533.0	1,330,249.0	18,397,645.0
48-49 Transportation & Warehousing	3,117,416.0	4,302,149.0	1,514,105.0	8,933,670.0
44-45 Retail trade	51,214,317.0	2,787,880.0	6,128,468.0	60,130,665.0
51 Information	3,625.0	2,060,389.0	346,264.0	2,410,278.0
52 Finance & insurance	-	1,465,440.0	2,150,908.0	3,616,348.0
53 Real estate & rental	1,510,076.0	2,644,189.0	956,485.0	5,110,750.0
54 Professional- scientific & tech svcs	-	6,003,809.0	935,325.0	6,939,134.0
55 Management of companies	-	1,575,853.0	94,621.0	1,670,474.0
56 Administrative & waste services	41,372.0	2,718,164.0	506,397.0	3,265,933.0
61 Educational svcs	-	47,573.0	583,605.0	631,178.0
62 Health & social services	-	2,418.0	10,991,058.0	10,993,476.0
71 Arts- entertainment & recreation	15,776,088.0	890,792.0	504,860.0	17,171,740.0
72 Accommodation & food services	11,476,260.0	1,040,259.0	3,093,127.0	15,609,646.0
81 Other services	8,107,235.0	989,120.0	2,658,665.0	11,755,019.0
92 Government & non NAICS	6,847,554.0	1,060,243.0	3,278,450.0	11,186,247.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	146,122,921.0	39,868,483.0	37,340,533.0	223,331,937.0

41%

Industry EMPLOYMENT impacts STATEWIDE due to RESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	150.8	27.7	2.6	181.1
21 Mining	2.4	32.6	4.3	39.2
22 Utilities	-	8.4	7.6	15.9
23 Construction	413.7	22.9	(0.3)	436.3
31-33 Manufacturing	75.8	31.2	23.4	130.4
42 Wholesale Trade	278.1	35.4	24.4	337.9
48-49 Transportation & Warehousing	57.1	79.6	31.9	168.7
44-45 Retail trade	1,847.4	90.5	198.0	2,135.9
51 Information	-	43.8	5.6	49.4
52 Finance & insurance	-	25.8	37.3	63.0
53 Real estate & rental	28.5	129.6	44.5	202.6
54 Professional- scientific & tech svcs	-	116.5	24.4	140.8
55 Management of companies	-	20.0	1.2	21.4
56 Administrative & waste services	0.8	93.8	20.6	115.4
61 Educational svcs	-	2.0	25.1	27.1
62 Health & social services	-	-	231.4	231.4
71 Arts- entertainment & recreation	845.4	44.7	25.9	916.0
72 Accommodation & food services	470.0	44.6	136.0	650.6
81 Other services	234.2	31.3	103.2	368.7
92 Government & non NAICS	126.6	22.8	60.1	209.5
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	4,531.1	903.3	1,007.2	6,441.5

Appendix O3.-Industry output, income and employment impacts of nonresident angler spending statewide.

Industry OUTPUT impacts STATEWIDE due to NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	2,062,085.0	2,688,890.0	308,306.0	5,059,282.0
21 Mining	621,476.0	20,097,381.0	4,754,538.0	25,473,396.0
22 Utilities	-	6,566,491.0	4,884,427.0	11,338,918.0
23 Construction	109,697,616.0	5,635,062.0	(1,130,799.0)	114,201,883.0
31-33 Manufacturing	33,660,216.0	27,444,450.0	14,975,648.0	76,080,313.0
42 Wholesale Trade	18,631,138.0	7,209,573.0	5,222,937.0	31,063,648.0
48-49 Transportation & Warehousing	58,869,864.0	14,615,734.0	7,017,899.0	81,703,498.0
44-45 Retail trade	46,868,898.0	9,358,969.0	21,786,829.0	78,014,696.0
51 Information	6,362.0	11,306,731.0	979,835.0	12,292,929.0
52 Finance & Insurance	-	6,987,520.0	12,654,023.0	19,641,543.0
53 Real estate & rental	24,665,002.0	23,498,693.0	6,004,697.0	54,168,390.0
54 Professional- scientific & tech svcs	-	21,786,491.0	1,128,621.0	22,915,111.0
55 Management of companies	-	3,373,242.0	(1,851.0)	3,371,589.0
56 Administrative & waste services	624,833.0	11,805,834.0	1,698,729.0	14,129,396.0
61 Educational svcs	-	121,458.0	1,795,500.0	1,916,957.0
62 Health & social services	-	7,690.0	29,096,210.0	29,103,898.0
71 Arts- entertainment & recreation	138,670,994.0	3,745,459.0	1,298,882.0	143,715,334.0
72 Accommodation & food services	117,985,423.0	5,411,732.0	13,418,977.0	136,816,127.0
81 Other services	2,086,461.0	4,108,148.0	10,899,893.0	17,024,493.0
92 Government & non NAICS	18,657,014.0	6,869,670.0	35,493,978.0	60,820,657.0
Imports and other non-industry sources	74,861,248.0	-	-	74,861,248.0
Total Angler Expenditures	649,178,422.0	182,551,204.0	171,995,478.0	1,013,725,100.0

51%

Industry INCOME impacts STATEWIDE due to NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	596,320.0	740,104.0	69,828.0	1,406,370.0
21 Mining	159,710.0	5,200,226.0	1,229,880.0	6,589,597.0
22 Utilities	-	1,410,813.0	1,209,773.0	2,620,586.0
23 Construction	41,810,408.0	2,588,606.0	(472,089.0)	43,914,923.0
31-33 Manufacturing	3,411,183.0	2,228,579.0	1,353,292.0	6,993,054.0
42 Wholesale Trade	7,041,536.0	2,724,816.0	1,973,979.0	11,740,332.0
48-49 Transportation & Warehousing	17,214,953.0	7,529,973.0	2,300,511.0	27,045,435.0
44-45 Retail trade	20,610,691.0	3,839,413.0	8,999,754.0	33,439,854.0
51 Information	1,803.0	2,723,407.0	72,850.0	2,798,061.0
52 Finance & Insurance	-	2,137,746.0	3,524,901.0	5,662,648.0
53 Real estate & rental	16,159,837.0	3,786,487.0	1,085,506.0	20,911,831.0
54 Professional- scientific & tech svcs	-	9,563,251.0	424,756.0	9,988,006.0
55 Management of companies	-	1,454,973.0	(712.0)	1,454,261.0
56 Administrative & waste services	199,108.0	4,504,898.0	454,719.0	5,157,526.0
61 Educational svcs	-	54,801.0	836,159.0	890,960.0
62 Health & social services	-	3,048.0	15,742,002.0	15,745,050.0
71 Arts- entertainment & recreation	43,558,568.0	1,886,807.0	338,276.0	45,595,449.0
72 Accommodation & food services	39,370,766.0	1,863,237.0	4,746,249.0	46,080,253.0
81 Other services	838,109.0	1,658,991.0	4,376,452.0	6,873,553.0
92 Government & non NAICS	17,027,972.0	1,935,310.0	7,769,929.0	26,733,212.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	208,000,960.0	57,747,401.0	56,133,790.0	321,882,151.0

59%

Industry EMPLOYMENT impacts STATEWIDE due to NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	54.4	72.2	4.1	131.0
21 Mining	0.8	27.1	6.6	34.4
22 Utilities	-	13.8	13.2	26.8
23 Construction	620.9	38.3	(7.2)	651.8
31-33 Manufacturing	86.7	49.3	45.9	182.0
42 Wholesale Trade	129.3	79.9	36.4	215.6
48-49 Transportation & Warehousing	338.3	139.1	50.0	527.3
44-45 Retail trade	802.2	124.8	290.3	1,217.0
51 Information	-	57.6	(1.6)	56.0
52 Finance & Insurance	-	37.7	60.0	97.7
53 Real estate & rental	305.4	185.3	45.1	535.8
54 Professional- scientific & tech svcs	-	182.0	19.3	201.4
55 Management of companies	-	18.6	-	18.6
56 Administrative & waste services	3.9	155.2	22.8	181.9
61 Educational svcs	-	2.1	36.0	38.3
62 Health & social services	-	-	333.8	333.8
71 Arts- entertainment & recreation	2,341.8	86.3	17.5	2,445.8
72 Accommodation & food services	1,584.1	85.6	205.7	1,875.4
81 Other services	24.3	54.0	162.5	240.8
92 Government & non NAICS	257.0	40.1	128.9	425.9
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	6,549.0	1,419.2	1,469.2	9,437.3

Appendix O4.-Industry output, income and employment impacts of all angler spending in the Southeast Region.

Industry OUTPUT impacts in the SOUTHEAST due to RESIDENT & NONRESIDENT angler expenditures.				
NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	1,525,564.0	1,246,807.0	34,281.0	2,806,654.0
21 Mining	5,675,264.0	459,240.0	61,589.0	6,196,093.0
22 Utilities	-	1,061,323.0	680,170.0	1,741,494.0
23 Construction	53,835,714.0	1,237,009.0	(219,354.0)	54,853,367.0
31-33 Manufacturing	6,613,817.0	1,286,001.0	1,584,997.0	9,484,817.0
42 Wholesale Trade	8,378,827.0	1,165,108.0	806,962.0	10,350,895.0
48-49 Transportation & Warehousing	18,443,836.0	4,618,188.0	1,122,036.0	24,184,059.0
44-45 Retail trade	26,256,166.0	3,496,920.0	6,532,361.0	36,285,448.0
51 Information	3.0	4,296,147.0	78,568.0	4,374,719.0
52 Finance & Insurance	-	1,336,949.0	3,119,695.0	4,456,644.0
53 Real estate & rental	2,395,601.0	5,790,835.0	1,629,080.0	9,815,514.0
54 Professional- scientific & tech svcs	-	4,493,016.0	345,014.0	4,838,029.0
55 Management of companies	-	155,042.0	(5,203.0)	149,839.0
56 Administrative & waste services	207,721.0	3,822,178.0	438,290.0	4,468,189.0
61 Educational svcs	-	23,345.0	370,523.0	393,868.0
62 Health & social services	-	2,641.0	7,681,198.0	7,683,838.0
71 Arts- entertainment & recreation	47,019,413.0	1,297,649.0	262,261.0	48,579,324.0
72 Accommodation & food services	31,990,865.0	1,632,058.0	4,187,679.0	37,800,601.0
81 Other services	6,948,715.0	1,022,937.0	3,524,794.0	11,496,448.0
92 Government & non NAICS	541,361.0	3,126,815.0	11,632,011.0	15,300,188.0
Imports and other non-industry sources	59,405,121.0	-	-	59,405,121.0
Total Angler Expenditures	269,227,986.0	41,570,201.0	43,868,944.0	354,665,145.0

Industry INCOME impacts in the SOUTHEAST due to RESIDENT & NONRESIDENT angler expenditures.				
NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	454,501.0	310,271.0	11,180.0	775,960.0
21 Mining	1,163,499.0	98,608.0	13,948.0	1,276,051.0
22 Utilities	-	238,175.0	154,882.0	392,856.0
23 Construction	20,377,697.0	560,882.0	(91,931.0)	20,846,651.0
31-33 Manufacturing	751,367.0	251,198.0	203,434.0	1,205,998.0
42 Wholesale Trade	3,166,449.0	440,307.0	304,959.0	3,911,715.0
48-49 Transportation & Warehousing	4,324,754.0	2,384,902.0	364,420.0	7,074,080.0
44-45 Retail trade	11,011,881.0	1,402,513.0	2,635,259.0	15,049,650.0
51 Information	-	1,005,510.0	(31,644.0)	973,866.0
52 Finance & Insurance	-	351,160.0	814,425.0	1,165,583.0
53 Real estate & rental	1,485,989.0	1,025,926.0	312,862.0	2,824,778.0
54 Professional- scientific & tech svcs	-	1,868,046.0	141,897.0	2,009,944.0
55 Management of companies	-	62,010.0	(2,083.0)	59,930.0
56 Administrative & waste services	61,503.0	1,182,248.0	106,762.0	1,350,511.0
61 Educational svcs	-	9,488.0	166,315.0	175,804.0
62 Health & social services	-	998.0	4,164,778.0	4,165,774.0
71 Arts- entertainment & recreation	15,400,653.0	538,968.0	60,289.0	15,999,912.0
72 Accommodation & food services	10,420,290.0	572,449.0	1,431,482.0	12,424,222.0
81 Other services	2,182,558.0	391,580.0	1,318,800.0	3,892,936.0
92 Government & non NAICS	170,667.0	804,819.0	2,289,805.0	3,565,492.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	71,272,005.0	13,500,039.0	14,369,650.0	99,141,694.0

Industry EMPLOYMENT impacts in the SOUTHEAST due to RESIDENT & NONRESIDENT angler expenditures.				
NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	53	34	1	88
21 Mining	7	1	-	8
22 Utilities	-	3	2	5
23 Construction	319	9	(1)	327
31-33 Manufacturing	22	8	5	35
42 Wholesale Trade	68	9	7	85
48-49 Transportation & Warehousing	124	55	11	189
44-45 Retail trade	418	47	88	553
51 Information	-	25	(2)	23
52 Finance & Insurance	-	7	15	23
53 Real estate & rental	40	44	11	95
54 Professional- scientific & tech svcs	-	41	5	46
55 Management of companies	-	1	(0)	1
56 Administrative & waste services	2	53	6	60
61 Educational svcs	-	0	8	9
62 Health & social services	-	-	88	88
71 Arts- entertainment & recreation	638	27	(0)	665
72 Accommodation & food services	484	28	69	581
81 Other services	79	15	52	146
92 Government & non NAICS	10	13	35	58
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	2,243	420	400	3,063

Appendix O5.-Industry output, income and employment impacts of resident angler spending in the Southeast Region.

Industry OUTPUT impacts in the SOUTHEAST REGION due to RESIDENT angler expenditure.				
NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	1,034,816.0	270,796.0	12,179.0	1,317,792.0
21 Mining	3,145,784.0	189,322.0	22,448.0	3,357,554.0
22 Utilities	-	213,192.0	182,430.0	395,622.0
23 Construction	19,540,190.0	284,567.0	(2,490.0)	19,822,265.0
31-33 Manufacturing	1,831,462.0	329,607.0	262,763.0	2,423,831.0
42 Wholesale Trade	4,081,244.0	333,590.0	206,290.0	4,621,123.0
48-49 Transportation & Warehousing	699,168.0	1,064,685.0	346,559.0	2,110,412.0
44-45 Retail trade	14,553,971.0	1,333,563.0	1,778,984.0	17,666,519.0
51 Information	1.0	1,099,848.0	200,399.0	1,300,349.0
52 Finance & insurance	-	348,803.0	706,306.0	1,055,109.0
53 Real estate & rental	125,956.0	1,392,182.0	547,215.0	2,065,352.0
54 Professional- scientific & tech svcs	-	1,162,454.0	187,606.0	1,350,060.0
55 Management of companies	-	52,775.0	2,363.0	55,138.0
56 Administrative & waste services	-	597,137.0	140,733.0	737,869.0
61 Educational svcs	-	9,621.0	102,937.0	112,558.0
62 Health & social services	-	812.0	2,122,917.0	2,123,729.0
71 Arts- entertainment & recreation	6,265,834.0	211,628.0	155,709.0	6,633,171.0
72 Accommodation & food services	366,828.0	302,541.0	1,063,437.0	1,732,806.0
81 Other services	5,815,587.0	246,072.0	761,135.0	6,822,795.0
92 Government & non NAICS	55,493.0	598,615.0	3,027,072.0	3,681,181.0
Imports and other non-industry sources	38,520,462.0	-	-	38,520,462.0
Total Angler Expenditures	96,036,595.0	10,041,905.0	11,826,987.0	117,905,490.0

Industry INCOME impacts in the SOUTHEAST REGION due to RESIDENT angler expenditures.				
NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	308,695.0	67,415.0	3,223.0	379,331.0
21 Mining	644,924.0	39,827.0	5,079.0	689,828.0
22 Utilities	-	47,589.0	41,224.0	88,813.0
23 Construction	7,266,003.0	128,754.0	704.0	7,395,460.0
31-33 Manufacturing	203,123.0	67,919.0	34,528.0	305,569.0
42 Wholesale Trade	1,542,348.0	126,068.0	77,958.0	1,746,373.0
48-49 Transportation & Warehousing	254,209.0	487,887.0	126,840.0	868,936.0
44-45 Retail trade	5,906,985.0	534,853.0	717,391.0	7,159,228.0
51 Information	-	259,277.0	34,757.0	294,034.0
52 Finance & insurance	-	91,162.0	178,172.0	269,333.0
53 Real estate & rental	78,131.0	247,431.0	101,679.0	427,241.0
54 Professional- scientific & tech svcs	-	491,829.0	78,666.0	570,495.0
55 Management of companies	-	21,108.0	945.0	22,053.0
56 Administrative & waste services	-	227,643.0	42,355.0	269,997.0
61 Educational svcs	-	3,897.0	46,176.0	50,073.0
62 Health & social services	-	308.0	1,151,022.0	1,151,329.0
71 Arts- entertainment & recreation	2,052,651.0	85,444.0	55,253.0	2,193,348.0
72 Accommodation & food services	125,000.0	105,823.0	367,570.0	598,394.0
81 Other services	1,852,048.0	98,844.0	300,522.0	2,251,414.0
92 Government & non NAICS	50,553.0	154,240.0	379,954.0	584,748.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	20,264,669.0	3,287,314.0	3,744,025.0	27,316,007.0

Industry EMPLOYMENT impacts in the SOUTHEAST REGION due to RESIDENT angler expenditures.				
NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	36.2	7.1	0.3	43.5
21 Mining	3.7	0.2	-	4.1
22 Utilities	-	0.6	0.4	1.1
23 Construction	113.9	2.0	0.1	116.0
31-33 Manufacturing	5.8	2.0	1.1	8.9
42 Wholesale Trade	33.4	2.7	1.6	37.7
48-49 Transportation & Warehousing	5.8	12.1	3.5	21.3
44-45 Retail trade	220.6	18.0	24.0	262.5
51 Information	-	6.4	0.7	7.0
52 Finance & insurance	-	1.9	3.4	5.4
53 Real estate & rental	2.1	10.6	4.2	16.8
54 Professional- scientific & tech svcs	-	10.4	2.1	12.6
55 Management of companies	-	0.3	-	0.3
56 Administrative & waste services	-	10.0	2.2	12.3
61 Educational svcs	-	0.2	2.2	2.4
62 Health & social services	-	-	24.3	24.4
71 Arts- entertainment & recreation	85.1	4.2	2.1	91.4
72 Accommodation & food services	6.1	5.1	18.0	29.1
81 Other services	67.1	3.7	12.2	83.1
92 Government & non NAICS	2.0	2.6	6.1	10.9
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	581.8	100.1	108.6	790.4

Appendix O6.-Industry output, income and employment impacts of nonresident angler spending in the Southeast Region.

Industry OUTPUT impacts in the SOUTHEAST REGION due to NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	490,749.0	976,011.0	22,102.0	1,488,862.0
21 Mining	2,529,480.0	269,918.0	39,141.0	2,838,539.0
22 Utilities	-	848,131.0	497,740.0	1,345,872.0
23 Construction	34,295,524.0	952,442.0	(216,864.0)	35,031,102.0
31-33 Manufacturing	4,782,355.0	956,394.0	1,322,234.0	7,060,983.0
42 Wholesale Trade	4,287,583.0	831,518.0	600,872.0	5,729,972.0
48-49 Transportation & Warehousing	17,744,666.0	3,553,503.0	775,477.0	22,073,647.0
44-45 Retail trade	11,702,195.0	2,163,357.0	4,753,377.0	18,618,929.0
51 Information	2.0	3,196,199.0	(121,831.0)	3,074,370.0
52 Finance & insurance	-	988,146.0	2,413,389.0	3,401,535.0
53 Real estate & rental	2,269,645.0	4,398,653.0	1,081,865.0	7,750,162.0
54 Professional- scientific & tech svcs	-	3,330,562.0	157,408.0	3,487,969.0
55 Management of companies	-	102,267.0	(7,566.0)	94,701.0
56 Administrative & waste services	207,721.0	3,225,041.0	297,557.0	3,730,320.0
61 Educational svcs	-	13,724.0	267,586.0	281,309.0
62 Health & social services	-	1,829.0	5,558,281.0	5,560,110.0
71 Arts- entertainment & recreation	40,753,579.0	1,086,021.0	106,552.0	41,946,153.0
72 Accommodation & food services	31,614,238.0	1,329,517.0	3,124,242.0	36,067,995.0
81 Other services	1,133,128.0	776,885.0	2,783,659.0	4,673,653.0
92 Government & non NAICS	485,969.0	2,528,200.0	8,604,939.0	11,619,007.0
Imports and other non-industry sources	20,684,659.0	-	-	20,684,659.0
Total Angler Expenditures	173,191,391.0	31,528,296.0	32,039,957.0	236,759,645.0

Industry INCOME impacts in the SOUTHEAST REGION due to NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	145,806.0	242,856.0	7,967.0	396,629.0
21 Mining	518,575.0	58,781.0	8,869.0	586,223.0
22 Utilities	-	190,586.0	113,458.0	304,043.0
23 Construction	13,111,894.0	432,128.0	(92,840.0)	13,451,183.0
31-33 Manufacturing	548,244.0	183,269.0	168,006.0	900,417.0
42 Wholesale Trade	1,624,103.0	314,239.0	227,001.0	2,165,342.0
48-49 Transportation & Warehousing	4,070,545.0	1,897,015.0	237,580.0	6,205,140.0
44-45 Retail trade	5,104,898.0	867,680.0	1,917,868.0	7,890,422.0
51 Information	-	746,233.0	(66,401.0)	679,830.0
52 Finance & insurance	-	259,998.0	636,253.0	896,250.0
53 Real estate & rental	1,407,858.0	778,495.0	211,183.0	2,397,537.0
54 Professional- scientific & tech svcs	-	1,376,217.0	63,231.0	1,439,448.0
55 Management of companies	-	40,902.0	(3,028.0)	37,877.0
56 Administrative & waste services	61,503.0	954,605.0	64,407.0	1,080,514.0
61 Educational svcs	-	5,591.0	120,139.0	125,731.0
62 Health & social services	-	690.0	3,013,756.0	3,014,445.0
71 Arts- entertainment & recreation	13,348,002.0	453,524.0	5,038.0	13,806,564.0
72 Accommodation & food services	10,295,290.0	466,626.0	1,063,912.0	11,825,828.0
81 Other services	330,509.0	292,736.0	1,018,278.0	1,641,522.0
92 Government & non NAICS	420,314.0	650,579.0	1,909,851.0	2,980,744.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	50,987,336.0	10,212,725.0	10,625,625.0	71,825,687.0

Industry EMPLOYMENT impacts in the SOUTHEAST REGION due to NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	17.0	26.8	0.6	44.9
21 Mining	2.9	0.3	-	3.6
22 Utilities	-	2.2	1.3	3.6
23 Construction	205.0	6.6	(1.5)	210.5
31-33 Manufacturing	16.3	5.6	4.2	26.1
42 Wholesale Trade	35.0	6.7	4.9	46.8
48-49 Transportation & Warehousing	119.0	42.7	7.0	167.8
44-45 Retail trade	196.9	29.2	64.2	290.3
51 Information	-	18.7	(2.7)	16.0
52 Finance & insurance	-	5.5	11.8	17.3
53 Real estate & rental	37.8	33.3	7.2	78.3
54 Professional- scientific & tech svcs	-	30.1	3.2	33.1
55 Management of companies	-	0.6	(0.1)	0.5
56 Administrative & waste services	1.5	42.7	3.7	48.0
61 Educational svcs	-	0.2	5.9	6.2
62 Health & social services	-	-	63.7	63.7
71 Arts- entertainment & recreation	553.0	23.1	(2.2)	573.9
72 Accommodation & food services	458.3	22.8	50.7	531.8
81 Other services	11.9	11.6	39.7	63.3
92 Government & non NAICS	7.7	10.7	28.8	47.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	1,661.6	320.0	290.9	2,272.1

Appendix O7.-Industry output, income and employment impacts of all angler spending in the Southcentral Region.

Industry OUTPUT impacts in the SOUTHCENTRAL due to RESIDENT & NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	4,949,392.0	2,344,818.0	243,212.0	7,537,422.0
21 Mining	3,029,259.0	41,924,266.0	7,898,824.0	52,852,350.0
22 Utilities	-	7,761,321.0	5,643,986.0	13,405,306.0
23 Construction	123,329,496.0	6,642,118.0	(813,937.0)	129,157,672.0
31-33 Manufacturing	61,016,572.0	28,797,806.0	16,752,521.0	106,566,899.0
42 Wholesale Trade	44,205,615.0	8,900,919.0	6,429,914.0	59,536,449.0
48-49 Transportation & Warehousing	42,815,099.0	16,884,774.0	8,578,490.0	68,078,366.0
44-45 Retail trade	128,166,754.0	11,797,762.0	26,910,636.0	166,875,152.0
51 Information	15,083.0	14,299,532.0	2,302,836.0	16,617,451.0
52 Finance & insurance	-	10,288,228.0	16,695,048.0	26,983,275.0
53 Real estate & rental	24,031,699.0	30,207,016.0	8,608,057.0	62,846,770.0
54 Professional- scientific & tech svcs	-	28,721,041.0	3,152,488.0	31,873,531.0
55 Management of companies	-	7,386,996.0	294,627.0	7,681,624.0
56 Administrative & waste services	481,215.0	12,708,071.0	2,365,228.0	15,552,513.0
61 Educational svcs	-	178,348.0	2,375,528.0	2,553,877.0
62 Health & social services	-	10,147.0	36,958,489.0	36,968,636.0
71 Arts- entertainment & recreation	132,915,417.0	4,434,232.0	1,789,222.0	139,138,869.0
72 Accommodation & food services	112,292,126.0	6,068,770.0	16,139,129.0	134,500,028.0
81 Other services	18,021,514.0	5,326,647.0	12,232,163.0	35,580,323.0
92 Government & non NAICS	1,533,501.0	7,276,653.0	42,430,870.0	51,241,021.0
Imports and other non-industry sources	279,096,106.0	-	-	279,096,106.0
Total Angler Expenditures	975,698,840.0	251,955,452.0	216,997,327.0	1,444,641,644.0

Industry INCOME impacts in the SOUTHCENTRAL due to RESIDENT & NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	1,418,369.0	699,529.0	40,394.0	2,158,294.0
21 Mining	779,193.0	10,865,022.0	2,046,869.0	13,691,086.0
22 Utilities	-	1,577,692.0	1,374,202.0	2,951,895.0
23 Construction	46,376,390.0	3,048,663.0	(329,588.0)	49,095,457.0
31-33 Manufacturing	5,103,578.0	2,800,294.0	1,519,200.0	9,423,073.0
42 Wholesale Trade	16,706,953.0	3,363,992.0	2,430,104.0	22,501,048.0
48-49 Transportation & Warehousing	13,511,987.0	8,211,072.0	2,979,477.0	24,702,537.0
44-45 Retail trade	54,131,691.0	4,874,206.0	11,175,942.0	70,181,838.0
51 Information	4,030.0	3,466,935.0	362,545.0	3,833,412.0
52 Finance & insurance	-	3,222,102.0	4,706,099.0	7,928,199.0
53 Real estate & rental	15,748,280.0	4,799,392.0	1,514,907.0	22,062,577.0
54 Professional- scientific & tech svcs	-	12,584,532.0	1,334,295.0	13,918,830.0
55 Management of companies	-	3,188,064.0	127,156.0	3,315,219.0
56 Administrative & waste services	153,200.0	4,967,057.0	737,593.0	5,857,847.0
61 Educational svcs	-	80,037.0	1,105,530.0	1,185,567.0
62 Health & social services	-	4,113.0	20,050,302.0	20,054,413.0
71 Arts- entertainment & recreation	41,559,292.0	1,968,536.0	589,215.0	44,117,045.0
72 Accommodation & food services	36,895,124.0	2,188,489.0	5,692,567.0	44,776,199.0
81 Other services	6,018,604.0	2,161,531.0	5,108,402.0	13,288,539.0
92 Government & non NAICS	1,352,487.0	2,104,588.0	7,963,622.0	11,420,677.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	239,759,153.0	76,175,738.0	70,528,842.0	386,463,736.0

Industry EMPLOYMENT impacts in the SOUTHCENTRAL due to RESIDENT & NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	145	63	3	211
21 Mining	3	49	9	61
22 Utilities	-	17	16	33
23 Construction	695	43	(2)	736
31-33 Manufacturing	133	63	50	245
42 Wholesale Trade	302	61	46	408
48-49 Transportation & Warehousing	197	139	59	395
44-45 Retail trade	1,997	169	348	2,513
51 Information	-	69	30	99
52 Finance & insurance	-	58	73	130
53 Real estate & rental	308	235	77	620
54 Professional- scientific & tech svcs	-	247	40	286
55 Management of companies	-	56	2	58
56 Administrative & waste services	3	169	32	204
61 Educational svcs	-	18	47	65
62 Health & social services	-	0	411	411
71 Arts- entertainment & recreation	2,007	85	63	2,155
72 Accommodation & food services	1,817	99	237	1,952
81 Other services	446	71	206	723
92 Government & non NAICS	41	42	121	205
Imports and other non-industry sources	2	4	16	22
Total Angler Expenditures	7,897	1,755	1,882	11,535

Appendix O8.—Industry output, income and employment impacts of resident angler spending in the Southcentral Region.

Industry OUTPUT impacts in the SOUTHCENTRAL REGION due to RESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	3,643,658.0	725,267.0	91,505.0	4,460,429.0
21 Mining	2,362,453.0	25,018,545.0	3,526,925.0	30,907,923.0
22 Utilities	-	3,317,379.0	2,482,678.0	5,800,055.0
23 Construction	50,895,000.0	2,763,355.0	(102,944.0)	53,555,412.0
31-33 Manufacturing	36,778,389.0	11,778,298.0	6,695,981.0	55,252,668.0
42 Wholesale Trade	31,093,424.0	3,963,573.0	2,851,523.0	37,938,520.0
48-49 Transportation & Warehousing	6,756,724.0	7,383,637.0	3,486,106.0	17,626,467.0
44-45 Retail trade	95,658,753.0	5,061,634.0	12,037,327.0	112,757,716.0
51 Information	10,353.0	6,678,791.0	1,478,592.0	8,167,737.0
52 Finance & insurance	-	4,585,559.0	7,139,437.0	11,724,996.0
53 Real estate & rental	2,144,825.0	13,836,179.0	4,380,198.0	20,361,199.0
54 Professional- scientific & tech svcs	-	12,299,385.0	2,016,667.0	14,316,052.0
55 Management of companies	-	4,094,093.0	250,260.0	4,344,353.0
56 Administrative & waste services	87,862.0	5,042,565.0	1,143,426.0	6,273,854.0
61 Educational svcs	-	88,635.0	1,076,826.0	1,165,461.0
62 Health & social services	-	4,901.0	16,690,992.0	16,695,893.0
71 Arts- entertainment & recreation	42,912,711.0	1,801,993.0	1,031,648.0	45,746,350.0
72 Accommodation & food services	32,014,222.0	2,346,897.0	7,039,335.0	41,400,453.0
81 Other services	17,145,161.0	2,148,763.0	5,194,230.0	24,488,154.0
92 Government & non NAICS	574,584.0	2,911,761.0	18,368,172.0	21,854,518.0
Imports and other non-industry sources	228,495,897.0	-	-	228,495,897.0
Total Angler Expenditures	550,574,016.0	115,881,204.0	96,878,683.0	763,333,906.0

Industry INCOME impacts in the SOUTHCENTRAL REGION due to RESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	1,071,163.0	208,471.0	17,705.0	1,297,340.0
21 Mining	607,676.0	6,484,043.0	914,030.0	8,005,751.0
22 Utilities	-	674,380.0	572,048.0	1,246,429.0
23 Construction	19,272,022.0	1,271,253.0	(30,178.0)	20,513,101.0
31-33 Manufacturing	2,513,812.0	1,192,536.0	605,109.0	4,311,457.0
42 Wholesale Trade	11,751,366.0	1,509,322.0	1,077,697.0	14,338,385.0
48-49 Transportation & Warehousing	2,423,948.0	3,386,692.0	1,267,681.0	7,078,322.0
44-45 Retail trade	39,843,162.0	2,091,197.0	4,997,894.0	46,932,252.0
51 Information	2,768.0	1,634,518.0	274,507.0	1,911,793.0
52 Finance & insurance	-	1,440,225.0	2,014,367.0	3,454,591.0
53 Real estate & rental	1,405,531.0	2,167,981.0	762,398.0	4,335,890.0
54 Professional- scientific & tech svcs	-	5,331,650.0	870,175.0	6,201,826.0
55 Management of companies	-	1,766,920.0	108,008.0	1,874,927.0
56 Administrative & waste services	27,972.0	2,068,558.0	393,439.0	2,489,968.0
61 Educational svcs	-	39,687.0	500,981.0	540,668.0
62 Health & social services	-	1,992.0	9,054,927.0	9,056,919.0
71 Arts- entertainment & recreation	13,423,962.0	797,494.0	375,366.0	14,596,822.0
72 Accommodation & food services	10,602,088.0	844,355.0	2,499,043.0	13,945,485.0
81 Other services	5,584,602.0	876,901.0	2,193,803.0	8,655,307.0
92 Government & non NAICS	485,163.0	838,533.0	2,719,061.0	4,042,757.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	109,015,231.0	34,626,685.0	31,188,079.0	174,829,998.0

Industry EMPLOYMENT impacts in the SOUTHCENTRAL REGION due to RESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	109.5	18.1	1.6	129.1
21 Mining	2.6	29.7	4.3	36.7
22 Utilities	-	7.0	6.8	13.8
23 Construction	288.8	19.0	(0.5)	307.3
31-33 Manufacturing	67.1	26.3	22.2	115.5
42 Wholesale Trade	212.0	27.2	19.4	258.7
48-49 Transportation & Warehousing	43.5	61.5	26.1	131.2
44-45 Retail trade	1,428.5	69.2	163.5	1,661.0
51 Information	-	33.5	4.4	38.0
52 Finance & insurance	-	25.1	34.8	59.7
53 Real estate & rental	27.5	114.5	38.0	180.2
54 Professional- scientific & tech svcs	-	103.6	22.1	125.6
55 Management of companies	-	22.5	1.3	23.8
56 Administrative & waste services	0.5	77.4	17.0	95.1
61 Educational svcs	-	1.6	21.7	23.4
62 Health & social services	-	-	196.8	196.8
71 Arts- entertainment & recreation	749.0	38.1	20.8	807.8
72 Accommodation & food services	453.5	37.3	112.5	603.2
81 Other services	160.9	27.6	88.5	277.0
92 Government & non NAICS	24.8	15.9	44.5	85.3
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	3,568.5	755.3	845.7	5,169.3

Appendix O9.- Industry output, income and employment impacts of nonresident angler spending in the Southcentral Region.

Industry OUTPUT impacts in the SOUTHCENTRAL REGION due to NONRESIDENT angler expenditures.				
NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	1,305,734.0	1,619,551.0	151,707.0	3,076,993.0
21 Mining	666,806.0	16,905,721.0	4,371,899.0	21,944,427.0
22 Utilities	-	4,443,942.0	3,161,308.0	7,605,250.0
23 Construction	72,434,496.0	3,878,763.0	(710,993.0)	75,602,266.0
31-33 Manufacturing	24,238,183.0	17,019,508.0	10,056,540.0	51,314,231.0
42 Wholesale Trade	13,112,191.0	4,907,346.0	3,578,391.0	21,597,928.0
48-49 Transportation & Warehousing	35,858,375.0	9,501,137.0	5,092,384.0	50,451,896.0
44-45 Retail trade	32,508,001.0	6,736,128.0	14,873,309.0	54,117,438.0
51 Information	4,730.0	7,620,741.0	824,244.0	8,449,714.0
52 Finance & insurance	-	5,700,669.0	9,555,611.0	15,256,279.0
53 Real estate & rental	21,886,874.0	16,370,337.0	4,227,859.0	42,485,070.0
54 Professional- scientific & tech svcs	-	16,421,656.0	1,135,821.0	17,557,477.0
55 Management of companies	-	3,292,903.0	44,367.0	3,337,269.0
56 Administrative & waste services	393,353.0	7,663,506.0	1,221,800.0	9,278,659.0
61 Educational svcs	-	89,713.0	1,298,902.0	1,388,616.0
62 Health & social services	-	5,246.0	20,267,507.0	20,272,752.0
71 Arts- entertainment & recreation	90,002,706.0	2,632,239.0	757,574.0	93,392,519.0
72 Accommodation & food services	80,277,904.0	3,721,873.0	9,099,794.0	93,099,571.0
81 Other services	876,353.0	3,177,884.0	7,037,933.0	11,092,169.0
92 Government & non NAICS	956,917.0	4,364,892.0	24,062,698.0	29,384,507.0
Imports and other non-industry sources	50,600,209.0	-	-	50,600,209.0
Total Angler Expenditures	425,124,824.0	136,074,248.0	120,108,844.0	681,307,916.0

Industry INCOME impacts in the SOUTHCENTRAL REGION due to NONRESIDENT angler expenditures.				
NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	347,206.0	491,058.0	22,889.0	860,954.0
21 Mining	171,517.0	4,380,979.0	1,132,839.0	5,685,335.0
22 Utilities	-	903,312.0	802,154.0	1,705,466.0
23 Construction	27,104,388.0	1,777,410.0	(289,420.0)	28,592,378.0
31-33 Manufacturing	2,589,766.0	1,607,758.0	914,091.0	5,111,616.0
42 Wholesale Trade	4,955,587.0	1,854,670.0	1,352,407.0	8,162,664.0
48-49 Transportation & Warehousing	11,088,039.0	4,824,380.0	1,711,796.0	17,624,215.0
44-45 Retail trade	14,288,529.0	2,783,009.0	6,178,048.0	23,249,586.0
51 Information	1,264.0	1,832,317.0	88,038.0	1,921,619.0
52 Finance & insurance	-	1,781,877.0	2,691,732.0	4,473,609.0
53 Real estate & rental	14,342,749.0	2,631,431.0	752,509.0	17,726,689.0
54 Professional- scientific & tech svcs	-	7,252,882.0	464,120.0	7,717,004.0
55 Management of companies	-	1,421,144.0	19,148.0	1,440,292.0
56 Administrative & waste services	125,228.0	2,898,499.0	344,154.0	3,367,879.0
61 Educational svcs	-	40,350.0	604,549.0	644,901.0
62 Health & social services	-	2,121.0	10,995,375.0	10,997,496.0
71 Arts- entertainment & recreation	28,135,330.0	1,171,042.0	213,829.0	29,520,201.0
72 Accommodation & food services	26,293,036.0	1,344,134.0	3,193,544.0	30,830,714.0
81 Other services	434,002.0	1,284,630.0	2,914,599.0	4,633,231.0
92 Government & non NAICS	867,304.0	1,266,055.0	5,244,561.0	7,377,920.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	130,743,922.0	41,549,052.0	39,340,763.0	211,633,738.0

Industry EMPLOYMENT impacts in the SOUTHCENTRAL REGION due to NONRESIDENT angler expenditures.				
NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	35.4	45.0	1.8	82.2
21 Mining	0.8	19.0	4.8	24.7
22 Utilities	-	9.6	9.4	19.2
23 Construction	406.4	23.5	(1.5)	428.6
31-33 Manufacturing	65.5	36.6	27.4	129.5
42 Wholesale Trade	89.6	33.8	26.2	149.4
48-49 Transportation & Warehousing	153.9	77.5	32.4	263.9
44-45 Retail trade	568.6	99.4	184.0	852.1
51 Information	-	35.6	25.4	61.0
52 Finance & insurance	-	32.6	38.1	70.7
53 Real estate & rental	280.9	120.5	38.6	440.2
54 Professional- scientific & tech svcs	-	143.0	17.9	160.7
55 Management of companies	-	33.6	0.6	34.2
56 Administrative & waste services	2.4	92.0	14.9	109.3
61 Educational svcs	-	16.5	24.9	41.3
62 Health & social services	-	0.2	214.4	214.6
71 Arts- entertainment & recreation	1,258.1	46.9	42.1	1,347.0
72 Accommodation & food services	1,163.4	61.7	124.1	1,349.2
81 Other services	285.1	43.3	117.9	446.1
92 Government & non NAICS	16.6	26.1	76.5	119.5
Imports and other non-industry sources	2.4	3.7	15.9	22.1
Total Angler Expenditures	4,328.8	999.6	1,036.7	6,365.4

Appendix O10.— Industry output, income and employment impacts of all angler spending in the Interior Region.

Industry OUTPUT impacts in the INTERIOR due to RESIDENT & NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	255,142.0	214,963.0	46,921.0	517,023.0
21 Mining	25,066.0	457,163.0	40,130.0	522,388.0
22 Utilities	-	697,874.0	272,189.0	970,065.0
23 Construction	5,671,949.0	461,148.0	(125,307.0)	6,007,791.0
31-33 Manufacturing	4,805,839.0	2,858,194.0	695,255.0	8,359,287.0
42 Wholesale Trade	4,608,379.0	382,775.0	269,400.0	5,260,555.0
48-49 Transportation & Warehousing	7,635,924.0	1,587,249.0	364,917.0	9,588,091.0
44-45 Retail trade	14,828,600.0	569,678.0	1,538,696.0	16,954,973.0
51 Information	681.0	1,042,670.0	31,299.0	1,074,649.0
52 Finance & Insurance	-	339,356.0	785,273.0	1,124,629.0
53 Real estate & rental	542,552.0	2,177,988.0	370,335.0	3,090,875.0
54 Professional- scientific & tech svcs	-	1,022,345.0	84,870.0	1,107,215.0
55 Management of companies	-	94,827.0	(4,218.0)	90,610.0
56 Administrative & waste services	65,729.0	1,058,748.0	104,082.0	1,228,559.0
61 Educational svcs	-	14,714.0	135,971.0	150,685.0
62 Health & social services	-	743.0	1,978,122.0	1,978,866.0
71 Arts- entertainment & recreation	11,881,623.0	175,416.0	134,723.0	12,191,762.0
72 Accommodation & food services	7,697,909.0	502,361.0	1,028,106.0	9,228,374.0
81 Other services	1,862,734.0	251,682.0	760,273.0	2,874,687.0
92 Government & non NAICS	819,403.0	725,918.0	2,846,302.0	4,391,621.0
Imports and other non-industry sources	39,700,851.0	-	-	39,700,851.0
Total Angler Expenditures	100,402,412.0	14,655,805.0	11,355,343.0	126,413,553.0

Industry INCOME impacts in the INTERIOR due to RESIDENT & NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	78,277.0	34,667.0	9,781.0	122,725.0
21 Mining	6,375.0	116,629.0	10,133.0	133,134.0
22 Utilities	-	159,315.0	60,749.0	220,064.0
23 Construction	2,222,058.0	218,151.0	(57,452.0)	2,382,757.0
31-33 Manufacturing	179,120.0	121,128.0	60,956.0	361,206.0
42 Wholesale Trade	1,742,067.0	144,698.0	101,839.0	1,988,600.0
48-49 Transportation & Warehousing	2,090,713.0	649,469.0	122,792.0	3,062,974.0
44-45 Retail trade	6,258,197.0	237,517.0	625,299.0	7,121,012.0
51 Information	269.0	253,555.0	(3,697.0)	250,128.0
52 Finance & Insurance	-	92,847.0	210,099.0	302,945.0
53 Real estate & rental	360,387.0	366,453.0	71,751.0	798,593.0
54 Professional- scientific & tech svcs	-	422,857.0	29,502.0	452,358.0
55 Management of companies	-	41,228.0	(1,833.0)	39,392.0
56 Administrative & waste services	22,666.0	491,958.0	17,846.0	532,471.0
61 Educational svcs	-	6,913.0	64,427.0	71,337.0
62 Health & social services	-	289.0	1,097,283.0	1,097,576.0
71 Arts- entertainment & recreation	3,610,247.0	90,057.0	24,358.0	3,724,660.0
72 Accommodation & food services	2,725,876.0	186,841.0	375,224.0	3,287,942.0
81 Other services	575,382.0	111,691.0	317,361.0	1,004,432.0
92 Government & non NAICS	674,229.0	228,584.0	706,761.0	1,609,576.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	20,545,860.0	4,174,849.0	3,843,173.0	28,563,882.0

Industry EMPLOYMENT impacts in the INTERIOR due to RESIDENT & NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	6	4	1	11
21 Mining	0	2	0	2
22 Utilities	-	1	0	1
23 Construction	31	3	(1)	33
31-33 Manufacturing	3	3	1	7
42 Wholesale Trade	34	3	2	39
48-49 Transportation & Warehousing	47	17	3	67
44-45 Retail trade	243	8	21	271
51 Information	-	6	(0)	5
52 Finance & Insurance	-	2	4	6
53 Real estate & rental	4	13	2	19
54 Professional- scientific & tech svcs	-	8	2	10
55 Management of companies	-	0	-	0
56 Administrative & waste services	0	12	1	14
61 Educational svcs	-	0	3	3
62 Health & social services	-	-	21	21
71 Arts- entertainment & recreation	220	5	2	227
72 Accommodation & food services	96	7	14	117
81 Other services	15	4	10	28
92 Government & non NAICS	20	7	14	41
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	720	105	98	922

Appendix O11.-Industry output, income and employment impacts of resident angler spending in the Interior Region.

Industry OUTPUT impacts in the INTERIOR REGION due to RESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	193,446.0	125,168.0	20,332.0	338,946.0
21 Mining	20,165.0	275,208.0	20,253.0	315,623.0
22 Utilities	-	282,187.0	159,912.0	442,099.0
23 Construction	2,704,345.0	159,513.0	5,460.0	2,869,319.0
31-33 Manufacturing	3,726,561.0	1,069,318.0	254,579.0	5,050,457.0
42 Wholesale Trade	3,764,875.0	181,442.0	114,754.0	4,061,071.0
48-49 Transportation & Warehousing	1,210,810.0	600,640.0	171,625.0	1,982,874.0
44-45 Retail trade	12,292,908.0	294,470.0	680,959.0	13,278,337.0
51 Information	612.0	487,808.0	102,076.0	590,496.0
52 Finance & insurance	-	150,302.0	246,531.0	396,832.0
53 Real estate & rental	34,072.0	982,537.0	270,945.0	1,287,553.0
54 Professional- scientific & tech svcs	-	391,594.0	80,983.0	472,577.0
55 Management of companies	-	59,415.0	2,448.0	61,863.0
56 Administrative & waste services	41,970.0	391,571.0	67,000.0	500,543.0
61 Educational svcs	-	7,103.0	84,132.0	91,235.0
62 Health & social services	-	312.0	920,819.0	921,131.0
71 Arts- entertainment & recreation	1,401,355.0	47,995.0	76,053.0	1,525,403.0
72 Accommodation & food services	1,604,627.0	198,734.0	421,918.0	2,225,279.0
81 Other services	1,775,756.0	103,177.0	245,113.0	2,124,046.0
92 Government & non NAICS	197,056.0	259,796.0	1,161,298.0	1,618,139.0
Imports and other non-industry sources	35,888,492.0	-	-	35,888,492.0
Total Angler Expenditures	64,856,852.0	6,068,268.0	5,067,184.0	76,022,320.0

Industry INCOME impacts in the INTERIOR REGION due to RESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	59,452.0	18,817.0	4,347.0	82,616.0
21 Mining	5,123.0	70,288.0	5,094.0	80,504.0
22 Utilities	-	63,480.0	36,541.0	100,021.0
23 Construction	1,067,198.0	75,846.0	3,087.0	1,146,130.0
31-33 Manufacturing	132,388.0	50,283.0	15,187.0	197,860.0
42 Wholesale Trade	1,423,204.0	68,588.0	43,379.0	1,535,171.0
48-49 Transportation & Warehousing	422,600.0	281,420.0	67,290.0	771,301.0
44-45 Retail trade	5,088,832.0	118,609.0	280,733.0	5,488,175.0
51 Information	242.0	119,824.0	20,363.0	140,229.0
52 Finance & insurance	-	41,009.0	64,893.0	105,902.0
53 Real estate & rental	22,632.0	165,362.0	49,789.0	237,784.0
54 Professional- scientific & tech svcs	-	157,375.0	33,388.0	190,763.0
55 Management of companies	-	25,831.0	1,065.0	26,895.0
56 Administrative & waste services	14,473.0	207,952.0	29,912.0	252,337.0
61 Educational svcs	-	3,327.0	30,380.0	33,706.0
62 Health & social services	-	124.0	510,766.0	510,891.0
71 Arts- entertainment & recreation	425,804.0	22,827.0	24,293.0	472,923.0
72 Accommodation & food services	584,096.0	73,617.0	156,531.0	814,244.0
81 Other services	530,043.0	47,919.0	111,034.0	688,995.0
92 Government & non NAICS	164,688.0	82,044.0	140,524.0	387,257.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	9,940,774.0	1,694,346.0	1,628,596.0	13,263,707.0

Industry EMPLOYMENT impacts in the INTERIOR REGION due to RESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	4.5	2.5	0.3	7.3
21 Mining	0.1	1.3	0.1	1.5
22 Utilities	-	0.6	0.3	0.8
23 Construction	14.8	1.1	-	15.8
31-33 Manufacturing	2.3	1.1	0.2	3.7
42 Wholesale Trade	27.8	1.5	0.9	30.0
48-49 Transportation & Warehousing	7.6	5.5	1.4	14.4
44-45 Retail trade	184.1	4.0	9.1	197.3
51 Information	-	2.6	0.3	3.0
52 Finance & insurance	-	0.7	1.2	2.1
53 Real estate & rental	0.3	5.8	1.7	7.8
54 Professional- scientific & tech svcs	-	3.2	0.9	4.1
55 Management of companies	-	0.3	-	0.3
56 Administrative & waste services	0.2	4.8	0.9	5.9
61 Educational svcs	-	0.1	1.2	1.4
62 Health & social services	-	-	9.6	9.6
71 Arts- entertainment & recreation	25.9	1.3	1.4	28.7
72 Accommodation & food services	22.3	2.7	6.2	31.3
81 Other services	13.3	1.5	3.7	18.5
92 Government & non NAICS	9.1	2.4	3.6	15.1
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	312.6	42.7	43.5	398.7

Appendix O12.-Industry output, income and employment impacts of nonresident angler spending in the Interior Region.

Industry OUTPUT impacts in the INTERIOR REGION due to NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	61,686.0	89,795.0	26,589.0	178,070.0
21 Mining	4,931.0	181,957.0	19,877.0	206,765.0
22 Utilities	-	415,687.0	112,277.0	527,964.0
23 Construction	2,967,604.0	301,835.0	(130,767.0)	3,138,472.0
31-33 Manufacturing	1,079,278.0	1,788,876.0	440,676.0	3,308,830.0
42 Wholesale Trade	843,504.0	201,333.0	154,648.0	1,199,484.0
48-49 Transportation & Warehousing	6,425,314.0	986,809.0	193,292.0	7,605,217.0
44-45 Retail trade	2,535,692.0	295,208.0	845,737.0	3,676,636.0
51 Information	69.0	554,862.0	(70,777.0)	484,153.0
52 Finance & insurance	-	189,054.0	538,742.0	727,797.0
53 Real estate & rental	508,480.0	1,195,451.0	99,390.0	1,803,322.0
54 Professional- scientific & tech svcs	-	630,751.0	3,887.0	634,638.0
55 Management of companies	-	35,412.0	(6,868.0)	28,544.0
56 Administrative & waste services	23,759.0	867,177.0	37,082.0	927,918.0
61 Educational svcs	-	7,611.0	71,839.0	79,449.0
62 Health & social services	-	431.0	1,057,303.0	1,057,735.0
71 Arts- entertainment & recreation	10,480,268.0	127,421.0	58,670.0	10,666,359.0
72 Accommodation & food services	6,093,282.0	303,627.0	606,188.0	7,003,095.0
81 Other services	86,978.0	148,505.0	515,180.0	750,663.0
92 Government & non NAICS	622,347.0	466,122.0	1,685,014.0	2,773,482.0
Imports and other non-industry sources	3,812,359.0	-	-	3,812,359.0
Total Angler Expenditures	35,545,560.0	8,587,519.0	6,258,159.0	50,391,238.0

Industry INCOME impacts in the INTERIOR REGION due to NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	18,825.0	15,850.0	5,434.0	40,109.0
21 Mining	1,252.0	46,341.0	5,039.0	52,630.0
22 Utilities	-	95,835.0	24,208.0	120,043.0
23 Construction	1,154,858.0	142,305.0	(80,539.0)	1,236,627.0
31-33 Manufacturing	46,732.0	70,845.0	45,769.0	163,346.0
42 Wholesale Trade	318,863.0	75,108.0	58,460.0	452,429.0
48-49 Transportation & Warehousing	1,668,113.0	568,049.0	55,512.0	2,291,673.0
44-45 Retail trade	1,169,365.0	118,908.0	344,566.0	1,632,837.0
51 Information	27.0	133,931.0	(24,060.0)	109,899.0
52 Finance & insurance	-	51,838.0	145,206.0	197,043.0
53 Real estate & rental	337,755.0	201,091.0	21,862.0	560,708.0
54 Professional- scientific & tech svcs	-	255,482.0	(3,886.0)	251,596.0
55 Management of companies	-	15,395.0	(2,898.0)	12,497.0
56 Administrative & waste services	8,193.0	284,006.0	(12,086.0)	280,113.0
61 Educational svcs	-	3,586.0	34,047.0	37,633.0
62 Health & social services	-	165.0	586,517.0	586,682.0
71 Arts- entertainment & recreation	3,184,443.0	87,230.0	65.0	3,271,737.0
72 Accommodation & food services	2,141,780.0	113,224.0	218,693.0	2,473,697.0
81 Other services	45,339.0	63,772.0	206,327.0	315,437.0
92 Government & non NAICS	509,541.0	146,540.0	566,237.0	1,222,319.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	10,605,086.0	2,480,503.0	2,214,587.0	15,300,175.0

Industry EMPLOYMENT impacts in the INTERIOR REGION due to NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	1.5	1.8	0.2	3.5
21 Mining	-	0.8	-	0.9
22 Utilities	-	0.8	0.1	1.0
23 Construction	16.0	1.8	(0.8)	17.1
31-33 Manufacturing	0.8	1.4	0.5	3.0
42 Wholesale Trade	6.3	1.4	1.1	8.9
48-49 Transportation & Warehousing	39.5	11.8	1.2	52.6
44-45 Retail trade	58.5	3.9	11.4	73.8
51 Information	-	2.9	(0.7)	2.2
52 Finance & insurance	-	1.0	2.7	3.7
53 Real estate & rental	3.9	7.0	0.4	11.4
54 Professional- scientific & tech svcs	-	5.1	0.6	5.7
55 Management of companies	-	-	-	0.1
56 Administrative & waste services	0.2	7.6	0.4	8.1
61 Educational svcs	-	-	1.4	1.5
62 Health & social services	-	-	11.2	11.2
71 Arts- entertainment & recreation	194.1	3.5	0.3	198.0
72 Accommodation & food services	73.6	4.5	8.0	86.1
81 Other services	1.3	2.0	6.2	9.3
92 Government & non NAICS	10.8	4.1	10.6	25.4
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	407.0	62.0	54.9	523.7

Appendix O13.-Industry output, income and employment impacts of all angler spending in the Cook Inlet Subregion.

Industry OUTPUT impacts in the COOK INLET due to RESIDENT & NONRESIDENT angler expenditures.				
NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	3,288,164.0	4,958,117.0	277,802.0	8,424,083.0
21 Mining	2,576,844.0	27,495,718.0	5,729,755.0	35,802,315.0
22 Utilities	-	4,770,585.0	3,932,142.0	8,702,726.0
23 Construction	114,770,704.0	4,716,893.0	(144,341.0)	119,343,061.0
31-33 Manufacturing	43,410,915.0	20,116,177.0	10,887,526.0	74,414,513.0
42 Wholesale Trade	31,697,630.0	6,676,467.0	4,643,233.0	43,017,331.0
48-49 Transportation & Warehousing	22,546,700.0	12,055,968.0	5,949,502.0	40,552,167.0
44-45 Retail trade	102,637,883.0	10,208,222.0	19,371,117.0	132,217,222.0
51 Information	12,751.0	9,774,171.0	2,407,578.0	12,194,500.0
52 Finance & insurance	-	7,651,937.0	12,230,388.0	19,882,334.0
53 Real estate & rental	19,816,057.0	20,233,717.0	7,101,770.0	46,951,542.0
54 Professional- scientific & tech svcs	-	21,066,179.0	3,421,866.0	24,488,045.0
55 Management of companies	-	7,620,081.0	681,664.0	8,201,745.0
56 Administrative & waste services	224,544.0	9,276,231.0	1,913,789.0	10,414,565.0
61 Educational svcs	-	123,971.0	1,747,151.0	1,871,125.0
62 Health & social services	-	6,626.0	27,104,067.0	27,110,694.0
71 Arts- entertainment & recreation	69,950,914.0	2,849,640.0	1,777,009.0	74,577,564.0
72 Accommodation & food services	61,528,255.0	4,036,895.0	11,371,240.0	76,936,385.0
81 Other services	15,309,059.0	3,611,460.0	8,267,974.0	27,188,491.0
92 Government & non NAICS	850,836.0	4,827,347.0	29,921,476.0	35,599,457.0
Imports and other non-industry sources	234,069,478.0	-	-	234,069,478.0
Total Angler Expenditures	722,490,422.0	180,976,189.0	158,492,765.0	1,061,959,343.0

Industry INCOME impacts in the COOK INLET due to RESIDENT & NONRESIDENT angler expenditures.				
NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	789,891.0	1,294,488.0	55,147.0	2,139,528.0
21 Mining	663,134.0	7,129,746.0	1,485,475.0	9,278,355.0
22 Utilities	-	961,241.0	912,616.0	1,873,858.0
23 Construction	42,920,299.0	2,167,578.0	(33,773.0)	45,054,105.0
31-33 Manufacturing	3,419,497.0	2,199,153.0	1,016,982.0	6,625,630.0
42 Wholesale Trade	11,979,708.0	2,523,285.0	1,754,851.0	16,257,841.0
48-49 Transportation & Warehousing	7,423,558.0	5,766,099.0	2,171,665.0	15,361,323.0
44-45 Retail trade	43,606,590.0	4,248,271.0	8,094,554.0	55,949,413.0
51 Information	3,410.0	2,380,919.0	447,001.0	2,831,330.0
52 Finance & insurance	-	2,414,196.0	3,493,747.0	5,907,945.0
53 Real estate & rental	12,861,398.0	3,212,709.0	1,228,973.0	17,303,079.0
54 Professional- scientific & tech svcs	-	9,327,326.0	1,484,129.0	10,811,459.0
55 Management of companies	-	3,292,217.0	251,307.0	3,543,521.0
56 Administrative & waste services	72,009.0	3,290,782.0	654,382.0	4,017,172.0
61 Educational svcs	-	55,817.0	821,104.0	876,921.0
62 Health & social services	-	2,695.0	14,708,781.0	14,711,475.0
71 Arts- entertainment & recreation	21,829,683.0	1,243,692.0	653,255.0	23,826,630.0
72 Accommodation & food services	20,305,919.0	1,458,065.0	4,047,510.0	25,811,493.0
81 Other services	4,796,499.0	1,504,274.0	3,538,392.0	9,839,165.0
92 Government & non NAICS	742,131.0	1,400,004.0	4,612,179.0	6,754,313.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	171,513,722.0	55,862,553.0	51,398,277.0	278,774,551.0

Industry EMPLOYMENT impacts in the COOK INLET due to RESIDENT & NONRESIDENT angler expenditures.				
NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	100	165	7	272
21 Mining	3	32	7	42
22 Utilities	-	9	12	21
23 Construction	645	32	(1)	677
31-33 Manufacturing	103	50	37	190
42 Wholesale Trade	217	46	32	295
48-49 Transportation & Warehousing	122	104	44	270
44-45 Retail trade	1,592	143	268	2,002
51 Information	-	48	7	55
52 Finance & insurance	-	42	60	102
53 Real estate & rental	252	172	63	486
54 Professional- scientific & tech svcs	-	178	37	215
55 Management of companies	-	42	3	45
56 Administrative & waste services	1	123	29	153
61 Educational svcs	-	2	34	37
62 Health & social services	-	-	320	320
71 Arts- entertainment & recreation	1,214	59	36	1,309
72 Accommodation & food services	868	65	181	1,114
81 Other services	136	47	141	324
92 Government & non NAICS	30	26	72	128
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	5,282	1,385	1,390	8,056

Appendix O14.-Industry output, income and employment impacts of resident angler spending in the Cook Inlet Subregion.

Industry OUTPUT impacts in the COOK INLET REGION due to RESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	2,300,875.0	1,391,097.0	128,657.0	3,820,629.0
21 Mining	2,026,783.0	17,201,578.0	2,785,053.0	22,013,413.0
22 Utilities	-	2,356,037.0	1,891,498.0	4,247,535.0
23 Construction	42,932,380.0	2,128,579.0	62,045.0	45,122,983.0
31-33 Manufacturing	26,601,094.0	8,902,465.0	4,888,132.0	40,391,691.0
42 Wholesale Trade	22,661,983.0	3,105,450.0	2,253,449.0	28,020,883.0
48-49 Transportation & Warehousing	5,307,787.0	5,766,187.0	2,791,868.0	13,865,842.0
44-45 Retail trade	79,254,015.0	4,291,979.0	9,428,979.0	92,974,973.0
51 Information	9,341.0	5,179,732.0	1,397,959.0	6,587,031.0
52 Finance & insurance	-	3,762,080.0	5,820,422.0	9,582,502.0
53 Real estate & rental	1,478,511.0	10,552,771.0	3,731,765.0	15,763,047.0
54 Professional- scientific & tech svcs	-	9,888,605.0	1,997,999.0	11,886,605.0
55 Management of companies	-	4,514,707.0	370,156.0	4,884,862.0
56 Administrative & waste services	60,029.0	3,849,492.0	989,556.0	4,899,078.0
61 Educational svcs	-	66,409.0	856,233.0	922,644.0
62 Health & social services	-	3,530.0	13,252,382.0	13,255,913.0
71 Arts- entertainment & recreation	25,921,678.0	1,326,126.0	977,902.0	28,225,706.0
72 Accommodation & food services	22,258,888.0	1,803,688.0	5,438,006.0	29,500,582.0
81 Other services	14,732,267.0	1,632,532.0	3,845,812.0	20,210,608.0
92 Government & non NAICS	459,870.0	2,263,153.0	14,288,070.0	17,011,092.0
Imports and other non-industry sources	203,065,693.0	-	-	203,065,693.0
Total Angler Expenditures	449,071,170.0	90,086,196.0	77,195,939.0	616,353,305.0

Industry INCOME impacts in the COOK INLET REGION due to RESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	562,480.0	363,014.0	26,654.0	952,151.0
21 Mining	521,580.0	4,480,780.0	722,081.0	5,704,439.0
22 Utilities	-	475,738.0	422,710.0	898,449.0
23 Construction	18,072,939.0	982,370.0	43,018.0	17,098,327.0
31-33 Manufacturing	1,810,414.0	977,502.0	455,190.0	3,243,106.0
42 Wholesale Trade	8,564,803.0	1,173,664.0	851,663.0	10,590,128.0
48-49 Transportation & Warehousing	1,920,839.0	2,670,879.0	1,047,111.0	5,638,829.0
44-45 Retail trade	33,267,114.0	1,786,158.0	3,939,719.0	38,992,988.0
51 Information	2,498.0	1,274,801.0	274,643.0	1,551,941.0
52 Finance & insurance	-	1,192,825.0	1,665,602.0	2,858,427.0
53 Real estate & rental	989,396.0	1,654,528.0	642,044.0	3,285,969.0
54 Professional- scientific & tech svcs	-	4,320,027.0	871,741.0	5,191,769.0
55 Management of companies	-	1,993,760.0	159,925.0	2,153,684.0
56 Administrative & waste services	19,251.0	1,578,347.0	355,257.0	1,952,854.0
61 Educational svcs	-	29,881.0	402,363.0	432,243.0
62 Health & social services	-	1,440.0	7,191,734.0	7,193,175.0
71 Arts- entertainment & recreation	8,131,713.0	578,641.0	371,868.0	9,082,219.0
72 Accommodation & food services	7,398,853.0	650,485.0	1,944,119.0	9,993,453.0
81 Other services	4,510,987.0	681,762.0	1,663,007.0	6,855,755.0
92 Government & non NAICS	386,798.0	651,002.0	1,862,429.0	2,900,229.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	84,239,551.0	27,497,501.0	24,912,874.0	136,650,135.0

Industry EMPLOYMENT impacts in the COOK INLET REGION due to RESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	71.7	45.9	3.3	121.0
21 Mining	2.3	20.3	3.3	26.0
22 Utilities	-	4.6	5.3	9.8
23 Construction	241.4	14.6	0.6	256.6
31-33 Manufacturing	55.0	21.7	16.6	93.5
42 Wholesale Trade	155.1	21.3	15.5	191.8
48-49 Transportation & Warehousing	34.6	48.3	21.3	104.3
44-45 Retail trade	1,206.1	59.9	130.8	1,396.7
51 Information	-	25.9	4.6	30.7
52 Finance & insurance	-	20.6	28.6	49.2
53 Real estate & rental	18.9	89.2	33.4	141.7
54 Professional- scientific & tech svcs	-	83.8	20.8	104.4
55 Management of companies	-	25.3	2.1	27.4
56 Administrative & waste services	0.4	59.7	15.0	75.1
61 Educational svcs	-	1.3	16.9	18.1
62 Health & social services	-	-	156.5	156.5
71 Arts- entertainment & recreation	447.1	27.2	19.8	494.3
72 Accommodation & food services	317.9	28.7	87.3	433.9
81 Other services	128.2	21.1	67.4	216.7
92 Government & non NAICS	20.1	12.0	30.4	62.6
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	2,698.8	632.0	679.4	4,010.3

Appendix O15.—Industry output, income and employment impacts of nonresident angler spending in the Cook Inlet Subregion.

Industry OUTPUT impacts in the COOK INLET REGION due to NONRESIDENT angler expenditures.

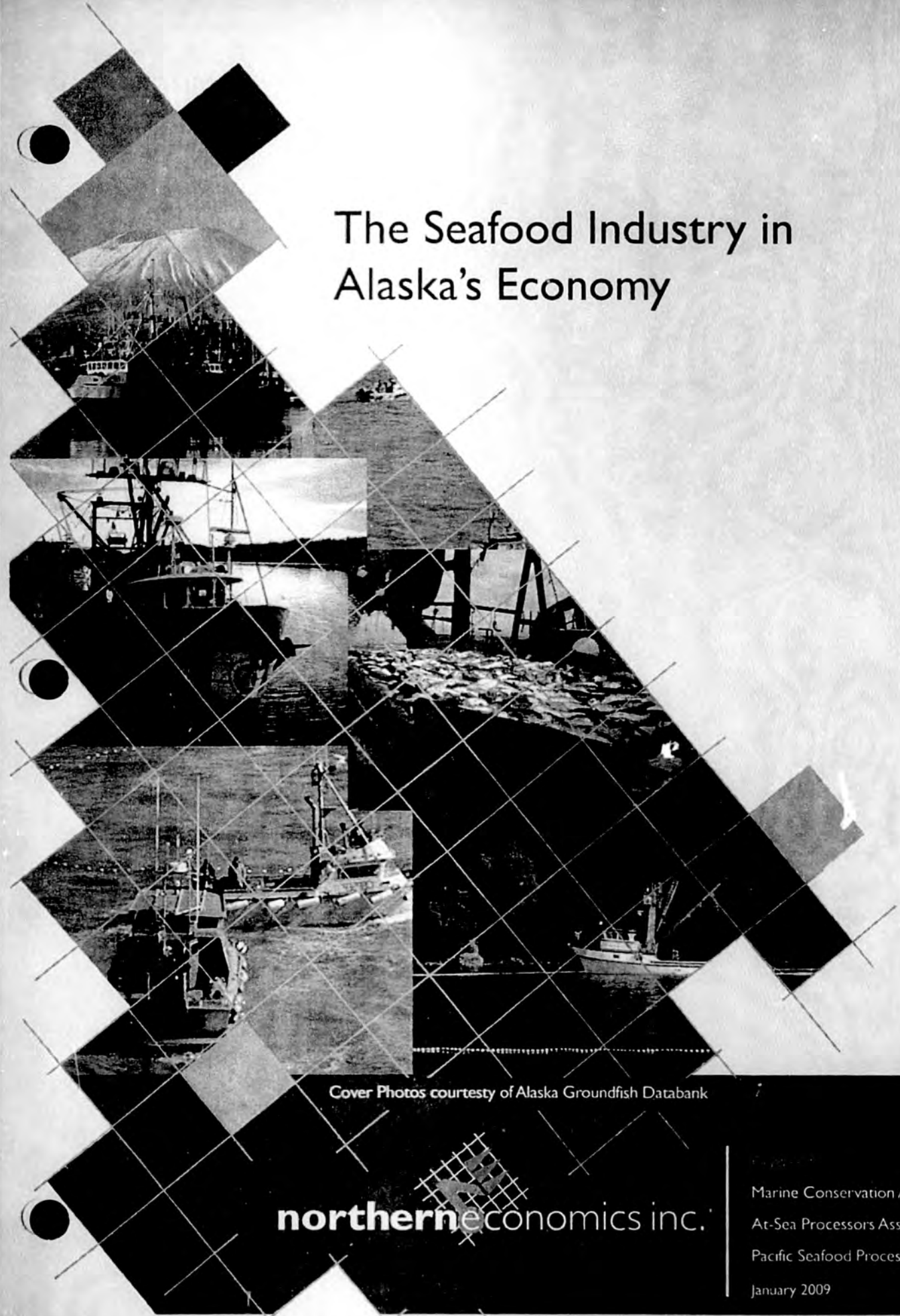
NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	987,289.0	3,467,020.0	149,145.0	4,603,454.0
21 Mining	550,061.0	10,294,140.0	2,944,702.0	13,788,902.0
22 Utilities	-	2,414,548.0	2,040,644.0	4,455,191.0
23 Construction	71,838,344.0	2,588,114.0	(206,386.0)	74,220,078.0
31-33 Manufacturing	16,809,721.0	11,213,712.0	5,999,394.0	34,022,822.0
42 Wholesale Trade	9,035,647.0	3,571,017.0	2,389,784.0	14,996,448.0
48-49 Transportation & Warehousing	17,238,913.0	6,289,779.0	3,157,634.0	26,686,325.0
44-45 Retail trade	23,383,868.0	5,916,243.0	9,942,138.0	39,242,249.0
51 Information	3,410.0	4,594,439.0	1,009,819.0	5,807,469.0
52 Finance & insurance	-	3,889,857.0	6,409,976.0	10,299,832.0
53 Real estate & rental	18,137,546.0	9,680,846.0	3,370,005.0	31,188,495.0
54 Professional- scientific & tech svcs	-	11,177,573.0	1,423,867.0	12,601,440.0
55 Management of companies	-	3,005,374.0	211,508.0	3,216,883.0
56 Administrative & waste services	164,515.0	4,426,739.0	924,233.0	5,515,487.0
61 Educational svcs	-	57,562.0	890,918.0	948,481.0
62 Health & social services	-	3,096.0	13,851,685.0	13,854,781.0
71 Arts- entertainment & recreation	44,029,239.0	1,523,514.0	799,107.0	46,351,858.0
72 Accommodation & food services	39,269,367.0	2,233,207.0	5,933,234.0	47,435,803.0
81 Other services	576,792.0	1,978,928.0	4,422,162.0	6,977,883.0
92 Government & non NAICS	390,766.0	2,564,194.0	15,633,406.0	18,588,365.0
Imports and other non-industry sources	31,003,785.0	-	-	31,003,785.0
Total Angler Expenditures	273,419,252.0	90,869,993.0	81,296,766.0	445,586,014.0

Industry INCOME impacts in the COOK INLET REGION due to NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	227,411.0	931,474.0	28,493.0	1,187,377.0
21 Mining	141,554.0	2,668,966.0	763,394.0	3,573,916.0
22 Utilities	-	485,503.0	489,906.0	975,409.0
23 Construction	26,847,360.0	1,185,208.0	(76,791.0)	27,955,778.0
31-33 Manufacturing	1,509,083.0	1,211,651.0	561,792.0	3,282,524.0
42 Wholesale Trade	3,414,905.0	1,349,621.0	903,188.0	5,667,713.0
48-49 Transportation & Warehousing	5,502,719.0	3,095,220.0	1,124,554.0	9,722,494.0
44-45 Retail trade	10,339,476.0	2,462,113.0	4,154,835.0	16,956,425.0
51 Information	912.0	1,106,118.0	172,356.0	1,279,389.0
52 Finance & insurance	-	1,221,371.0	1,828,145.0	3,049,518.0
53 Real estate & rental	11,892,002.0	1,558,181.0	586,929.0	14,037,110.0
54 Professional- scientific & tech svcs	-	5,007,299.0	612,388.0	5,619,690.0
55 Management of companies	-	1,298,457.0	91,382.0	1,389,837.0
56 Administrative & waste services	52,758.0	1,712,435.0	299,125.0	2,064,318.0
61 Educational svcs	-	25,938.0	418,741.0	444,679.0
62 Health & social services	-	1,255.0	7,517,047.0	7,518,300.0
71 Arts- entertainment & recreation	13,797,970.0	665,051.0	281,389.0	14,744,411.0
72 Accommodation & food services	12,907,066.0	807,580.0	2,103,392.0	15,818,040.0
81 Other services	285,512.0	822,512.0	1,875,385.0	2,983,410.0
92 Government & non NAICS	355,333.0	749,002.0	2,749,750.0	3,854,084.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	87,274,061.0	28,364,952.0	26,485,403.0	142,124,416.0

Industry EMPLOYMENT impacts in the COOK INLET REGION due to NONRESIDENT angler expenditures.

NAICS Industry Categories	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	26.7	119.1	3.7	151.3
21 Mining	0.7	12.1	3.6	16.3
22 Utilities	-	4.7	6.5	11.2
23 Construction	403.2	17.6	(1.2)	419.8
31-33 Manufacturing	48.0	29.2	20.5	96.7
42 Wholesale Trade	61.8	24.4	18.4	102.7
48-49 Transportation & Warehousing	87.0	55.4	23.1	165.7
44-45 Retail trade	385.4	82.6	137.6	605.6
51 Information	-	22.1	2.4	24.5
52 Finance & insurance	-	21.5	31.1	52.5
53 Real estate & rental	232.6	82.3	29.1	344.1
54 Professional- scientific & tech svcs	-	93.8	18.1	110.2
55 Management of companies	-	16.5	1.1	17.6
56 Administrative & waste services	1.0	63.3	13.5	77.8
61 Educational svcs	-	1.0	17.4	18.7
62 Health & social services	-	-	163.7	163.8
71 Arts- entertainment & recreation	766.9	32.0	15.7	814.5
72 Accommodation & food services	550.0	35.8	94.0	679.9
81 Other services	7.9	25.6	73.9	107.5
92 Government & non NAICS	9.6	14.0	41.4	65.0
Imports and other non-industry sources	-	-	-	-
Total Angler Expenditures	2,583.3	752.5	710.2	4,045.8



The Seafood Industry in Alaska's Economy

Cover Photos courtesy of Alaska Groundfish Databank

northerneconomics inc.

by

Marine Conservation Alliance
At-Sea Processors Association
Pacific Seafood Processors Association
January 2009

The Seafood Industry in Alaska's Economy

northern economics inc.

Prepared for the

**Marine Conservation Alliance
At-Sea Processors Association
Pacific Seafood Processors Association**

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Abbreviations

ADCCED	Alaska Department of Commerce, Community and Economic Development
ADF&G	Alaska Department of Fish and Game
ADOLWD	Alaska Department of Labor and Workforce Development
ADOR	Alaska Department of Revenue
BSAI	Bering Sea/Aleutian Islands
CFEC	Commercial Fisheries Entry Commission
CDQ	Community Development Quota
EEZ	Exclusive Economic Zone
GOA	Gulf of Alaska
IFQ	individual fishing quota
IPHC	International Pacific Halibut Commission
MSC	Marine Stewardship Council
mt	metric tons
NMFS	National Marine Fisheries Service (NOAA Fisheries)
NPFMC	North Pacific Fishery Management Council
USCG	U.S. Coast Guard

Ex-vessel value: The term nominally means the value of harvested but unprocessed fish as it transferred off of the harvesting vessel. Typically the ex-vessel value equals the amount of money that fishing vessels receive for unprocessed fish or shellfish; ex-vessel value is equal to the quantity of fish or shellfish retained for processing multiplied by the ex-vessel (hooked) per-unit price. Catcher processors do not technically generate an ex-vessel value, but a value may be imputed from catcher processor harvested fish—see Imputed Ex-vessel Value.

Factory trawler: A larger catcher-processor equipped as a stern trawler.

First wholesale value: Amount of money that first processors receive for their product; first wholesale value is equal to the quantity of processed product multiplied by the wholesale product price after primary processing.

Fisheries business tax: State tax levied on fisheries businesses and persons who process or export fisheries resource from Alaska. The tax is based on the fisheries value paid to commercial seafood processors or the market value when there is not an arms-length transaction. Fisheries business tax is

Glossary

At-sea processing sector: Includes vessels that process catch at-sea, such as catcher-processors or motherships, and catcher vessels that deliver fish or shellfish to at-sea processors.

Average Employment: In this document average employment refers to the average number of employees over the course of a given year at shore-based processing plants and associated facilities. These estimates are based on ES-202 reports (see **ES-202 Reports**) submitted to the Alaska Department of Labor and Workforce Development (ADOLWD).

Basic sector: Those firms that export a large share of their production, thereby bringing in revenue from outside the state. In-state federal government expenditures, Permanent Fund dividend payments and expenditures by out-of-state tourists are also basic sector activities.

Catcher processor: A vessel that processes its own catch; some catcher processors also purchase fish or shellfish harvested by catcher vessels and process that catch.

Catcher vessel: A vessel that is used for catching fish or shellfish and that does not process fish or shellfish on board.

Direct economic impacts: The initial, immediate economic effects (i.e., output, employment, income) caused by a specific activity; direct impacts initiate subsequent rounds of spending and re-spending and result in indirect and induced impacts.

ES-202 Reports: These reports are required by the US Employment Security (ES) Act as a means to track employment and employees for purposes of unemployment insurance. Employers paying wages and salaries are required to submit ES-202 reports to their state's department of labor every quarter. The form asks employers to indicate the industry sector in which they operate and to report persons (by name and social security number) that were employed on the 12th day of each month within the quarter. From this report, ADOLWD can generate estimates of the number of wage and salary employees in an industry in any month and also the average number of employees over the course of the year. In addition, because they have the social security numbers of individuals employed at each firm they can estimate the total workforce utilized in the industry. In Alaska, ADOLWD is also able to estimate the residency status of the workforce using the database generated for the permanent fund dividend. It should be noted that firms that operate fishing vessels are not required to submit ES-202 forms, and therefore estimates regarding employment and workforce in the fish harvesting industry are much less certain than estimates of employment and workforce in the fish processing industry.

Ex-vessel value: This term nominally means the value of harvested but unprocessed fish as it transferred off of the harvesting vessel. Typically the ex-vessel value equals the amount of money that fishing vessels receive for unprocessed fish or shellfish; ex-vessel value is equal to the quantity of fish or shellfish retained for processing multiplied by the ex-vessel (dockside) per-unit price. Catcher processors do not technically generate an ex-vessel value, but a value may be imputed from catcher processor harvested fish—see **Imputed Ex-vessel Value**.

Factory trawler: A larger catcher-processor equipped as a stern trawler.

First wholesale value: Amount of money that first processors receive for their product; first wholesale value is equal to the quantity of processed product multiplied by the wholesale product price after primary processing.

Fisheries business tax: State tax levied on fisheries businesses and persons who process or export fisheries resource from Alaska. The tax is based on the fisheries value paid to commercial seafood harvesters or fair market value when there is not an arms length transaction. Fisheries business tax is

collected primarily from licensed processors and persons who export fish from Alaska. The tax rate is 3 percent.

Fishery resource landing tax: State tax levied on processed fishery resource first landed in Alaska or any processed fishery resource subject to sec. 210(f) of the American Fisheries Act. The tax is based on the unprocessed value of the resource, which is determined by multiplying a statewide average price per pound by the unprocessed weight. Fishery Resource Landing Tax is collected primarily from factory trawlers and floating processors which process fishery resource outside of the state's 3-mile limit and bring their products into Alaska for transshipment. The tax rate is 3 percent.

Imputed Ex-vessel Value: Catcher processors, because their fish are fed directly into their on-board processing lines do not generate a financial transaction in which fish are bought or sold. Technically, therefore, there is no ex-vessel price associated with the raw/unprocessed fish. In order to account for the value of this fish, so that it can be compared to other fisheries, an ex-vessel value is often imputed for them. The imputed ex-vessel value is equal to the price per pound of shore based fish of the same species caught in a similar location with a similar gear multiplied by the amount of catcher processor harvests.

Indirect economic impacts: The economic impacts that result from an activity purchasing local goods and services to produce its products.

Induced economic impacts: The economic impacts that result from local spending of income and government revenue generated by direct and indirect activities.

Job: As used in this report, the term "job" refers to a particular full or part-time employment opportunity.

Mothership: A vessel engaged solely in processing; motherships operate at sea by taking deliveries of fish or shellfish harvested by catcher vessels and processing them.

Nominal dollars: Dollars unadjusted for inflation.

Output: The value of goods and services produced by an activity. Output is also a measure of sales.

Payments to labor: Wages and salaries.

Real dollars: Dollars adjusted for inflation.

Secondary economic impacts: The sum of the indirect and induced economic impacts of an activity.

Shore-side processor: Any land-based person, company or vessel that receives unprocessed or limited-processed fish or shellfish, except catcher-processors, motherships, buying stations, restaurants or persons receiving fish or shellfish for personal consumption or bait.

Stationary floating processor: A vessel operating as a processor that remains anchored or otherwise remains stationary in a single location while receiving or processing fish or shellfish.

Total economic impacts: The sum of the direct, indirect and induced economic impacts of an activity.

Workers: In this document the term workers is used to mean participants in the workforce.

Workforce: In this document workforce means the estimated number of individuals that work in a particular industry sector or region. In theory, if two persons fill a particular job over the course of a year, the workforce for that job is two. In the harvesting sector and the at-sea sector, the workforce is undocumented—there is no listing of all of the individuals that have worked onboard a fishing vessel. Therefore, the workforce is estimated based on standardized parameters and assumptions.

collected primarily from licensed processors and persons who export fish from Alaska. The tax rate is 3 percent.

Fishery resource landing tax: State tax levied on processed fishery resource that landed in Alaska or any processed fishery resource subject to sec. 2101 of the American Fisheries Act. The tax is based on the unprocessed value of the resource, which is determined by multiplying a statewide average price per pound by the unprocessed weight. Fishery Resource Landing Tax is collected primarily from factory trawlers and floating processors which process fishery resource outside of the state's 3-mile limit and bring their product into Alaska for transshipment. The tax rate is 3 percent.

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Executive Summary

The commercial harvesting and processing of fish and other seafood products is part of Alaska's historical heritage dating back well over 100 years. The industry started with cod, halibut, herring and salmon in the late 1800s and early 1900s and has grown to include today's sophisticated offshore fisheries for pollock, cod, crab, and other species. As a major player in global markets, Alaska's seafood industry is an economic engine for the state and the nation. If Alaska were an independent country, it would rank in the top 10 of seafood producing nations. On the national scale, Alaska produces over half the United States' seafood landings. Alaska has 8 of the 20 largest seafood ports nationally (based on ex-vessel value of product): Unalaska/Dutch Harbor (2nd); Kodiak (3rd); Naknek-King Salmon (7th); Seward (9th); Sitka (10th); Cordova (11th); Homer (13th); and Petersburg (16th). Additionally, Unalaska/Dutch Harbor has been one of the nation's highest volume seafood ports for years. Within Alaska, the industry is the largest private sector employer, and provides jobs and revenues to communities throughout the state.

The seafood industry in Alaska is dependent on a healthy marine ecosystem and access to sustainable stocks of fish and shellfish. Management is science-driven and conservation comes first. Alaska's fishery management systems are held up as examples to fisheries around the world. The Pew Ocean Commission, as well as the United States Commission on Oceans Policy found that Alaska's fisheries are some of the best managed fisheries in the country, citing the role of science in setting catch limits, efforts to control bycatch and protect habitat. National Geographic (Bourne, 2003) identified Alaska as one of the three best managed and most sustainable fisheries in the world.

The mosaic of fisheries in Alaska is complex. State fisheries include salmon, herring, shellfish, and other species harvested within three miles of shore and in Alaska's vast network of rivers and lakes. Federal fisheries are those harvested beyond 3 miles, in federal waters out to the 200 mile limit. Federal fisheries include some of the nation's largest, such as pollock, cod, and crab. All of these fisheries, both federal and state, contribute to the economic and social well-being of Alaska's coastal communities, its urban cities, and the state as a whole.

Some highlights of the economic importance of the Alaska seafood industry include:

Importance of Alaska to the Global Seafood Market

If Alaska were a nation, it would place 9th among seafood producing countries.

The groundfish fishery in the waters off Alaska is among the largest fisheries in the world. Alaska landings of traditional global groundfish species groups (including cod, pollock, hake, and haddock) and flatfish accounted for about one-fifth of the world harvest of these species groups in 2006.

In the same year, around 42 percent of the world capture production of species in the "salmon, trout, smelt" group occurred in Alaska waters.

Alaska is the top producer of wild, high-value salmon, producing nearly 80 percent of the world supply of wild king, sockeye and coho.

Importance of Alaska Seafood to the U.S.

In 2007, Alaska accounted for over 62 percent of the volume of the commercial seafood harvested in the United States.

Alaska as a single state led all other multi-state regions in the US in terms of ex-vessel value with over 37 percent of the US total. The five New England States combined for a distant second at with 21 percent, followed by the five states on the Gulf of Mexico with 16 percent.

In terms of volume, Alaska's pollock fishery is the largest in the U.S., accounting for more than one-third of total U.S. fisheries landings.

Alaska also accounted for 96 percent of total U.S. commercial landings of salmon in 2007, and approximately one-third or more of total U.S. crab catches. U.S. domestic production of king and snow crab comes entirely from Alaska.

Alaska landings accounted for over 90 percent of the U.S. Pacific Ocean herring harvest and over 75 percent of the US commercial catch of Pacific Halibut in 2007.

Since 1997, Dutch Harbor-Unalaska has been the leading U.S. fishing port in quantity of commercial fishery landings. In 2006, the port had record landings for quantity at a U.S. port, with more than 414,200 mt of seafood.

In 2007, Alaska had two of the country's three top fishing ports ranked by total harvest value. Dutch Harbor-Unalaska ranked second (after New Bedford, MA) with a harvest value of \$174 million; Kodiak moved was ranked third with \$126 million in harvest value.

In the list of top 100 U.S. ports based on volume for 2007, Alaska had 14 including: Unalaska/Dutch Harbor(1st); Kodiak (4th); Naknek-King Salmon (11th); Cordova (12th); Ketchikan (17th); Petersburg (18th); Seward (19th); Sitka (22nd); Juneau (37th); Homer (41th); Kenai (57th); Wrangell (53rd); Yakutat (64th); Anchorage (78th). Were it not for confidentiality restrictions for ports with 3 or fewer companies, Akutan, King Cove, and Sandpoint would all be listed in the top 20.

Importance of Alaska Seafood to Alaska

The total estimated ex-vessel value of Alaska's commercial harvest was \$1.55 billion in 2007.¹

The additional value added by Alaska's seafood processing sector brought the total wholesale value of Alaska's commercial seafood industry to over \$3.6 billion in 2007.

It is estimated that the seafood industry's \$3.6 billion in wholesale value generated an additional \$2.2 billion in indirect and induced economic output for a total contribution of \$5.8 billion to Alaska's economic output. The seafood industry also generated a total of 78,519 direct, indirect and induced jobs and \$1.75 billion in direct, indirect and induced payments to labor and income.

While data for 2007 are not available it is estimated that in 2006, the wholesale value generated by the seafood industry represented over 9.4 percent of the \$36.4 billion basic sector activity in Alaska's economy. The basic sector, because it brings money into the state from outside, is the driving force behind all economic activity in the state.

The seafood industry ranks third in importance behind the North Slope oil and gas industry and federal government in terms of generating basic economic activity in Alaska.

According to ADCCED (2007), seafood is Alaska's top international export—seafood exports accounted for half of the State's total export value.

In 2006, seafood processing accounted for about 80 percent of all manufacturing jobs in the state.

With an estimated workforce of 56,606, the seafood industry employs more workers than any other industry sector in Alaska. The retail and wholesale trade sector follows with a workforce of 56,445.

With the concentration of major fishing ports in the Aleutian and Pribilof Islands region, seafood processing accounted for 65.4 percent of all private sector payments to labor in the region in 2007.

¹ This estimate includes the imputed ex-vessel value of the crab and groundfish that are harvested by vessels that both catch and process seafood, i.e. catcher processors. Because these vessels process their own catch they do not make payments for their unprocessed fish, nor do they report the unprocessed value of their catch.

The seafood processing industry is estimated to have accounted for over 33 percent of private sector payments to labor in Bristol Bay and 39 percent of private sectors payment to labor in Kodiak.

The Community Development Quota (CDQ) Program augments the important role of the seafood industry in Western Alaska. Sixty-five Bering Sea communities participate in the CDQ Program.

From 1992 through 2005 the CDQ Program generated over \$362 million in net income.

The value of CDQ group assets in the aggregate increased from about \$13.3 million in 1992 to over \$415 million in 2005.

The seafood processing industry is estimated to have accounted for over 33 percent of private sector payments to labor in Bristol Bay and 39 percent of private sector payment to labor in Kodiak. The Community Development Quota (CDQ) Program augments the important role of the seafood industry in Western Alaska. Sixty-five Bristol Bay communities participate in the CDQ Program. From 1992 through 2002 the CDQ Program generated over \$362 million in net income. The value of CDQ group assets in the aggregate increased from about \$13.3 million in 1992 to over \$412 million in 2002.

1 Introduction

The commercial harvesting and processing of fish and other seafood products is part of Alaska's historical heritage dating back well over 100 years. Starting with cod, herring, halibut, and salmon in the 1800s and growing to include today's sophisticated offshore fisheries for pollock, cod, crab, and other species. As a major player in global markets, Alaska's seafood industry is an economic engine for the state and the nation. If Alaska were an independent country, it would rank in the top 10 of seafood producing nations. On the national scale, Alaska produces over half the United States' seafood landings, and Unalaska/Dutch Harbor has consistently been the nation's highest volume seafood port for years. Within Alaska, the industry is one of Alaska's largest private sector employers, and provides jobs and revenues to communities throughout the state.

The mosaic of fisheries in Alaska is complex. State fisheries include salmon, herring, shellfish, and other species harvested within 3 miles of shore and in Alaska's vast network of rivers and lakes. Federal fisheries are those harvested beyond 3 miles, in federal waters out to the 200 mile limit. Federal fisheries include some of the nation's largest, such as pollock, cod, and crab. All of these fisheries, both federal and state, contribute to the economic and social well-being of Alaska's coastal communities, its urban cities, and the state as a whole.

1.1 Purpose and Organization

The purpose of this report is to describe the economic importance of Alaska's seafood industry, focusing primarily on the industry's significance to the state economy. The report draws on data from a wide range of sources and presents those data in a precise, easy-to-read format. The report includes extensive footnotes for those readers who want additional information.

Chapter 2 offers a historical overview of the growth of Alaska's seafood industry, with a focus on the development of the fisheries for the major species or species groups, including groundfish, shellfish, salmon, herring and halibut. Chapter 3 presents a comparison of the Alaska seafood industry with national and international seafood industries.

Chapter 4 provides a "snapshot" of the contemporary economic impacts of Alaska's seafood industry using data from 2006 and 2007—whichever was the most recent data available. In addition to presenting the estimated economic effects of the seafood industry on the state as a whole, the analysis differentiates the impacts by:

- Region of industry activity (Southeast, Southcentral, Kodiak, Aleutian and Pribilof Islands, Bristol Bay, Yukon-Kuskokwim, Northwest and Arctic)
- Residency of participants (Alaska resident, nonresident)
- Fisheries jurisdictional area (federal, state, joint)
- Major target species or species group

Chapter 4 also includes a discussion of the economic effects of two commercial fisheries-related areas of special interest: 1) in-state expenditures for commercial fisheries management and research by State of Alaska and federal agencies and 2) the Community Development Quota Program, a federal fisheries program established in 1992 with the goal of promoting fisheries-related economic development in western Alaska.

1.2 Data Sources

In general, data reporting the volume and value of catches of Alaska's fisheries are considered to be among the best in the US and around the world. Most of the harvesting and processing data used in this report for Alaska fisheries were provided by the Alaska Fisheries Science Center of the National Marine Fisheries Service (NMFS) at the request of Northern Economics, Inc. These data include estimates of the ex-vessel value and first wholesale value of Alaska fish and shellfish landings in 2007. Information on the historical trend in the ex-vessel value of Alaska fisheries was provided by the economic component of the Stock Assessment and Fishery Evaluation (SAFE) report published by NMFS (Hiatt, 2008b).

The majority of employment and income data were obtained from the "Seafood Industry" Web site developed by the Research and Analysis Division of the Alaska Department of Labor and Workforce Development (ADOLWD). The data sources and methodology used to derive employment estimates are described on ADOLWD's Seafood Industry Web site.²

While catch volume and value data regarding Alaska's fisheries are deemed to be very reliable, information on employment, particularly employment in harvesting operations and in at-sea processing operations, is considered much less reliable. (Northern Economics, Inc., 2007). Harvesters and at-sea processing employees differ from other groups involved in harvesting and processing seafood in terms of the amount of data collected on their activities, and these differences result in less overall information being available for stakeholders. Individuals working in Alaska's shore-based fish processing sector are wage-and-salary employees. This classification means that the number of processing jobs is recorded in the annual average monthly employment statistics reported by the ADOLWD. Commercial fish harvesters and at-sea processing employees are exempted from unemployment insurance and other employment reporting requirements because these crewmembers are classified as self-employed. Consequently, detailed information on these workers is generally not available for most Alaskan fisheries.

Because detailed data on harvesting and at-sea employment are not available, estimates of employment and income are based on data that are available—such as vessels and permits owner information—augmented with information gathered from industry sources and surveys. While Northern Economics believe these estimates are reasonable, employment and payments to labor estimates in this report should not be considered as accurate or reliable as, for example, data presented on ex-vessel or wholesale value.³

² The address of the State of Alaska's "Seafood Industry" Web site is <http://almis.labor.state.ak.us/cgi/databrowsing/?PAGEID=4&SUBID=300>. Data sources and methodology are described on a Web page at <http://www.labor.state.ak.us/research/seafood/Methodology.pdf>.

³ Funding for a program to improve seafood harvesting employment data was approved by the Alaska Legislature as part of the State's budget on April 15, 2008. (Welch, 2008).

2 Overview and History of Alaska's Seafood Industry

Alaska's seafood industry began over 130 years ago. The purpose of this chapter is to examine how Alaska's seafood industry evolved to its current prominent position in the state's economy. First, a brief historic summary of volume landed by the different fisheries from 1900 to 2007 is presented. Then an overview is provided of changes in the value of the fish and shellfish caught in Alaska's commercial fisheries over the past two decades. The remainder of the chapter briefly describes the historical development of the principal fisheries, starting from the pre-statehood period. As is shown below, each fishery has a unique history, and the development of each made a significant contribution to Alaska's economic growth.

2.1 General Overview of Alaska's Seafood Industry.

Typically, Alaska commercial fisheries are divided into five major species groups: groundfish, shellfish, salmon, herring and halibut. Figure 1 shows the total weight of landings of US fishermen by species by year between 1900 and 2006, while Figure 2 shows landings from 1900 to 1976 using a scale more appropriate to landings during those earlier years. The figures show how the volume of overall landings has fluctuated, with salmon being the largest industry by pounds landed up to the 1960s. Herring was important from the 1920s up to the 1960s, but has become less important from a volume perspective since then. Halibut, which is managed by the federal government and the International Pacific Halibut Commission (IPHC), has been relatively stable since the 1930s but has also fluctuated from year to year. Crab and shellfish became increasingly important beginning in the 1960s, then crashed in the late 1970s and have fluctuated at generally lower levels since then.

In 1976 the enactment of the Fishery Conservation and Management Act (FCMA) (Magnuson-Stevens Act)⁴ marked the start of a new era of domestic groundfish fishery. Before then, the United States only claimed a 3-mile territorial sea or 12-mile contiguous zone jurisdiction and foreign vessels could fish many of the same stocks as US fishermen. While U.S. fishermen concentrated on species like salmon, herring and nearshore crab, foreign fleets concentrated on groundfish species like Pacific Ocean perch, turbot, pollock and cod. The new act was implemented to change all that. The Act extended federal jurisdiction and the control of US waters to 200 nautical miles in the ocean, and created mechanisms to control foreign fishing activities within the newly defined Fishery Conservation Zone (FCZ). The ensuing fishing reductions allowed already overfished stocks to recover and ensured good conservation and management of the fishery resources.⁵ Groundfish harvests by US fishermen were relatively insignificant prior to the MSFCMA, but since 1982 the volume of groundfish increased and since after 1988 the volume has averaged over 2 million metric tons per year.

Landings volumes in 2007 by species were:

- Salmon: 390,652 mt
- Herring: 28,746 mt
- Halibut: 24,445 mt
- Crab & shellfish: 31,320 mt
- Groundfish: 2,406,000 mt
- All species combined: 2,881,162 mt

⁴ Renamed in 1980 to honor the late Senator Warren G. Magnuson, and in 1996 to include Senator Ted Stevens, the FCMA is now known as the MSFCMA.

⁵ Harvests of fishery resources off the coast of Alaska by foreign fishing vessels are not included in Figure 1.

Figure 1. Historic Landings US Vessels by Species off Alaska, 1900 – 2006

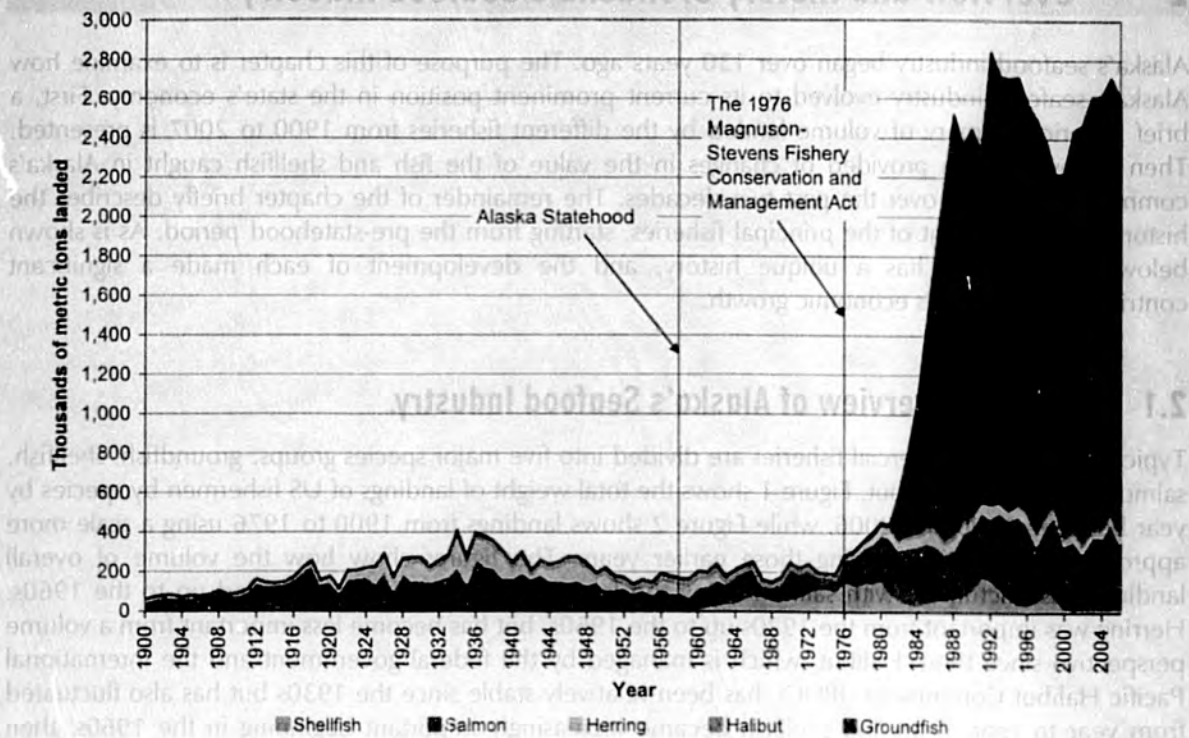
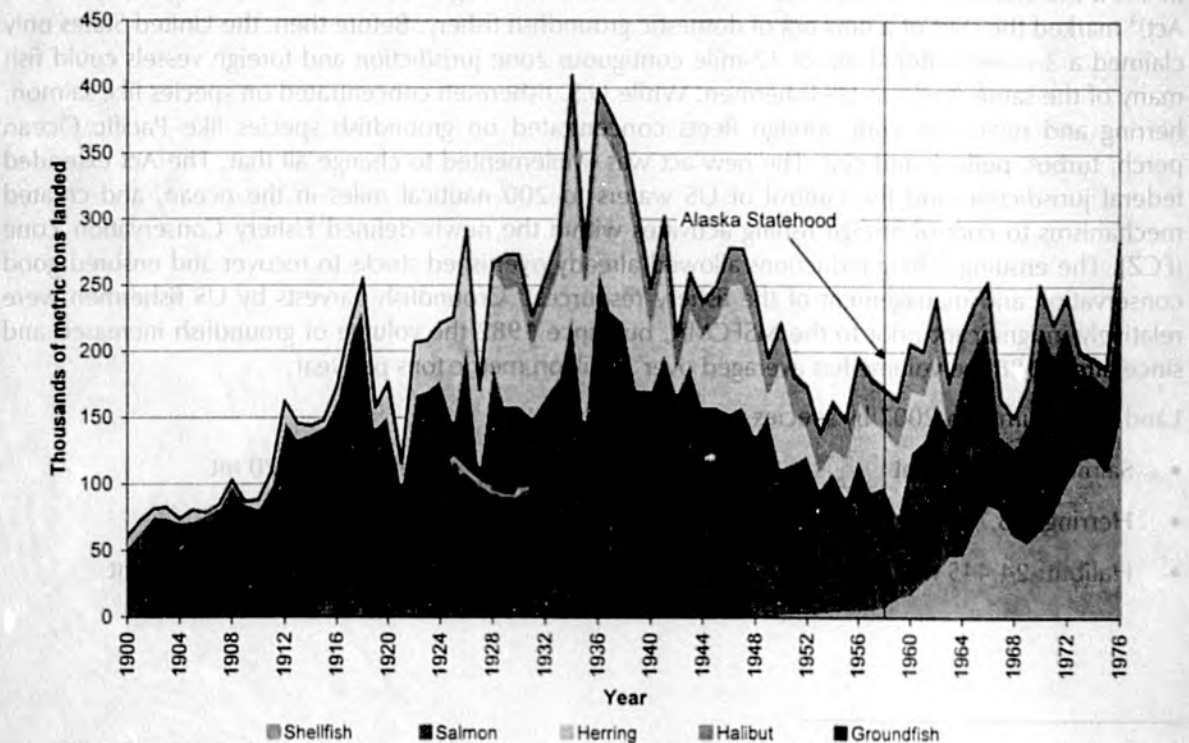


Figure 2. Details of Historic Landings by Species, 1900 – 1976

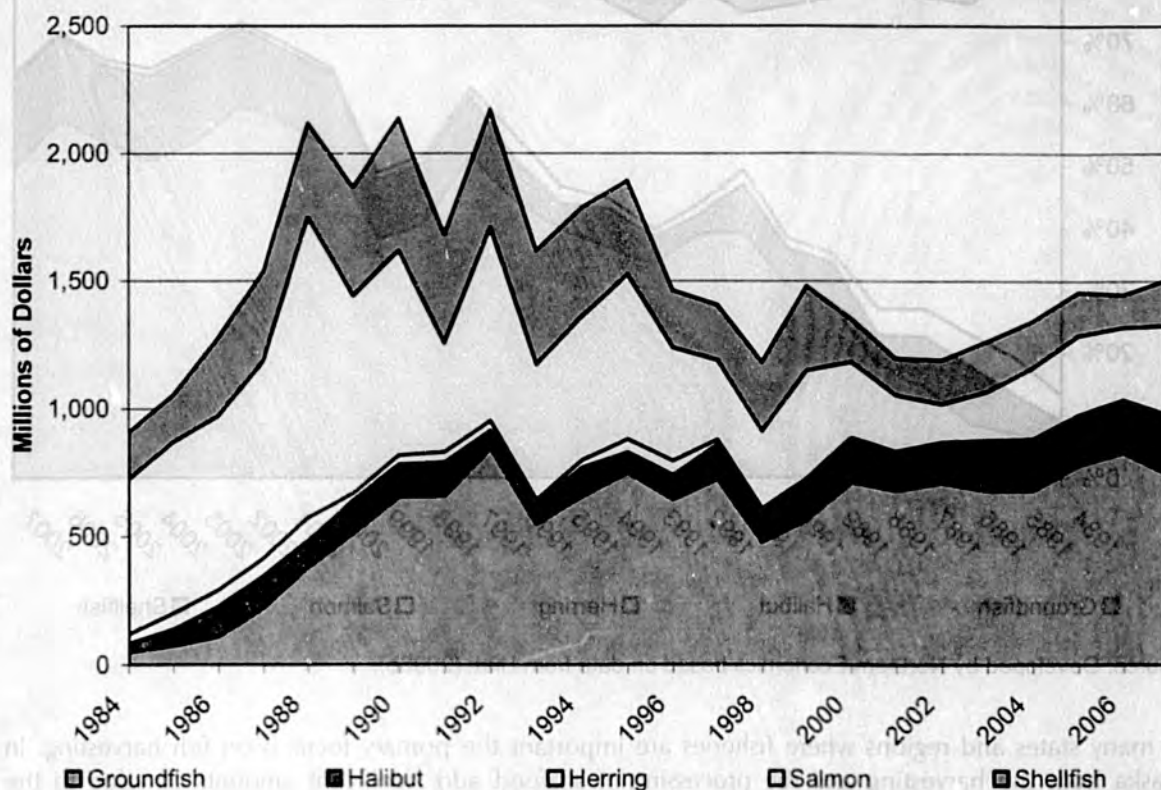


Sources for Figure 1 and Figure 2: Developed by Northern Economics from multiple sources including ADFG&G, (1987 and 2008), IPHC (2008), NMFS (2008d and 2008e), and Plotnick (2008)

From the volumes shown in the figures above, it might be interpreted that the size of the groundfish fisheries make the salmon, crab, herring, and halibut fisheries insignificant. However, most groundfish fisheries are high-volume low-value fisheries—for years the typical price received for pollock, the dominant groundfish species, was \$0.8 per pound. Fish are harvested and processed for the money, and therefore the importance of the state's fisheries is judged by the values that they generate. This report will describe the values of the fisheries in terms of two primary sources of value: ex-vessel value—the value received by harvesters from buyers and processors, included an imputed ex-vessel value for catcher processors; and wholesale value—the value received by processors for the market ready product they produce.

Figure 3 shows the ex-vessel value of the Alaska harvest by species group from 1984 through 2007 as reported by Hiatt. (2008b).⁶ The data have been adjusted for inflation (i.e., they are reported in real dollars). The value of landings shows considerable year-to-year variation. Much of this fluctuation can be attributed to natural changes in stock abundance for certain species that create larger or smaller harvests in some years.

Figure 3. Real Ex-vessel Value of Alaska Seafood Industry Harvest by Species Group, 1984-2007



Note: The data have been adjusted to 2007 dollars by applying GDP implicit price deflators presented in Hiatt (2008b). Also note that the ex-vessel values include imputed values from catcher processors.

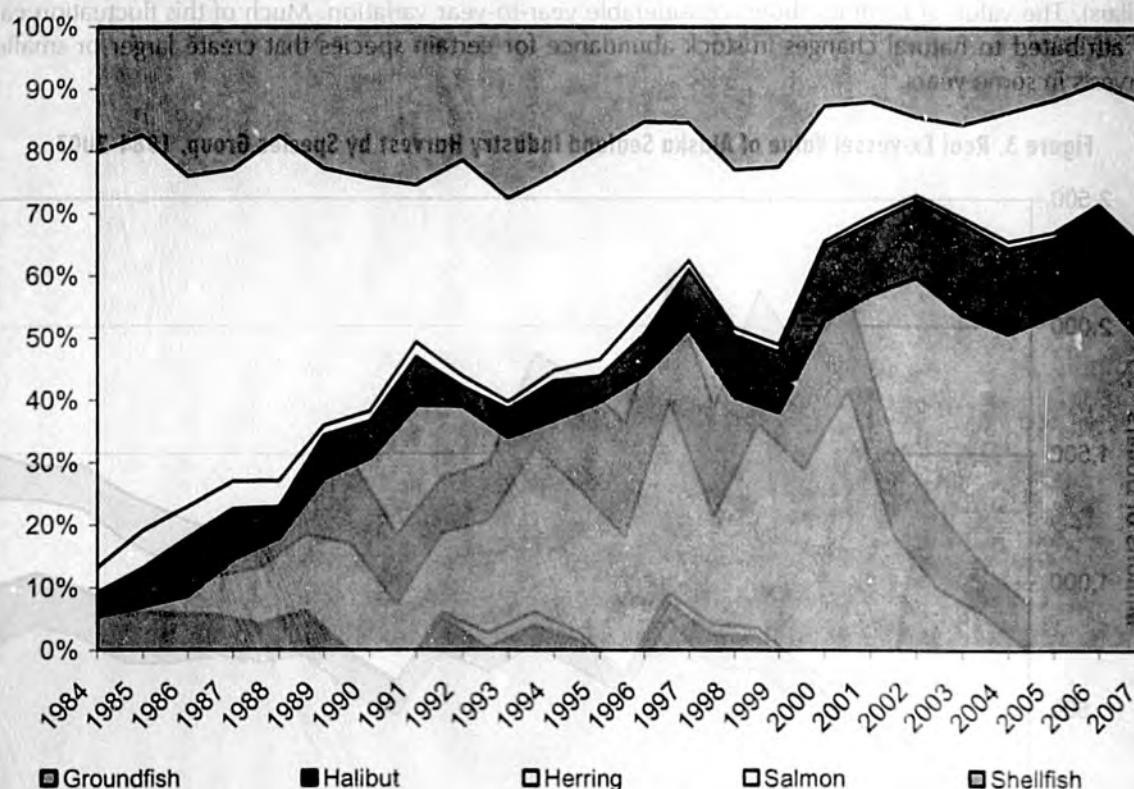
Source: Developed by Northern Economics based on data from Hiatt (2008b).

Figure 4 shows that the importance of species groups has changed over time. During the late 1980s, salmon generated about half of the total ex-vessel value of Alaska fisheries, while shellfish typically

⁶ Consistently reliable data for ex-vessel value are not available for all species for earlier years.

contributed more than one-fifth of the overall value. Beginning in the early 1990s, however, groundfish displaced salmon and shellfish as the most significant component of total value. Tremendous growth in the domestic groundfish catch occurred as American harvesters and processors took over the offshore groundfish fishery from foreign fleets. The rapid expansion and profitability of the fishery earned it the reputation as "the next Alaska gold rush." Since the 1990s, groundfish catches have stabilized, but they continue to dominate the overall value and volume of Alaska's harvest. In 2007, the groundfish fishery accounted for 50 percent of the ex-vessel value of all commercial fisheries off Alaska, while the salmon fishery was second with 20 percent of the total Alaska ex-vessel value. The value of the Pacific halibut catch amounted to 14 percent of the total.

Figure 4. Percentage of Ex-vessel Value of Alaska Seafood Industry Harvest by Species Group, 1984-2007

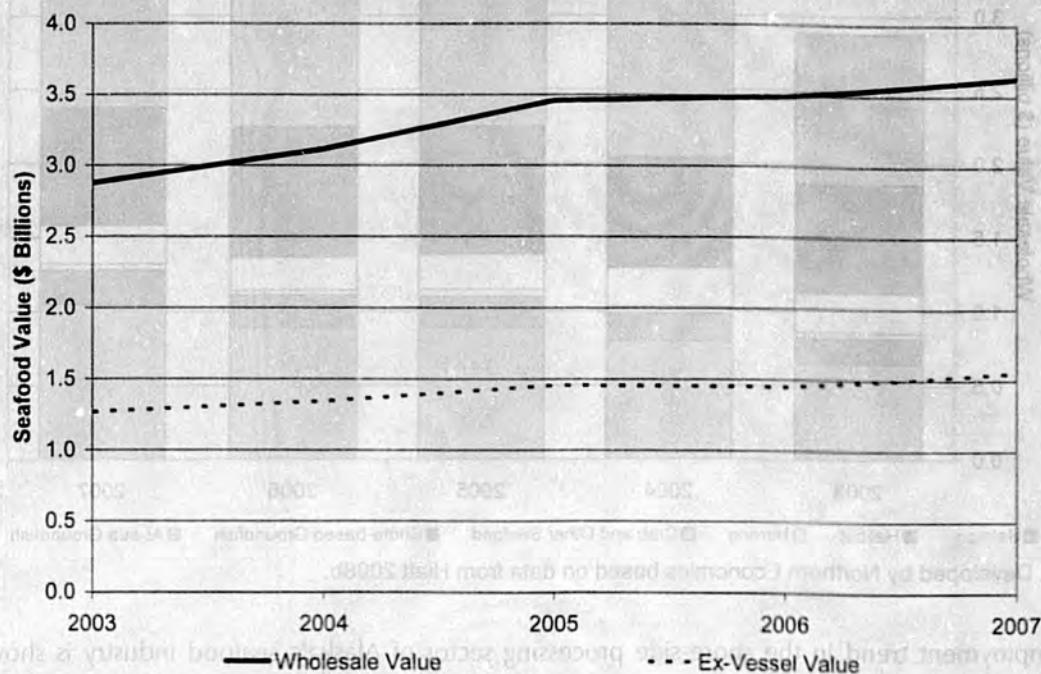


Source: Developed by Northern Economics based on data from Hiatt (2008b).

In many states and regions where fisheries are important the primary focus is on fish harvesting. In Alaska both the harvesting and the processing of seafood add significant amounts of value to the economy. Seafood processing is a critically important component of the seafood industry in Alaska because of the distance from the resource to the markets and high cost of transporting unprocessed fish to those markets. Because of the importance of processing to the understanding of the seafood industry, Alaska is one of the few regions that collect and report data on processed product volumes and perhaps more importantly, on the wholesale value that is added to the resource by processors. For many years ADF&G had a voluntary program that allowed seafood processors to report processed product values. In 2003 mandatory reporting of processed product values was required by both ADF&G and NMFS, and since then complete reliable estimates of wholesale value have become

available.⁷ Figure 5 shows both the total ex-vessel value and the total wholesale value since 2003 generated in the Alaska seafood industry in terms of 2007 dollars. On average, since 2003 total ex-vessel value has been 44 percent of wholesale value.

Figure 5. Recent Trends in Real Wholesale and Ex-vessel Value in Alaska Fisheries, 2003 - 2007

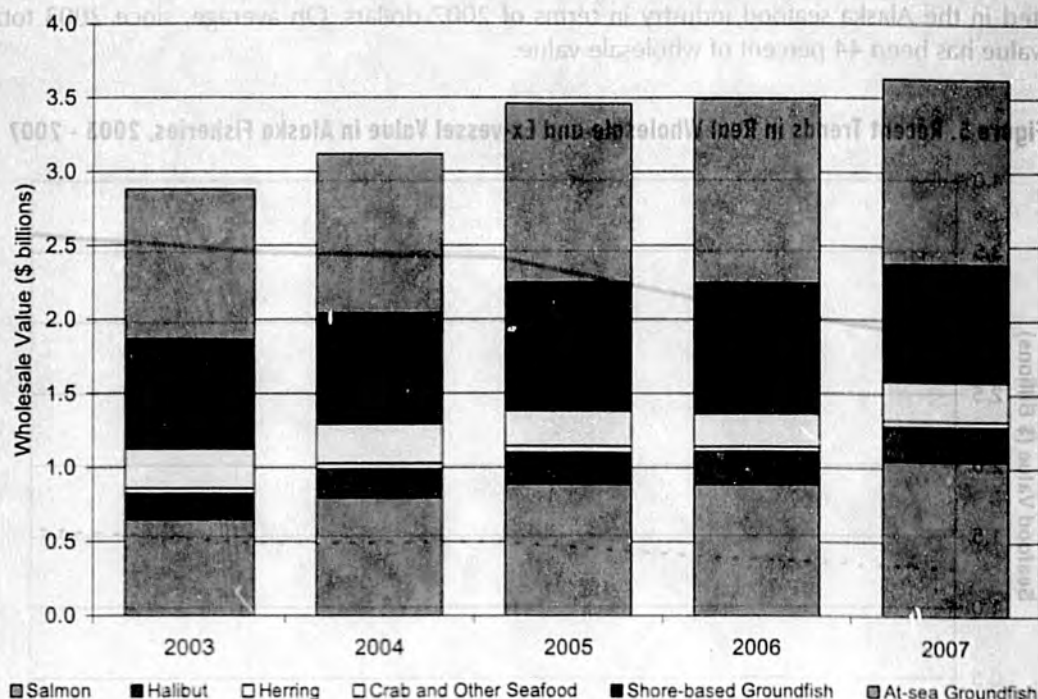


Note: The data have been adjusted to 2007 dollars by applying GDP price deflators presented in Hiatt 2008b.
Source: Developed by Northern Economics based on data from Hiatt 2008b.

Figure 6 summarizes total wholesale value in Alaska's fisheries by species after adjusting for inflation to 2007 dollars. Over the last 5 years wholesale value has increased from just over 2.88 billion to 3.63 billion, an increase in real terms of 126 percent. Of the primary species groups, the wholesale value of salmon had the greatest increases (up 62 percent), while the wholesale value of crab fell in 2005 and 2006 and then recovered in 2007.

⁷ The wholesale values reported in this report include only "primary processing" values. The majority of processing in Alaska consists of "primary processing" wherein processors perform the first modification to the fish and shellfish delivered by harvesters. In some cases, the products after the initial stage of processing may be table-ready or final product. In general, however, relatively little of the output of Alaska commercial fishery harvests is sold fresh because of the remoteness of most fishing ports. More often, the primary products are reprocessed by secondary processors, the majority of which are outside of Alaska. Secondary processing adds additional value to the product, creating skinless/boneless fillets, smoked salmon, fish patties, breaded fish sticks and many other seafood products.

Figure 6. Recent Trends in Wholesale Value by Species, 2003 – 2007



Source: Developed by Northern Economics based on data from Hiatt 2008b.

The employment trend in the shore-side processing sector of Alaska's seafood industry is shown in Figure 7, which reports the annual average of monthly employment by year from 1980 to 2007. After the collapse of Alaska's king crab fishery in the early 1980s, processing employment slid for three years and then changed little for the next three. But in 1988, the aforementioned "Americanization" of the groundfish resources⁸ began to "turbo-charge" Alaska's seafood processing sector (Fried 1996). The peak in shore-side processing labor in 1992 corresponds to a record high harvest volume and total ex-vessel value. In that year large groundfish and Bering Sea snow crab catches, together with record salmon harvests, increased the demand for processor workers.

The employment numbers in Figure 7 exclude processing workers in the at-sea component of the industry (catcher processor and motherships). These vessels are not included in ADOLWD estimates of seafood processing workers because much of their employment occurs outside the state's jurisdiction, and comparable time series data simply do not exist. A similar problem exists with respect to harvesting employment—fish harvesting crews are considered self-employed contractors and as such there are no comparable or consistent data sources that report employment numbers for fish harvesters.⁹

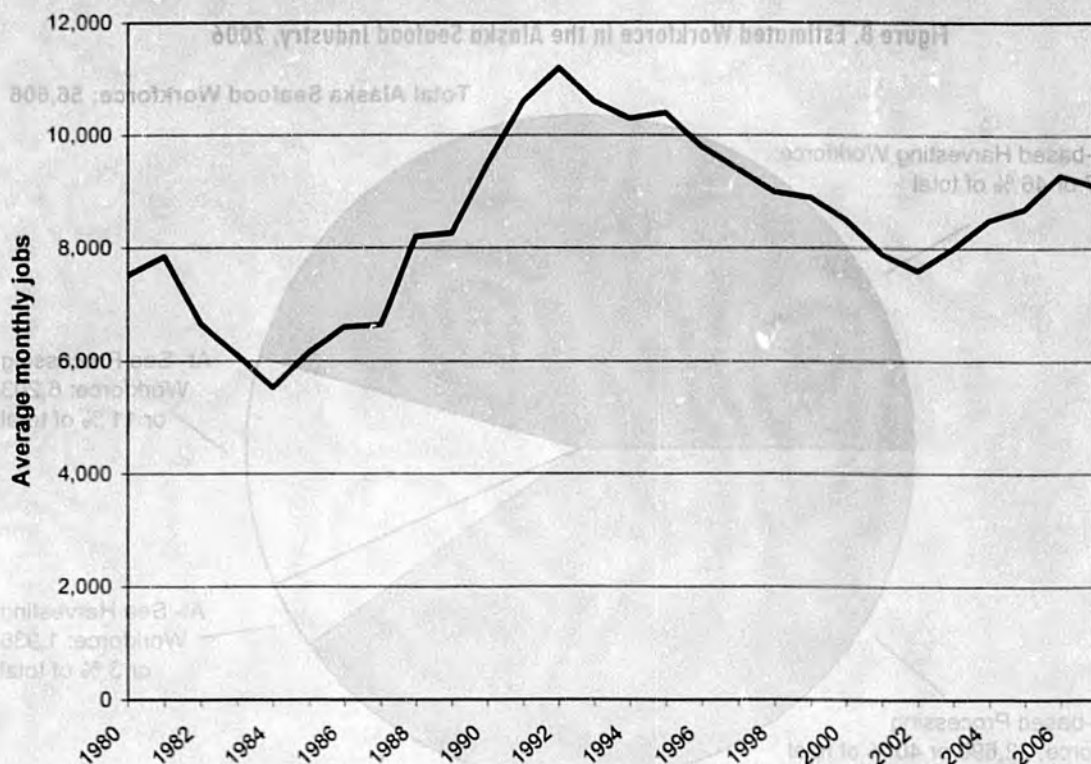
While there are no official time-series data reporting fish harvesting employment, nor at-sea processing employment, it is possible to estimate these data on an *ad hoc* basis for a given year, using assumptions of the number of crew members on various types of fishing operations. Using data from ADOLWD (2007c) and Hiatt (2008a) it is estimated that between 2003 and 2007 the annual average of monthly employment in the harvesting sector ranges from 7,500 to 8,500, with an

⁸ The "Americanization" of the groundfish industry is described in greater detail in Section 2.2.

⁹ The State of Alaska has recognized the need to collect employment data for fish harvesters, and the FY 2008 budget includes funds to investigate means to collect fish harvesting employment data on an ongoing basis.

additional monthly average of 1,700 to 1,900 processing workers in the at-sea sector. Adding all of these estimates together, the total annual average monthly employment in Alaska's seafood industry has been between 16,000 and 20,000 from 2003 to 2007.

Figure 7. Alaska Seafood Shore-side Processing Annual Average of Monthly Employment, 1980-2007



Note: Annual average employment refers to the average number of monthly jobs over the full calendar year.

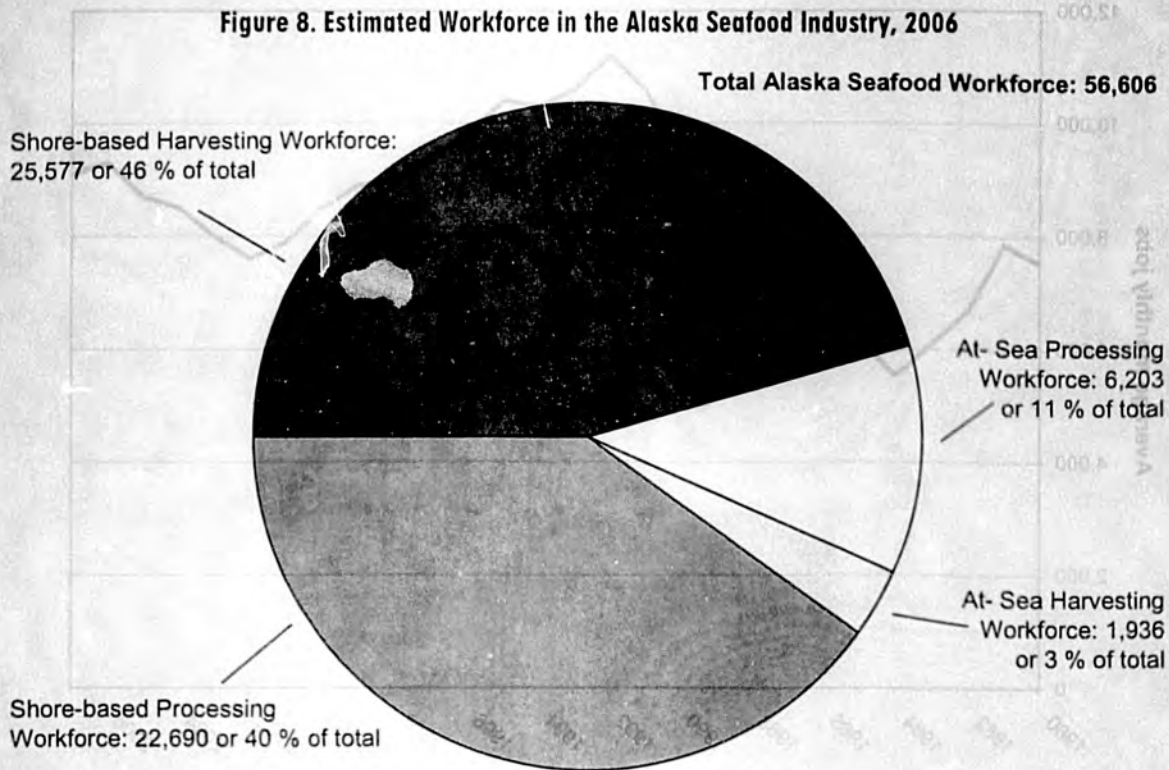
Source: Developed by Northern Economics based on data from ADOLWD 2008b.

Jobs in the Alaska seafood industry are highly seasonal and in most cases relatively short term. For example, one of the biggest fisheries in the state, the sockeye salmon fishery in Bristol Bay typically lasts for only 45 days with the majority of the activity in a two-week period around July 4th. In 2007 there were 2,328 active permit holders in the fishery. Assuming each permit holder had a crew of two, an estimated 6,984 worker participated in the fishery. In addition, ADOLWD (2008c) estimate there were 4,480 processing workers in Bristol Bay during the peak of the run. In total it is estimated that there were 11,464 individuals employed in the Bristol Bay salmon fishery. Because none of these persons were likely to have been both a harvester and a processor, the workforce in the Bristol Bay sockeye salmon fishery is estimated to be 11,464. However, since most worked no more than 1.5 months, the calculated annual average monthly employment would be 1/6th of this number or 1,911 annual jobs.

Based on the example above, it is clear that the workforce in the Alaska seafood industry is significantly larger than the annual average of monthly employment. Figure 8 shows the estimated workforce in Alaska's seafood industry for 2006.¹⁰ The figure shows estimates for four sectors: Shore-based processing and harvesting, and at-sea processing and harvesting. With the exception of the

¹⁰ At the time publication, workforce estimates for 2007 shore-based processors were unavailable.

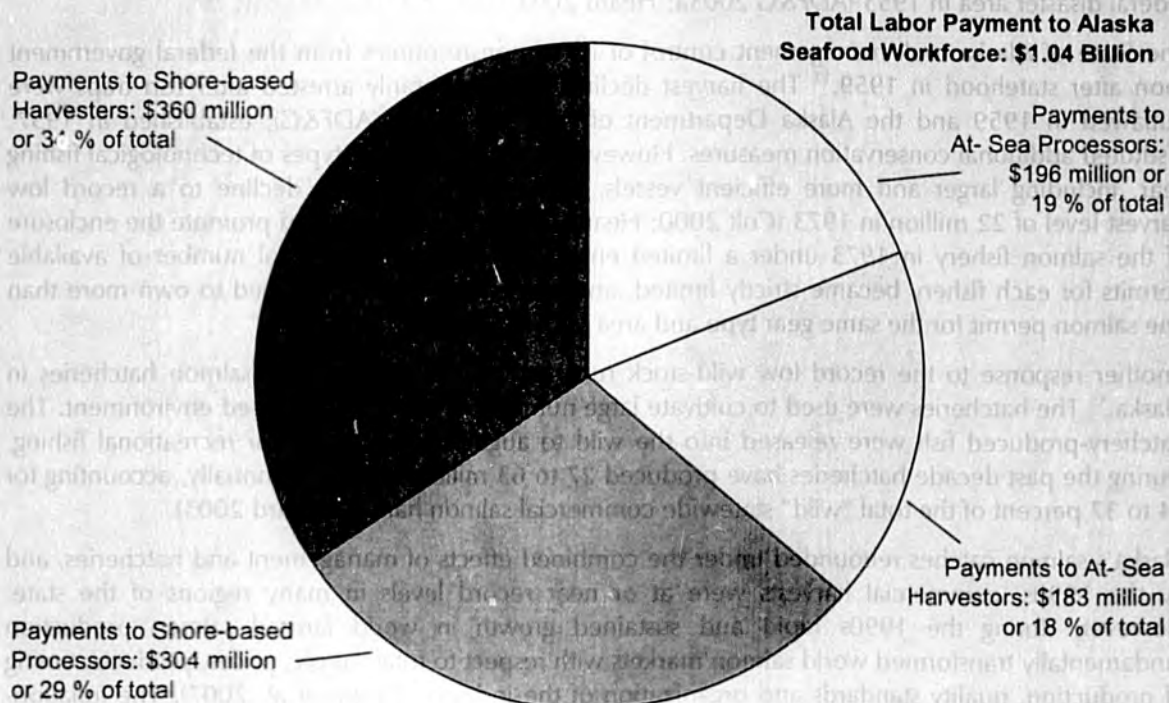
workforce for shore-based processing—which relies on monthly data collected quarterly by the ADOLWD, the numbers are estimates developed by Northern Economics using data from CFEC (2008) and Hiatt (2008a). Overall, the size of the Alaska seafood industry workforce is estimated at 56,606 workers. Of these 86 percent worked in shore-based operations. There were a total of 27,713 harvesters and 28,893 processors.



Source: Estimated by Northern Economics using from ADOLWD (2008a), CFEC (2008), and Hiatt (2008a)

This document refers to the earnings of processors and harvesters as payments to labor. As with employment and workforce, official data on payments to labor in the seafood industry are incomplete. Because shore-based processing workers are “regular” employees whose employers pay unemployment taxes, monthly data on payments to labor for shore-based processors are collected on a quarterly basis by ADOLWD. As discussed earlier, data for shore-based harvesters and both harvesters and processors on at-sea processing operations are not collected on a regular and formal basis, and therefore payments to labor for these components of the seafood industry must be estimated on an *ad hoc* basis, using information from the industry source on the share of either ex-vessel or wholesale value that is typically paid to workers.

Figure 9 shows the estimated payment to labor in the Alaska seafood industry for 2007. Overall it is estimated that workers earned a total of \$1.04 billion from the harvesting and processing efforts. Of this, harvesters (shore-based and at-sea combined) received \$543 million or 52 percent of the total, while processing workers were estimated to have been paid \$501 million or 48 percent of the total.

Figure 9. Estimated Payments to Labor in the Alaska Seafood Industry, 2007

Source: Estimated by Northern Economics using data from ADOLWD (2008b) and Hiatt (2008a)

2.2 Historical Overview of the Salmon Fishery

Five types of salmon (chinook, coho, sockeye, pink, and chum) are harvested commercially in Alaska waters. These species have been the basis for one of Alaska's most important industries for nearly 130 years, with the first salmon canneries being built in Alaska in 1878 (Woodby et al. 2005; NMFS 2004). With the rising demand and depleted runs along the U.S. West Coast, American business operators were quick to recognize the value of Alaska salmon, and the technology of canning allowed them to preserve the fish in large quantities for transport by ship to markets in the United States and Europe (Sisk 2007). By 1890, large corporate salmon canneries, owned primarily by West Coast-based companies, began to appear in Alaska, and the salmon catch grew rapidly with the expansion of cannery capacity (Alaska State Library 2006; Colt 2000).¹¹ The salmon industry soon dominated Alaska's economy—by the 1920s, a tax on each case of salmon packed in the Territory accounted for 70 percent of general fund revenue (Fried 1996).¹²

The federal government had jurisdiction over the Alaska salmon fisheries, but management was weak, poorly funded and ineffectively enforced (Woodby et al. 2005). About half of the salmon catch was taken in a relatively small number of large and very efficient fish traps that were directly owned by the processors (Kruse et al. 2000). After reaching record high harvest levels of over 100 million salmon

¹¹ Manpower and materials were scarce, and each spring the companies would ship to Alaska all the cans and other production inputs needed for the salmon packing season—even about 75 percent of the workforce was imported (Fried 1996; Tremaine 1989).

¹² In 1913, the First Territorial Legislature adopted the "salmon pack" tax which applied to salmon canneries based on canned salmon (7¢ per case) (ADOR 2006a)

caught annually during the 1940s, stocks dropped so low that President Eisenhower declared Alaska a federal disaster area in 1953 (ADF&G 2003a; Heard 2003).

The State of Alaska took management control of its salmon resources from the federal government soon after statehood in 1959.¹³ The harvest decline was temporarily arrested after fish traps were outlawed in 1959 and the Alaska Department of Fish and Game (ADF&G), established in 1957, instituted additional conservation measures. However, the entry of other types of technological fishing gear, including larger and more efficient vessels, coincided with further decline to a record low harvest level of 22 million in 1973 (Colt 2000; Heard 2003). This crisis helped promote the enclosure of the salmon fishery in 1973 under a limited entry permit system. The total number of available permits for each fishery became strictly limited, and harvesters were not allowed to own more than one salmon permit for the same gear type and area (ADF&G 2003b).¹⁴

Another response to the record low wild-stock runs was the development of salmon hatcheries in Alaska.¹⁵ The hatcheries were used to cultivate large numbers of fish in an enclosed environment. The hatchery-produced fish were released into the wild to augment commercial or recreational fishing. During the past decade hatcheries have produced 27 to 63 million adult fish annually, accounting for 14 to 37 percent of the total "wild" statewide commercial salmon harvest (Heard 2003).

Alaska's salmon catches rebounded under the combined effects of management and hatcheries, and by the 1990s, commercial harvests were at or near record levels in many regions of the state. However, during the 1990s rapid and sustained growth in world farmed salmon production fundamentally transformed world salmon markets with respect to total supply, prices, products, timing of production, quality standards and organization of the industry (Knapp et al. 2007). The inflation-adjusted ex-vessel value of annual Alaska salmon catches dropped from more than \$800 million in the late 1980s to less than \$300 million for the 2000-2004 period. Most of this decline in value was due to a decline in prices (rather than catches), and much of the decline in prices was due to competition from farmed salmon (Knapp et al. 2007).

The economic condition of the salmon fisheries has shown some improvement in recent years. The 2007 salmon harvest value was more than double the 2002 figure (Figure 3). This increase was a combination of a large harvest of over 221 million salmon, the largest commercial harvest in history and modest increases in salmon prices, particularly for sockeye salmon (AGF&G undated). With the increase in harvests and prices there has been a gradual increase in the value of Alaska salmon permits, particularly those for the Bristol Bay sockeye fishery, although permit prices are still a fraction of what they were in the 1980s (Welch 2007a).

¹³ Alaska was the only U.S. territory never to exercise control over its fishery resources (Gilbertsen 2004). Acquiring control of salmon fisheries was a primary incentive of the statehood movement (Woodby et al. 2005). Alaska is the only state with a constitutional mandate that requires sustainability of its fish and wildlife resources—Article 8 of the State of Alaska Constitution reads: "Fish, forests, wildlife, grasslands, and all other replenishable resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses."

¹⁴ Gilbertsen (2004:4) notes that the limited entry program was intended to transfer economic benefits from out-of-state processors to Alaska fishermen as well as regulate fishing effort: "the limited entry program... conveyed the right of fishery access to the gear operator rather than to the vessel owner. This provision ultimately resulted in salmon canneries' divesting themselves of their corporate owned fishing fleets, and provided fishermen increased bargaining power."

¹⁵ Salmon hatcheries have existed in Alaska as far back as the late 1800s, but the success of these early facilities was limited. The federal government started several research stations as well as territorial hatcheries in the 1930s and 1950s. Hatchery production increased when enhancement planning in the early to mid-1970s called for significant capital construction under a newly formed division (Fisheries Rehabilitation, Enhancement and Development Division) within ADF&G (Kruse et al. 2000).

2.3 Historical Overview of the Herring Fishery

One of Alaska's oldest commercial fisheries, the herring industry began in Alaska in 1878 (Woodby et al. 2005). Salted and pickled herring production peaked after World War I, when about 12,700 mt were harvested annually. During the 1920s, herring became increasingly valued for oil and meal. Reduction plants to "reduce" herring to meal and oil sprang up along the Gulf of Alaska from Craig to Kodiak. When harvests in the 1920s and 1930s reached as high as 113,400 mt stocks began to decline. Moreover, during the 1950s, lower cost Peruvian anchoveta severely impacted the oil and meal markets. The last Alaska herring reduction plant closed in 1966 (Woodby et al. 2005).

A Japanese and Russian trawl fishery for herring began in the Bering Sea in the late 1950s, reaching a peak harvest of 146,000 mt in 1970. Japanese longliners also fished for herring with gillnets in the 1960s and early '70s near Togiak and Hagemester Strait. These high harvests were likely not sustainable and the foreign fishery declined until it was phased out following the establishment of the 200-mile Fishery Conservation Zone in 1976 (Woodby et al. 2005).

When Japan's herring stocks declined during the 1960s, the Japanese fishing fleet began importing herring roe from other countries. A lucrative market for herring eggs and eggs on kelp prompted the development of Alaska's roe herring fisheries. When inshore domestic fisheries began to fully utilize Bering Sea herring around 1980, foreign harvests were eliminated, but roe (harvested as sac roe or spawn-on-kelp) remained the principle utilization of herring (ADF&G 2006c).

In recent years, herring roe markets have begun to deteriorate as the consumption of salted herring roe declines in Japan. Mainly because of lower prices, the average value of Alaska herring catches has fallen dramatically. By way of comparison, total herring harvest values (in real dollars) in the early 1990s exceeded \$35 million; during the 2001-2005 period, total ex-vessel value averaged about \$12 million (Figure 3). With the weak market and lower prices, participation in herring fisheries has also been declining (ADF&G 2007e). In response to the falling demand, herring processors have been increasingly concerned about product quality. Harvesters, ADF&G, and the seafood processing sector have renewed efforts to increase roe percentages and reduce the length of time herring are held before processing (ADF&G 2006c). While the herring fishery is much smaller in terms of value than the other Alaska fisheries, it continues to be an important source of supplementary income for participants in other fisheries.

The commercial catch of herring for bait in Alaska began around 1900 and remained relatively stable, typically 1,800-2,700 mt per year, in spite of large fluctuations in the herring catch for the reduction, foreign, and sac roe fisheries. The development of extensive crab fisheries in the 1970s greatly increased the demand for herring bait (Woodby et al. 2005).

2.4 Historical Overview of the Halibut Fishery

In the 1880s, a commercial fishery began for Pacific halibut in the inside waters of Southeast Alaska, with sablefish targeted as a secondary fishery (Woodby et al. 2005). The first shipment of fresh halibut was sent south from Juneau in 1897 (Alaska State Library 2006). The market demand for halibut grew as the development of ice makers enabled harvesters to preserve the halibut long enough to make it available to markets throughout the United States (NMFS 2004). Most of the halibut fishing in Alaska waters was conducted by halibut schooners built in Seattle and based in that port (Federal Fisheries Investment Task Force 1999).

Concerns about the increasing amounts of gear and decreasing catch per unit of gear in the Pacific halibut fishery from northern California through Alaska led Canada and the United States to negotiate

the Convention for the Preservation of the Halibut Fishery of the Northern Pacific Ocean in 1923.¹⁶ The treaty established a bilateral commission (later named the International Pacific Halibut Commission or IPHC) that was granted regulatory powers (IPHC undated).

In 1995, an IFQ program was established for the fixed gear halibut fishery in both the GOA and BSAI, whereby harvest quota shares are allocated to individuals or companies within separate IPHC regulatory areas and for specific vessel size classes. The extended fishing made possible by the IFQ system has allowed harvesters to increase their production of higher-value fresh fish and time their catch to receive the best prices (Hartley and Fina 2001). As shown in Figure 3, the halibut fishery increased in ex-vessel value after it changed from a derby fishery to an IFQ fishery and delivery patterns shifted. The average 2006 dockside price paid to commercial halibut fishermen was \$3.71 per pound, up \$0.70 cents from 2005 and almost a dollar from 2004 (ADCCED 2007). The high prices in most major Alaska ports took the halibut harvest to its highest ex-vessel value on record (Figure 3). The strong market for halibut has also resulted in record-high halibut quota share prices (Welch 2007a).

2.5 Historical Overview of the Crab Fishery

The history of crab fisheries in Alaska waters extends back to 1930, but substantial domestic commercial efforts were not undertaken until the 1950s when the king crab fisheries began to develop in the Bering Sea (Woodby et al. 2005).¹⁷ King crab are Alaska's most valuable crab per pound and are generally sold at the highest prices of any crabs in U.S. fisheries (NMFS and NPFMC 2004). Commercial fishing for red king crab in the Bering Sea started with Japanese harvests in 1930 (Bowers et al. 2005). Canned crab was popular in the U.S. in the pre-World War II years; the U.S. imported about ten million pounds per year (NMFS and NPFMC 2004). The Japanese fishery ended in 1940 with the onset of World War II, but resumed in Bristol Bay from 1953 until 1974. The Russian fleet also fished for red king crab in Bristol Bay from 1959 through 1971. U.S. harvesters entered the eastern Bering Sea fishery with trawl gear in 1947. The domestic fishery in Bristol Bay expanded to full-scale in the late 1970s and peaked in 1980 with a catch of 59,000 mt, worth an estimated \$115.3 million in nominal dollars.¹⁸ Since 1980, king crab stocks throughout Alaska, including Bristol Bay, have declined sharply and show no signs of recovering to pre-1980 levels (Bowers et al. 2005).

Since the early 1980s, the Bering Sea snow (*Chionoecetes opilio*) crab fishery has been the largest shellfish fishery in Alaska. Snow crab was harvested in the Bering Sea by the Japanese from the 1960s until 1980 when foreign fishing was prohibited (Turnock and Rugolo 2007). The first domestic commercial landings of snow crab from the Bering Sea were recorded in 1977, incidental to the

¹⁶ The treaty of 1923 was especially noteworthy in that it was the first international treaty to be concluded for the conservation of a depleted deep-sea fishery (IPHC undated).

¹⁷ The domestic deepwater crab fisheries developed later than some other Alaska fisheries because of their distance from markets and their capital requirements: large vessels, expensive gear and sophisticated freezing equipment or live-holding tanks (NMFS and NPFMC 2004).

¹⁸ Different king crab fishery areas in Alaska have seen different peaks and declines. The domestic fishery was concentrated at first in the eastern Bering Sea but shifted to the Kodiak area in 1954. During the 1960s, the Kodiak area was a major producer of king crab with a peak in 1965 of 43,180 mt., close to 70 percent of the total domestic Alaska king crab harvest. This record high harvest was followed by a precipitous decline in the late 1960s. The Kodiak fishery continued at low levels until 1982 when the fishery was closed. It has remained closed ever since. Following the collapse of the Kodiak fishery in the late 1960s, fishing effort migrated into the Bristol Bay king crab fishery and Bering Sea Tanner crab fishery (NMFS and NPFMC 2004).

harvest of Tanner (*C. bairidi*) crab.¹⁹ In 1981, a reduction in the Tanner crab harvest resulted in increased snow crab harvest (Bowers et al. 2005). Retained catch in the domestic fishery increased in the late 1980s to a high of about 149,073 mt in 1991 (Turnock and Rugolo 2007). Ex-vessel value increased from \$8 million in 1984 to a peak in 1994 of nearly \$200 million in nominal dollars. In just 15 years, snow crab, which was earlier considered of no commercial value, became the most valuable commercial crab fishery in the United States and the new economic foundation of the Alaska crab fleet (Herrmann and Greenberg 2006).²⁰ However, the catch declined to 29,500 mt in 1996, increased to 110,400 mt in 1998, then declined to 15,200 mt in the 2000 fishery. Due largely to the precipitous drop in Bering Sea snow crab landings in 2000, the ex-vessel value of Alaska's shellfish harvest fell by half despite a substantial increase in crab prices (Figure 3). As a result of low abundance and a reduced harvest rate, snow crab catches have remained low and were 11,800 mt in the 2005 fishery and 16,800 mt in 2006 and 2007 (Turnock and Rugolo 2007). In summary, commercial harvests in all major crab fisheries in Alaska have fluctuated over the years perhaps due to overfishing and environmental causes. Some crab stocks have collapsed and shown no signs of recovery (e.g., Kodiak red king crab), while others have declined to relatively low levels (Kruse et al. 2000).

In August of 2005, fishing in the BSAI crab fisheries began under a new share-based management program (the "Crab Rationalization Program"). The program allocates BSAI crab resources among harvesters, processors and coastal communities. Share allocations to harvesters and processors, together with incentives to participate in crab harvesting cooperatives, are intended to improve safety and conservation, increase efficiencies, provide economic stability and facilitate compensated reduction of excess capacities in the harvesting and processing sectors (Plan Team for the King and Tanner Crab Fisheries of the Bering Sea and Aleutian Islands 2007).

Shrimp once supported large and historically important commercial fisheries in the late 1950s through the early 1980s, particularly in the central and western Gulf of Alaska (Woodby et al. 2005). A beam trawl fishery for northern shrimp began in the Petersburg area in 1915. Alaska's largest shrimp fishery targeted northern shrimp with otter trawls in the Kodiak area beginning in 1958, extending west to the Alaska Peninsula in the Chignik and South Peninsula districts in 1968. Statewide shrimp catches, mainly with trawl gear, averaged 52,200 mt annually at the peak from 1973 to 1977 (ADF&G 2007c). The shrimp populations in the western and central Gulf crashed in the late 1970s and early 1980s, due in part to a climate regime shift (Woodby et al. 2005). Recent commercial harvests are much smaller in volume and are predominantly from Southeast Alaska. Statewide catches averaged 900 mt valued at \$4.2 million for the 2000–2004 period (ADF&G 2007c).

The commercial scallop fishery began in Alaska in the Kodiak area in 1967 and the Yakutat area in 1968 (Woodby et al. 2005). The fishery expanded to the Alaska Peninsula in 1975, Southeast Alaska in 1980, Cook Inlet in 1983, the Bering Sea in 1987, and Prince William Sound in 1992. Since the early 1990s, scallop harvests have shown a declining trend. Harvests in the 2001–2005 period averaged 214 mt of shucked meats, with an ex-vessel value of slightly over \$2.4 million (ADF&G 2007d). In 2000, six of the licensed scallop vessel owners formed a voluntary, self-regulatory fishing cooperative, allocating harvest shares based on prior fishing history (Woodby et al. 2005).

¹⁹ Prior to the early 1970s, harvest of Tanner crabs from the Bering Sea was, in general, incidental to the directed red king crab fishery in that area. Development of the fishery was slow due to a number of reasons, the most important being low consumer acceptance. As market conditions improved, a directed fishery began in 1974, and commercial harvest reached a high of about 30,232 mt during the 1977/1978 season. However, by 1985 catches had fallen to 1,430 mt., and further stock declines led to a fishery closure during the 1986 and 1987 seasons. Since then, commercial harvest of Tanner crabs in the Bering Sea has occurred at relatively low levels and with periodic closures (Kruse et al. 2000; NMFS and NPFMC 2004).

²⁰ The success of the snow crab fishery was due in part to the development of new markets in Japan and the United States, including the domestic "all you can eat" seafood buffet restaurants (Gay 1992).

2.6 Historical Overview of the Groundfish²¹

Among Alaska's commercial fisheries, the groundfish fishery has targeted the greatest diversity of species, including pollock, Pacific cod, sablefish, Atka mackerel, lingcod and numerous rockfish and flatfish species (ADF&G 2006a). The majority of groundfish are harvested in federal waters.

A robust foreign groundfish fishery operated off Alaska prior to WWII and then picked up after the war to record levels in the 1960s and '70s, long before a modern domestic fishery developed. An American sail and dory Pacific cod fishery operated in Alaska waters near Unimak Pass and the Shumagin Islands from May 1, 1865 till the 1950s (Shields 2001). Harvests in Bering Sea foreign groundfish fisheries reached a record 2.2 million metric tons (mt) in 1972, but thereafter catches dropped sharply (ADF&G 2006b). In general, the period of foreign fishing is characterized by unregulated overfishing of groundfish resources off Alaska and gear conflicts between foreign trawl fisheries and domestic pot fisheries for crab and longliner fisheries for halibut.

Establishment of the 200-mile Fishery Conservation Zone (later called the U.S. Exclusive Economic Zone or EEZ) in 1976 was followed by a variety of federal laws and programs developed to promote the "Americanization" of fisheries inside the U.S. EEZ, especially the rich groundfish resources of the Bering Sea.²² The "Americanization" process began in the late 1970s and early 1980s with the advent of the "Fish-and-Chips" policy and enactment of the American Fisheries Promotion Act. These strategies increased the number of criteria upon which foreign fishing privileges in the U.S. EEZ were based to include the removal of trade barriers, the commitment to purchase the products of the U.S. seafood industry, the minimization of gear conflicts, and the transfer of fishing and processing technology. A parallel program sponsored by NMFS, the Fisheries Obligation Guarantee Program, guaranteed over \$150 million worth of loans between 1977 and 1996 for the construction of U.S. factory trawlers and stationary floating processors. The financial assistance offered under the program was extended to U.S. shore-side processing plants in 1983.

Under these incentives, the Alaska groundfish fishery moved from almost entirely foreign to joint ventures to a completely domestic fishery in 1991. U.S. harvests were minimal in 1980 compared to salmon and crab, accounting for less than 6,000 of the 262,000 mt harvested in the domestic Alaska fisheries. The value of these harvests represented only around 0.2 percent of the total value of domestic fisheries in Alaska. By 1991, the amount of groundfish handled by domestic processors was nearly ten times greater than the amount of salmon, crab, halibut, and other species combined, and accounted for about 39 percent of the ex-vessel value of all Alaska fishery resources. Since 2001, groundfish has accounted for over half of the total ex-vessel value (Figure 3).

While the fishery management and development policies for the Bering Sea/Aleutian Islands (BSAI) and GOA groundfish fisheries have resulted in high levels of catch, revenues, and employment, the race for fish as a principal mechanism for managing the groundfish quotas and prohibited species catch limits among competing fishing operations has adversely affected at least some aspects of the economic performance of the fisheries. The individual fishing quota (IFQ) program for the fixed gear sablefish and halibut fisheries, the Community Development Quota (CDQ) program for BSAI groundfish, the American Fisheries Act (AFA) cooperatives for the BSAI pollock fishery, and newly implemented crab rationalization program, and GOA Rockfish Pilot Program have all demonstrated that eliminating the race for fish and replacing it with a market-based system can reduce excess fishing capacity, decrease harvesting and processing costs and increase the value of the groundfish catch.

²¹ All the information presented in this section is from NMFS (2004) unless cited otherwise.

²² Beginning with the Presidential Proclamation of a U.S. EEZ in 1983, and culminating in 1986 with PL 99-659, the EEZ superseded the Fisheries Conservation Zone as the coastal area within which the United States exerts the right to control marine fishing activity.

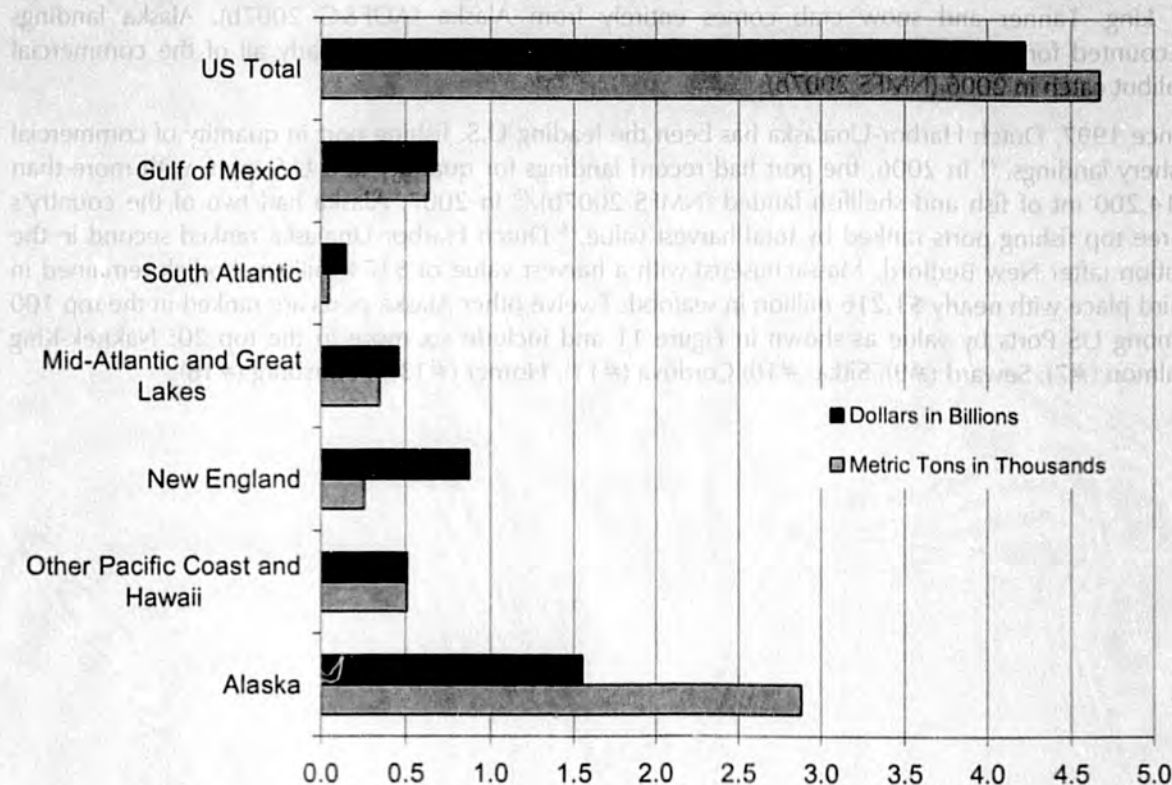
3 Alaska's Seafood Industry in the U.S. and Global Markets

The purpose of this chapter is to demonstrate the importance of Alaska's seafood industry in the U.S. and global seafood industries in terms of volume and value of landings.

3.1 National Importance of Alaska Seafood Industry

In 2007, Alaska led all regions in seafood harvest volume, with landings of 2.88 million mt (Hiatt, 2008a), followed by the Gulf of Mexico with 0.63 million mt (NMFS 2008). Alaska also led all regions in ex-vessel value, with \$1.55 billion,²³ followed by the New England Region with \$872 million and the Gulf of Mexico with \$681 million. Figure 10 shows seafood product and ex-vessel value by region as well as total US volume and value.

Figure 10. Comparison of Alaska and US Volume and Ex-Vessel Value of Commercial Fishery Landings, 2007



Source: Developed by Northern Economics based on data from Hiatt (2008b) and NMFS (2008b).

All of Alaska fisheries combined accounted for 62 percent of the volume and 37 percent of the ex-vessel value of the commercial seafood harvested in the United States as reported in NMFS (2008a). The groundfish fishery off Alaska is an especially important segment of the U.S. fishing industry. With landings of 2.4 million mt in 2007, Alaska groundfish accounted 51 percent of U.S. commercial fishery landings by volume.

²³ Includes an imputed \$310 million in ex-vessel value from harvests of catcher processors.

As discussed earlier, pollock is the most dominant species in the commercial groundfish catch off Alaska. With the exception of *de minimus* harvests off of the coast of Washington, all of the pollock landed in the United States is harvested in the fishery off the coast of Alaska. This fishery is the largest U.S. fishery by volume, accounting for more than one-third of total U.S. fisheries landings (Knapp 2006a). Pacific cod is the second most dominant groundfish species harvested off Alaska. Pacific cod now accounts for more than 95 percent of the U.S. domestic cod harvest, and more than 99 percent of this harvest is from Alaska waters (Knapp 2006b). The yellowfin sole and rock sole fisheries off Alaska are the largest flatfish fisheries in the United States. The two flatfish species account for approximately half of U.S. flatfish landings from the Pacific and Atlantic Oceans combined. Yellowfin sole is landed only in Alaska, and rock sole almost entirely so (West Coast landings comprise less than one percent of total U.S. landings for the species) (Roberts and Stevens 2006). Alaska landings accounted for 71 percent of the commercial sablefish catch in 2006 (NMFS 2007b).

With respect to non-groundfish species, Alaska accounted for 96 percent of total U.S. commercial landings of salmon in 2006 (NMFS 2007b). The BSAI and GOA together produce approximately one-third or more of total U.S. crab catches on average (Woodby et al. 2005). U.S. domestic production of king, Tanner and snow crab comes entirely from Alaska (ADF&G 2007b). Alaska landings accounted for 97 percent of the U.S. Pacific sea herring harvest and nearly all of the commercial halibut catch in 2006 (NMFS 2007b).

Since 1997, Dutch Harbor-Unalaska has been the leading U.S. fishing port in quantity of commercial fishery landings.²⁴ In 2006, the port had record landings for quantity at a U.S. port, with more than 414,200 mt of fish and shellfish landed (NMFS 2007b).²⁵ In 2007, Alaska had two of the country's three top fishing ports ranked by total harvest value.²⁶ Dutch Harbor-Unalaska ranked second in the nation (after New Bedford, Massachusetts) with a harvest value of \$174 million; Kodiak remained in third place with nearly \$1,216 million in seafood. Twelve other Alaska ports are ranked in the top 100 among US Ports by value as shown in Figure 11 and include six more in the top 20: Naknek-King Salmon (#7), Seward (#9), Sitka (#10) Cordova (#11), Homer (#13), Petersburg (#16).

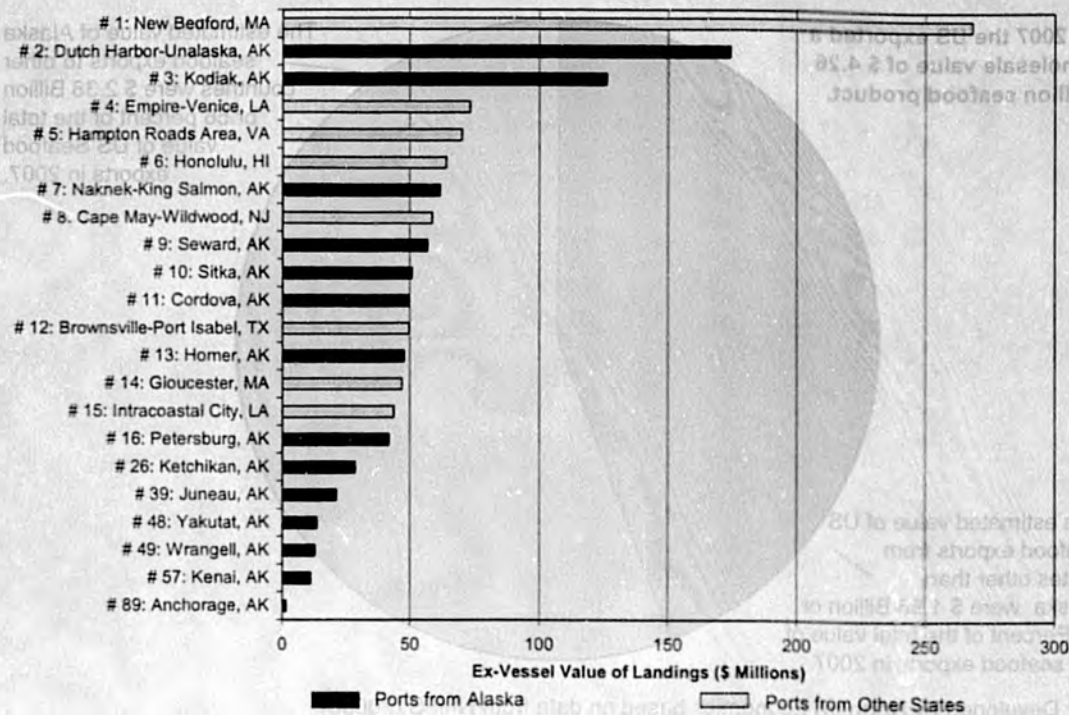


²⁴ To protect the confidentiality of proprietary data, NMFS (2007b) does not include certain leading ports. The ports of Akutan, King Cove and Sand Point are typically not listed among the top U.S. ports because each has only one fish processor/buyer; therefore, data regarding total landed weight and value at these ports are confidential. However, the American Fisheries Act of 1998 opened data associated with BSAI pollock fisheries to public scrutiny, and based on Bering Sea pollock data alone, the three communities would all be in the top 50 in terms of landed weight, with Akutan ranking in the top ten.

²⁵ In 2002, Dutch Harbor-Unalaska surpassed the 32-year volume record of 385,500 mt. held by Los Angeles.

²⁶ Dutch Harbor-Unalaska was the leading U.S. port ranked by dollar value of landings for eight years, from 1992 through 1999, before being displaced by New Bedford.

Figure 11. Rankings of Selected US Ports by Ex-Vessel Value, 2007



Source: Developed by Northern Economics based on data from NMFS (2008c).

Alaska is also one of the primary sources of US exports of seafood product. As shown in Figure 12, it is estimated that Alaska exported seafood worth \$2.38 billion in wholesale value in 2007²⁷. This was 56 percent of the total export value of US seafood product (NMFS, 2008b). The export value of seafood from all other states combined was only 44 percent of the total.

As shown in Figure 13, Japan, China, and South Korea were the three leading importers of Alaska seafood products in 2007. Germany, the Netherlands and other countries in Europe have become increasingly more important for exporters of Alaska Seafood. For fisheries outside of Alaska, the leading importer is Canada.

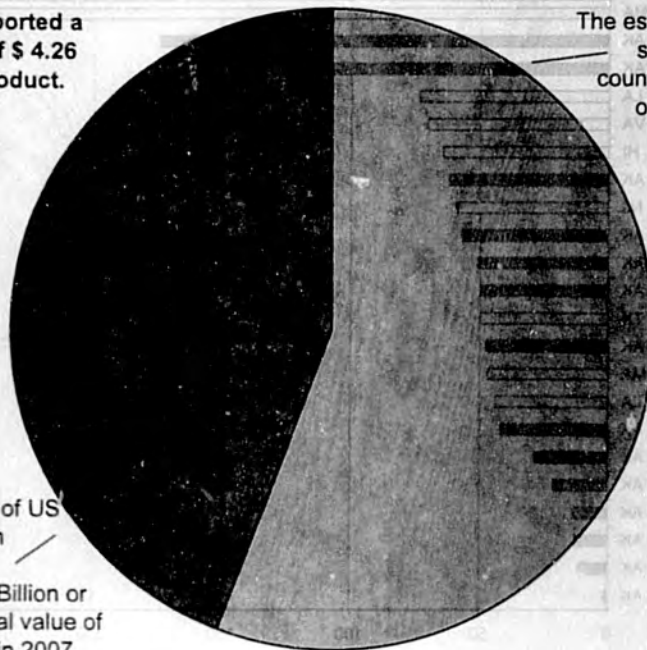
²⁷ Estimates of the value of exports from a particular state or region are somewhat imprecise because export data are reported by species, product, and the US Customs District from which the fish was exported. Because Seattle is a major export port for Alaska seafood, the possibility exists that some of the amounts attributed to Alaska may have originated from other fisheries, particularly where similar species and products are produced in different fisheries served by the same export district.

Figure 12. Alaska Seafood Exports as a Percent of Total US Seafood Export Value, 2007

In 2007 the US exported a wholesale value of \$ 4.26 Billion seafood product.

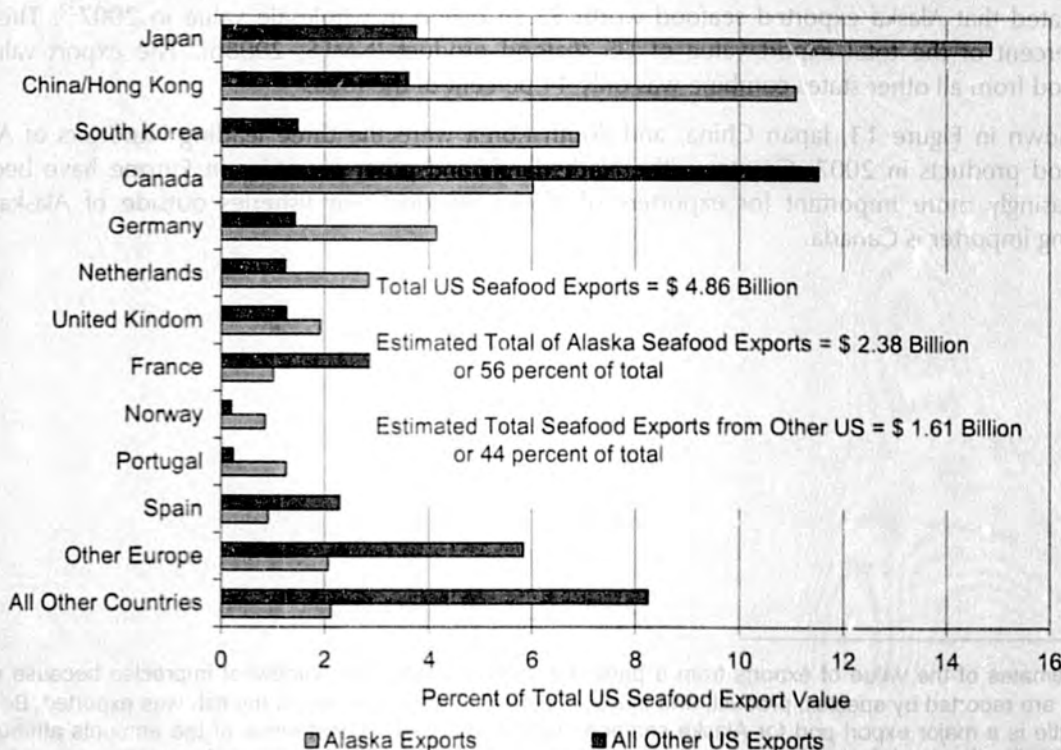
The estimated value of Alaska seafood exports to other countries were \$ 2.38 Billion or 56 percent of the total value of US Seafood exports in 2007.

The estimated value of US seafood exports from States other than Alaska were \$ 1.88 Billion or 44 Percent of the total value of US seafood exports in 2007.



Source: Developed by Northern Economics based on data from NMFS (2008b).

Figure 13. Primary Destinations of Alaska and Other US Seafood Exports, 2007

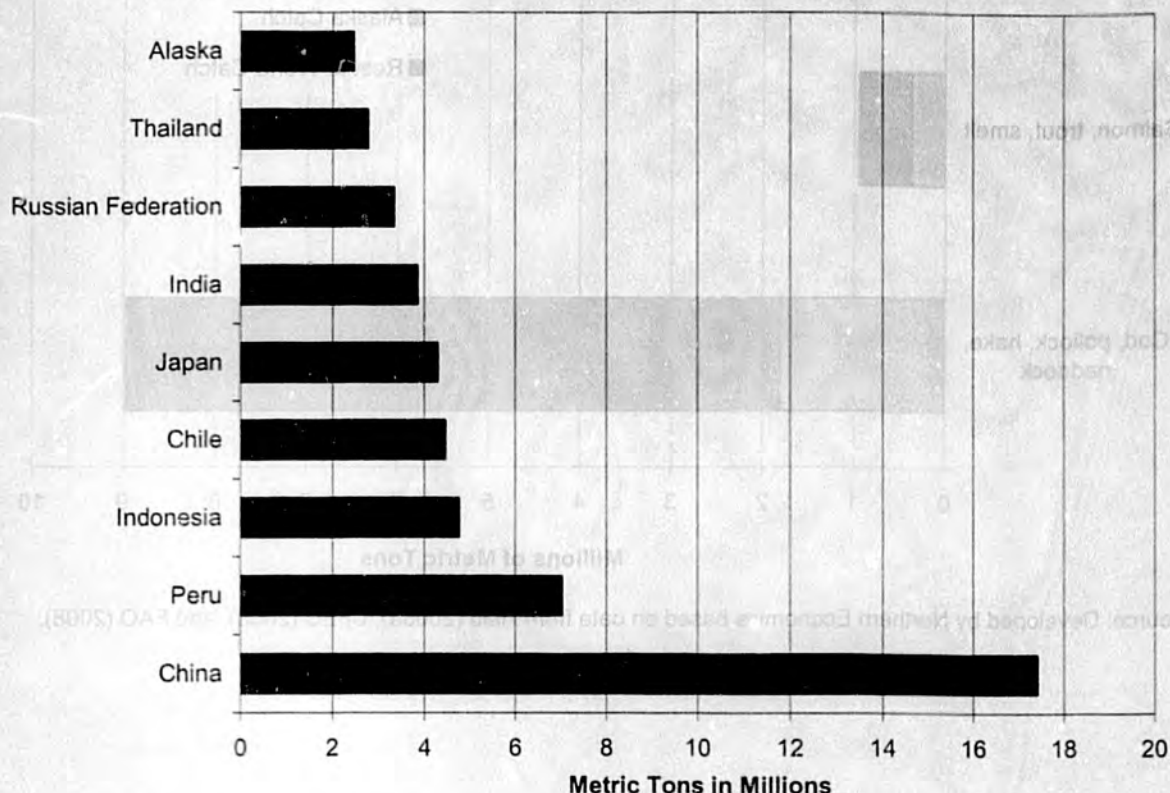


Source: Developed by Northern Economics based on data from NMFS (2008c).

3.2 International Importance of Alaska Seafood Industry

As described in the previous section, exports of Alaska enter markets around the world. Because seafood is one of the most internationally traded products in the world, it is also of interest to examine the Alaska seafood industry in the larger context of worldwide capture fish production. As shown in Figure 14, if Alaska were a nation, it would have placed 9th among seafood producing countries in 2006. (Hiatt, 2008a and FAO, 2008).

Figure 14. Top World Capture (Wild) Seafood Producers by Country plus Alaska, 2006

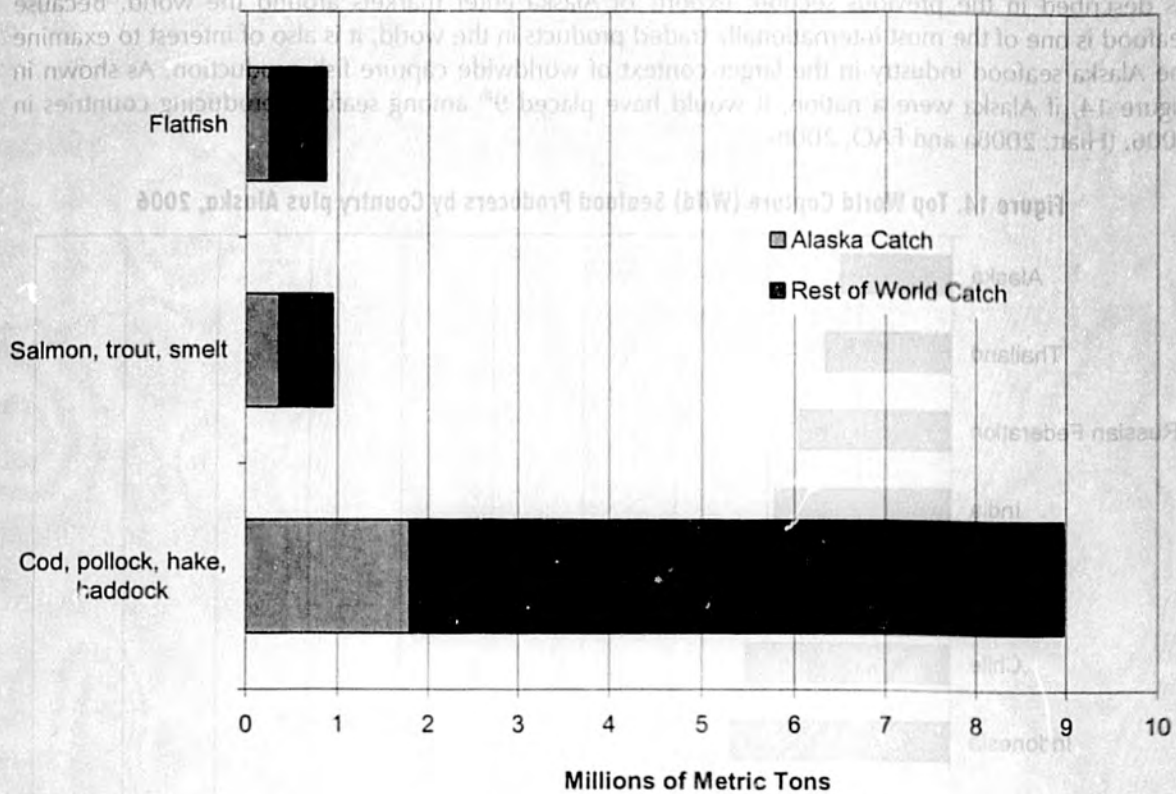


Note: Global harvest data for 2007 were not available at the time this report was prepared.

Source: Developed by Northern Economics based on data from Hiatt (2008a) and FAO (2008).

The global importance of Alaska fisheries increases if one focuses on the landings of certain species or species groups. The groundfish fishery in the waters off Alaska is among the largest fisheries from a global perspective. As shown in Figure 15, Alaska landings of traditional groundfish species (including cod, pollock, hake and haddock) and flatfish accounted for about one-fifth of the world harvest of these species groups in 2006. In the same year, around 42 percent of the world capture production of species in the "salmon, trout, smelt" group occurred in Alaska waters. Alaska is the top producer of wild, high-value salmon, producing nearly 80 percent of the world supply of wild king, sockeye and coho (ADF&G 2003b).

Figure 15. Comparison of Alaska and International Volume of Commercial Fishery Landings by Species Group, 2006



Source: Developed by Northern Economics based on data from Hiatt (2008a), CFEC (2008), and FAO (2008).

4 Current Role of the Seafood Industry in Alaska's Economy

This chapter demonstrates the economic importance of the seafood industry in the State of Alaska as a whole. Economic effects are measured in terms of the total employment and income generated, ex-vessel value and first wholesale value of commercial landings, amount of taxes and fees paid, and total output. In addition, the analysis differentiates the economic impacts by region, residency, fisheries jurisdiction and major species or species group. In general, information from 2007 is described. However, 2007 data on workforces and residency were not available at the time of this publication; therefore information for 2006 is reported.

This chapter also examines the economic effects of two commercial fisheries-related areas of interest: 1) in-state expenditures for commercial fisheries management and research by state and federal agencies and 2) the Community Development Quota Program, a federal fisheries program established in 1992 with the goal of promoting fisheries-related economic development in western Alaska

4.1 Statewide Economic Impacts

The total ex-vessel value of Alaska's commercial fish and shellfish harvest was \$1.55 billion in 2007. The value added by Alaska's seafood processing sector brought the total value of Alaska's commercial landings to over \$3.63 billion in 2007 (Hiatt 2008a).

In 2006, an estimated 56,606 individuals worked in Alaska's seafood industry. Of that total number of workers, about half (27,713) were employed in the seafood harvesting sector and half (28,893) had jobs in the seafood processing sector (ADOLWD, 2007d and Hiatt, 2008a).

The above employment estimates include individuals working in the at-sea processing sector. ADOLWD does not collect complete employment data for this sector because they do not submit (nor are they required to submit) standard employment forms (ES-202) to the agency. To account for these additional workers, Northern Economics collected crew capacity estimates for catcher processors; these estimates suggest that the at-sea processing sector creates about 3,102 processing jobs and 968 harvesting jobs. Counts of jobs are not directly comparable to counts of workers because employee turnover is not factored in. Based on discussions with seafood industry representatives, it was assumed that each processing and harvesting job in the at-sea sector is filled twice per year.

The direct employment generated by the seafood industry creates income in the form of wages and salaries in the processing sector and crew and skipper shares in the harvesting sector. Data from ADOLWD only include gross earnings of the seafood harvesting workforce. Gross earnings are not directly comparable to wages because fishing expenses, such as fuel and oil, bait, ice, and food and stores, have not been deducted. Therefore, the income of harvesters was estimated using a rule of thumb previously developed by Northern Economics based on discussions with seafood industry representatives—in most cases payments to harvesting labor were assumed to be 35 percent of ex-vessel value²⁸. Payments to harvesting and processing labor for the at-sea sector are based on the assumption that employees receive 25 percent of the first wholesale value. Within the total paid to all at-sea employees, it is assumed that members of the harvesting crews receive 35 percent of an imputed ex-vessel value, had the fish been caught and harvested by independent catcher vessels.

²⁸ This is an across-the-board average that represents all fisheries as a whole.

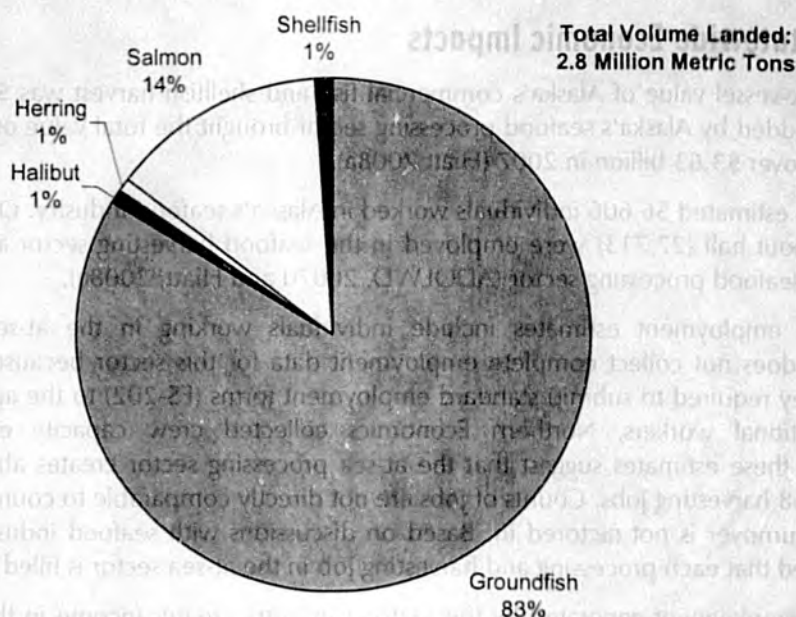
The total payments to labor by the seafood industry in 2007 were estimated to be \$1.04 billion. Of that total, and \$500 million (48 percent) were estimated to have been paid to the workers in the processing sector, and \$543 million (52 percent) were paid to workers in the harvesting sector.²⁹

4.2 Economic Impacts by Major Species

This section breaks down the economic impacts of Alaska's seafood industry in 2007 by major species or species group landed and processed in the state—primarily crab and other shellfish, flatfish, halibut, herring, Pacific cod, pollock, other groundfish (including Atka mackerel, rock fish, sablefish, and miscellaneous groundfish) and salmon.

In 2007, Alaska's fisheries landed a total of 2.8 million metric tons of seafood. Figure 16 shows that more than 83 percent of the seafood landed was groundfish, while 14 percent landed was salmon.

Figure 16. Percentage of Volume Landed by Species, 2007



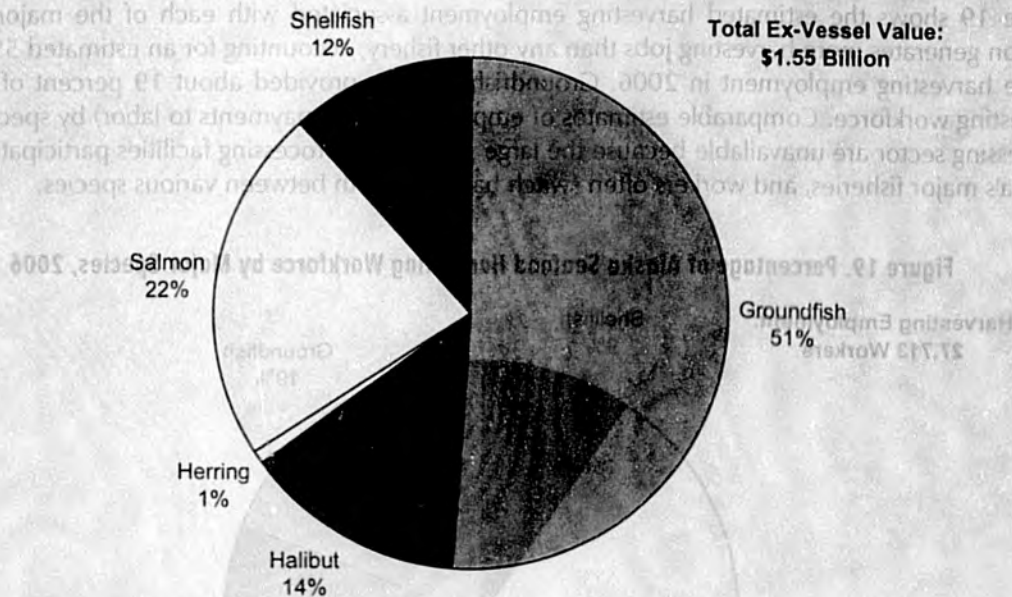
Source: Developed by Northern Economics based on data from Hiatt (2008a).

4.2.1 Ex-vessel Value

Figure 17 shows the distribution of the total ex-vessel value of \$1.55 billion in 2007 by major species, including an imputed value for fish harvested by catcher processors. Salmon generates more harvesting jobs than any other fishery, but in terms of both volume and value, the state's largest fishery is groundfish, where a relatively small number of large boats catch huge quantities of fish, predominantly pollock, without requiring proportionate increases in manpower (Robinson and Gilbertsen 2006). In 2007, groundfish fisheries accounted for about 51 percent of the overall ex-vessel value of Alaska's commercial fisheries, while salmon fisheries accounted for about 22 percent.

²⁹ Estimated by Northern Economics using data from ADOLWD (2008a), CFEC (2008), and Hiatt (2008a).

Figure 17. Percentage of Ex-vessel Value of Alaska Seafood Industry Harvest by Major Species, 2007

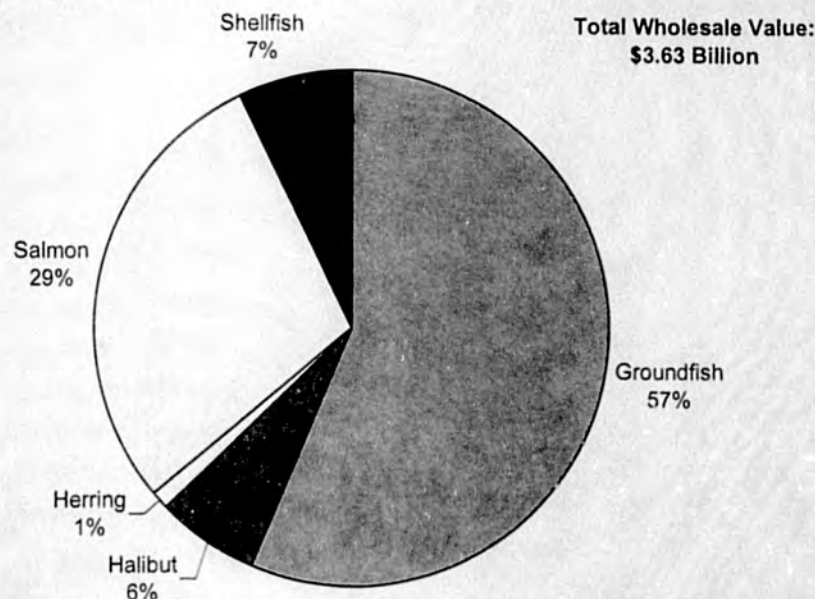


Source: Developed by Northern Economics based on data from Hiatt (2008a).

4.2.2 First Wholesale Value

Groundfish fisheries accounted for around 57 percent of the total first wholesale value of Alaska seafood products in 2007, and salmon fisheries accounted for 29 percent (Figure 18). Species-specific annual estimates of first wholesale value should not be directly compared to estimates of ex-vessel value, because the data are collected by different agencies and wholesale transactions may occur in different years than harvests.

Figure 18. Percentage of First Wholesale Value of Alaska Seafood Industry Harvest by Major Species, 2007



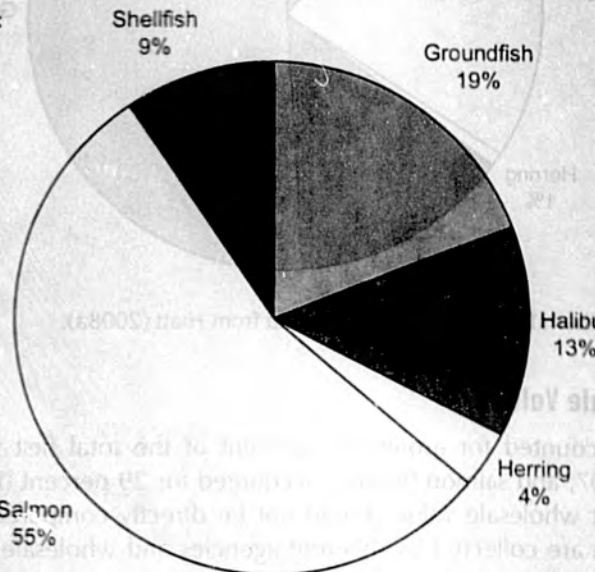
Source: Developed by Northern Economics based on data from Hiatt (2008a).

4.2.3 Employment

Figure 19 shows the estimated harvesting employment associated with each of the major species. Salmon generates more harvesting jobs than any other fishery, accounting for an estimated 55 percent of the harvesting employment in 2006. Groundfish fisheries provided about 19 percent of the total harvesting workforce. Comparable estimates of employment (and payments to labor) by species in the processing sector are unavailable because the large shorebased processing facilities participate in all of Alaska's major fisheries, and workers often switch back and forth between various species.

Figure 19. Percentage of Alaska Seafood Harvesting Workforce by Major Species, 2006

Harvesting Employment:
27,713 Workers



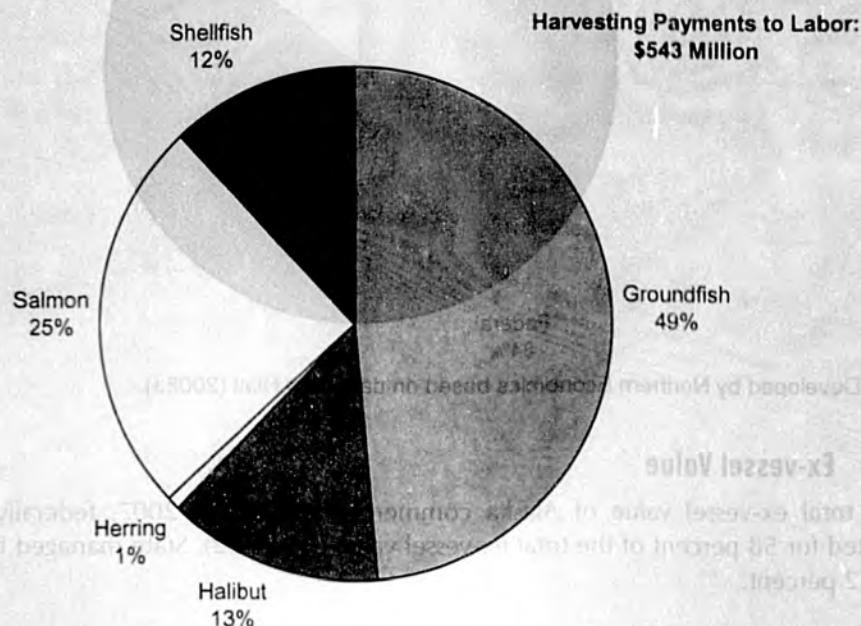
Note: Workforce estimates for 2006 were not available at the time this report was prepared.

Source: Developed by Northern Economics from ADOLWD (2007a) and Hiatt (2008a).

4.2.4 Payments to Labor

Although salmon fisheries provided the most jobs, pollock and other groundfish fisheries generated the greatest amount of payments to labor in 2007 (Figure 20). Groundfish generated 49 percent of payments to labor, while salmon provided 25 percent. As discussed above, it is not possible to estimate payments to labor by species for the processing sector, because workers at large shore plants work on many different species during the course of their employment.

Figure 20. Percentage of Alaska Seafood Harvesting Payments to Labor by Major Species, 2007



Source: Developed by Northern Economics from ADOLWD (2008b) and Hiatt (2008a).

4.3 Economic Impacts by Fisheries Jurisdiction

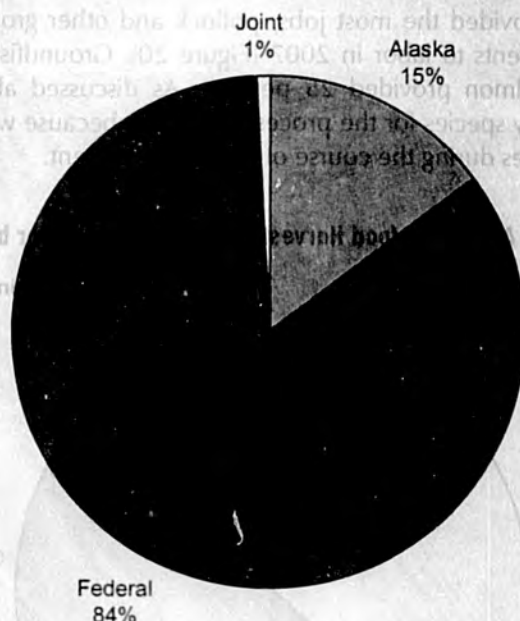
This section separates the economic impacts of Alaska's seafood industry according to fisheries jurisdiction. Fisheries in Alaska are under state management, federal management or joint-management (these are primarily fisheries in federal waters managed by the State of Alaska under federal delegation). The federal government has primary jurisdiction over groundfish, halibut (in cooperation with the IPHC) and most sablefish fisheries. Joint jurisdiction, resulting from a federal delegation of authority, is found in the Bering Sea crab fisheries as well as in the Southeast Alaska Chinook salmon troll fishery. The state has primary jurisdiction over all other major fisheries in Alaska, including salmon and herring. In addition, it manages inshore sablefish fisheries in Southeast Alaska and a portion of the pollock and Pacific cod fisheries.

Because most shore-based processing plants process fish from all jurisdictions, often simultaneously, data to estimate harvesting and processing employment by fisheries jurisdiction are not available.

Figure 21 shows that of the 2.8 million metric tons that was landed in 2007, 84.4 percent was landed in federally managed waters. As mentioned above the federal government has primary jurisdiction over groundfish and halibut.

Figure 21. Percentage of Volume Landed of Alaska Seafood Industry by Fisheries Jurisdiction, 2007

**Total Volume Landed:
2.8 Million Metric Tons**



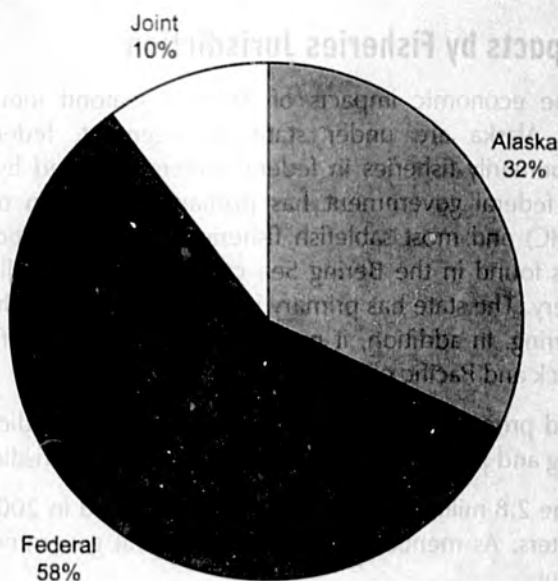
Source: Developed by Northern Economics based on data from Hiatt (2008a).

4.3.1 Ex-vessel Value

Of the total ex-vessel value of Alaska commercial landings in 2007, federally managed fisheries accounted for 58 percent of the total ex-vessel value (Figure 22). State managed fisheries represented about 32 percent.

Figure 22. Percentage of Ex-vessel Value of Alaska Seafood Industry by Fisheries Jurisdiction, 2007

**Total Ex-Vessel Value:
\$1.55 Billion**



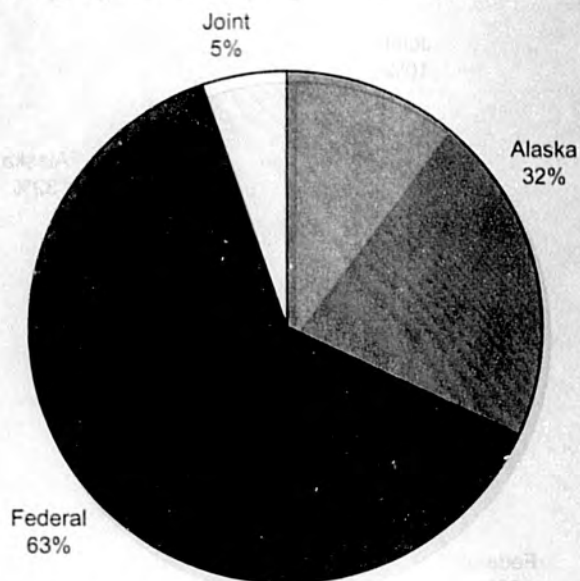
Note: Includes imputed ex-vessel values of fish harvested by catcher processors
Source: Developed by Northern Economics based on data from Hiatt (2008a).

4.3.2 First Wholesale Value

As shown in Figure 23, the first wholesale value of seafood caught in federal fisheries represented about 63 percent of the total value of \$3.63 billion in 2007. Harvests from state-managed fisheries accounted for about 32 percent of the total first wholesale value, with joint fisheries accounting for the remaining 5 percent.

Figure 23. Percentage of Wholesale Value of Alaska Seafood Industry by Fisheries Jurisdiction, 2007

Total Wholesale Value:
\$3.63 Billion



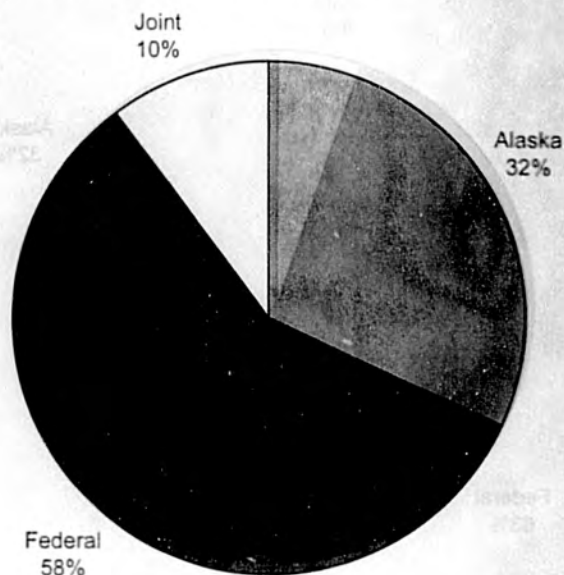
Source: Developed by Northern Economics based on data from Hiatt (2008a).

4.3.3 Payments to Labor

Figure 24 shows the estimated harvesting payments to labor associated with each of the three fisheries jurisdictional areas. Fisheries under federal jurisdiction accounted for the largest share (58 percent) of payments to labor in 2007. State fisheries accounted for about 32 percent of payments to labor. Comparable estimates of payments to labor in the processing sector are unavailable because the large processing facilities receive fish and shellfish caught in all jurisdictional areas.

Figure 24. Percentage of Alaska Seafood Harvesting Payments to Labor by Fisheries Jurisdiction, 2007

Total Payments to Labor:
\$543 Million

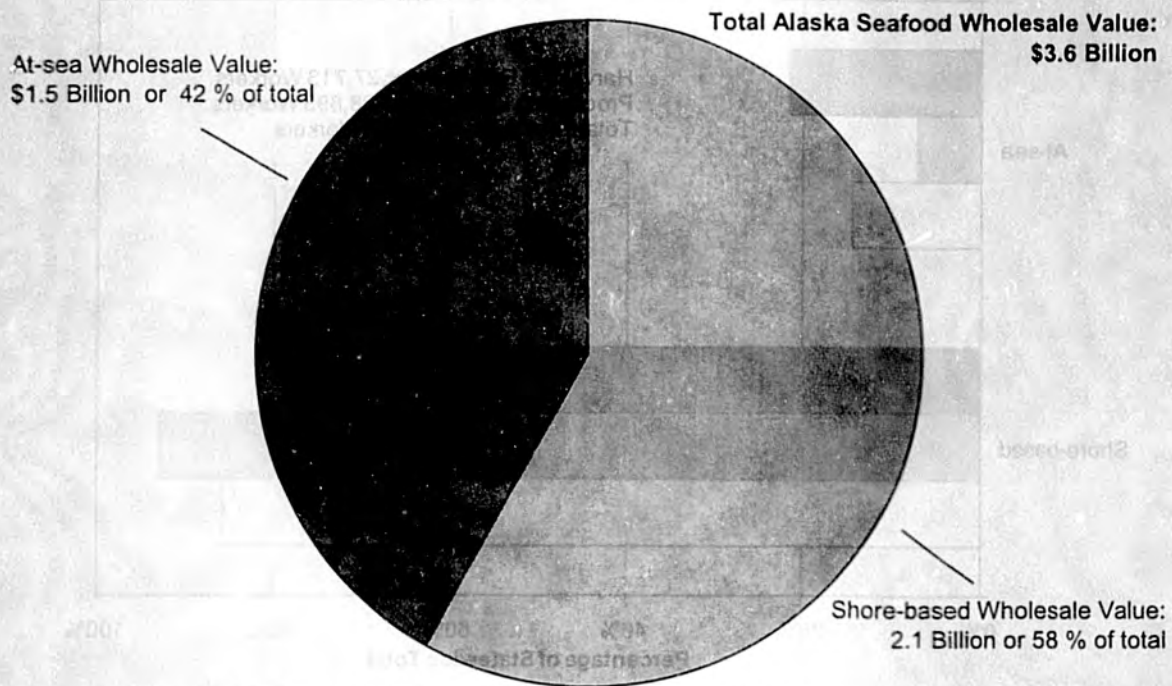


Source: Developed by Northern Economics from Hiatt (2008a).

4.4 Comparison of Shore-based and At-Sea Sectors

The at-sea fisheries make an important contribution to the Alaska fisheries. The at-sea sector, is primarily involved in the capture and processing of Bering Sea and Aleutian Island resources, mainly groundfish but also some at-sea crab and halibut.³⁰ In addition, some at-sea processing is done in the Gulf of Alaska. Figure 25 shows the percentage of first wholesale value of the Alaska seafood industry harvest in 2007 divided between the at-sea and shore-based sectors. In 2007 the total wholesale value was \$3.6 billion and 42 percent, (\$1.5 billion) of that came from the at-sea sector.

Figure 25. Percentage of Wholesale Value of Alaska Seafood Industry, At-sea and Shore-based, 2007



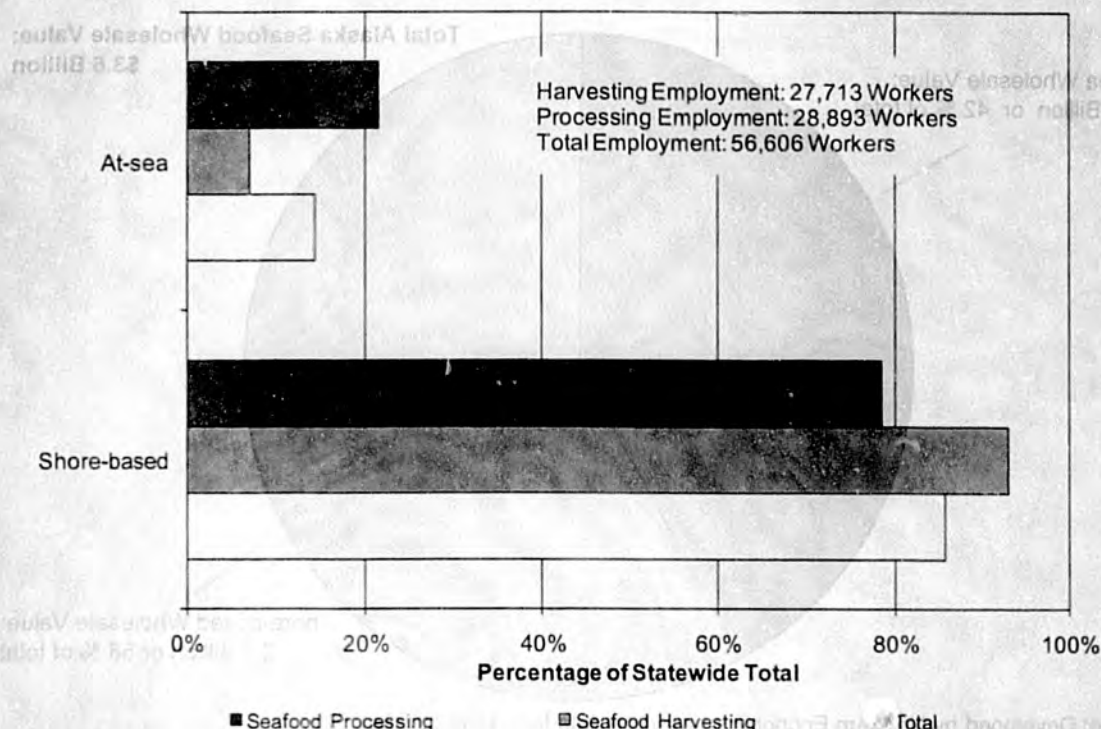
Source: Developed by Northern Economics based on data from Hiatt (2008a).

³⁰ The at-sea numbers also includes small amounts of fish landed at shore plants outside Alaska.

Figure 26 shows the number of workers employed in seafood harvesting and seafood processing divided between the at-sea and shore-based sectors in 2006.³¹ The figure shows percentages of Alaska seafood processing and harvesting workforce in the at-sea and shore-based sectors, as well as percentages of the state's total seafood industry in at-sea and shore-based sectors.

The figure shows that 93 percent of the harvesting jobs and 79 percent of the processing jobs are found in the shore-based sector of the industry.

Figure 26. Percentage of Alaska Seafood Processing and Harvesting Workforce in the At-sea and Shore-based Sectors, 2006



Note: Workforce refers to the number of individual workers employed in an industry for any amount of time during the year.

Source: Developed by Northern Economics from ADOLWD (2007a) and Hiatt (2008a).

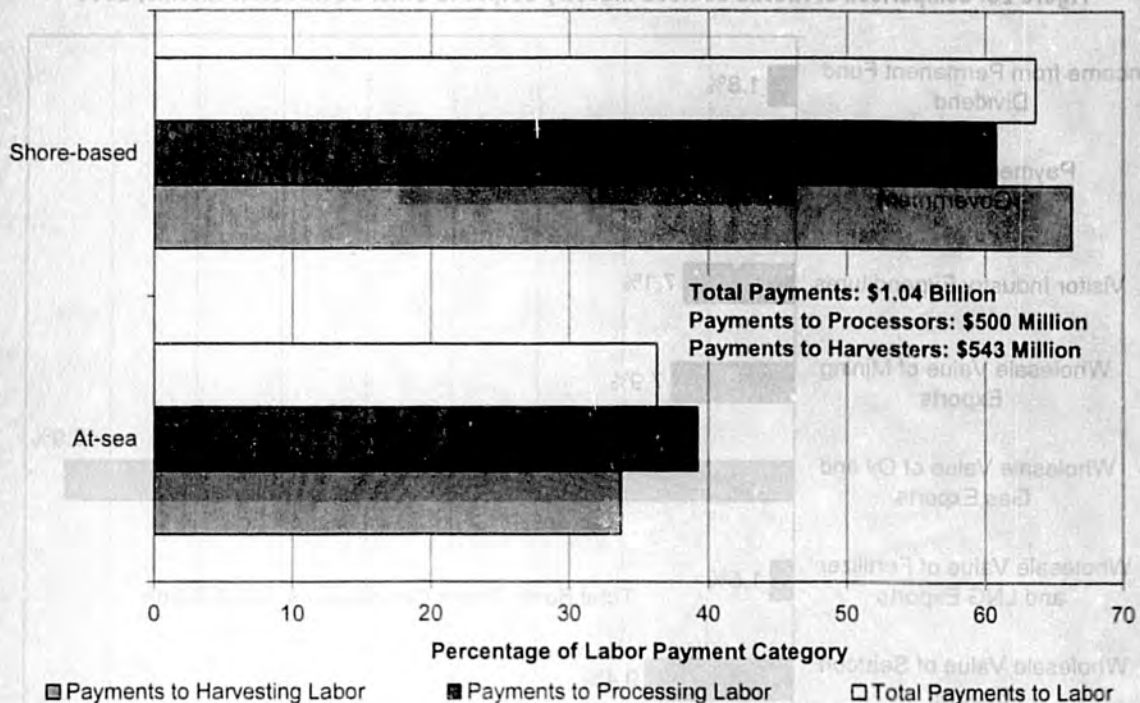
Figure 27 shows the percentages of Alaska seafood industry payments to labor divided between the at-sea and shore-based sectors in Alaska in 2007. The estimated total payment to labor was \$1.04 billion. Payments to the shore based sector accounted for 64 percent of the all payments to labor, while the at-sea sector accounted for 36 percent.

In total, the figure shows that 36 percent of total payments to labor went to the at-sea sector. As indicated in Figure 26 above, it is estimated that the at-sea sector accounted for only about 14 percent of seafood industry workforce in 2006. One reason that the payments to labor in the at-sea sector are disproportionately large in comparison to the number of employees is that on average they are employed for relatively long periods of time. In addition, unlike shore-side processing workers, who are usually paid an hourly wage, the majority of at-sea processing workers are paid by

³¹ Workforce estimates of the shore-based processing sector for 2007 were not available at the time of this publication, and therefore these numbers reflect the estimated workforces in 2006.

percentage of catch or by what is called a case rate based on the market value of the product being produced.

Figure 27. Percentage of Alaska Seafood Industry Payments to Labor in the At-sea and Shore-based Sectors, 2007



Source: Shore-based processing estimates from ADOLWD (2008b). Harvesting and at-sea estimates were based on data from Hiatt (2008a).

4.5 Statewide Importance of Alaska Seafood Industry

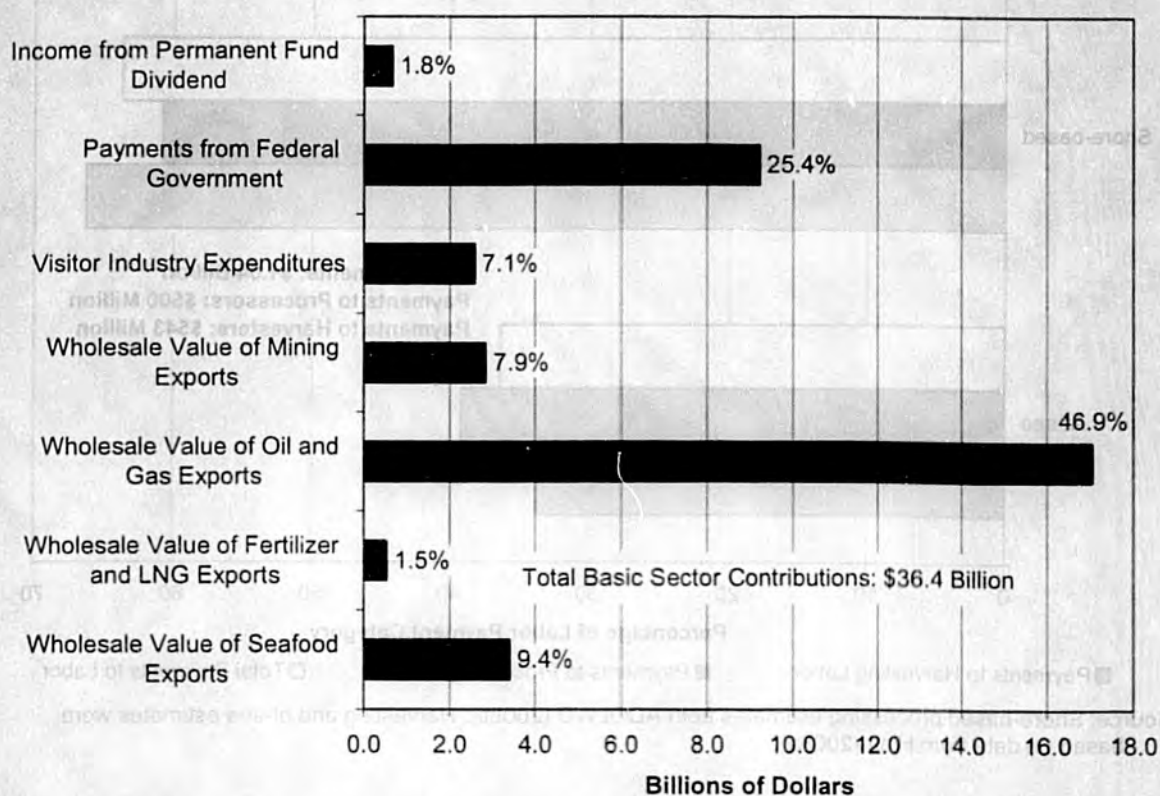
The seafood industry is a particularly important component of Alaska's economy because it is a major part of the basic sector. By bringing money into the State from outside sources, the basic sector is considered the "engine" of the economy. The non-basic sector, which consists of firms that sell goods and services to local businesses and consumers, is dependent on the basic sector to keep the economy running. In addition to the seafood industry, Alaska's basic sector includes the Cook Inlet and North Slope oil and gas industry, mining industry, tourism, payments from the federal government and the Permanent Fund.

Figure 28 provides a comparison of the contributions of the components of the basic sector to Alaska's economy. Northern Economics estimated that the basic sector brought approximately \$36.4 billion into the state in 2006.³² Of this total, the seafood industry contributed \$3.4 billion, or 9.4 percent. This estimate does not include federal government expenditures on commercial fisheries management and research in Alaska (Section 4.8). The seafood industry ranks third in importance behind the North Slope oil and gas industry and federal government in terms of generating basic

³² The estimate of basic sector income does not include private investment income or private pension income earned by individuals or entities such as the Alaska Native Corporations. Reliable estimates of the income of these components of the basic sector were not readily available.

economic activity in Alaska. According to ADCCED (2007), seafood is Alaska's top international export—seafood exports accounted for half of the state's total export value.³³ Exports of Alaska seafood were shown in Figure 12 and Figure 13 in the discussion of the importance of Alaska seafood in the global seafood market.

Figure 28. Comparison of Alaska Seafood Industry Output to Other Basic Sector Income, 2006



Note: At the time of publication 2007 data were not available for all sectors, so 2006 data were used.

Source: Developed by Northern Economics based on data from ADOR (2007b), U.S. Census Bureau (2007), ADCCED (2007b) Cruise Line International Association (2006), Alaska Office of the Governor (2007); and Hiatt (2008a)

As discussed in Section 4.5.1 below, Alaska's seafood industry generates millions of dollars in revenue through taxes and fees paid to the state and local governments. A testament to the longtime importance of the seafood industry in Alaska is the fact that the 1899 fisheries business tax is the oldest tax in the state (Alaska Department of Revenue 2006a).³⁴ While Alaska's seafood industry is currently far overshadowed by the state's petroleum industry in terms of generating state tax revenues, it is worth noting that since fish is a renewable resource, its long-term value to Alaska's economy ultimately has the potential to be greater than that of non-renewable petroleum (ADCCED 2002).

³³ ADCCED's export figure may understate the importance of Alaska's seafood industry due to the way in which the exports are monitored. Unlike Alaska's mineral and timber resources, which are for the most part shipped directly from Alaska ports, much of Alaska's seafood harvest, is first transported to Seattle and other Puget Sound area cities before being shipped to foreign countries. As a result, these products of Alaska origin are counted as exports from the State of Washington.

³⁴ In 1899, the U.S. Congress adopted a "salmon case" tax to fund fisheries-related activities in pre-territorial Alaska (ADOR 2006a).

Employment statistics also provide a sense of the scale of the economic contribution of the seafood harvesting and processing sectors to the Alaska economy. Extending a trend begun four years ago, total earnings and employment in the Alaska seafood industry are some of the highest in recent years. Including all harvesting and processing, Alaska's seafood industry is the largest private sector employer in the state.³⁵ In 2005, seafood harvesting jobs accounted for 3.2 percent of all private sector employment.³⁶ When seafood processing's 3.6 percent is added to harvesting, the combined seafood industry makes up 6.8 percent of Alaska's private sector employment (Robinson and Gilbertsen 2006).

In 2006, seafood processing made up more than one-fifth of the annual average employment in Alaska's "goods producing" sector and accounted for about 80 percent of all manufacturing employment (ADOLWD 2008). No other state has this level of industry concentration (Fried 1996). Eight seafood companies are on the list of Alaska's 100 largest employers (Fried 2007).³⁷

Figure 29 provides a comparison of the size of the Alaska seafood industry workforce (both harvesters and processors) to workforces in other sectors for 2006. With an estimated workforce of 56,606, the seafood industry employs more workers than any other industry sector. The retail and wholesale trade sector with a workforce of 56,445 is ranked second, while the government and education sector is third with 52,363 workers.



Notes:
 1) Workforce refers to the number of workers employed for any amount of time during the year.
 2) ADOLWD does not estimate the number of all workers employed in the seafood processing sector. Based on NMFS crew count data for these ports it was estimated that this sector employs about 6,200 processing workers and 1,336 harvesting workers.
 3) 2007 data are not available.
 Source: Developed by Northern Economics based on ADOLWD (2007, 2008) and Hult (2008).

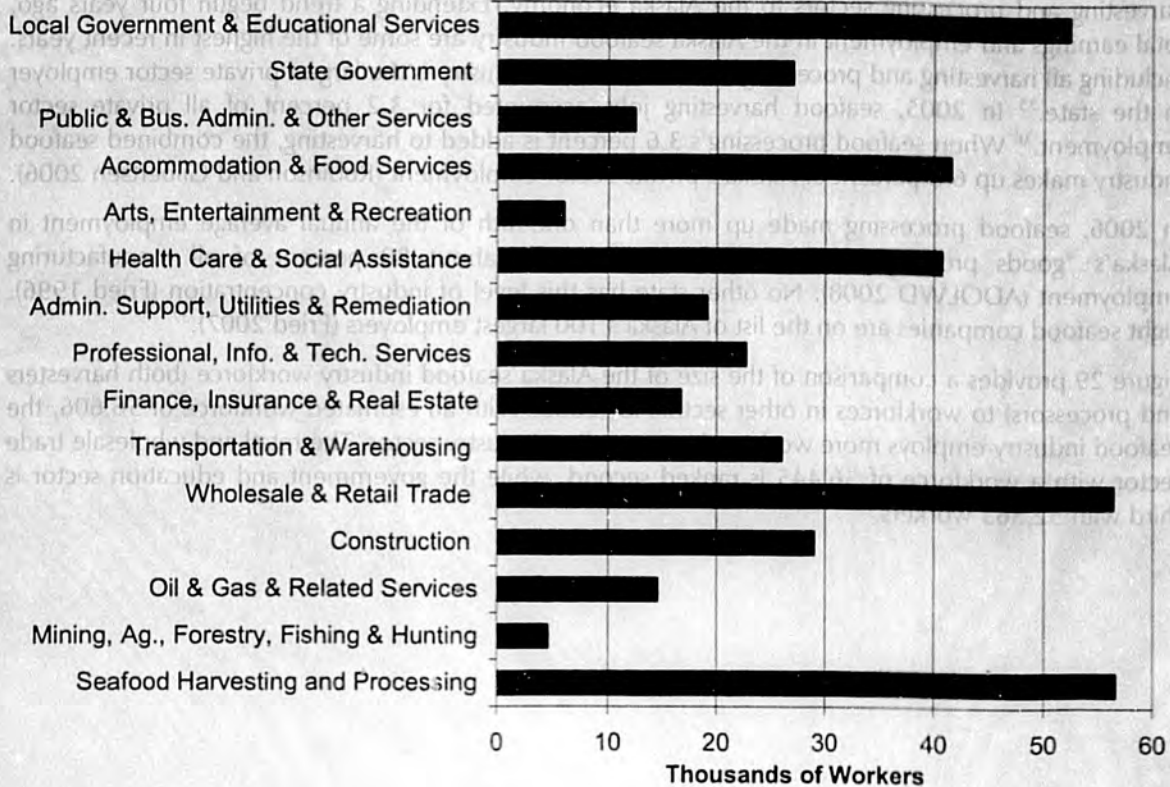
While Figure 29 shows the size of total seafood workforce, Figure 30 below compares annual average employment in the seafood industry with other industries in the state in 2007. Because the seafood industry is very seasonal in nature (see Figure 32), the estimated average number of employees across all months of the year (16,606) is much less than the total size of the seafood workforce. The seafood industry is still the dominant employer among the natural resource-based industries which also include agriculture, forest products, mining and oil and gas.

³⁵ As the state's economy has expanded and diversified, the relative importance of the seafood industry in terms of employment has declined. Two decades ago one of every eight jobs in Alaska's private sector was involved directly in fisheries, and the combined payroll in the seafood processing and harvesting sectors accounted for one-sixth of the state's total private sector economic base (Tremaine 1989).

³⁶ "Private sector employment" is defined here to mean all private wage and salary jobs combined with the fish harvesting employment discussed here. Self-employment, employment in industries not covered by state unemployment insurance laws and all other agricultural employment are excluded (Robinson and Gilbertsen 2006).

³⁷ The eight seafood processing companies on the 2006 *Trends* 100 list and their average monthly employment were Trident Seafoods (1,951), UniSea (923), Icicle Seafoods (783), Westward Seafoods (686), Peter Pan Seafoods (628), Ocean Beauty Seafoods (596), North Pacific Seafoods (402) and NorQuest Seafoods (351).

Figure 29. Comparison of Alaska Seafood Workforce to Workforces in Other Sectors, 2006



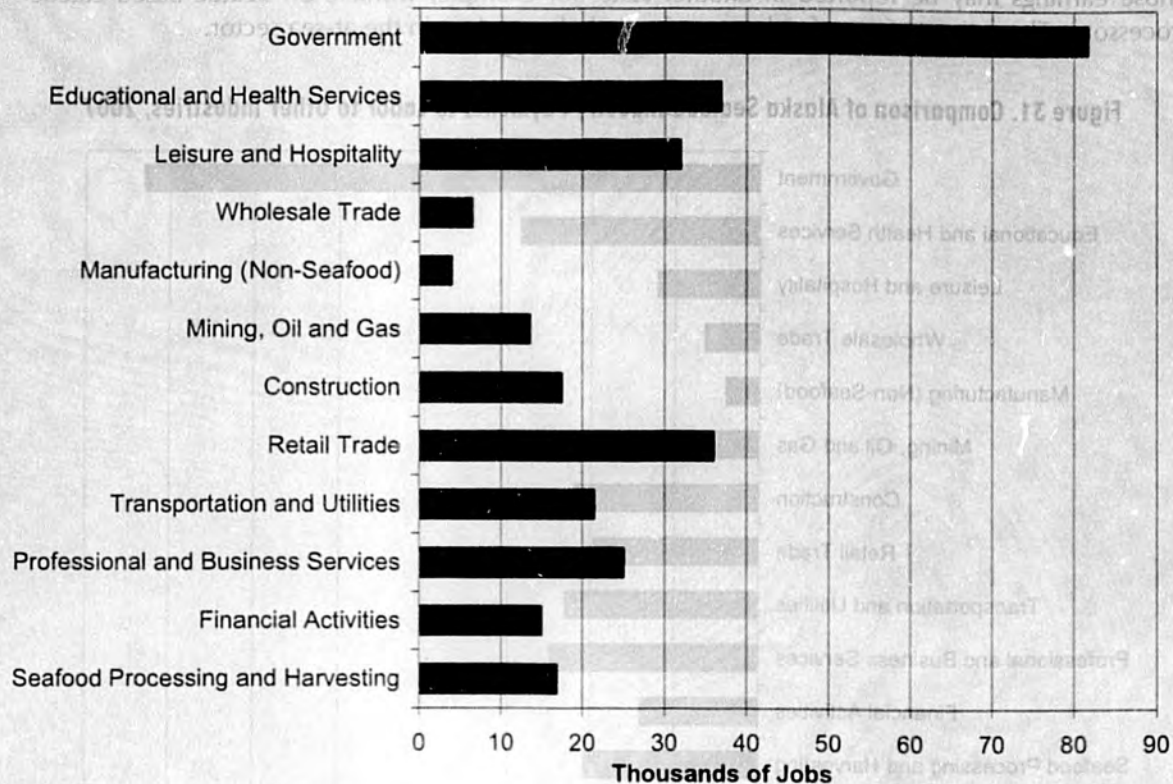
Notes:

- 1) Workforce refers to the number of workers employed for any amount of time during the year.
- 2) ADOLWD does not estimate the number of all workers employed in the at-sea processing sector. Based on NMFS crew count data for these boats it was estimated that this sector employs about 6,203 processing workers and 1,936 harvesting workers.
- 3) 2007 data are not available.

Source: Developed by Northern Economics based on ADOLWD, (2007a, 2008b) and Hiatt (2008a).

While Figure 29 above shows the size of total seafood workforce, Figure 30 below compares annual average employment in the seafood industry with other industries in the state in 2007. Because the seafood industry is very seasonal in nature (see Figure 32), the estimated average number of employees across all months of the year (16,886) is much less than the total size of the seafood workforce. The seafood industry is still the dominant employer among the natural resource-based industries, which also include agriculture, forest products, mining and oil and gas.

Figure 30. Comparison of Alaska Seafood Processing Industry Annual Average Employment to Other Industry Annual Average Employment, 2007



Notes:

- 1) Annual average employment refers to the average number of monthly jobs over the full calendar year.
- 2) Data from ADOLWD do not include jobs in the at-sea processing sector. An estimate of the number of these jobs was derived from NMFS vessel and crew count data.

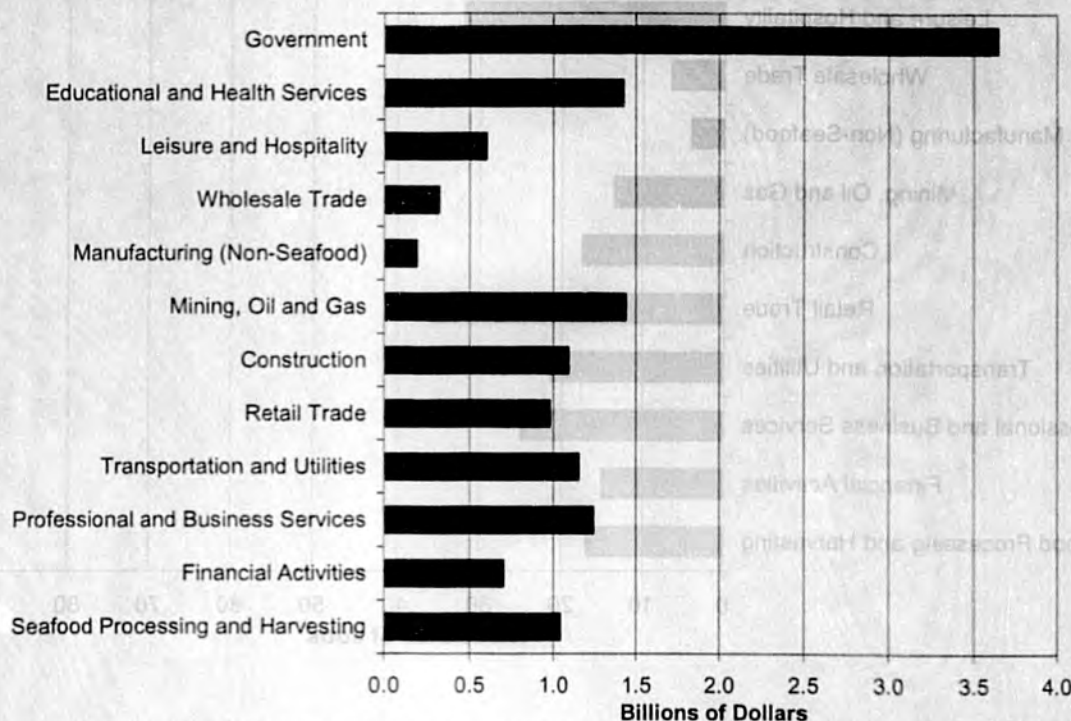
Source: Developed by Northern Economics based on ADOLWD, (2007a, 2008b) and Hiatt (2008a).

While the Alaska seafood industry generates a large number of jobs, it is not necessarily the largest source of employment in the state. The chart shows that the government sector is the largest employer in Alaska, followed by the seafood processing industry. The manufacturing sector (non-seafood) is also a significant employer. The chart also shows that the seafood processing industry is a major employer in the state, particularly in the processing sector. The chart is a horizontal bar chart with the x-axis representing thousands of jobs and the y-axis representing different industries. The bars are black and the chart is titled 'Figure 30. Comparison of Alaska Seafood Processing Industry Annual Average Employment to Other Industry Annual Average Employment, 2007'.

Figure 30 shows that the seafood processing industry is a major employer in the state, particularly in the processing sector. The chart is a horizontal bar chart with the x-axis representing thousands of jobs and the y-axis representing different industries. The bars are black and the chart is titled 'Figure 30. Comparison of Alaska Seafood Processing Industry Annual Average Employment to Other Industry Annual Average Employment, 2007'.

Figure 31 compares payments to labor in the seafood industry with total wages in other industries in 2007. Payments to labor for the seafood industry include estimated payments made to nonresidents whose earnings may be reported in another state (for example, workers on Seattle-based catcher-processors). The estimate for seafood processing includes workers in the at-sea sector.

Figure 31. Comparison of Alaska Seafood Industry Payments to Labor to Other Industries, 2007

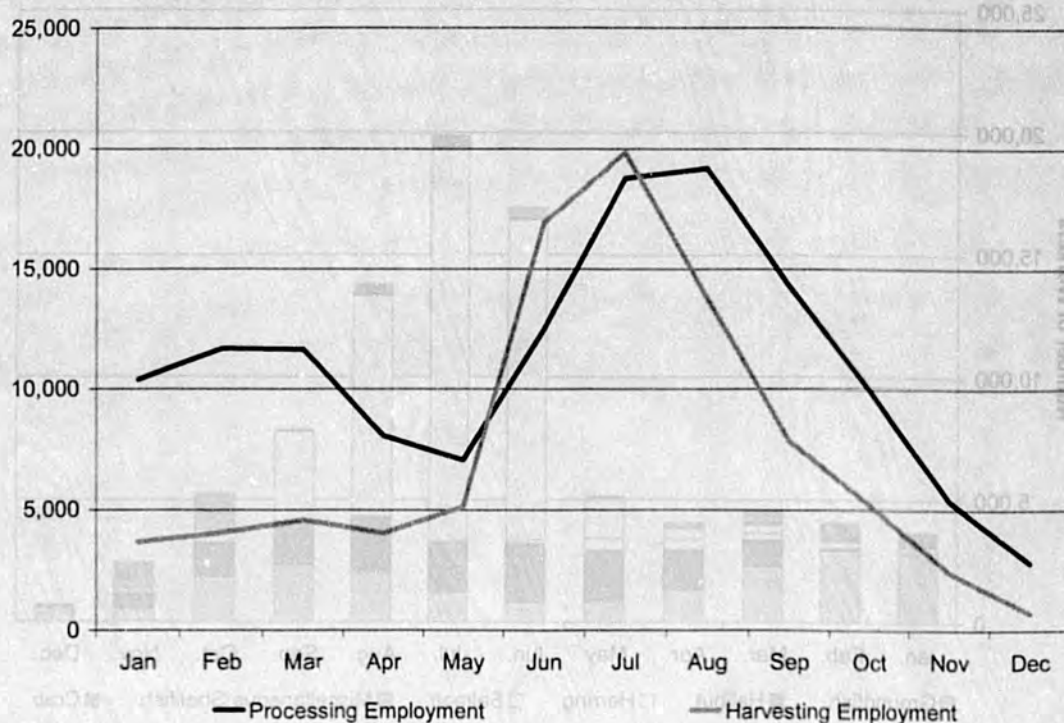


Notes: Data from ADOLWD only includes data on standard employee/employer relationships where wages and unemployment taxes are paid and collected. Only the shore-based processing portion of the seafood industry fall into this category, thus payments to labor for harvesters and the at-sea sector are estimated by Northern Economics.

Source: Developed by Northern Economics based on ADOLWD, 2007a, 2008b) and Hiatt (2008a)

While the Alaska seafood industry generates a large number of jobs, these jobs do not necessarily provide year-round employment. No other state's labor force shows as much seasonal fluctuation as Alaska's, and, except for the visitor industry, seafood harvesting and processing is Alaska's most seasonal industry (Fried 1996; Rae 1997). As shown in Figure 32, employment in the seafood processing sector in 2006 varied more than six-fold from the peak month (July) to the bottom month (December).³⁸ Figure 32 also shows the seasonality of jobs in the seafood harvesting sector. As with processing employment, harvesting employment typically reaches its peak in July before declining to the seasonal low point in December.

³⁸ Fried (1996) notes that the seasonality of seafood processing employment has varied over the years with the length and diversity of Alaska's fisheries. In the late 1970s and early 1980s, the king crab winter harvests boosted employment during traditionally low months. After the crash of the king crab fishery, seasonality increased dramatically. With the advent of the huge harvest of groundfish during the non-summer months, employment became year-round.

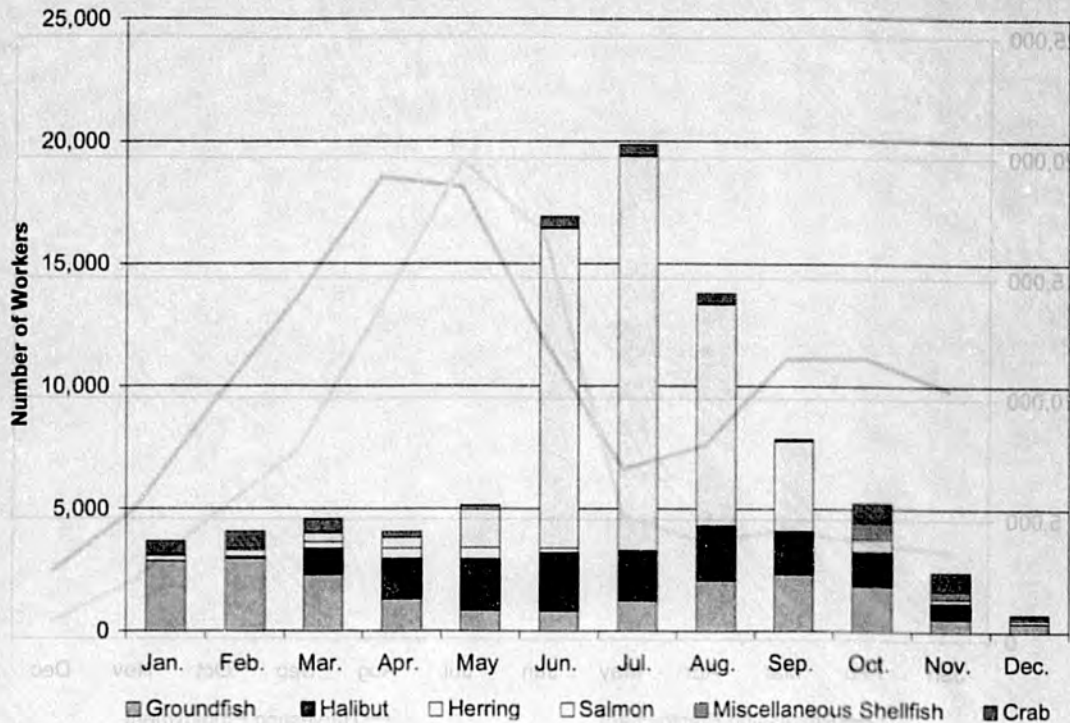
Figure 32. Alaska Seafood Processing and Harvesting Average Monthly Employment, 2006**Notes:**

- 1) Average monthly employment refers to the average number of monthly jobs.
- 2) Data from ADOLWD do not include jobs in the at-sea sector. An estimate of the number of these jobs was derived from NMFS vessel and crew count data.
- 3) 2007 data were not available at the time of this publication.

Source: Developed by Northern Economics based on data from ADOLWD (2008b) and Hiatt (2008a).

In contrast to the highly seasonal salmon fishery, Alaska's halibut and various groundfish fisheries provide a more constant number of jobs month to month (Figure 33). Also unlike employment in the salmon fishery, the peak months for jobs in the crab fishery occur in the less hospitable winter months (Olson and Robinson 2004). The crab fishery starts the year with the Bering Sea snow crab fishery, which reaches full strength in February, while the Bristol Bay red king crab fishery ramps up jobs in the late fall, especially October.³⁹ The summer months in between concentrate jobs primarily in the dungeness crab fishery in the Southeast region. Miscellaneous shellfish jobs spike in October with the shrimp pot fishery in the Southeast. Harvesting in Alaska's sac roe herring fisheries occurs in the spring with peak employment in May spread out in all regions of the state (Olson and Robinson 2004).

³⁹ Robinson and Gilbertsen (2006) note that rationalizing the Bristol Bay red king crab fishery in 2005 has lowered employment in the peak month of October and raised employment levels in November and December as harvesters with quota shares are no longer in a race to harvest the available catch and they take longer to harvest their quotas. Additional information on the effects of rationalization on employment in the BSAI crab fisheries is provided in Section 2.5.

Figure 33. Alaska Shore-based Harvesting Average Monthly Employment by Species, 2006**Notes:**

- 1) 2006 halibut fishing employment data are unavailable; 2005's monthly halibut figures have been used as a proxy for 2006.
- 2) Data from ADOLWD do not include jobs in the at-sea processing sector. An estimate of the number of these jobs was derived from NMFS vessel and crew count data.
- 3) 2007 data are not available.

Source: Developed by Northern Economics based on data from ADOLWD (2007c) and Hiatt (2008a).

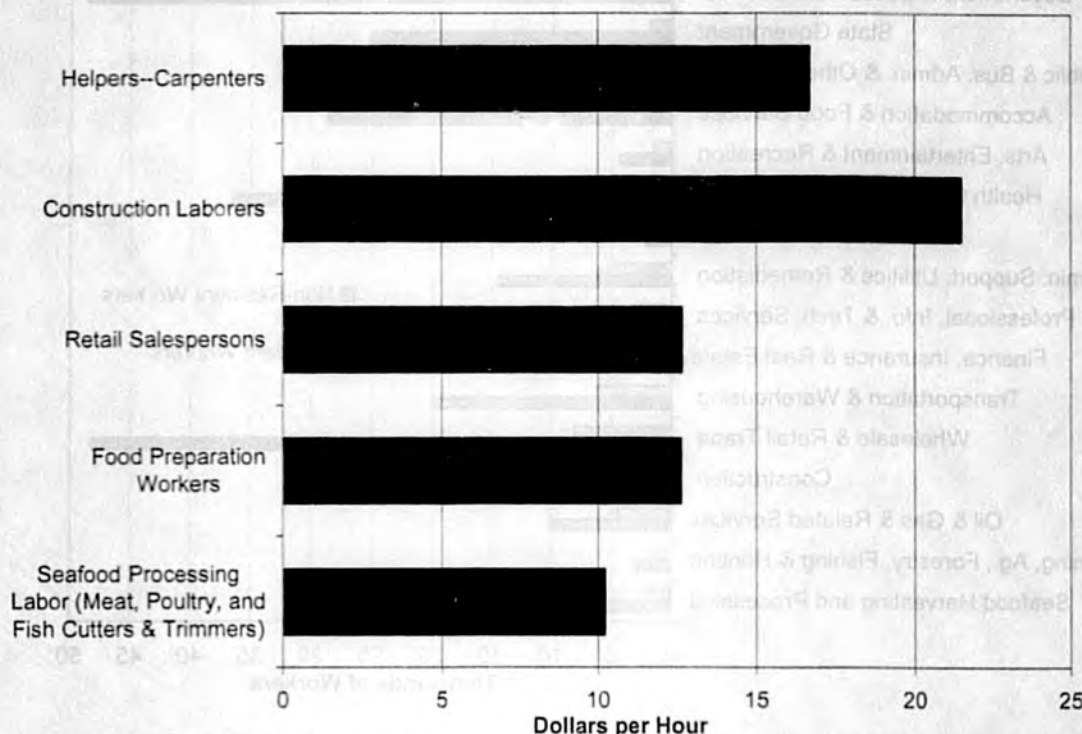
Because some fishing seasons are so short, many seafood harvesters work wage and salary jobs to supplement their income from a fishing operation. Based on an analysis of active CFEC commercial fishing permit holders and their adult crew members, Wink et al. (2006) found that more than half of all resident Alaska harvesters relied on a wage and salary job in addition to their fish harvesting work to earn a living in 2006. That's a higher rate of multiple job holding than for Alaska wage and salary workers in general, where only about 32 percent held multiple jobs in 2006.

In addition to the length of the fishing season, gear type and amount of required capitalization dictates whether it is possible, or prudent, for Alaska seafood harvesters to hold down a shore-side job. The gear types with permit holders that had the highest percentages of non-fishing jobs in 2006 were set gillnet (64 percent), hand troll (55 percent), drift gillnet (42 percent) and longline (36 percent). The set gillnet and hand troll gear, for instance, are for fisheries that have short seasons and require less capital. Otter trawl (12 percent), power troll (18 percent), purse seine (21 percent) and pot gear (26 percent) permit holders possessed the lowest percentages of wage and salary

participation. Pot gear, for instance, is used mostly for the crab fisheries that have short seasons and require a lot of capital (Wink et al 2007).⁴⁰

In addition to job duration, it is important to examine the level of compensation that seafood industry jobs offer. In 2007, the average hourly wage for jobs in the seafood on-shore processing sector was \$10.22.⁴¹ Other jobs in Alaska pay considerably more (Figure 34). Entry-level, on-shore processors in some remote areas earn the Alaska minimum wage rate of \$7.15 per hour. In most cases, room and board and transportation are provided as well. Urban work sites without company housing pay a slightly higher wage (ADOLWD 2007b). On the other hand, as noted in Section 4.4, many at-sea processing workers are paid on a "share of catch" basis, and if a company has a good catch, a worker's earnings can be very high. It is also important to note that many fish processing occupations are highly skilled and well compensated, such as roe technicians (who grade the salmon roe and oversee its packing), machine maintenance occupations (including Baader filleting machine technicians) and surimi technicians (Fried 1996). The higher a particular shore-based processing job pays, the more likely an Alaska resident will be in that job (Miller 2002).

Figure 34. Comparison of Alaska Seafood Processing Average Hourly Wage to Other Occupational Average Hourly Wages, 2007



Note: Seafood Processing Labor is part of the class of workers officially titled Meat, Poultry, and Fish Cutters & Trimmers. In Alaska the number of this class of workers that are not in the seafood industry is *de minimus*.

Source: Developed by Northern Economics based on data from ADOLWD (2008c).

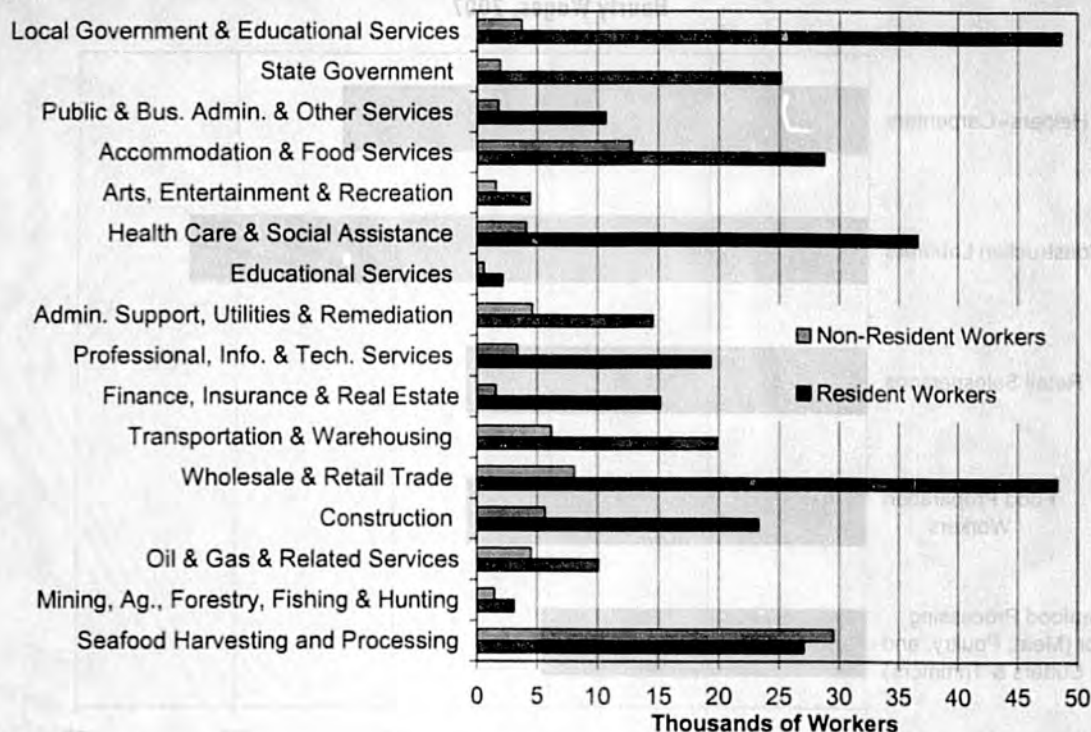
⁴⁰ Purse seiners, gillnetters and trollers participate in salmon fisheries. Herring is also caught by purse seiners. Pot boats catch crab and groundfish, while longliners harvest halibut and groundfish and trawlers focus on groundfish.

⁴¹ Many processing workers, particularly in remote areas, receive room and board in addition to their wages.

In a discussion of the relative economic impact of the Alaska seafood industry it is important to examine the state of residency of seafood industry workers. As noted in Section 4.7, Alaska's seafood processing sector generates thousands of jobs but employs relatively few residents of Alaska (Figure 35). In 2006, the seafood processing sector employed the highest number and greatest percentage of nonresident workers of any industry sector in the state (ADOLWD 2008).⁴² Nonresident seafood processing workers accounted for 22 percent of the private, nonresident workforce in Alaska (ADOLWD 2008). What this high percentage of nonresident employee means is that while seafood processing is an important driver of the state economy, much of the labor income earned in the sector flows out of Alaska.

With respect to seafood harvesters, data from ADOLWD indicate that residents hold most fish harvesting jobs in Alaska, but most of the earnings generated by harvesters accrue to nonresidents—primarily from the harvest of groundfish. In 2006, nonresident individuals accounted for \$1.08 billion of the \$1.48 billion landed in all Alaska fisheries. This means that nearly three-quarters of the total ex-vessel value accrued to nonresident seafood harvesters.

Figure 35. Comparison of Resident and Non-Resident Workforces by Sector, 2006



Notes:

- 1) Workforce refers to the number of workers employed for any amount of time during the year.
- 2) ADOLWD does not estimate the number of all workers employed in the at-sea processing sector. Based on NMFS crew count data for these boats it was estimated that this sector employs about 6,203 processing workers and 1,936 harvesting workers.
- 3) 2007 data are not available.

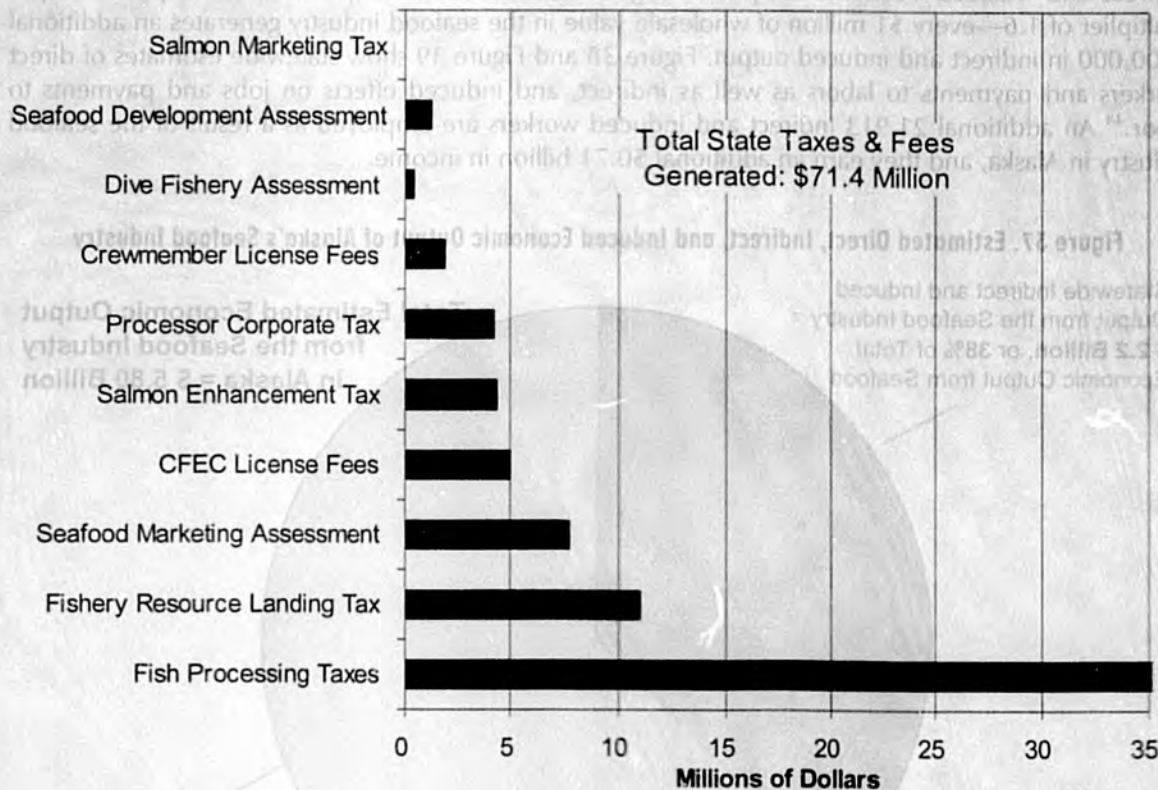
Source: Developed by Northern Economics based on data from (ADOLWD (2007a and 2008b) and Hiatt, 2008a)

⁴² Whereas many of the early salmon cannery workers were Filipinos (Footnote 11), in more recent years immigrants in Alaska's seafood processing sector tend to be from Mexico and Central America. (Gerjevic 1998).

4.5.1 State Taxes and Fees

Alaska's seafood industry contributed about \$71.4 million in state taxes and fees in 2007 (Figure 36). The industry also pays a significant portion of the marine fuel taxes collected in the state, although estimates of these tax payments are not readily available.

Figure 36. State Revenue Generated by Alaska's Seafood Industry, 2007



Note: CFEC Licenses Fees, Crewmember License Fees and Processor Corporate Taxes reflect 2006 values.

Source: Developed by Northern Economics based on data from ADCCED (2007), ADOR (2008).

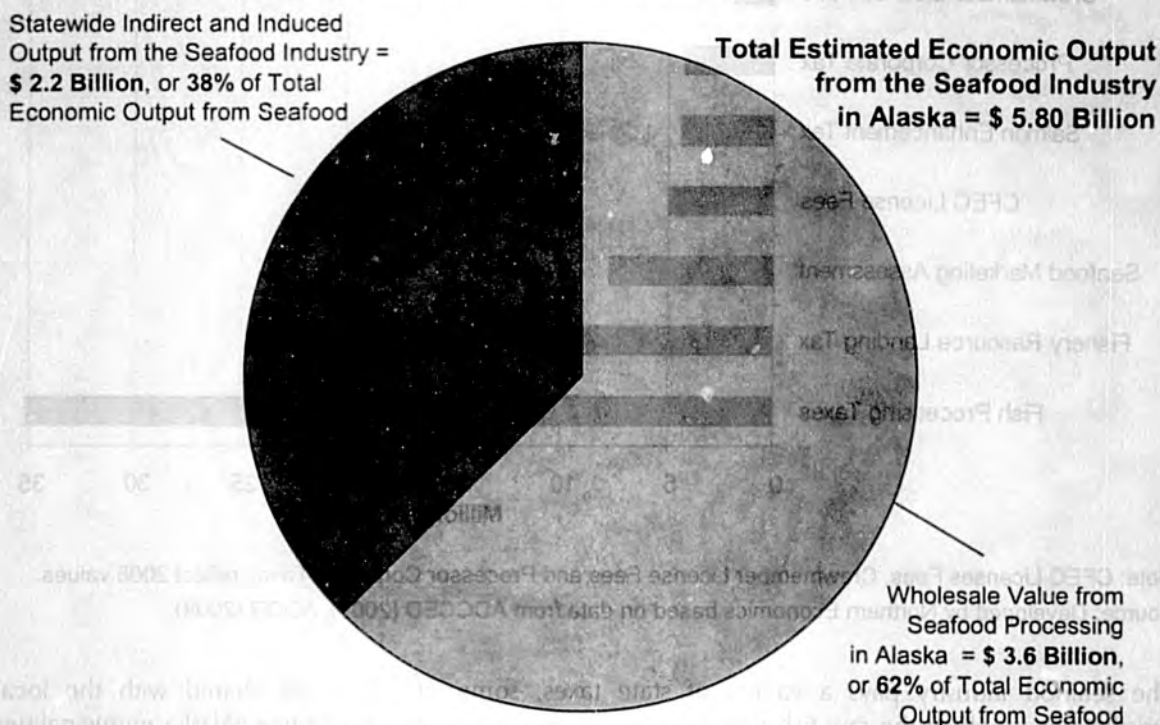
The seafood industry pays a variety of state taxes, some of which are shared with the local jurisdictions in which the raw fish or processed product is landed. In addition, Alaska municipalities have the power to implement their own local tax on the sale of fish to processors and other local fisheries-related taxes. The total of these municipal taxes in 2006 was approximately \$13.9 million. Both shared state taxes and municipal taxes are discussed in more detail in Section 4.6.5.

4.5.2 Economic Multiplier Effects of Alaska's Seafood Industry

Alaska seafood not only generates direct economic output, jobs, and payments to labor (income) within the industry, it also generates economic output, jobs and payments to labor in the industries that supply fuel, parts, processing materials and transportation. Collectively, the impacts in these supply industries are known as indirect effects. In addition, Alaska seafood induces further economic activity in Alaska, through the payments to labor that are made both to workers in the seafood industry and to workers in the supply industries. These induced effects occur as workers spend their income on food, clothing, housing and other consumer goods and services.

Figure 37 shows the estimated direct, indirect, and induced economic output from Alaska's seafood industry in Alaska for 2007. Estimates of direct output are equal to estimated wholesale value from both at-sea and shore-based processors discussed in earlier sections.⁴³ Estimates of indirect and induced impacts (sometimes referred to as multiplier effects) have been generated for the Alaska Seafood industry using software and data from IMPLAN™. It is estimated that the \$3.6 billion in wholesale value generated by the seafood processing industry generates an additional \$2.2 billion in indirect and induced economic output throughout the state. This represents an output-to-output multiplier of 1.6—every \$1 million of wholesale value in the seafood industry generates an additional \$600,000 in indirect and induced output. Figure 38 and Figure 39 show statewide estimates of direct workers and payments to labor as well as indirect, and induced effects on jobs and payments to labor.⁴⁴ An additional 21,913 indirect and induced workers are employed as a result of the seafood industry in Alaska, and they earn an additional \$0.71 billion in income.

Figure 37. Estimated Direct, Indirect, and Induced Economic Output of Alaska's Seafood Industry



Source: Estimated by Northern Economics, Inc., using multipliers from IMPLAN software.

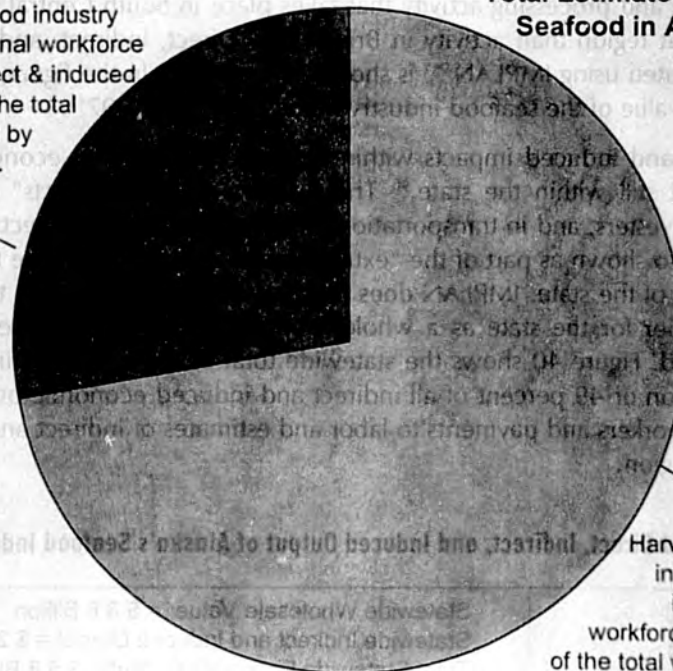
⁴³ The estimate of indirect and induced output includes the ex-vessel payments made to harvesters. This is proper since fish harvesters supply goods and services to the processing industry similar to other industry suppliers such as the paper industry and the transportation industry.

⁴⁴ In these two figures the entire harvesting workforce and all payments to labor made to harvesters are included in the estimates of direct effects. The indirect and induced effects have been adjusted to account for this and to avoid double counting.

Figure 38. Estimated Direct, Indirect, and Induced Workers in the Seafood Industry in Alaska

Statewide, the seafood industry generates an additional workforce of **21,913** from indirect & induced activities, or **28%** of the total workforce generated by the seafood industry.

Total Estimated Workforce from Seafood in Alaska = 78,519



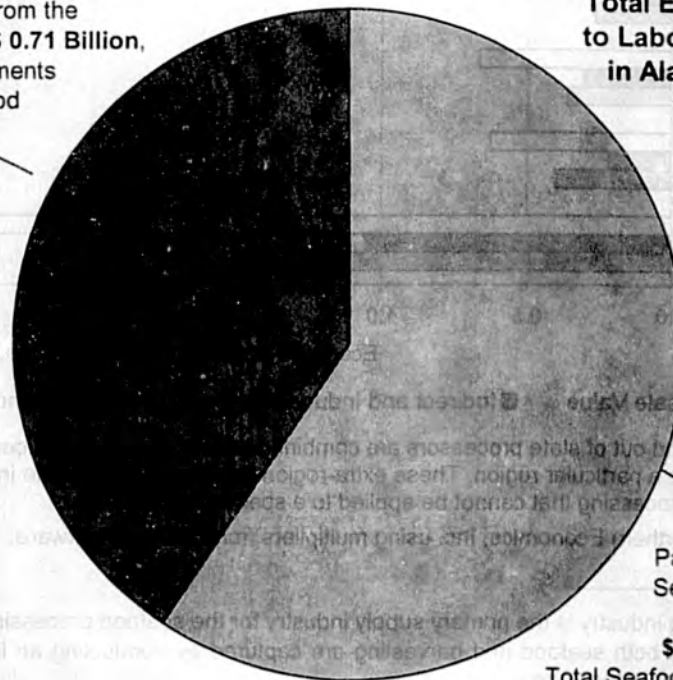
Harvesting & processing in the Alaska Seafood industry generates a workforce of **56,606**, or **72%** of the total workforce generated by the seafood industry

Source: Estimated by Northern Economics, Inc. using multipliers from IMPLAN software.

Figure 39. Estimated Direct, Indirect, and Induced Payments to Labor in the Seafood Industry in Alaska

Statewide Indirect and Induced Payments to Labor from the Seafood Industry = **\$ 0.71 Billion**, or **40%** of Total Payments to Labor from Seafood

Total Estimated Payments to Labor from the Seafood in Alaska = \$ 1.75 Billion



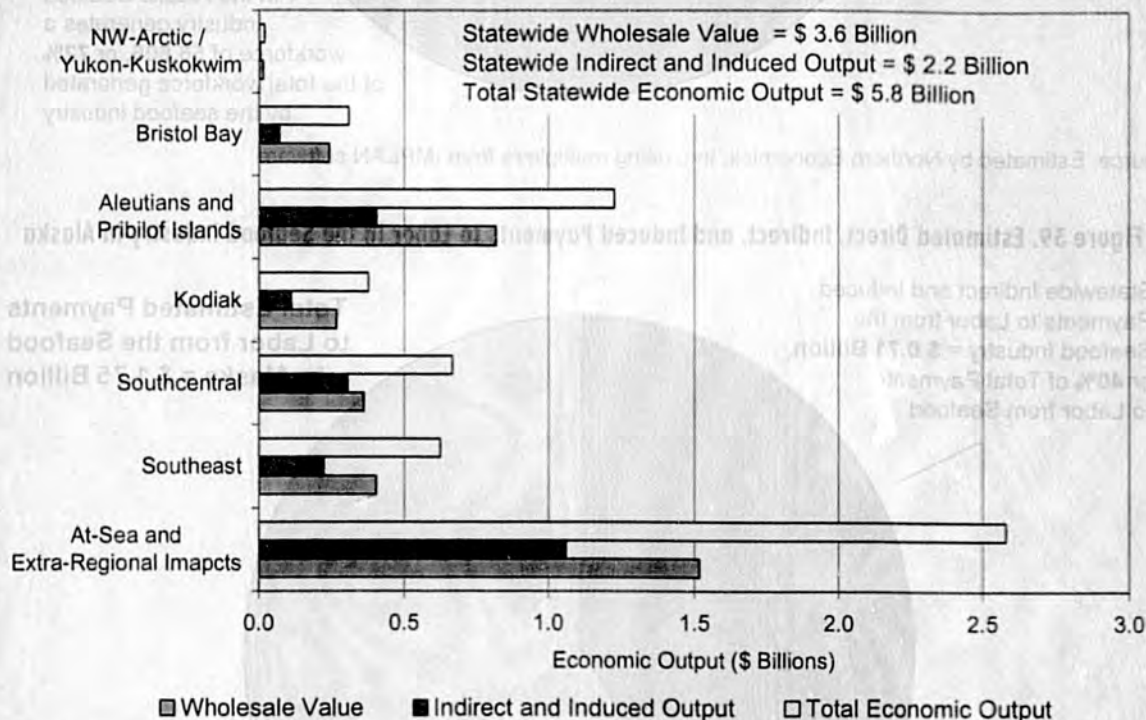
Payments to Labor from Seafood Harvesting and Processing in Alaska **\$1.04 Billion** or **60%** of Total Seafood Payments to Labor

Source: Estimated by Northern Economics, Inc. using multipliers from IMPLAN software.

The seafood industry has variable levels of impacts within different regions. In general, the more developed a region's economy, the greater the additional impact the industry has inside the region. For example, harvesting and processing activity that takes place in South Central Alaska has a greater economic impact in that region than activity in Bristol Bay. Direct, indirect, and induced economic output by region (estimated using IMPLAN™) is shown in Figure 40. In the figure, the direct output is equal to the wholesale value of the seafood industry in the region for 2007⁴⁵.

In addition to indirect and induced impacts within the region, additional economic activity occurs outside the region, but still within the state.⁴⁶ These "extra-regional impacts" occur in the home regions of non-local harvesters, and in transportation and supply hubs. The direct effects of the at-sea processing sector are also shown as part of the "extra-regional" impacts, because they are not specific to any particular region of the state. IMPLAN does not provide data on linkages to other regions, but does provide a multiplier for the state as a whole, through which the extra-regional impacts as a whole can be calculated. Figure 40 shows the statewide total of extra-regional indirect and induced impacts to be \$1.1 billion or 49 percent of all indirect and induced economic output. Figure 41 and Figure 42 show direct workers and payments to labor and estimates of indirect and induced jobs and payments to labor by region.

Figure 40. Estimated Direct, Indirect, and Induced Output of Alaska's Seafood Industry, by Region



Note: Impacts of at-sea and out of state processors are combined with indirect and induced impacts that cannot be specifically assigned to a particular region. These extra-regional impacts also include indirect and induced impacts of shore based processing that cannot be applied to a specific region.

Source: Developed by Northern Economics, Inc. using multipliers from IMPLAN software.

⁴⁵ The seafood harvesting industry is the primary supply industry for the seafood processing industry. Thus, all of the economic impacts of both seafood and harvesting are captured by conducting an input-output analysis of the seafood processing industry alone.

⁴⁶ There are also significant amounts of economic activity that leak out of the state to other states and countries.

Figure 41. Estimated Direct, Indirect, and Induced Workers in Alaska's Seafood Industry, by Region

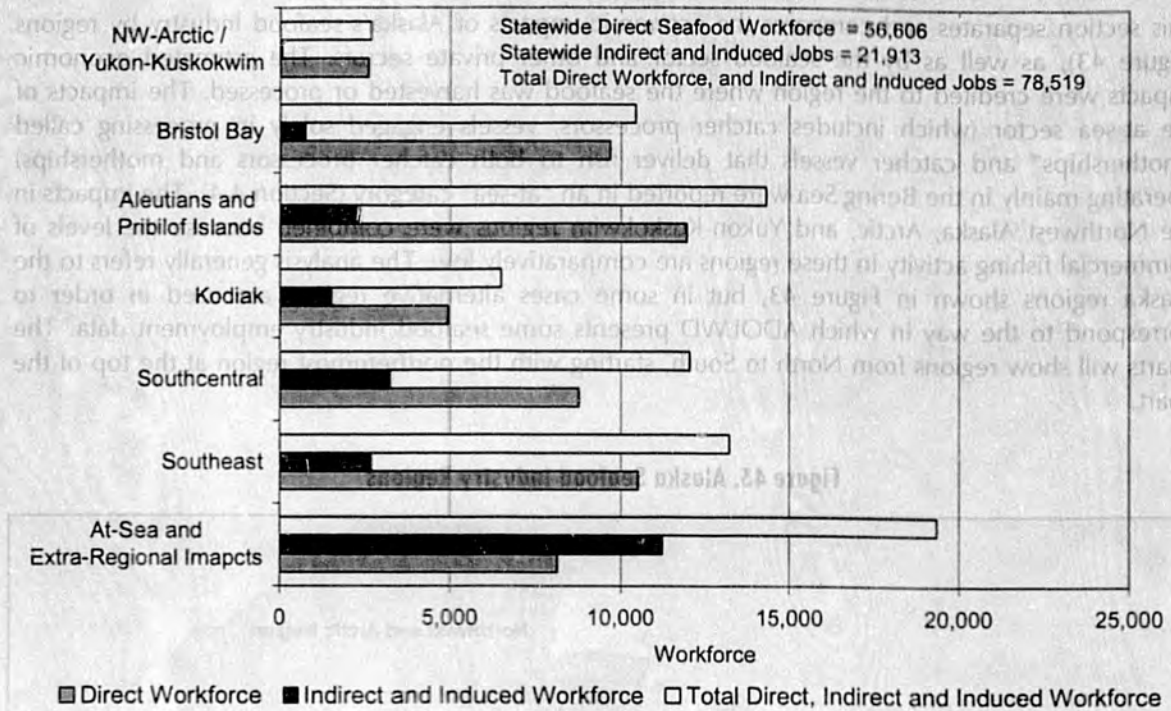
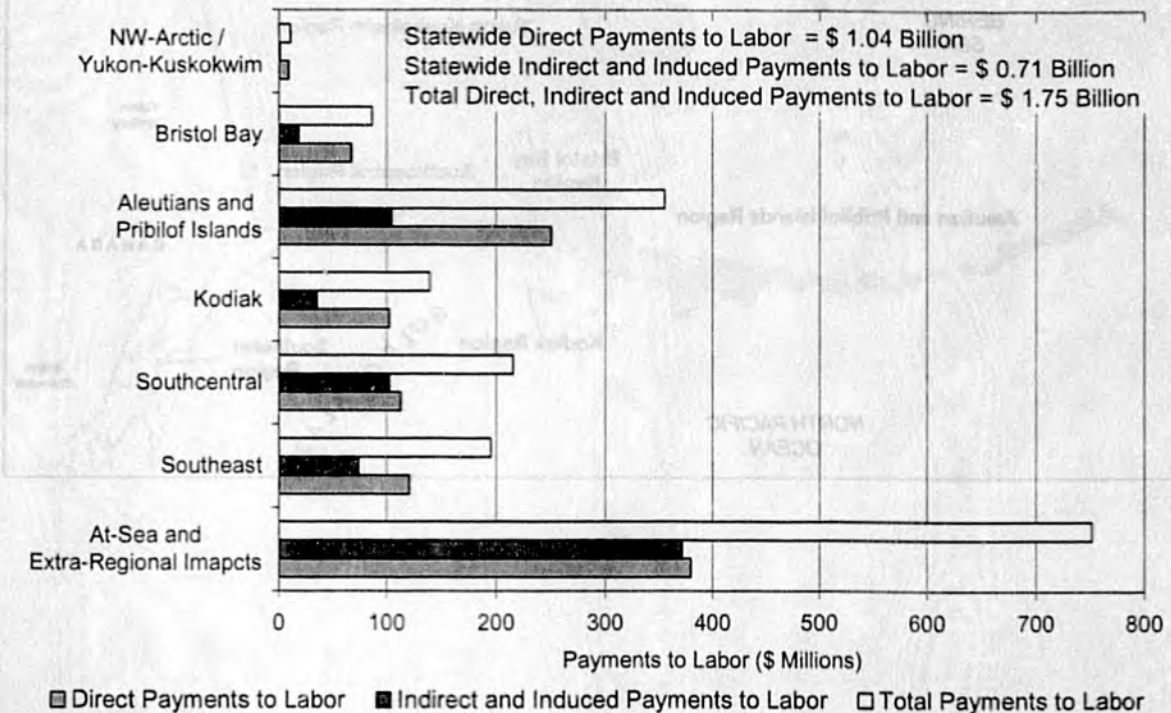


Figure 42. Estimated Direct, Indirect, and Induced Payments to Labor, by Region



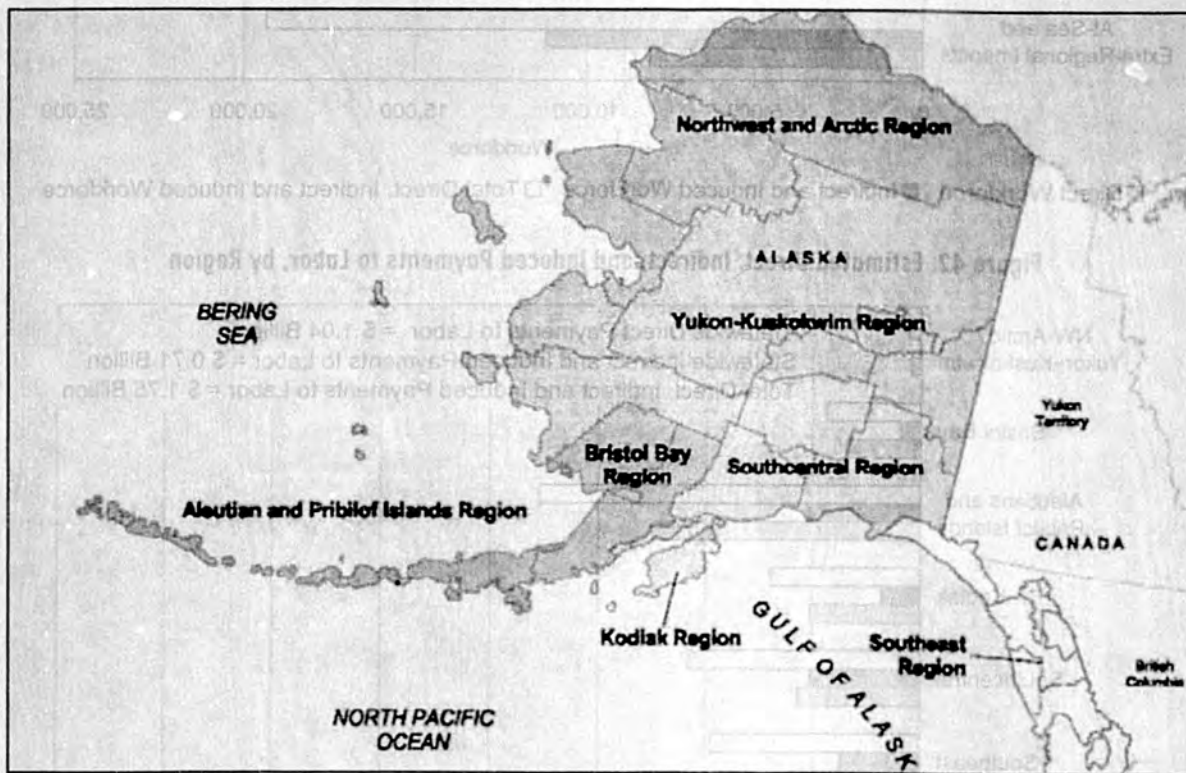
Note for Figure 41 and Figure 42: Impacts of at-sea and out of state processors are combined with indirect and induced impacts that cannot be specifically assigned to a particular region. These extra-regional impacts also include indirect and induced impacts of processing that cannot be applied to a specific region.

Source: Developed by Northern Economics, Inc. using multipliers from IMPLAN software.

4.6 Economic Impacts by Alaska Geographic Region

This section separates and compares the economic impacts of Alaska's seafood industry by regions (Figure 43), as well as by the seafood sector and other private sectors. The estimated economic impacts were credited to the region where the seafood was harvested or processed. The impacts of the at-sea sector (which includes catcher processors, vessels engaged solely in processing called "motherships" and catcher vessels that deliver fish to both catcher processors and motherships) operating mainly in the Bering Sea were reported in an "at-sea" category (Section 4.4). The impacts in the Northwest Alaska, Arctic, and Yukon-Kuskokwim regions were combined because the levels of commercial fishing activity in these regions are comparatively low. The analysis generally refers to the Alaska regions shown in Figure 43, but in some cases alternative regions are used in order to correspond to the way in which ADOLWD presents some seafood industry employment data. The charts will show regions from North to South, starting with the northernmost region at the top of the chart.

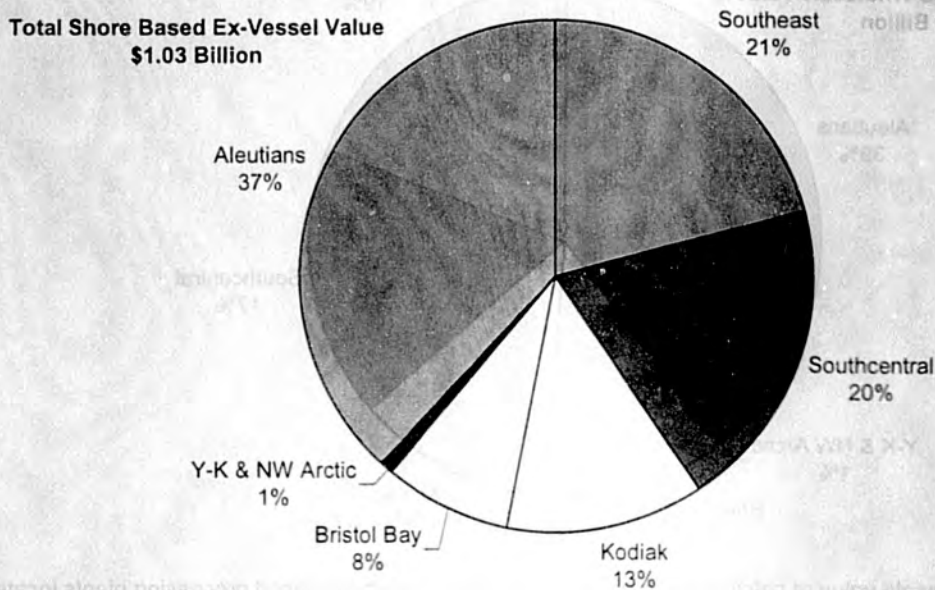
Figure 43. Alaska Seafood Industry Regions



4.6.1 Ex-vessel Value in Alaska Regions

Figure 44 divides the estimated statewide ex-vessel value of fish and shellfish harvests in 2007 among regions. The \$1.03 billion total ex-vessel value shown in the figure does not include \$522 million in estimated ex-vessel value for the at-sea sector and shore-based processors located outside the State of Alaska. The Aleutian and Pribilof Islands was clearly the dominant region in Alaska, with commercial landings valued at \$392 million, 37 percent of the total ex-vessel value of all the regions. Southeast and Southcentral accounted for respectively 21 and 20 percent of the total ex-vessel value.

Figure 44. Percentage of Ex-vessel Value of Alaska Shore-based Seafood Industry Harvest by Region, 2007



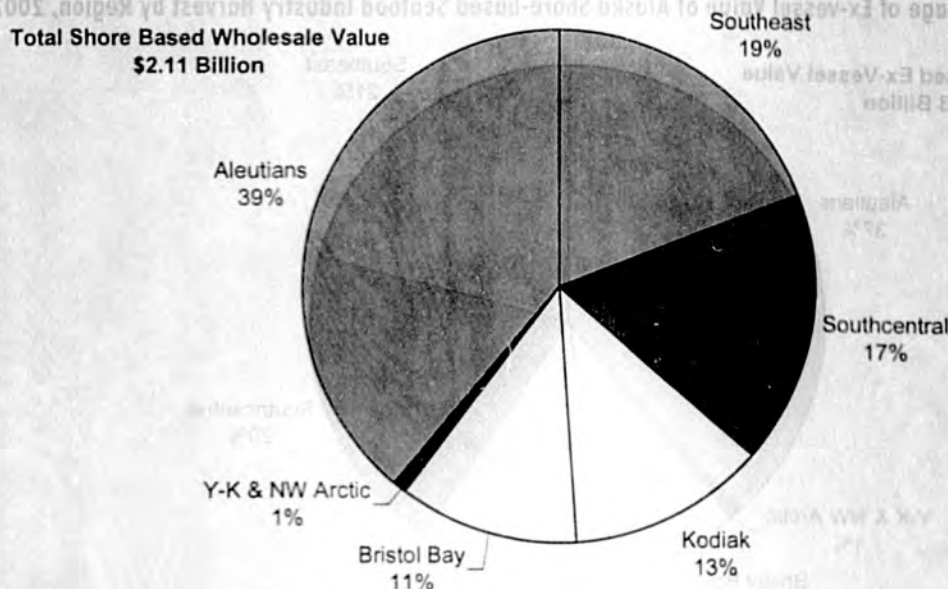
Note: Excludes ex-vessel payments by motherships, shore-based processing plants located outside of Alaska, and the imputed ex-vessel value of catcher processors.

Source: Developed by Northern Economics based on data from Hiatt (2008a).

4.6.2 First Wholesale Value in Alaska Regions

As shown in Figure 45, the Aleutian and Pribilof Islands region was also the largest region in terms of first wholesale value. The accounted for about 39 percent, or \$821.9 million of the region's first wholesale value of shore-side processed seafood. The total wholesale value of Alaska seafood industry harvest for the regions were \$2.11 billion in 2007, Southeast and Southcentral regions accounted for 19 and 17 percent this total.

Figure 45. Percentage of First Wholesale Value of Alaska Seafood Industry Harvest by Region, 2007



Note: Excludes wholesale value of catcher processors, motherships, and shore-based processing plants located outside of Alaska

Source: Developed by Northern Economics based on data from Hiatt (2008a).

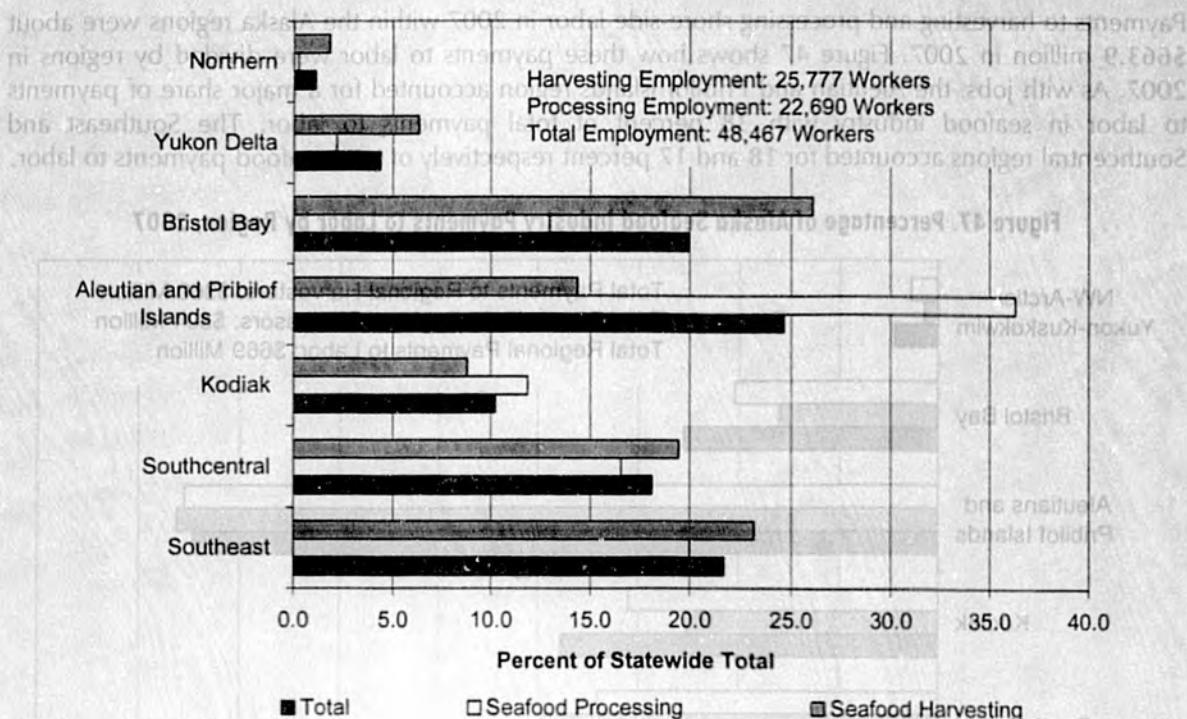
4.6.3 Seafood Employment in Alaska Regions

Figure 46 shows the number of workers employed in the shore-side seafood industry by region in 2006.⁴⁷ The Aleutian and Pribilof Islands region, with its concentration of large seafood processing facilities, accounted for 36.3 percent of the seafood processing jobs.⁴⁸ Bristol Bay accounted for a substantial portion of Alaska's seafood harvesting jobs due to the large salmon fisheries occurring in the region. The Southeast, Southcentral and Kodiak regions, which have sizeable harvesting as well as processing sectors, also made important contributions to statewide seafood industry employment. The figure shows percentages of Alaska Seafood processing and harvesting shore-side workforce by region, as well as percentage of the state's total seafood industry workforce by region. As an example, the figure shows that Bristol Bay has about 13 percent of Alaska's total seafood processing jobs, 26.1 percent of the state's total seafood harvesting jobs, and about 19.9 percent of the state's workforce in seafood harvesting and seafood processing combined.

⁴⁷ Seafood harvesting workforce estimates for 2007 were not available at the time this report was developed.

⁴⁸ Fishing ports in the Aleutian and Pribilof Islands region with large seafood processing facilities include Dutch Harbor-Unalaska (which has six processing plants), Akutan (where Trident Seafoods has the largest seafood processing operation in North America), Adak, Atka, King Cove, St. Paul, Port Moller, and Sand Point.

Figure 46. Percentage of Alaska Shore-side Processing and Harvesting Workforce by Region, 2006



Notes:

- 1) Workforce refers to the number of workers employed in an industry for any amount of time during the year.
- 2) Yukon Delta Includes data from the Bethel and Wade Hampton census areas; Northern includes data from the Denali, Fairbanks North Star, North Slope and Northwest Arctic boroughs and the Nome, Southeast Fairbanks and Yukon-Koyukuk census areas. Other regions are as shown in Figure 43.
- 3) 2007 data are not available.

Source: Developed by Northern Economics based on data from ADOLWD (2007a).

4.4.2 Regional Importance of Alaska Seafood Industry

The economic importance of the seafood industry in Alaska goes beyond the value of products harvested and processed in the state each year. The estimated \$3.6 billion of economic output generated by the shore-based seafood industry gives an indication of the economic importance of the industry. However, if the seafood industry were to go away, many communities would experience lasting effects.

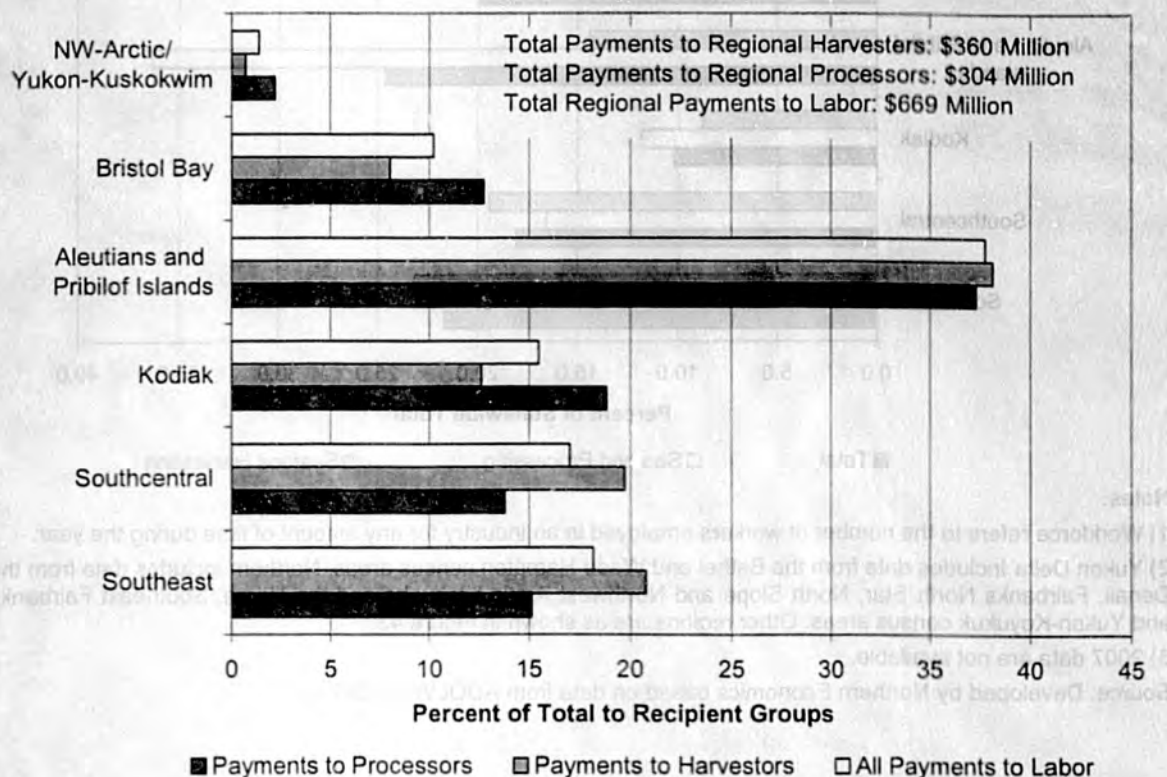
One of the transportation challenges faced in Alaska is the high cost of bringing goods into the state. One of the factors causing these high transportation costs is the fact that the quantity of goods being shipped to Alaska far exceeds the quantity of goods being shipped from Alaska. The lack of exports means that more of the round-trip transportation cost has to be covered by charges on imported goods sent than would be the imports and exports were more balanced.

In communities where the seafood industry is established, seafood exports help to increase marine transportation activity and reduce transportation costs. The industry is also responsible for a substantial amount of air traffic as harvesting and processing workers travel to and from fishing areas with the

4.6.4 Payments to Labor in Alaska Regions

Payments to harvesting and processing shore-side labor in 2007 within the Alaska regions were about \$663.9 million in 2007. Figure 47 shows how these payments to labor were divided by regions in 2007. As with jobs, the Aleutian and Pribilof Islands region accounted for a major share of payments to labor in seafood industry with 38 percent of total payments to labor. The Southeast and Southcentral regions accounted for 18 and 17 percent respectively of total seafood payments to labor.

Figure 47. Percentage of Alaska Seafood Industry Payments to Labor by Region, 2007



4.6.5 Regional Importance of Alaska Seafood Industry

The economic importance of the seafood industry in Alaska goes beyond the value of products harvested and processed in the state each year. The estimated \$3.65 billion of economic output generated by the shore-based seafood industry gives an indication of the economic importance of the industry. However, if the seafood industry were to go away, many communities would experience lasting effects.

One of the transportation challenges faced in Alaska is the high cost of bringing goods into the state. One of the factors causing these high transportation costs is the fact that the quantity of goods being shipped to Alaska by far exceeds the quantity of goods being shipped from Alaska. The lack of exports means that more of the round-trip transportation cost has to be covered by charges on imported goods sent than would be if the imports and exports were more balanced.

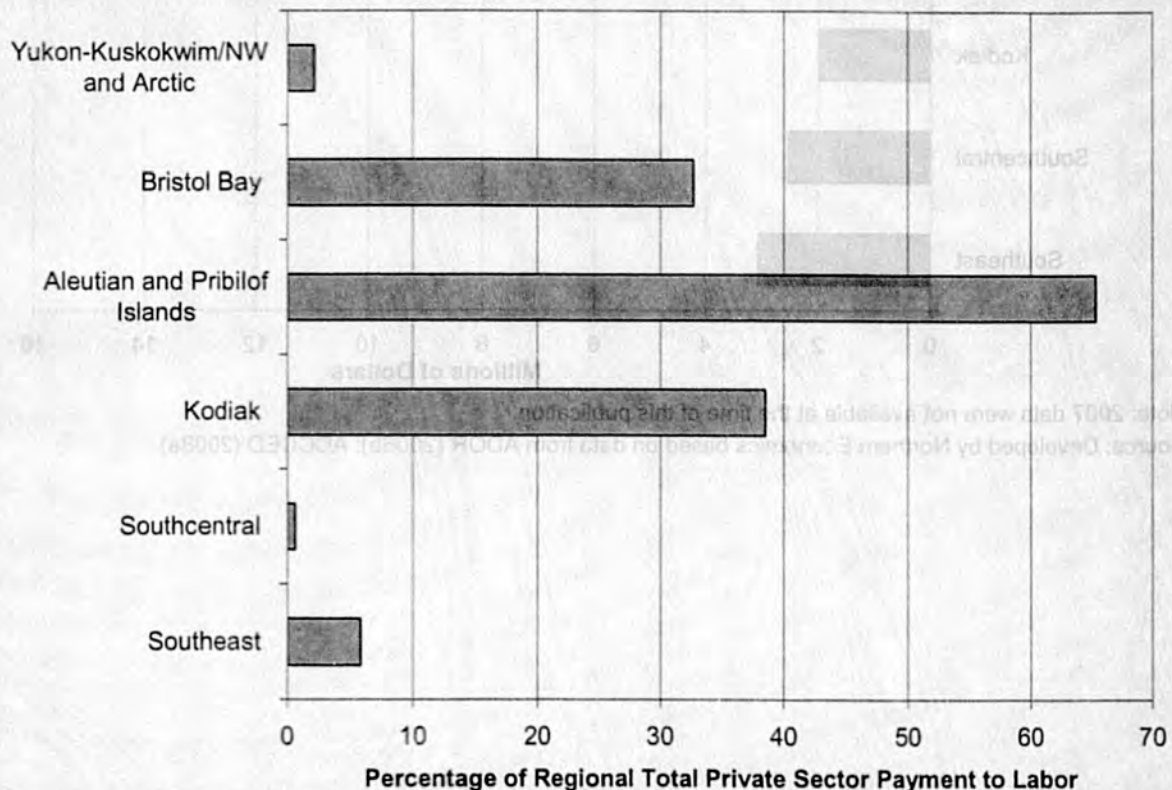
In communities where the seafood industry is established, seafood exports help to increase marine transportation activity and reduce transportation costs. The industry is also responsible for a substantial amount of air traffic as harvesting and processing workers travel to and from fishing areas with the

seasons. While the effect of the industry's presence is hard to quantify, if the seafood industry were to go away, many communities would likely see a decrease in transportation options and the frequency of trips, as well as an increase in the cost of those transportation linkages.

Many communities rely on the seafood industry as an important part of the tax base, including revenues generated from property taxes (both for processing facilities and equipment and for the year-round residents who are in the community due to their fishing employment), sales taxes (including for purchases made by seafood workers), and port charges (including dockage, wharfage, and moorage). From the private sector to the public sector, it is important to recognize that a closure of the seafood industry would have far-reaching implications.

This section describes the importance of the seafood industry by Alaska region in terms of employment and local government taxes. In many coastal areas of Alaska, seafood processing and harvesting provides a large proportion of jobs. Figure 48 shows the percentage of private sector payments to labor from Alaska Seafood Processing by region in 2007. Payments to harvesting labor have not been included as it is not reported in the ADOLWD data (see Section 1.2). With the concentration of major fishing ports in the Aleutian and Pribilof Islands region, seafood processing accounted for 65 percent of all private sector payments to labor in 2007 (Figure 48). The seafood industry accounted for over 33 percent of payments to labor in Bristol Bay and 39 percent in Kodiak. The seafood industry accounted for over 33 percent of payments to labor in Bristol Bay and 39 percent in Kodiak.

Figure 48. Percentage of Private Sector Payments to Labor from Alaska Seafood Processing by Region, 2007

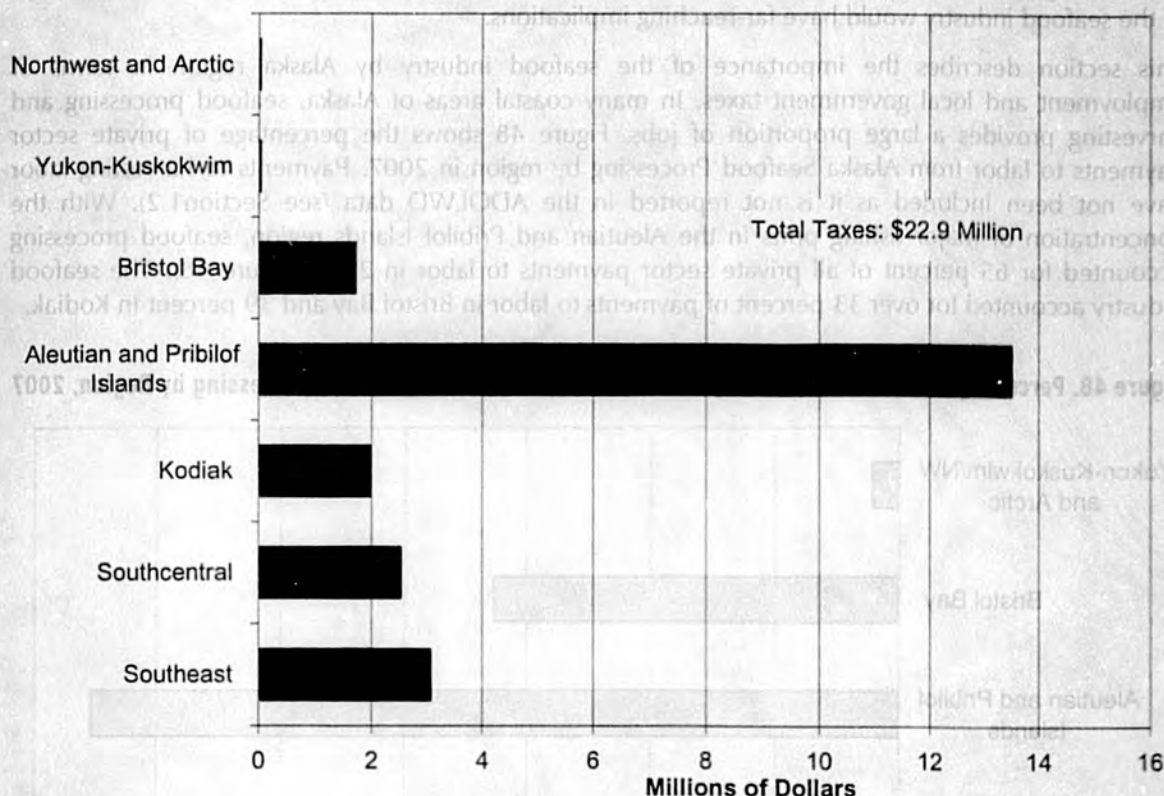


Note: The private sector excludes government and education labor, but includes labor in regional, village and tribal organizations.

Source: Developed by Northern Economics based on data from ADOLWD (2008b).

As discussed in Section 4.5.1, Alaska municipalities may receive fish-related tax revenues through programs which provide for an annual sharing of state fisheries business taxes and fishery resource landing taxes. Under these programs, the state shares 50 percent of such taxes with eligible local governments. The shared tax revenues are received by municipalities two years after the fishing season on which they are based. Figure 49 shows the distribution of this important source of local government revenues in 2006.

Figure 49. Distribution of Fisheries Business and Fishery Resource Landing Taxes by Region, 2006

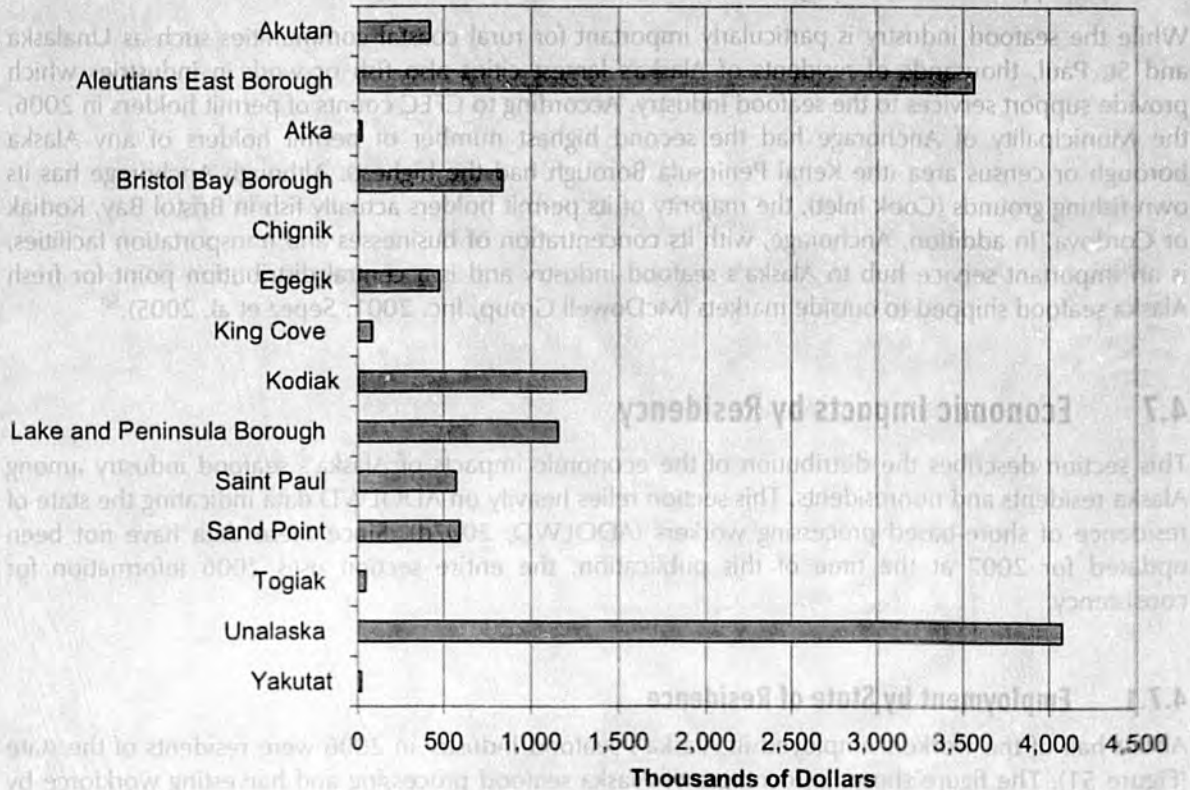


Note: 2007 data were not available at the time of this publication.

Source: Developed by Northern Economics based on data from ADOR (2006b); ADCCED (2008a).

In addition to the shared state taxes collected from fishery resources, municipalities have the power to levy their own local tax on the sale of fish to processors, and many municipalities have chosen to do so (Figure 50). In the figure, the municipalities are listed in alphabetical order.

Figure 50. Alaska Seafood Industry-Related Municipal Taxes and Revenues by Municipality, 2007



Note: Chart only shows fish taxes, not property or sales taxes.

Source: Developed by Northern Economics based on data from ADCCED (2008b).

For many of the coastal communities within the important fishing regions discussed above, seafood harvesting and processing are often the only significant private sector activities, and fisheries taxes are the most important source of local government revenues. For example, the economy of the City of Unalaska, located in the Aleutians West Census Area, is based almost entirely on the seafood industry. The industry is the major source of employment, accounting for over 90 percent of jobs (Sepez et al. 2005). In FY 2006, \$11,371,533, or 43 percent of Unalaska's general fund revenues, were derived from the city's share of the fisheries business tax and fishery resource landing tax and from its seafood sales tax (raw fish tax) (City of Unalaska 2006).⁴⁹

Another way of assessing the economic dependence of Alaska municipalities on the seafood industry is to examine the fiscal impacts when fishery harvests decline. For instance, Scholz et al. (2007) described the effects of the sharp drop in Bering Sea snow crab landings (Section 2.3) on the fiscal condition of the City of St. Paul in the Pribilof Islands. In 1999, the operating revenue for St. Paul was \$11,672 per capita. In 2000, after the snow crab fishery's sudden collapse, the operating revenue was \$6,491 per capita, a decrease of almost 50 percent. The downturn in the snow crab fishery was also

⁴⁹ The City of Unalaska charges a general sales tax of three percent for the goods and services provided locally. Most of this revenue is derived from fuel sales to the fishing fleet and processing plants (City of Unalaska 2006).

matched by a steep decline in the city's population. More recently, the economy of St. Paul has appeared to be stabilizing due in large part to the community's participation in CDQ Program fisheries (Scholz et al. 2007). In short, it is no exaggeration to say that many communities in the Aleutian and Pribilof Islands region—and others scattered throughout much of coastal Alaska—would virtually disappear without fishing (Patton and Robinson 2006).

While the seafood industry is particularly important for rural coastal communities such as Unalaska and St. Paul, thousands of residents of Alaska's largest cities also fish or work in industries which provide support services to the seafood industry. According to CFEC counts of permit holders in 2006, the Municipality of Anchorage had the second highest number of permit holders of any Alaska borough or census area (the Kenai Peninsula Borough had the highest). Although Anchorage has its own fishing grounds (Cook Inlet), the majority of its permit holders actually fish in Bristol Bay, Kodiak or Cordova. In addition, Anchorage, with its concentration of businesses and transportation facilities, is an important service hub to Alaska's seafood industry and is a central distribution point for fresh Alaska seafood shipped to outside markets (McDowell Group, Inc. 2001; Sepez et al. 2005).⁵⁰

4.7 Economic Impacts by Residency

This section describes the distribution of the economic impacts of Alaska's seafood industry among Alaska residents and nonresidents. This section relies heavily on ADOLWD data indicating the state of residence of shore-based processing workers (ADOLWD, 2007d). Since these data have not been updated for 2007 at the time of this publication, the entire section uses 2006 information for consistency.

4.7.1 Employment by State of Residence

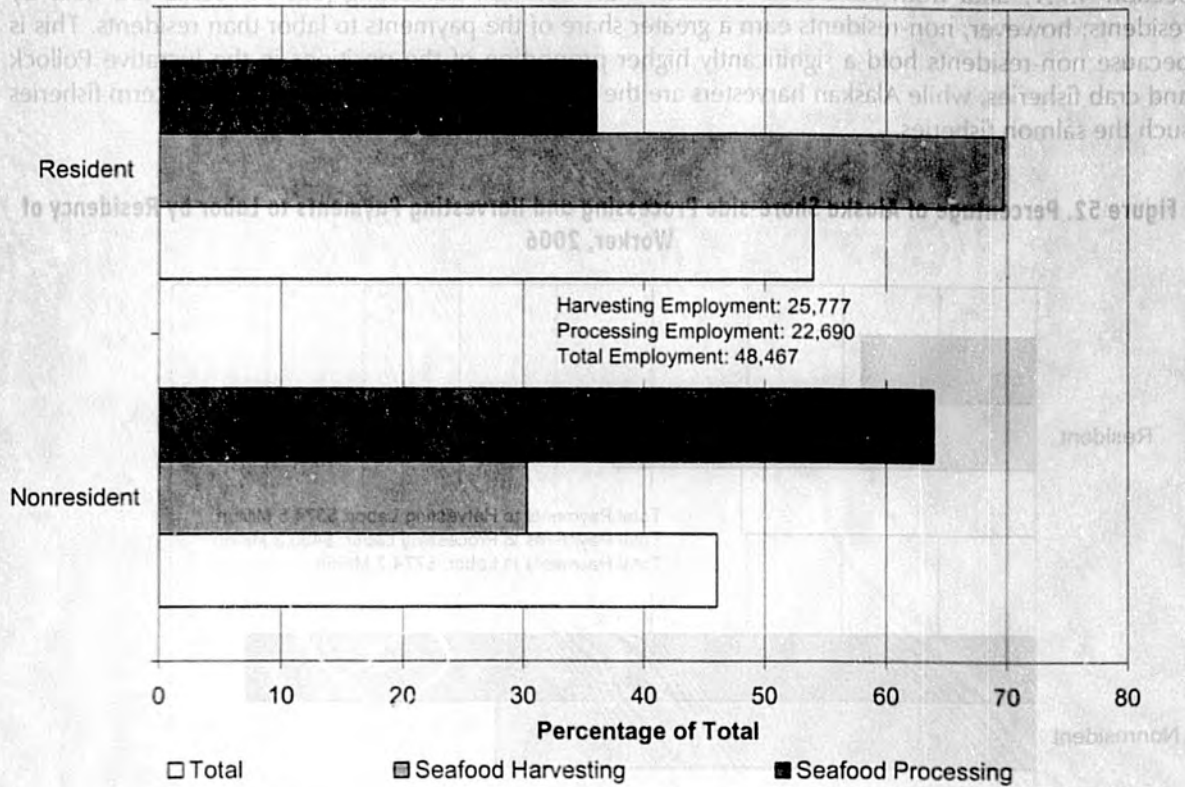
About half of the workers employed in Alaska's seafood industry in 2006 were residents of the state (Figure 51). The figure shows percentages of Alaska seafood processing and harvesting workforce by residency of worker, as well as percentage of the state's total seafood industry workforce by residency of workers. Residents account for 30 percent of the seafood processing labor, 70 percent of seafood harvesting labor, and 48 percent of total workforce in the Alaska seafood industry. Although the seafood processing sector generates thousands of jobs, it employs relatively few residents. According to data for 2006, only about one-third of the seafood processing workforce are Alaskans. In contrast, Alaskans accounted for about two-thirds of the harvesting labor force in the Alaska seafood industry.

Alaska's processing companies make significant efforts to hire Alaskan residents. According to industry sources, processing hire virtually every Alaskan that is willing to work, and that can meet the basic physical requirements of the job. The Division of Employment Security in ADOLWD runs a seafood industry web site that is dedicated to helping Alaskans find processing jobs (ADOLWD, 2007b). While

⁵⁰ The following excerpt from McDowell Group, Inc. (2001:1) highlights the importance of Anchorage as a fresh seafood distribution center: "For air shipments, seafood is either trucked or flown to Anchorage where it's distributed to Lower 48 markets on passenger and cargo flights. A very small quantity is shipped on dedicated cargo freighters. Fresh seafood that is trucked directly to outside markets originates primarily out of Homer, Seward, Kenai, and Valdez. Some fresh product is trucked or flown to Anchorage, then redistributed by truck to outside markets. This fresh product usually comes from Western Alaska waters, the Kodiak area, and Prince William Sound. A small amount of fresh seafood is trucked from other Southcentral communities to Anchorage, then loaded on container ships for delivery to Tacoma, Washington. In addition, some fresh salmon is shipped out of Cordova using a landing craft to Whittier, where it is loaded on a truck, delivered to Anchorage and positioned on the ship."

there are plenty of seafood processing jobs available, Alaskan workers tend not to apply for these jobs, preferring instead to work in the harvesting sector.

Figure 51. Percentage of Alaska Shore-side Processing and Harvesting Workforce by Residency, 2006



Source: Developed by Northern Economics based data from ADOLWD (2007d; 2007e).

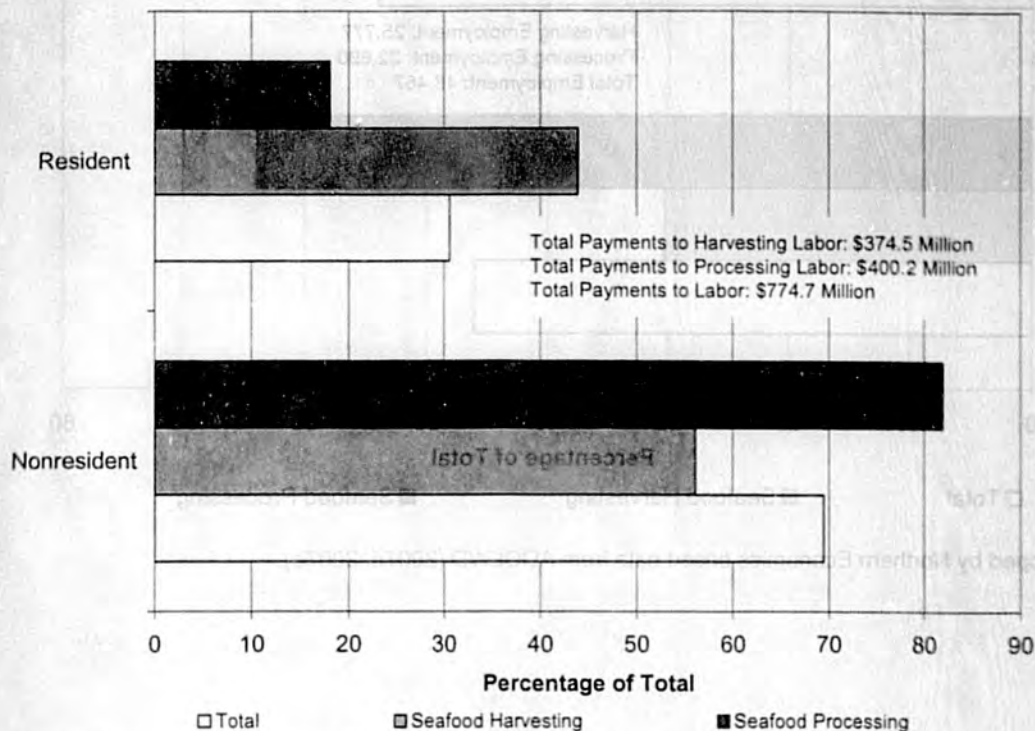
4.8 Economic Impacts of Commercial Fisheries Management and Research

The development of Alaska's commercial fisheries has been a significant factor in the state's economic growth. The establishment of the Alaska Department of Fish and Game in 1966 was a key milestone in the management of the state's fisheries. The department's efforts have led to the sustainable development of the commercial fisheries sector, which is a major contributor to the state's economy. The economic impacts of commercial fisheries management and research are significant, and this section examines the current level of expenditure on research and development in the sector. The section also discusses the challenges facing the sector and the need for continued research and development. The research in this section is based on data from the Alaska Department of Fish and Game and other sources. The research is presented in Figure 52, which shows the percentage of total expenditure on research and development in the sector by year. The research shows that the percentage of total expenditure on research and development in the sector has increased significantly over the past decade. This is due to a number of factors, including the increasing importance of research and development in the sector and the growing awareness of the need for sustainable management of the fisheries. The research also shows that the majority of the expenditure on research and development in the sector is on the part of the state government. This is due to the fact that the state government is the primary funder of research and development in the sector. The research also shows that the private sector is also a significant contributor to the expenditure on research and development in the sector. This is due to the fact that the private sector is increasingly becoming involved in research and development in the sector. The research shows that the expenditure on research and development in the sector is a small but growing part of the state's total expenditure. This is due to the fact that the state's total expenditure is growing rapidly. The research also shows that the expenditure on research and development in the sector is a small but growing part of the state's total expenditure. This is due to the fact that the state's total expenditure is growing rapidly.

4.7.2 Payments to Labor

In 2006, nonresident seafood processing workers earned about \$328 million (82 percent) of the \$400.2 million paid to all seafood processing workers (Figure 52). About 56 percent of the payments to labor in the harvesting sector, totaling around \$209.9 million, went to nonresidents. As noted in Section 4.7.1, data from ADOLWD indicate that most fish harvesting jobs in Alaska are held by residents; however, non-residents earn a greater share of the payments to labor than residents. This is because non-residents hold a significantly higher proportion of the positions in the lucrative Pollock and crab fisheries, while Alaskan harvesters are the vast majority in less lucrative or short term fisheries such as the salmon fisheries.

Figure 52. Percentage of Alaska Shore-side Processing and Harvesting Payments to Labor by Residency of Worker, 2006

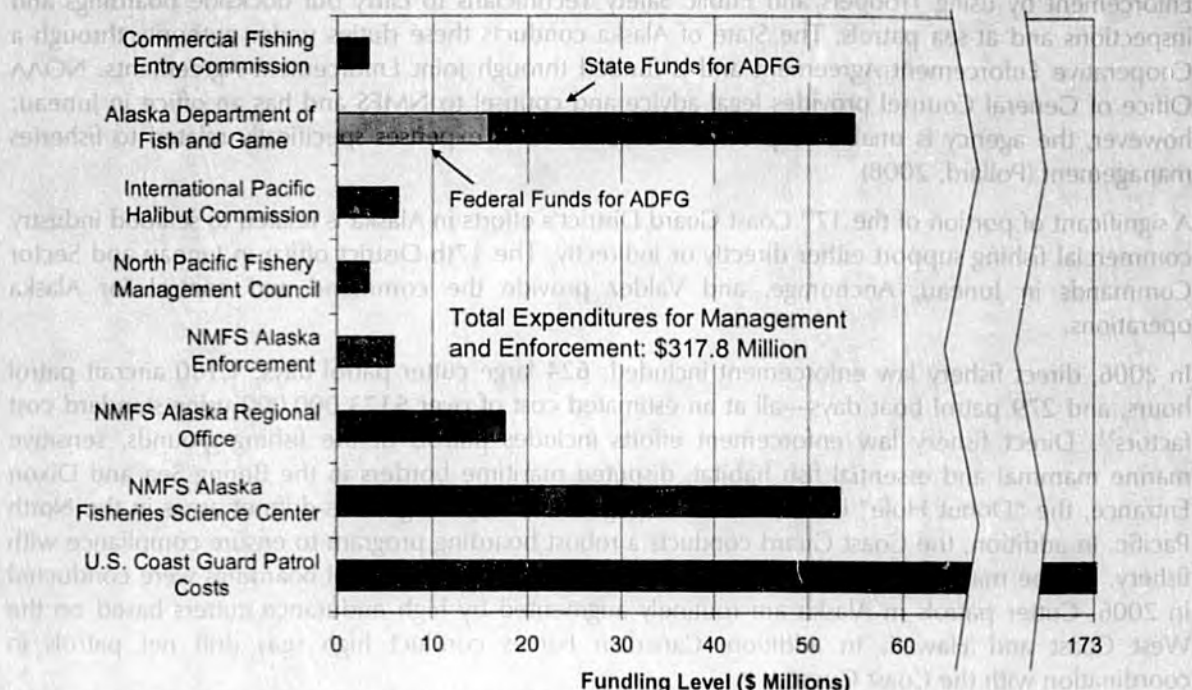


Source: Developed by Northern Economics based on data from ADOLWD (2007d, 2007e) and Hiatt (2008a).

4.8 Economic Impacts of Commercial Fisheries Management, Enforcement, and Research

The development of Alaska's commercial fisheries over the past 130 years has been accompanied by the establishment of increasingly complex management regimes designed to ensure the biological and economic health of those fisheries. State of Alaska and federal agencies have spent considerable funds to conduct stock research, make fishery management decisions, and enforce those decisions. This section examines the current level of expenditures on commercial fisheries management in Alaska. Expenditures for marketing and business development programs for Alaska's commercial fisheries are not included in this discussion, nor are expenditures for research outside of government agencies.

Estimates of state and federal expenditures in support of Alaska commercial fisheries management and research in 2006 are presented in Figure 53. The total amount spent was about \$317.8 million.

Figure 53. State and Federal Expenditures for Alaska Commercial Fisheries Management, 2006

Source: Developed by Northern Economics based on data from ADF&G (Undated), Bruce (2008), Ferrero (2008), Jones (2008), Leman (2008), Oliver (2008), Penrose (2008), Paterni (2008), Ragone (2008).

Expenditures by the ADF&G Division of Commercial Fisheries were about \$54.8 million (ADF&G undated). Federal funding, including significant amounts from Congressional earmarks, accounted for 29 percent of these expenditures. In 2006, the Division of Commercial Fisheries employed 303 full time staff and 508 seasonal workers (ADF&G undated). The Alaska Commercial Fisheries Entry Commission (CFEC), which issues permits and vessel licenses to qualified individuals in limited entry and other fisheries, had an operating budget in 2006 of approximately \$3.3 million (Penrose, 2008). Tax revenues generated by the seafood industry exceeded state expenditures on commercial fisheries management and research in FY 2006 (Section 4.5.1).

Tracking federal expenditures for Alaska commercial fisheries management and research is difficult because these expenditures are spread across several entities, some of which are not located in Alaska and/or have functions besides fisheries management and research. Some management and research functions are performed by the NMFS Alaska Regional Office based in Juneau. This NMFS regional office had an annual operating budget of about \$17.6 million in 2006 and a staff of 121 (Jones, 2009). However, most of the federally funded research on living marine resources in the waters off Alaska is conducted by the NMFS Alaska Fisheries Science Center, which is based in the NOAA Western Regional Center's Sand Point Facility in Seattle. The operating budget for the Alaska Fisheries Science Center in 2006 was around \$53.3 million (Ferrero 2008). The North Pacific Fishery Management Council, which oversees management of most groundfish fisheries in the waters off Alaska and jointly manages Bering Sea crab fisheries, had an annual operating budget in 2006 of about \$3.4 million and a staff of 15 (Oliver 2008).

NMFS Office for Law Enforcement, which is involved in the enforcement of fisheries management regulations in the EEZ, has offices in Juneau, Anchorage, Homer and Petersburg. Fully staffed, these Alaska offices operate with 17 Special Agents and 15 Enforcement Officers. Their total budget was

about \$6.0 million in 2006 (Paterni, 2008). The Alaska State Troopers assist the NMFS Office for Law Enforcement by using Troopers and Public Safety Technicians to carry out dockside boardings and inspections and at-sea patrols. The State of Alaska conducts these duties under authority through a Cooperative Enforcement Agreement and is funded through Joint Enforcement Agreements. NOAA Office of General Counsel provides legal advice and counsel to NMFS and has an office in Juneau; however, the agency is unable to provide a breakdown of expenses specifically related to fisheries management (Pollard, 2008).

A significant portion of the 17th Coast Guard District's efforts in Alaska is related to seafood industry commercial fishing support either directly or indirectly. The 17th District office in Juneau and Sector Commands in Juneau, Anchorage, and Valdez provide the command and control for Alaska operations.

In 2006, direct fishery law enforcement included: 624 large cutter patrol days, 1,160 aircraft patrol hours, and 279 patrol boat days—all at an estimated cost of over \$173,000,000 using standard cost factors⁵¹. Direct fishery law enforcement efforts includes patrols of the fishing grounds, sensitive marine mammal and essential fish habitat, disputed maritime borders in the Bering Sea and Dixon Entrance, the "Donut Hole" in the Central Bering Sea, and the high seas driftnet areas in the North Pacific. In addition, the Coast Guard conducts a robust boarding program to ensure compliance with fishery, marine mammal, safety, and immigration rules; 748 fishing vessel boardings were conducted in 2006. Cutter patrols in Alaska are routinely augmented by high endurance cutters based on the West Coast and Hawaii. In addition, Canadian Forces conduct high seas drift net patrols in coordination with the Coast Guard.

Three medium endurance cutters – STORIS, ACUSHNET, and ALEX HALEY—are based in Alaska for the primary purpose of fishery enforcement. Six 110' patrol boats spend considerable time on enforcement. In addition, the air stations at Kodiak and Sitka provide both law enforcement patrols and search and rescue (SAR). The Kodiak Fishery Training Center has 15 personnel dedicated to supporting the fishery mission and the 17th District staff in Juneau has four dedicated personnel, with 6 more inspectors stationed at the Sectors or Marine Safety Detachment. These inspectors, along with other personnel, conducted nearly 1,100 fishing vessel safety exams in 2006, and issued approximately 700 safety decals to those vessels which passed their exams as part of this voluntary program. Small boat stations in Ketchikan and Juneau routinely enforce IFQ regulations. Four HH65 helicopters with 53 personnel are based in Kodiak for the primary purpose of supporting fisheries enforcement. The total number of personnel primarily dedicated to fishery enforcement is 321.

Six buoy tenders maintain aids to navigation in ports and waterways important to commercial fishing and transport of fish products or supporting logistics. Marine safety personnel support commercial fishing and processing through safety and pollution prevention and response programs. In addition to short range aids to navigation, seven LORAN stations provide electronic navigation. Support centers in Kodiak and Ketchikan provide logistical, medical, and engineering support to the operating forces in Alaska.

In 2006, approximately 2,550 active duty, reserve, and civilian Coast Guard personnel were based in Alaska⁵². It is difficult to estimate the exact proportion of personnel dedicated to commercial fishing enforcement and the economic activity they and their families generate in addition to the economic

⁵¹ Computed from 17th Coast Guard District 2006 year in Review Report to the North Pacific Fishery Management Council and Commandant Instruction 7310.1J

⁵² USCG Alaska Fact Sheet (2006)

activity generated by Coast Guard units; however, a conservative estimate is that 765 or 30 percent or more of total personnel are based in Alaska as a result of commercial fishing.

It is estimated that management of Alaska halibut fisheries represented about \$6.4 million of IPHC's total annual expenditures in 2006 (Leman 2008).

State and federal expenditures toward commercial fisheries management and research directly support the functions of the institutions carrying out the research. In the case of universities, research funds support faculty investigators, student assistants and others directly involved in the research activity. The administration of research projects and various research-supporting activities generate additional permanent and temporary positions within the universities. In the case of other institutions, such as ADF&G and NMFS, fisheries management and research money is a primary source for funding the employment of in-house researchers, supporting staff and other workers.

It is also important to discuss federal research programs that are not directly related to Alaska commercial fisheries but are intended to indirectly benefit those fisheries. Most notable among these programs is the Steller sea lion research program, which was expanded out of a concern that the Alaska groundfish fishery might face costly restrictions as a result of scientific uncertainty about the fishery's role, if any, in the decline of the Steller sea lion population (NMFS 2007a). It was hoped that with this program the fishery could remain open while, simultaneously, more research and protection of Steller sea lion could occur.⁵³ Between FY 2000 and FY 2006, a total of \$166.75 million was appropriated for Steller sea lion research and management through Congressional earmarks or the NMFS budget (NMFS 2007a).⁵⁴ Although much of this funding has been channeled into institutions outside of Alaska, several in-state entities have also been recipients, including ADF&G, NPFMC, Alaska SeaLife Center, University of Alaska Fairbanks, Alaska Fisheries Development Foundation and Prince William Sound Science Center (NMFS 2007a).

Research-related spending not only generates jobs and income in the entities that are recipients of the research funds, it can have a "ripple" economic effect throughout a region. For example, research funding can benefit a large variety of businesses in the private economy by providing funding recipients with procurement budgets that allow them to purchase research-related equipment, supplies and services (e.g., computer components and other high-tech equipment, professional and maintenance services, travel services, aircraft and vessel charters and printing and photographic services). The periodic convening of researchers at research symposia and workshops can also benefit private businesses in the service sector, such as hotels and restaurants. In addition, the majority of the wages and salaries of researchers and other research-related workers circulate back into the local economy through purchases of local goods and services, thereby providing a foundation for other jobs in the retail and service sectors.

⁵³ NMFS (2007a:3-31) summarized the importance of the Steller sea lion research program to Alaska commercial fisheries as follows: "Several of the largest U.S. fisheries operate within the range of the [Steller sea lion]; the fisheries' role, if any, in the decline of the western [Steller sea lion population] remains both a topic of debate ... and a significant issue for ongoing litigation (*Greenpeace et al. v. NMFS and At-Sea Processors et al.*, Civ. No. C98-0492-C). On the one hand, if fisheries play a significant part in the decline and lack of recovery, then actions should be taken to avoid those effects. On the other hand, if fisheries do not impede recovery, then the economic viability of those fisheries should not be unnecessarily compromised by regulations or other legal requirements related to protection of [Steller sea lions]. In either case, [Steller sea lion] scientific information is critical to the future of both the [Steller sea lion] population and commercial fisheries in Alaska."

⁵⁴ The budget for Steller sea lion research (including research outside of government agencies) since 2001 has been the largest for a species listed as threatened or endangered under the U.S. Endangered Species Act (Holmes et al. 2006).

4.9 Economic Impacts of the Western Alaska Community Development Quota Program

As described in Chapter 2, the full development of the domestic fishing and processing sectors in the BSAI fisheries between 1976 and 1990 generated substantial wealth; however, little of that wealth flowed to the small, rural villages along the coast of western Alaska. While the communities bordered some of the richest fishing grounds in the world, the high capital investment required to compete in these large-scale, industrialized fisheries precluded small communities from participating in their development.⁵⁵ This concern provided part of the impetus behind the creation of the Community Development Quota (CDQ) Program (National Research Council 1999; Northern Economics 2002).⁵⁶

This section describes the economic effects of the CDQ Program with respect to revenues, royalties, assets, employment and wages. The most recent year for which data are available is 2005—annual CDQ statistics have not been compiled and published by the State of Alaska or NMFS after 2006 amendments to the CDQ provisions of the Magnuson-Stevens Act altered the administrative aspects of the CDQ Program, including the CDQ reporting requirements and oversight roles of NMFS and the state.⁵⁷ To show how the CDQ Program has developed since its inception, this section includes historical information as well as the most current update.

The CDQ Program was created by the NPFMC in 1992 as part of the inshore/offshore allocations of pollock in the BSAI fishery. Initially, the CDQ Program set aside 7.5 percent of the BSAI's annual total allowable catch for pollock for allocation to qualifying communities. Over the years, the CDQ Program expanded to become multi-species in nature, encompassing both groundfish and non-groundfish fisheries.

Currently, 65 communities located along the Bering Sea are eligible for the CDQ Program. These communities are aligned into six CDQ groups: Aleutian Pribilof Island Community Development Association, Bristol Bay Economic Development Corporation, Central Bering Sea Fishermen's Association, Coastal Villages Regional Fund, Norton Sound Economic Development Corporation, and Yukon Delta Fisheries Development Association.

The total net income generated by the CDQ Program from 1992 through 2005 was approximately \$362 million (Figure 54). Initially, program revenues were from royalties obtained from leases of quota species. Between 1992 and 2005, approximately \$454 million were generated from these royalty payments (Figure 55). Eventually, revenues were obtained from other sources such as investments and other business activities. Revenues minus royalty income for the program, 1992 through 2000, were equal to nearly \$318 million. The dramatic increase in CDQ revenues in 2004 was due, in part, to investment payouts to several CDQ groups, high pollock and crab prices, and

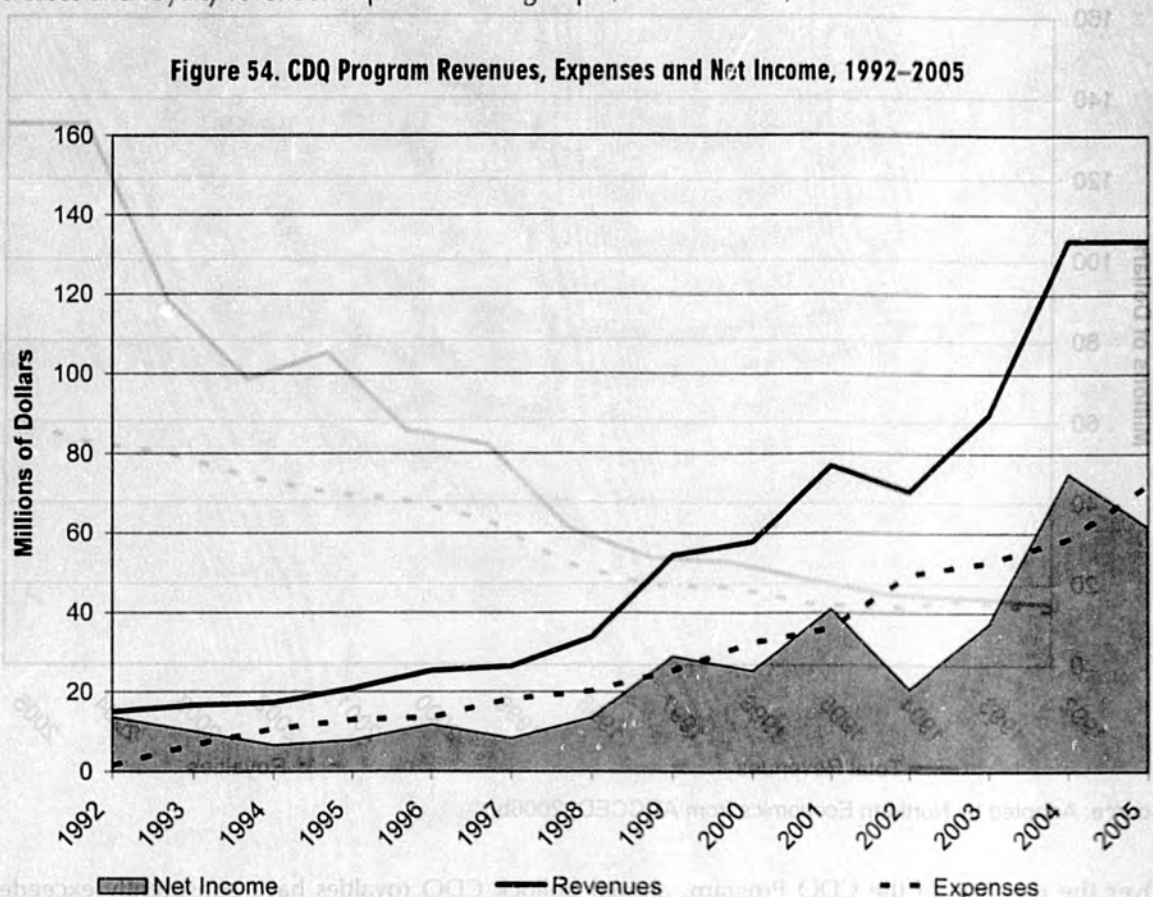
⁵⁵ The economic barriers to participation in the offshore groundfish fishery are summarized by ADCCED (undated) as follows: "Involvement in Alaska's groundfish fishery operations requires considerable investment and expertise. Factory trawler companies are multimillion-dollar operations. Their employees must possess sophisticated business and technical skills to compete in the industry. These companies not only employ seasoned captains, engineers, plant managers, maintenance crews, deckhands and processors, but headquarters are staffed with accountants, human resource professionals, administrators, lobbyists, marketing arms and sales forces."

⁵⁶ As defined by section 305(i)(1)(A) of the Magnuson-Stevens Act, the purpose of the CDQ Program is to 1) provide eligible western Alaska villages with the opportunity to participate and invest in fisheries in the BSAI Management Area; 2) support economic development in western Alaska; 3) alleviate poverty and provide economic and social benefits for residents of western Alaska; and 4) achieve sustainable and diversified local economies in western Alaska. The communities in western Alaska are predominantly Alaska Native villages.

⁵⁷ The CDQ provisions of the Magnuson-Stevens Act were amended by the Coast Guard and Maritime Transportation Act of 2006.

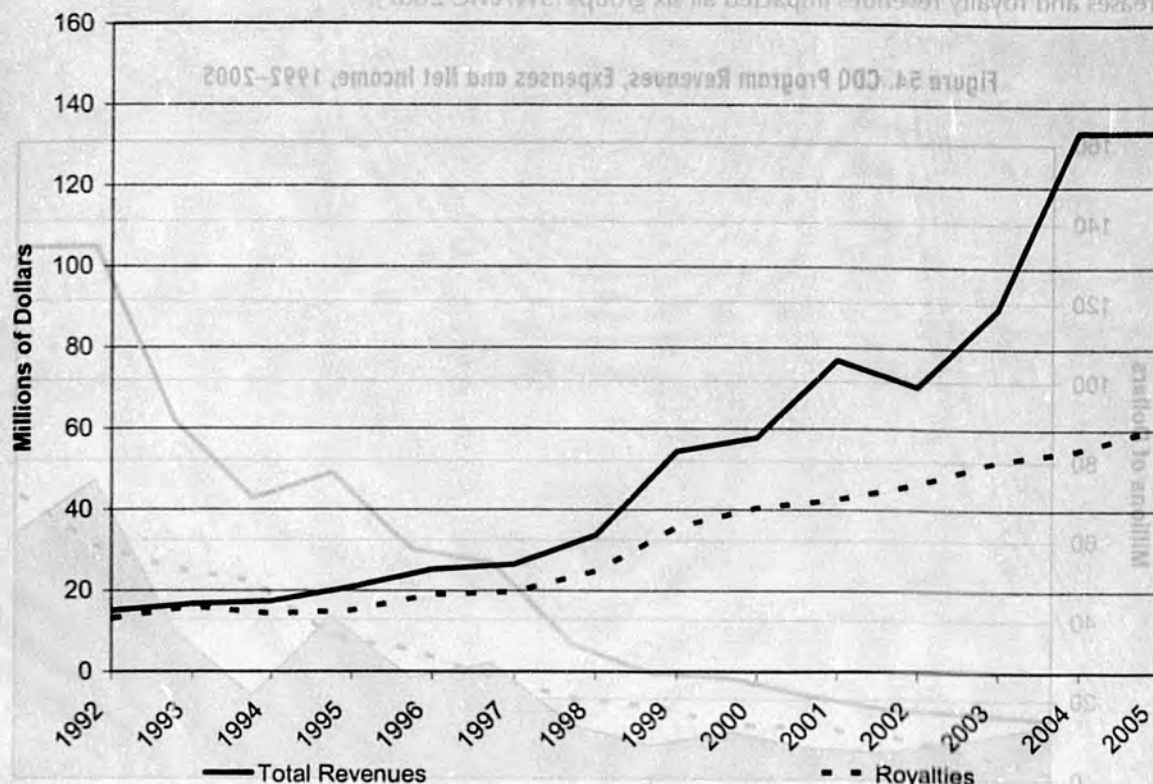
some increase in royalty revenues. Investment payouts affected only a few groups, while price increases and royalty revenues impacted all six groups (SWAMC 2007).

Figure 54. CDQ Program Revenues, Expenses and Net Income, 1992-2005



Source: Adapted by Northern Economics from ADCED, 2006a.

Figure 55. CDQ Program Royalties and Revenues, 1992–2005

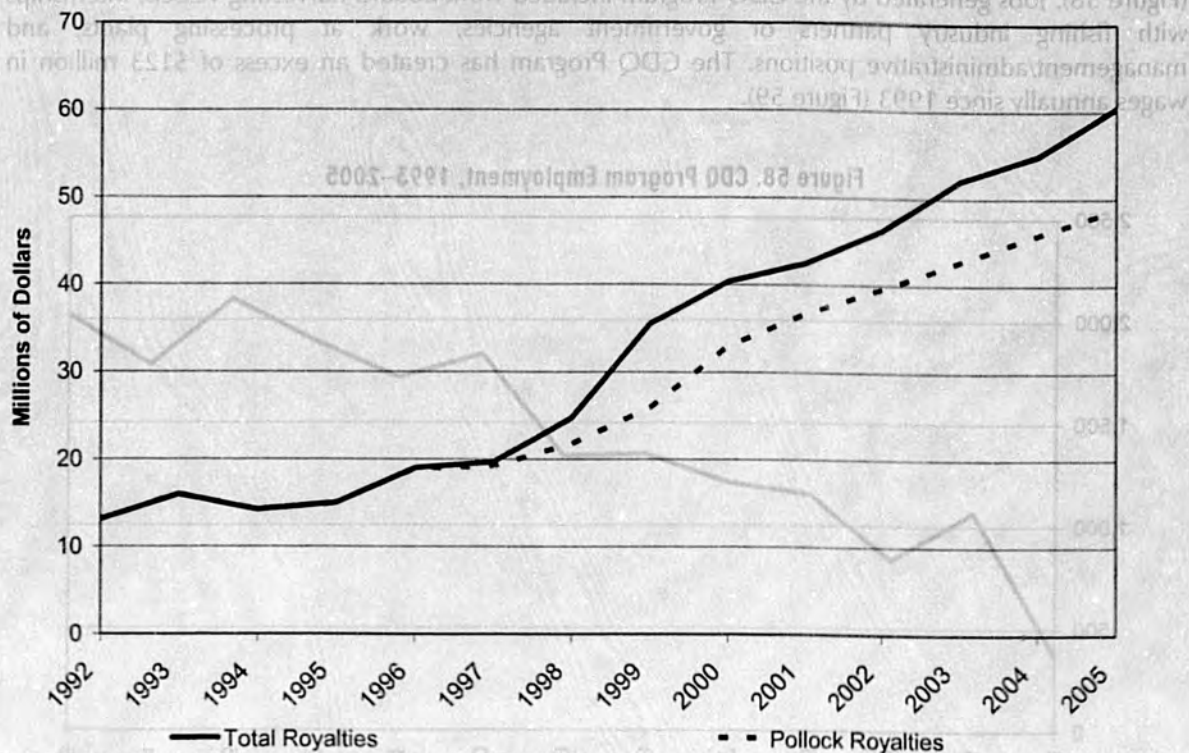


Source: Adapted by Northern Economics from ADCCED, 2006b.

Over the duration of the CDQ Program, annual pollock CDQ royalties have consistently exceeded \$13 million (Figure 56). In 2005, the CDQ groups received nearly \$49 million in pollock CDQ royalties, while royalties from the multi-species program provided the groups an additional \$11.7 million. The revenue stream from the lease of CDQ allocations has permitted the CDQ groups to make substantial fisheries-related investments. The value of CDQ group assets in aggregate increased from about \$13.3 million in 1992 to over \$415 million in 2005 (Figure 57). The CDQ groups have acquired ownership interests in the at-sea processing sector and catcher vessels. In addition, some CDQ groups have invested in inshore processing plants, motherships, and catcher-processors that operate in the crab, halibut and groundfish fisheries. A number of CDQ groups have also promoted investment in local, small-scale fishing operations targeting salmon, herring, halibut, or other species. For example, CDQ groups have channeled significant resources toward local fisheries-related infrastructure development (Northern Economics, Inc. 2002). In 2004, CDQ earned income exceeded royalty revenues for the first time in program history, and earned income doubled royalty revenues in 2005. As CDQ groups continue to make investments in various fisheries assets, capacity for earned income will continue to increase in future years (SWAMC 2007).⁵⁸

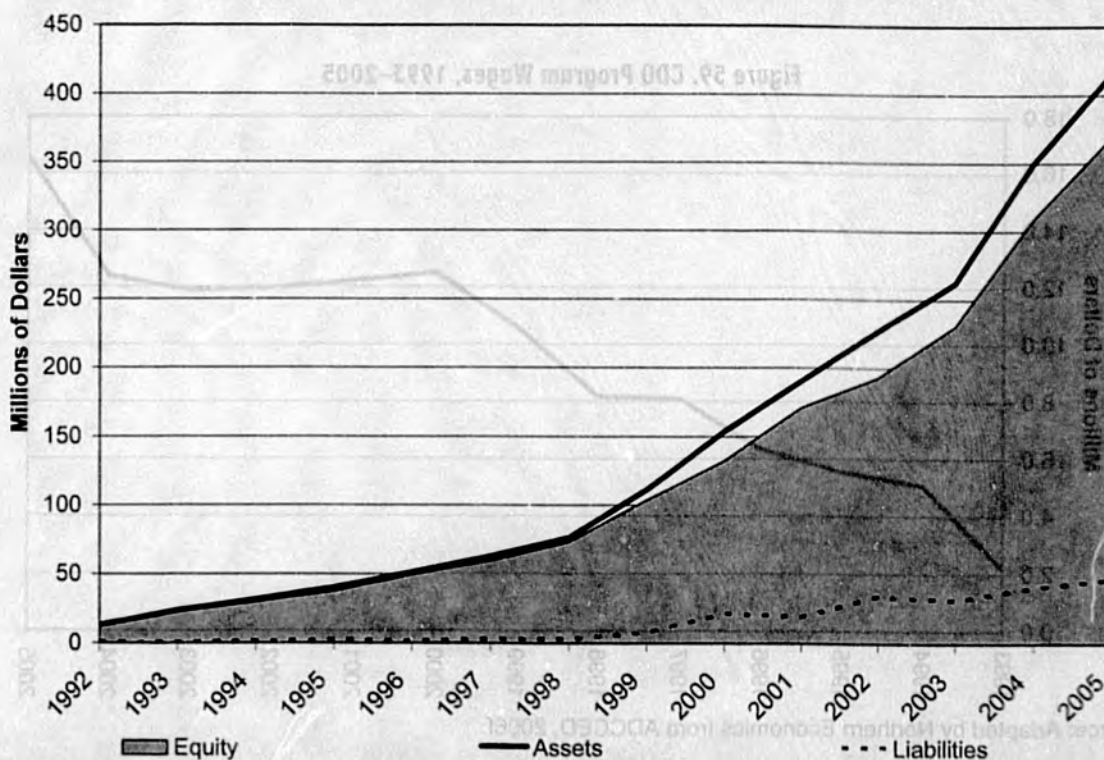
⁵⁸ In 2006, CDQ Program regulations were amended to allow CDQ groups to make up to 20 percent of their annual investments in projects that are not fishery-related, including matching grants or leveraging dollars with other agencies, foundations or non-profit projects, but only within the regions and communities that the CDQ groups serve.

Figure 56. CDQ Program Pollock Royalties and Total Royalties, 1992-2005



Source: Adapted by Northern Economics from ADCCED, 2006c.

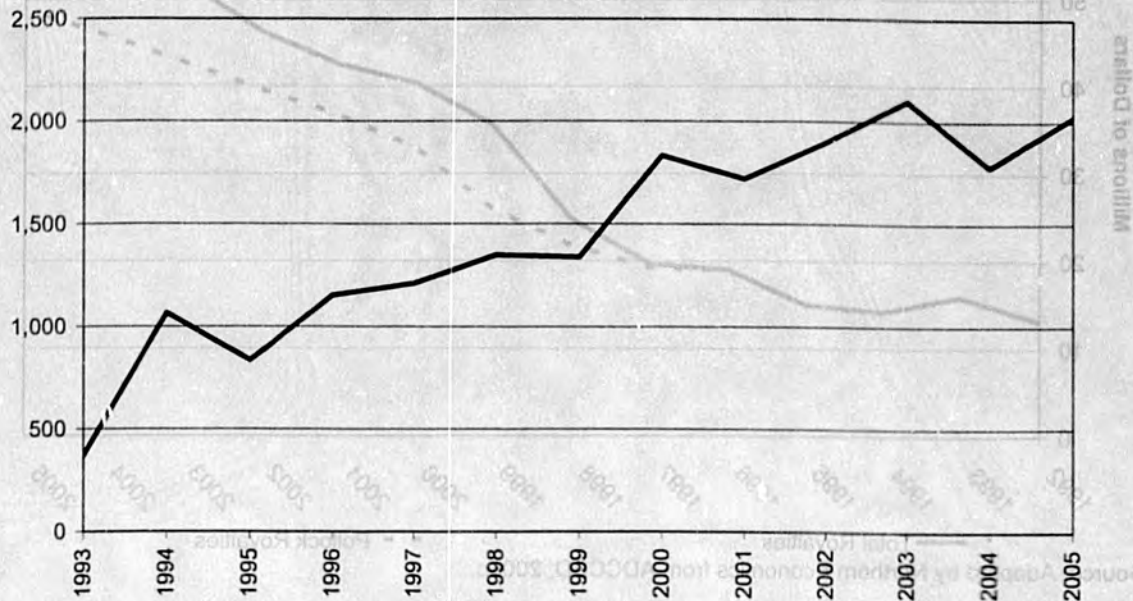
Figure 57. CDQ Program Assets, Liabilities and Equity, 1992-2005



Source: Adapted by Northern Economics from ADCCED, 2006d.

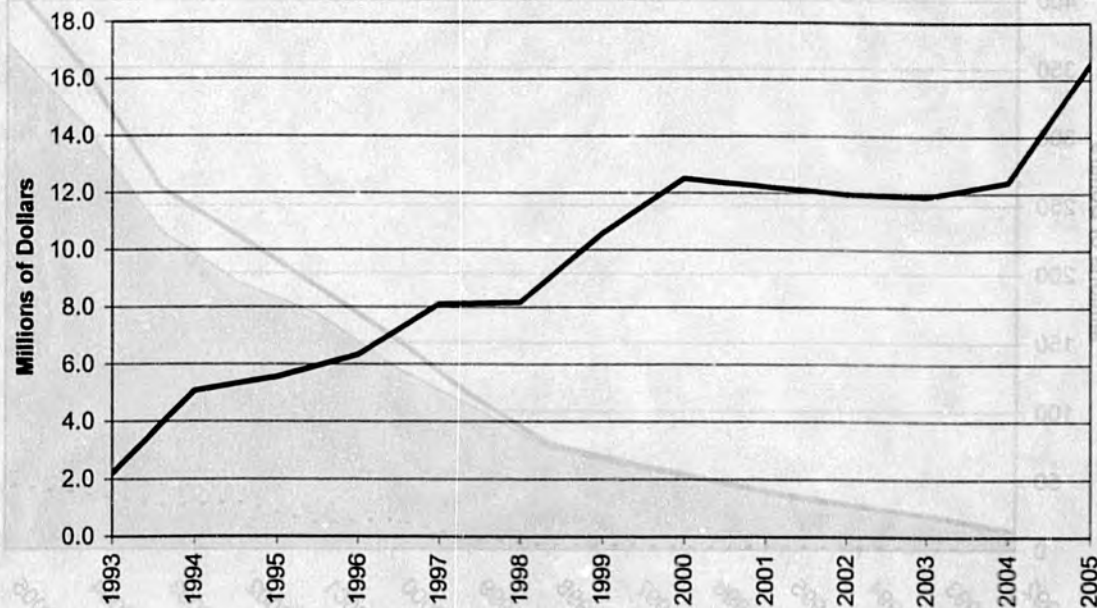
Employment opportunities have been one of the most tangible direct benefits of the CDQ Program (Figure 58). Jobs generated by the CDQ Program included work aboard harvesting vessels, internships with fishing industry partners or government agencies, work at processing plants, and management/administrative positions. The CDQ Program has created an excess of \$123 million in wages annually since 1993 (Figure 59).

Figure 58. CDQ Program Employment, 1993–2005



Source: Adapted by Northern Economics from ADCCED, 2006e.

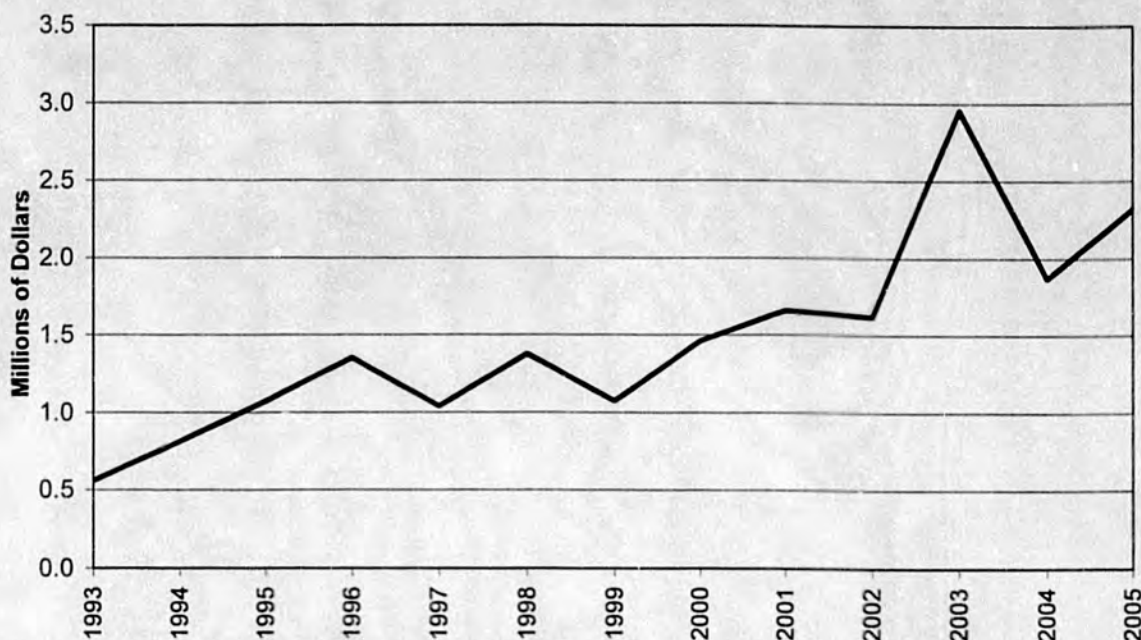
Figure 59. CDQ Program Wages, 1993–2005



Source: Adapted by Northern Economics from ADCCED, 2006f.

Training of CDQ community residents has been a primary objective for CDQ groups from the onset of the program and has been promoted as an essential means to developing a sustainable, locally-based fishery economy. Each CDQ group provides training for their residents based not only on the individual needs of the trainee, but also on the overall needs of the community (Northern Economics, Inc. 2002). Figure 60 shows CDQ group expenditures for training and education. According to CDQ group statistics compiled by ADCCED, approximately 13,350 people received training between 1993 and 2005 (there may be some double counting in this estimate because an individual can take advantage of more than one training program).

Figure 60. CDQ Program Training Expenditures

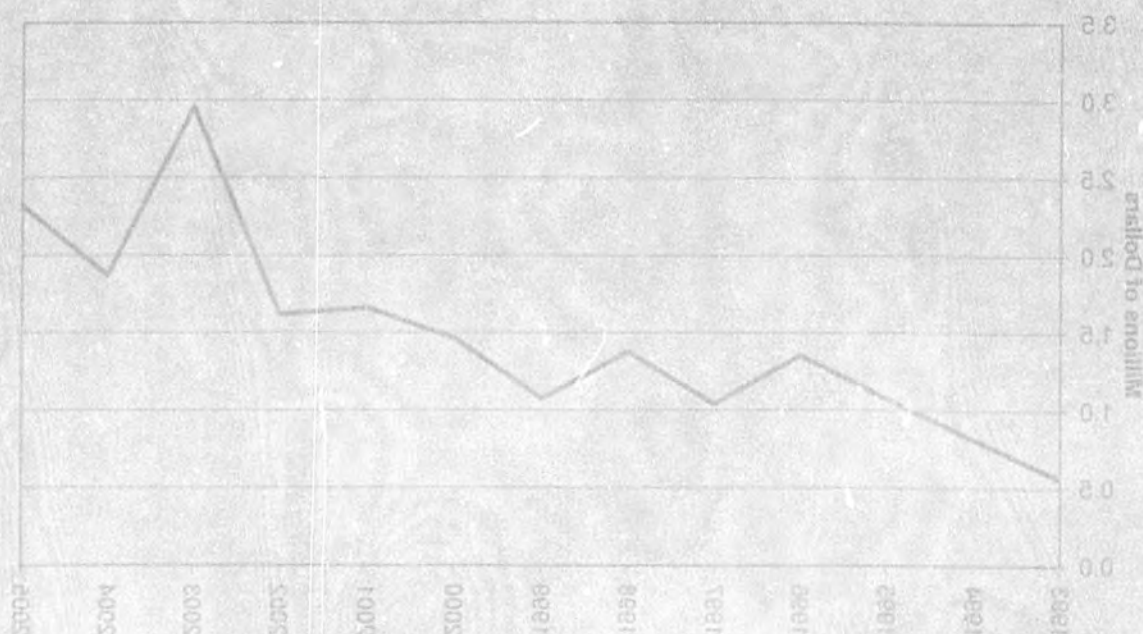


Source: Adapted by Northern Economics from ADCCED, 2006g.

Another important effect of the CDQ Program has been its "Alaskanizing" influence on the state's seafood industry (ADCCED 2002). Alaska's seafood processors are dominated by businesses headquartered out of state; few, if any, major "Alaska" shore-side facilities or at-sea catcher-processor vessels are headquartered in Alaska (ADCCED 2002). While the groundfish and crab fisheries continue to be dominated by Seattle-based companies, CDQ group investments in inshore processing plants, motherships and catcher-processors that operate in the crab and groundfish fisheries have significantly increased the participation of Alaska residents in those fisheries (Northern Economics, Inc. 2002). No other mechanism has been as successful as the CDQ program in promoting involvement of Alaskans in the harvest and processing of offshore Bering Sea fishery resources (ADCCED undated).

Training of CDO community residents has been a primary objective for CDO groups from the onset of the program and has been promoted as an essential means to developing a sustainable, locally-based fishery economy. Each CDO group provides training for their residents based not only on the individual needs of the trainees, but also on the overall needs of the community (Northern Economics, Inc. 2002). Figure 60 shows CDO group expenditures for training and education. According to CDO group statistics compiled by ADCCED, approximately 13,350 people received training between 1993 and 2002; there may be some double counting in this estimate because an individual can take advantage of more than one training program.

Figure 60. CDO Program Training Expenditures



Source: Adapted by Northern Economics from ADCCED, 2006g.

Another important effect of the CDO Program has been its Alaska-wide influence on the state's seafood industry (ADCCED 2002). Alaska's seafood processors are dominated by businesses headquartered out of state; few, if any, major Alaska shore-side facilities or at-sea catcher-processor vessels are headquartered in Alaska (ADCCED 2002). While the groundfish and crab fisheries continue to be dominated by Seattle-based companies, CDO group investments in inshore processing plants, motherhips and catcher-processors that operate in the crab and groundfish fisheries have significantly increased the participation of Alaska residents in those fisheries (Northern Economics, Inc. 2002). No other mechanism has been as successful as the CDO program in promoting involvement of Alaskans in the harvest and processing of offshore, longline fishery resources (ADCCED undated).

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Addendum

Addendum: The citation for 'Montaigne, 2007' replaces that of 'Bourne, 2003' referenced on page one of the Executive Summary (ES-1) and on page 74.

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