

Subsistence Salmon Harvest Summary

Northwest Alaska 2002

- Norton Sound District
- Port Clarence District
- Kotzebue District

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BACKGROUND

Subsistence salmon fishing has been a major feature of life in northwest Alaska for centuries. Coastal sites with fishing artifacts in the area date to more than 4,000 years ago, and it is probable that earlier sites have been obscured by rising sea levels. Salmon, along with marine mammals and terrestrial mammals, were likely among the foundations of the ancient subsistence economy and they remain an essential component to the present day.

In 2002, in the Norton Sound District, about 7,800 people lived in 11 predominantly Iñupiaq or Yup'ik Eskimo communities ranging from Stebbins in the south to Nome in the north and including St. Lawrence Island. In the Port Clarence District about 550 people lived in two predominantly Iñupiaq communities, Teller and Brevig Mission; and in the Kotzebue District about 8,800 people lived in 15 predominantly Iñupiaq communities stretching from Wales in the south to Point Hope in the north. Most local residents in the region participated in a mixed subsistence-cash economy, depending on local wild foods for cultural and nutritional sustenance.

In the Norton Sound and Port Clarence districts, subsistence fishers operated gillnets or seines in the main Seward Peninsula rivers and in the coastal marine waters. Beach seines were used near the spawning grounds to catch schooling or spawning salmon and other species of fish. The major portion of fish taken during the summer months was air dried or smoked for later consumption by local residents. Chum, pink, and coho salmon were found throughout the Norton Sound and Port Clarence districts, with chinook salmon more common in eastern and southern Norton Sound and sockeye salmon more common in Port Clarence drainages.

In the Kotzebue District, salmon's role in the wild food diet varied from community to community, affected primarily by salmon abundance. Along the Noatak and Kobuk rivers, where runs of chum salmon are strong, many households' activities in middle and late summer (July to early September) revolved around the catching, drying, and storing of salmon for use during the winter. Some local residents based their fishing activities out of the village, while others moved seasonally to fish camps where they stayed from several days to several weeks. Chum salmon predominated in the district, with small numbers of other salmon species present.

The management of the region's salmon fisheries requires that the department know how many salmon are harvested in both the subsistence and commercial fisheries. Data on subsistence harvests are not used for inseason management, but rather they help to identify subsistence needs, which must be considered in management decisions.

From 1963 to 1993, ADF&G assessed subsistence salmon harvests in the region using a combination of household surveys, calendars, and permits. Permit data collection methods were the most consistent over time, but applied only to fishing in the Nome subdistrict. Survey data collection methods were not consistent from year to year and the results were published as simple, unexpanded data with no adjustments for variations in sampling fractions. In 1986, as a result of funding reductions, the Division of Commercial Fisheries discontinued subsistence salmon surveys in Norton Sound. By 1993 it became apparent that managers needed more reliable subsistence salmon harvest data and the following year the department initiated a new annual subsistence salmon harvest assessment effort in northwest Alaska that provided more extensive, complete, and reliable salmon harvest estimates than had existed previously.

In 2002 the department, in cooperation with Kawerak, Inc., continued the subsistence salmon harvest assessment program in the Norton Sound region as developed in 1994. This included household surveys in 8 of the 11 communities in the Norton Sound District and both communities in the Port Clarence District. In Nome (Norton Sound Subdistrict 1), subsistence salmon harvests were determined through the return of permits as required since 1974. In the Kotzebue District in 2002, subsistence salmon harvests were documented in two communities, Noatak and Noorvik. The Division of Commercial Fisheries funded most of the household surveys and the Division of Subsistence collected and analyzed the data. The Bering Sea Fishermen's Association and Kawerak, Inc. provided funding for local village researchers to assist with the data collection in the Norton Sound and Port Clarence districts.

SUBSISTENCE SALMON HARVEST COLLECTION METHODS

Two methods were used to assess subsistence salmon harvests in northwest Alaska in 2002: 1) post-season household surveys in 12 communities, and 2) fishing permits in the Nome Subdistrict and the Salmon Lake-Pilgrim River drainage.

Household Surveys

In the Norton Sound District, household surveys were conducted in Golovin, White Mountain, Elim, Koyuk, Shaktoolik, Unalakleet, St. Michael, and Stebbins. The seasonal community of Council on the Niukluk River was not surveyed. Subsistence salmon fishing occurs at Council by Nome residents, but these harvests are not routinely documented by household surveys or permit data (a fishing permit is not required for the Niukluk River, although the department issues one to people who request it). In 2001 a study jointly conducted by Kawerak and the Alaska Department of Fish and Game

estimated Nome's salmon harvest in the Council-White Mountain-Golovin area to be 1,436 salmon (Magdanz, Tahbone, Kamletz, and Ahmasuk 2003). Of these, 46% were chum, 41% were coho, and the remainder chinook and pink salmon. Harvests in the Council-White Mountain-Golovin area accounted for an estimated 23% of Nome's subsistence salmon harvest in 2001. Twenty-nine Nome households caught salmon in this area.

In Port Clarence, household surveys were conducted in both of the district's two communities, Brevig Mission and Teller. Like the Council area, subsistence salmon fishing by Nome residents takes place in the Teller area, but these harvests are not routinely documented by household surveys or permit data. The study by Magdanz et al. (2003) estimated Nome's salmon harvest in the Port Clarence area to be 1,158 salmon, of which 37% were sockeye, 23% chum, and the remainder a mix of other salmon species. About 35% of Nome's salmon harvest in the Port Clarence area was taken by King Island households fishing in the Woolley Lagoon area at the western edge of the Norton Sound District. About 63% of the harvest was taken by Nome residents using nets in the Teller area. In the Port Clarence District, permits are required only for Salmon Lake and the Pilgrim River drainage.

In the Kotzebue District, household surveys were conducted in Noatak and Noorvik. Ambler, Kiana, Kobuk, Kotzebue, and Shungnak were not surveyed in 2002, although they normally have been in past years. The communities of Wales, Diomede, Shishmaref, Deering, Buckland, Selawik, Kivalina, and Point Hope are not routinely surveyed due to little availability of salmon, the lack of competing commercial salmon uses, or limited staff time and funding.

The goals of the post-season household survey were to:

- 1) collect harvest data that would result in a total harvest estimate for subsistence salmon by species by community, and
- 2) compile information on gear types, participation rates, sharing, household size, and use of salmon for dog food.

Researchers attempted to contact 100% of the households in each of the surveyed communities. Actual sample rates ranged from 83% of households in Golovin to 99% of households in Unalakleet. Overall, 93% of the households in the surveyed communities were interviewed. Table 1 lists the study communities and summarizes the samples. Researchers interviewed households with the use of a two-page survey instrument (Appendix). In Norton Sound and Port Clarence, one department staff, Peter Nanouk, was responsible for conducting the household surveys. In most communities he was assisted by one or more local residents. In Kotzebue Sound, the subsistence salmon

harvest survey was done in conjunction with a big game harvest survey. These were administered by local residents in each community.

Households surveys were conducted in most Norton Sound and Port Clarence communities between October 7 and November 19, 2002. The exception was Unalakleet, where surveying began December 30, 2002 and ended January 12, 2003. Household surveys in Noatak took place November 14-15, 2002, and in Noorvik January 27-February 8, 2003. Prior to conducting the surveys, Kawerak obtained approvals for the research from tribal councils in the Norton Sound and Port Clarence communities. In Kotzebue Sound, Maniilaq Association obtained approvals from tribal councils to conduct the combined salmon and big game harvest surveys. In most cases, tribal councils identified one or more local residents willing to assist with the surveys. Before arriving in a community, ADF&G staff called the tribal office to ask if it were a suitable time to visit. Announcements about the surveys were broadcast on the local radio stations. Upon arrival in a community, staff checked in with the tribal council office to introduce themselves and arrange to meet with the village assistant. When possible, the same local assistants were used in 2002 as in the previous years.

With the help of knowledgeable residents, ADF&G staff updated the community household list from 2001, adding new households and deleting those no longer there. In most communities, ADF&G staff and local assistants worked concurrently to contact all the households and administer a survey, recording their progress on a tracking sheet. In Noorvik, surveys were done by six high school science students who were trained by ADF&G staff and supervised by their teacher. Surveys typically took less than 15 minutes each to complete and most communities were surveyed in two days. In the Norton Sound and Port Clarence area, staff mailed a survey to households who were out-of-town or unavailable at the time of the village visit. In total, 727 subsistence salmon surveys were completed in the Norton Sound District, 138 in the Port Clarence District, and 191 in the Kotzebue District in 2002 for a total of 1,056 household surveys (Table 1).

Norton Sound Subdistrict 1 Fishing Permits

In Norton Sound Subdistrict 1 (Nome), low salmon stock levels in the area combined with a large concentration of users have led the department to issue subsistence fishing permits since 1974. Since 1999, Tier II chum salmon fishing permits have also been issued to a limited number of Nome households. These households had first priority over other subsistence users if only a small number of chum salmon were available for harvest. Tier I fishing permits were available to all other households when run strength was determined to be adequate. The Tier I permits identified a particular fishing location, each of which had its own catch limit per permit; additional permits for other areas could be issued to fishermen after the earlier one had been returned. The permits included a

calendar on which to record harvest by species, river, and date. After the fishing season, households returned the completed calendar to the department, whether or not they actually fished. In 2002, 141 permits (103 Tier I and 38 Tier II permits) were issued for Subdistrict 1, 113 (80%) of which were returned to the department.

Salmon Lake and Pilgrim River Fishing Permits

Households fishing for salmon in Salmon Lake or the Pilgrim River drainage (Port Clarence District) were required by regulation to apply for a permit at the department's Nome office. Their application was logged in department records and they were given a calendar on which to record harvest. After the fishing season, households were required to return the completed calendar to the department, whether or not they actually fished. In 2002, 28 households requested permits for this area, 21 (75%) of which were returned to the department.

SUBSISTENCE SALMON HARVEST ESTIMATION

Once completed, each community's surveys were reviewed by the project field workers and by the project leader in Kotzebue. Then the data were entered into a computer database for analysis. Households were stratified into "usually fish" and "do not usually fish" households on the basis of their response to question 2 on the survey instrument: "Does your household **usually** subsistence fish for salmon?" (Appendix). Households not surveyed in 2002 were placed in the same stratum as in previous years (based on their response to the same question) or, if they were new to the community, then in the "do not usually fish" stratum. The salmon survey data were then expanded by stratum to estimate total community harvests with expansion factors varying by stratum depending upon the sampling rate. Community harvest estimates and their variances were summed across communities for district totals and across all districts for area totals.

If fewer than 30 households and less than 50% of the households in a community harvest strata were surveyed, then the data were not expanded and the estimated and the reported harvests were the same. This was not the case for any community in 2002.

As in the past four years, the Nome permit data were not expanded in 2002. This contrasted with earlier years when permit data were expanded by drainage with expansion factors based upon the fraction of unreturned permits for that drainage. Department staff believed that expansion of the permit data led to an overestimation of the salmon harvest because the unreturned permits were most likely from households that did not fish.

SUBSISTENCE SALMON HARVEST SURVEY RESULTS, 2002

Subsistence Salmon Harvest

In 2002 the estimated subsistence harvest of salmon in the Norton Sound, Port Clarence, and Kotzebue districts was 132,598 fish. A summary of the 2002 subsistence salmon harvest estimates by community is presented in Table 2. Subsistence salmon harvests by district are summarized in Figures 1-3. Tables 3 and 4 summarize subsistence salmon harvests by community in the three districts for the years 1994-2002.

Norton Sound District

The 2002 subsistence salmon harvest in the Norton Sound District was 103,490 fish. This was the highest subsistence salmon harvest in this district since 1996 (Fig. 11). Pink salmon returns are strongest in even-numbered years, accounting in large part for this year's higher subsistence harvest. In 2002, pink salmon returns were highly variable in the district, with some rivers having very high returns and some very low returns when compared to the historical averages (Menard 2002). Coho, chum, and chinook returns were generally below average. For comparable even-numbered years, the 2002 total harvest was about 34% more than the 2000 harvest and about 6% more than the 1998 harvest for the same communities.

Figures 4-8 depict subsistence salmon harvests by species in the Norton Sound District for the past nine years. The 2002 chum salmon harvest was one of the lowest recorded during this period, while the pink salmon harvest was the highest since 1996. The chinook, coho, and sockeye salmon harvests were similar to 2001, but still below the average of the past nine years. Figures 9-11 depict harvest information in a linear format for the period 1994-2002.

Of the total salmon harvest, 5% were chinook, 17% were chum, 62% were pink, 1% were sockeye, and 15% were coho (Fig. 12). Figure 12 also compares the 2002 proportional contribution of species to the total harvest with 2000, a comparable year of pink salmon abundance. In 2000, a year of abundant pink salmon, pink salmon accounted for 50% of the total harvest by number.

In the Norton Sound District, the estimated mean salmon harvest was about 111 salmon per household; the estimated breakdown of this harvest was 6 chinook, 19 chum, 69 pink, 1 sockeye, and 16 coho. As in past years, Subdistrict 5 (Shaktoolik) accounted for the largest mean household harvest of salmon, an estimated 220 fish. The mean household harvests in the other subdistricts were 36 salmon in Subdistrict 1 (Nome), 140 salmon in

Subdistrict 2 (Golovin and White Mountain), 149 salmon in Subdistrict 3 (Elim), 132 salmon in Subdistrict 4 (Koyuk), 120 salmon in Subdistrict 6 (Unalakleet), and 79 salmon in southern Norton Sound (Stebbins and St. Michael). After Shaktoolik, the communities reporting the largest mean household harvests of salmon were Golovin (214 fish) and Elim (149 fish) (Fig. 13).

Port Clarence District

The estimated 2002 subsistence harvest of salmon in the Port Clarence District was 12,152 fish (Table 2). This was the highest harvest since 1998. Of the total harvest, 1% were chinook, 22% were chum, 28% were pink, 31% were sockeye, and 18% were coho (Fig. 12).

The estimated mean harvest in the Port Clarence District was about 69 salmon per household; the estimated breakdown of this harvest was 1 chinook, 15 chum, 19 pink, 21 sockeye, and 13 coho. Brevig Mission harvested a total of 7,815 salmon, or a mean of 110 salmon per household. In Teller, the total subsistence harvest of salmon was 4,117 fish, or 54 salmon per household (Fig. 13). Households with Pilgrim River permits harvested an average of 8 salmon per household.

Kotzebue District

The 2002 subsistence salmon harvest in the two surveyed communities in the Kotzebue District was 16,955 fish, nearly all of which were chum salmon (Table 2 and Fig. 12). For the same communities, the 2002 subsistence salmon harvest was the second lowest since 1995. Figure 2 depicts the district's total subsistence salmon harvests for each year since 1994.

The estimated mean salmon harvest was about 79 salmon per household, nearly all chum. Noorvik had a mean household harvest of 122 salmon, while Noatak's mean household harvest was 29 salmon (Fig. 13).

Participation in Subsistence Fishing

About 63% of the households in the study communities subsistence fished for salmon in 2002 (Table 5). Overall, participation in subsistence salmon fishing in the Norton Sound and Port Clarence districts has been fairly stable over the past eight years with no clear trend upward or downward (Fig. 14). In the Kotzebue District, participation in subsistence salmon fishing has also been fairly stable, although it was unusually low in 2001 due to an extended search for a drowning victim on the upper Kobuk River. In the

Norton Sound District in 2002, about 65% of households subsistence fished for salmon and an additional 9% assisted other households in processing subsistence-caught salmon. Participation in subsistence salmon fishing in the district ranged from about 34% of households in St. Michael to 87% in Elim (Table 5).

In the Port Clarence District in 2002, about 55% of households subsistence fished for salmon and 8% helped other households process subsistence-caught fish (Table 5).

In the Kotzebue District, about 64% of households subsistence fished for salmon in 2002 and about 7% assisted other households in processing subsistence-caught salmon. In Noatak 78% of households and in Noorvik 51% of households participated in subsistence salmon fishing (Table 5). These were the only two communities surveyed in 2002. Because communities that typically have lower participation rates, such as Kotzebue, were not surveyed, the overall participation rate in the Kotzebue District was higher in 2002 than in previous years (Fig. 14).

Participation in Commercial Fishing

About 1% of the households in the surveyed communities in the three districts participated in commercial salmon fishing in 2002 (Table 6). Less than one-half of these households reported removing salmon from their commercial catches for subsistence use. In the Norton Sound District less than 2% of households participated in commercial salmon fishing, and in the Port Clarence and Kotzebue districts none participated. An estimated total of 542 salmon were retained from commercial catches for subsistence use, comprising less than one-half percent of the estimated total subsistence harvest in the region (Table 6). In 2002, commercial salmon fishing throughout the region continued to suffer from poor market conditions and from poor salmon returns in some areas. The 2002 participation in commercial salmon fishing was the lowest in the past eight years.

Gear Type

In the Norton Sound and Port Clarence districts, set gillnets were the most common gear for harvesting salmon; about 82% and 95% respectively of the households that subsistence fished for salmon used gillnets (Table 7, Fig. 15). In the Norton Sound District, rod and reel was the next most widely used gear, used by 63% of fishing households. In Port Clarence District, rod and reel was used by 7% of households. Seines were used by 29% of fishing households in Norton Sound and 6% of fishing households in Port Clarence. (A household may use multiple gear types.) Although rod and reel was widely used, it accounted for only 9% of the total salmon harvest in the surveyed communities (excluding Nome) in the Norton Sound District. Coho salmon

were the primary target of rod-and-reel fishing, with about 22% of the coho harvest in the district taken with this gear type. Rod-and-reel fishing contributed the most to the total salmon harvest in Elim (23% of the harvest).

In the Kotzebue District, set gillnets were also the most common gear for harvesting salmon, used by about 49% of households that subsistence fished for salmon. Rod-and-reel was the second most common gear, used by about 48% of fishing households (Table 7, Fig. 15). Overall, rod-and-reel gear accounted for less than 4% of the total salmon harvest in the two surveyed communities in the district.

Sharing

In the surveyed communities, respondents who fished were asked whether they gave salmon to other households this year. About 62% of the fishing households in the Norton Sound, Port Clarence, and Kotzebue districts (excluding Nome) responded “yes” to this question (Table 8). Responses to this question have been fairly stable over the past seven years (Fig. 16).

Salmon for Dog Food

In 2002 an estimated 5,129 salmon were harvested specifically for dog food in the surveyed communities (excluding Nome) in the three districts (Table 9). This harvest for dog food was comparable to the previous four years, but substantially less than in 1994-97 (Fig. 17). In 2002 the mean number of salmon fed per dog was about 18 fish per year (Table 9). In the Kotzebue District, about 13% of the estimated subsistence salmon harvest in the two surveyed communities was caught specifically for dog food (Fig. 18). In the Norton Sound-Port Clarence districts (excluding Nome), about 3% of the salmon harvest was caught for dog food. Overall, in the three districts about 3% of the surveyed households (excluding Nome) caught salmon for dog food (Table 9).

Assessment of Fishing Season

When asked whether subsistence chum salmon fishing was very good, average, or poor in 2002, 47% of the fishing households in the Norton Sound District (excluding Nome) responded “poor,” 38% responded “average,” and 15% responded “very good” (Table 10). This was the most favorable assessment of the fishing season since 1997 (Fig. 19). The percentage of households assessing the 2002 chum salmon fishing season as “very good” ranged from 32% of fishing households in Koyuk to 0% in White Mountain.

In the Port Clarence District, 16% of the fishing households responded that the chum fishing season was “poor” in 2002, 58% said it was “average,” and 26% said “very good” (Table 10). This was by far the most favorable assessment of the fishing season in the past six years (Fig. 20).

In the Kotzebue District, 11% of fishing households responded that their chum fishing season was “poor” in 2002, 53% said “average,” and 36% said “very good” (Table 10). Assessment of the fishing season has been fairly stable over the past four years (Fig. 21). In general, satisfaction with subsistence chum salmon fishing in the Kotzebue District is determined largely by weather and water conditions. Salmon stocks continue to be fairly stable and abundant in this district, particularly compared to Norton Sound.

Sheefish, Whitefish, and Char

In the Kotzebue District, the household survey collected information on subsistence sheefish and whitefish harvests in Noorvik and on subsistence char and whitefish harvests in Noatak. In 2002 an estimated 4,310 sheefish were harvested by Noorvik households (Table 11). This was the second highest sheefish harvest in Noorvik in the past eight years (Fig. 22). The mean household harvest in Noorvik was 38 sheefish (Table 11).

In 2002 Noorvik and Noatak harvested an estimated 25,607 whitefish for subsistence, about 89% of which was taken by Noorvik (Table 11). This was Noorvik’s third highest harvest of whitefish in the past six years (Fig. 23). The mean household harvest in Noorvik was 197 whitefish, and in Noatak 29 whitefish (Table 11).

In 2002 an estimated 3,242 char (Dolly Varden) were harvested for subsistence by the community of Noatak for a mean household harvest of about 32 fish (Table 12). This was higher than the 2001 harvest, but lower than the 1995-2000 harvests (Fig. 24).

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TABLES AND FIGURES

**Table 1. Household Sampling, Subsistence Salmon Harvest Surveys,
Northwest Alaska, 2002**

	Total HH's Contacted	HH's Total HH	% of Total HH	Postcards ¹			Survey	
				Mailed	Returned	% Returned	Interviews	% of Total HH
Golovin	47	39	83.0%	0	0	0.0%	39	83.0%
White Mountain	65	59	90.8%	0	0	0.0%	59	90.8%
Subdistrict 2	112	98	87.5%	0	0	0.0%	98	87.5%
Elim	82	76	92.7%	0	0	0.0%	76	92.7%
Subdistrict 3	82	76	92.7%	0	0	0.0%	76	92.7%
Koyuk	84	76	90.5%	0	0	0.0%	76	90.5%
Subdistrict 4	84	76	90.5%	0	0	0.0%	76	90.5%
Shaktoolik	59	57	96.6%	0	0	0.0%	57	96.6%
Subdistrict 5	59	57	96.6%	0	0	0.0%	57	96.6%
Unalakleet	225	222	98.7%	0	0	0.0%	222	98.7%
Subdistrict 6	225	222	98.7%	0	0	0.0%	222	98.7%
Stebbins	122	108	88.5%	0	0	0.0%	108	88.5%
St. Michael	93	90	96.8%	0	0	0.0%	90	96.8%
South Norton Sound	215	198	92.1%	0	0	0.0%	198	92.1%
NORTON SOUND	777	727	93.6%	0	0	0.0%	727	93.6%
Brevig Mission	71	67	94.4%	0	0	0.0%	67	94.4%
Teller	77	71	92.2%	0	0	0.0%	71	92.2%
PORT CLARENCE	148	138	93.2%	0	0	0.0%	138	93.2%
Noatak	101	90	89.1%	0	0	0.0%	90	89.1%
Noorvik	115	101	87.8%	0	0	0.0%	101	87.8%
KOTZEBUE SOUND²	216	191	88.4%	0	0	0.0%	191	88.4%
TOTALS	1,141	1,056	92.6%	0	0	0.0%	1,056	92.6%

¹ Postcard surveys are normally conducted in Kotzebue, but this was not done in 2002.

² The Kotzebue Sound communities of Ambler, Kiana, Kobuk, Kotzebue, and Shungnak, though normally included, were not surveyed in 2002.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, and Kawerak, Inc., household surveys

Table 2. Subsistence Salmon Harvests, Northwest Alaska, 2002

			Chinook		Chum		Pink		Sockeye		Coho		Total	
	Total HH's Contacted	HH's	Reported Harvest	Est. Total ¹	Reported Harvest	Est. Total ¹	Reported Harvest	Est. Total ¹	Reported Harvest	Est. Total ¹	Reported Harvest	Est. Total ¹	Reported Harvest	Est. Total ¹
Nome Permits ²	141	113	4	4	1,114	1,114	3,161	3,161	79	79	666	666	5,024	5,024
Subdistrict 1	141	113	4	4	1,114	1,114	3,161	3,161	79	79	666	666	5,024	5,024
Golovin	47	39	35	42	949	1,144	6,492	7,827	55	66	812	979	8,343	10,058
Niukluk R. Permits ²	17	14	0	0	32	32	589	589	0	0	80	80	701	701
White Mountain	65	59	25	27	661	706	5,599	6,014	0	0	544	581	6,829	7,328
Subdistrict 2	129	112	60	69	1,642	1,882	12,680	14,430	55	66	1,436	1,640	15,873	18,087
Elim	82	76	541	565	1,390	1,451	7,993	8,345	13	14	1,725	1,801	11,662	12,177
Subdistrict 3	82	76	541	565	1,390	1,451	7,993	8,345	13	14	1,725	1,801	11,662	12,177
Koyuk	84	76	511	557	3,643	3,971	5,551	6,049	0	0	467	509	10,172	11,086
Subdistrict 4	84	76	511	557	3,643	3,971	5,551	6,049	0	0	467	509	10,172	11,086
Shaktolik	59	57	1,230	1,230	800	800	8,769	8,769	4	4	2,169	2,169	12,972	12,972
Subdistrict 5	59	57	1,230	1,230	800	800	8,769	8,769	4	4	2,169	2,169	12,972	12,972
Unalakleet ³	225	222	2,310	2,367	3,164	3,877	13,958	15,557	278	280	4,604	4,988	24,314	27,069
Subdistrict 6	225	222	2,310	2,367	3,164	3,877	13,958	15,557	278	280	4,604	4,988	24,314	27,069
Stebbins	122	108	405	450	3,221	3,586	6,730	7,459	270	300	2,085	2,324	12,711	14,119
St. Michael	93	90	224	227	1,120	1,136	575	583	20	20	975	989	2,914	2,957
South Norton Sound	215	198	629	678	4,341	4,722	7,305	8,043	290	320	3,060	3,313	15,625	17,075
NORTON SOUND	935	854	5,285	5,469	16,094	17,817	59,417	64,354	719	763	14,127	15,086	95,642	103,490
Brevig Mission	71	67	61	65	1,444	1,534	2,209	2,347	2,002	2,127	1,639	1,741	7,355	7,815
Pilgrim R. Permits ²	28	21	18	18	13	13	4	4	165	165	20	20	220	220
Teller	77	71	44	50	1,007	1,152	908	1,043	1,262	1,440	378	433	3,599	4,117
PORT CLARENCE	176	159	123	133	2,464	2,699	3,121	3,394	3,429	3,732	2,037	2,194	11,174	12,152
Noatak	101	90	0	0	2,626	2,937	0	0	0	0	10	11	2,636	2,948
Noorvik	115	101	3	3	12,542	13,943	7	8	8	9	40	44	12,600	14,007
KOTZEBUE SOUND⁴	216	191	3	3	15,168	16,880	7	8	8	9	50	56	15,236	16,955
TOTALS	1,327	1,204	5,411	5,605	33,726	37,396	62,545	67,756	4,156	4,504	16,214	17,336	122,052	132,598

NOTE: Harvests include salmon from subsistence fishing, rod and reel fishing (except in permit areas), removal from commercial catches, and test fisheries.

¹ Data from contacted households were expanded to households not contacted. If fewer than 30 and less than 50% of households in a community harvest strata were contacted, then the harvest for that community is the reported harvest, not an expanded estimate.

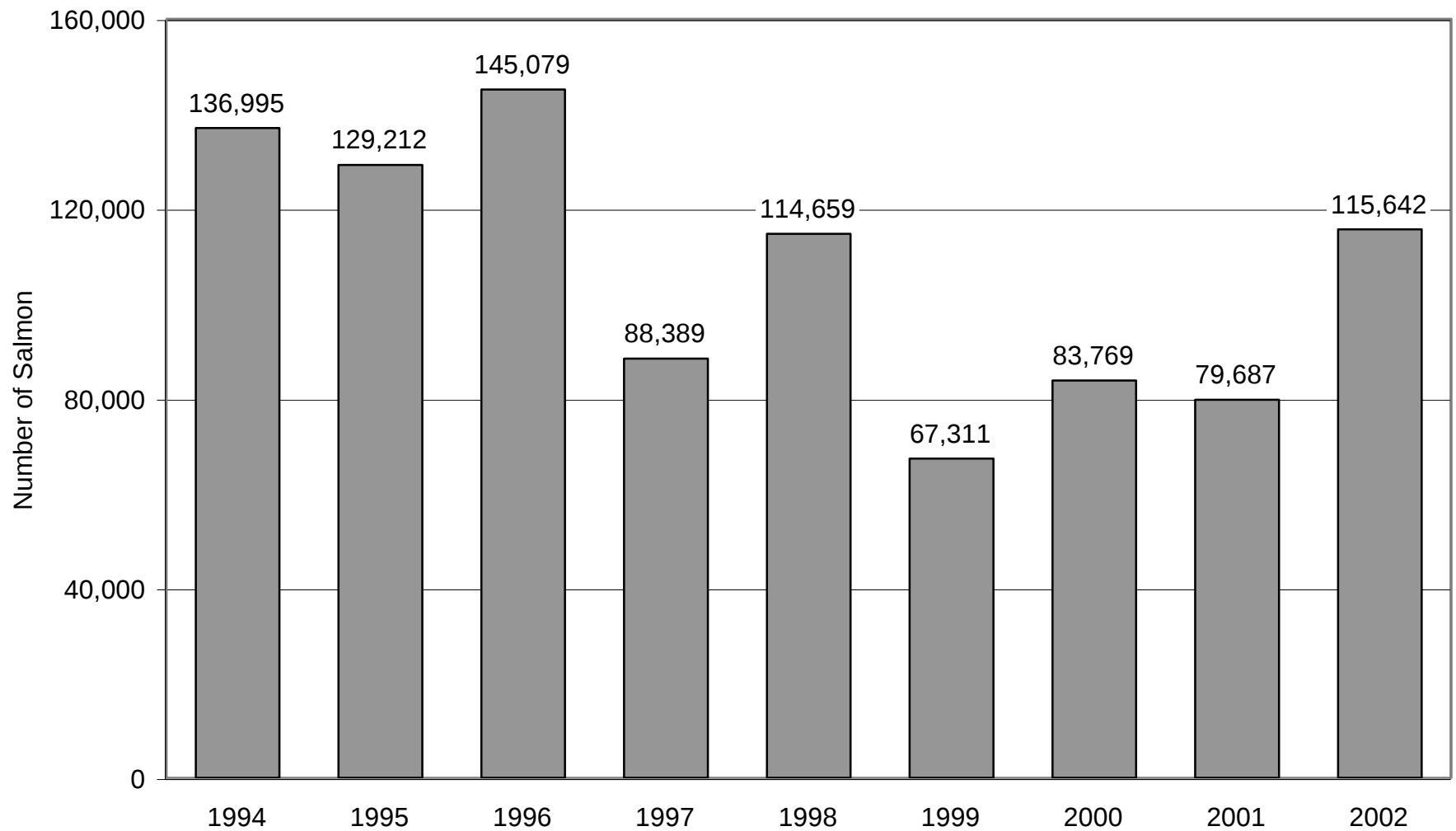
² Alaska Department of Fish and Game, Division of Commercial Fisheries, permit returns, 2002. Data not expanded.

³ Unalakleet estimated harvests include 42 chinook, 692 chum, 1,522 pink, and 353 coho from the ADF&G test net fishery in addition to the survey results.

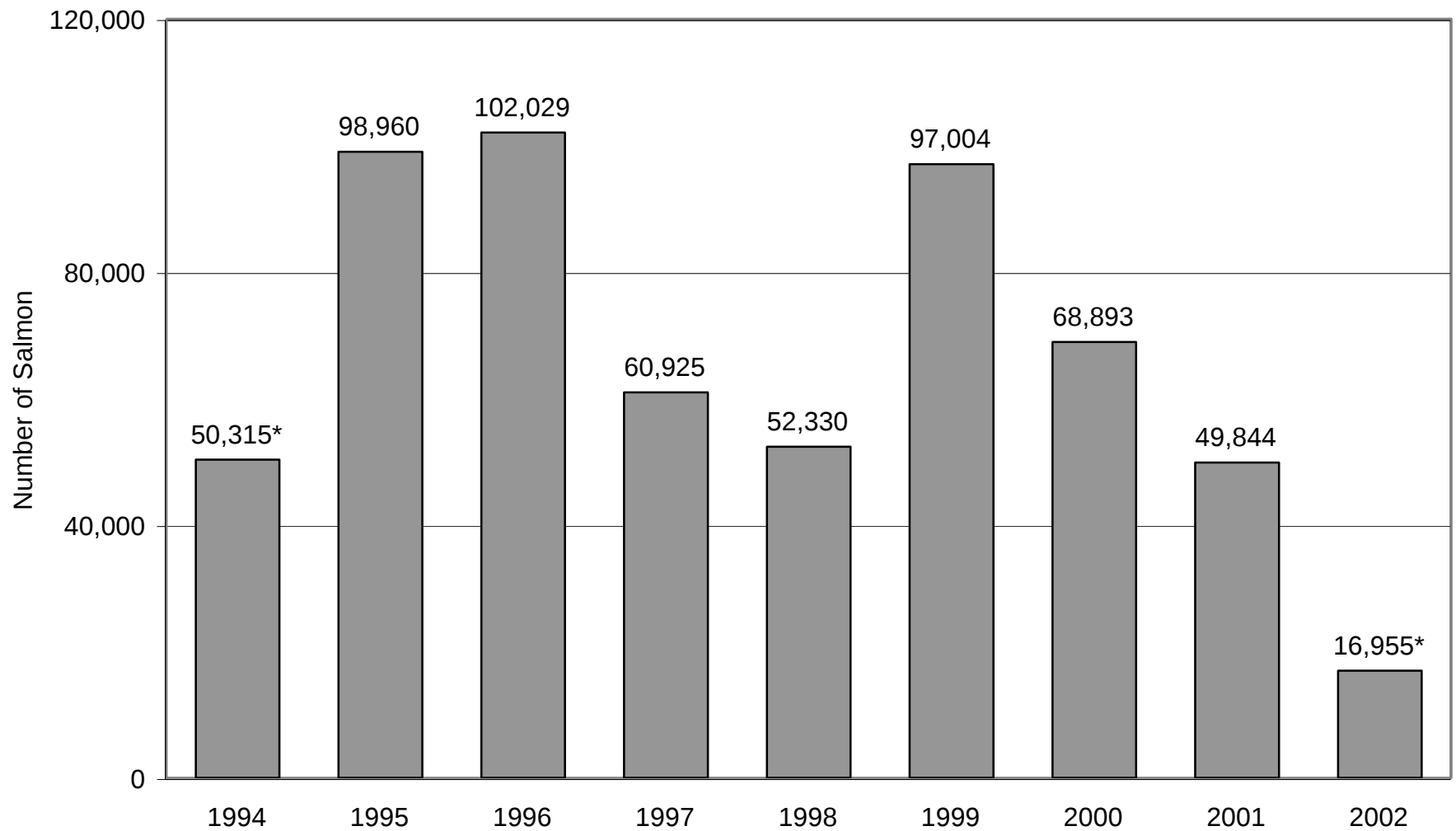
⁴ The Kotzebue Sound communities of Ambler, Kiana, Kobuk, Kotzebue, and Shungnak, though normally included, were not surveyed in 2002.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, and Kawerak, Inc., household surveys, 2002.

**FIG. 1. SUBSISTENCE SALMON HARVESTS, 1994-2002,
Norton Sound-Port Clarence Districts**

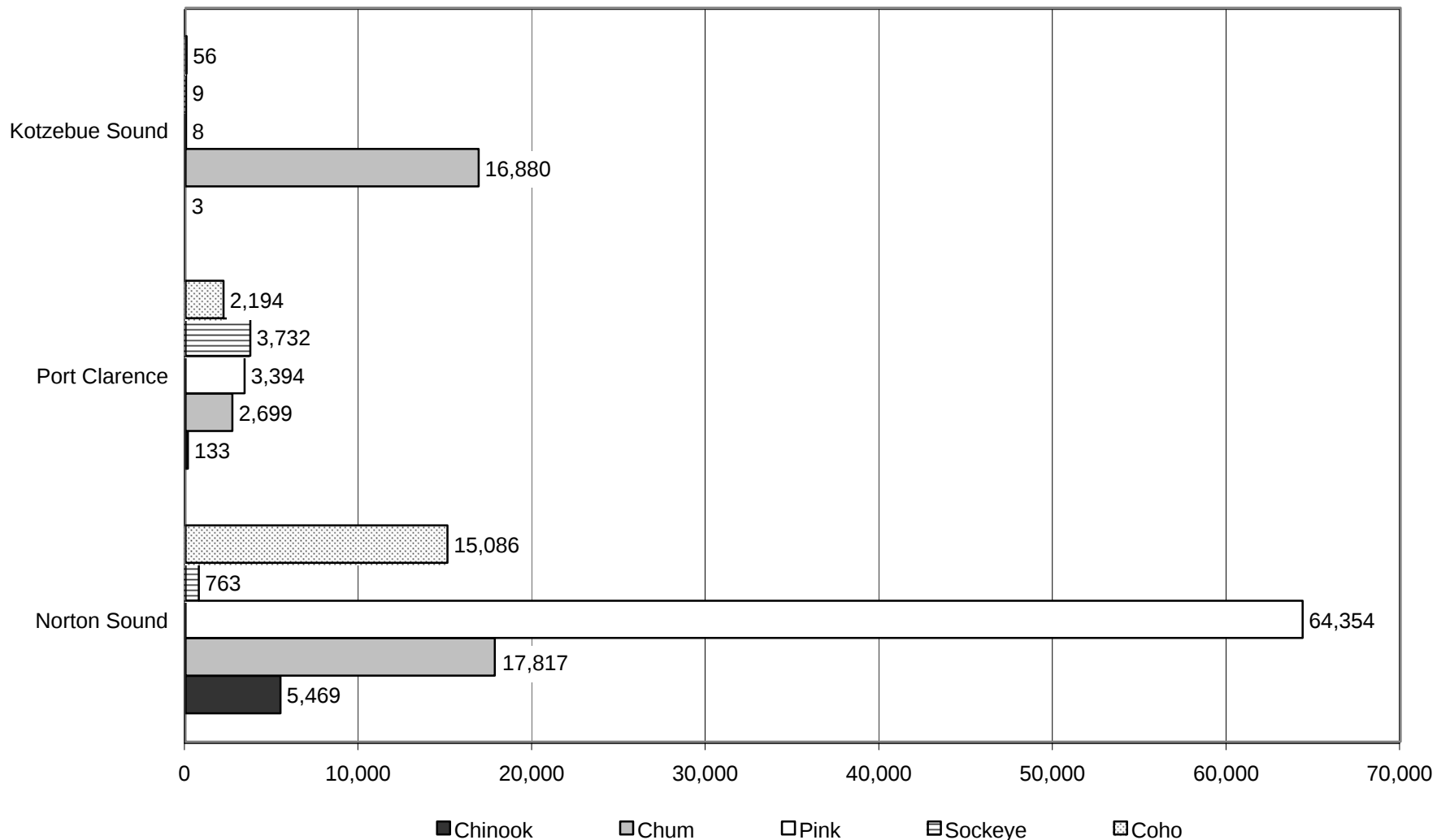


**FIG. 2. SUBSISTENCE SALMON HARVESTS, 1994-2002,
Kotzebue District**



* Note: 1994 does not include harvest estimates for Kotzebue. 2002 only includes Noatak and Noorvik.

**FIG. 3. SUBSISTENCE SALMON HARVESTS BY SPECIES, 2002,
Norton Sound, Port Clarence, and Kotzebue Districts**



**Table 3. Subsistence Salmon Harvests by Community, 1994-2002,
Norton Sound-Port Clarence Districts**

Place	Species	1994	1995	1996	1997	1998	1999	2000	2001	2002
Brevig Mission	Chinook	37	3	13	56	109	38	32	41	65
	Chum	296	1,869	2,350	1,086	588	748	486	1,041	1,534
	Pink	1,436	1,976	1,584	476	4,981	666	808	468	2,347
	Sockeye	412	1,741	727	1,267	590	919	1,007	2,040	2,127
	Coho	883	945	734	514	606	774	530	1,070	1,741
	All Salmon	3,064	6,533	5,408	3,399	6,874	3,144	2,863	4,660	7,815
Elim	Chinook	322	284	417	619	414	424	248	427	565
	Chum	3,476	3,774	2,319	2,064	1,376	744	1,173	898	1,451
	Pink	9,345	2,046	9,442	1,314	6,891	1,564	5,983	1,390	8,345
	Sockeye	104	17	52	50	49	13	46	70	14
	Coho	1,180	1,353	1,720	1,213	1,831	975	1,429	1,352	1,801
	All Salmon	14,426	7,474	13,951	5,261	10,561	3,720	8,879	4,137	12,177
Golovin	Chinook	48	106	56	81	86	56	42	65	42
	Chum	833	4,235	952	1,788	1,023	1,692	866	1,206	1,144
	Pink	5,066	2,940	5,661	1,648	5,446	172	4,306	168	7,827
	Sockeye	163	33	70	35	17	48	18	68	66
	Coho	336	441	1,077	311	611	784	1,328	199	979
	All Salmon	6,445	7,755	7,815	3,863	7,184	2,751	6,560	1,707	10,058
Koyuk	Chinook	308	475	295	565	684	327	397	460	557
	Chum	4,581	5,828	4,161	4,040	6,192	4,153	4,714	4,445	3,971
	Pink	6,049	3,514	3,929	1,795	2,009	1,943	2,255	5,203	6,049
	Sockeye	1	46	3	54	0	0	2	14	0
	Coho	370	985	676	322	388	167	267	276	509
	All Salmon	11,309	10,847	9,064	6,777	9,274	6,590	7,635	10,397	11,086
Shaktoolik	Chinook	1,175	1,303	1,114	1,146	982	818	440	936	1,230
	Chum	1,221	2,534	4,425	1,612	1,034	467	2,412	1,553	800
	Pink	9,133	7,176	8,370	5,779	6,270	5,092	5,432	10,172	8,769
	Sockeye	1	72	31	62	92	183	20	143	4
	Coho	2,777	2,682	3,615	2,761	1,872	1,556	2,799	2,090	2,169
	All Salmon	14,307	13,766	17,555	11,360	10,250	8,116	11,103	14,895	12,972
St. Michael	Chinook	769	1,267	1,400	970	542	1,053	160	282	227
	Chum	4,309	5,778	6,352	2,816	1,502	3,036	1,381	2,246	1,136
	Pink	2,673	391	1,503	84	961	365	80	229	583
	Sockeye	127	45	3	41	143	111	16	17	20
	Coho	1,022	2,235	1,641	547	1,406	798	1,180	491	989
	All Salmon	8,901	9,715	10,899	4,458	4,554	5,363	2,818	3,264	2,957

**Table 3. (con't) Subsistence Salmon Harvests by Community, 1994-2002,
Norton Sound-Port Clarence Districts**

Place	Species	1994	1995	1996	1997	1998	1999	2000	2001	2002
Stebbins	Chinook	1,525	1,211	1,030	1,164	1,410	760	298	570	450
	Chum	5,989	5,042	7,401	3,230	3,909	3,312	2,913	3,999	3,586
	Pink	5,552	758	2,375	243	3,125	459	364	202	7,459
	Sockeye	288	207	424	116	295	200	341	0	300
	Coho	3,948	2,570	3,746	1,826	3,116	1,312	2,429	2,759	2,324
	All Salmon	17,302	9,788	14,975	6,580	11,854	6,043	6,345	7,530	14,119
Teller	Chinook	167	64	182	102	178	24	39	40	50
	Chum	1,998	4,130	2,357	1,000	2,033	1,097	747	863	1,152
	Pink	2,824	1,317	652	276	2,831	120	557	715	1,043
	Sockeye	1,774	2,564	1,907	1,881	1,075	1,293	1,784	1,483	1,440
	Coho	1,009	787	524	316	1,153	236	369	209	433
	All Salmon	7,771	8,862	5,621	3,574	7,270	2,770	3,494	3,310	4,117
Unalakleet	Chinook	3,000	3,026	2,894	4,191	3,963	2,691	2,429	2,810	2,367
	Chum	2,434	4,342	2,728	1,603	2,551	3,692	3,000	2,918	3,877
	Pink	23,347	16,404	15,904	10,477	13,173	10,067	10,631	11,279	15,557
	Sockeye	404	591	181	196	201	537	212	359	280
	Coho	11,110	9,645	10,576	6,746	7,303	8,140	5,878	6,270	4,988
	All Salmon	40,295	34,008	32,282	23,213	27,191	25,127	22,150	23,637	27,069
White Mountain	Chinook	NA	59	30	54	98	4	120	21	27
	Chum	NA	6,138	1,915	3,031	870	1,694	289	2,083	706
	Pink	NA	4,878	11,738	2,910	7,894	271	6,600	1,497	6,014
	Sockeye	NA	1	64	0	20	0	0	4	0
	Coho	NA	1,170	1,937	244	603	365	932	557	581
	All Salmon	NA	12,246	15,684	6,239	9,486	2,334	7,941	4,163	7,328

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, and Kawerak, Inc., household surveys.

**Table 4. Subsistence Salmon Harvests by Community, 1994-2002,
Kotzebue District**

Place	Species	1994	1995	1996	1997	1998	1999	2000	2001	2002**
Ambler	Chinook	0	1	1	0	0	0	0	NA	NA
	Chum	6,444*	8,558	9,062	2,713	2,432	590*	5,009	NA	NA
	Pink	0	1	65	14	2	0	0	NA	NA
	Sockeye	0	5	2	5	2	0	0	NA	NA
	Coho	5*	0	6	1	0	100*	0	NA	NA
	All Salmon	6,449*	8,566	9,137	2,732	2,437	690*	5,009	NA	NA
Kiana	Chinook	0	0	6	0	29	5	0	0	NA
	Chum	4,060	5,985	5,935	3,064	3,414	3,788	2,876	5,379	NA
	Pink	22	7	0	6	6	7	0	0	NA
	Sockeye	0	0	0	0	0	0	74	0	NA
	Coho	0	0	12	138	17	33	107	0	NA
	All Salmon	4,082	5,991	5,953	3,208	3,466	3,832	3,057	5,379	NA
Kobuk	Chinook	3	1	0	0	0	0	0	0	NA
	Chum	6,369	2,959	1,819	629	1,031	1,869	318*	2,843	NA
	Pink	0	0	0	0	0	0	0	1	NA
	Sockeye	0	0	0	0	0	0	0	1	NA
	Coho	0	0	1	0	0	0	0	0	NA
	All Salmon	6,372	2,960	1,821	629	1,031	1,869	318*	2,846	NA
Kotzebue	Chinook	NA	140	505	449	327	0	206	5	NA
	Chum	NA	50,708	50,573	26,355	24,968	64,768	37,144	17,713	NA
	Pink	NA	522	288	1,083	1,877	817	0	25	NA
	Sockeye	NA	484	468	443	387	478	0	13	NA
	Coho	NA	1,664	42	22	262	1,202	640	0	NA
	All Salmon	NA	53,518	51,876	28,351	27,821	67,264	37,990	17,756	NA
Noatak	Chinook	4	0	0	4	5	0	0	0	0
	Chum	5,771	6,359	10,091	5,309	2,614	1,616*	7,293	2,326	2,937
	Pink	0	0	0	0	6	10*	3	0	0
	Sockeye	0	0	1	0	2	0	2	0	0
	Coho	185	111	0	9	0	0	87	116	11
	All Salmon	5,960	6,469	10,092	5,323	2,627	1,626*	7,385	2,442	2,948
Noorvik	Chinook	2	8	38	9	21	4	5	6	3
	Chum	10,649	15,485	13,611	14,323	9,845	17,843	10,391	16,444	13,943
	Pink	0	34	597	78	224	8	71	10	8
	Sockeye	0	1	0	80	0	0	0	0	9
	Coho	0	47	256	677	140	0	1,722	652	44
	All Salmon	10,652	15,575	14,501	15,166	10,230	17,855	12,189	17,112	14,007

**Table 4. (con't) Subsistence Salmon Harvests by Community, 1994-2002,
Kotzebue District**

Place	Species	1994	1995	1996	1997	1998	1999	2000	2001	2002
Shungnak	Chinook	0	0	0	2	0	0	0	0	NA
	Chum	8,611	5,880	8,649	5,513	4,676	3,868	2,944	4,310	NA
	Pink	1	0	0	0	0	0	0	0	NA
	Sockeye	0	0	0	0	0	0	0	0	NA
	Coho	0	0	0	0	42	0	1	0	NA
	All Salmon	8,612	5,880	8,649	5,515	4,718	3,868	2,945	4,310	NA

* Includes only harvests reported by interviewed households. Data not expanded to unsurveyed households due to insufficient number of surveys.

** The Kotzebue Sound communities of Ambler, Kiana, Kobuk, Kotzebue, and Shungnak, though normally included, were not surveyed in 2002.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, household surveys.

FIG. 4. SUBSISTENCE CHUM SALMON HARVESTS IN NORTON SOUND DISTRICT, 1994-2002

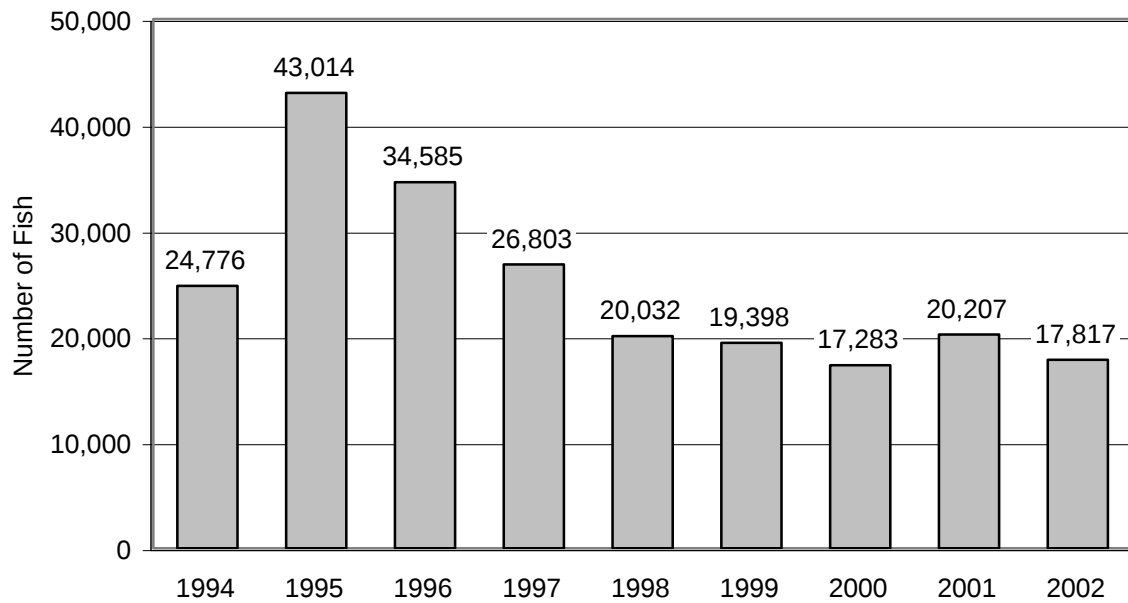


FIG. 5. SUBSISTENCE CHINOOK SALMON HARVESTS IN NORTON SOUND DISTRICT, 1994-2002

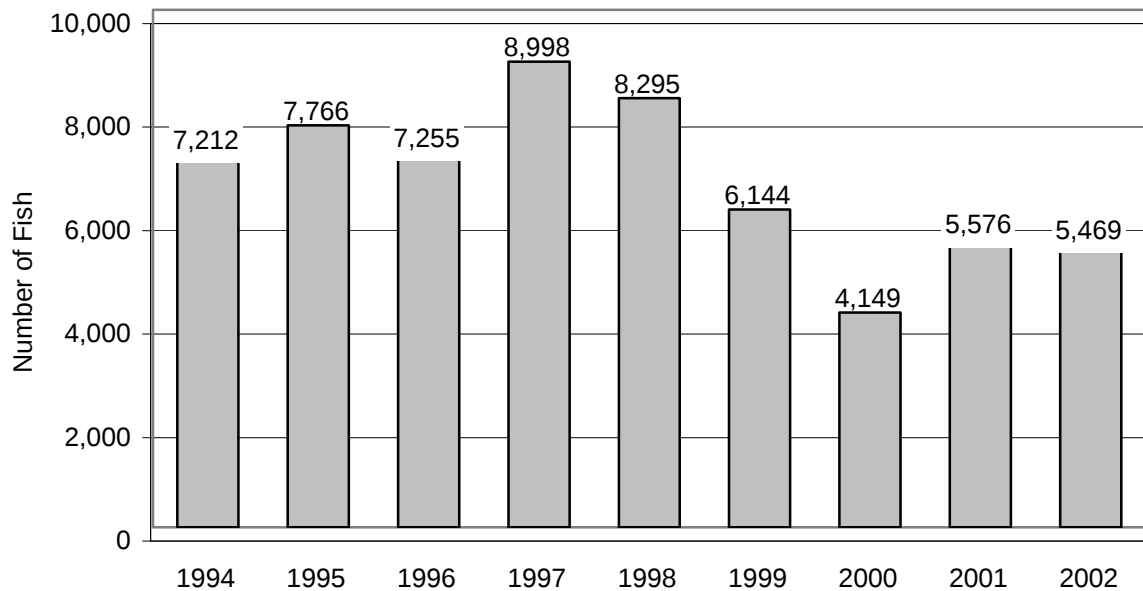


FIG. 6. SUBSISTENCE PINK SALMON HARVESTS IN NORTON SOUND DISTRICT, 1994-2002

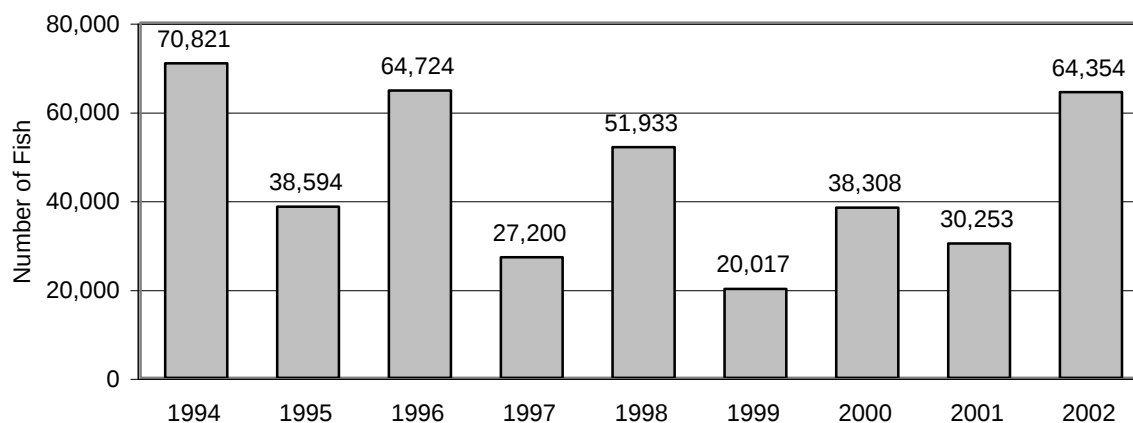


FIG. 7. SUBSISTENCE SOCKEYE SALMON HARVESTS IN NORTON SOUND DISTRICT, 1994-2002

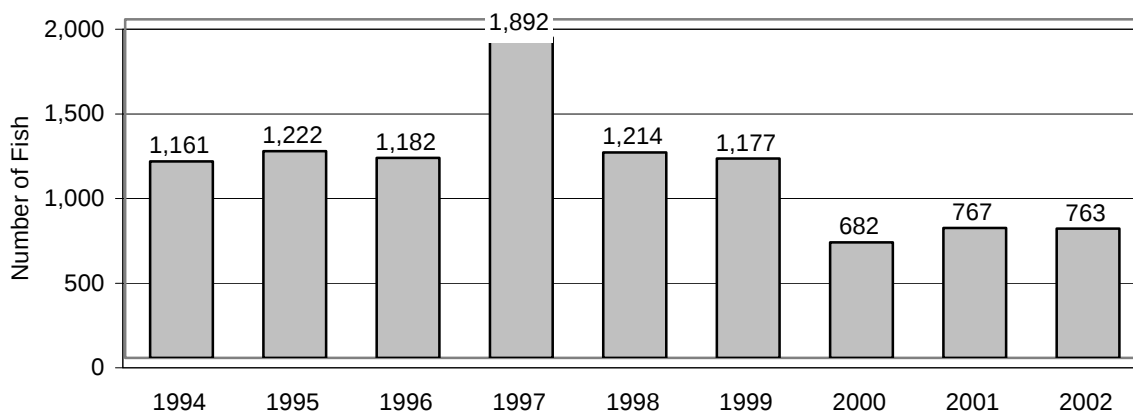


FIG. 8. SUBSISTENCE COHO SALMON HARVESTS IN NORTON SOUND DISTRICT, 1994-2002

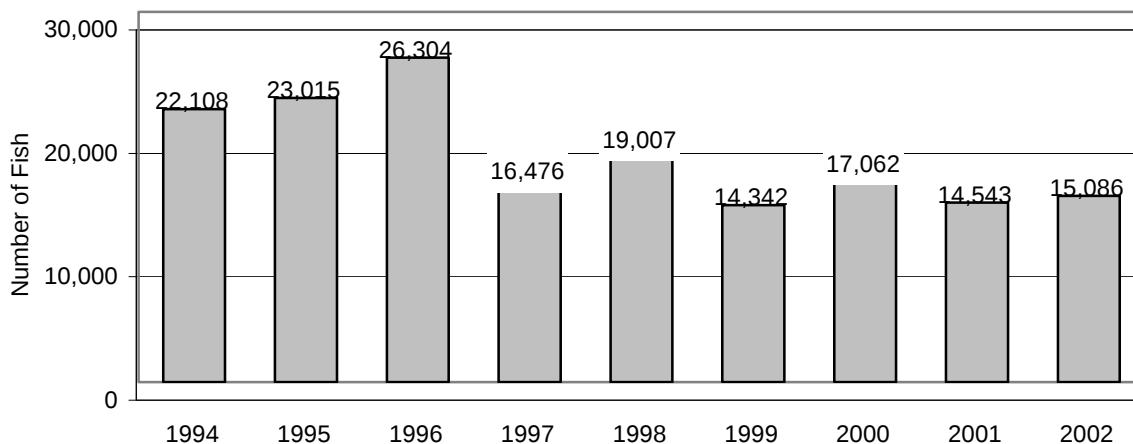


FIG. 9. SUBSISTENCE CHINOOK AND SOCKEYE SALMON HARVESTS, 1994-2002, Norton Sound District

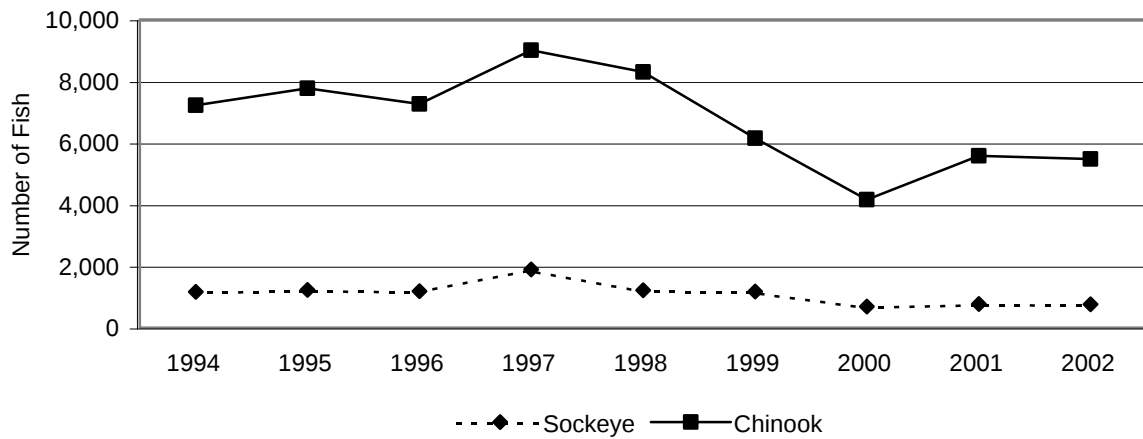


FIG. 10. SUBSISTENCE CHUM AND COHO SALMON HARVESTS, 1994-2002, Norton Sound District

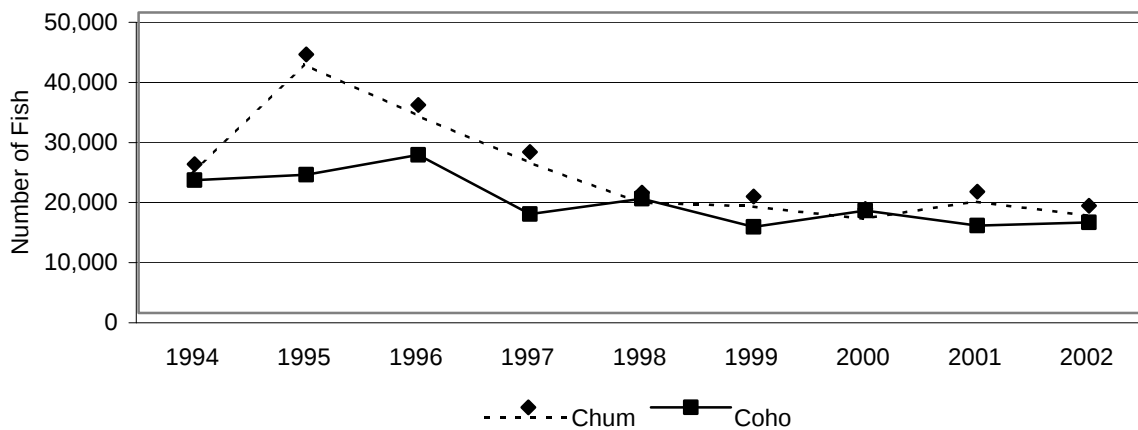


FIG. 11. SUBSISTENCE PINK SALMON AND TOTAL SALMON HARVESTS, 1994-2002, Norton Sound District

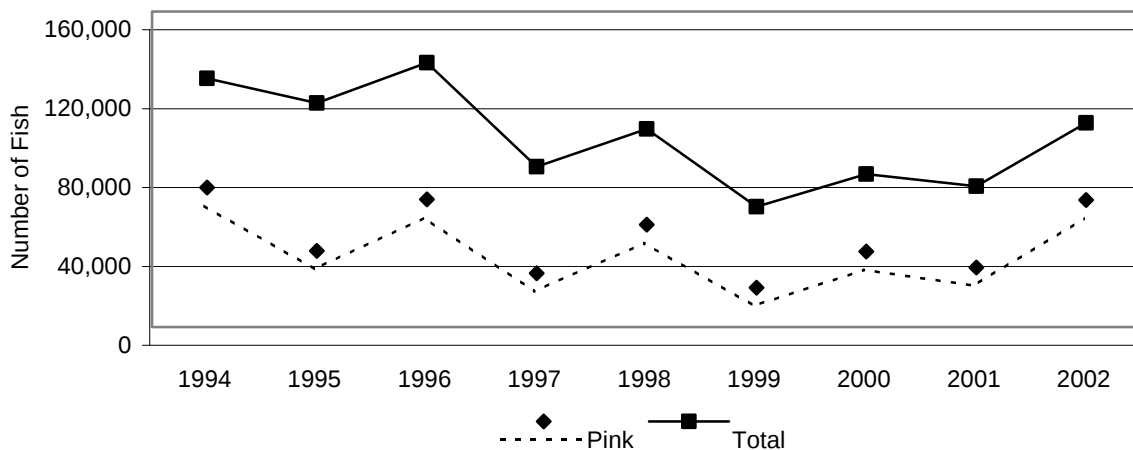


FIG. 12. SPECIES COMPOSITION OF SUBSISTENCE SALMON HARVESTS, 2000 and 2002, Norton Sound, Port Clarence, and Kotzebue Districts

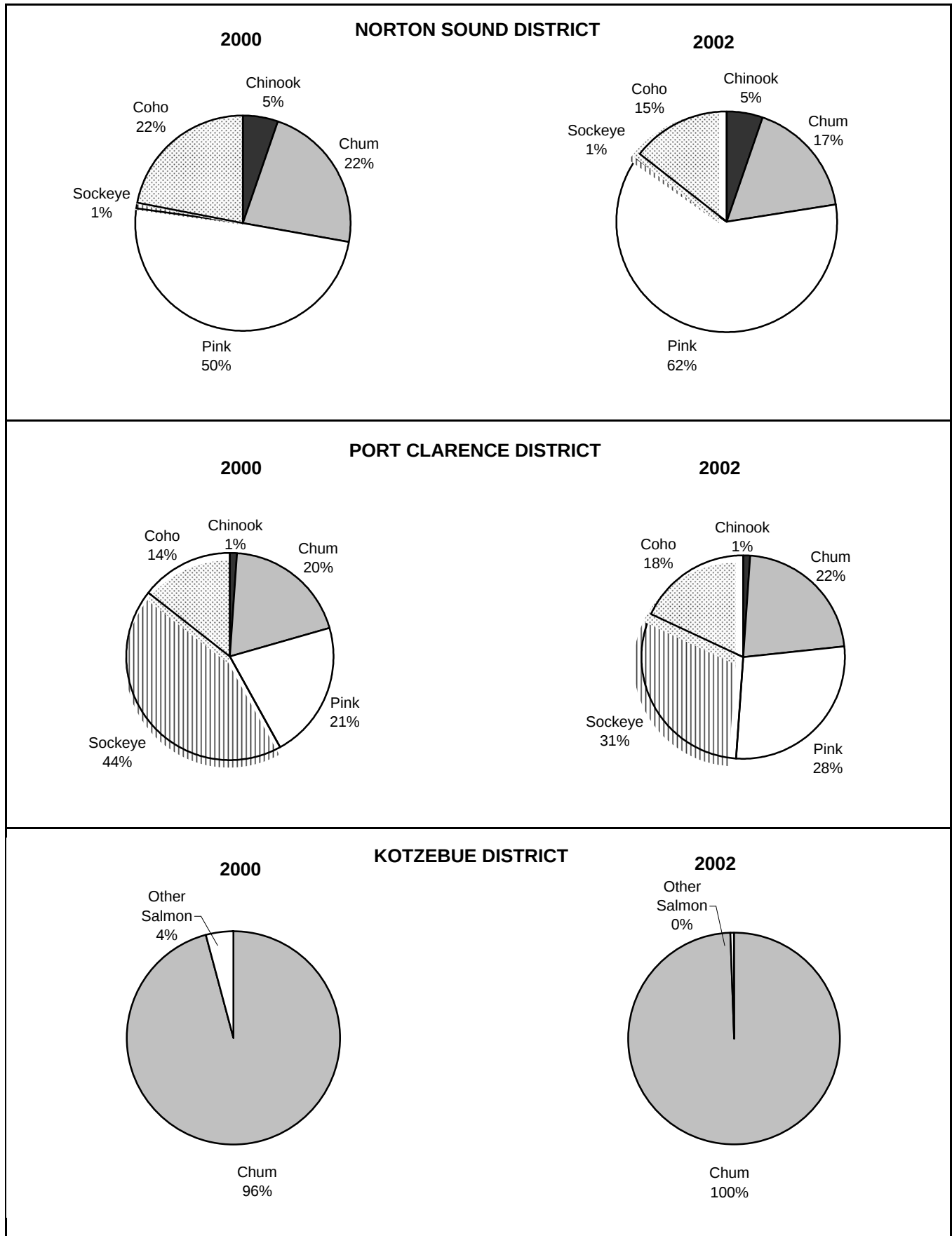
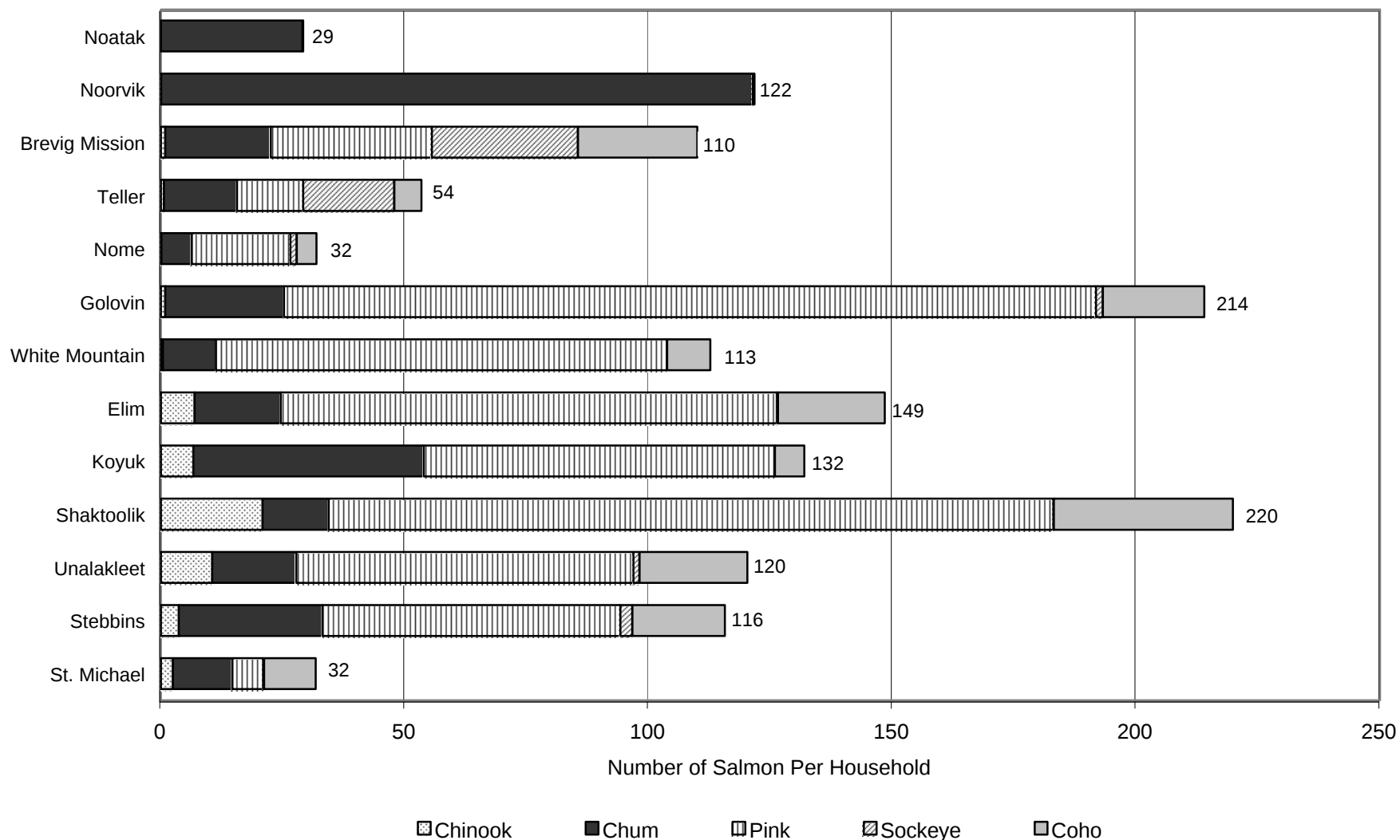


FIG. 13. AVERAGE NUMBER OF SUBSISTENCE SALMON CAUGHT PER HOUSEHOLD, BY COMMUNITY, 2002, NORTHWEST ALASKA



**Table 5. Household Participation in Subsistence Salmon Fishing,
Northwest Alaska, 2002**

	Percentage of Households				
	Total HH's	HH's Contacted	Did Not Participate	Helped Process ¹	Fished
Nome Permits	141	113	46.0%	NA	54.0%
Subdistrict 1	141	113	46.0%	NA	54.0%
Golovin	47	39	5.1%	15.4%	79.5%
Niukluk R. Permits	17	14	28.6%	NA	71.4%
White Mountain	65	59	27.3%	3.7%	69.0%
Subdistrict 2	129	112	19.3%	7.3%	73.4%
Elim	82	76	13.4%	0.0%	86.6%
Subdistrict 3	82	76	13.4%	0.0%	86.6%
Koyuk	84	76	24.5%	10.6%	64.9%
Subdistrict 4	84	76	24.5%	10.6%	64.9%
Shaktolik	59	57	14.5%	9.2%	76.3%
Subdistrict 5	59	57	14.5%	9.2%	76.3%
Unalakleet	225	222	14.3%	13.3%	72.4%
Subdistrict 6	225	222	14.3%	13.3%	72.4%
Stebbins	122	108	35.9%	11.3%	52.7%
St. Michael	93	90	56.4%	9.8%	33.8%
South Norton Sound	215	198	45.4%	10.8%	43.8%
NORTON SOUND	935	854	27.0%	8.5%	64.5%
Brevig Mission	71	67	34.2%	9.0%	56.9%
Pilgrim R. Permits	28	21	61.9%	NA	38.1%
Teller	77	71	34.0%	9.5%	56.6%
PORT CLARENCE	176	159	37.3%	8.0%	54.7%
Noatak	101	90	22.4%	0.0%	77.6%
Noorvik	115	101	36.3%	12.3%	51.3%
KOTZEBUE SOUND²	216	191	29.9%	6.5%	63.6%
TOTALS	1,327	1,204	28.9%	8.1%	63.0%

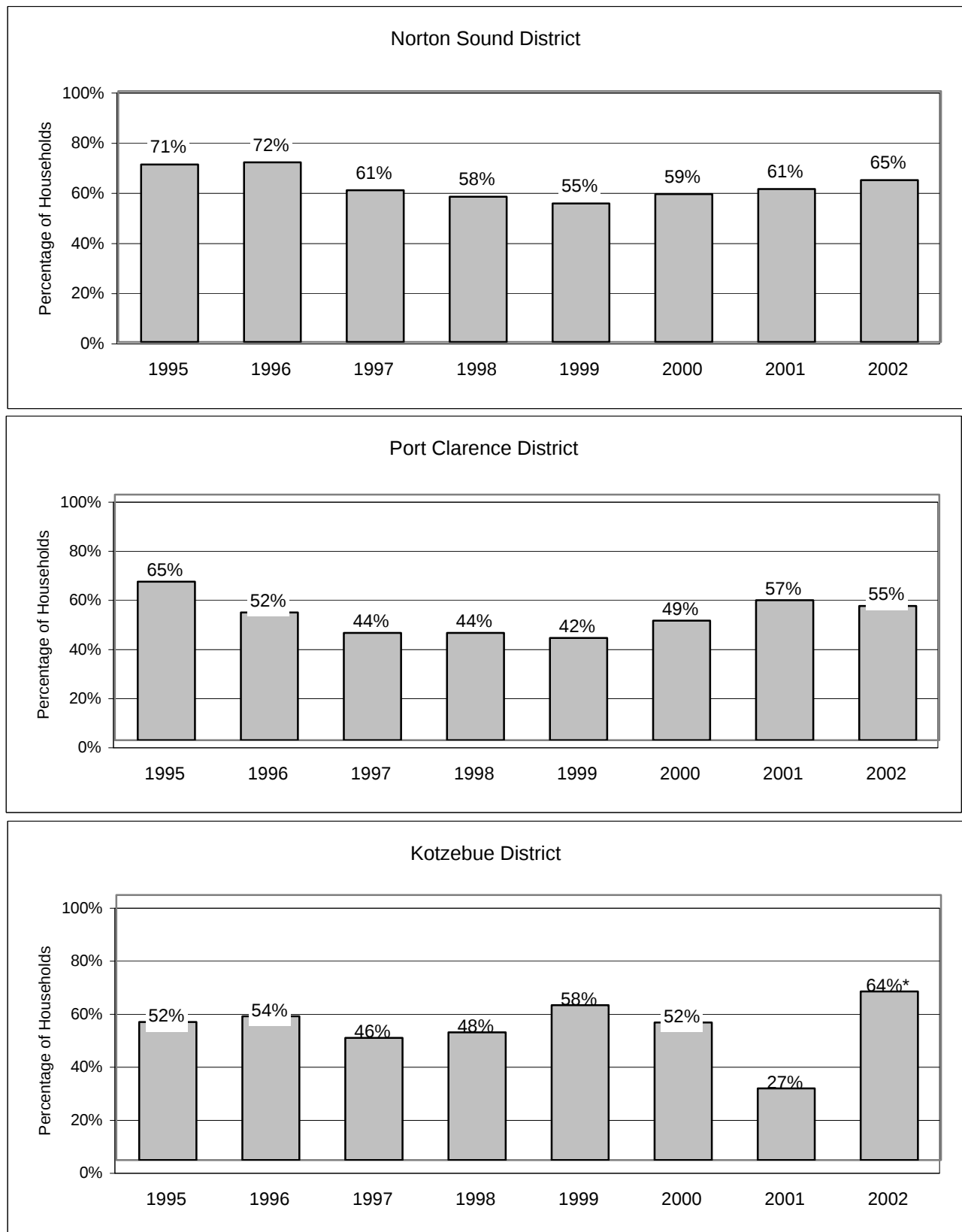
NA = Information on helping to process fish not available from permits.

¹ Does not include fishing households that also helped process.

² The Kotzebue Sound communities of Ambler, Kiana, Kobuk, Kotzebue, and Shungnak, though normally included, were not surveyed in 2002.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, and Kawerak, Inc., household surveys, 2002; Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, permit returns, 2002.

FIG. 14. HOUSEHOLD PARTICIPATION IN SUBSISTENCE SALMON FISHING, 1995-2002, Norton Sound, Port Clarence, and Kotzebue Districts



* Includes only Noatak and Noorvik.

**Table 6. Salmon Removed from Commercial Catches for Subsistence Use,
Northwest Alaska, 2002**

	Total HH's	HH's Contacted	% of HH's Commercial Fishing	% Removing Salmon from Comm. Catch	Number Removed from Commercial Catch					
					Chinook	Chum	Pink	Sockeye	Coho	Total
Golovin	47	39	0.0%	0.0%	0	0	0	0	0	0
White Mountain	65	59	0.0%	0.0%	0	0	0	0	0	0
Subdistrict 2	112	98	0.0%	0.0%	0	0	0	0	0	0
Elim	82	76	0.0%	0.0%	0	0	0	0	0	0
Subdistrict 3	82	76	0.0%	0.0%	0	0	0	0	0	0
Koyuk	84	76	0.0%	0.0%	0	0	0	0	0	0
Subdistrict 4	84	76	0.0%	0.0%	0	0	0	0	0	0
Shaktolik	59	57	6.8%	0.0%	0	0	0	0	0	0
Subdistrict 5	59	57	6.8%	0.0%	0	0	0	0	0	0
Unalakleet	225	222	2.2%	1.8%	0	2	2	2	518	524
Subdistrict 6	225	222	2.2%	1.8%	0	2	2	2	518	524
Stebbins	122	108	1.8%	0.9%	19	0	0	0	0	19
St. Michael	93	90	0.0%	0.0%	0	0	0	0	0	0
South Norton Sound	215	198	1.0%	0.5%	19	0	0	0	0	19
NORTON SOUND	777	727	1.4%	0.7%	19	2	2	2	518	542
Brevig Mission	71	67	0.0%	0.0%	0	0	0	0	0	0
Teller	77	71	0.0%	0.0%	0	0	0	0	0	0
PORT CLARENCE	148	138	0.0%	0.0%	0	0	0	0	0	0
Noatak	101	90	0.0%	0.0%	0	0	0	0	0	0
Noorvik	115	101	0.0%	0.0%	0	0	0	0	0	0
KOTZEBUE SOUND¹	216	191	0.0%	0.0%	0	0	0	0	0	0
TOTALS	1,141	1,056	1.0%	0.4%	19	2	2	2	518	542

¹ The Kotzebue Sound communities of Ambler, Kiana, Kobuk, Kotzebue, and Shungnak, though normally included, were not surveyed in 2002.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, and Kawerak, Inc., household surveys, 2002.

**Table 7. Gear Types for Non-Commercial Salmon Harvest,
Northwest Alaska, 2002**

	Gear Types ¹					
	Total HH's	HH's Responding	Driftnet	Setnet	Seine	Rod & Reel
Golovin	47	29	0.0%	44.8%	48.3%	62.1%
White Mountain	65	42	0.0%	19.0%	50.0%	69.0%
Subdistrict 2	112	71	0.0%	29.6%	49.3%	66.2%
Elim	82	68	1.5%	36.8%	38.2%	76.5%
Subdistrict 3	82	68	1.5%	36.8%	38.2%	76.5%
Koyuk	84	49	0.0%	49.9%	21.2%	62.2%
Subdistrict 4	84	49	0.0%	49.9%	21.2%	62.2%
Shaktoolik	59	45	11.1%	53.3%	55.6%	40.0%
Subdistrict 5	59	45	11.1%	53.3%	55.6%	40.0%
Unalakleet	225	162	0.0%	64.6%	22.3%	53.1%
Subdistrict 6	225	162	0.0%	64.6%	22.3%	53.1%
Stebbins	122	55	0.0%	97.1%	0.0%	4.9%
St. Michael	93	30	0.0%	80.0%	0.0%	26.7%
South Norton Sound	215	85	0.0%	93.3%	0.0%	9.7%
NORTON SOUND	777	480	1.2%	82.1%	28.8%	62.9%
Brevig Mission	71	37	0.0%	94.6%	18.9%	5.4%
Teller	77	37	0.0%	93.4%	0.0%	10.0%
PORT CLARENCE	148	74	0.0%	94.6%	6.3%	7.2%
Noatak	101	69	0.0%	18.5%	35.2%	66.6%
Noorvik	115	50	0.0%	88.6%	11.4%	20.0%
KOTZEBUE SOUND²	216	119	0.0%	48.6%	24.2%	47.7%
TOTALS	1,141	673	0.8%	74.2%	27.8%	57.1%

¹ A household may use multiple gear types.

normally

included, were not surveyed in 2002.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, and Kawerak, Inc., household surveys, 2002.

FIG. 15. GEAR TYPES USED FOR NON-COMMERCIAL SALMON HARVESTS, 2002, Norton Sound, Port Clarence, and Kotzebue Districts

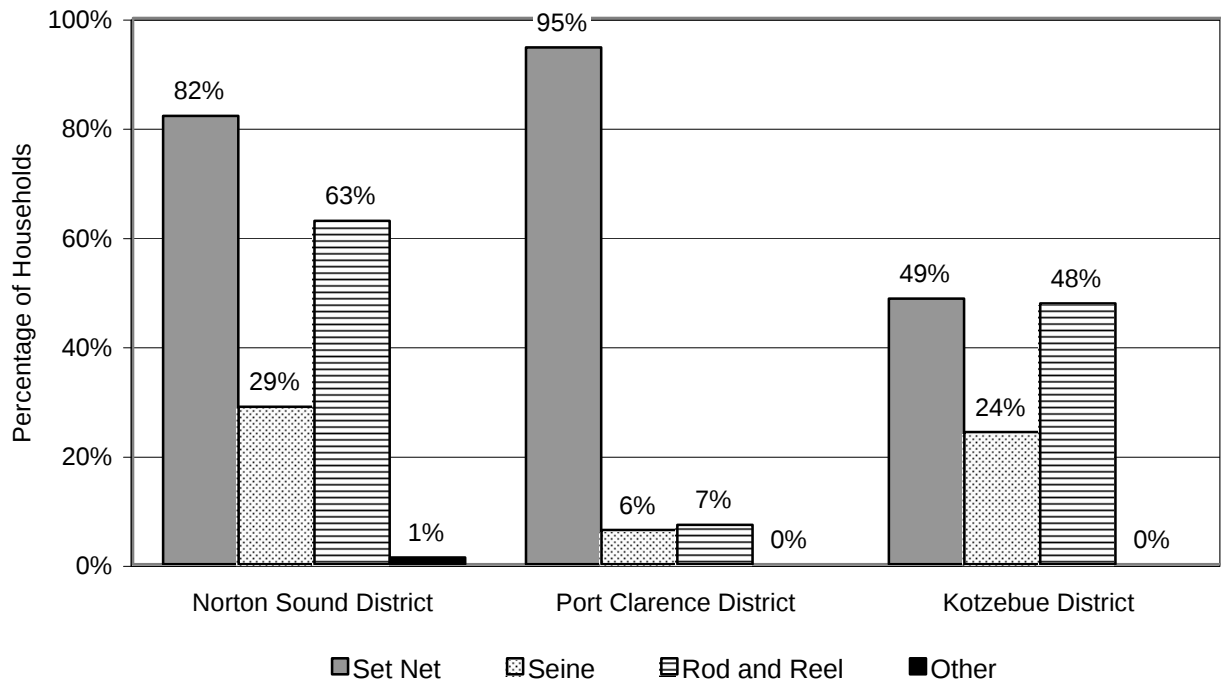
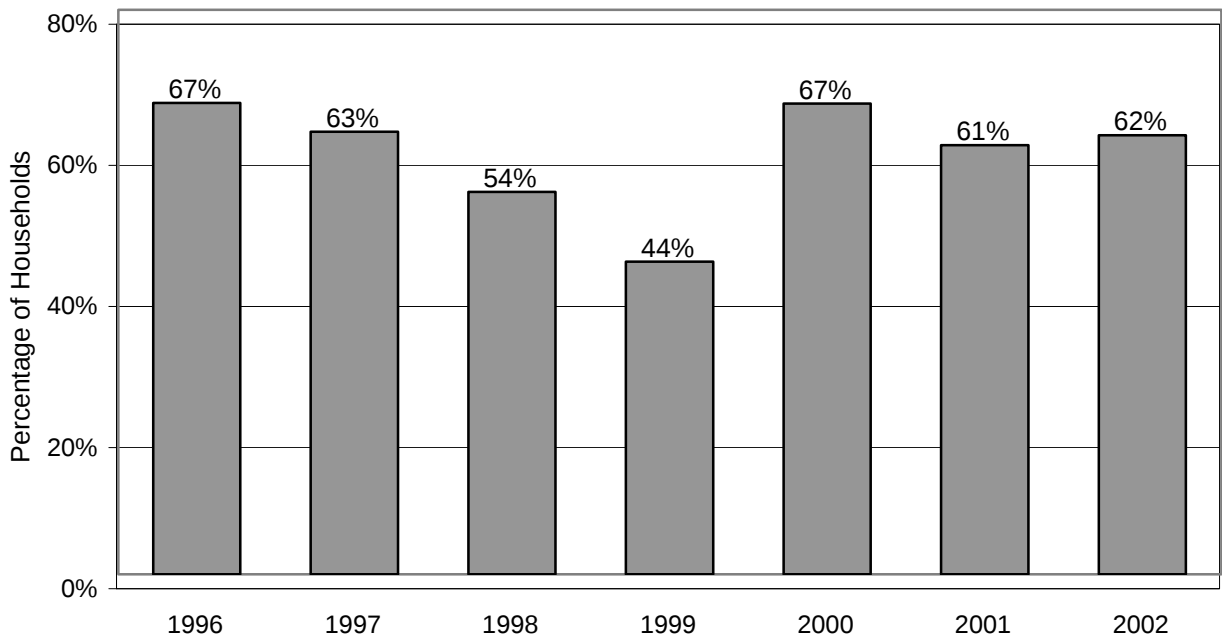


FIG. 16. PERCENTAGE OF HOUSEHOLDS GIVING SALMON TO OTHERS, 1996-2002, Northwest Alaska



**Table 8. Percentage of Households Giving Salmon to Others,
Northwest Alaska, 2002**

	Total Households	Households Responding	% of Fishing Households Sharing Salmon ¹
Golovin	47	31	64.7%
White Mountain	65	42	34.4%
Subdistrict 2	112	73	46.3%
Elim	82	68	66.2%
Subdistrict 3	82	68	66.2%
Koyuk	84	50	45.9%
Subdistrict 4	84	50	45.9%
Shaktoolik	59	45	43.4%
Subdistrict 5	59	45	43.4%
Unalakleet	225	162	69.1%
Subdistrict 6	225	162	69.1%
Stebbins	122	58	24.9%
St. Michael	93	31	47.9%
South Norton Sound	215	89	33.3%
NORTON SOUND	777	487	53.6%
Brevig Mission	71	38	56.7%
Teller	77	38	67.7%
PORT CLARENCE	148	76	75.5%
Noatak	101	70	58.8%
Noorvik	115	53	78.1%
KOTZEBUE SOUND²	216	123	67.5%
TOTALS	1,141	686	62.2%

¹ Responses are weighted by stratum.

² The Kotzebue Sound communities of Ambler, Kiana, Kobuk, Kotzebue, and Shungnak, though normally included, were not surveyed in 2002.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, and Kawerak, Inc., household surveys, 2002.

**Table 9. Salmon Caught for Dog Food,
Northwest Alaska, 2002**

	Number of Salmon Caught for Dog Food ¹									Est. Number of Dogs	Salmon Per Dog
	Total HH's	HH's Contacted	% of HH's Catching Salmon for Dogs	Chinook	Chum	Pink	Sockeye	Coho	Total		
Golovin	47	39	0.0%	0	0	0	0	0	0	0.0	0.0
White Mountain	65	59	0.0%	0	0	0	0	0	0	0.0	0.0
Subdistrict 2	112	98	0.0%	0	0	0	0	0	0	0.0	0.0
Elim	82	76	6.4%	0	75	2	0	11	89	7.3	12.1
Subdistrict 3	82	76	6.4%	0	75	2	0	11	89	7.3	12.1
Koyuk	84	76	1.3%	0	17	109	0	0	126	2.2	58.0
Subdistrict 4	84	76	1.3%	0	17	109	0	0	126	2.2	58.0
Shaktoolik	59	57	8.5%	0	210	200	0	306	716	68.0	10.5
Subdistrict 5	59	57	8.5%	0	210	200	0	306	716	68.0	10.5
Unalakleet	225	222	2.7%	10	993	437	2	241	1,683	49.2	34.2
Subdistrict 6	225	222	2.7%	10	993	437	2	241	1,683	49.2	34.2
Stebbins	122	108	1.8%	0	25	0	0	9	34	4.4	7.8
St. Michael	93	90	0.0%	0	0	0	0	0	0	0.0	0.0
South Norton Sound	215	198	1.0%	0	25	0	0	9	34	4.4	7.8
NORTON SOUND	777	727	2.5%	10	1,321	748	2	568	2,649	131.2	20.2
Brevig Mission	71	67	3.0%	0	43	5	5	16	69	23.4	3.0
Teller	77	71	3.0%	0	46	7	40	52	145	32.2	4.5
PORT CLARENCE	148	138	3.0%	0	89	12	46	68	214	55.6	3.8
Noatak	101	90	0.0%	0	0	0	0	0	0	0.0	0.0
Noorvik	115	101	5.9%	0	2,266	0	0	0	2,266	101.7	22.3
KOTZEBUE SOUND²	216	191	3.1%	0	2,266	0	0	0	2,266	101.7	22.3
TOTALS	1,141	1,056	2.7%	10	3,676	760	48	635	5,129	288.4	17.8

¹ Does not include feeding scraps or spoiled fish to dogs.

² The Kotzebue Sound communities of Ambler, Kiana, Kobuk, Kotzebue, and Shungnak, though normally included, were not surveyed in 2002.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, and Kawerak, Inc., household surveys, 2002.

FIG. 17. NUMBER OF SALMON HARVESTED FOR DOG FOOD, 1994-2002, Northwest Alaska

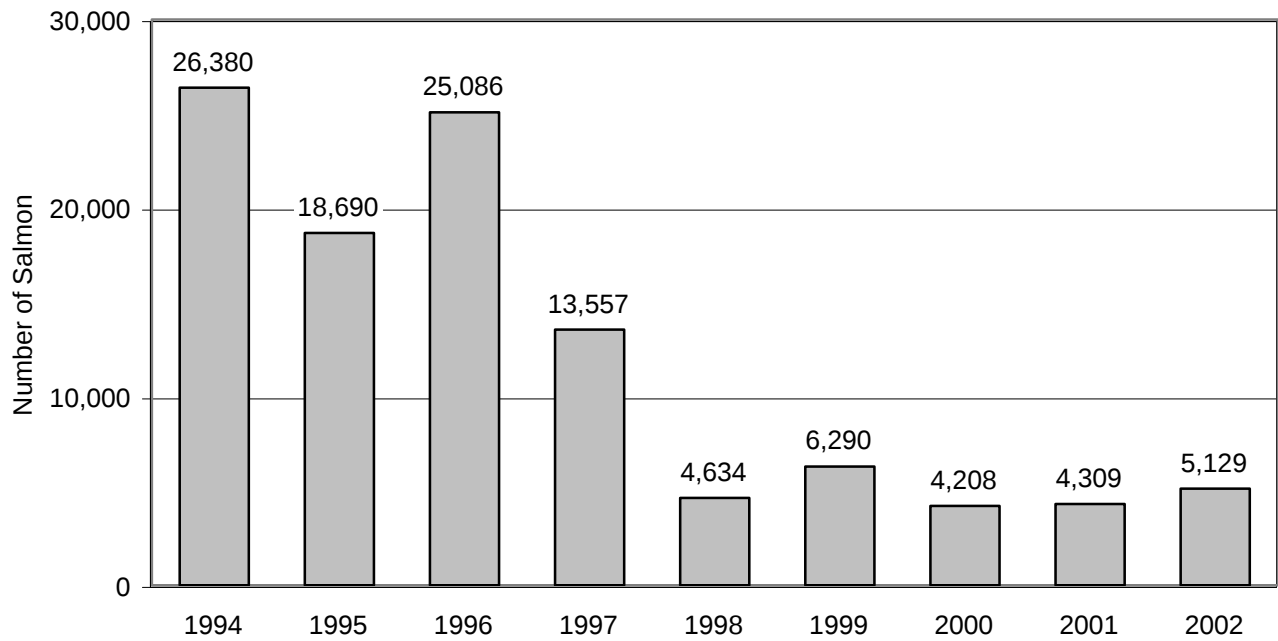
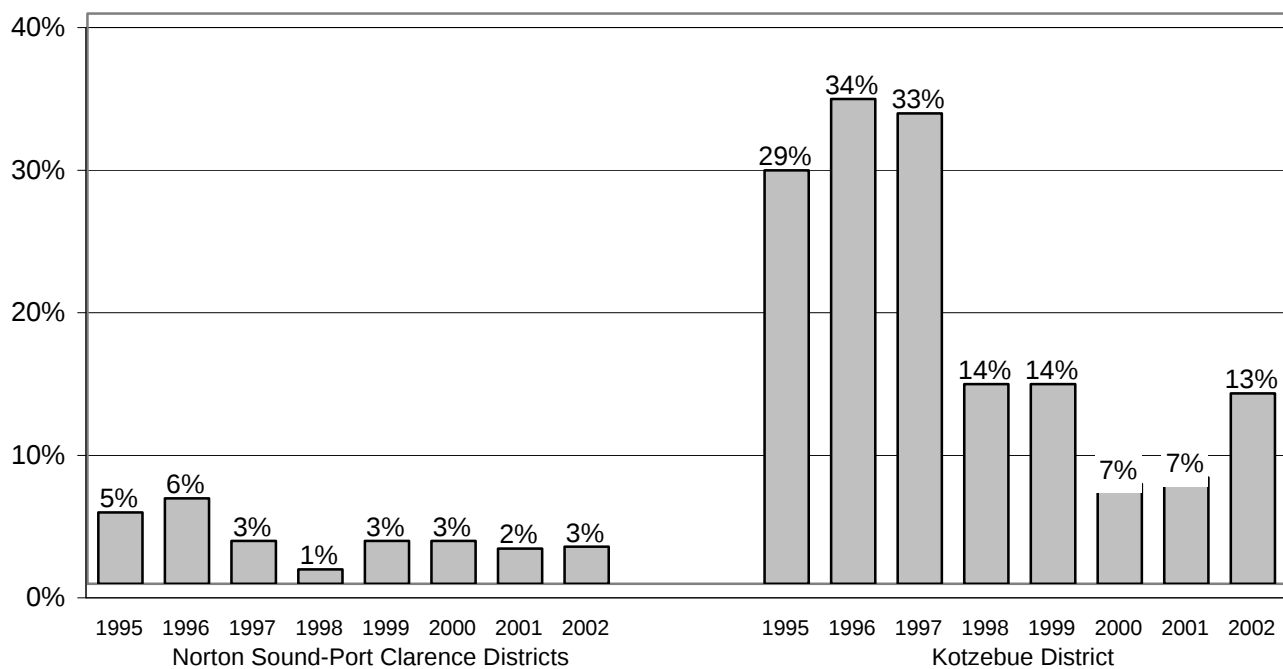


FIG.18. PERCENTAGE OF SUBSISTENCE SALMON HARVEST CAUGHT FOR DOG FOOD, 1995-2002, Norton Sound-Port Clarence and Kotzebue Districts



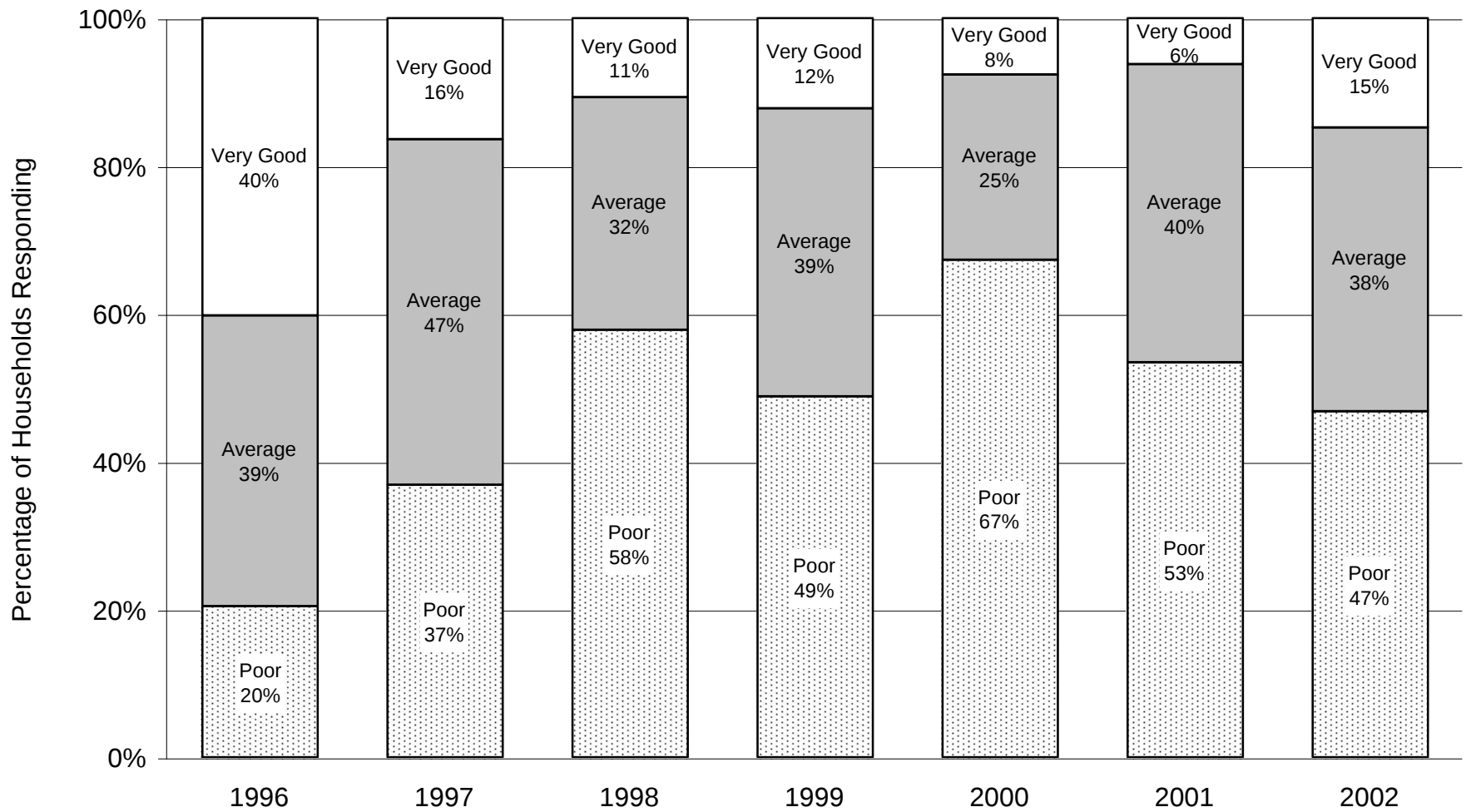
**Table 10. Assessment of Chum Salmon Fishing,
Northwest Alaska, 2002**

	Total HH's	HH's Responding	Percentage of Households		
			Very Good	Average	Poor
Golovin	47	23	26.1%	17.4%	56.5%
White Mountain	65	29	0.0%	58.6%	41.4%
Subdistrict 2	112	52	11.5%	40.4%	48.1%
Elim	82	59	23.7%	39.0%	37.3%
Subdistrict 3	82	59	23.7%	39.0%	37.3%
Koyuk	84	38	31.6%	34.2%	34.2%
Subdistrict 4	84	38	31.6%	34.2%	34.2%
Shaktoolik	59	31	12.9%	19.4%	67.7%
Subdistrict 5	59	31	12.9%	19.4%	67.7%
Unalakleet	225	133	11.3%	32.3%	56.4%
Subdistrict 6	225	133	11.3%	32.3%	56.4%
Stebbins	122	41	7.3%	61.0%	31.7%
St. Michael	93	18	5.6%	66.7%	27.8%
South Norton Sound	215	59	6.8%	62.7%	30.5%
NORTON SOUND	777	372	14.8%	38.4%	46.8%
Brevig Mission	71	31	29.0%	67.7%	3.2%
Teller	77	26	23.1%	46.2%	30.8%
PORT CLARENCE	148	57	26.3%	57.9%	15.8%
Noatak	101	67	20.9%	65.7%	13.4%
Noorvik	115	51	56.9%	35.3%	7.8%
KOTZEBUE SOUND¹	216	118	36.4%	52.5%	11.0%
TOTALS	1,141	547	20.7%	43.5%	35.8%

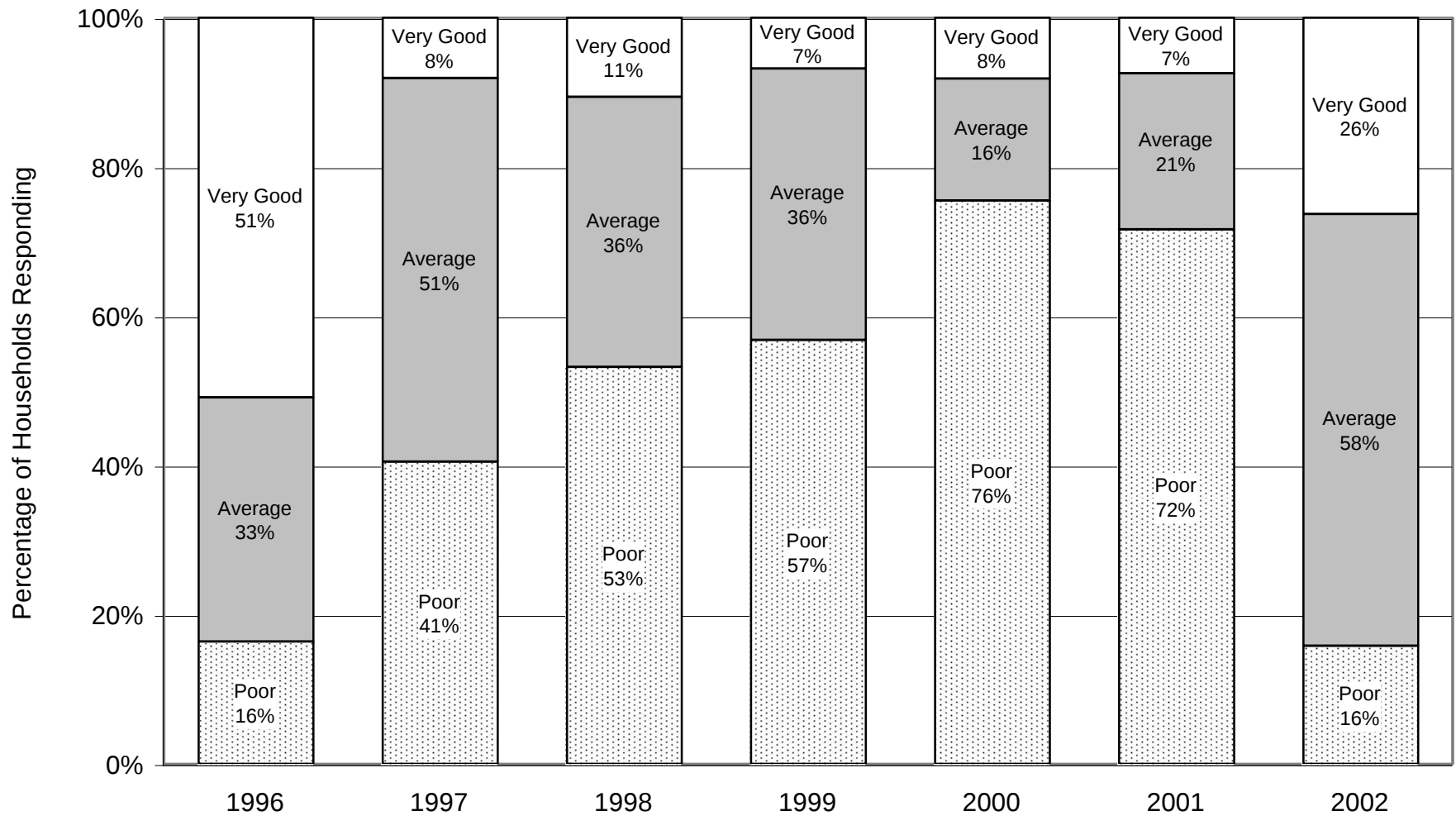
¹ The Kotzebue Sound communities of Ambler, Kiana, Kobuk, Kotzebue, and Shungnak, though normally included, were not surveyed in 2002.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, and Kawerak, Inc., household surveys, 2002.

**FIG. 19. ASSESSMENT OF CHUM SALMON FISHING, 1996-2002,
Norton Sound District**



**FIG. 20. ASSESSMENT OF CHUM SALMON FISHING, 1996-2002,
Port Clarence District**



**FIG. 21. ASSESSMENT OF CHUM SALMON FISHING, 1996-2002,
Kotzebue District**

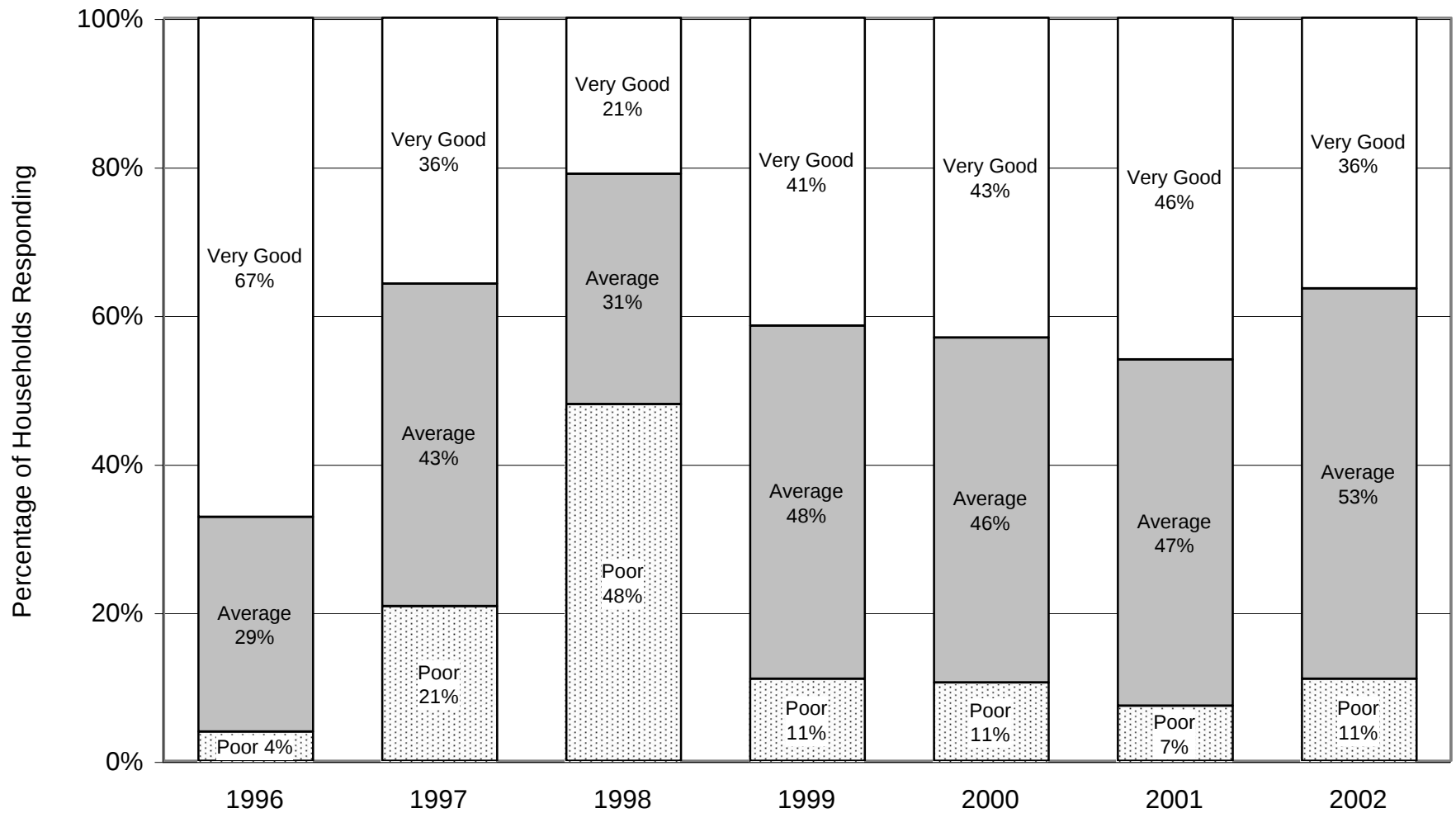


Table 11. Subsistence Sheefish and Whitefish Harvests, 2002, Kotzebue District

	Sheefish					Whitefish			
	Total HH's	HH's Contctd	Mean	Reported Harvest	Est. Total*	Confidence Interval % +/-	Mean	Reported Harvest	Est. Total* Confidence Interval % +/-
Noatak ¹	101	90	-	-	-	-	28.9	2,610	2,919 14.9%
Noorvik	115	101	37.5	3,882	4,310	19.5%	197.3	20,378	22,688 10.0%
KOTZEBUE SOUND²	115	101	37.5	3,882	4,310	19.5%	118.6	22,988	25,607 9.0%

¹ Information on sheefish harvests not collected in Noatak.

² The Kotzebue Sound communities of Ambler, Kiana, Kobuk, Kotzebue, and Shungnak, though normally included, were not surveyed in 2002.

* Data from contacted households were expanded to households not contacted.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, household surveys, 2002.

Table 12. Subsistence Char Harvests, 2002, Noatak

	Total HH's	HH's Contctd	Mean	Reported Harvest	Est. Total	Confidence Interval % +/-
Noatak	101	90	32.1	2,892	3,242	10.2%

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, household surveys, 2002.

FIG. 22. SUBSISTENCE SHEEFISH HARVESTS IN NOORVIK, 1995-2002

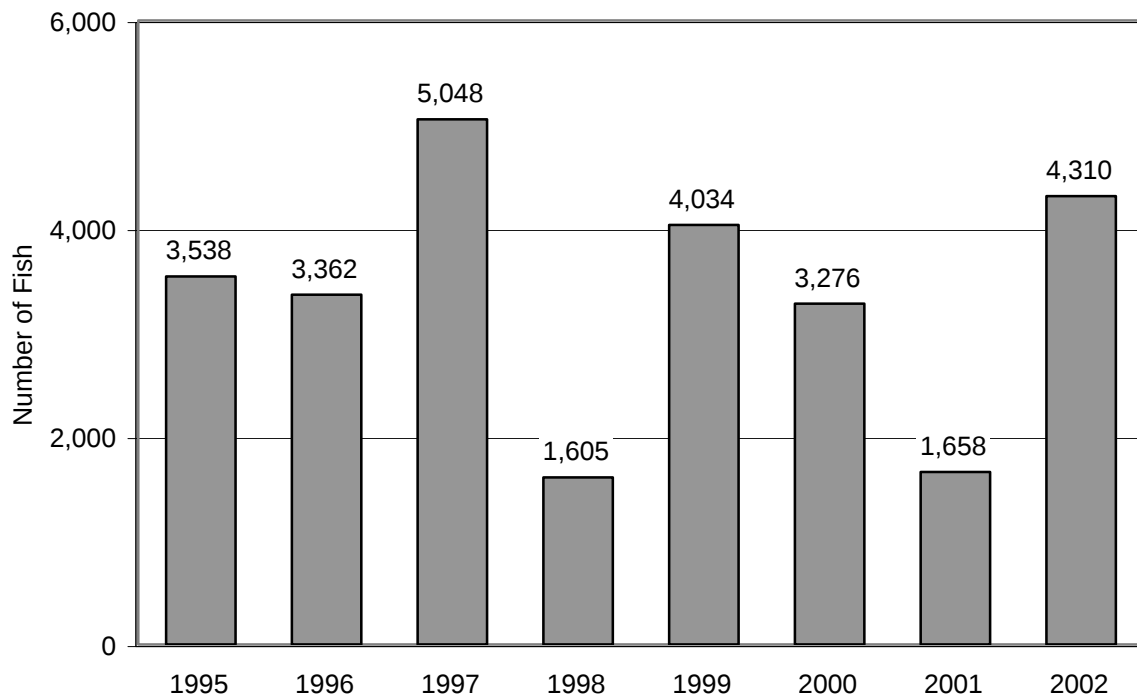


FIG. 23. SUBSISTENCE WHITEFISH HARVESTS IN NOORVIK, 1997-2002

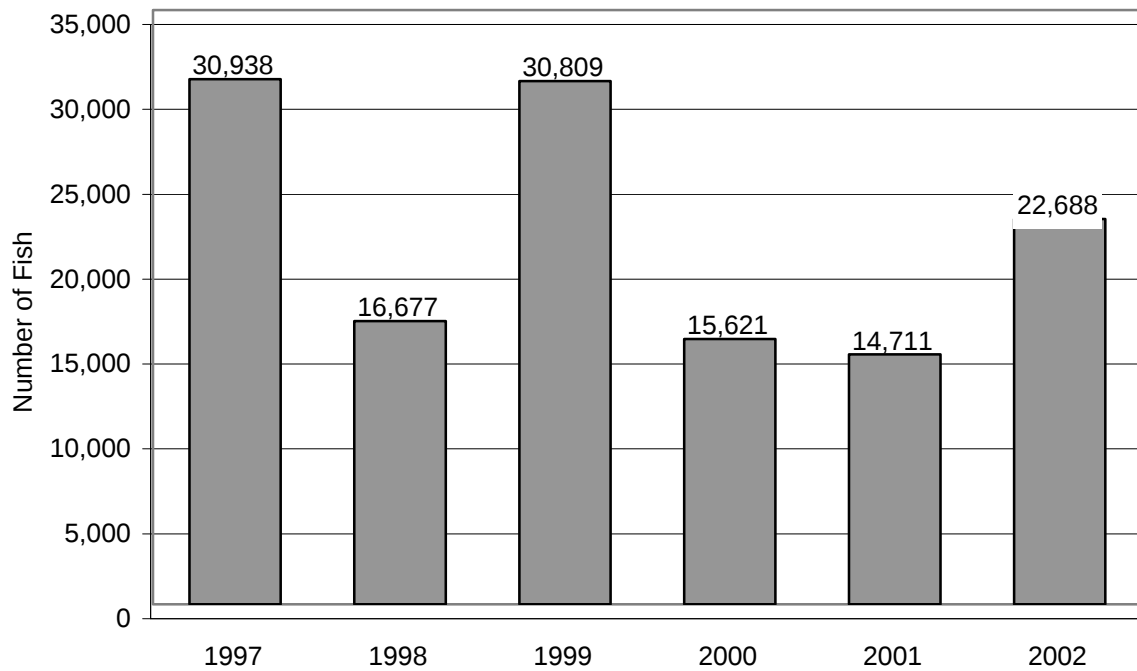
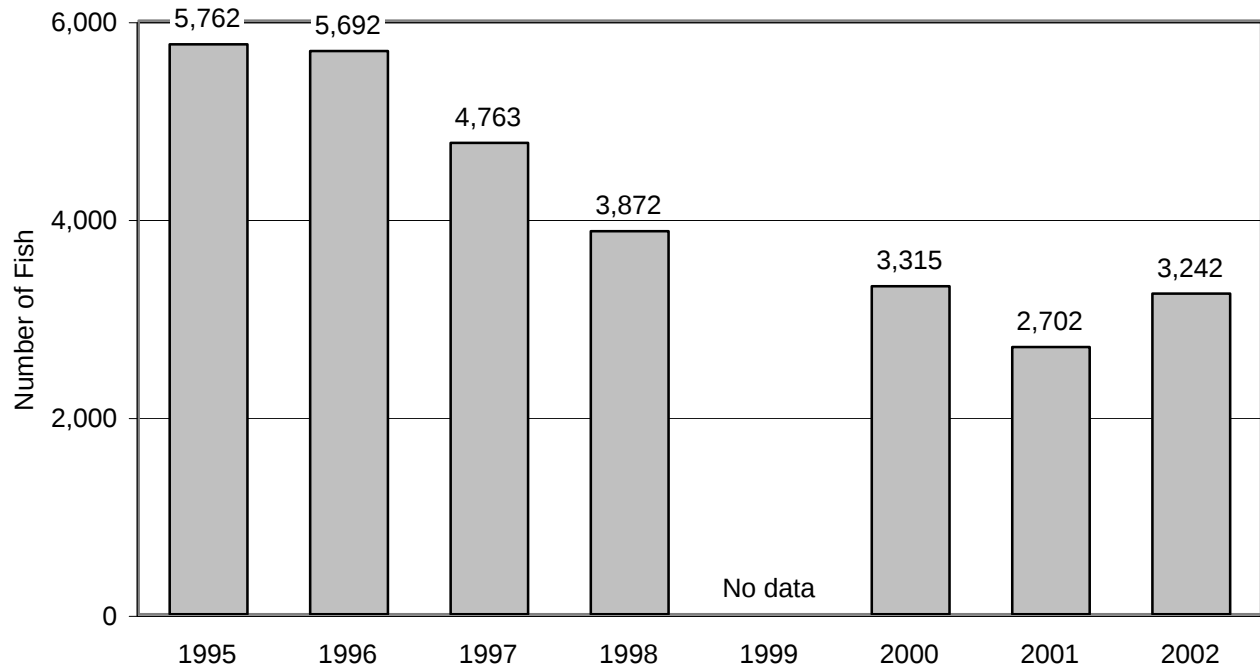


FIG. 24. SUBSISTENCE CHAR HARVESTS IN NOATAK, 1995-2002



APPENDIX: SURVEY INSTRUMENTS

