

Subsistence Salmon Harvest Summary

Northwest Alaska 2000

- Norton Sound District
- Port Clarence District
- Kotzebue District

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Kotzebue, Alaska
February 2001

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TABLE OF CONTENTS

List of Tables	ii
List of Figures	iii
Background	1
Subsistence Salmon Harvest Collection Methods	2
Household Surveys	2
Norton Sound Subdistrict 1 Fishing Permits	4
Salmon Lake and Pilgrim River Fishing Permits	4
Kotzebue Postcard Survey	5
Subsistence Salmon Harvest Estimation.....	5
Subsistence Salmon Harvest Survey Results, 2000.....	6
Subsistence Salmon Harvest	6
Norton Sound District	7
Port Clarence District.....	8
Kotzebue District	8
Participation in Subsistence Fishing.....	8
Participation in Commercial Fishing	9
Gear Type.....	9
Sharing	10
Salmon for Dog Food.....	10
Assessment of Fishing Season	10
Sheefish, Whitefish, and Char	11
Tables and Figures	13
Appendix: Survey Instruments	45

LIST OF TABLES

Table 1.	Household Sampling, Subsistence Salmon Harvest Surveys, Northwest Alaska, 2000	15
Table 2.	Subsistence Salmon Harvests, Northwest Alaska, 2000.....	16
Table 3.	Subsistence Salmon Harvests by Community, 1994-2000, Norton Sound-Port Clarence Districts.....	20
Table 4.	Subsistence Salmon Harvests by Community, 1994-2000, Kotzebue District.....	22
Table 5.	Household Participation in Subsistence Salmon Fishing, Northwest Alaska, 2000.....	28
Table 6.	Salmon Removed from Commercial Catches for Subsistence Use, Northwest Alaska, 2000	30
Table 7.	Gear Types for Non-Commercial Salmon Harvest, Northwest Alaska, 2000.....	31
Table 8.	Percentage of Households Giving Salmon to Others, Northwest Alaska, 2000.....	33
Table 9.	Whole Salmon Fed to Dogs, Northwest Alaska, 2000	34
Table 10.	Assessment of Chum Salmon Fishing, Northwest Alaska, 2000.....	37
Table 11.	Subsistence Sheefish and Whitefish Harvests, 2000, Kotzebue District.....	41
Table 12.	Subsistence Char Harvests, 2000, Noatak	41

LIST OF FIGURES

Fig. 1. Subsistence Salmon Harvests, 1994-2000, Norton Sound-Port Clarence Districts ...	17
Fig. 2. Subsistence Salmon Harvests, 1994-2000, Kotzebue District	18
Fig. 3. Subsistence Salmon Harvests by Species, 2000, Norton Sound, Port Clarence, and Kotzebue Districts	19
Fig. 4. Subsistence Chum Salmon Harvests in Norton Sound District, 1994-2000	24
Fig. 5. Subsistence Chinook Salmon Harvests in Norton Sound District, 1994-2000	24
Fig. 6. Subsistence Pink Salmon Harvests in Norton Sound District, 1994-2000	25
Fig. 7. Subsistence Sockeye Salmon Harvests in Norton Sound District, 1994-2000	25
Fig. 8. Subsistence Coho Salmon Harvests in Norton Sound District, 1994-2000	25
Fig. 9. Species Composition of Subsistence Salmon Harvests, 2000, Norton Sound, Port Clarence, and Kotzebue Districts	26
Fig. 10. Average Number of Subsistence Salmon Caught Per Household, 2000, Norton Sound, Port Clarence, and Kotzebue Districts	27
Fig. 11. Household Participation in Subsistence Salmon Fishing, 1995-2000, Norton Sound, Port Clarence, and Kotzebue Districts	29
Fig. 12. Percentage of Non-Commercial Salmon Harvest by Rod and Reel, 2000, Norton Sound-Port Clarence and Kotzebue Districts.....	32
Fig. 13. Number of Salmon Harvested for Dog Food, 1994-2000, Norton Sound, Port Clarence, and Kotzebue Districts	35
Fig. 14. Percentage of Subsistence Salmon Harvest Caught for Dog Food, 1995-2000, Norton Sound-Port Clarence and Kotzebue Districts	36
Fig. 15. Assessment of Chum Salmon Fishing, 1996-2000, Norton Sound District.....	38
Fig. 16. Assessment of Chum Salmon Fishing, 1996-2000, Port Clarence District.....	39
Fig. 17. Assessment of Chum Salmon Fishing, 1996-2000, Kotzebue District	40
Fig. 18. Subsistence Sheefish Harvests, 1995-2000, Kobuk River Villages.....	42
Fig. 19. Subsistence Whitefish Harvests, 1997-2000, Noatak and Kobuk River Villages	42
Fig. 20. Subsistence Char Harvests, 1995-2000, Noatak	43

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 2000, in the Norton Sound District, about 7,000 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 500 people lived in two predominantly Iñupiaq communities, Teller and Brevig Mission; and in the Kotzebue District about 8,000 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, the department 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 2000 the department continued its subsistence salmon harvest assessment program as developed in 1994. This included household surveys in 8 of the 11 communities in the Norton Sound District, both communities in the Port Clarence District, and 6 of the 15 communities in the Kotzebue District. In Nome (Norton Sound Subdistrict 1), subsistence salmon harvests were determined through the return of permits as required since 1974. In Kotzebue, subsistence salmon harvests were determined through a postcard survey. 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

Three methods were used to assess subsistence salmon harvests in northwest Alaska in 2000: 1) post-season household surveys in 16 communities, 2) a postcard survey in Kotzebue, and 3) 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. An unknown amount of subsistence salmon fishing occurs at Council by Nome residents that is neither

documented by household surveys nor permit data (a fishing permit is not required for the Niukluk River, although the department issues one to people who request it). An unknown amount of subsistence salmon fishing by Nome residents also occurs at Woolley Lagoon near the district's western border, where members of Nome's King Island community maintain seasonal camps.

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 and is neither documented by household surveys nor permit data. 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 the Noatak and Kobuk river villages of Noatak, Noorvik, Kiana, Ambler, Shungnak, and Kobuk. The communities of Wales, Diomedes, Shishmaref, Deering, Buckland, Selawik, Kivalina, and Point Hope were not 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 38% of households in Noatak to 97% of households in White Mountain. Overall, 77% 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). Two department staff assisted by local residents in each community were responsible for conducting the household surveys.

Department staff traveled to all the communities between October 10 and December 6, 2000. Prior to arriving in a community, researchers called the local city or tribal office to inform them of the project, ask if it were a suitable time to visit, and seek suggestions for local contractors to assist in the surveys. Announcements about community survey schedules were broadcast on the local radio stations. Upon arrival in a community, staff checked in with the city or tribal council office, introduced themselves, and described their tasks. City or tribal administrators frequently identified one or two local residents who were willing to assist with the surveys and arranged for them to meet with

department staff for training and orientation. When possible, the same local assistants were used in 2000 as in the previous years.

With the help of knowledgeable individuals, department staff updated the community household list from 1999, adding new households and deleting those no longer there. Department staff and local assistants then worked concurrently to contact all the households and administer a survey, recording their progress on a tracking sheet. Surveys typically took less than 15 minutes each to complete and most communities were surveyed in two days. After returning to Nome or Kotzebue, staff mailed a survey to households who were out-of-town or unavailable at the time of the village visit. In total, 674 subsistence salmon surveys were completed in the Norton Sound District, 126 in the Port Clarence District, and 237 in the Kotzebue District in 2000 for a total of 1,037 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. In 2000 for a second year, Tier II chum salmon fishing permits were issued to a limited number of Nome households with the intent that these households would have 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 2000, 107 permits (97 Tier I and 10 Tier II permits) were issued for Subdistrict 1, 82 (77%) 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 2000, 15 households requested permits for this area, 8 (50%) of which were returned to the department.

Kotzebue Postcard Survey

With a population of about 3,000 people, Kotzebue was too large to survey house-to-house in an effective and timely way. Instead the department assessed subsistence salmon harvests through a mail-out postcard survey.

An abbreviated version of the household survey instrument, the postcard survey simply asked if the household harvested salmon for subsistence use, the quantities harvested, the type of fishing gear used, and whether the household had a very good, average, or poor fishing season (Appendix). The postcard could be separated in half and returned postage paid. After updating the 1999 mailing list, a total of 733 postcards were mailed to Kotzebue households; 188 (26%) responded (Table 1). An undetermined number of households, especially those who recently moved to Kotzebue, were missed by the postcard survey. These newer households, however, were less likely to be major subsistence harvesters than more stable, long-term households.

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?" (Appendices 1-2). Households not surveyed in 2000 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. The average community catch (C_k) was estimated for salmon species from the composite catch per household data. Mean community catch (C_k) was estimated by:

$$C_k = \sum_{i=0}^1 (N_{ki} * C_{ki}) / \sum_{i=0}^1 N_{ki}$$

where... k = community

i = indicates whether the group "usually fishes" (1) or "usually does not fish"(0)

N_{ki} = number of households that "usually fish" or "usually do not fish"

C_{ki} = mean harvest for households that "usually fish" or "usually do not fish"

The total community catch (T_k) was estimated by:

$$T_k = \sum_{i=0}^1 (N_{ki} * C_{ki})$$

Its variance (V_k) includes a finite population correction factor:

$$V_k = \sum_{i=0}^1 ((N_{ki})^2)(1 - (n_{ki}/N_{ki})) (s_{ki}^2/n_{ki})$$

where... n_{ki} = number of households for which information is available that "usually fish" or "usually do not fish"
 S_{ki}^2 = variance for the amount harvested for the "usually fish" or "usually do not fish" households.

Community catch estimates and their variances were summed across communities for district totals and across all districts for area totals.

If less than 30 households and less than 50% of the households in a community were surveyed, then the data were not expanded and the estimated and the reported harvests were the same. In 2000, this occurred in one community, Kobuk. Because too few households were surveyed in this community to allow for expansion of the salmon survey data, the reported and the estimated harvests in the tables are the same.

As in the past two years, the Nome permit data were not expanded in 2000. 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.

The Kotzebue postcard data were analyzed as a random sample and expanded with a single expansion factor based on the sampling rate of the entire community. Using a recent list of Permanent Fund Dividend applicants, an additional 46 households were added to the Kotzebue household list after the postcard mailing took place. The expanded estimate of Kotzebue's subsistence salmon harvest was based on this total of 779 households. Kotzebue households were arbitrarily placed under the "usually fish" column in the data analysis. (The postcard survey did not ask respondents whether or not they usually subsistence fish for salmon.)

SUBSISTENCE SALMON HARVEST SURVEY RESULTS, 2000

Subsistence Salmon Harvest

In 2000 the estimated subsistence harvest of salmon in the Norton Sound, Port Clarence, and Kotzebue districts was 152,898 fish. This was the second lowest subsistence salmon harvest of the three districts combined in the past seven years. A summary of the 2000 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 1994-2000.

Norton Sound District

The 2000 subsistence salmon harvest in the Norton Sound District was 77,485 fish. This was the second lowest subsistence salmon harvest documented in the seven years of this survey project for this area, and the lowest harvest for the district in an even-numbered year when pink salmon returns are strongest. (Pink salmon abundance fluctuates in an even-year/odd-year cycle, with even-numbered years having the greatest abundance.) For comparable even-numbered years, the 2000 harvest was about 20% less than the 1998 harvest for the same communities and about 42% less than the 1996 harvest.

Figures 4-8 depict subsistence salmon harvests by species in the Norton Sound District for the past seven years. Chum salmon harvests have declined annually in the district since 1995. Chinook salmon harvests generally remained stable from 1994 to 1998, but in the past two years appear to be declining. Pink salmon alternate in abundance in an even-year/odd-year cycle; harvests in both these cycles have declined since 1994. Sockeye and coho salmon harvests have generally remained stable in the past seven years, although coho harvests have been lower in 1997-2000 than in the earlier three years.

Of the total salmon harvest, 5% were chinook, 22% were chum, 50% were pink, 1% were sockeye, and 22% were coho (Fig. 9). The proportional contribution of the species to the 2000 total harvest was similar to that in 1998, a comparable year of pink salmon abundance. In 1999, an off-year year for pink salmon abundance, pink salmon contributed proportionally less and chum salmon more to the total harvest. The proportional contributions of chinook, coho, and sockeye salmon tend to remain stable from year to year.

In the Norton Sound District, the estimated mean salmon harvest was about 90 salmon per household; the estimated breakdown of this harvest was 5 chinook, 20 chum, 45 pink, 1 sockeye, and 20 coho. As in past years, Subdistrict 5 (Shaktoolik) accounted for the largest mean household harvest of salmon, an estimated 198 fish. The mean household harvests in the other subdistricts were 48 salmon in Subdistrict 1 (Nome), 123 salmon in Subdistrict 2 (Golovin and White Mountain), 106 salmon in Subdistrict 3 (Elim), 102 salmon in Subdistrict 4 (Koyuk), 108 salmon in Subdistrict 6 (Unalakleet), and 43 salmon in southern Norton Sound (Stebbins and St. Michael). After Shaktoolik, the communities reporting the largest mean household harvests of salmon were Golovin (146 fish) and White Mountain (119 fish) (Fig. 10).

Port Clarence District

The estimated 2000 subsistence harvest of salmon in the Port Clarence District was 6,521 fish (Table 2). This was the second lowest harvest in the past seven years, and only slightly higher than the lowest harvest in 1999. Of the total harvest, 1% were chinook, 20% were chum, 21% were pink, 44% were sockeye, and 14% were coho (Fig. 9).

The estimated mean harvest in the Port Clarence District was about 42 salmon per household; the estimated breakdown of this harvest was 0.4 chinook, 8 chum, 9 pink, 18 sockeye, and 6 coho. Brevig Mission harvested a total of 2,863 salmon, or a mean of 41 salmon per household. In Teller, the total subsistence harvest of salmon was 3,494 fish, or 44 salmon per household (Fig. 10). Households with Pilgrim River permits harvested an average of 21 salmon per household.

Kotzebue District

The 2000 subsistence salmon harvest in the Kotzebue District was 68,893 fish, 96% of which were chum salmon (Fig. 9). The remaining portion was a mix of other salmon species, present in only small numbers in the district. The 2000 subsistence salmon harvest was intermediate between the high and low harvests in the district in the past seven years (Fig. 2).

The estimated mean salmon harvest was about 56 salmon per household, which included 54 chum and 2 coho. Noorvik had the highest mean household harvest (109 salmon), followed by Noatak and Ambler (72 salmon) (Fig. 10). The remaining communities had mean household harvests ranging from 21 to 64 salmon. Kotzebue's estimated salmon harvest accounted for about 55% of the district's total harvest.

Participation in Subsistence Fishing

About 57% of the households in the study communities subsistence fished for salmon in 2000 (Table 5). Overall, participation in subsistence salmon fishing in each of the three districts has been fairly stable over the past six years with no clear trends upwards or downwards (Fig. 11). In the Norton Sound District in 2000, about 59% of households subsistence fished for salmon and an additional 11% assisted other households in processing subsistence-caught salmon. Participation in subsistence salmon fishing in the district ranged from about 40% of households in Stebbins and St. Michael to 85% in Unalakleet (Table 5).

In the Port Clarence District in 2000, 49% of households subsistence fished for salmon (Table 5). About 11% helped other households process subsistence-caught fish.

In the Kotzebue District, 52% of households subsistence fished for salmon in 2000 and about 5% assisted other households in processing subsistence-caught salmon. Participation in subsistence salmon fishing ranged from 28% of households in Ambler to 69% in Noatak (Table 5).

Participation in Commercial Fishing

About 14% of the households in the surveyed communities in the three districts participated in commercial salmon fishing in 2000. About one-fourth of these households reported removing salmon from their commercial catches for subsistence use. In the Norton Sound District about 18% of households participated in commercial salmon fishing, in the Port Clarence District about 1% participated, and in the Kotzebue District (excluding Kotzebue) about 3% participated (Table 6). In 2000 as in other recent years, commercial salmon fishing throughout the region suffered from poor market conditions and from poor salmon returns in some areas. An estimated total of 1,192 salmon were retained from commercial catches for subsistence use, comprising less than 1% of the estimated total subsistence harvest in the region (Table 6).

Gear Type

In the Port Clarence and Kotzebue districts, set gillnets were the most common gear for harvesting salmon; about 93% and 65% respectively of the households that subsistence fished for salmon used gillnets (Table 7). In both districts, rod and reel was the next most widely used gear, followed by seines. In the Kotzebue District, less than 4% of the salmon catch in the surveyed communities (excluding Kotzebue) was caught with rod and reel, while in the Port Clarence District less than 1% of the salmon harvest was caught with rod and reel.

In the Norton Sound District, rod and reel was used by about 88% of households to harvest salmon, followed by set gillnets (68% of households), seines (22% of households), and driftnets (less than 1% of households) (Table 7). (A household may use multiple gear types.) Although rod and reel was the most widely used gear type, it accounted for only 11% of the total salmon harvest in the surveyed communities (excluding Nome) in the Norton Sound District. Coho and pink salmon were the primary target of rod and reel fishing, accounting for 44% and 42% respectively of the surveyed communities' rod-and-reel salmon harvest. About 21% of the total coho harvest in the district (excluding Nome) was taken with a rod and reel compared to 10% or less for each

of the other salmon species (Fig. 12). Rod-and-reel fishing contributed the most to the total salmon harvest in Elim (27% of the harvest) and White Mountain (19%).

Sharing

In the surveyed communities, respondents who fished were asked whether they gave salmon to other households this year. About 67% of the fishing households in the Norton Sound, Port Clarence, and Kotzebue districts (excluding Nome and Kotzebue) responded affirmatively to this question (Table 8).

Salmon for Dog Food

In 2000 an estimated 4,208 salmon were harvested specifically for dog food in the surveyed communities (excluding Kotzebue and Nome) in the three districts (Table 9). This harvest for dog food was comparable to the previous two years, but substantially less than in 1994-97 (Fig. 13). In 2000 the mean number of salmon fed per dog was about 12 fish per year (Table 9). In the Kotzebue District, about 7% of the estimated subsistence salmon harvest in the surveyed communities (excluding Kotzebue) was caught specifically for dog food (Fig. 14). 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 5% of all the surveyed households (excluding Nome and Kotzebue) 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 2000, 67% of the fishing households in the Norton Sound District (excluding Nome) responded “poor,” 25% responded “average,” and 8% responded “very good” (Table 10). A larger percentage of households responded “poor” in 2000 than in the previous four years (Fig. 15). The percentage of households assessing the 2000 chum salmon fishing season as “poor” ranged from 37% of households in Koyuk to 79% in St. Michael.

In the Port Clarence District, about 76% of the fishing households responded that the chum fishing season was “poor” in 2000, 16% said it was “average,” and 8% said “very good” (Table 10). As in the Norton Sound District, a larger percentage of households responded “poor” in 2000 than in the previous four years (Fig. 16).

In the Kotzebue District, 11% of fishing households responded that their chum fishing season was “poor” in 2000, 46% said “average,” and 43% said “very good.” This was nearly identical to the responses in 1999 (Fig. 17). 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 the Norton Sound District.

Sheefish, Whitefish, and Char

In the Kotzebue District, the household survey collected information on subsistence sheefish and whitefish harvests and, in Noatak, on subsistence char harvests. In 2000 an estimated 7,446 sheefish were harvested by the surveyed communities (excluding Kotzebue) (Table 11). This was slightly less than the average harvest of the previous five years (Fig. 18). Mean household harvests ranged from 1 sheefish in Noatak to 29 sheefish in Noorvik (Table 11).

In 2000 an estimated 70,097 whitefish were harvested for subsistence by the surveyed communities in Kotzebue Sound (excluding Kotzebue) (Table 11). This was higher than the average harvest of the previous three years (Fig. 19). Mean household harvests ranged from about 26 whitefish in Noatak to 502 in Ambler (Table 11).

In 2000 an estimated 3,315 char (Dolly Varden) were harvested for subsistence by the community of Noatak for a mean household harvest of about 33 fish (Table 12). This was lower than the estimated char harvests for Noatak from 1995-98 (Fig. 20). Char harvest data were not collected in 1999.

TABLES AND FIGURES

**Table 1. Household Sampling, Subsistence Salmon Harvest Surveys,
Northwest Alaska, 2000**

	Total HH's	HH's Contacted	% of Total HH	Postcards			Survey	
				Mailed	Returned	% Returned	Interviews	% of HHs
Golovin	45	42	93.3%	0	0	0.0%	42	93.3%
White Mountain	67	65	97.0%	0	0	0.0%	65	97.0%
Subdistrict 2	112	107	95.5%	0	0	0.0%	107	95.5%
Elim	84	76	90.5%	0	0	0.0%	76	90.5%
Subdistrict 3	84	76	90.5%	0	0	0.0%	76	90.5%
Koyuk	75	67	89.3%	0	0	0.0%	67	89.3%
Subdistrict 4	75	67	89.3%	0	0	0.0%	67	89.3%
Shaktoolik	56	54	96.4%	0	0	0.0%	54	96.4%
Subdistrict 5	56	54	96.4%	0	0	0.0%	54	96.4%
Unalakleet	206	178	86.4%	0	0	0.0%	178	86.4%
Subdistrict 6	206	178	86.4%	0	0	0.0%	178	86.4%
Stebbins	128	110	85.9%	0	0	0.0%	110	85.9%
St. Michael	85	82	96.5%	0	0	0.0%	82	96.5%
South Norton Sound	213	192	90.1%	0	0	0.0%	192	90.1%
NORTON SOUND	746	674	90.3%	0	0	0.0%	674	90.3%
Brevig Mission	69	57	82.6%	0	0	0.0%	57	82.6%
Teller	79	69	87.3%	0	0	0.0%	69	87.3%
PORT CLARENCE	148	126	85.1%	0	0	0.0%	126	85.1%
Ambler	70	34	48.6%	0	0	0.0%	34	48.6%
Kiana	88	51	58.0%	0	0	0.0%	51	58.0%
Kobuk	30	15	50.0%	0	0	0.0%	15	50.0%
Kotzebue	779	188	24.1%	733	188	25.6%	-	-
Noatak	102	61	59.8%	0	0	0.0%	61	59.8%
Noorvik	112	42	37.5%	0	0	0.0%	42	37.5%
Shungnak	46	34	73.9%	0	0	0.0%	34	73.9%
KOTZEBUE SOUND	1,227	425	34.6%	733	188	25.6%	237	52.9%
TOTALS	2,121	1,225	57.8%	733	188	25.6%	1,037	77.3%

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, household surveys, 2000.

Table 2. Subsistence Salmon Harvests, Northwest Alaska, 2000

	Total HH's Contacted	Chinook		Chum		Pink		Sockeye		Coho		Total	
		Reported Harvest	Est.* Total	Reported Harvest	Est.* Total	Reported Harvest	Est.* Total	Reported Harvest	Est.* Total	Reported Harvest	Est.* Total	Reported Harvest	Est.* Total
Nome Permits ¹	107	82	7	535	535	2,657	2,657	26	26	747	747	3,972	3,972
Subdistrict 1	107	82	7	535	535	2,657	2,657	26	26	747	747	3,972	3,972
Golovin	45	42	41	839	866	4,158	4,306	17	18	1,287	1,328	6,342	6,560
Niukluk R. Permits ¹	7	4	7	0	0	0	0	0	0	74	74	81	81
White Mountain	67	65	116	280	289	6,381	6,600	0	0	902	932	7,679	7,941
Subdistrict 2	119	111	164	1,119	1,155	10,539	10,906	17	18	2,263	2,335	14,102	14,583
Elim	84	76	226	1,068	1,173	5,444	5,983	42	46	1,300	1,429	8,080	8,879
Subdistrict 3	84	76	226	1,068	1,173	5,444	5,983	42	46	1,300	1,429	8,080	8,879
Koyuk	75	67	348	4,135	4,714	1,978	2,255	2	2	234	267	6,697	7,635
Subdistrict 4	75	67	348	4,135	4,714	1,978	2,255	2	2	234	267	6,697	7,635
Shaktoolik	56	54	431	2,361	2,412	5,316	5,432	20	20	2,738	2,799	10,866	11,103
Subdistrict 5	56	54	431	2,361	2,412	5,316	5,432	20	20	2,738	2,799	10,866	11,103
Unalakleet ²	206	177	2,112	2,182	3,000	9,161	10,631	188	212	5,028	5,878	18,671	22,150
Subdistrict 6	206	177	2,112	2,182	3,000	9,161	10,631	188	212	5,028	5,878	18,671	22,150
Stebbins	128	110	257	2,510	2,913	314	364	294	341	2,093	2,429	5,468	6,345
St. Michael	85	80	148	1,276	1,381	74	80	15	16	1,091	1,180	2,604	2,818
South Norton Sound	213	190	405	3,786	4,294	388	444	309	357	3,184	3,609	8,072	9,163
NORTON SOUND	860	757	3,693	15,186	17,283	35,483	38,308	604	682	15,494	17,062	70,460	77,485
Brevig Mission	69	57	27	413	486	680	808	850	1,007	443	530	2,413	2,863
Pilgrim R. Permits ¹	15	8	2	43	43	22	22	61	61	36	36	164	164
Teller	79	69	33	640	747	477	557	1,530	1,784	316	369	2,996	3,494
POT CLARENCE	163	134	62	1,096	1,275	1,179	1,387	2,441	2,851	795	935	5,573	6,521
Ambler	70	34	0	2,620	5,009	0	0	0	0	0	0	2,620	5,009
Kiana ³	88	51	0	567	2,876	0	0	45	74	65	107	677	3,057
Kobuk	30	15	0	318	318	0	0	0	0	0	0	318	318
Kotzebue ⁴	779	185	49	8,821	37,144	0	0	0	0	152	640	9,022	37,990
Noatak	102	61	0	4,456	7,293	2	3	1	2	53	87	4,512	7,385
Noorvik	112	42	2	4,375	10,391	30	71	0	0	725	1,722	5,132	12,189
Shungnak	46	34	0	2,208	2,944	0	0	0	0	1	1	2,209	2,945
KOTZEBUE SOUND	1,227	422	51	23,365	65,975	32	75	46	75	996	2,557	24,490	68,893
TOTALS	2,250	1,313	3,806	4,432	39,647	36,694	39,769	3,091	3,609	17,285	20,554	100,523	152,898

* Data from contacted households were expanded to households not contacted. If less than 30 and less than 50% of households in a community were contacted, then reported harvest is used for estimated harvest.

¹ Alaska Department of Fish and Game, Division of Commercial Fisheries, permit returns, 2000. Data not expanded.

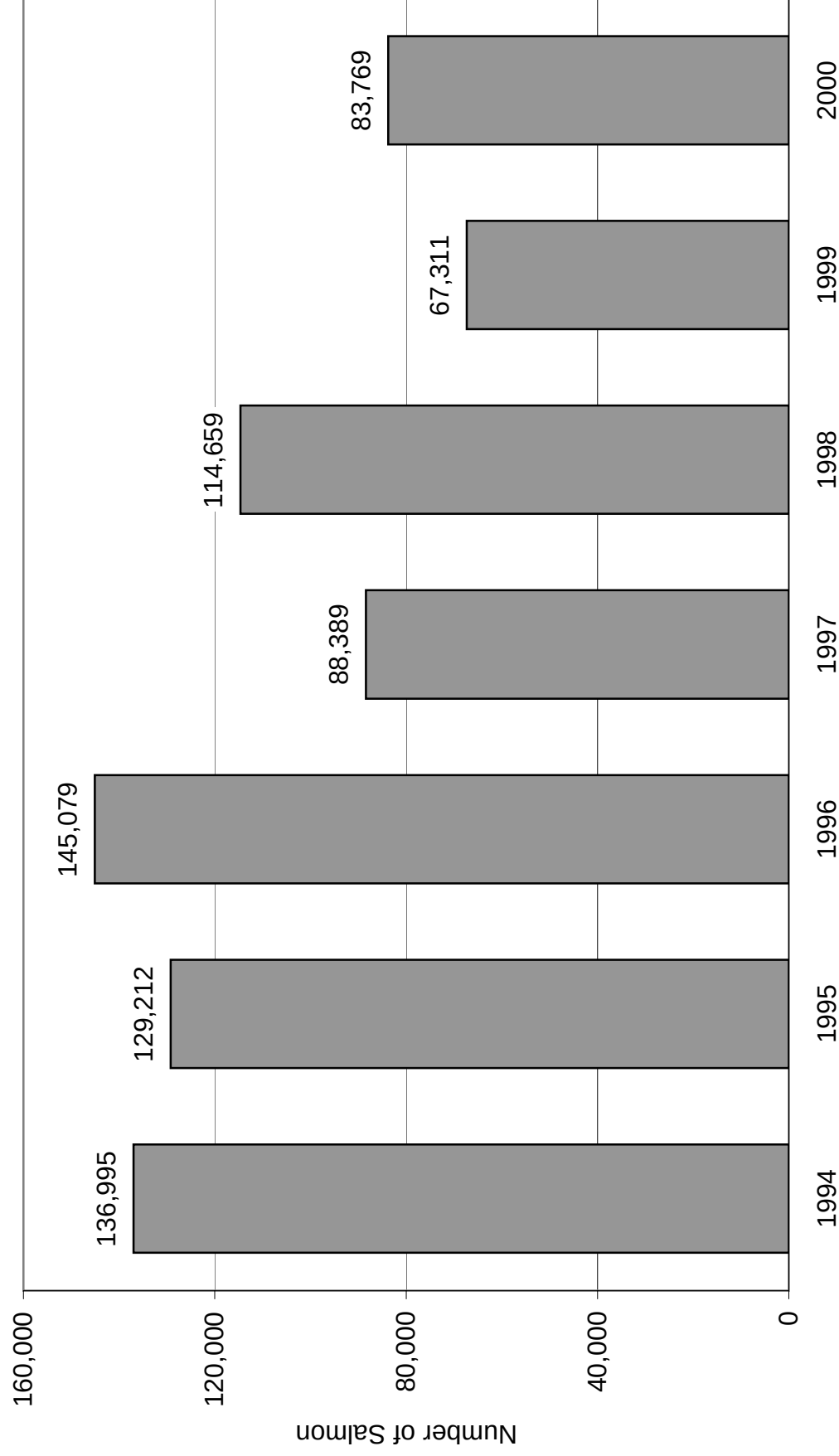
² Estimated salmon harvest in Unalakleet includes 45 chinook, 535 chum, 292 pink, and 183 coho from the ADF&G test net fishery in addition to the survey results.

³ Estimated chum salmon harvest in Kiana includes 1,932 chum from the ADF&G test net fishery in addition to the survey results.

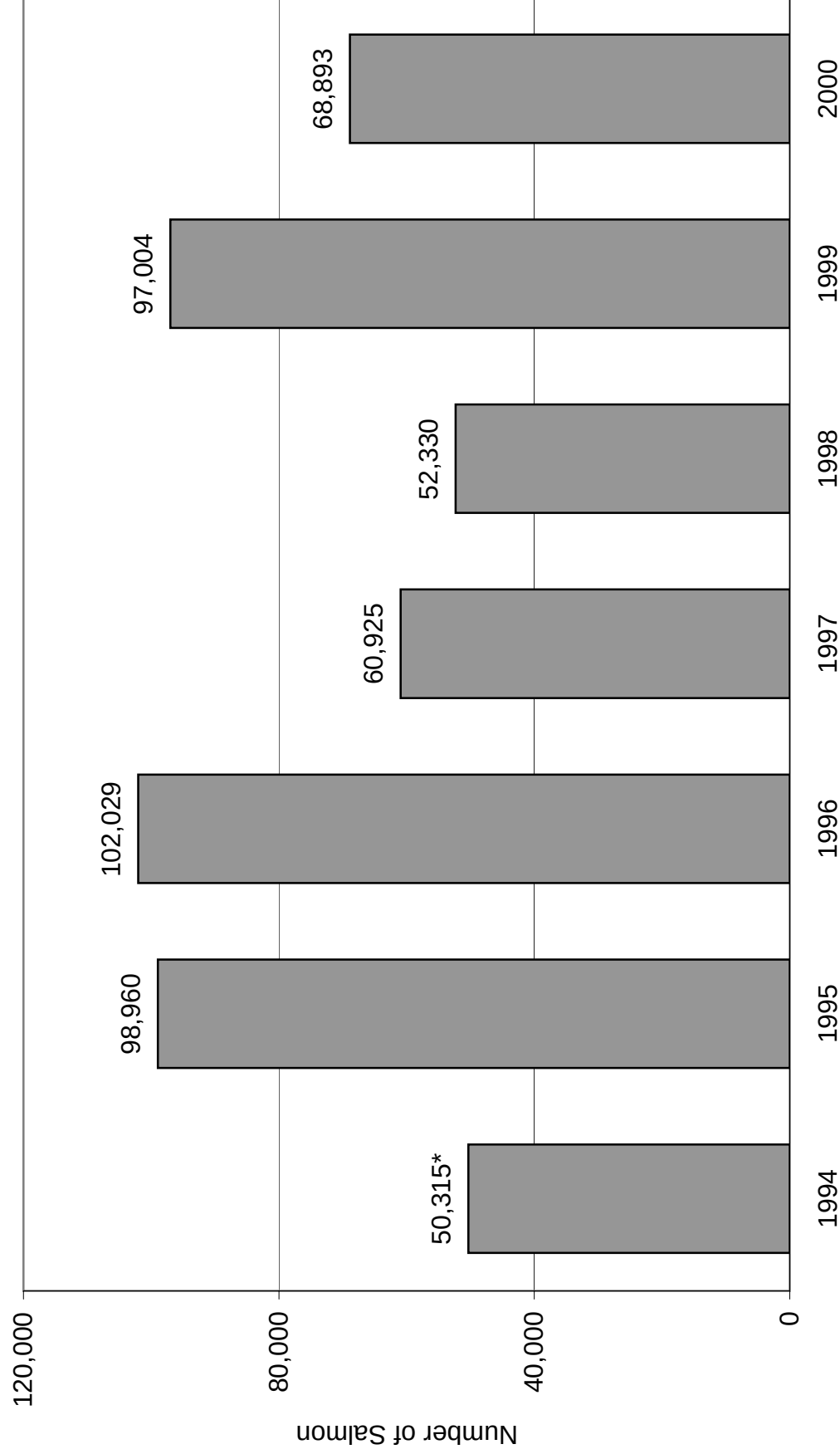
⁴ Alaska Department of Fish and Game, Division of Subsistence, postcard survey, 2000.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, household surveys, 2000.

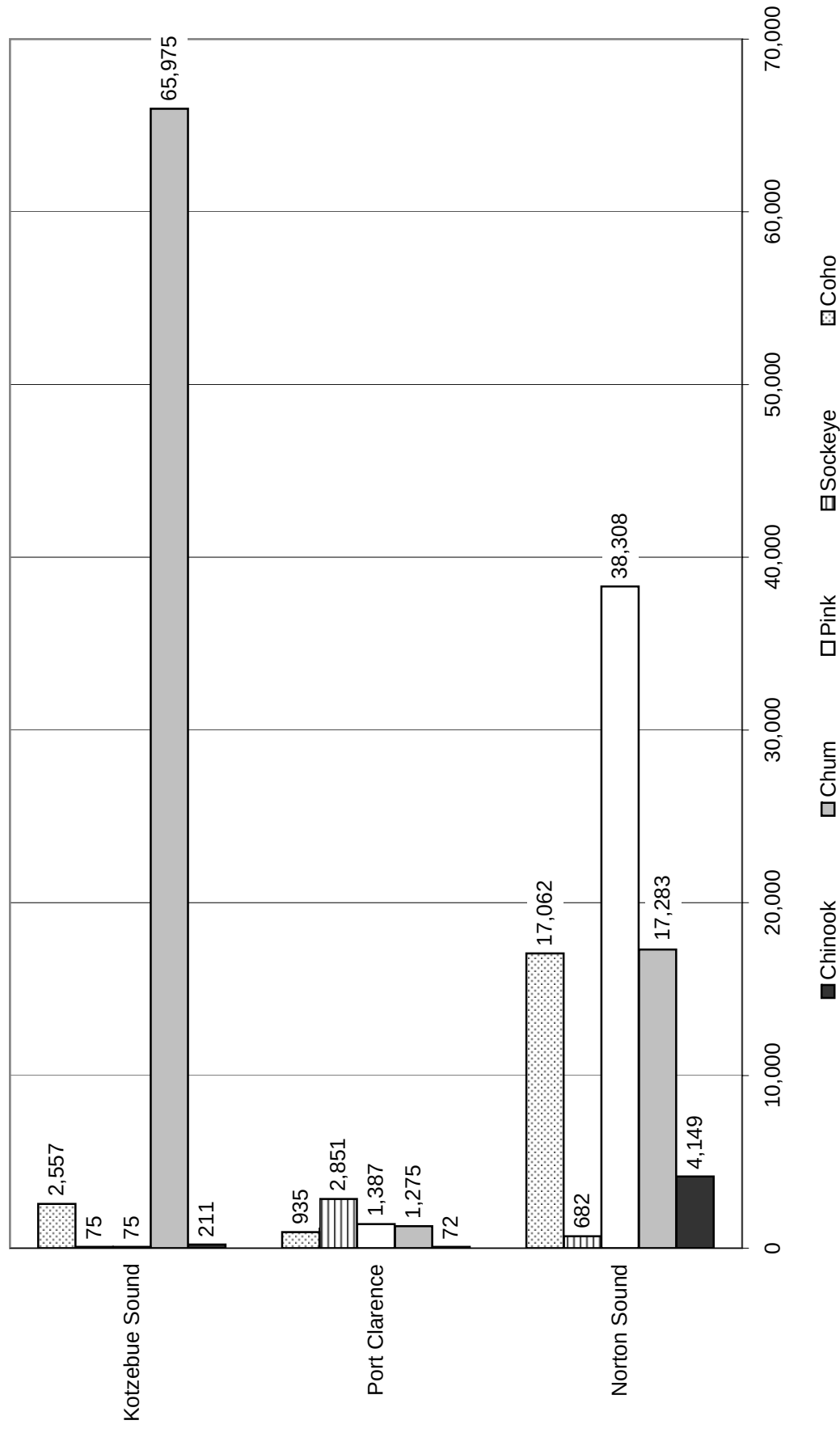
**FIG. 1. SUBSISTENCE SALMON HARVESTS, 1994-2000,
Norton Sound-Port Clarence Districts**



**FIG. 2. SUBSISTENCE SALMON HARVESTS, 1994-2000,
Kotzebue District**



**FIG. 3. SUBSISTENCE SALMON HARVESTS BY SPECIES, 2000,
Norton Sound, Port Clarence, and Kotzebue Districts**



**Table 3. Subsistence Salmon Harvests by Community, 1994-2000,
Norton Sound-Port Clarence Districts**

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

**Table 3. (con't) Subsistence Salmon Harvests by Community, 1994-2000,
Norton Sound-Port Clarence Districts**

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

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

**Table 4. Subsistence Salmon Harvests by Community, 1994-2000,
Kotzebue District**

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

**Table 4. (con't) Subsistence Salmon Harvests by Community, 1994-2000,
Kotzebue District**

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

* Includes only harvests reported by interviewed households. Data not expanded to unsurveyed households due to insufficient number of surveys.
SOURCE: Alaska Department of Fish and Game, Division of Subsistence, household surveys.

FIG. 4. SUBSISTENCE CHUM SALMON HARVESTS IN NORTON SOUND DISTRICT, 1994-2000

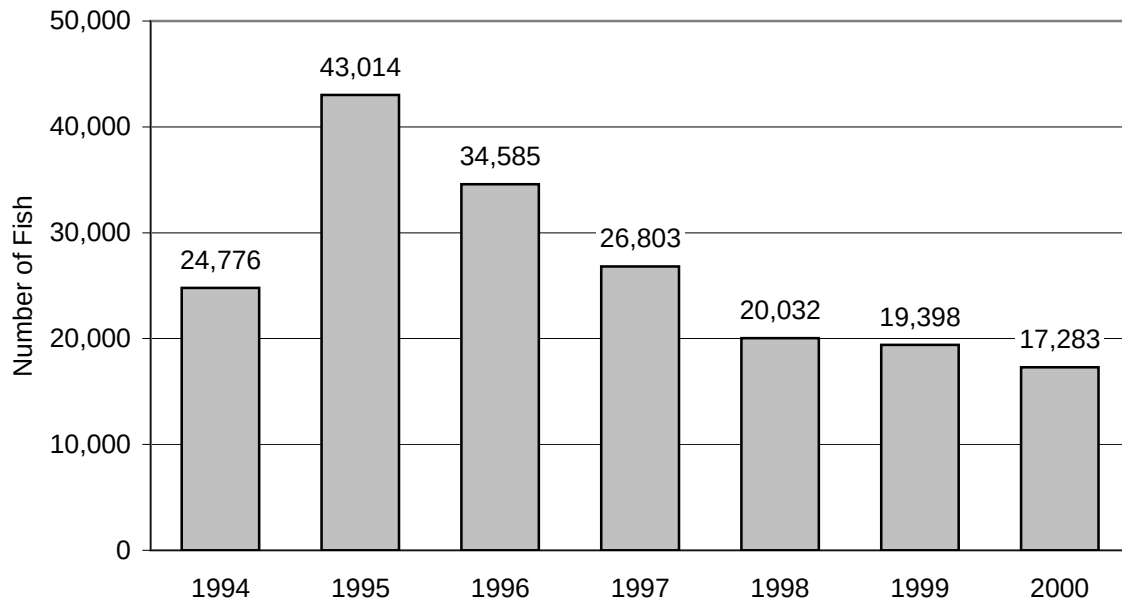


FIG. 5. SUBSISTENCE CHINOOK SALMON HARVESTS IN NORTON SOUND DISTRICT, 1994-2000

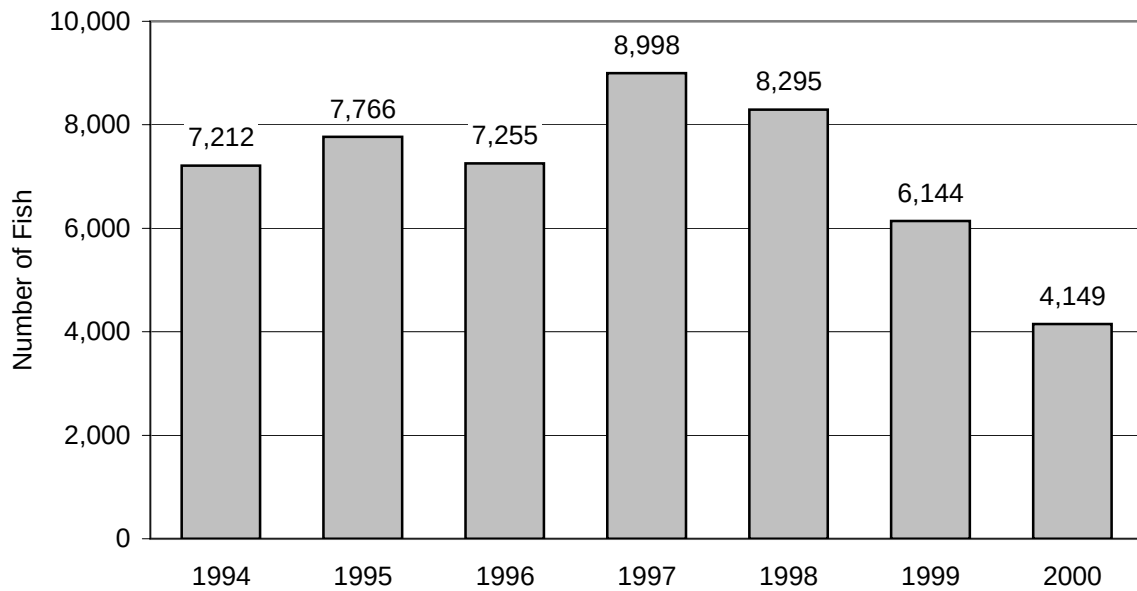


FIG. 6. SUBSISTENCE PINK SALMON HARVESTS IN NORTON SOUND DISTRICT, 1994-2000

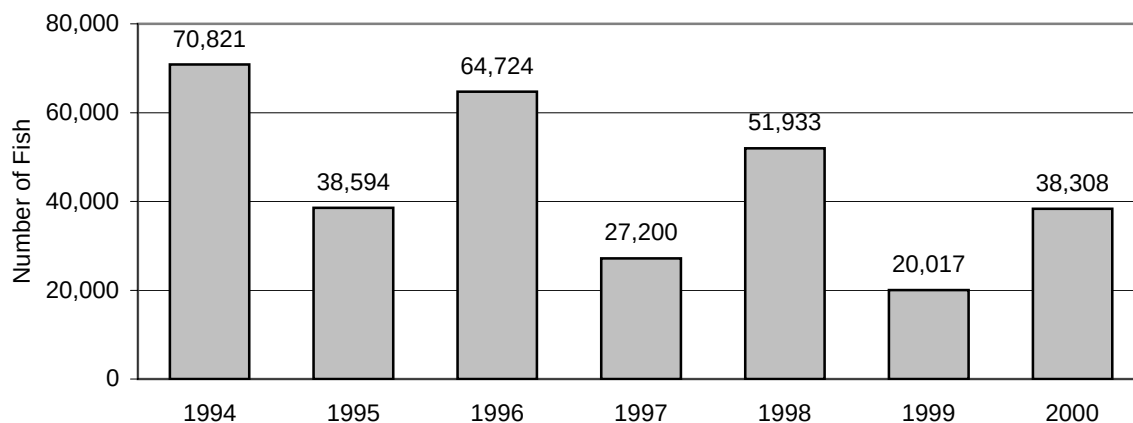


FIG. 7. SUBSISTENCE SOCKEYE SALMON HARVESTS IN NORTON SOUND DISTRICT, 1994-2000

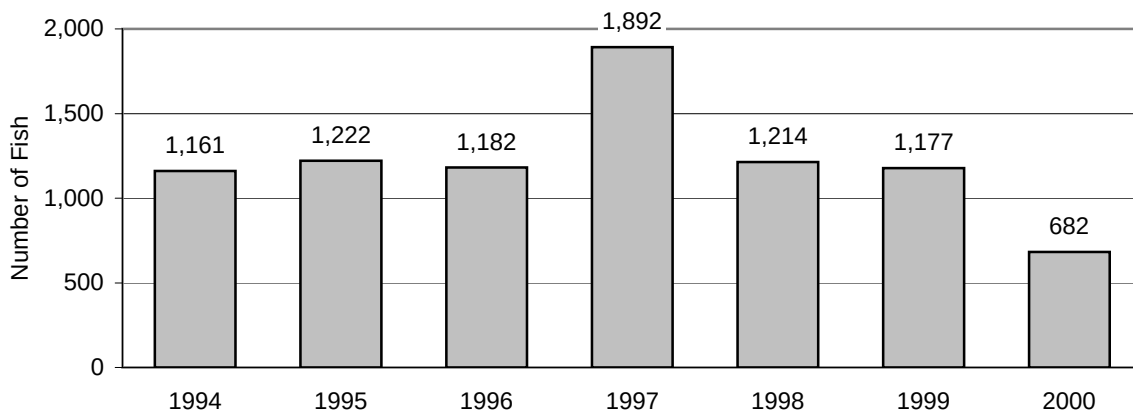
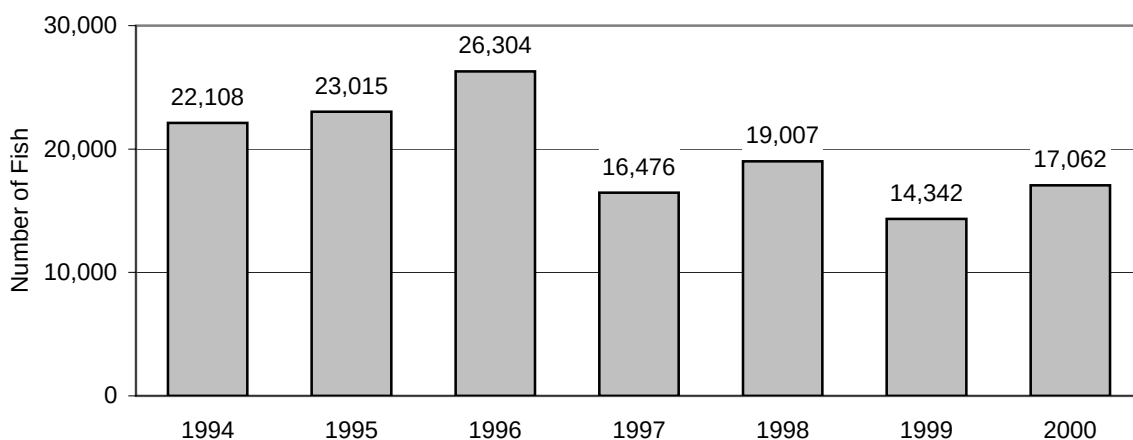


FIG. 8. SUBSISTENCE COHO SALMON HARVESTS IN NORTON SOUND DISTRICT, 1994-2000



**FIG. 9. SPECIES COMPOSITION OF SUBSISTENCE SALMON HARVESTS, 2000,
Norton Sound, Port Clarence, and Kotzebue Districts**

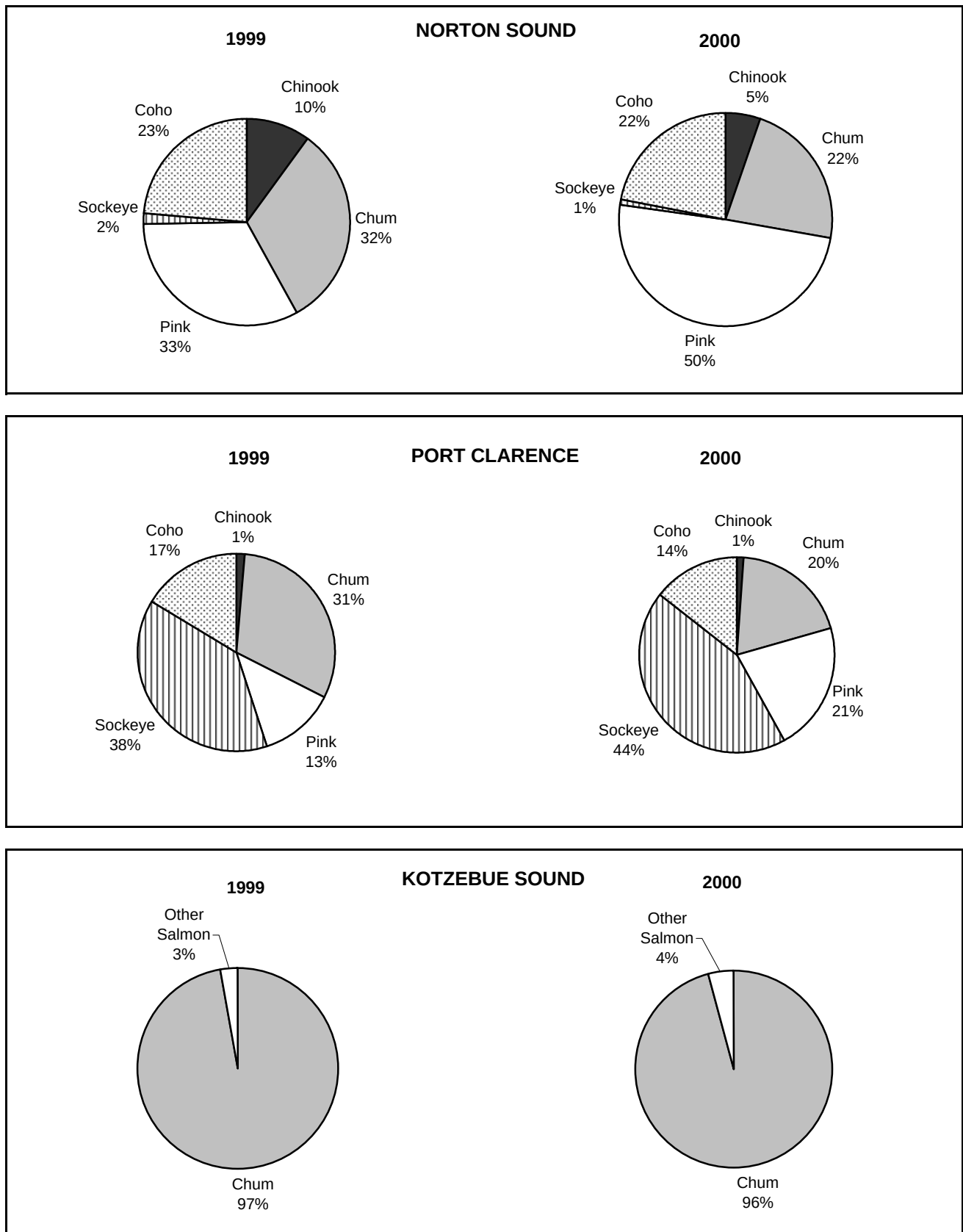
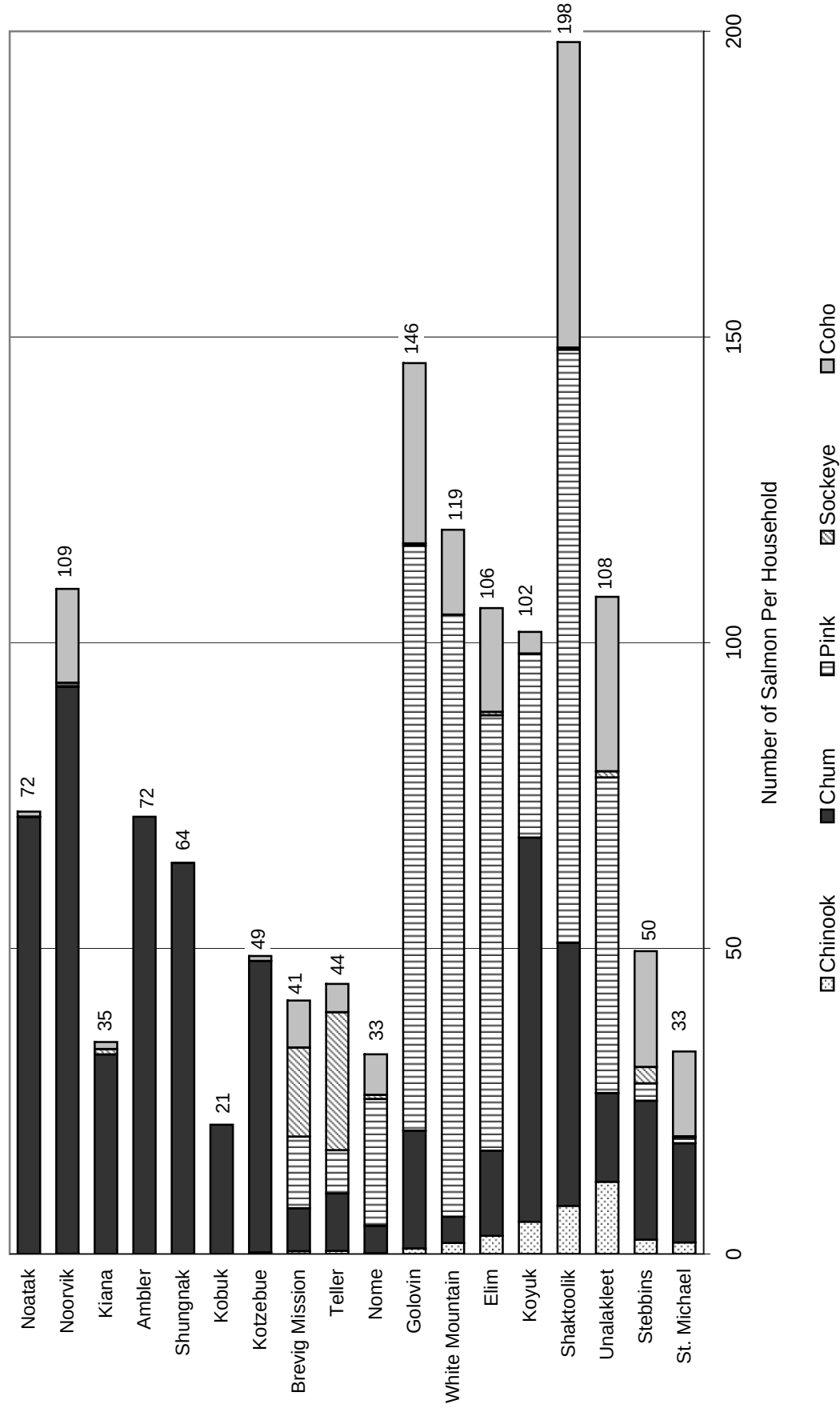


FIG. 10. AVERAGE NUMBER OF SUBSISTENCE SALMON CAUGHT PER HOUSEHOLD, 2000,
Norton Sound, Port Clarence, and Kotzebue Districts



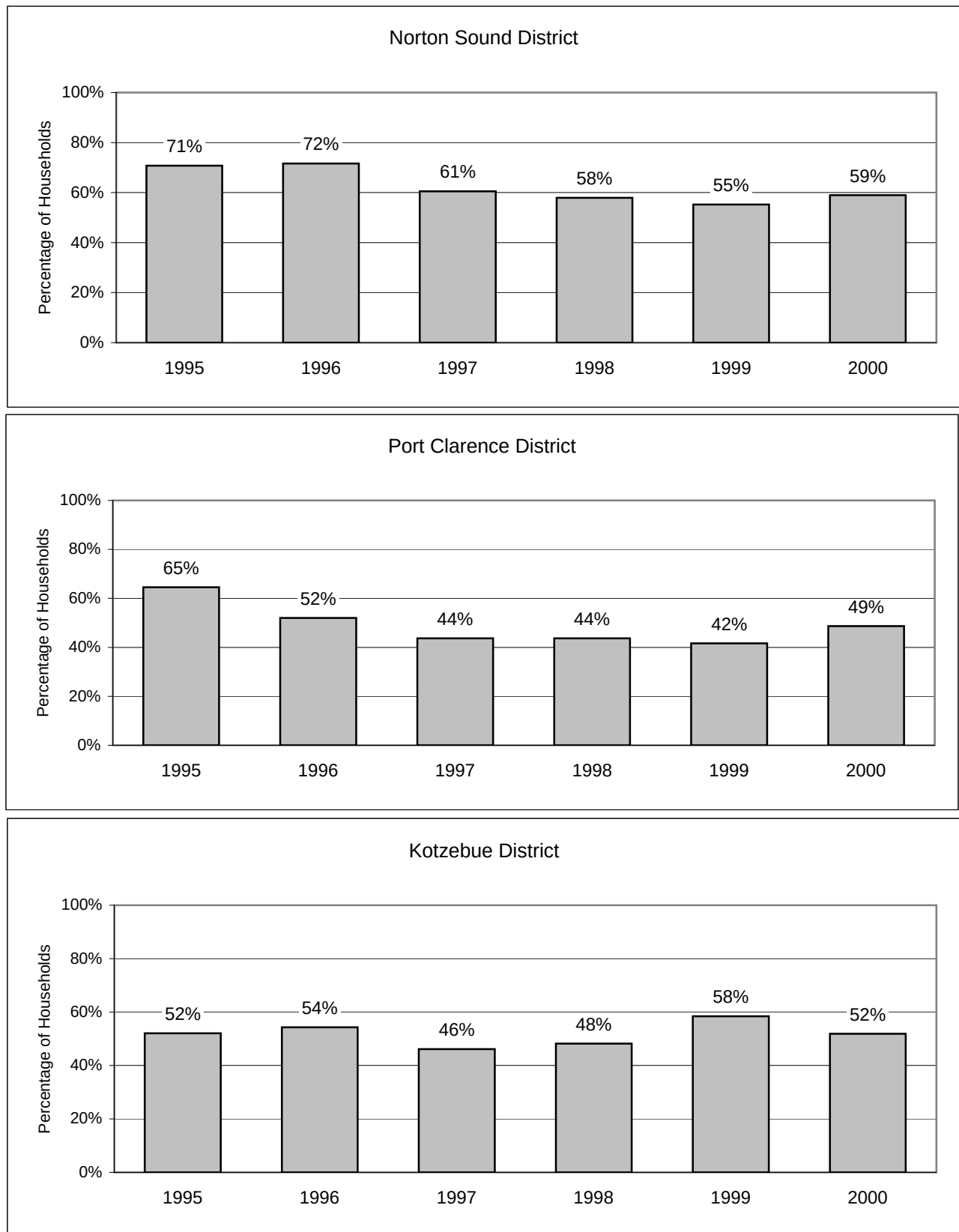
**Table 5. Household Participation in Subsistence Salmon Fishing,
Northwest Alaska, 2000**

	Percentage of Households				
	Total HH's	HH's Contacted	Did Not Participate	Helped Process	Fished
Nome Permits	109	90	65.6%	NA	34.4%
Subdistrict 1	109	90	65.6%	NA	34.4%
Golovin	45	42	25.9%	23.3%	50.8%
Niukluk R. Permits	9	6	33.3%	NA	66.7%
White Mountain	67	65	15.1%	9.3%	75.6%
Subdistrict 2	121	113	20.0%	14.1%	65.9%
Elim	84	76	25.4%	10.5%	64.1%
Subdistrict 3	84	76	25.4%	10.5%	64.1%
Koyuk	75	67	34.6%	19.8%	45.6%
Subdistrict 4	75	67	34.6%	19.8%	45.6%
Shaktoolik	56	54	11.9%	11.3%	76.8%
Subdistrict 5	56	54	11.9%	11.3%	76.8%
Unalakleet	206	177	12.3%	3.0%	84.7%
Subdistrict 6	206	177	12.3%	3.0%	84.7%
Stebbins	128	110	40.1%	20.0%	39.9%
St. Michael	85	80	40.7%	19.8%	39.5%
South Norton Sound	213	190	40.3%	19.9%	39.8%
NORTON SOUND	864	767	29.7%	11.3%	59.0%
Brevig Mission	69	57	39.6%	16.2%	44.3%
Pilgrim R. Permits	35	22	40.9%	NA	59.1%
Teller	79	69	42.8%	10.0%	47.3%
PORT CLARENCE	183	148	40.7%	10.6%	48.7%
Ambler	70	34	39.3%	33.0%	27.7%
Kiana	88	51	34.6%	16.1%	49.3%
Kobuk	30	15	40.7%	5.2%	54.1%
Kotzebue	788	185	54.6%	NA	45.4%
Noatak	102	61	27.6%	3.3%	69.1%
Noorvik	112	42	57.6%	0.0%	42.4%
Shungnak	46	34	38.9%	2.9%	58.2%
KOTZEBUE SOUND	1,236	422	42.9%	5.2%	51.9%
TOTALS	2,283	1,337	34.3%	9.1%	56.6%

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

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, household surveys, 2000,
and Division of Commercial Fisheries, permit returns, 2000.

FIG. 11. HOUSEHOLD PARTICIPATION IN SUBSISTENCE SALMON FISHING, 1995-2000, Norton Sound, Port Clarence, and Kotzebue Districts



**Table 6. Salmon Removed from Commercial Catches for Subsistence Use,
Northwest Alaska, 2000**

	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
Nome Permits ¹										
Subdistrict 1										
Golovin	45	42	7.3%	5.0%	0.0	0.0	18.3	3.7	18.5	40.5
Niukluk R. Permits ¹										
White Mountain	67	65	0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
Subdistrict 2	112	107	2.8%	1.9%	0.0	0.0	18.3	3.7	18.5	40.5
Elim	84	76	20.9%	6.5%	29.7	113.1	54.9	27.5	100.0	325.1
Subdistrict 3	84	76	20.9%	6.5%	29.7	113.1	54.9	27.5	100.0	325.1
Koyuk	75	67	0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
Subdistrict 4	75	67	0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
Shaktoolik	56	54	29.4%	1.8%	0.0	2.0	0.0	0.0	0.0	2.0
Subdistrict 5	56	54	29.4%	1.8%	0.0	2.0	0.0	0.0	0.0	2.0
Unalakleet	206	177	25.7%	8.8%	46.3	24.8	36.1	53.0	62.0	222.2
Subdistrict 6	206	177	25.7%	8.8%	46.3	24.8	36.1	53.0	62.0	222.2
Stebbins	128	110	7.3%	0.9%	23.2	464.0	0.0	0.0	0.0	487.2
St. Michael	85	80	3.8%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
South Norton Sound	213	190	5.8%	0.5%	23.2	464.0	0.0	0.0	0.0	487.2
NORTON SOUND	746	671	17.6%	4.8%	99.1	604.0	109.3	84.1	180.5	1,077.1
Brevig Mission	69	57	0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
Pilgrim R. Permits ¹										
Teller	79	69	1.5%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
PORT CLARENCE	148	126	0.8%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
Ambler	70	34	6.3%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
Kiana	88	51	0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
Kobuk	30	15	0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
Kotzebue ¹										
Noatak	102	61	3.2%	1.6%	0.0	114.5	0.0	0.0	0.0	114.5
Noorvik	112	42	0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
Shungnak	46	34	0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
KOTZEBUE SOUND	448	237	2.5%	0.7%	0.0	114.5	0.0	0.0	0.0	114.5
TOTALS	1,342	1,034	14.2%	3.8%	99.1	718.5	109.3	84.1	180.5	1,191.6

¹ Information on commercial salmon fishing not collected.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, household surveys, 2000.

**Table 7. Gear Types for Non-Commercial Salmon Harvest,
Northwest Alaska, 2000**

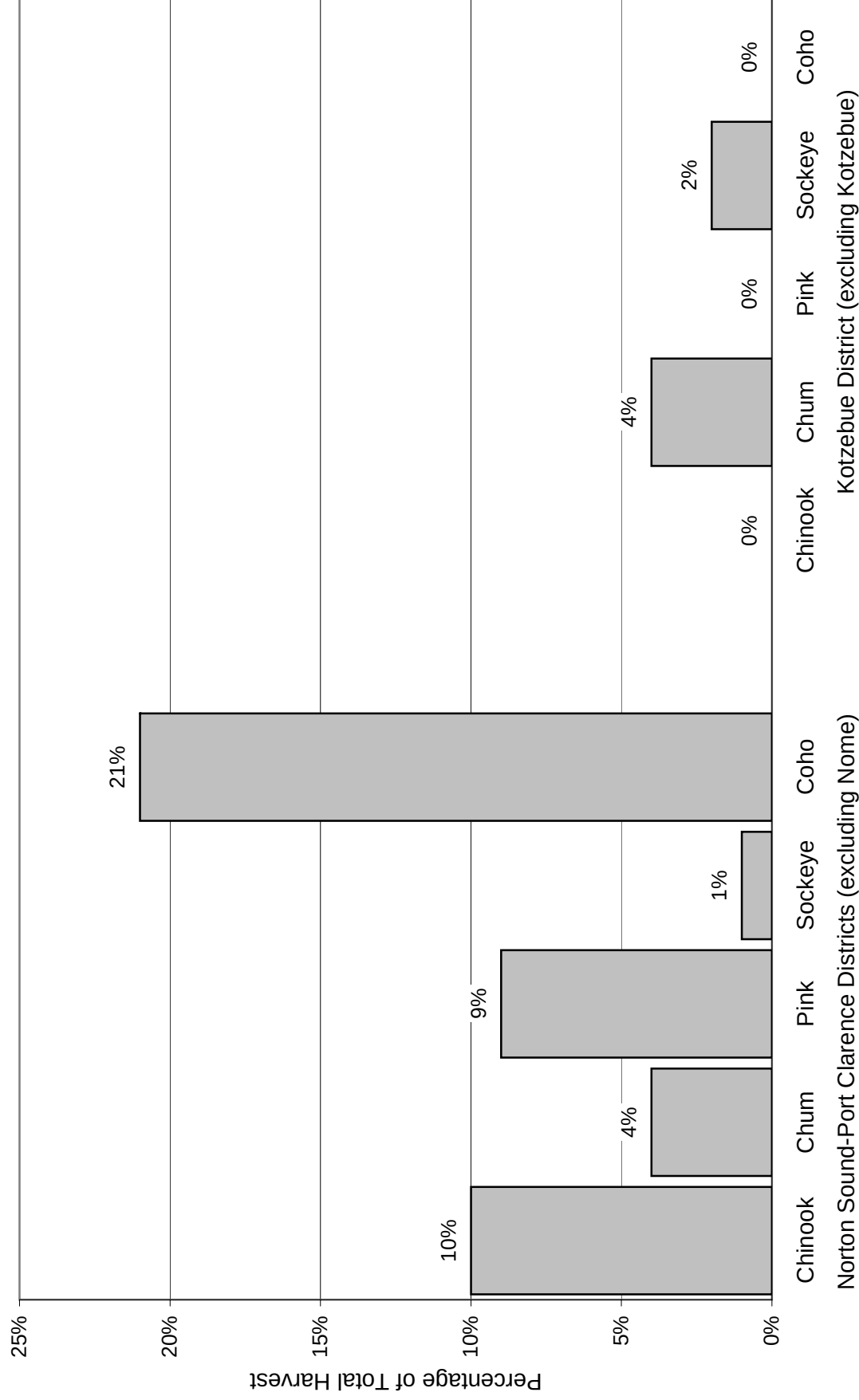
	Gear Types*					
	Total HH's	HH's Responding	Driftnet	Setnet	Seine	Rod & Reel
Nome Permits ¹						
Subdistrict 1						
Golovin	45	22	0.0%	39.6%	14.4%	67.6%
Niukluk R. Permits ¹						
White Mountain	67	49	0.0%	5.6%	28.0%	88.8%
Subdistrict 2	112	71	0.0%	17.0%	23.1%	81.8%
Elim	84	49	0.0%	29.9%	24.9%	70.1%
Subdistrict 3	84	49	0.0%	29.9%	24.9%	70.1%
Koyuk	75	32	0.0%	93.8%	0.0%	34.4%
Subdistrict 4	75	32	0.0%	93.8%	0.0%	34.4%
Shaktolik	56	42	0.0%	61.4%	12.3%	65.2%
Subdistrict 5	56	42	0.0%	61.4%	12.3%	65.2%
Unalakleet	206	153	0.6%	66.4%	30.1%	65.5%
Subdistrict 6	206	153	0.6%	66.4%	30.1%	65.5%
Stebbins	128	45	0.0%	61.8%	0.0%	41.3%
St. Michael	85	33	0.0%	81.8%	0.0%	30.3%
South Norton Sound	213	78	0.0%	56.8%	0.0%	48.3%
NORTON SOUND	746	425	0.2%	68.0%	21.7%	88.2%
Brevig Mission	69	26	4.8%	92.9%	2.4%	0.0%
Pilgrim R. Permits ¹						
Teller	79	32	0.0%	90.6%	0.0%	9.4%
PORT CLARENCE	148	58	2.3%	93.1%	1.1%	3.4%
Ambler	70	10	0.0%	92.9%	7.1%	7.1%
Kiana	88	27	0.0%	39.8%	5.8%	76.7%
Kobuk	30	9	0.0%	33.3%	6.7%	80.0%
Kotzebue	779	86	5.8%	87.2%	0.0%	17.4%
Noatak	102	43	0.0%	23.5%	26.9%	68.1%
Noorvik	112	21	0.0%	100.0%	14.3%	0.0%
Shungnak	46	20	0.0%	57.7%	8.2%	38.2%
KOTZEBUE SOUND	1,227	216	2.1%	64.5%	10.4%	37.8%
TOTALS	2,121	699	1.1%	66.5%	15.3%	58.2%

* A household may use multiple gear types.

¹ Information on gear type not collected.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, household surveys, 2000.

**FIG. 12. PERCENTAGE OF NON-COMMERCIAL SALMON HARVEST BY ROD AND REEL, 2000,
Norton Sound-Port Clarence and Kotzebue Districts**



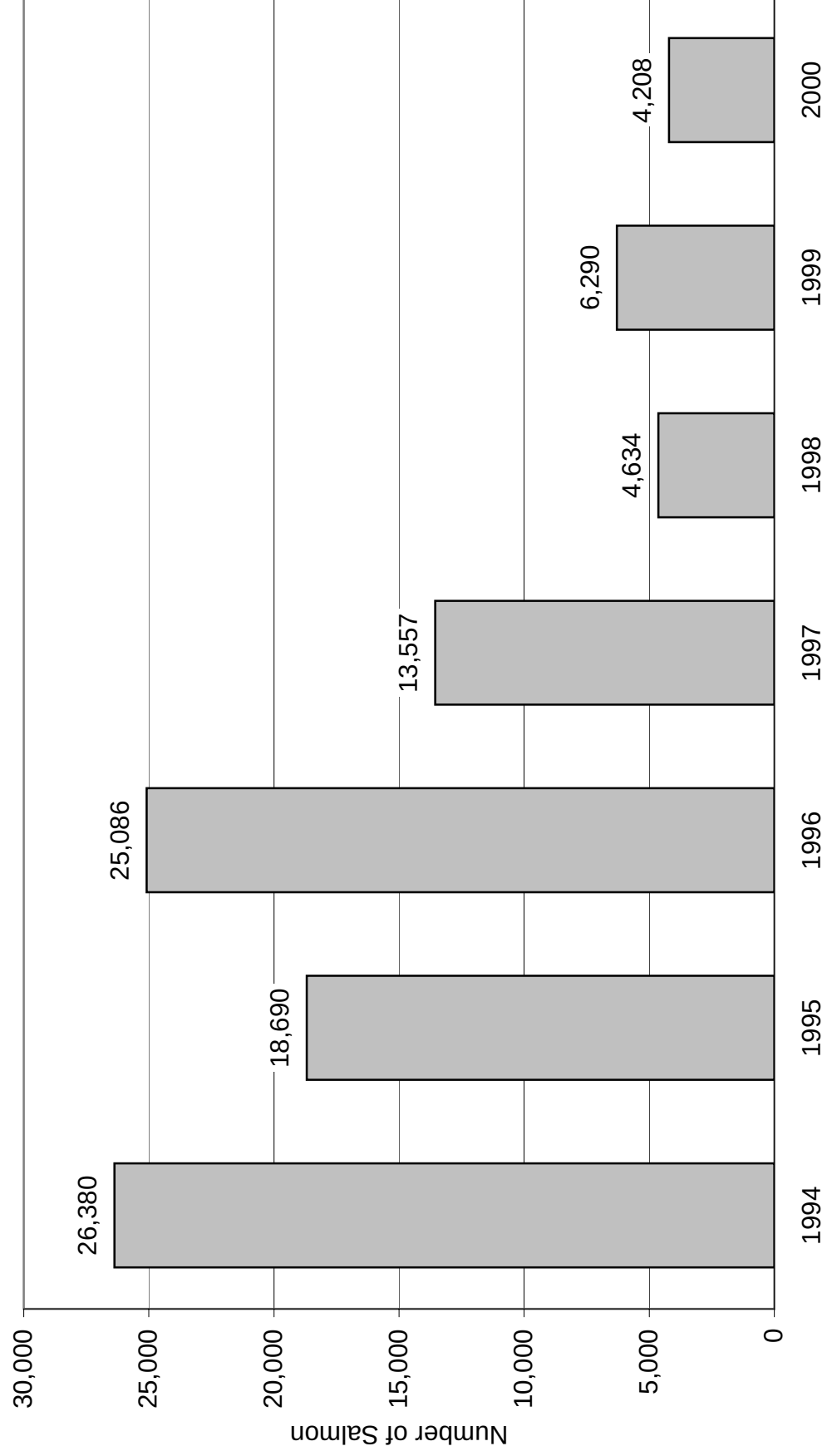
**Table 8. Percentage of Households Giving Salmon to Others,
Northwest Alaska, 2000**

	Total Households	Households Responding	% of Fishing Households Sharing Salmon
Nome Permits ¹			
Subdistrict 1			
Golovin	45	22	61.2%
Niukluk R. Permits ¹			
White Mountain	67	49	40.3%
Subdistrict 2	112	71	48.2%
Elim	84	49	61.5%
Subdistrict 3	84	49	61.5%
Koyuk	75	30	55.7%
Subdistrict 4	75	30	55.7%
Shaktolik	56	42	40.9%
Subdistrict 5	56	42	40.9%
Unalakleet	206	154	63.0%
Subdistrict 6	206	154	63.0%
Stebbins	128	44	49.0%
St. Michael	85	33	40.8%
South Norton Sound	213	77	45.5%
NORTON SOUND	746	423	72.6%
Brevig Mission	69	26	88.1%
Pilgrim R. Permits ¹			
Teller	79	32	48.7%
PORT CLARENCE	148	58	82.8%
Ambler	70	10	35.7%
Kiana	88	26	30.3%
Kobuk	30	9	80.0%
Kotzebue ¹			
Noatak	102	43	71.4%
Noorvik	112	20	38.2%
Shungnak	46	20	45.3%
KOTZEBUE SOUND	448	128	52.5%
TOTALS	1,342	609	66.7%

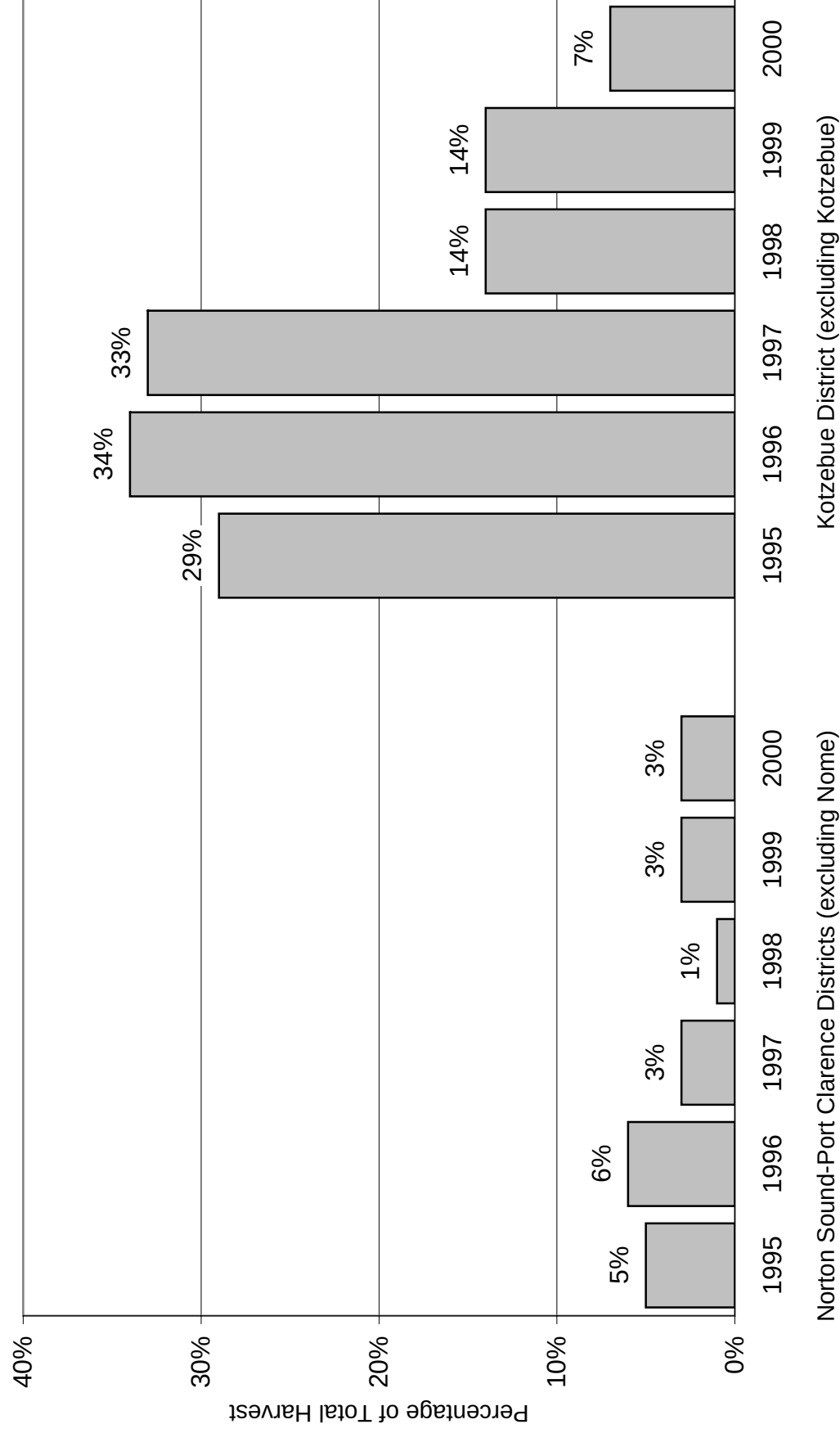
**Table 9. Whole Salmon Fed to Dogs,
Northwest Alaska, 2000**

Whole Salmon Fed to Dogs*											
	Total HH's	HH's Contacted	% of HH's Feeding Salmon to Dogs	Chinook	Chum	Pink	Sockeye	Coho	Total	Est. Number of Dogs	Salmon Per Dog
Nome Permits ¹											
Subdistrict 1											
Golovin	45	42	0.0%	0	0	0	0	0	0	0.0	0.0
Niukluk R. Permits ¹											
White Mountain	67	65	1.5%	0	0	72	0	0	72	1.0	70.0
Subdistrict 2	112	107	0.9%	0	0	72	0	0	72	1.0	70.0
Elim	84	76	3.9%	0	13	55	0	0	68	8.8	7.8
Subdistrict 3	84	76	3.9%	0	13	55	0	0	68	8.8	7.8
Koyuk	75	67	0.0%	0	0	0	0	0	0	0.0	0.0
Subdistrict 4	75	67	0.0%	0	0	0	0	0	0	0.0	0.0
Shaktoolik	56	54	10.9%	0	575	225	0	276	1,076	65.4	16.5
Subdistrict 5	56	54	10.9%	0	575	225	0	276	1,076	65.4	16.5
Unalakleet	206	177	1.6%	0	578	56	0	0	634	15.8	40.1
Subdistrict 6	206	177	1.6%	0	578	56	0	0	634	15.8	40.1
Stebbins	128	110	0.0%	0	0	0	0	0	0	0.0	0.0
St. Michael	85	80	0.0%	0	0	0	0	0	0	0.0	0.0
South Norton Sound	213	190	0.0%	0	0	0	0	0	0	0.0	0.0
NORTON SOUND	746	671	1.9%	0	1,166	409	0	276	1,850	91.0	20.3
Brevig Mission	69	57	1.7%	0	6	9	13	6	34	1.2	29.0
Pilgrim R. Permits ¹											
Teller	79	69	3.0%	0	158	0	0	0	158	23.3	6.8
PORT CLARENCE	148	126	2.4%	0	163	9	13	6	191	24.5	7.8
Ambler	70	34	6.3%	0	838	0	0	0	838	98.8	8.5
Kiana	88	51	1.9%	0	82	0	0	0	82	1.6	50.0
Kobuk	30	15	10.4%	0	16	0	0	0	16	54.4	0.3
Kotzebue ¹											
Noatak	102	61	4.8%	0	334	0	0	0	334	6.5	51.0
Noorvik	112	42	4.2%	0	724	0	0	0	724	16.6	43.6
Shungnak	46	34	11.6%	0	173	0	0	0	173	49.3	3.5
KOTZEBUE SOUND	448	237	5.4%	0	2,167	0	0	0	2,167	227.3	9.5

**FIG. 13. NUMBER OF SALMON HARVESTED FOR DOG FOOD, 1994-2000,
Norton Sound, Port Clarence, and Kotzebue Districts**



**FIG. 14. PERCENTAGE OF SUBSISTENCE SALMON HARVEST CAUGHT FOR DOG FOOD,
1995-2000, Norton Sound-Port Clarence and Kotzebue Districts**



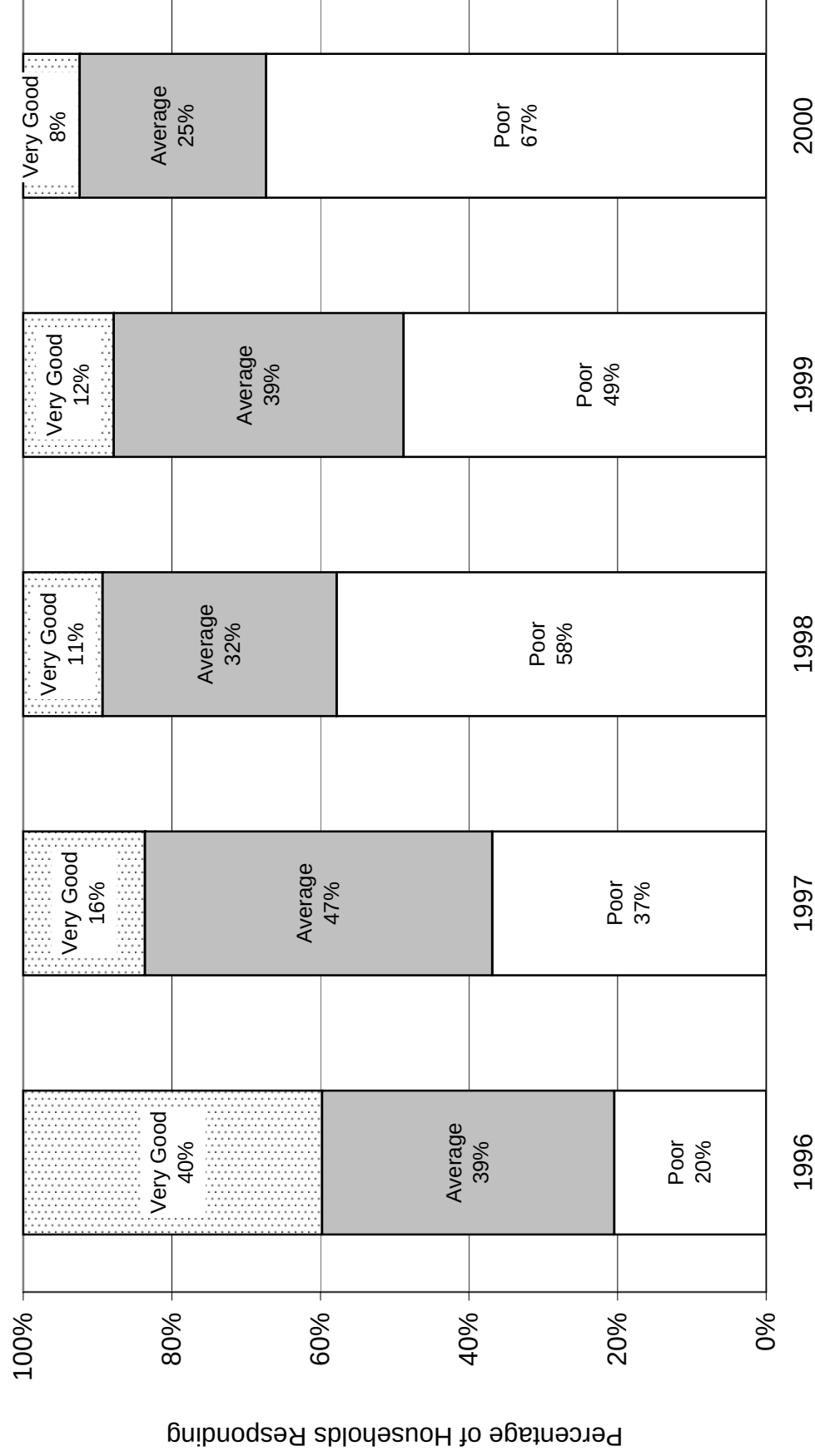
**Table 10. Assessment of Chum Salmon Fishing,
Northwest Alaska, 2000**

	Total HH's	HH's Responding	Percentage of Households		
			Very Good	Average	Poor
Nome Permits ¹					
Subdistrict 1					
Golovin	45	14	7.1%	28.6%	64.3%
Niukluk R. Permits ¹					
White Mountain	67	32	6.3%	18.8%	75.0%
Subdistrict 2	112	46	6.5%	21.7%	71.7%
Elim	84	39	7.7%	30.8%	61.5%
Subdistrict 3	84	39	7.7%	30.8%	61.5%
Koyuk	75	30	3.3%	60.0%	36.7%
Subdistrict 4	75	30	3.3%	60.0%	36.7%
Shaktoolik	56	36	11.1%	25.0%	63.9%
Subdistrict 5	56	36	11.1%	25.0%	63.9%
Unalakleet	206	99	7.1%	20.2%	72.7%
Subdistrict 6	206	99	7.1%	20.2%	72.7%
Stebbins	128	37	10.8%	16.2%	73.0%
St. Michael	85	28	7.1%	14.3%	78.6%
South Norton Sound	213	65	9.2%	15.4%	75.4%
NORTON SOUND	746	315	7.6%	25.1%	67.3%
Brevig Mission	69	21	14.3%	14.3%	71.4%
Pilgrim R. Permits ¹					
Teller	79	28	3.6%	17.9%	78.6%
PORT CLARENCE	148	49	8.2%	16.3%	75.5%
Ambler	70	10	30.0%	50.0%	20.0%
Kiana	88	26	50.0%	30.8%	19.2%
Kobuk	30	9	0.0%	66.7%	33.3%
Kotzebue	779	85	38.8%	51.8%	9.4%
Noatak	102	43	34.9%	58.1%	7.0%
Noorvik	112	20	55.0%	40.0%	5.0%
Shungnak	46	16	93.8%	6.3%	0.0%
KOTZEBUE SOUND	1,227	209	43.1%	46.4%	10.5%
TOTALS	2,121	573	20.6%	32.1%	47.3%

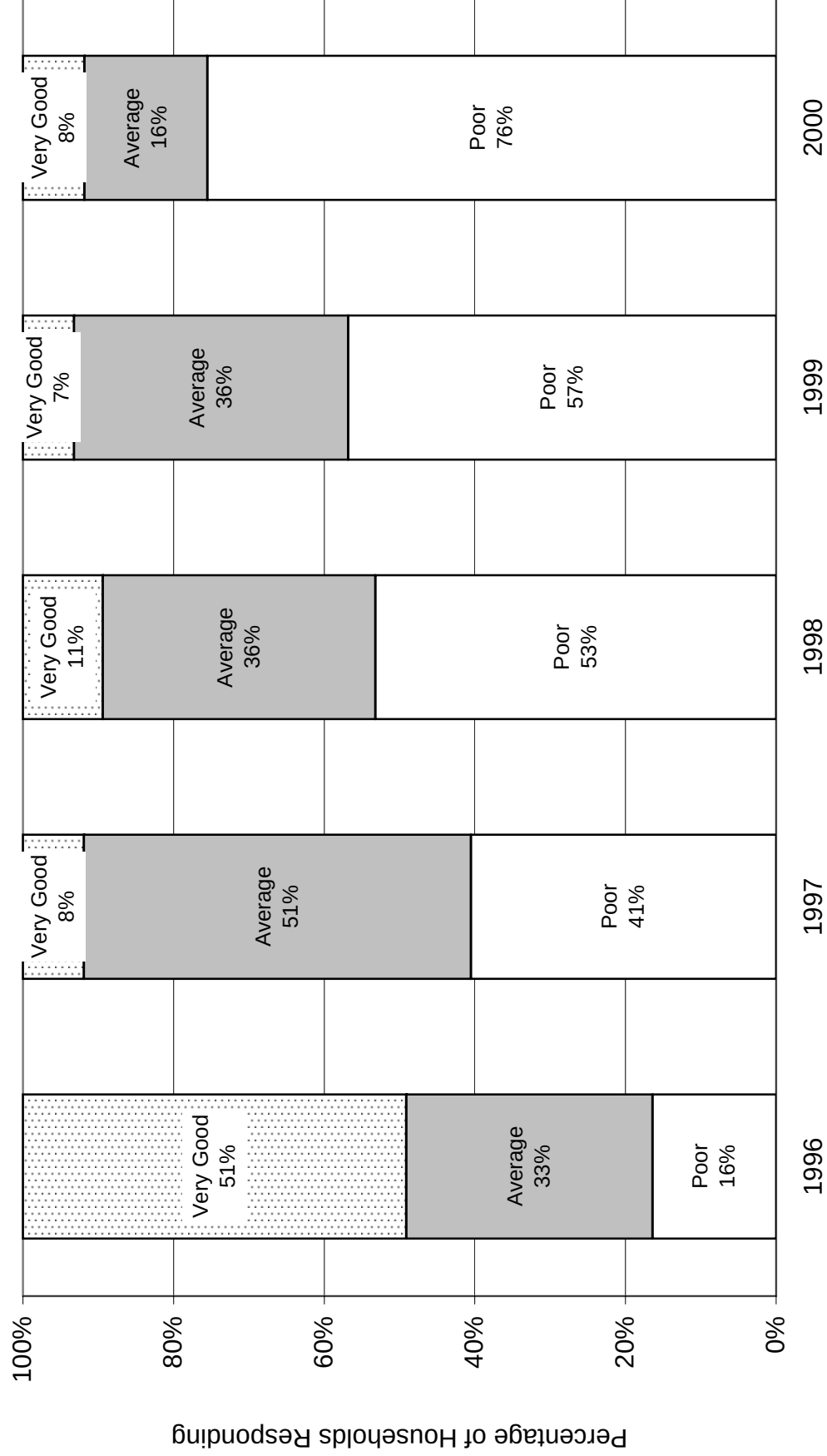
¹ Information on chum fishing assessment not collected.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, household surveys, 2000.

**FIG. 15. ASSESSMENT OF CHUM SALMON FISHING, 1996-2000,
Norton Sound District**



**FIG. 16. ASSESSMENT OF CHUM SALMON FISHING, 1996-2000,
Port Clarence District**



**FIG. 17. ASSESSMENT OF CHUM SALMON FISHING, 1996-2000,
Kotzebue District**

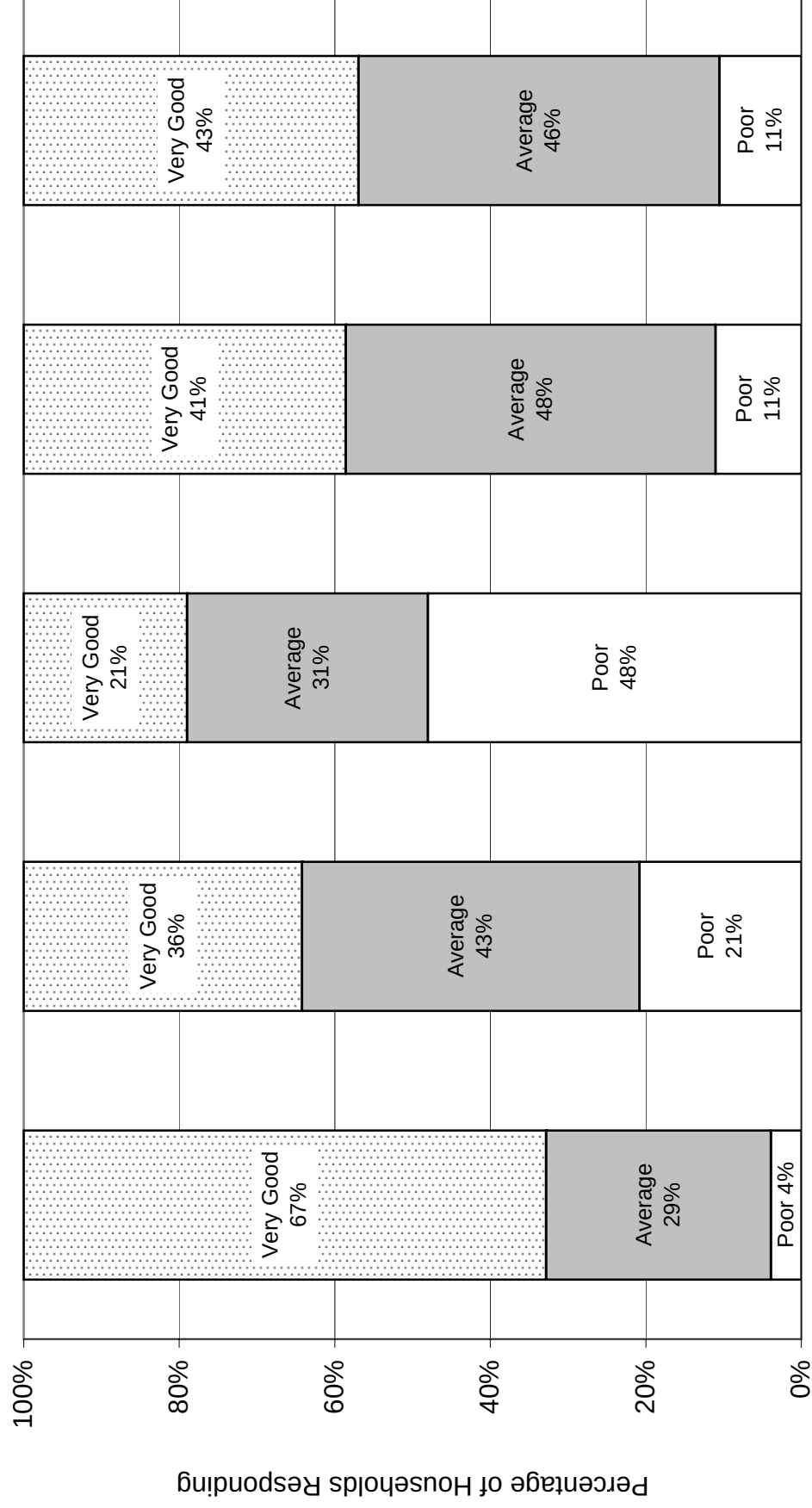


Table 11. Subsistence Sheefish and Whitefish Harvests, 2000, Kotzebue District

	Sheefish						Whitefish			
	Total HH's	HH's Contctd	Mean	Reported Harvest	Est. Total*	Confidence Interval % +/-	Mean	Reported Harvest	Est. Total*	Confidence Interval % +/-
Ambler	70	34	23.9	810	1,672	44.4%	501.7	16,193	35,118	83.5%
Kiana ¹	88	51	15.7	412	1,385	13.9%	100.8	5,261	8,867	46.6%
Kobuk	30	15	4.7	140	140	NA	26.8	805	805	NA
Noatak	102	61	1.2	75	123	89.0%	26.1	1,618	2,664	32.0%
Noorvik	112	42	29.2	1,365	3,276	42.2%	139.5	6,520	15,621	27.8%
Shungnak	46	34	18.5	632	850	20.1%	152.7	5,267	7,023	29.4%
KOTZEBUE SOUND	448	237	16.6	3,434	7,446	21.4%	156.5	35,664	70,097	42.8%

¹ Estimated sheefish harvest in Kiana includes 690 sheefish distributed to the community from ADF&G test net fishery, in addition to survey results.

* Data from contacted households were expanded to households not contacted. If less than 30 and less than 50% of households in a community were contacted, then reported harvest is used for estimated harvest.

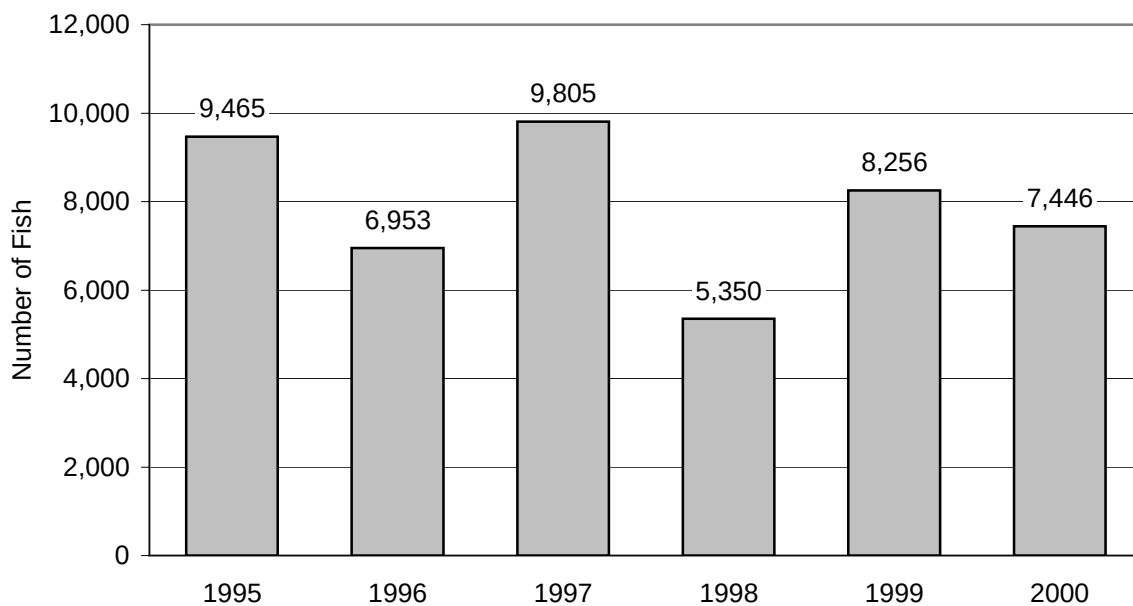
SOURCE: Alaska Department of Fish and Game, Division of Subsistence, household surveys, 2000.

Table 12. Subsistence Char Harvests, 2000, Noatak

	Total HH's	HH's Contctd	Mean	Reported Harvest	Est. Total	Confidence Interval % +/-
Noatak	102	61	32.5	2,009	3,315	27.2%

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, household surveys, 2000.

**FIG. 18. SUBSISTENCE SHEEFISH HARVESTS, 1995-2000,
Kobuk River Villages**



**FIG. 19. SUBSISTENCE WHITEFISH HARVESTS, 1997-2000,
Noatak and Kobuk River Villages**

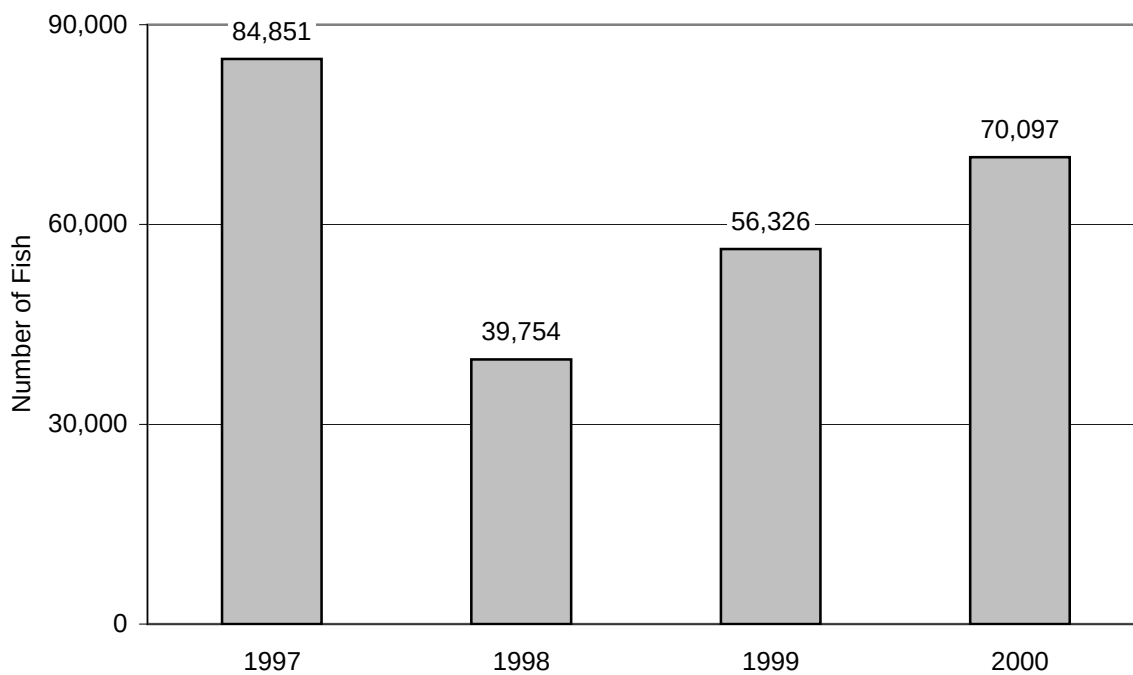
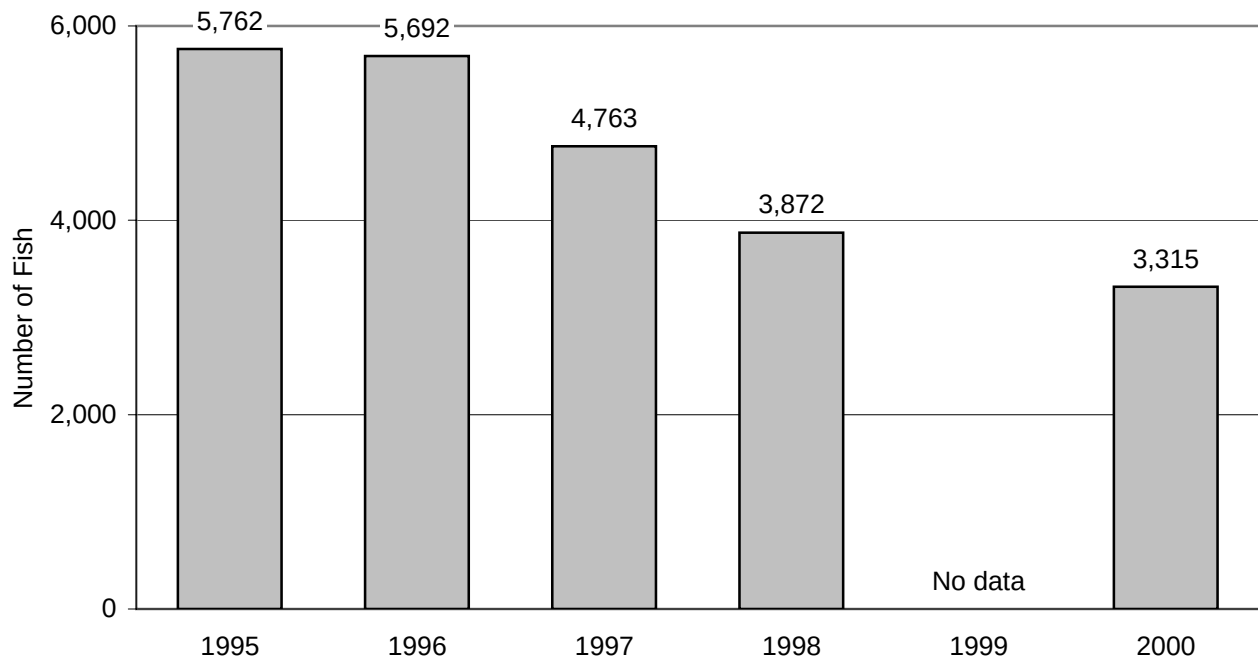


FIG. 20. SUBSISTENCE CHAR HARVESTS, 1995-2000, NOATAK



APPENDIX: SURVEY INSTRUMENTS

COMMUNITY ID# _____

HHID# _____

NORTON SOUND AND SEWARD PENINSULA AREA
2000 SUBSISTENCE SALMON HOUSEHOLD HARVEST SURVEY

* Questions marked with an asterisk are asked of all households interviewed

Community: _____

Survey Date: _____

Interviewer: _____

Household Head Name: _____

***Household Size** _____

If new household, where were you living last year? _____

(If new household) P.O. Box: _____

***1. Did your household catch salmon for subsistence use or with a rod-and-reel this year?**

No _____ Yes _____

***2. Does your household usually subsistence fish for salmon?** No _____ Yes _____

FISHING HOUSEHOLDS ("Yes" to #1)

3. Please estimate how many salmon your household caught for subsistence use or with a rod-and-reel this year (your share of the catch if fishing with others). Include salmon you gave away, ate fresh, lost to spoilage, or obtained from helping others process fish.

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____ UNKNOWN SALMON _____
 ("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

4. What type(s) of fishing gear did your household use for catching subsistence salmon this year?

SET GILL NET _____ SEINE _____
 ROD-AND-REEL _____ DRIFT GILL NET _____

4a. (If rod-and- reel was used) How many salmon did your household catch and keep with rod-and-reel this year?

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____
 ("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

5. Did your household give salmon to other households this year? No _____ Yes _____

6. How was subsistence chum salmon fishing for your household this year?

____VERY GOOD ____AVERAGE ____POOR IF POOR, WHY? _____

7. Did your household catch salmon specifically for dog food? (Using salmon for dog food is allowed by regulations.)

No _____ (Go to #13) Only backbones/heads/guts/scraps/spoiled fish _____ (Go to #13) Yes _____(Go to #8)

If Household Fished for Dog Food:

8. How many salmon did your household catch for dog food? (Do not include fish lost to spoilage and fed to dogs.)

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____ UNKNOWN SALMON _____
 ("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

9. Were these salmon included in the estimates you already gave me? No _____ Yes _____

10. How many dogs does your household have? _____

(Go to #13)

NORTON SOUND AND SEWARD PENINSULA AREA
2000 SUBSISTENCE SALMON HOUSEHOLD HARVEST SURVEY (CON'T)

NON-FISHING HOUSEHOLDS ("No" to #1)

11. Did your household help another household fish, cut or hang salmon, or process it some other way? No _____ (Go to #13)
 Yes _____

12. Did you receive salmon in exchange for your help? No _____ Yes _____

If yes, please estimate how many salmon you received for your household. (Do not include fish from a F&G test net.)

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____ UNKNOWN SALMON _____
 ("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

(Go to #13)

COMMERCIAL FISHING

***13. Did your household commercially fish for salmon this year?** No _____ (Go to #17) Yes _____

If yes, where? _____

14. Were all of the salmon you caught when commercial fishing sold or were some brought home to eat or processed for subsistence? All sold _____ (Go to #17) Some used for subsistence _____

15. How many commercially caught salmon did your household use for subsistence?

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____ UNKNOWN SALMON _____
 ("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

16. Were these salmon included in the estimates you already gave me? No _____ Yes _____

***17. Do you have any suggestions or concerns about subsistence fishing?**

THANK YOU FOR YOUR TIME AND FOR HELPING WITH THIS PROJECT.

A summary of this subsistence fishing survey will be sent to you next spring (April).

COMMUNITY ID# _____

HHID# _____

KOBUK RIVER AREA**2000 SUBSISTENCE SALMON HOUSEHOLD HARVEST SURVEY**

* Questions marked with an asterisk are asked of all households interviewed

Community: _____

Survey Date: _____

Interviewer: _____

Household Head Name: _____

***Household Size** _____

If new household, where were you living last year? _____

(If new household) P.O. Box: _____

***1. Did your household catch salmon for subsistence use or with a rod-and-reel this year?**

No _____ Yes _____

***2. Does your household usually subsistence fish for salmon?** No _____ Yes _____**FISHING HOUSEHOLDS ("Yes" to #1)**

3. Please estimate how many salmon your household caught for subsistence use or with a rod-and-reel this year (your share of the catch if fishing with others). Include salmon you gave away, ate fresh, lost to spoilage, or obtained from helping others process fish.

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____ UNKNOWN SALMON _____
 ("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

4. What type(s) of fishing gear did your household use for catching subsistence salmon this year?

SET GILL NET _____ SEINE _____
 ROD-AND-REEL _____ DRIFT GILL NET _____

4a. (If rod-and-reel was used) How many salmon did your household catch and keep with rod-and-reel this year?

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____
 ("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

5. Did your household give salmon to other households this year? No _____ Yes _____

6. How was subsistence chum salmon fishing for your household this year?

____ VERY GOOD ____ AVERAGE ____ POOR IF POOR, WHY? _____

7. Did your household catch salmon specifically for dog food? (Using salmon for dog food is allowed by regulations.)

No _____ (Go to #13) Only backbones/heads/guts/scraps/spoiled fish _____ (Go to #13) Yes _____ (Go to #8)

If Household Fished for Dog Food:

8. How many salmon did your household catch for dog food? (Do not include fish lost to spoilage and fed to dogs.)

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____ UNKNOWN SALMON _____
 ("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

9. Were these salmon included in the estimates you already gave me? No _____ Yes _____

10. How many dogs does your household have? _____ (Go to #13)

HHID# _____

KOBUK RIVER AREA

2000 SUBSISTENCE SALMON HOUSEHOLD HARVEST SURVEY (CON'T)

NON-FISHING HOUSEHOLDS ("No" to #1)

11. Did your household help another household fish, cut or hang salmon, or process it some other way? No _____ (Go to #13)
Yes _____

12. Did you receive salmon in exchange for your help? No _____ Yes _____

If yes, please estimate how many salmon you received for your household. (Do not include fish from a F&G test net.)

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____ UNKNOWN SALMON _____
("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

(Go to #13)

COMMERCIAL FISHING

***13. Did your household commercially fish for salmon this year?** No _____ (Go to #17) Yes _____
If yes, where? _____

14. Were all of the salmon you caught when commercial fishing sold or were some brought home to eat or processed for subsistence? All sold _____ (Go to #17) Some used for subsistence _____

15. How many commercially caught salmon did your household use for subsistence?

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____ UNKNOWN SALMON _____
("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

16. Were these salmon included in the estimates you already gave me? No _____ Yes _____

SHEEFISH AND WHITEFISH FISHING

***17. Did your household catch sheefish or whitefish for subsistence use this year?** No _____ (Go to #19) Yes _____

18. Please estimate how many sheefish and whitefish your household caught for subsistence use this year (your share of the catch if fishing with others). Include fish you caught and gave away, ate fresh, lost to spoilage, or fed to dogs.

SHEEFISH _____ WHITEFISH _____

***19. Do you have any suggestions or concerns about subsistence fishing?**

THANK YOU FOR YOUR TIME AND FOR HELPING WITH THIS PROJECT.

A summary of this subsistence fishing survey will be sent to you next spring (April).

COMMUNITY ID# _____

HHID# _____

NOATAK RIVER AREA**2000 SUBSISTENCE SALMON HOUSEHOLD HARVEST SURVEY**

* Questions marked with an asterisk are asked of all households interviewed

Community: _____

Survey Date: _____

Interviewer: _____

Household Head Name: _____

***Household Size** _____

If new household, where were you living last year? _____

(If new household) P.O. Box: _____

***1. Did your household catch salmon for subsistence use or with a rod-and-reel this year?**

No _____ Yes _____

***2. Does your household usually subsistence fish for salmon?** No _____ Yes _____**FISHING HOUSEHOLDS ("Yes" to #1)**

3. Please estimate how many salmon your household caught for subsistence use or with a rod-and-reel this year (your share of the catch if fishing with others). Include salmon you gave away, ate fresh, lost to spoilage, or obtained from helping others process fish.

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____ UNKNOWN SALMON _____
 ("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

4. What type(s) of fishing gear did your household use for catching subsistence salmon this year?

SET GILL NET _____ SEINE _____
 ROD-AND-REEL _____ DRIFT GILL NET _____

4a. (If rod-and-reel was used) How many salmon did your household catch and keep with rod-and-reel this year?

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____
 ("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

5. Did your household give salmon to other households this year? No _____ Yes _____

6. How was subsistence chum salmon fishing for your household this year?

____ VERY GOOD ____ AVERAGE ____ POOR IF POOR, WHY? _____

7. Did your household catch salmon specifically for dog food? (Using salmon for dog food is allowed by regulations.)

No ____ (Go to #13) Only backbones/heads/guts/scraps/spoiled fish ____ (Go to #13) Yes ____ (Go to #8)

If Household Fished for Dog Food:

8. How many salmon did your household catch for dog food? (Do not include fish lost to spoilage and fed to dogs.)

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____ UNKNOWN SALMON _____
 ("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

9. Were these salmon included in the estimates you already gave me? No _____ Yes _____

10. How many dogs does your household have? _____ (Go to #13)

HHID# _____

NOATAK RIVER AREA

2000 SUBSISTENCE SALMON HOUSEHOLD HARVEST SURVEY (CON'T)

NON-FISHING HOUSEHOLDS ("No" to #1)

11. Did your household help another household fish, cut or hang salmon, or process it some other way? No _____ (Go to #13)
Yes _____

12. Did you receive salmon in exchange for your help? No _____ Yes _____

If yes, please estimate how many salmon you received for your household. (Do not include fish from a F&G test net.)

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____ UNKNOWN SALMON _____
("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

(Go to #13)

COMMERCIAL FISHING

***13. Did your household commercially fish for salmon this year?** No _____ (Go to #17) Yes _____
If yes, where? _____

14. Were all of the salmon you caught when commercial fishing sold or were some brought home to eat or processed for subsistence? All sold _____ (Go to #17) Some used for subsistence _____

15. How many commercially caught salmon did your household use for subsistence?

CHUM _____ CHINOOK _____ PINK _____ SOCKEYE _____ COHO _____ UNKNOWN SALMON _____
("DOGS") ("KINGS") ("HUMPIES") ("REDS") ("SILVERS")

16. Were these salmon included in the estimates you already gave me? No _____ Yes _____

TROUT (CHAR) AND WHITEFISH FISHING

***17. Did your household catch trout or whitefish for subsistence use this year?** No _____ (Go to #19) Yes _____

18. Please estimate how many trout and whitefish your household caught for subsistence use this year (your share of the catch if fishing with others). Include fish you caught and gave away, ate fresh, lost to spoilage, or fed to dogs.

TROUT _____ WHITEFISH _____

***19. Do you have any suggestions or concerns about subsistence fishing?**

THANK YOU FOR YOUR TIME AND FOR HELPING WITH THIS PROJECT.

A summary of this subsistence fishing survey will be sent to you next spring (April).