Harvest and Use of Fish and Wildlife Resources by Residents of Petersburg, Alaska

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CHAPTER 1
INTRODUCTION

The primary objective of this research study is to describe the annual hunting and fishing activities of Petersburg residents. The study focuses on the kinds and amounts of animal, fish, and plant resources harvested by Petersburg residents for home (i.e., non-commercial) use, the methods of harvesting, the sharing and distribution of harvested resources to members of other households, and the locations of historical and contemporary areas used for fishing, hunting, and gathering activities. The report includes profiles of community history, economy, and population characteristics, with an emphasis on previous resource harvest practices, in order to provide a context for the discussion of current resource use.

The research consisted of formal, personal interviews with 50 randomly selected households in the community and a series of more focused discussions on specific topics with about 35 knowledgeable individuals and local experts. It also involved review and analysis of published and unpublished source materials. Six additional households in Beecher Pass were included in the formal survey.

The Petersburg research was part of a much larger project that collected similar information in 29 Southeast Alaska communities, entitled "Tongass Resource Use Cooperative Study" (TRUCS), with major funding provided by the Alaska Region of the United States Forest Service (USFS). The research project was jointly sponsored by the Division of Subsistence of the Alaska Department of Fish and Game (ADF&G) and the USFS, and included participation by the University of Alaska, Anchorage, Institute for Social and Economic Research. The complete results of this project, which include additional information collected in Petersburg but not reported here, will be analyzed at a later date by the sponsoring agencies.

ADF&G is responsible for providing information on community subsistence hunting and fishing activities to the Alaska Boards of Fisheries and Game on a regular basis, to assist them in making decisions regarding management regulations on fish and game resources. This report will become part of the baseline information for the use of the Boards. At the present time, the Boards are in the process of identifying which Alaskan communities are to be classified as "rural" and "non-rural" under the state's subsistence law; the results of this study will be reviewed in these deliberations.[1] ADF&G will also routinely use the information to provide review and comments on development proposals, submitted by other state and federal agencies, with regard to the potential impacts on subsistence use. For example, a proposal for a fishery enhancement project on Etolin Island, not far distant from Petersburg, is currently under review within the ADF&G.

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[1] Under the current legislation, communities which are classified as "non-rural" are not entitled to priority use, for subsistence purposes, of a fish and game resource should it become necessary for managers to allocate the harvest levels among different users in order to maintain a healthy population of the resource.

The USFS will use this information in its revision of the Tongass Land Management Plan (TLMP), which specifies how land and resources will be managed in the Tongass National Forest. This national forest, which at 16.8 million acres is the largest in the U.S., extends over nearly all of the land area in Southeast Alaska. In revising TLMP, the TRUCS study will assist the USFS to identify areas that are important to local communities, and to improve their ability to assess the potential impacts of management proposals on existing or potential community hunting and fishing activities and use areas. In addition, the study results will be used regularly in the future by the USFS to make determinations of the effects on rural hunting and fishing of other management uses of the forest land, such as timber harvests, fish hatcheries, or recreational developments. Such determinations are required under Section 810 of the Alaska National Interest Lands Conservation Act.

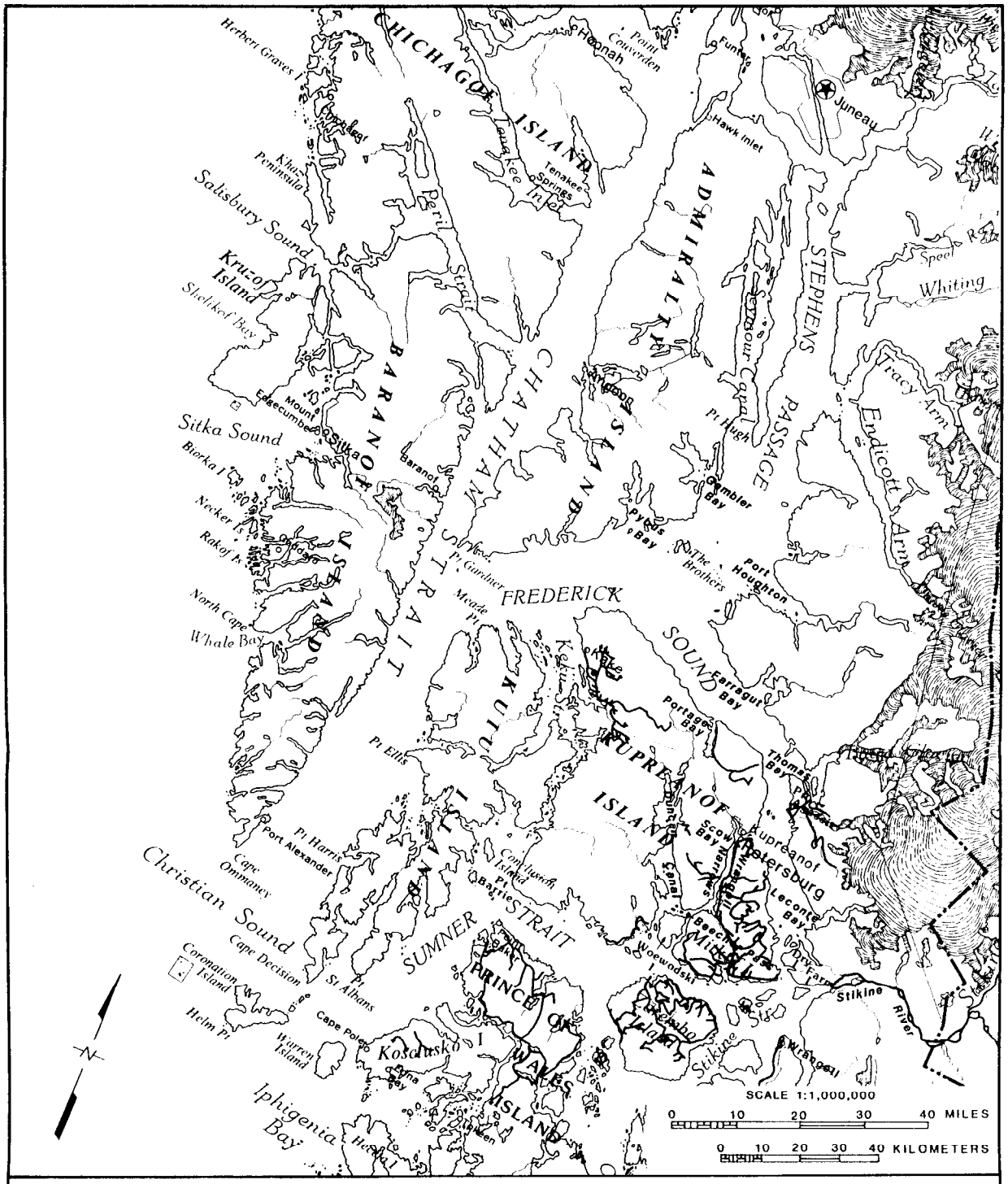
THE SETTING

Petersburg is located at the north end of Wrangell Narrows along the northwest shore of Mitkof Island. This island, which is named after a Russian ship captain, is 23 miles long and is found nine miles northwest of Wrangell. Petersburg is about mid-way between Juneau and Ketchikan (see Figure 1). A small salmon stream, Petersburg Creek, lies across the Narrows opposite the town. This side of the Narrows is bounded by Kupreanof Island, which is named after the Governor of the Russian-American Colonies from 1836 to 1840 (Orth 1967). The small village of Kupreanof extends along the shore on both sides of Petersburg Creek, facing the town of Petersburg.

Situated inside the entrance to the Narrows, the Petersburg harbor is well protected from rough weather. The towering mountains of the mainland can be seen to the north and east across Frederick Sound. Along the mainland coast, Point Agassiz and Thomas Bay lie in the north, and the Stikine River and Wrangell are found to the south. At the north end of the Narrows, the strong tidal current resembles a swift-running river as it flows into and ebbs out of Frederick Sound beyond the harbor. The tidal range is 13.4 feet in Petersburg harbor, which is average for inside waters in Southeast.

The Southeast Alaska climate is characterized by small daily temperature changes, usually less than ten degrees Fahrenheit, and relatively small mean temperature changes from winter to summer. The summer temperature range in Petersburg is 45-64 degrees, and the winter range is 22-37 degrees. The recorded extremes are -22 and 84 degrees (Selkregg 1974).

Petersburg receives its share of rain and snow. The average annual precipitation is 106 inches, including 103 inches of snow. This compares with 91 inches of precipitation in Juneau and 154 inches in Ketchikan. It is interesting that the two communities lying closest to Petersburg receive substantially less rain: Kake, a Tlingit community located on the west shore of Kupreanof Island, collects 57 inches of precipitation a year, while Wrangell acquires 82 inches. In this area, heavy snows can occur; but the winters have been mild in recent years. The last heavy snow years were recorded during 1968-69 and 1970-71.



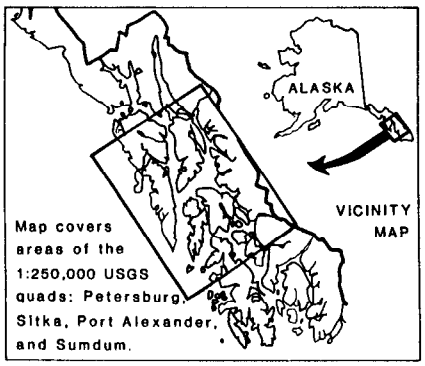


Figure 1. LOCATION MAP

——— Logging Roads

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

Subsistence Division

The town of Petersburg is built on a muskeg flat in the northwest portion of Mitkof Island. For many years, Petersburg had wood plank roads elevated on pilings over the shoreline and muskeg; a portion of the downtown is still supported by pilings today. The town is located within a foothills region in proximity to the rugged, high mountains on the mainland. Close behind and to the south of the town, low mountains and valleys extend the length of the island. The highest mountain on the island is 3,317 feet in elevation. These low (2,500 to 3,000 feet) mountains have rounded summits formed by glacial override, which contrasts sharply with the high, jagged peaks characteristic of the coastal mountain range visible on the mainland.

The vegetation on nearly all of Mitkof Island is coastal western hemlock and Sitka spruce forest, except for small muskeg areas and, in the south, one alpine tundra zone. The island is dotted with clearcut areas dating from the late 1950's, and several logging roads have opened access to a large portion of the southern island. There are several small lakes and streams on the island. Kupreanof Island has a similar vegetation pattern, although logging areas are less extensive and more recent.

The Petersburg area is rich in fish and wildlife resources, although some species have declined in recent years. The Narrows is a passage for king, coho, pink, and chum salmon and contains good shellfish grounds, particularly for dungeness crab and clams. The hatchery at Crystal Lake is bringing more coho salmon into Blind Slough at present. The Narrows and wetlands in Blind Slough are also prime habitat for many species of waterfowl, especially ducks. King salmon, halibut, and cod can be caught in Frederick Sound just north of town. Herring have been plentiful in the harbor area. Dolly Varden, steelhead, and cutthroat trout are available on the island and across in Kupreanof Island streams. Accessible areas on Kupreanof Island, particularly in Duncan Canal, are also rich areas for most of these species. Deer were formerly very plentiful on both islands, but the population has only partially recovered from its crash in the early 1970's. There are some moose available on the mainland.

PETERSBURG

Arriving in Petersburg by ferry introduces the visitor to the maritime orientation of the community. As the ferry negotiates the entrance to the Wrangell Narrows, houses can be seen first on the south shore and soon on both sides of the Narrows. The light blue warehouses, workshops, and production facilities of Petersburg Fisheries, Inc. (PFI), built high atop pilings inside the Narrows, marks the complex of fish processing, harbor, and docking facilities that extends southward. PFI is on the site of the original cannery built here before the turn of the century. Two other canneries, Alaska Glacier Seafoods and Chatham Straits Seafoods, are located in the midst of the harbor, which has been enlarged into three separate areas. A seaplane dock, two fuel docks, the ferry terminal (Alaska Marine Highway), and a fourth cannery (Nelbro Packing Company) complete the waterfront. On the other shore across the Narrows, small houses, docks, and the warehouse-like holding pens of former fox farms can be seen.

Petersburg is a moderately sized town by Alaskan standards, with an estimated population of 3,282 residents in 1987 living in 1,123 households. The community is not connected by roads to other towns or villages, but with daily jet service from the north and southward directions, and once or twice weekly ferry service, it is easy to approach. The social center of town is the retail business section, which is stretched out along the main street behind the harbor. Cafes, stores, bakeries, the druggist, bank, post office, movie theater, bars, disco, pizza parlor, bookstore, library, police and fire departments, and offices are located here. When a tsunami warning is issued, people in the harbor and downtown area are asked to go to higher ground until the warning is lifted. Members of the police and fire departments cruise downtown making this announcement over their loudspeakers.

Residential areas extend up the hill and on the muskeg flats in back of downtown, along the shore north of town, and southward out the road along the Narrows. Additional commercial areas, including sawmills and a lumber yard, warehouses, and small businesses, are located along the shore road continuing south of town.

For a community of its size, Petersburg has a large complement of services and facilities. A hydroelectric plant, with back-up diesel generators, supplies power to the town. A large, modern school serves the students, and it is also used by the community for recreation (swimming pool and gymnasium) and special functions (auditorium). A general hospital and senior citizen (long term care) residence, 12 churches, two local radio stations, a weekly newspaper, cable television, library, museum, city parks, baseball fields, and picnic areas are some of the facilities available in the community. Voluntary organizations such as Moose and Elks Clubs, Sons and Daughters of Norway, and Chamber of Commerce are very active and sponsor a variety of community projects.

KUPREANOF

Across the Narrows from town lies the small village of Kupreanof. First settled at the turn of the century simultaneously with the town of Petersburg, this community shares a background of fishing and sawmill activity. Petersburg Creek bisects the village land; the creek is a productive salmon and trout stream that has provided resources for the community throughout its history. In the 1920's and 30's, Kupreanof became the center of fur farming in the district; the last active farm ceased operations in 1967. Several of the large holding pens are visible from across the Narrows. The community was known as "West Petersburg" until 1975, when the village incorporated under its present name.

Currently, the village is a residential community with homes situated along the shoreline. During the research, 14 households were enumerated in the village. Some of these families are retired, but many residents commute regularly by boat to Petersburg for work. A few commercial fishermen live in the town. A school boat transports children from their homes in Kupreanof to the harbor in town, from which they walk to school.

The City of Kupreanof has worked consistently to protect the rural setting of the community and to maintain the ability of its residents to live in close proximity to their natural surroundings while having a minimal impact on the environment. The City formed a Planning Commission in 1979, adopted an extensive zoning and subdivision ordinance in 1980, and approved a Policy Plan in 1984. The City has banned all motorized vehicles and has a policy opposing all road construction within its boundaries. In 1987, plans were underway to construct a community center.

SCOW BAY AND WRANGELL NARROWS

More residences and places of business are situated down the Narrows south of town, along Mitkof Highway, with the highest concentration between town and Scow Bay. About three miles south of Nelbro Packers lies the community of Scow Bay, another of the original settlements in the area. At a naturally-occurring deep water port, steamships used to stop alongside a scow tied up here and load fresh frozen halibut for transfer to Seattle markets, which provided a name to the growing settlement. Several businesses, including two small sawmills, are located here, as well as a few homesteads dating from the early years of the century. Scow Bay was annexed by the city of Petersburg in the 1970's and now lies within city limits.

The Beachcomber Inn is situated another mile beyond Scow Bay. Currently a restaurant, hotel, and bar, this historic building was formerly a cannery and packing plant. The site of the University of Alaska Experimental Fur Farm, now a USFS Tree Nursery, is located eight miles south of town. Settlement becomes more sparse towards this end of Mitkof Island. A few miles beyond the nursery is Papke's Landing, named in memory of a popular character who was one of the original homesteaders on Kupreanof Island. A small dock and parking area provides road access to town for persons living in the Narrows and in Beecher Pass, as well as serving as a small boat launch for Petersburg residents. There were seven households located across the Narrows on Kupreanof Island, below the Kupreanof city limits, in 1987.

On Mitkof Island, an estimated seven or eight households are situated off the road beyond city limits, beyond the entrance to Blind Slough. The state-operated Crystal Lake Fish Hatchery is sited at the end of Blind Slough; five households are present here. Several USFS recreational sites are located on the southern portion of Mitkof Island, and another small boat launching ramp is available.

BEECHER PASS

This study included research in Beecher Pass at the request of the USFS because little was known about the community and its patterns of resource use. Following a state land disposal in Keene Channel and Duncan Canal in 1982, several new residences were built at the south end of Kupreanof Island and on neighboring islands. This community, referred to as Beecher Pass in this study, includes

families residing in Keene Channel and beyond into Duncan Canal.

The community is comprised primarily of new migrants to the area from Juneau, Ketchikan, and other parts of the state. These individuals purchased homesites and lots in this area to give themselves the opportunity to live out on the land, at a distance from larger, more settled communities. As in Kupreanof, residents expressed their desire to live within a minimally disturbed natural environment. "I moved to Beecher Pass because it is a nice area; you can get to town once or twice a week to get your mail." This individual lived there seasonally: working in summer and taking winters off. He liked to hunt, fish, and trap. The proximity to Petersburg was an attraction of this particular land sale, according to several of the Beecher Pass residents. The area is accessible to Petersburg with a moderate sized skiff at any time of the year. On a good day, it takes about an hour to run to town from Beecher Pass.

There were 13 households with a population of 28 individuals, including five children, counted as residents in the settlement. As with the community of Kupreanof, a boat transports school-age children to Mitkof Island. At the time of our interview (December, 1987), one Beecher Pass family had school-aged children. On a daily basis, their parents ran them by boat up to Papke's Landing, where they met the school bus from town. Another Beecher Pass household with a school-aged child moved into Petersburg at the beginning of the school year so their child would have the opportunity to enjoy the increased social relationships that in-town living would provide. "We moved out there in 1982; we fished that summer and built the house in the fall. We taught the kids in correspondence school, until this year when we moved to town so our 14-year-old could be there: she needs to socialize. We were up a 4:45 AM to get the skiff across."

Approximately 70 percent of the households in Beecher Pass engage in commercial fishing during the year as owner/operators of their own boats. The fishing is small scale: the majority are trollers and some are gill netters, operating mainly in Southeast waters, although Beecher Pass residents have been participants in the Bristol Bay herring fisheries and in the Bering Sea crab fishery. One resident reportedly operates a tender in the area to the south of Mitkof Island. In addition, the members of one household have a small retail fresh-produce business in Southeast, with their activity centered in Petersburg.

Residence in Beecher Pass fluctuates substantially in the course of a year. One of the residents described Beecher Pass as "an emerging community." Unlike Petersburg or Kupreanof, the majority of community members are not permanent, year-round residents. Instead, three residence patterns are observable: permanent, semi-permanent, and recreational or occasional residence. At the end of 1987, when the survey was conducted, there were about four permanent households in Beecher Pass. This group remains in the community for the entire year, staying in the area through the year, or leaving for the commercial fishing season and returning to Beecher Pass during periods of inactivity. More of the households can be characterized as semi-permanent, since they are likely to leave the area for two, three, or four months during the year, usually in the winter months, as well as leaving during commercial

fishing seasons. The third group of residents have homes in Petersburg and use Beecher Pass as a recreational area, coming to their cabin "to get away from town" rather than as a long-term residence. This latter group was not counted as resident in Beecher Pass.

The residence pattern in Beecher Pass is partly a result of the settlers' occupations, which take persons out of the community for indefinite periods of time (such as during fishery openings) and limits the duration of active residence. During periods of time between seasons, especially during the winter months, residents often travel away from home for a while, returning according to their schedule of income-earning activity. Living in Beecher Pass semi-permanently is also a lifestyle choice, indicating a preference for alternating periods of long, hard, and steady work with periods of vacation and relaxation. It is possible that the level of annual residency will increase as the community matures, and more homes are constructed. A community barbecue and softball game has become an annual Fourth of July event in Beecher Pass, suggesting that a community consciousness is developing. "Last year (1987), we had fireworks, played two games of softball on the spit, big potluck --- all day, depending on the tides. Everybody was there, 20-21 people attended." On the other hand, fluctuating and semi-permanent residencies may remain the predominant pattern, with a small core of permanent households.

The settlement of Beecher Pass has brought about an increase in the use of fish and wildlife resources in the area. A common concern for the conservation of wildlife is one of the reasons given for becoming more organized as a community, particularly to be a more effective voice to the Boards of Fisheries and Game. Speaking as a community before the Boards carries more weight than appearing as individuals, according to residents. Also, a USFS proposal for a timber sale on nearby Woewodski Islands has served as a catalyst to community organization. One of the Beecher Pass families is recognized by the others as the spokesman for the community on this issue.

CHAPTER 2
RESEARCH METHODOLOGY

This project involved three methods of research: structured interviews with randomly selected households in a formal survey, informal interviews with local experts, and analysis of secondary literature and available data. This chapter briefly describes the procedures that were followed for each of these methods.

The primary component of the research was the formal survey conducted with a random sample of Petersburg households. The survey structure and questions were cooperatively developed and tested by ADF&G, USFS, and the University of Alaska, with subsequent revisions carried out after further field trials in Juneau, Petersburg, and Wrangell by ADF&G. Basic topics concerning species harvested, amounts harvested by different methods, distribution of harvest products to other households, mapping of harvest areas for many species, and background demographic and economic information were included in the survey and are analyzed in this report. Additional in-depth questions dealing with deer hunting practices, estimates of the contribution of hunting and fishing activities to household consumption, and other subjects were included in the survey, but these results will be analyzed at a later time by the sponsoring agencies. A copy of the survey form is provided in Appendix A.

In order to ensure that the survey results are scientifically valid and representative of the hunting and fishing patterns for the entire community, formal procedures were followed in the conduct of the survey. Particular care was taken in the selection of a random sample, with the household as the unit of data collection. First, a listing of all households in Petersburg was made using lists acquired from the public utility, to which we added residents in Kupreanof and along Wrangell Narrows, and those persons living on boats in the harbor. The random samples were drawn from this list of 1,200 households.

A two-group stratified sample design was followed which drew a separate sample from those households in the community which harvest the largest amount of resources. This approach was suggested by the Division of Subsistence, ADF&G, on the basis of research conducted in three other Southeastern communities (Klawock, Angoon, and Yakutat). This work shows that a small proportion of households in a community produce the greatest amount of fish and wildlife resources, which is then redistributed among households in the community and beyond. For each of the three communities studied, it was found that about 30 percent of the households harvested about 70 percent of the meat, fish, and plant resources utilized in the village. The sampling procedures in Petersburg were modelled on these findings: the community was divided into two groups using these proportions and a random sample was drawn from each group.

To make this division, the active hunting and fishing households in Petersburg were identified using a combination of fish and game records and input from the community. A list of the holders of deer, moose, and goat tags, and commercial fishing permits, was first compiled from ADF&G records.

Subsequently, four local experts were asked to identify which persons on the list were considered active hunters and/or fishermen in Petersburg. In this way, local knowledge was factored into the sampling process. These four persons represented the commercial fishing industry as well as established hunting and trapping families; two of the four experts were active commercial fishermen. These two sources of information (tag lists and local experts' identifications) were used to rank the names on the list. Out of a total of 760 households on the base list, a group of 329 were selected to represent the stratum of "active" hunting and fishing households. The "active" group represented 27.4 percent of all Petersburg households. The remaining 871 households in Petersburg comprised the second group which was sampled to represent the "less active" households.

Random samples were drawn from each group after reconciling the list of resource users with the master household list developed from the electric utility. A total of 50 households were included in the sample, 27 from the "active" group and 23 from the remaining households.

Additional consideration was given to the separate treatment of the outlying communities of Kupreanof and Beecher Pass during the selection of this sample. In many ways Kupreanof residents cannot be distinguished from the residents of Petersburg. Kupreanof residents are employed in a range of occupations, including fishing, government, and professional categories. A few retired persons also live there. Several Kupreanof residents commute daily for work in Petersburg, and Kupreanof children attend school in the larger community. Also, all food and supplies are purchased across the Narrows in Petersburg, except the resources harvested for home consumption. For these reasons, the community of Kupreanof was included in the larger Petersburg sample, with the acknowledgement that for purposes of residence, local government, and community goals, Kupreanof villagers are a distinguishable community from the town of Petersburg.

The community in Beecher Pass shares some characteristics with Kupreanof, in terms of interaction with the larger town of Petersburg. However, Beecher Pass is more distant from Petersburg, which is reflected in the social and economic patterns of its residents. Most Beecher Pass families boat up the Narrows to Petersburg once or twice a week, to check the mail, visit friends, and purchase food and supplies. School children commute daily to Petersburg for classes, but such is not the case with the working adults; there is no regular commuting for work in the larger town. If there is work in town to be done, Beecher Pass residents usually stay in Petersburg with friends, or on their boats, for a couple of days or more. Commercial fishing is the major occupational group in Beecher Pass; commercial fishing enterprises also result in visits to town for maintenance, supplies, and selling the catch. Thus, there is regular and substantial interchange with Petersburg, but it is not as frequent as for Kupreanof residents.

In recognition of these patterns, and also because Beecher Pass was more distant from Petersburg and less was known about the community, Beecher Pass was made a separate sample. Six households from Beecher Pass were included in the research. The sample was an opportunistic one, in that every household that was available at the time of the fieldwork was interviewed. The Beecher

Pass sample represents about 50 percent of the total population. Because different sampling procedures were followed in Beecher Pass, comparisons with the Petersburg results should be made with caution. For this reason, the Beecher Pass households were not included in the quantitative analysis described in this report; these results will be reported at a later date by the sponsoring agencies. Preliminary results show that household harvest and use patterns were similar to those in Petersburg, with the exception that *Beecher Pass households had substantially higher harvest levels*. It is apparent from these results that the Beecher Pass area is used more intensively now, than was the case prior to the formation of the community. In order to present all available information regarding resource areas used, the results of mapping questions for Beecher Pass households are combined with the Petersburg results in the community maps for this report.

The sampling proportions were the following:

	Total Number of Households	Households Contacted for Interview	Households Interviewed in Sample
Petersburg Households			
Active Households	329	34	27
Less-Active Households	871	27	23
Total	1,200	61	50
Beecher Pass Households	13	6	6

The survey response rate in Petersburg was 82 percent. Five households were absent from the community during the survey, and six refused or did not show up at scheduled appointments. Reasons given for refusals included fears that the information would be used against the community, concerns about confidentiality of the personal information, and a disinterest in giving information.

The analytic framework developed by the University of Alaska, Institute for Social and Economic Research, employed weighted sample strata which are provided below:

	Households Coded	Strata Weights	Reported Sample Size
Petersburg			
Active Households	26	.56	38.64
Less-Active Households	23	1.68	14.56
Beecher Pass	5	.15	(.75)*
Total Sample	54	53.20	

*Strata dropped in calculations reported in this study.

In calculating the harvest results for the community of Petersburg, the samples of active and less-active households are weighted differentially, on the basis of their proportion to the total population, in order to reach community-level values. Active households, which were interviewed at a higher rate, are weighted lower than the less-active households, which were interviewed at a lower rate. In this way, the household strata are correctly represented in the calculations of community totals. During data entry, the Petersburg sample was reduced by one less-active household, resulting in a total of 49 household interviews for the final analysis; and the Beecher Pass sample was also reduced by one household. The weighted sample size used in the analysis of Petersburg was 53.2 households.

The numerical survey results pertaining to harvest levels (pounds of meat and fish harvested or distributed) are the harvests for a one-year period, from November of 1986 to October, 1987. The numbers of animals and fish taken for home use was converted to *edible pounds* of meat and fish using conversion factors provided by the Division of Subsistence (see Appendix B). For the variable of total pounds of meat, fish, and plants harvested by sampled households in Petersburg, a confidence interval of +/- 26 percent, at the .95 confidence level, was obtained.

Comprehensive harvest estimates are valuable for describing the levels and composition of community resource use, and are useful in making comparisons with other communities. However, the value of such data is dependent upon the degree to which the study year is representative of recent annual quantities. Resource fluctuations, economic conditions, population characteristics, and other factors may cause annual harvest levels of different resources to vary. Although comparative data with recent years were not available for Petersburg, other information is presented to indicate special conditions which may have existed during the year assessed in this study. This information is provided in the discussions in the following chapters.

Chapter 7 presents a description of the harvest, use, and distribution levels for all wildlife resources used in Petersburg based on frequencies of harvest participation and quantities of harvest. These data are useful quantitative measures of the variety and extent of resources utilized in the community, but we would like to point out that these are not the only dimensions of importance or significance of the resources to the community. For example, a resource may be valued highly by many households throughout the community, but for some reasons (such as limited local availability) the community harvest and use levels are not high. Or it may be the case that a resource is highly significant, economically, to a segment of the community, which may not be expressed saliently in frequencies that describe the total community. As a final example, some resources may possess a special cultural significance to the residents which may or may not be reflected in the levels of use. Thus, while frequencies and quantities of harvest and use are useful for describing wildlife resource use patterns, it must be emphasized that additional dimensions of significance are not appraised by this information.

The maps compiled in the course of the survey are biographical, extending through time as long as the respondent has lived in Petersburg. This differs from the harvest data, which applied to a one-year period. The biographical mapping procedure was followed in order to collect information on

historical as well as contemporary use areas, and to include different activity areas that may have been utilized in different years for as long as an individual was living in the community. This procedure, combined with a good sample design, ensures that the results integrate the areas of long-time residents, which tend to be large and complex, with the smaller areas of newer or younger residents. Changes in harvest areas due to the effects of regulations are also embraced with this method.

In addition to the formal survey, informal interviews on selected topics were conducted with persons knowledgeable about local issues. These discussions provided information on aspects of community history, the Petersburg economy, and historical patterns of resource use. Members of local organizations and government agencies were interviewed about recent economic and employment issues. Extended discussions were held with twelve long-term residents of Petersburg recognized as authorities on different elements of community history, past practices of resource harvesting, the development of the commercial fishing industry, and other resource use activities such as hunting and trapping.

The discussion of community history was expanded to describe historical patterns of resource harvest and use, and fluctuations in the availability of different resources, as noted by these experts. The record of resource fluctuations shows that most resource populations are not constant and unchanging, but are dynamic over time in response to a number of factors. Also, the historic population fluctuations are partly responsible for different patterns of resource harvest and use, indicating species for which historical practices differ from the contemporary period. This is particularly the case with deer and moose harvests. The analysis suggests that substantially more work could be done on this topic, which should include a more detailed assessment of past management practices, regulations, and changes in resource availability.

Another objective of the local expert interviews was to obtain more complete mapping information than was collected during the survey research. The harvest areas of a few important resources (moose, goats, furbearers, and plants) were not mapped as part of the TRUCS project. Additional mapping interviews were carried out with twelve knowledgeable individuals. This information has been added to the TRUCS mapping data, and has provided additional maps of harvest areas for moose, goat, furbearers (trapping), and plants, for this report.

The final method of research for this project involved the collection and analysis of secondary sources of information, including published and unpublished historical accounts of the community, review of published data bases such as the U.S. Census for population and income data, and aggregation and analysis of data from unpublished data sources such as the Commercial Fisheries Entry Commission and the Alaska Department of Labor. This information supplements the sources described above, and has been integrated into the discussion. Selections from the Petersburg Diamond Jubilee broadcasts describing early community history on the local radio station also contributed important information to the report.

CHAPTER 3
COMMUNITY HISTORY

TRADITIONAL TLINGIT USE OF THE AREA

Prior to the time Petersburg was being developed by homesteaders and fishermen at the turn of this century, Tlingit use of the area occurred primarily at many small settlements used to harvest and process naturally-occurring resources. These settlements, commonly referred to as "temporary" fish camps or "seasonal sites," were part of the traditional land use pattern of Tlingit society. Following an annual round of aggregation and dispersal, Tlingit groups assembled together into larger villages with more permanent structures (wood plank houses) for the winter, and broke up into small family groups during the spring, summer, and fall months to harvest resources at different locations within defined territories.

Although these settlement patterns were modified under the influence of Russian, British, and American traders, especially by the end of the nineteenth century when Peter Buschmann and others brought the commercial fishing industry into the Petersburg area, there are reports that a Tlingit family occupied a camp next to the site at which Buschmann began work on his cannery. The Kake Tlingit had "established a summer fishing camp on the north end of Mitkof Island" with at least one family in residence. "One, John Lot, had a house located on what would become the corner of Sing Lee Alley and Main Street. He was living there when Peter Buschmann arrived in the area in the late 1890's" (Alaska Department of Community and Regional Affairs 1984). This account indicates the house was situated at the outlet of Hammer Slough on the north shore, just south of the original cannery, in an area that would become the center of town. Another report also refers to John Lot as the owner of a parcel of land in the developing town: "The original Indian owner, John Lot by name, allowed his white son-in-law, Mr. Hogue, to build a store on his land" (Lipps 1937:84). Subsequently, other settlers began to build in this location and Lot's land was eventually absorbed by the growing town.

Oral history parallels these accounts and records that other Tlingit families also held land in town in the early years of community formation. Petersburg residents reported there were additional Tlingit fish camps in the area, at Ohmer Creek, and at Skookes Creek across the Narrows, in 1902. A camp on the east shore of Mitkof Island, a short way above Ideal Cove, was reported by a Stikine man (Goldschmidt and Haas 1946:124).

Prehistoric evidence exists which shows much older habitation of the Petersburg area, but unfortunately there has been little archeological investigation to provide adequate analysis. A prehistoric wooden fish weir was recently discovered in the Petersburg harbor, when dredging for expansion of the facility uncovered wooden stakes of the sort used by Tlingit fishermen for an intertidal trap (see Ackerman and Shaw 1981; Rabich Campbell 1982; Reger and Rabich Campbell 1987; Langdon 1987;

Wooley 1987).[2] The fish weir is located on the mud flats north of the outlet of Hammer Slough, in the area that John Lot originally settled; it is probable that his family fished in the same location as these prehistoric Indians. Other remains of prehistoric habitation are the petroglyphs at Sandy Beach in the town of Petersburg, which are known widely in the community. This beach was a very productive area for clams, gumboots, and black seaweed in former years, and it is still used by current residents. Prehistoric Tlingit artifacts have been discovered at a site up Petersburg Creek, where Shakey Frank used to live.

Currently, the expansive resource harvest range of Petersburg residents spans the traditional territories of several tribal groups, but the region of most concentrated use extends into areas of three tribes: the Stikine, Kake, and Auk (Goldschmidt and Haas 1946:123-33 and 157-65). The Stikine area encompassed the country surrounding Petersburg including Mitkof Island, much of Kupreanof Island, and the mainland as far north as Farragut Bay. The Kake territory extended north along the mainland above Farragut Bay and westward to the Brothers Islands and Pybus Bay. Western Kupreanof Island was part of their territory. The Auk tribe controlled the area on Admiralty Island north of Point Pybus, including Gambier Bay and Seymour Canal, but through intermarriage the Kake people also had use rights to the area. The Petersburg harvest range, both historically and in the present, also overlaps the traditional areas of the Killisnoo (Angoon), Sumdum, and Taku people.

During federal hearings held to determine the expanse of traditional Tlingit tribal territories, it was reported that a Stikine clan owned Petersburg Creek and the northern portion of Wrangell Narrows:

> Across from Petersburg there was a salmon creek which belonged to the talquedi. There is now a mink farm at this location. The talquedi people use the Wrangell Narrows area for trapping mink and hunting bear. They generally reach this area by going overland from Blind Slough.
> (Goldschmidt and Haas 1946:124)

Apparently, the Stikine Tlingit were using the area near the present townsite less intensively by the turn of the century, as they became more centralized in the Wrangell area, and Kake families had migrated in this direction.

On the mainland, the talquedi clan of the Stikine tribe was also associated with a camp and a former village of substantial size in Thomas Bay. The camp was used for trapping mink, otter and beaver and hunting bear and seal, and apparently represents recent habitation (late 1800's). The village is older, probably at least by 100 years.

> According to him there was a village at Wood Point on the south shore of Thomas Bay which belonged to the talquedi clan. He states, however, that

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[2] One of the investigated sites, at the mouth of Naukati Creek on Prince of Wales Island, has been carbon dated to 2,240 BP (before present).

> this area is no longer used and the remains of the village have disappeared. He also states there was at one time a house on Muddy River which was a good salmon stream (ibid.).

Other references to the prehistoric village at Thomas Bay appear in the spectral memoirs of a Petersburg prospector written in the early thirties:

> Thomas Bay is known by the natives in Alaska as the Bay of Death. About one hundred and fifty years ago, a slide down one of the mountains wiped out a village, killing over five hundred of the inhabitants. (Colp 1978:9)

Later, I.M. Dahl, a Petersburg druggist, found the mummified remains of a baby (probably of Russian or mixed ancestry) in a cave approximately two miles from the site of a rock landslide which covered the village.[3] The Thomas Bay and Point Agassiz area was homesteaded during the early twentieth century, and it remains an important hunting area for some Petersburg residents. Cabins on the original homesteads are used frequently by Petersburg residents, and a small-scale logger is active there at present.

The mainland area to the south of Point Agassiz was also identified:

> Le Conte Bay likewise belonged to the talquedi. Camp Island was the site of the camping place. The area was used chiefly for hunting seal and the cliff area along the coast north of Le Conte Bay was important hunting territory. (ibid.)

The cliff region north of Le Conte Bay, Horn Cliffs, is also used by current hunters from Petersburg.

The Wrangell people formerly had villages on the Stikine and used this area heavily, including the extensive flats and islands at the mouth of the Stikine River. There were large fishing camps on the flats, which were important for eulachon in the spring and salmon gill netting for king, sockeye, pink, chum, and coho in the fall. The late season of gill net fishing suggests this was a subsistence fishery, but the area was used extensively by both white and Indian commercial gill netters as well in the summer (see Goldschmidt and Haas 1946:125-26). In 1880, four Tlingit settlements were recorded on the Stikine River by the U.S. Census.

The Stikine territory also extended across Mitkof Island onto Kupreanof Island. In the south, the area between Point Barrie and Totem Bay was the boundary between the Stikine and the Kake Indians. Kake Indians had a village at Point Barrie before the turn of the century; a saltery was situated at this place when Buschmann first came into the area. The Stikine had the use of Duncan Canal, which is a major fish, shellfish, and waterfowl area for Petersburg residents (and formerly a prime deer hunting region until it was closed in the early 1970's). Portage Bay was the boundary between the

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[3] The mummy is presently in the Burke Museum in Seattle, Washington.

Stikine and the Kake territories on the north shore of Kupreanof Island. Both tribes utilized Portage Bay, which subsequently became an area used extensively by Petersburg residents.

To the north on the mainland, Farragut Bay was used by the Stikine for hunting, fishing, and trapping in the early historic period:

> I used to hunt at Farragut Bay. We camped behind Red Island and dried fish. This was also a good place for fur hunting. It has been a long time since I went up there. ... Farragut Bay was a place where we got goats, beaver, bear, mink, marten, otter, seal and berries. We trapped mink between Fenshaw (sic.) and Bay Point. There was also a camp for drying fish at the bay just north of Point Vandeput.
> (Goldschmidt and Haas 1946:124)

Tlingit witnesses from Wrangell and Kake reported that their occupation of some areas declined when islands were leased as fur farms, which gave exclusive rights to the fur farmers and prevented the continuation of customary use. The area beyond Farragut Bay belonged to the Kake tribe, extending up to Holkham Bay. The area from Port Houghton to the north is also associated with valid claims by the Taku and Sumdum tribes. A Petersburg fisherman discovered the remains of a prehistoric shaman's burial on Entrance Island in Hobart Bay, according to local reports. A traditional bent wood box with a skull inside was removed from the site.

A Kake village was reported at Port Houghton in the 1880 U.S. Census, and witnesses reported cabins at two places on the shore and on Roberts Island (Goldschmidt and Haas 1946:159). "There are good fish streams in that area and the people who live there used to smoke fish there." This area is claimed by the taniedi (sic.) clan. The village was apparently abandoned by the turn of the century, but Kake Tlingit reported that they return there "to trap and to seine for fish." Witnesses from Kake also reported that Tlingit constructed two houses near the cannery in Fanshaw Bay, and that there are fish streams "all along Fanshaw Bay. ... Chief Tom of Kake has lived on a point inside Fanshaw Bay. He also had a cabin at Portage Bay on the peninsula [Lindenburg Peninsula on Kupreanof Island]."

In 1880, four Kake villages were recorded in the U.S. Census, including two on Kupreanof Island (at Point Barrie and at the present site of Kake village). Other communities were located in Seymour Canal and Port Houghton. The 1890 census also lists additional villages at Gambier Bay and Pybus Bay.

The traditional Kake territory extends to Pybus Bay and Gambier Bay on Admiralty Island. The area north of Pybus Point, which includes Gambier Bay and Seymour Canal, originally belonged exclusively to the Auk tribe, but Kake people gained the rights to use the land in Gambier Bay through intermarriage, in accordance with Tlingit tradition (Goldschmidt and Haas 1946:165). These two bays are currently the primary deer hunting areas of many Petersburg residents, who have been using the area since the early decades of this century. This area was noted as having joint use by Alaska Natives and non-Natives during the hearings (ibid.).

The southern portion of Admiralty Island, and the shores of Baranof Island in Chatham and Peril Straits, are within traditional territories of Angoon clans (see George and Bosworth 1987:46-47). Petersburg residents have also used this area extensively since the early 1900's.

SETTLEMENT AND THE DEVELOPMENT OF PETERSBURG

Petersburg grew up around a salmon cannery built at the north end of Wrangell Narrows before the turn of the century. At the urging of Peter Buschmann, the Icy Strait Packing Company of Seattle funded the construction, and a town site and post office was established under the name of "Petersburg." A sawmill, a wharf, a store and the cannery were operating for the 1900 salmon season near land first homesteaded by Peter Buschmann in 1897. A Native village also appeared next to the cannery, probably comprised of Kake Tlingit from communities on the west coast of Kupreanof Island and on the mainland. In the first year, 34 whites and 24 Natives fished for the company, which employed white, Native, and Chinese cannery workers (Arndt 1980:24-5). The cannery was sold in 1901 and Buschmann stayed on as vice-president and plant manager of the new operation.

In 1902, the year of Buschmann's death, there were five families reportedly living in the settlement.[4] The cannery closed down during this year but was revived in 1906 by the Pacific Coast and Norway Packing Company, which apparently bought the site of the defunct cannery and expanded the facilities (see Arndt 1980:29-31). Before buying the site in Petersburg, this company operated the Tonka Cannery on Kupreanof Island in the Narrows, from 1901 through 1905.[5] Canneries and processors have been operating in the town continuously since this date, which attracted many Norwegian fishing families to the area. The summer fishing activities employed Euro-American, Tlingit, Chinese, and Japanese workers; later Filipinos also came to work in Petersburg.

In the early days, hand trolling, gill netting, and seining were the primary methods of salmon fishing, and all species of salmon were caught. Hand trollers were the most numerous; they lined for king salmon using rowboats. Gill netters made the most money because they concentrated on sockeye salmon. The Stikine River flats was the primary area for salmon gill netting, but the Petersburg fishermen ranged through the many bays and creek mouths of Southeast. The Taku River was another important gill net fishing area for the Petersburg canneries in the early years. Fishermen from many communities in Alaska and the Pacific Northwest, including Tlingit Indians from as far away as Haines, came to fish for the local canneries using seines. In the 1920's and '30's, the local cannery (Pacific American Fisheries (PAF)) regularly had three or four seine boats run by Tlingit from Kake.

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[4] An account in Alaska Geographic reported that Peter Buschmann committed suicide "because of depression over his business affairs" (Alaska Geographic 1978:95).

[5] Constructed in 1898, the Tonka Cannery was the first salmon cannery in the Petersburg area. It operated as a saltery for one year in 1900.

Halibut was central to the developing economy because it provided regular employment through the winter months. Deep water made it possible for a large buying scow to tie up down the Narrows from Petersburg in what was to become Scow Bay. Halibut was packed in ice collected from nearby Le Conte glacier, and the deep water in Scow Bay enabled passenger steamers to stop and load aboard the iced fish in 500 pound boxes. This gave Petersburg a direct link to the southern markets. The scow had a power boat that ran out and picked up ice in Le Conte Bay. The workers clubbed the ice with sticks to break it up for use in packing. The use of glacial ice for packing freshly caught halibut was a local innovation giving the fishermen a market advantage. By the winter of 1906, a typical year, there were 23 Puget Sound vessels in Petersburg, and 18 boats indigenous to Southeastern Alaska (Bell 1981:87). After 1910, Southeast ports gradually developed their own fleets and Puget Sound vessels ceased their winter operations. "Petersburg soon became the home port for a closely knit fleet of uniformly successful medium-sized halibut boats and continues to this day to be the mainstay of the Southeastern Alaska halibut fleet" (ibid.).

Herring was important as a baitfish for the summer salmon troll fishery and the winter halibut fishery. For years two Petersburg boats fished herring through the winter for halibut bait, and another fisherman from Scow Bay also was a long time participant in this fishery. In summer, herring men constructed pounds with their nets, seining migrating herring and keeping them alive for the trollers. The herring seiners dumped additional live herring into these pounds to keep a fresh supply. In winter, salted herring was used when live herring could not be supplied.

Other settlements were being developed in the area while Buschmann was building his cannery. Several homesteads were located across the Narrows in "West Petersburg," at the mouth of Petersburg Creek. The Knutson brothers constructed a sawmill here and produced barrels for salted herring and salmon. Apparently they were in the fishing business as well; in 1902 they had correspondence from Russian authorities politely expressing a disinterest in the Knutsons' offer to sell them salted herring. The fish barrels were sold to local salteries, which were numerous during the first decade of the century. The first salteries in the area were reported prior to 1900 at Point Barrie, Beecher Pass, and Tonka; the Beecher Pass site was taken over as a cannery in 1900 (Arndt 1980:42-3, 50). Between 1900 and 1910, seven salteries operated in the Narrows, four in Petersburg, two at Ideal Cove, and several on Kupreanof Island (including Pt. Barrie, Tonka, and Three Mile).

Scow Bay in Wrangell Narrows was also settled by homesteaders in the early years of the century. It was the home of fishermen, who caught salmon, herring, and halibut. The deep water available here was suitable for loading fish directly onto steamships bound for Seattle, as described above. The scow operation located here provided a name to the growing community. A herring processor operated here in 1906 (ibid.:68). Myer Hofstad built a cannery which packed Stikine River salmon from 1915 through 1918, and it continued operations under different owners through 1923. In 1917, according to a local historian, the first cold storage in the area was installed at the present site of the Beachcomber Inn; it operated for about two years. A sawmill was established in Scow Bay before

1910; in 1915, the mill advertised dressed and rough lumber and fish barrels for sale. The population of Scow Bay was 73 in 1920 (U.S. Census). For many years, Scow Bay was a separate community from Petersburg; it was only in the 1970's that it formally became part of the city of Petersburg.

Another outlying community was located across Frederick Sound on the mainland at Point Agassiz and Thomas Bay. It was very beautiful there and families began to clear land and build dairy farms in about 1910. Grass and crops grew well in the outflow of Muddy River. Shrimp was discovered in Thomas Bay and in 1915 a local settler tried his had at marketing it. For many years, the bay was the major fishing grounds for Petersburg shrimp. A shrimp and salmon cannery operated in Thomas Bay for one year in 1918. By the 1930's, there were ten farms with dairy cattle. A sawmill was present in the settlement. The farms produced milk which was delivered to Petersburg households for years until local stores began importing fresh milk from Seattle in the 1950's.[6] Sheep were raised on the farms, and their meat and wool was also sold in Petersburg.

The Stikine River delta was another region of significance to the developing community in Petersburg. The Stikine River was a center of beach seining and gill netting for the commercial salmon fishery, and also the location of a subsistence gill net fishery. Several islands in the Stikine Delta were homesteaded in the early twentieth century. It was reported that Farm Island held about eight homesteads located on both the north and south shores, and at least one winter trapping cabin was also situated here. Most of the homesteads were farms which raised dairy cows; and as in other settlements a sawmill operated for the local population. Residents of the area had close ties to Wrangell, but some descendants of the original homesteaders have taken up residence in Petersburg.

All of these communities continued to expand over the next several decades. Sawmills operated in tandem with the other activities and provided employment as well as markets for local small-scale loggers. The timber activity was mostly beach logging at camps in outlying areas. Logging at the southern end of the Narrows on Mitkof and Kupreanof Islands, and on the mainland in Point Agassiz and Muddy River, was underway in 1915.

Trappers were also active throughout the Petersburg area from the earliest years of the community. There were people staying in trapping cabins in many locations, including the mainland, and later trapping was a regular practice on the many islands leased as fur farms from the 1920's to the 1940's. One trapper, whose grandfather first came to Petersburg in 1909, said that there used to be a lot of people who trapped in the winter months. A "big share" of the trollers went trapping in winter, going in their boats to Duncan Canal, Rocky Pass, and other outlying areas. Fur farmers also trapped fox and mink through the winter; many of the animals that were raised on farms were let loose on the islands to grow to maturity, after which they were trapped. Trappers earned money from furs and the bounties that were placed on wolves, seals, and bald eagles.

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[6] The importation also put a Petersburg dairyman out of business; this man used to take his cattle across the Narrows on a barge to graze up Petersburg Creek every summer.

Prospectors were another component of the early settlement. Usually independent operators, these individuals searched over large tracts of territory in the area. A gold mine in Beecher Pass, the Olympic Mine, employed local residents in 1908 or 1909. Thomas Bay was another area of prospecting; a mining claim was filed there in 1915.

The first classroom in Petersburg was held in the cannery mess hall with seven students in 1905. Two years later, a reading and recreation room known as the Fishermen's Hall was constructed as a gathering place for fishermen; this also served as a school and the site of the first church services, which were nonsectarian. Besides the cannery, there were two stores, a saloon, and plenty of bachelor fishermen in town at this time. Petition for incorporation as a town was filed in 1908, and the first town council was elected in April of 1910 by an all male vote.[7] The first council placed a tax on dogs, and followed shortly with a school tax. Among the first ordinances was the prohibition of the sale and use of opium in the town. A fire department was established and a town marshall was appointed. Water and electric systems for the growing town were among the first issues to be discussed by the council.

A local school board also organized in 1910; it oversaw the public school. A separate school for Native children was operated by the Bureau of Indian Affairs for many years. By the mid-1920's, there were five primary schools in the area including the two in Petersburg and one in each of the communities of West Petersburg, Scow Bay, and Thomas Bay. The first church in Petersburg was the Salvation Army which held services for the Native population during the first decade of the century. The Wrangell Presbyterian Mission built a church here in 1911. Lutherans bought this building in 1913 and began holding services there; several years later they also built a hospital (about 1918). The Presbyterians later built another church.

By 1915, Petersburg had grown to 732 persons, according to the local newspaper. The Bank of Petersburg was incorporated with $25,000 capital in this year, and a scow with a machine shop came to town. Petersburg had about six general merchandise stores. One was owned by a Chinese man named Sing Lee; his motto was "Always on the job, night and day." Underground water pipes were installed in town, and free water was offered to Natives in return for digging pipe ditches. There was a power plant and a wireless station, and telephones. A library was located in the bank, and the Petersburg Hospital Association formed. There was a soda fountain and a movie theater. The Moose Lodge, Arctic Brotherhood, and Sons and Daughters of Norway were active community organizations. The Petersburg Band provided entertainment for Saturday night dances.

New salmon canneries and new shellfish fisheries (shrimp, clam, and crab) were developing in the area. The Doyhof Fish Products Company was built in Scow Bay in 1915 to can salmon, as mentioned above. In the following year, Alaska Glacier Seafoods established their headquarters in Petersburg. This company pioneered the shrimp industry in Alaska and continues to operate today as

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[7] Acceptance of the petition was initially delayed by the court in Ketchikan because there were too many women who had signed it. It was necessary to collect eight more male signatures before the petition was granted.

the primary buyer and processor of Petersburg shrimp. Petersburg clams were canned commercially by a local firm in 1918. A fishery for dungeness crab developed soon after. A Newport, Oregon, firm located a floating processor in Petersburg for two years in 1922-'23, from May through mid-December (Arndt 1980:56). A local firm first operated a crab cannery (at the Trading Union) in 1924. In the 1930's, the company was expanded under Kayler-Otness ownership to include salmon canning and shrimp processing. Through the years, numerous salmon, crab, and shrimp canneries have operated in Petersburg for different lengths of time.

During the 1920's, a new herring seine fishery developed around floating processors which rendered the fish into oil. The best herring was salted, and some was made into fertilizer. Local residents reported that about 16 "reduction plants" operated in the area in summer, primarily in Chatham Straits, and that a large fleet of Seattle-based fishermen accompanied them. Petersburg boats soon joined the fishery, which continued until the herring were depleted in the 1930's. Salmon and halibut continued to be the primary fisheries for the Petersburg fleet, but reductions in the seasons forced people to develop alternatives.

Large commercial fish traps were serious competition for salmon fishermen, especially the seiners. "There used to be so many fish traps out in the Straits, you could not seine there." In 1921, the local newspaper reported that 748 fish traps were operating. During these years, the large majority of salmon fishermen were gill netters and hand trollers; there were few seiners. Seined fish were not the preferred fish because often it was two days before they reached the cannery, compared to eight hours for fish tendered in from traps. After WWII, there were a few more seiners, but the main increase in seining started after statehood, when traps were eliminated.[8] Petersburg fishermen were actively opposed to commercial fish traps, and it was a local fisherman, Eldor Lee, who introduced a proposal prohibiting the use of fish traps for commercial salmon fisheries at Alaska's Constitutional Convention.

After the cold storage was built in Petersburg in about 1925, a commercial fishery for Dolly Varden trout developed. Fish traps were set in Petersburg Creek for this purpose, intercepting the fish as they migrated out of the lake. Beach seines set on the flats at the mouths of creeks at several locations in the Narrows, including Petersburg Creek, was another popular harvest method. There were several buyers for the dollies, and fishermen would visit them before selling at the highest price. The fishery provided employment in the spring at a down time, after winter trapping and before the summer salmon season. The beach seiners used the same methods later in the summer for fishing salmon in the Narrows.

The construction of the cold storage plant benefitted the halibut fishery. The facility improved the marketing of halibut, by allowing fresh frozen fish to be produced locally. This provided employment during the slower winter months in the 1930's (halibut was not shipped in summer). As

[8] The development of new net materials (nylon) and hydraulics also served to improve the gear substantially.

described below, the cold storage also provided the townspeople a place to store their meat and fish, which was a welcome alternative to canned and salted meat.

The Petersburg area was heavily used by fur farmers from before 1920 until the 1940's; and there were active fur farms in town until the late 1960's. The local newspaper reported that 80 islands were leased for blue and silver fox farms in 1921. Islands were the preferred sites because excess animals were let out of the pens to be reared on the island; the farmers would return in the winter to trap them. A higher return was made from the sale of breeder stock than from the furs; in 1936 the Yukon Fur Farm in West Petersburg (Kupreanof) was shipping mink breeders to Sweden and Chile. Farmers shifted to mink after the mid-'30's because the quality of the blue fox, an arctic species, deteriorated over time with successive breeding, and the fur market, which was primarily in Europe, became constricted by the war.

There were about a dozen fur farms operating in Petersburg at the height of the activity, four in town and eight across the Narrows in West Petersburg. The largest, Yukon Fur Farm, was located at the mouth of Petersburg Creek. The owner of this farm, who was chairman of the Alaska Game Commission at the time, proposed that a research station be established in town to continue experiments with selective breeding and different feed mixtures. The University of Alaska opened the Experimental Fur Farm in 1939 and operated it until its closure in 1972. The local fur farms utilized Petersburg Creek as a source of feed fish for the animals. The fur farmers beach seined on the flats at the mouth of the creek for flounder and other flatfish, salmon, and Dolly Varden trout. They also used fish traps and gill nets in the creek, for salmon (primarily pink) and Dolly Varden. Cutthroat and steelhead trout were also used as feed when they were taken. West Petersburg fur farmers reportedly constructed a large scow which they took up Petersburg Creek and, using a gill net spread across the creek, filled with fish for their animals.

For about five years in the early 1930's, a gold mine operated near Beecher Pass on Woewodski Island. Several Petersburgers were employed at this mine, known as the "Maid of Mexico," which had four or five workers and a cook living with their families in the camp. Woewodski Island was hunted extensively for deer by the miners, and one of the workers reported there was never a shortage of meat. Crab and clams were also plentiful by the island. Duncan Canal was very productive for crab, clams, deer, ducks, and salmon during this period. It was reported to be a very good life during the Depression years: the area was so rich in wildlife resources that the shortage of cash was not a major hardship. A similar viewpoint was expressed by individuals who lived on fur farms during the Depression. Both groups made the further point that the resource base has declined so substantially in the present, as compared to the Depression years, that they would not be able to support themselves as they had during the 1930's.

More recently (in the 1950's), a barite mine operated on Castle Island in Duncan Canal, employing about nine miners for five months of the year. This mine, owned by a Canadian firm, produced barite used in drilling mud for the Kenai oil fields. Large ships would enter the canal to load

tons of the material at a time.

Deer was a major resource for local consumption since the founding of Petersburg. Deer was plentiful, and the meat was salted, dried, and canned by all families in the early years. Fish, deer, clams, and birds (ducks and geese) were the most important subsistence resources in the community. Townspeople recalled that the construction of a cold storage plant for the fishing industry (about 1925) was beneficial for the entire village because, during the Depression years, it became common for people to store their meat and fish in a halibut box in the storeroom. This freezer storage was made available to anyone in the community at no charge. Later, in the 1950's, families began to rent individual lockers.

During the Depression years, a new market developed for halibut livers and viscera; the "hal oil" fishery was a valuable source of extra cash when it started in the early 1930's. The development of synthetic oils eliminated the hal oil products in the 1950's.

The black cod fishery started in the late '30's and continued strongly in the 1940's. This fishery occurred primarily in protected, inside waters. The fishermen carried special cans for the livers, which were saved and sold separately for their oil and vitamin A content. At the time, the livers were worth more than the fish. The inside black cod fishery declined significantly in the 1950's, which is attributed by local fishermen to the activities of Russian and Japanese fleets which took large quantities of black cod off the reef in outside waters. Compared to earlier years, very few boats fished black cod; one fisherman estimated that only 10-12 boats fished black cod between 1959 and 1975.

After World War II, some halibut fishermen began to salmon seine in the summer, to offset the shortened season and low halibut prices. Combination longline/purse seine boats appeared more frequently. The salmon gill net fleet also grew as some purse seine crewmen invested in gill net boats, to enter this higher valued fishery. Salmon, halibut, and cod catches were low in the early 1950's, motivating some individuals to explore other fisheries. Salmon harvests remained low for more than a decade, in contrast to the 1940's. The red king crab fishery was initiated in Petersburg in 1950, and developed slowly in the decade. Fur farms also declined substantially in this period after the war, as prices came down from the war-time high and tastes changed from ranch-raised mink to wild brown mink.

The economic decline after the war also brought reductions in the populations of all the communities in the area, as families and individuals migrated towards better opportunities elsewhere. Some fishermen moved south and participated in Washington and California fisheries, only to return in the 1960's when conditions improved. The population of Petersburg decreased from 1,619 in 1950 to 1,502 in 1960, and West Petersburg substantially declined from 60 to 26 individuals. After the war, the community in Point Agassiz/Thomas Bay was unable to sustain itself and the families moved out to Petersburg and elsewhere. One farmer attempted to raise beef cattle for several years, but he was unsuccessful. The area was not resettled until a logging camp was built in Thomas Bay in about 1958.

Beginning in the late 1950's, the number of halibut fishermen who purse seined in the summer rose, and investments in larger combination boats were more in evidence. In recent years, there has

been a gradual build-up in the fisheries, characterized by more fish, higher prices, and increasing investments into new and better gear combinations. These trends intensified after 1975, following the imposition of the 200-mile fishing zone and the introduction of limited entry. Halibut fishing has been improving significantly over the last ten years. Today's quota is similar to levels in the 1960's, when the season was much more prolonged (four to five months). With the enforcement of the 200-mile limit, the black cod fishery has improved and Petersburgers have entered the outside fishery as well. However, the outside fishery remains better than the inside. The salmon catch, which was depressed since the early 1940's, also increased substantially during the recent period.

Another stimulant to the local economy occurred in the 1960's with the introduction of large-scale logging in the area. The two large timber and pulp mills in Sitka and Ketchikan began to contract with many smaller outfits which substantially increased logging throughout Southeast Alaska. Large tracts in the southern portion of Mitkof Island and across Frederick Sound in Thomas Bay were logged by several local concerns in the 1960's. Subsequent activity in more outlying areas brought more loggers into the area, and the town became a base of operations in the 1960's and '70's.

CHAPTER 4
HISTORICAL RESOURCE USE FOR HOME CONSUMPTION

In this chapter, the historical patterns of hunting and fishing in the Petersburg area are described, covering the period circa 1900 to 1975. The chapter includes descriptions of commercial activities when a portion of the harvested resources was also used at home. This is the case for most of the fish and shellfish resources.

This section is not meant to be an exhaustive discussion of the many harvest methods, regulatory regimes, and levels of participation practiced throughout Petersburg history, because that is a history in itself. The discussion is offered to provide some historical depth to the subsequent chapter on contemporary harvest and use patterns. A second goal is to describe the historical fluctuations in population levels and harvest amounts of certain key resources. The primary source of this information is from interviews with local experts who are recognized in the community as having a long and active participation in hunting and fishing activities in the area. Archival sources were also researched.

The major resources harvested throughout the historic period were fish, deer, clams, and birds (ducks and geese). Different species of fish were available seasonally during the year; the primary varieties were halibut, cod, and salmon. Dolly Varden and steelhead trout were also taken frequently. Salmon (usually coho) was taken for canning. Halibut and cod were consumed when available in the winter months. Deer was a staple for many years; it was canned, salted, and made into jerky. Preservation of all these resources became easier after the cold storage became available in the mid-1920's.

FISH

HALIBUT AND COD

As mentioned above, halibut was a major commercial resource for many Petersburg fishermen in the early years of the century because it provided steady employment throughout the winter. The halibut season was open from February until November, and a quota was not introduced until 1930. By this time, the availability of halibut had declined and "people had to struggle to get a trip." One local authority on halibut, a former member of the Pacific Halibut Commission, reported that the Petersburg fishermen enacted a voluntary catch limit in 1934. They also instituted the custom of laying up for ten days in between trips, as a means of extending the season. Halibut fishing continued to decline and by the 1940's people "did anything but fish halibut because the prices were so low." For many years, Petersburg halibut fishermen ran their catch to buyers in Prince Ruppert or Seattle if they could obtain better prices than were available locally.

Halibut and cod were frequently removed from the commercial catch for use in the home. Before the cold storage was built, in about 1925, the common method for keeping this fish fresh during

winter was to bury it in a snow bank in back of the house. Preservation became easier year-round with the use of the cold storage facility. Cod was popular in some households for making traditional Norwegian foods such as lutefisk and smoked black cod.

During the Depression, it was the custom for individuals to go out for "cookfish," which involved setting three or four skates a short distance from town and bringing the catch back for distribution to townspeople at the dock. This occurred during the winter (November to March), when people were "fish hungry." Often word would get around town before the fisherman went out, and upon his return, "you could see a line of people running down the float" to pick up some halibut or cod. It was also customary for people, particularly those who did not fish, to acquire fish from a regular commercial catch. They could go down to the dock and ask a returning fisherman for this or that fish, and the fisherman would give it to them. "When a halibut boat came in, generally there would be two or three people come down and ask for a fish." Fishermen would sometimes bring back red snapper, gray cod, and other species which would not sell (i.e., for which there was no market at the time), and these also were given away at dockside. These practices were common from the 1930's through the 1950's, according to local residents, when the town numbered between 1,000 and 2,000 people.[9]

A former halibut fisherman gave this account of the recent fluctuations in the availability of halibut, and the response of other commercial fishermen:

> I used to halibut fish; I had my own boat. But all the seiners started to fish halibut, and there got to be too many. Can't make it on one-day openings. 1975-76, there were not many halibut around; then it started to pick up. Sometimes you would pull your whole string, not get anything. You would be out for two weeks, and only get 6-7,000 pounds. Then one fall, you could see the halibut moving in with the black cod. 1950's and '60's, if you made $5,000. it was a big take.

Halibut and cod continue to be important commercial species, and are also preferred for home consumption in many Petersburg households.

SALMON

Local experts reported that in Petersburg's "early days," most of the salmon used at home was taken from the commercial catch. This contrasts with the present time, when sport fishing accounts for 80 percent of the salmon harvest, as is shown in Chapter 7. Fish were retained from commercial catches destined for export markets and for local fur farms. As in the commercial fisheries, a variety

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[9] A deer hunter reported that a similar practice occurred with deer until the mid-sixties, when deer started to decline in the local area. People who hunted deer would give it away at the dock; townspeople who did not have deer would go down to the dock and pick out an animal. He reported that, in the 1950's and early '60's, about 25 young men provided deer for most of the community.

of methods were used to harvest salmon for home use in special subsistence fisheries. Subsistence fishing ventures for salmon were practiced in Petersburg since the founding of the town.

Petersburg fishermen first began to gill net commercially for sockeye salmon in the flats of large rivers (Stikine, Taku) in 1900. Petersburg gill netters have fished the Stikine continuously through the years, for both commercial and subsistence purposes. Gill netters also fished in the shallow bays and channels at the mouths of many smaller streams. They were small, one- or two-man operations, catching sockeye and coho which were iced and delivered to the cannery everyday. Petersburgers competed with fleets from Wrangell, Juneau, and Douglas. The gill net fishermen generally did not fish halibut.

In the late 1940's and early '50's, several Petersburg residents fished in the Stikine with gill nets after the commercial season, to catch coho for canning. This was a subsistence fishery, and a permit was required. "They would come and unload their last commercial catch, and go up there with a piece of rag." This occurred in the days of cotton and linen nets, and dragging the nets through the shallow water fishery was hard on the equipment. One fisherman reported going into the north arm with a shallow, 20 fathom net and fishing in five feet of water, "I would drag it and lift it when it got hung up." This activity on the Stikine is no longer practiced by Petersburg residents.

Petersburg Creek has long been the site of salmon gill netting. In addition to salmon, steelhead and Dolly Varden were fished with gill nets in the creek for both home and commercial use. The nets were used as beach seines at the mouth and set nets in the creek. Local residents placed gill nets about two miles up Petersburg Creek in the 1930's to acquire salmon and trout for fur farms in West Petersburg. As described above, the fur farmers reportedly owned a large scow which they used for this purpose, taking it up the creek and filling it with the take from a gill net. Presumably fur farmers in other areas utilized similar methods. Fish caught for fur farms was classified as commercial, and fur farmers were expected to follow the regulations for commercial fishing. However, fish from this source was also used in the home.

Commercial salmon seining started with shallow bay and beach seines set up as "side rigs." This method was practiced at the mouths of all the salmon creeks and streams in the Petersburg area. The seiners had large (300 fathom) purse seines which were rowed out in a "sweep" from the side of the boat. The first salteries in the area, and later the Petersburg canneries, were reportedly built on the products of this seine activity. Beach seines were prohibited after 1925, but in 1937 and subsequent years, an exception for Wrangell Narrows was written into the regulations. Apparently beach seining continued to be practiced at the mouth of Petersburg Creek for commercial sockeye, coho, pink and chum salmon after 1925, according to local experts. Steelhead, cutthroat, and Dolly Varden were also caught in this fishery. Steelhead caught in saltwater and Dolly Varden caught in either salt or fresh water were classified as commercial species.[10] Steelhead was considered especially good for smoking

[10] Steelhead was classified as a gamefish if it was caught in fresh water.

for home use, and it is still a preferred species for this use. Another commercial beach seine salmon fishery was located in Blind Slough, for coho, chum, and pink salmon, in the early years. This was also a major source for home consumption.

Beach seining also was widely practiced for many years to supply fur farms. Fur farmers used seine rigs in the flats at the mouths of creeks, to catch salmon, trout, flounder and other fish for their animals. This method was used extensively for many years around the mouth of Petersburg Creek for the fur farms in West Petersburg. Although beach seining was prohibited throughout southeast, an exclusion from this restriction existed for Wrangell Narrows except within one mile of the mouth of Petersburg Creek. This provision may have been the result of pressure brought by the fur farmers in the area. Beach seining was practiced there at a small scale until 1967, when the last fur farm ceased operations. This seine activity, which was classified as commercial fishing, also provided fur farmers with fish for home consumption.

Subsistence salmon beach seine fisheries were reported in Petersburg Creek and Blind Slough shortly before statehood. Residents acquired permits for these fisheries. Local fishermen used a variety of nets; one man reported using a salmon gill net lead. Coho were fished this way for canning. As mentioned above, these sites were fished commercially with seines in prior years, and fish was taken out of the catch for canning and smoking. Subsistence fishing is not permitted in these locations at the present time.

Hand trolling for king salmon is another long time subsistence salmon fishing practice, dating from the commercial hand troll fisheries at the turn of the century. Rowboats were used as late as the 1930's. The trolling areas in this early fishery are identical to those used at the present time: Frederick Sound, and from out the mouth of the Narrows north of town as far as Point Frederick to Scow Bay in the Narrows. This area is currently used by sport and commercial fishermen, and is a major source of king salmon for home use in the community.

A subsistence dip-net fishery for coho salmon in Fall Creek was also reported. This was a non-commercial fishery. It is no longer permitted under the current regulations.

Salmon fishing in Scow Bay is reported to have declined substantially in recent years, which one person suggested may be due in part to an increase in seals and sea lions in the area. King salmon have become more scarce in this area in recent years.

DOLLY VARDEN TROUT

Dolly Varden have always been plentiful in the Petersburg area, and were a source of fish for home consumption since the first settlement was established. Dolly Varden trout were taken as a commercial fish in the area during the 1920's and '30's. The fishery occurred in the spring, after trapping and before the salmon season. The trout were iced and boxed up, and sent to Seattle for distribution to restaurants. Fishermen had to clean the fish before taking them to buyer. The fishery

was not lucrative, as compared to halibut, cod, and salmon, but prices were good and there was competition among the buyers. "In those days, there were several buyers at each cold storage; you would go and dicker with them."

The principal methods for harvesting Dolly Varden were seining on the flats and setting trout traps in the streams. During April and May, the voracious Dolly Varden trout were abundant out on the flats following the salmon fingerlings. The fish were caught by beach seining around the mouths of creeks, including Petersburg Creek, Blind Slough, and others in the Narrows. Beach seining was also reported out on the beach just beyond the PFI cannery, on the east shore of Mitkof Island in Ideal Cove, on the mainland in Farragut Bay, and on Kuiu Island in Tebenkof Bay. Petersburg had four or five trout boats in the 1920's, when the price for these fish was higher than halibut. Trout boats were also reported in Wrangell and Ketchikan.

Fish traps were also used to harvest Dolly Varden directly from streams and creeks. Trout traps were located in Petersburg Creek in spring for catching the dollies as they migrated out of the lake. Dollies were harvested with this method by fur farmers for use as animal food. One former farmer reported, "Dolly Varden go into the lake in winter and sleep in the mud. We put a fence across the creek in spring, catch them on the way out." The traps were set "way up in the creek; the slats were spaced so the [salmon] fingerlings could get through." The use of traps in local creeks continued until traps were prohibited sometime after WWII, and Dolly Varden were reclassified as a sport fish.

There is evidence that Dolly Varden were utilized more heavily by some households during periods of economic hardship. "We used to have to eat dolly, but no more."

STEELHEAD TROUT

In addition to the gill netting activity for Dolly Varden described above, a small commercial and subsistence gill net fishery for steelhead trout was practiced in several local creeks including Petersburg Creek, Staney Creek, and others. One long time resident reported that he and two other high school chums gill netted spring steelhead in Petersburg Creek in the 1930's. His father made a net for them and directed them to go up the creek, "more as something for us kids to do, than as a money maker." They received .10 per lb. for the fish from a local cannery (Ohmer). He noted they encountered strong disapproval by sportsmen at the time. He also reported that there are more steelhead returning to Petersburg Creek in the present than in the 1930's.

HERRING

Herring was fished for salteries in the Petersburg area since before the turn of the century. Salteries were small (two to four person) summer operations that produced barrels of salted herring and salmon, and mild-cured king salmon. Salmon was beach seined on the flats at the mouths of

creeks, salted, and shipped south in barrels. Seined herring were put up into 200-lb. barrels for markets in the mid-west (especially Minnesota). Barrels for the salteries were produced in local sawmills.

A variety of commercial herring seine fisheries contributed to the historical development of Petersburg. As a baitfish for the halibut and salmon longliners, herring was one of the earliest fisheries to develop in the area. Herring fishermen "followed the herring around all summer" for this purpose. Migrating herring were corralled close to the shoreline and kept alive for fishermen in pounds constructed of nets. Seiners would add to the supply when it diminished, keeping their catch alive and dropping live herring into the pounds. "Pounded" herring provided a continuous, live bait source through the summer months for the lucrative king salmon fisheries in the 1920's. The first cold storage appeared in Petersburg in about 1925, which enabled the cannery to supply frozen herring to the halibut fishermen throughout the winter.

A large herring seine fishery developed in the 1920's to supply herring reduction plants (usually floating processors) which produced some salted herring and fish meal, but primarily rendered the fish into oil for use in paints and other oil-based products. Older residents reported that there were as many as 16 reduction plants operating in the area, mostly in Chatham Straits, during the 1920's and early '30's, and one man recalled counting 80 herring seiners tied up in Port Alexander during a storm in the summer of 1928. Most of these herring boats were from Seattle, but the local fishermen convinced the reduction plants to also buy from Petersburg men. Occasionally, baitfish boats would deliver to a reduction plant.

By the late '30's, most salteries and reduction plants went out of business because the herring were depleted. The halibut baitfish fishery continued, but by this time halibut was under a quota and the demand for herring was shrinking. The market for salted herring never returned. It was not until the mid-1970's, when PFI pioneered the herring roe fisheries in Sitka and Kah Shakes, that a market for herring reappeared.

Herring has been used continuously by Petersburg households since the first years. It was smoked, pickled, fried fresh, and frozen for home use. Herring was always abundant off the dock in the harbor area; the common practice was to gill net (beach seine) at night around the harbor flats. This method is no longer practiced; jigging from the floats is the current harvest pattern. Residents have reported a major decline in the availability of herring in the harbor, as compared to the vast amounts that were present more than 10 years ago. "The harbor used to be bubbling with herring; you don't see that now."

Harvest of herring roe on hemlock branches is a customary and traditional use in Petersburg among the Tlingit families, but this is practiced less frequently in recent years. One resource expert indicated that the practice started to decline about 10 years ago because of adverse pressure from non-Natives living in the community.

SHELLFISH

SHRIMP

The shrimp industry dates from 1915, when a Thomas Bay settler tried unsuccessfully to market dried shrimp. This operation, backed by Chinese capital, was reportedly the first attempt to make commercial use of Alaskan shrimp (Arndt 1980:57). Canneries in Petersburg and Wrangell started to process shrimp in the following year. As mentioned above, Alaska Glacier Seafoods located to Petersburg in 1916 and is the oldest Alaskan shrimp cannery in continuous operation. The early shrimp fishery in Petersburg was comprised of a small group of fishermen who fished shrimp exclusively.

Thomas Bay was the primary fishing grounds for Petersburg shrimp for many years. The major shrimping grounds extended from Thomas Bay to the Stikine flats, and also in Duncan Canal. One man reported there were about eight boats that shrimped in Thomas Bay in 1927-29. He was a young boy at this time, and boys his age could always get a ride on shrimp boats to Thomas Bay to hunt ducks and geese, and an occasional moose. In the 1930's, he used to shrimp the length of the Narrows everyday during the winter. Beam trawling was the original gear used by the early shrimp fishermen; a few of these rigs are still in operation today.

The shrimp harvests in Thomas Bay declined significantly in the early 1960's and have remained at low levels. Since 1972, Thomas Bay has produced under 10 percent of the commercial harvest. Duncan Canal has been the major harvest area in recent years.

CRAB

Petersburg families harvested dungeness crab for home consumption throughout the early years. Residents frequently gathered dungeness crab for home use from the flats north of town and across the Narrows around the mouth of Petersburg Creek, and at places in the Narrows such as across from Scow Bay. A subsistence dungeness crab fishery was reported in the flats at the mouth of Petersburg Creek. Local residents also speared crab from rowboats across from Scow Bay and near Petersburg Creek.

In the 1930's, several men were reportedly fishing dungeness crab for commercial sale and a crab cannery was located in Petersburg. Apparently, these men did not fish in other commercial fisheries, a characteristic they shared with shrimpers. The early crab and shrimp fishermen reportedly kept their distance from the other fishermen in town. Duncan Canal was the most productive area for dungeness in the early days for both commercial and subsistence use.

The harvesting of king and tanner crab in the Petersburg area originated as commercial activity. One Petersburg fishermen worked on a power scow in the Bering Sea crab fishery for the local cannery in the late 1940's. After his return to town, he and his partner started to set pots for red king crab in local waters in 1950. Tanner crab was known in the area, but people did not believe there were local

king crab until a population was located in Seymour Canal. At first, about three or four boats fished king crab for commercial sale. After a few years when people saw there were king crab available, the number of boats increased to about 10. The Kayler-Dahl cannery reportedly provided fuel oil to the fishermen for prospecting crab in the early years, and after the firm folded PAF took over the market development for the fishery. The king crab fishery remained small for 15-20 years. During that time, there was a nine month season, limited to 40 pots. Starting in 1975, many more boats entered the fishery as the prices for king crab escalated.

There was no market for tanner crab before the early 1970's. Prior to this time, fishermen would sometimes find their pots full of tanner, but they would dump the crab back into the sea. A Japanese market was developed in the early 1970's by PFI. A market for brown king crab developed after the tanner fishery, also with the assistance of the local cannery. The initial price for brown king crab was so low that only a few boats fished it to start. The fleet began to grow to its present size in the late 1970's.

CLAMS

Butter clams and cockles were utilized heavily throughout the early days of the community. They were harvested on the spit at the north end of town by PFI. Another species collected in the area is referred to as "pink necks," which were gathered across in the flats of Petersburg Creek. Residents reported that clams were one of the important food sources in the community throughout the early years of settlement. Gumboots were gathered by the Tlingit families living in town. The use of these resources continues at the present time. Local canneries have processed clams for commercial sale at different times during the development of the community.

LAND MAMMALS

DEER

From the time that Petersburg was first settled, deer has been a primary food resource for the community, particularly in the fall and winter months. Deer was the principal source of red meat for many years, for moose were infrequent in the area until the 1950's. During the Depression, deer was especially important because many families could not afford to purchase meat at the store. The annual take was estimated by key respondents to be three bucks per household in the 1920's and '30's, and it continued at that level until statehood. The meat was canned in Mason jars or salted, and some was made into jerky (dried). During the Depression, townspeople were able to store venison in the freezer at the cold storage. In later years, when lockers became available for rent at the cold storage, residents began to store whole deer at the dock.

In the early years before any roads were built, individuals used row boats or skiffs for access along the shore to hunt. The hunting range expanded as motor boats and commercial fishing boats became more prevalent. Deer were hunted on the beaches, in the foothills, on the sidehills, and on the mountain tops. The legal deer season was long in previous years. Early fall (August-September) hunting took place up high in alpine areas, late fall (November-December) hunting occurred along the shore, usually down in the Narrows. In most years, deer was available close to shore or a short distance inland from shore. In years when deer were scarce, hunters hiked longer distances up the hillsides. Like salmon fishing, deer hunting was primarily a matter of effort, according to local hunters. "If you stayed there long enough, you could always get a deer."

Areas on the east side of Mitkof Island, across in the vicinity of Petersburg Creek, and along the north shore of Kupreanof Island, were readily accessible by skiff. "Lower part of Mitkof [was] never hunted as heavily as other parts of the island. All over Mitkof was good, and Kupreanof. Woewodski was good. Duncan Canal used to be good." Woewodski Island was hunted extensively in earlier years in connection with mining in the area, as noted above, and a cabin was erected on Keene Island that has been in use for about forty years. The Duncan Canal region was extensively utilized by Petersburgers for deer and birds for many years. Hunters used abandoned trapping cabins in the area, and one group built a cabin on Castle Island for their use.

Although most deer hunting occurred on Mitkof and Kupreanof Islands, Petersburg commercial fishermen also utilized more distant places, in sheltered bays and inlets where they could lay up their boats. Deer were usually available wherever the fishermen went. Current hunting areas on Admiralty Island (Pybus Bay, Gambier Bay, Seymour Canal) and Baranof Island (Chatham and Peril Straits) also were used regularly on an occasional basis since the early 1900's.

Older residents reported that deer were always plentiful on Mitkof and Kupreanof Islands until the population crash in the early 1970's. Deer were readily available up Petersburg Creek or down the Narrows not more than five miles from town. Anywhere from Blind Slough southward was considered prime deer area on Mitkof, in the era before logging roads (prior to 1958). One man who travelled down the Narrows everyday during WWII stated that he would frequently count 150 deer on each side of the Narrows. Residents pointed out that winters often used to be very severe, and occasionally the deer population would decline for a year or two and require greater effort to hunt. "In winters with lots of snow, which was common 30-40 years ago, it would be hard to get deer; we had to go to the mountain tops.... but we always did [get deer] and they would come back the following year. Sometimes the season would go to one buck for a year." Also, it was noted that several wolf packs roamed the area and howling wolves could be heard frequently in town during these years. But residents said that the deer population always rebounded and, overall, it remained healthy and stable throughout the area.

According to local experts, the population of deer in the area was high until after statehood, when different hunting regulations were put into effect which raised the limit and opened the season on

does.[11] Significant logging was initiated on Mitkof Island at the same time, which put additional hunting pressure on the deer. First, an increase in the population of the local community was occurring. Second, the construction of logging roads on the southern portion of the island (starting along Blind Slough and Falls Creek in 1958) opened prime hunting areas where, previously, not many people went. Fearing that the deer population could not sustain itself under the new harvest regulations and increased hunting pressure, local hunters started to advocate for a reduced limit and elimination of the doe hunt in 1965. As late as 1971, it was reported widely that deer could still be seen "everywhere along the Narrows," and swimming across. But by 1973, the deer population on Mitkof and Kupreanof had crashed and deer were no longer seen on either island.[12] Unlike in previous years of scarcity, the deer population did not rebound despite the mild winters and subsequent decline in the wolf population throughout the intervening years.[13]

The deer population decline resulted in a closure on Mitkof, Kupreanof, Woewodski, and Butterworth Islands that remained in effect during the study period. The closure has greatly changed the hunting areas of Petersburg residents, who now utilize more distant areas on Admiralty Island or Prince of Wales Island. It also increased hunting pressure for deer on the mainland, and encouraged a shift to moose as an alternate resource. Older respondents reported that the continued area closures have increased the cost of hunting deer, which is causing their participation to decline:

> We have to get areas closer to us opened up, because it costs each person we take about $60.00 a head to go. And the cost is going up every year. Us older guys can't go as far when hunting. We have to take fewer people along because of cost. So no one to help us pack deer out and can't do it ourselves.

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[11] Long time residents remain very critical of new regulations that were introduced after statehood which raised the bag limit to four or five deer and included does in the hunt. Prior to statehood, the bag limit was two bucks; and occasionally the limit was reduced for temporary periods. It was noted that sometimes it was necessary to take additional deer beyond the legal limit to feed the household. It was also remarked that the resident population of wolves varied in size with the deer, and that a healthy wolf population was not a threat to the deer. The bounty on wolves also served to keep the wolf population in control.

[12] Extremely heavy snowfalls were recorded in Petersburg in 1968-69 and 1970-71, which contributed to the steep decline. Another factor was a change in wolf trapping regulations. In earlier years a bounty on wolves encouraged wolf trapping, which possibly served as a control on the wolf population in the area; by 1970, this bounty was removed and trapping ceased. As a result of this management shift, the level of wolf predation probably increased in this period.

[13] Why the deer population has remained low is unclear to local residents. Several survey respondents expressed the concern that too much old growth forest was being cut. "I feel they should leave some old growth forest between clearcutting." "Watch timber harvest on old growth forest." A model of the impacts of logging on deer population being developed by ADF&G suggests that old growth stands are critical to the maintenance of deer populations in the long term (Schoen and Kirchhoff n.d.)

The closure has restricted households without access to larger boats, which are necessary for travelling to the most productive areas.

It is only in the last few years that deer again have been sighted with some regularity in the southern region of Mitkof Island and in Beecher Pass, although in much lower numbers than in the past. Some level of illegal hunting is occurring from fishing boats along the shore and from vehicles along the network of logging roads now available on the island. The continued scarcity of deer on Mitkof and Kupreanof Islands is a major concern of local residents. Recent proposals to open the deer season on Mitkof, Woewodski, and Butterworth Islands has fueled sharp debates between the proponents of these proposals and older, long term residents who recommend waiting until the deer approach previous population levels.

Deer were hunted by local residents in the Thomas Bay/Pt. Agassiz area during their period of settlement prior to WWII, but use of the area fell off after they moved into town across the Straits. There was occasional use of the area by Petersburg residents through the years, but their needs were met largely by the plentiful supply of deer on Mitkof and Kupreanof Islands. Deer declined in the Thomas Bay area in the 1960's and early 1970's, and the population has not rebounded. Some local residents attribute the decline to heavy hunting by loggers, who were present in the area for about eight years from 1958 until the mid-'60's. During the period after the logging ended, Petersburg hunters also started to utilize the Thomas Bay/Pt. Agassiz area more intensively for deer, as bag limits were increased and deer became scarce on Mitkof and Kupreanof Islands.

During the study period, deer were reported to be present in small numbers in the Thomas Bay/Point Agassiz area, and low intensity hunting was being carried out. This area is one of the few open areas that remains accessible by skiff from Petersburg. Although the deer did not rebound to earlier levels after the logging stopped in about 1965, according to local hunters, moose immigrated into this area on the mainland in larger numbers. The area now is used intensively for moose hunting by Petersburg hunters.

MOOSE

Petersburg moose hunters have utilized two places on the mainland, in the Thomas Bay/Pt. Agassiz and Stikine areas. Reports of current residents establish that they were hunting moose in Thomas Bay in the late 1920's, and on the Stikine in the early 1930's. Prior to this time, there were homesteaders in each of these areas who also probably utilized an occasional moose. In the early days, moose hunting was not widespread in the community. Several respondents commented they "never heard about moose" when they were growing up in the 1930's, but moose became more commonplace in later years.

Of the two areas, the Stikine was used more heavily by Petersburg hunters until recently; the number of hunters using the area increased gradually from the 1940's through the '60's. The earliest

moose hunting in the Stikine River was reported from the 1930's, when a small number (four or five) of community residents hunted there. Other respondents said they started hunting moose up on the Stikine flats shortly before WWII. In the 1950's, a few more residents hunted up the Stikine. Then a group of five hunters built a cabin (known as "Petersburg Cabin") near Kakwan Point in the early 1960's. This cabin is being used regularly by members of the original group.

The largest increase in the number of Petersburg moose hunters occurred after 1965, when people started hunting moose to replace deer. The hunters used the Stikine area, and began to go over to Thomas Bay/Pt. Agassiz as moose migrated into that area. According to the hunters, the moose migrated down the Stikine from the interior, into the Stikine flats, north along the mainland to Thomas Bay, and across to Mitkof Island. A resident population is now reported on Dry Island in the Stikine delta, which is a change from the early 1960's when hunting was poor in the lower river. One hunter estimated that the moose have doubled in the area since that time. This is probably related to the changes in local habitat due to isostatic rebound, which has dried out wetlands and allowed alder to spread.[14]

Moose migrated from the Stikine flats north along the mainland into Point Agassiz and Thomas Bay, appearing there in larger numbers shortly before WWII. They have advanced as far north as Farragut Bay, and very recent reports indicate that moose are entering the Port Houghton area. A trapper remarked he saw "lots of moose sign" in the southern area of Port Houghton in the winter of 1987-88. Moose also have been moving across to Mitkof and Kupreanof Islands. Several hunters reported moose on Mitkof Island in recent years, and one knowledgeable hunter has observed "more moose sign than deer sign on Three Lakes road" in the southern portion of Mitkof Island. He reported observations of moose sign at several places on Kupreanof Island including Castle River, Towers Arm, and Hamilton Bay.

The Stikine hunting range now encompasses both the upper riverine and slough region and lower flats and wetland region, and hunters are usually more knowledgeable of one or the other of these areas. ADF&G recorded 37 Petersburg residents were hunting moose on the Stikine River during a spot check of the 1987 hunt, which is 18 percent of the hunters interviewed in the survey. Comparable figures are not available for the Thomas Bay moose district, which now extends from Farragut Bay in the north to along the shoreline south of Point Agassiz, but statements by residents indicate there is substantially heavier use of this area.

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[14] One of the users of Petersburg Cabin has reported changes in the upriver habitat as well. He noted that meadows have dried up, willows have grown up, and that what was once a beaver pond area has dried out. These changes have caused the group to alter their hunting style, from running the river and sloughs to hunting regularly in one area using trails they have made. In this upper region, he feels that the moose population has not changed significantly; he has observed there is plenty of browse that is not eaten. This hunter also reported he now sees some deer tracks where he has not seen anything in a long time; deer tracks were rare or nonexistent "even in the 1950's and 60's."

The moose population has increased in the Thomas Bay/Pt. Agassiz area, according to local hunters. Prior to logging, hunters walked inland to the lakes to get a moose, and then packed the moose back down to their boats. After the construction of logging roads, hunters began to use vehicles to drive the meat out. In 1958, after the logging was underway, there were reportedly about 8-10 hunters in a season. In 1962, it was reported that about 75 men hunted there, bringing their vehicles with them. Within a few years, a limit was placed on the harvest, which was confined to older bulls, and the population increased.

Since the early 1960's, the Thomas Bay/Pt. Agassiz region has been used more intensively by Petersburg moose hunters than the Stikine area. The area is more readily accessible from town by skiff, and the presence of roads is very convenient for transporting meat to the boats. Estimates of the hunting pressure have been as high as 100-200 hunters in recent years. The heavy use occasionally causes the moose population to fluctuate in the area; the season was reportedly closed for two years not long ago due to the lack of bulls.

MOUNTAIN GOAT

As reported in Chapter 3, goats were hunted historically by Tlingit on the mainland near Petersburg. Goat hunting was probably continued by Petersburg residents after formation of the community. According to local residents, goats were hunted for meat in the 1930's across on the mainland along Horn Cliffs. Goats were also taken in the Thomas Bay area during the 1960's by loggers after logging roads were constructed which gave access to the interior. More work needs to be done on the historic use of goat. Goats are hunted in the present time, although no goat hunters were included in the study sample.

BIRDS

DUCKS AND GEESE

"Deer, birds, and fish, we lived on that when we were young." Ducks and geese have been hunted in Petersburg since the founding of the community. For some, bird hunting was too costly in certain periods. For instance, during the Depression the cost of shells prevented some families from hunting birds. Mallards, wigeon, teal, spriggs, and shovel nose ducks are the major species utilized. Male mallards, identified as "greenheads" by local hunters, are the preferred duck species. Geese hunted include Canada geese, black brandt, and snow geese. The most heavily utilized is Canada geese.

Historically, ducks were plentiful at various locations along the Narrows. The Stikine flats and the low areas in the delta also was a major bird hunting area. Residents have reported changes in the habitat that have reduced the bird habitat and altered the availability of certain species. Dry and Farm Islands used to have large wetland areas that were utilized for wigeon and goose hunting. In recent

years moss and alder have taken over the grassland, which makes the area unsuitable for these birds. Duncan Canal was also heavily utilized as a duck-hunting area.

PTARMIGAN AND GROUSE

Ptarmigan were hunted by boys on the muskeg flats up in back of the houses in town in 1930's. Boys followed their tracks in the snow. "But you never see them today." Ptarmigan and grouse were also hunted on Kupreanof Island.

PLANTS

SEAWEED

The Petersburg has a long-standing reputation among the Tlingit population as an excellent source of black seaweed, which is a highly valued food when it is dried. In recent years, traditional harvest areas close to town have reportedly been under increased harvest pressure from newer, Asian migrants. Petersburg residents who use dried black seaweed are acquiring larger amounts from nearby communities, particularly Kake, than in previous years.

BERRIES

Logging roads have opened large areas to berry picking, which used to occur primarily along the beaches down along the Narrows, or on the muskeg in back of town. People also reported going to the Stikine area for berry-picking. After the construction of logging roads in the late 1950's, harvest areas shifted to cleared areas along these roads in the southern portion of Mitkof Island.

MARINE MAMMALS

SEAL

Petersburg residents harvested seal most intensively during the years there was a bounty on the animals, when seals were regarded as interfering with the commercial salmon stocks. "1937: used to shoot seals for bounty, and use them for wolf bait [trapping]. Eagles, too; used to get $1.50 for a set of claws. Eagles would eat young fox pups; the ranchers didn't like them. Trapping and seal and eagle bounties---it all added up." "We used to hunt seal; I used to hunt seal, there were lots and lots. There was more seal around prior to closing the season, 1973, then in later years. Anytime we wanted a seal, we could go down the Narrows this time of year [December] and get one. We used the hides and get liver."

During the recent decade, seal was hunted occasionally in Petersburg, according to local experts, but none were reported during the study year. Only one or two households were reported to hunt seals at the present time, and not on a regular basis.[15] Both the hide and the carcass are valued by the households. The hide is tanned and used in sewing, and the carcass is used for meat and to make seal oil. "People hunt for the hide, and give us the carcass." The meat and oil are used in the home and given to other households. "We make a seal meat stew, with potatoes and carrots; give the seal craklings and oil to our daughter in Juneau."

SEA LION

Sea lions have been returning in larger numbers in recent years. Occasionally, an animal is seen swimming in the harbor for several days at a time. One was observed swimming under the commercial fishing boats during March, 1988. Sea lions are currently protected under the Marine Mammal Protection Act. In prior years, sea lions were considered a nuisance in the salmon fisheries, as was seal. In 1937, for example, it was permissible for a salmon fisherman to kill sea lions "while such animals are destroying salmon and other food fish." At least one person commented that the recent increase in seal and sea lion populations is having a negative impact on the salmon.

SEA OTTER

In the early historic period, sea otters were hunted to extinction throughout southeast Alaska for the Russian, American, and European fur markets. Beaver, mink, fox, and land otter were also hunted in the region, but sea otter, particularly that of the dam, was the preferred fur. They were reintroduced by the Alaska Department of Fish and Game in six locations in southeast Alaska, including the west coast of Admiralty and Kuiu Islands, between 1965 and 1968. The population has been reported expanding up the east coast of Kuiu Island in Sumner Strait.

FURBEARERS

TRAPPING

As described in the previous chapter, trapping was widely practiced during the early years of settlement in the Petersburg region. There were trapping cabins in many locations throughout the area, including the mainland. Early trapping areas included Petersburg Creek, Thomas Bay, Alexander Bay, Whiskey Pass, and along the Stikine River. The land around Duncan Canal was noted by several

[15] Under the Marine Mammal Protection Act, seal and sea lion hunting for food and traditional handicrafts are open only to Alaska Natives.

individuals as a productive area, and trapping cabins were built in the area. One trapper, whose grandfather first came to Petersburg in 1909, said that there used to be a lot of people who trapped in the winter months. A "big share" of the trollers went trapping in winter, going out in their boats into Duncan Canal, Rocky Pass, and other areas.

As already mentioned, the operators of fur farms also trapped fox and mink through the winter; most of the animals that were raised on farms were let loose on the islands to grow to maturity. Islands in Port Houghton, Fanshaw Bay, Farragut Bay, Sumner Straits (Level Island), and others near Admiralty held fur farms; as many as 60 islands in the area were reported to be the sites of farms during this century. Trappers earned money from furs and the bounties that were placed on wolves.

One household represents the fourth generation of trappers in this area. In the previous generation, the number of very active trappers was about eight individuals.

Trappers took resident species of mink, marten, beaver, wolf, wolverine, and land otter. Foxes were introduced into the area and were trapped on fox farms until they were replaced with mink in the late 1920's and '30's. There was a good market for wild mink after WWII, when tastes shifted away from domesticated mink to wild brown mink. Mink, marten, and land otter were the main species trapped in that period. As the prices varied for each fur over the years, trappers would switch from one to another. Often trappers started the season with beaver; these pelts did not bring good money but the carcasses made the best wolf bait.

Marten were scarce during the 1950's and early '60's, compared to earlier years. The population gradually rebuilt in the 1960's, and was "good" in the 1970's, but it has been going down in recent years due to the higher demand (prices) for the fur. Land otters were plentiful in the 1930's and were commonly observed on the floats in town, but they are not often seen today. Most of the trapping species have fluctuated in population levels through the years; but in contrast to other species, mink populations are reported to remain stable over time. Instead of showing seasonal or cyclical fluctuations, mink populations vary by area.

Throughout many years and as recently as the 1960's, wolves were plentiful in the Petersburg area. Residents reported that wolves were readily seen and heard close to town. It was common to hear three packs of wolves from town: one up Petersburg Creek, another down the island south of town, and another in back of town on the muskeg. One long time resident estimated that there were 25 wolf packs in the area, including the surrounding islands and the mainland. The wolves circulated throughout the region; Woewodski Island was reported to be a whelping area for the population. Deer hunters stated that the wolf population fluctuated over the short term following the deer population, but that wolves remained stable in the long run until the mid-'70's, when they crashed with the deer population. The bounty on wolves was discontinued prior to 1970, which removed the hunting pressure by trappers prior to the crash in the deer population. Signs of wolves are no longer reported on the islands, and they have remained very scarce to the present.

Wolverine appeared in the area in recent years, and are reported on Mitkof, Kupreanof, and Kuiu Islands. An experienced trapper said he took wolverine in his wolf traps on Mitkof during the 1970's, and they were never there when he was young, in the 1930's. He suggested they may have swum over from the mainland.

The trapper also reported there were indications in the forest that the beaver population formerly was larger than it was when he was trapping in the 1930's. He recalled that there was a trapping limit of 10 beaver in those years. Later on, he noted that the beaver disappeared. At the present time, beaver are reported up in Blind Slough.

CHAPTER 5
DEMOGRAPHY

Homesteaders first began to stake their plots in the Petersburg area at the turn of the century. Some of these early comers accompanied Buschmann to Alaska to build canneries and salteries in 1897; by 1902, five families were living year-round in the new settlement (Sandvik 1976:3). Encouraged by the availability of land, the plenitude of resources, (especially fish, deer, and timber), and opportunities to compete against the Seattle fishing fleet, the settlement at Petersburg grew quickly during the early decades of the century. The community was of significant size in 1910 (585), and the population more than doubled by 1930, reaching 1,252 (see Figure 2).

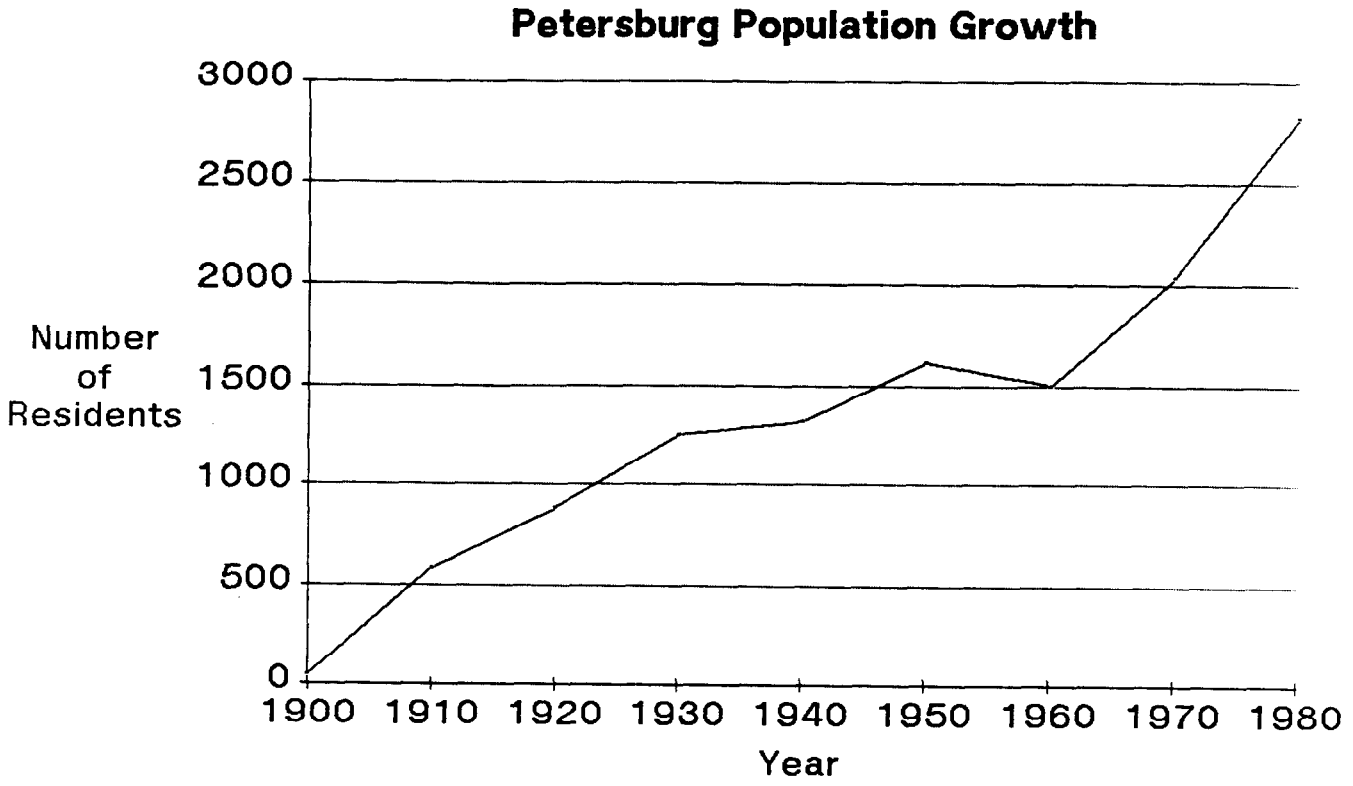
In these early years, there were small communities which developed around homesteads at several outlying locations in the Petersburg area. West Petersburg, situated at the mouth of Petersburg Creek across the Narrows from town, was the closest and the first to be settled (at about the same time as Petersburg itself). For many years, Scow Bay was a separate fishing community from Petersburg; in 1920 the village was recorded in the U.S. Census with a population of 73 individuals. Homesteading dairy farmers also settled across Frederick Sound in the area of Point Agassiz and Thomas Bay during the first decade of the century. At its peak in the 1920's and '30's, there were a dozen farming families living in this area. Each of these communities had an elementary school.

The rate of population growth in Petersburg diminished during the Depression years as economic opportunities declined and some residents emigrated or dispersed into the surrounding areas to live on fur farms. Petersburg continued to grow at a slow rate until the 1950's, when the population actually declined. The period after WWII was difficult; increasing limitations of the open fishing seasons, decreasing stocks, and lowered prices contributed to the situation which motivated some families to move elsewhere for a time. The post-war changes also affected the fur markets, which were marked by fluctuating prices and tastes, making fur farming an uncertain occupation. The changing conditions affected the outlying settlements as well as Petersburg; the community at Thomas Bay dispersed completely, and West Petersburg declined by more than 50 percent at this time.

The 1960's were a period of growth for the town of Petersburg, and the population increased at the fastest rate in recent decades (36 percent). Improvements in the fishing industry and the introduction of large scale commercial logging in the region fueled this development. Use of outlying areas, now by loggers, increased again. The southern portion of Mitkof Island was logged, and Thomas Bay was also logged, during this decade. By 1970, the Petersburg population exceeded two thousand (2,042), not including the population for Scow Bay which increased to 238. West Petersburg also grew during the 1960's.

Community population growth continued in the next decade, although at a lower rate than in the 1960's, and for Alaska as a whole during this time. The population for the Petersburg area increased by 24 percent, in contrast to the state which rose by 34 percent, in the 1970's (U.S. Census). The

Petersburg population reached 2,821 by 1980, while the newly incorporated city of Kupreanof (formerly West Petersburg) increased to 47.[16] Government became the second-largest employment sector (after fishing) in these years, which accounts for a large portion of the new immigration. There were 978 households counted in the 1980 census, with an average household size of 2.9 persons. Two-person households predominated. The 1980 population was 47 percent female, the same proportion as for the state as a whole.



Note: The City of Petersburg expanded its boundaries between 1970 and 1980; the inclusion of a larger land area in the 1980 census accounts for the higher growth rate in the 1970's.

Source: U.S. Census.

Figure 2. Petersburg Population Growth, 1900-80.

[16] In the 1970's, the city of Petersburg expanded its boundaries southwards along Wrangell Narrows, including Scow Bay, which accounts for a large portion of the population increase during this decade.

The Petersburg population exceeded three thousand by 1985, when the population was estimated to be 3,137 (revenue-sharing estimates by the Department of Community and Regional Affairs). The growth rate declined substantially in the 1980's, compared to the two earlier decades. Petersburg grew by 12 percent between 1980 and '85, compared to 34 percent for the state as a whole. This trend to a slower rate of growth, which began in the 1970's, indicates that the Petersburg population level is more responsive to local socioeconomic factors than conditions affecting the state-wide economy.

The 1987 population estimate was 3,282 (ibid.). There were 1,123 estimated occupied housing units for this population, indicating that the average household size was 2.9 persons, the same level as in 1980.

ETHNICITY

The population of Petersburg is primarily of Euro-American cultural heritage. The town was developed by persons from the continental United States, many of whom were themselves recent immigrants from European countries, especially Norway. In the early years, Norwegians came to Petersburg directly from their home country.

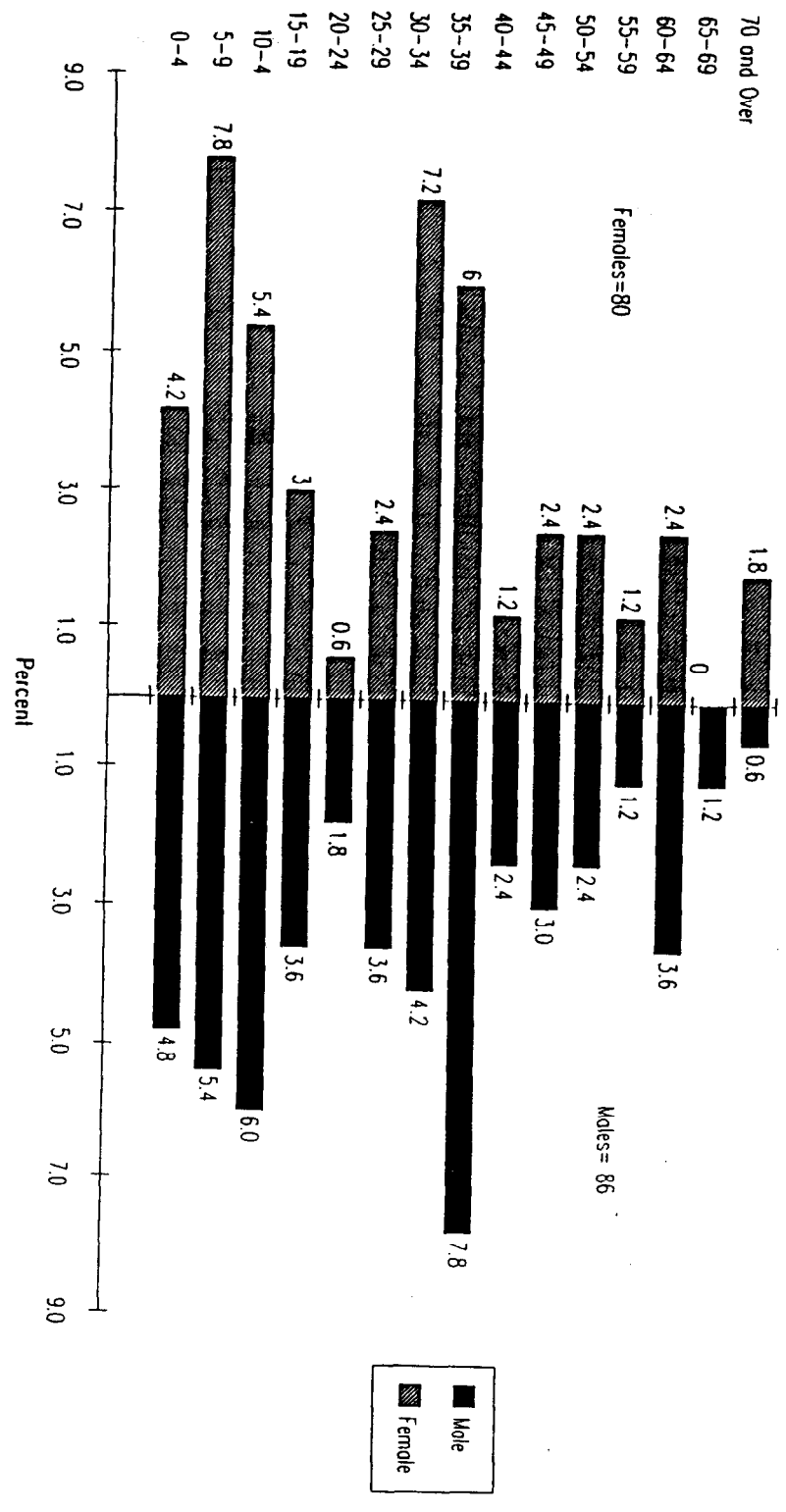
Petersburg also has a small, non-white ethnic population which reflects the local history as a fishing and cannery town. In 1980, this population represented 15 percent of the community residents. Most of the longer term residents in this category have been involved in the fishing industry through the years as processing workers and fishermen. Alaska Natives, Filipinos, Koreans, Japanese, and Hispanics comprise this population. Alaska Natives account for the largest portion of the non-white group, and constitute 11 percent of Petersburg's total population. Compared to a state-wide figure of 16 percent in 1980, this proportion is lower than the state average. There was little change in the proportion of Native residents in the 1970's; it was 12 percent in 1970.

SAMPLE CHARACTERISTICS

As described in the discussion of methodology, a randomly drawn sample of 49 households was included in the final data analysis for this study. The sample population was 51.8 percent male and 48.2 percent female, which shows a one percent change since 1980. The average age was 28.9 years for the entire sample, with an average of 29.5 years for the male population and 28.4 years for females. Table 1 provides the age and sex characteristics of the sample. The ethnic composition of the sample was 81 percent white, 17 percent Alaska Native, and two percent other.

A total of 1,200 households were counted in the initial enumeration of the Petersburg population for sampling purposes. Forty-nine Petersburg households were included in the final data tabulation; these households had 166 members. The average household size of the sample was 3.4 persons, with a range from one to eight residents. The distribution of households by their size is

Table 1. Age and Sex Characteristics of Sample Population.



provided in Figure 3. Households with two members were the most numerous.

The sample population had a substantial degree of longevity in the community and state, as measured by the length of residence of the heads of households. The average length of residence in Petersburg was 26.4 years, and in the state, 29.6 years. The longest period of residence in the community was 70 years; 12 percent have been percent for 50 or more years. In contrast, 30.7 percent of sampled household heads have been living in Petersburg from two to ten years. This result indicates that, in addition to a segment of long-term residents, a substantial portion of the Petersburg population, nearly one-third, is relatively new.

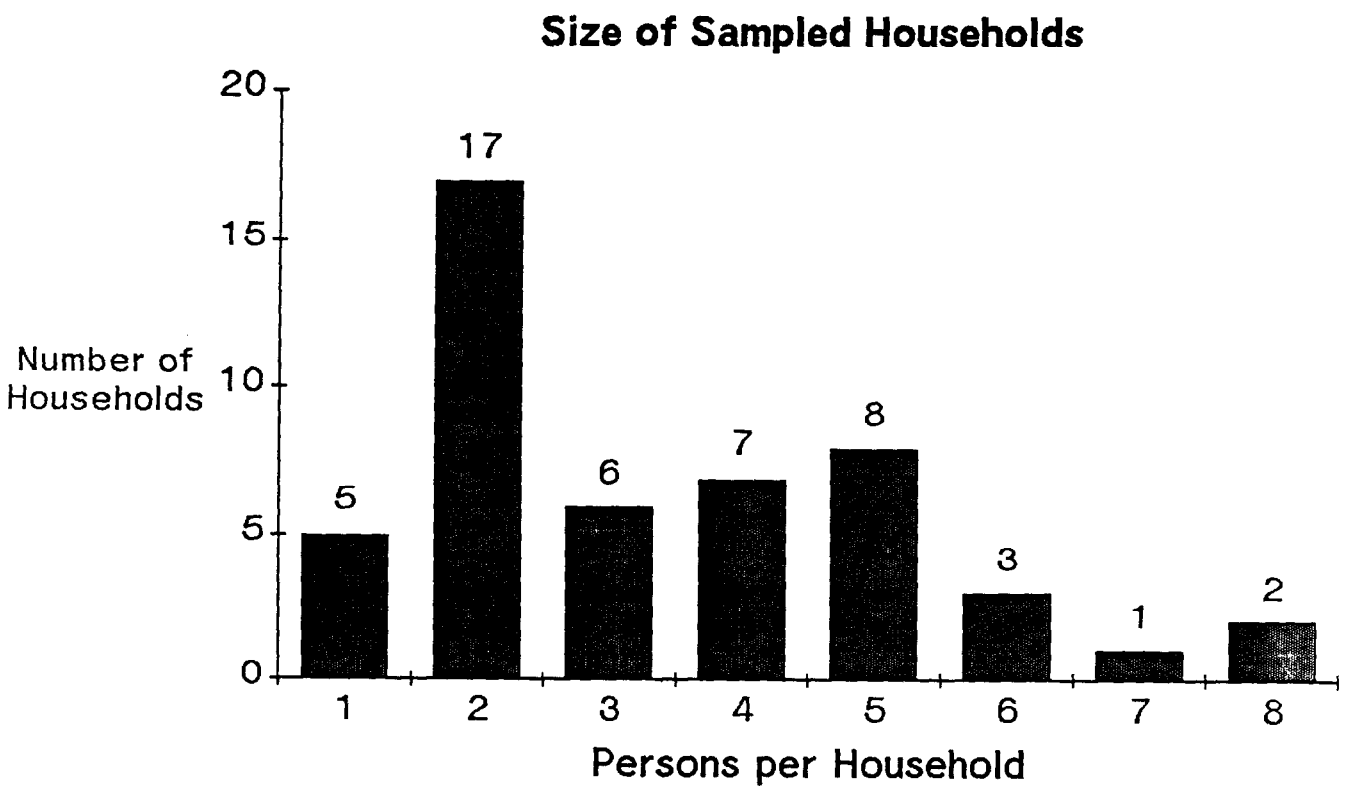


Figure 3. Size of Sampled Houscholds.

CHAPTER 6
ECONOMY: EMPLOYMENT AND INCOME

Commercial fishing has been the economic foundation of the community since its inception at the turn of the century, and it continues to be primary in the present. Substantial increases in the value of the fishery resources have brought expanded returns to local fishermen in recent years, compared to earlier decades. Another recent trend is the development of government institutions, particularly local government, which experienced major expansion during the 1970's and became the second largest employment sector in the Petersburg economy in the 1980's. Retail trade has also been a significant source of regular employment and income. The total wages have remained stable in many sectors of the economy in recent years, indicating that Petersburg is shielded from the negative forces currently affecting the Alaskan economy.

The timber industry also has been closely associated with the development and maintenance of the Petersburg economy throughout most of its history. Small, family-operated logging and milling concerns were present in each small community established in the Petersburg area. Large-scale logging became an important economic component in the area in the late 1950's and continued through the 1970's. However, logging and milling activities have declined substantially in the 1980's.

SELF-EMPLOYMENT

COMMERCIAL FISHING

Petersburg is situated close to good fishing grounds for a large variety of commercial species including salmon, halibut, cod, herring, crab, and shrimp. Over the years, the bounty of the surrounding waters have benefitted the community, but it is also the case that local fishermen have actively sought out markets and aggressively pursued the development of new fisheries and new products since the early years. Petersburg fishermen have competed successfully with fishermen from elsewhere in Alaska and the Pacific Northwest, and have continued to experiment with and adopt new gear to improve their efficiency. Local fishermen have also expanded their fishing zone as local resource populations declined and new opportunities were opened.

These trends are evident in the multiple gear types and geographical distribution of the current Petersburg fishing efforts (see Table 2). Although most of their fishing occurs in southeast waters, local fishermen are active in many fisheries throughout Alaska as far north as Norton Sound. Petersburg fishermen participate in salmon purse seine fisheries in Kodiak and the Aleutians, salmon gill net fisheries in Bristol Bay and the Aleutians, tanner crab in Cook Inlet, herring roe fisheries in Prince William Sound, Bristol Bay, Nunivak and Nelson Islands, Security Cove, and Norton Sound, and halibut and blackcod fishing in Prince William Sound, Cook Inlet, Kodiak, the Aleutians, Dutch Harbor and the Bering Sea.

Table 2. Fisheries with Petersburg Resident Permit Holders, 1985

Halibut: Hand Troll: Statewide
Longline: Statewide
Jig: Statewide

Blackcod: Longline: Statewide except Southern SE Inside

Salmon: Purse Seine: Southeast, Kodiak, Peninsula/Aleutians
Gill Net: Southeast, Peninsula/Aleutians, Bristol Bay
Hand Troll: Statewide
Power Troll: Statewide

Shrimp: Pots: Statewide
Beam Trawl: Statewide

Crab: Dungeness: Pots: Statewide except Prince William Sound
Other: Statewide except Prince William Sound
King (all species): Pots: Southeast
Other: Southeast
Tanner: Pots: Cook Inlet
Other: Southeast

Herring: Roe: Purse Seine: Southeast, Prince William Sound, Bristol Bay
Gill Net: Southeast, Nunivak/Nelson Island, Security Cove, Bristol Bay, Norton Sound
Food/Bait: Purse Seine: Southeast
Pound: Southeast

Abalone: Diving: Statewide

Miscellaneous Saltwater Fish: Longline: Statewide

Note: There is at least one Petersburg resident holding a permit in each of these fisheries. Permit fisheries designated as "statewide" are not necessarily fished in all available areas by Petersburg fishermen; more often the areas fished under these permits are in southeastern Alaska.

Source: Aggregated from data provided by the Commercial Fisheries Entry Commission.

The four species of salmon constitute the largest portion of the annual harvest, averaging about 60 percent of the catch by weight. Other important commercial species are herring (both sac roe and food/baitfish), halibut, black cod, crab (including dungeness, red, blue and brown king, and tanner), and shrimp. Less important species are Pacific cod, rock fish, abalone, scallops, and octopus. Steelhead are also sold commercially, as incidental catch. In 1985, the composition of the commercial harvest was 62.6 percent salmon, 22.5 percent herring, 6.7 percent halibut, 3.6 percent blackcod, 4.2 percent crab, and .4 percent other species. About 75 percent of the salmon was caught with purse seine gear, 22 percent with gill nets, 3 percent by power trollers, and less than one percent by hand trollers. The herring catch was about 85 percent sac roe and the remainder was food/bait fish. Shrimp is presently a very small proportion of the total harvest (.04 percent in 1985), although Petersburg is noted for its special quality shrimp.

The production of the home fleet has increased steadily in the recent period (see Table 3). The totals are indicative of the increased participation of Petersburg fishermen, and higher catches and

Table 3. Commercial Fishing Returns to Petersburg Resident Permit Holders, 1975-85.

Year	Estimated Pounds	Estimated Earnings	Number of Permit Holders	Number of Permits Fished
1975	12,890,786	$ 2,761,299.	247	345
1976	18,600,509	$ 5,125,086.	250	379
1977	23,054,179	$ 10,426,154.	301	465
1978	23,217,779	$ 13,835,636.	338	537
1979	27,203,088	$ 21,499,272.	355	615
1980	24,584,726	$ 12,397,234.	350	585
1981	28,771,453	$ 16,042,240.	335	582
1982	29,873,595	$ 18,811,246.	363	660
1983	32,236,291	$ 17,594,878.	372	699
1984	33,815,362	$ 19,560,586.	364	747
1985	47,508,017	$ 24,953,285.	362	697

Source: Aggregated from data provided by the Commercial Fisheries Entry Commission.

higher prices, that have characterized the years since limited entry (for salmon and southeast herring sac roe) and the 200-mile limit on foreign fishing efforts were instituted. In 1985, resident fishermen brought in 47,508,017 pounds of fish and shellfish, for a total return of $24,953,285. The earnings by Petersburg fishermen comprised 44 percent ($3,423,367) of the Southeast herring seine, 11 percent ($5,940,060) of the Southeast salmon seine, 15 percent ($2,558,452) of the Southeast salmon drift gill net, six percent ($1,308,694) of the Southeast salmon power troll, and eight percent ($319,724) of the Southeast salmon hand troll fisheries.

There were 540 vessels in the Petersburg fleet in the 1986-87 season, according to the harbormaster. The fleet consists of purse seiners, gill netters, power trollers, hand trollers, longliners, and beam trawlers. Depending on the fishery, some of these boats are also used as packers and pot (crab and shrimp) fishing boats.

The number of Petersburg fishermen who own fishing permits increased by about 50 percent between 1975 and 1982, as shown in Table 3, to 363. Since 1982, the number of local permit holders has remained at about the same level. In 1985, 697 permits were fished by Petersburg permit holders. Table 4 shows how these permits were distributed among local fishermen by type of gear.

Table 4. Petersburg Fishing Permits by Gear Type, 1985.

Gear Type	Number of Permits	Percent
Purse Seine	83	11.9
Gill Net	113	16.2
Longline	228	32.7
Pot	109	15.6
Power Troll	58	8.3
Hand Troll	88	12.6
Other	18	2.7
Total	697	100.0

Note: The number of permits fished is a count of all permits used in all the fisheries, which combines the count of individuals owning multiple permits with instances of multiple use of a single permit. In a given year, more than one person may use the same permit through an emergency or permanent transfer of the permit.

Source: Aggregated from data provided by the Commercial Fisheries Entry Commission.

Estimates of the crew size for each gear type provide an indication of employment levels on fishing vessels run by resident fishermen (see Table 5). The total estimated employment on board Petersburg fishing boats was 2,751 for the 1985 year, including permit holders and crew members. These figures represent the total number of persons receiving income from each fishery in which a Petersburg permit holder participated. This total overestimates the actual (net) employment level due to overlapping crew membership and multiple permit ownership, by which individuals participated in more than one fishery during the year. Such overlap is a common practice. If the total employment were reduced to 50 percent, or 1,376 persons, this still would indicate a high level of employment in local

Table 5. Crew Size Estimates by Gear Type for Petersburg Permit Holders, 1985.

Gear Type	Number of Permit Holders	Crew Factor	Number of Crew Members	Total
Purse Seine	83	5.25	436	519
Gill Net	113	1.50	198	311
Longline	228	4.00	912	1,140
Pot	109	2.50	273	382
Power Troll	58	1.75	102	160
Hand Troll	88	1.00	88	176
Other	18	2.50	45	63
Total	697		2,054	2,751

Note: Crew estimates were developed by using crew factors for major fisheries in each gear type. The purse seine estimate is calculated using a crew factor for the Southeast salmon purse seine fishery, 5.25. The gill net estimate is calculated using the crew factor for the Southeast salmon gill net fishery, 1.75. The longline estimate is calculated with the crew factor for the statewide halibut fishery (boats over five tons), 4. The pot fisheries estimate is based on the median crew factor for the Southeast dungeness and king crab fisheries, 2.5. The power and hand troll estimates are calculated using the crew factors for the Southeast troll fisheries, 1.75 and 1.0 respectively. The Other category was factored by 2.5.

Source: Aggregated from data provided by the Commercial Fisheries Entry Commission.

fishing enterprises, when compared to the total population of the community (about 3,137 people in 1985). Thus, a very large portion of this fishing employment involves local residents who earn income from this activity.

Purse seiners for salmon and herring accounted for 41 percent of 1985 earnings, and salmon and herring gill netters were responsible for 23 percent (see Table 6). In combination, the seiners and gill netters produced nearly two-thirds of the earnings in that year. The longliners (primarily halibut and black cod) and pot fishermen (mostly crab) accounted for more than 25 percent of earnings. The

combined information in Tables 5 and 6 show there is significant variation in employment and earnings among the different fisheries. Whereas hand troll permits showed an average of only $3,697 in total earnings in 1985, purse seine permits averaged $124,187 (see Table 6).[17]

Table 6. Commercial Fisheries Earnings by Petersburg Resident Permit Holders, 1985.

Gear Type	Gross Earnings	Percent	Number of Permits	Average Earnings Per Permit
Purse Seine	$ 10,307,490.	41.3	83	$ 124,187.
Gill Net	$ 5,667,607.	22.7	113	$ 50,156.
Longline	$ 4,318,327.	17.3	228	$ 18,940.
Pots	$ 2,920,196.	11.7	109	$ 26,791.
Power Troll	$ 1,308,389.	5.2	58	$ 22,558.
Hand Troll	$ 325,300.	1.3	88	$ 3,697.
Other	$ 105,991.	.5	18	$ 5,888.
Total	$ 24,953,285.	100.0	697	$ 35,801.

Source: Aggregated from data provided by the Commercial Fisheries Entry Commission.

The earnings in Table 6 represent the gross ex-vessel values (sale price) of the commercial catch. To calculate the net earnings from to fishermen, the capital (boat and equipment) costs and expenses must be deducted from the gross earnings. It was estimated that an average boat share is 50 percent of the total earnings for all gear types (except longline, which was estimated at 35 percent). Using these factors, a total estimated net income of approximately $12 million was generated by the Petersburg fishing fleet in 1985. This represents 23.6 percent of the total earnings of Petersburg residents in 1985, which is the proportion of net fishing income to total cash earnings (net fishing income added to the total earned wages reported to the state).[18] Fishermen, including crew members, are classified as self-employed persons and are not counted in the usual methods of enumerating employment and income. State-generated figures for employment and earned income are confined to

[17] It should be noted that a single gear type includes permits from very different fisheries. For example, purse seine gear combines salmon and herring sac roe fisheries.

[18] The total wages earned in Petersburg was $38,867,833. in 1985. Wage income is discussed more fully below.

wage-paying positions (i.e., those for which employers pay unemployment insurance to the state). Thus, state-generated wage employment statistics do not count approximately 25 percent of the total earned income in Petersburg for 1985.

TIMBER INDUSTRY

Small logging operations have been part of the Petersburg economy since the earliest days of the community. Logging became more significant in the late 1950's, when the large timber companies gave contracts to smaller concerns which operated locally. The peak years for the local industry were 1979-81, after which timber prices fell and continued to decline through 1986. By the end of 1987, Petersburg had one small mill and two logging operators in the business, along with about four independent contractors, for a total employment of about 20-25 positions. Most of these positions were seasonal logging jobs.

Mitkof Lumber, which operated the mill of the same name in town for many years, moved their mill to Haines in 1987 after buying facilities there. This reduced the local employment in the industry by 8-10 permanent positions. About the same number of loggers have maintained their employment by the concern, which is continuing its small logging operation on Kupreanof Island. There is limited logging activity occurring on Mitkof Island and in Thomas Bay at the present time by small contractors.

WAGE EMPLOYMENT

As with earnings from commercial fishing, the amount of wages paid by Petersburg employers has more than doubled in the past ten years. In 1986, employers paid $37,525,146 in wages (see Table 7). The largest source of this wage income was the government sector; more than one-third (34.5 percent) of the total wages paid in Petersburg during 1986 came from federal, state, and local government (Figure 4). The manufacturing sector, which is primarily fish processing wages, accounted for the next largest source of earnings, 29.8 percent. Retail earnings provided 8.4 percent of total wages. These three sectors supply nearly three-quarters of the total wages in the local economy.[19]

[19] The 1986 figures are used for the discussion of wage employment because that year appears more representative of the current economy in which government-sponsored construction is declining. In 1985, construction was nearly twice the 1986 level, comprising 25 percent of all earned wages in 1985. This level of activity affects the relative proportions of other sectors in that year. For example, manufacturing (primarily fish processing) accounted for 22 percent of total wages in 1985, compared to 30 percent in 1986.

Table 7. Wage Employment Earnings in Petersburg, 1977-86.

Year	Earned Wages
1977	$ 11,129,269.
1978	$ 19,316,634.
1979	$ 23,471,000.
1980	$ 30,621,317.
1981	$ 31,619,336.
1982	$ 31,510,843.
1983	$ 33,626,637.
1984	$ 35,598,092.
1985	$ 38,867,833.
1986	$ 37,525,146.

Source: Alaska Department of Labor

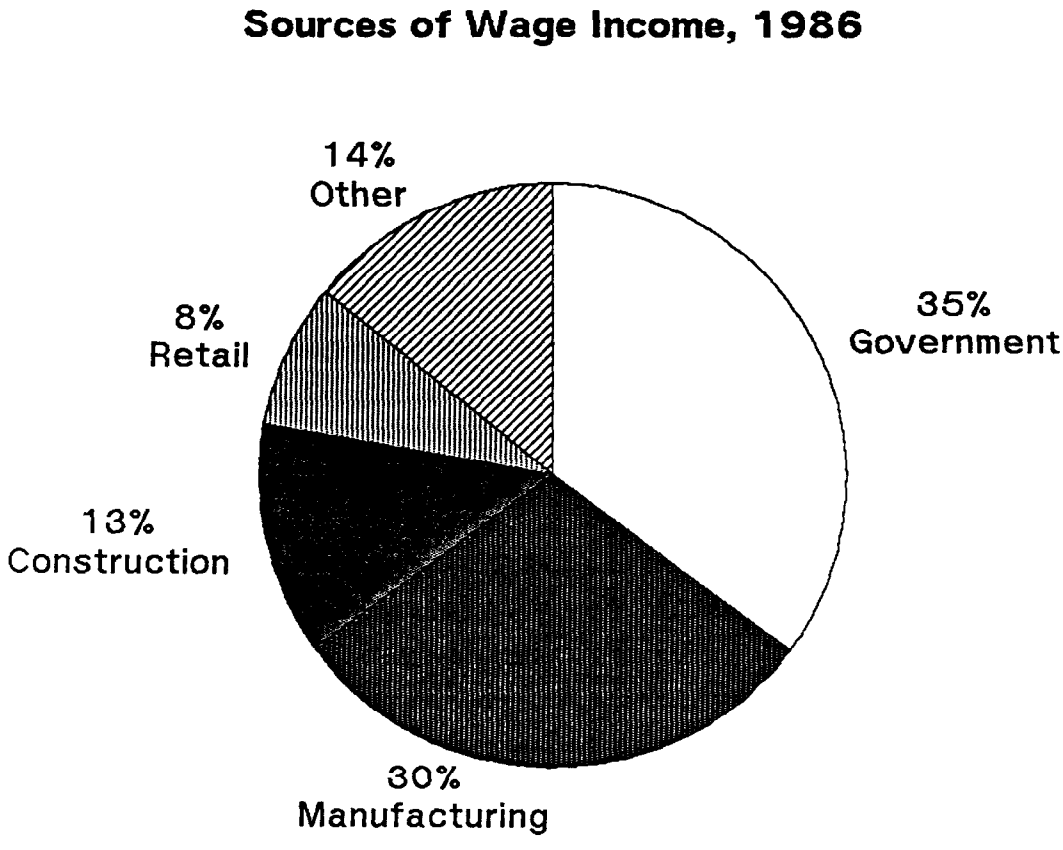
FISH PROCESSING

Petersburg is the largest seafood producer in Southeast Alaska and is regularly ranked among the top 20 U.S. ports in volume and value of total landings. In 1986, the town was tenth in value ($38.1 million) and 11th in quantity (85.2 million pounds) of landings among U.S. ports, and second in value and third in volume in the state.[20] These figures represent the activity of the local fleet as well as other boats. Fishermen land fish directly to processors located in town or deliver to tenders which unload their fish in Petersburg. A small number of fish buyers who fly out their unprocessed fish also operate in the area. An estimated 950 vessels used the port of Petersburg in the 1986-87 season. This vessel figure included 540 Petersburg vessels and an additional 75 boats which were home ported in neighboring communities.

There are four major processors in town, two of which are owned by companies ranked second and third among seafood processors in the Puget Sound area in 1986. The largest is Petersburg

[20] Among Alaskan ports, Petersburg is behind Kodiak and Unalaska/Dutch Harbor in quantity and behind Kodiak in value, but is well ahead of Ketchikan and Sitka in both.

Fisheries, Inc. (PFI), a division of Icicle Seafoods, which grew out of a purchase of the PAF cannery by local fishermen in 1965. Chatham Straits Seafoods is owned by Ocean Beauty Seafood, a subsidiary of Sealaska Corporation. Nelbro Packing Company and Alaska Glacier Seafoods are smaller operations which are locally owned; Alaska Glacier has been packing shrimp in Petersburg since 1916. In addition, a few very small, specialty processing firms have been started in recent years by local residents.



Total wage earnings in Petersburg were $ 37,525,146 in 1986.

Source: Alaska Department of Labor.

Figure 4. Sources of Wage Income in Petersburg, 1986.

Employment in seafood processing is intermittent and seasonal with wide fluctuations in total employment throughout the year. During the peak summer months, processing employment approaches 50 percent of all available employment in town. Employment levels in the manufacturing sector portray the employment patterns in fish processing, although a small portion of this employment sector is comprised of loggers. Large increases begin in March, with the sharpest rise occurring in June. In 1986, for the months of June through most of September, fish processing employment was substantially larger than all other sectors. From July through September, employment averaged 798 positions; and in August, nearly half (991, or 48 percent) of all wage employment positions in Petersburg were in the seafood processing industry. The next highest sector was government, with 396 positions in August. On the other hand, the lowest seafood processing employment levels occur in the first three months of the year, January to March: there was an average monthly employment of 178 positions in the manufacturing sector during this period of 1986.

The seasonality of fish processing work, and the fishing activity on which it is based, is a major factor in the annual employment pattern in Petersburg. Local residents are often active in more than one fishery, or may work both as a fisherman and as a processing employee at different times of the year.

Although the number of positions in fish processing can be high during certain months, the level of pay is often low compared to other sectors. Also, this sector has substantial levels of out of town employees. Starting at the end of March with the herring roe fisheries, the canneries need more help than is available locally. During the peak summer months, cannery bunk houses are occupied and Tent City, a city-operated camping facility with a capacity of 120 campsites, is also full. The local job placement official placed 60 percent of his job seekers in the fishing industry, out of 1050 persons who were placed in jobs in 1987. This figure includes workers from out-of-town.

In the summer quarter of 1986 (July through September), the total wages reported for the manufacturing sector were $5,661,299, 43 percent of the total for the community. Although this industry brings in a large work force which spends some of the earnings in town, a portion of these wages are not expended in town but are taken out of the community when the workers leave at the end of the season.

GOVERNMENT

The 1970's brought major expansion to one employment sector in the community: government. The USFS located the regional office for the Stikine Area of the Tongass National Forest in town during this period. The city government also expanded substantially in this decade with the influx of state oil revenues. This growth trend continued in the 1980's, especially in local government, with the continuation of capital spending and other revenues from the state. By the mid-1980's, government at the federal, state and local levels became the largest regular employer in town. In 1986, there were 434 positions in government agencies in an average month. The government sector represents primarily

regular, annual employment, in contrast to the seasonal fishing industry.

Local government is the largest component of this employment sector, accounting for half of the average monthly government employment in 1986. In that year, 219 regular wage positions were reported for local government. The school district is the largest segment of this employment, followed by the City of Petersburg and the hospital. The growth in local government was fueled by increases in state revenue sharing, which funded expansion of the school system and construction of the local hospital and senior citizen's residence. Another factor has been the expansion in the school-age population resulting from the immigration of USFS families to town which started in the late 1970's.

The federal and state governments also expanded during the 1970's. The U.S. Coast Guard opened a local office and stationed two ships in Petersburg. The largest increase occurred in the USFS, when the Tongass National Forest was divided into management areas and the headquarters for the local unit was located in Petersburg. In addition to the new Supervisor's Office, staff increased in the District Office. The State of Alaska added staff to the Department of Fish and Game and other agencies during the same period. State and federal government accounted for an average of 102 and 113 positions, respectively, during 1986.

The contribution of the government sector to the local economy is substantial, accounting for 35 percent of the wage income in the community in 1986 (Figure 4). Government is the largest source of wage income in town, exceeding the manufacturing sector by nearly $2 million. Since the government sector has been one of the most stable segments of local employment, it represents a major factor in the continued economic well-being of the community. Recent budget cuts at state and federal levels have slightly reduced the level of government employment in 1987, and it is possible that this trend may continue. In early 1988, the USFS announced that it is considering phasing out the Supervisor's Office. This action would reduce the government sector by an estimated 30 positions over a period of two to three years.

OTHER EMPLOYMENT SECTORS

The construction sector was the third largest source of wages in 1986. There was more construction activity during 1986 than in 1987, and employment and wage levels reflect this difference. The construction was primarily government-related capital projects (hospital and roads), which declined after the projects were completed and budgeted funds were expended. Retail trade is the fourth largest area of wage employment, following government, manufacturing, and construction sectors. Compared to construction employment, which is very seasonal, retail trade shows minor fluctuations in the course of the year, with slightly higher levels in summer and the lowest levels after Christmas. The average number of monthly positions in this sector during 1986 was 218. The overall wage payments for retail trade remained stable into early 1987. Transportation, communication, services, and fire protection were also stable sectors of the economy in terms of wage levels in 1986.

INCOME

The total wage income earned in Petersburg during 1986 was $37,525,146, of which over one-third was derived from employment in government (see Figure 4). Manufacturing, which is primarily fish processing employment, is also a large component, followed by construction, retail trade, and other sectors. As mentioned above, construction has declined further in 1987, compared to 1985 and 1986 levels. The "Other" category includes transportation, communications, and public utilities; wholesale trade; fire; services; and miscellaneous.

The Petersburg economy resembles an urban economy in the proportion of wage income which is derived from government sources. In a comparison of employment in urban and rural regions, it has been reported that government employment from all sources (local, state, and federal) is 33 percent of the total wage income in urban areas, which is the same proportion as in Petersburg.[21] This contrasts with employment in rural regions:

> In the village economy, local, state, and federal government combined account for 62 per cent of all earned income. In the urban Alaskan economy, all government accounts for only 33 per cent of earned income. Local government (which includes schools) is the overpowering element in the rural economy. It accounts for 47 per cent of all payroll...
> (Department of Community and Regional Affairs 1987:3)

This finding is based on a comparison of Alaska State House election districts in the Juneau, Kenai, Anchorage, Mat-Su, and Fairbanks areas, with the three large northern and western Alaska districts. In small, remote communities, the economic dependence on sustained levels of government services is a serious issue in periods of economic downturn such as the state of Alaska is experiencing at present, when aid to local government has been cut at a rate three times as high as the rate for the operating budget. The economies in more developed regions of the state are more insulated from these forces because they receive less of this type of aid, and because government, particularly local government, is a smaller component of the total economy.

The Petersburg economy has an advantage in having a commercial fishing and fish processing sector, which is a basic industry producing something for export. When commercial fishing is computed into the total earned income from all sources, the proportion of income derived from government sources is less than 33 percent in Petersburg. Commercial fishing and manufacturing (fish processing) employment accounts for 40-45 percent of the total earned income in the community. In 1985, the total income generated in Petersburg was about $50,867,833, or $16,400. in per capita income.

The sustained vitality of the local economy is indicated by the rising levels of sales tax revenues from local sources collected by the City. Local revenues in FY1987 were higher than in 1986, and it was reported that the revenues have continued to display slight increases in the last six months of 1987. This

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[21] In making this comparison, we have used the same time period (FY1986) as in the state study.

indicator suggests the local economy has maintained a small rate of growth, compared to a severe downturn in other areas of the state throughout 1987. The tax revenues have increased steadily over the past decade (see Table 8, below).

Table 8. City of Petersburg Sales Tax Revenue from Local Sources, FY75-FY87.

For Year Ending	Amount Received
6-30-75	$ 490,732.
6-30-76	$ 529,735.
6-30-77	$ 618,592.
6-30-78	$ 613,082
6-30-79	$ 704,967.
6-30-80	$ 925,820.
6-30-81	$ 873,035.
6-30-82	$ 972,611.
6-30-83	$ 1,170,855.
6-30-84	$ 1,168,058.
6-30-85	$ 1,237,475.
6-30-86	$ 1,250,491.
6-30-87	$ 1,264,420.

Source: City of Petersburg

In 1979, the average household income in Petersburg was $31,762 (U.S. Census). The breakdown by income amount shows that there was substantial differentiation among households by income in the community. Fifty percent of the households had an income of less than $24,966, and 16 percent were less than $10,000, while 14 percent reported $50,000 and above. Petersburg ranked 15th in the state in 1983 per capita income, which was estimated to be $13,281 (Alaska Department of Labor 1986:9). This compares with $18,018 for the state as a whole. In 1985, the average taxable income (per income return) in Petersburg was $23,779. This compares with Anchorage at $25,855, Juneau at $25,871, and Wrangell at $20,277. In that year, Petersburg ranked 32nd among communities in the state in average taxable income (Alaska Department of Revenue 1988).

A comprehensive geographic cost of living study completed in 1985 showed that the Petersburg-Wrangell district was the second lowest region in the state for overall cost of living (The McDowell Group, et al. 1985:39). Using Anchorage as a base, the expenditure for a full range of household services and purchases was .98 of Anchorage costs. Seattle was .86 of the Anchorage base, and Juneau was 1.03.

Using the number of households receiving some form of public assistance as an indicator of socioeconomic well-being, there has been an important increase in socioeconomic differentiation in recent years. In 1987, payments of public assistance, including welfare and food stamps, were made to an average of 63 households per month, in the amount of $321.[22] This represents an increase of more than 50 percent in eight years; forty households were reported as receiving public assistance in 1979 (U.S. Census). For comparison, the community population increased by about 16 percent over the same period.

CHARACTERISTICS OF THE SAMPLE: HOUSEHOLD EMPLOYMENT AND INCOME

During the survey, respondents reported information on employment by household members and household income levels. There were 126 occupations (jobs) reported for all residents of the sample households during the study year, or an average of 2.6 positions per household. These jobs were not distributed equally to all households in the sample, however. Of the 126 jobs reported, 35 were identified as second, third, fourth, or fifth jobs held by an individual. At least 70, or 55.6 percent, of the jobs held by members of the sample households were less than a year in duration. These results indicate that a significant proportion of the employed householders in the sample held more than one job during the year, and the multiple jobs tended to be temporary and seasonal positions (i.e., probably fishing and fish processing employment).

Of the 49 households included in the analysis, 46 reported household income amounts for the year 1986 (Figure 5). The average adjusted household income for the sample was in the range $35-39,000. Adjusted household income is calculated from the gross annual household income for 1986, less expenses from commercial fishing and other business expenses. More than one-fifth (21.7 percent) of households reported an adjusted income under $15,000, while about an equal proportion (23.8 percent) were $50,000 or higher. The distribution of annual household income for the sample households is provided in Figure 5, on the following page.

[22] These data were compiled for the twelve-month period ending September, 1987, using information from the Alaska Department of Health and Social Services.

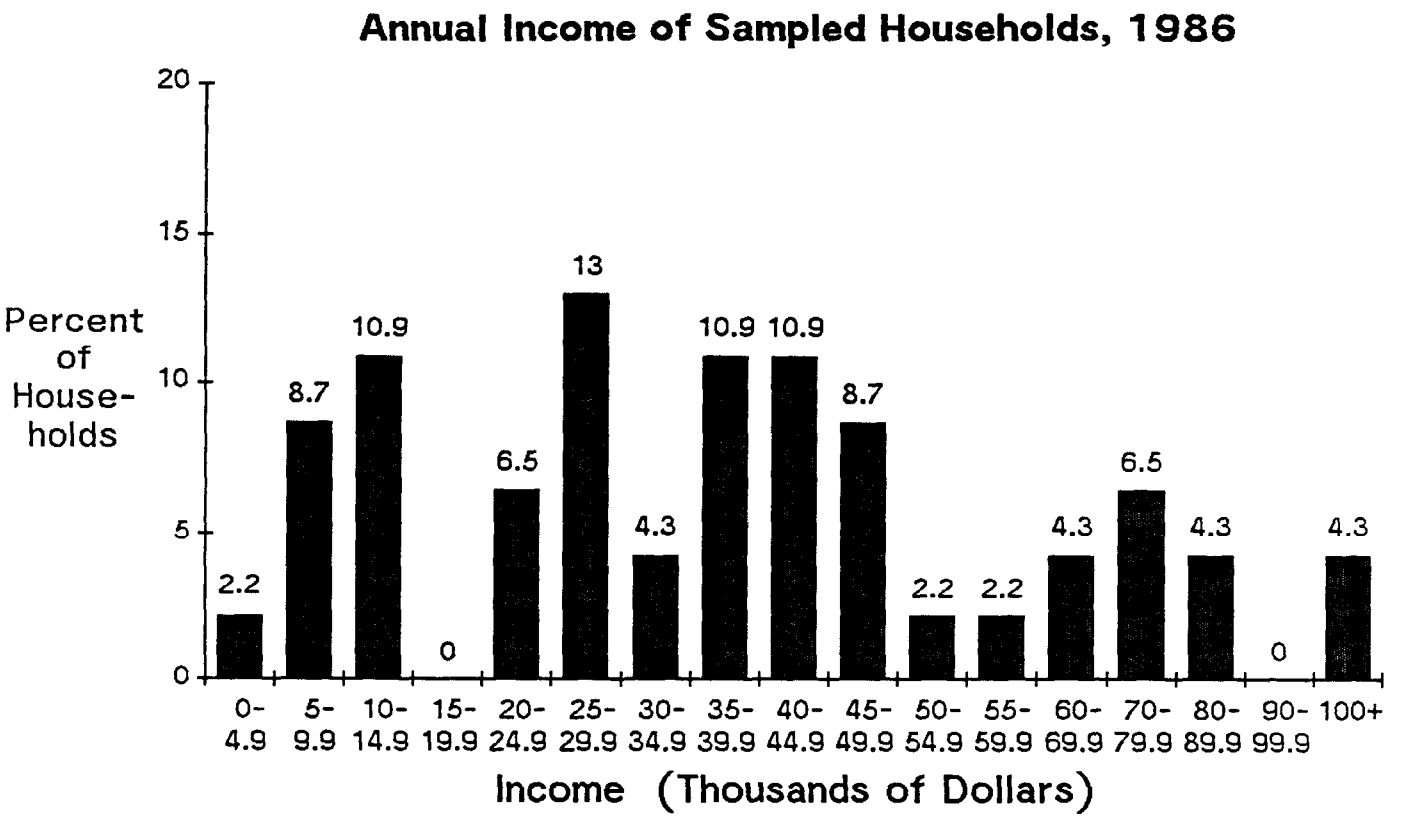


Figure 5. Adjusted Gross Income of Sampled Households, 1986.

CHAPTER 7
WILDLIFE RESOURCE USE AND HARVEST

This chapter presents information about the harvest, use, and distribution levels for all wildlife resources used in Petersburg. The discussion will highlight the resources with the highest frequencies of use, but details for every resource are provided in tables and figures. The data summarized here describe how often and in what quantities wildlife resources were harvested for home consumption, or shared with other households, in the course of one year from November, 1986, to October, 1987. As detailed in the discussion of methodology (Chapter 2), this information derives from a stratified random sample of 49 households comprising a weighted sample size of 53.2 households.

HOUSEHOLD USE AND HARVEST PARTICIPATION RATES

At least one wildlife resource was used for home consumption in 96.8 percent of the sampled households. These households included those with active harvesters and others which received wildlife resources from other harvesting households. Participation in harvest activities was nearly as high: 93.7 percent of households were successful in harvesting at least one resource during the study period. The levels of sharing and distribution of resources were also substantial: 92.6 percent of the sampled households received one or more species during the year and 83.2 percent gave away at least one.

Salmon was the most widely used resource category among Petersburg households; every household which utilized a wildlife resource consumed at least one species of salmon, 96.8 percent (see Figure 6). Salmon was also the most frequently harvested: 74.7 percent of sampled households successfully caught some salmon. Marine fish, primarily halibut, was the next most heavily utilized resource category: 84.2 percent of households used some marine fish, and 69.5 percent were harvesters. Invertebrates (predominately crab, shrimp, and clams) was used in 80 percent of households and harvested in 55.8 percent. Land mammals were consumed in 75.8 percent of sampled households, while they were harvested in 42.1 percent. Deer was the principal land mammal in most households, but moose was important for some. Plants, including berries and firewood, were used by 77.9 percent, and harvested by 69.5 percent, of the households. Other resource categories used and harvested were trout, birds, and furbearers.

HARVEST LEVELS AND COMPOSITION

The mean household harvest of all wild resources in the sample was 674.6 pounds of edible food (see Table 9). The per capita harvest level was 202.8 pounds, and the total harvest for the entire community was calculated to be 809,641 pounds. These calculations are based on conversions of harvest levels for different species into pounds of edible food; conversion factors are provided in Appendix B.

Land mammals comprised the largest component of the annual harvest in 1986-87, accounting for 30.8 percent of the total harvest (see Figure 7). Deer was the major component of this category, representing 21.5 percent of the total harvest in the year. The next most important resource categories were salmon (22.2 percent of the total harvest) and marine fish (20.6 percent). Halibut is the principal element of the marine fish category, accounting for 15.9 percent of the total harvest. Invertebrates, including nearly equal components of crab, shrimp, and clams, comprised 17.0 percent of the annual

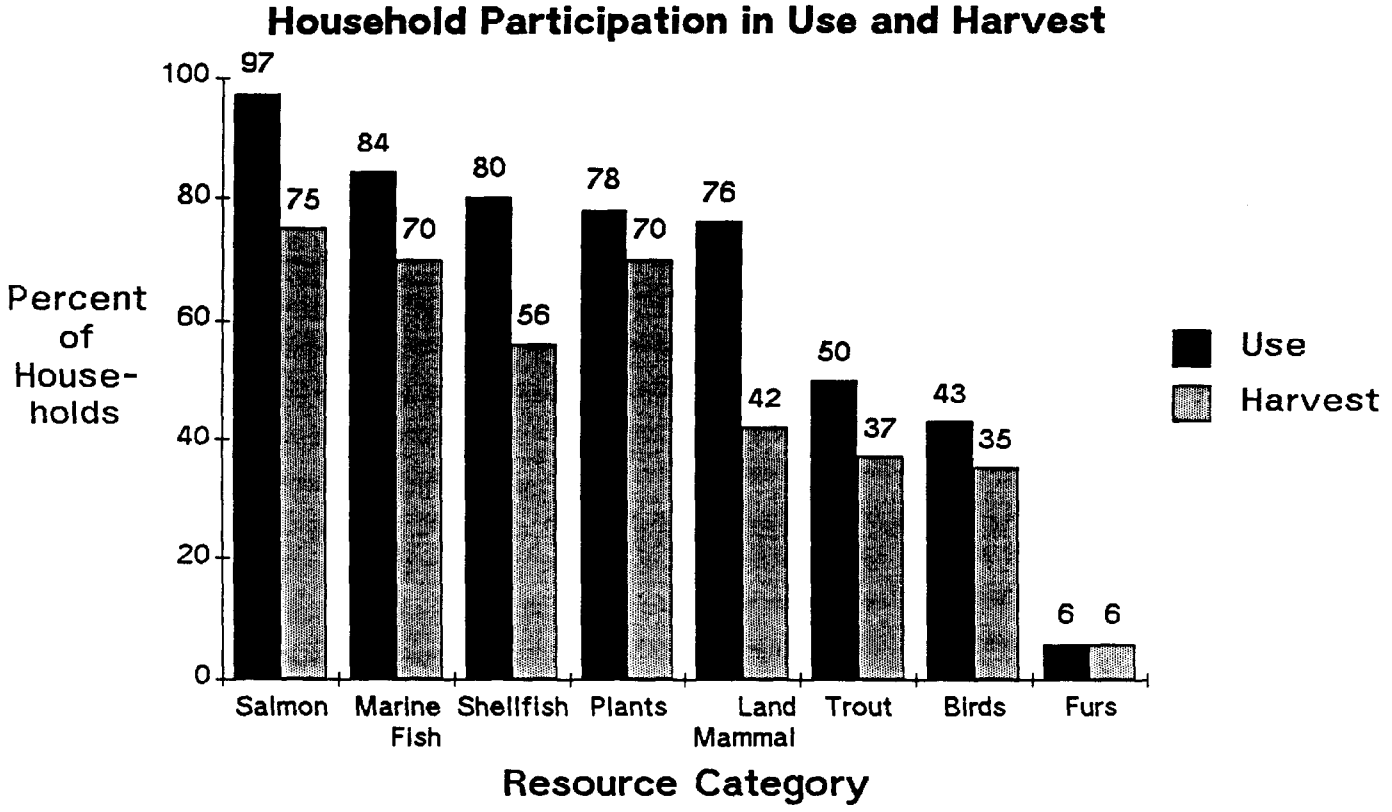


Figure 6. Household Participation in Use and Harvest by Resource Category, 1986-87.

harvest. Birds and plants constituted the remainder of the community harvest. Furbearers are not included in the tabulations of edible food because the uses of furbearers in Petersburg are limited to producing skins for sale, and to a lesser extent for bait meat. There was no reported harvest of seals or other sea mammals in the sampled households during the study year. However, as noted in previous

Table 9. Petersburg Harvest Composition by Resource Category, 1986-87.

	Mean Household Harvest, Pounds	Mean Per Capita Harvest, Pounds	Percent of Total Harvest
Land Mammals	207.5	62.4	30.8%
Salmon	150.7	45.1	22.2%
Marine Fish	139.6	41.9	20.6%
Trout	20.4	6.1	3.0%
Shellfish	114.6	34.4	17.0%
Birds	18.3	5.5	2.7%
Plants	24.2	7.3	3.7%
Total	674.6	202.8	100.0%

Note: Columns do not add up to totals given due to rounding factors.

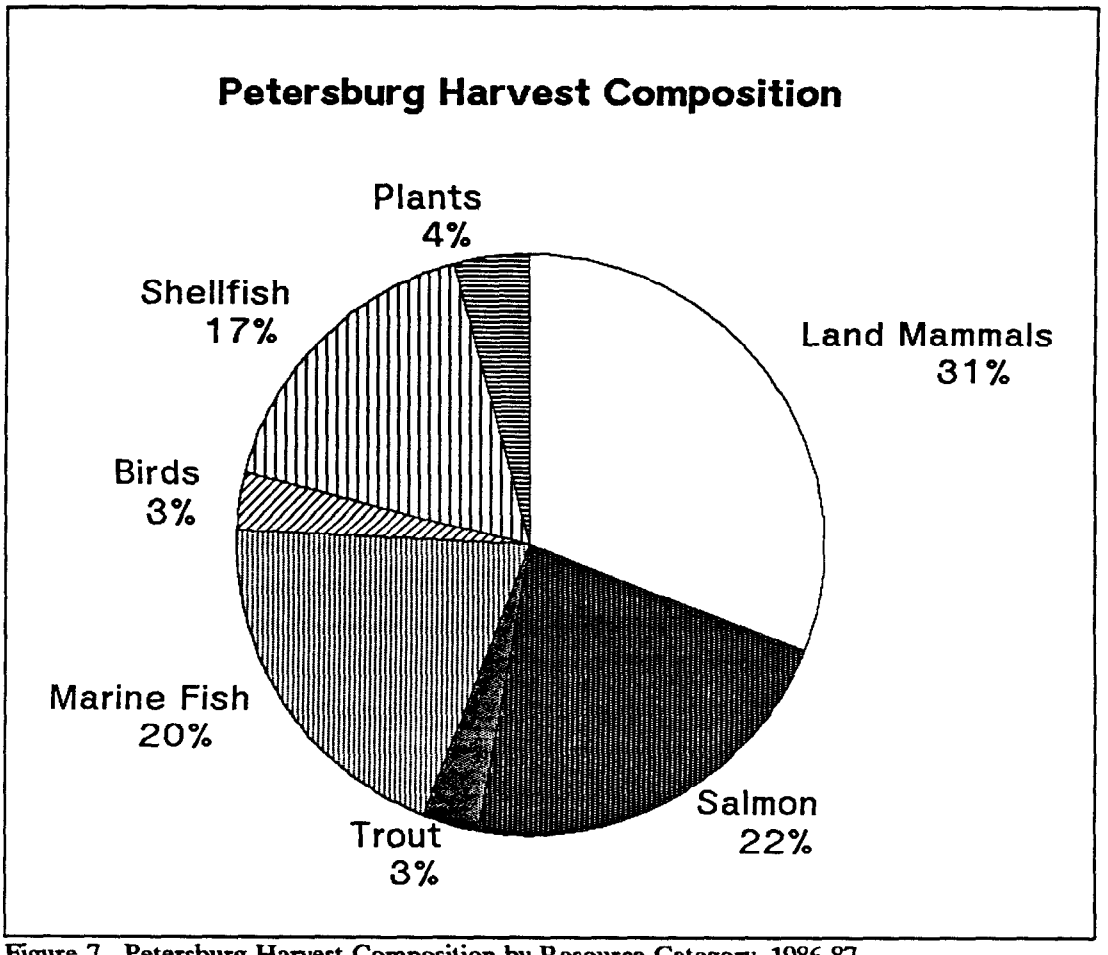


Figure 7. Petersburg Harvest Composition by Resource Category, 1986-87.

chapters, there historically were regular harvests of seals, and a few Petersburg households continue to use and harvest seals each year.

For individual species, the highest harvest levels were reported for deer (44 pounds average annual per capita harvest, edible weight), halibut (32 pounds average annual per capita harvest), king salmon (25 pounds average per capita harvest), moose (17 pounds), coho salmon (14 pounds), shrimp (10 pounds), clams (9 pounds), dungeness crab (7 pounds), and trout (6 pounds). Nearly all of the other resources were harvested at less than three pounds per capita (see Table 10).

As described above, there was a high rate of household participation in the annual harvest activity (93.7 percent of all households in the sample), which confirms the impression gained from observations during the conduct of the study. The harvest level for each household varies substantially, however, as measured by the number of pounds produced in each household, with a larger proportion of households producing significant levels (see Figure 8). In the sample, only 6.3 percent of the households had no harvests. The four highest households produced 1,474, 1,877, 2,013, and 3,717 pounds of edible wild resources.

Compared to other communities, a smaller proportion of Petersburg households harvested at low levels, while more than two-thirds of the sampled households (68.3 percent) produced over 400 pounds of edible food in the course of the year. This pattern distinguishes Petersburg from some other rural Alaskan communities. For example, in a study of several small, road-connected communities in the middle Susitna region of the state, it was reported that only 12.7 percent of the Susitna households produced more than 400 pounds of wild food (Fall and Foster 1987:48).[23] More than half of the Susitna households (59.7 percent) harvested 100 pounds or less, compared to less than one-quarter of Petersburg households (23.2 percent).

Another measure of the range of household productivity is provided by cumulative household harvest levels (see Figure 9). Cumulative harvests show the relative productivity of households by relating the cumulative percentage of food harvested for all households to the cumulative percent of all households. In Petersburg, 30 percent of the households produced 57 percent of all the edible harvest in the study year. This finding indicates that, compared to other communities, productive households are more numerous in Petersburg. In Stevens Village, for example, 30 percent of the households produced 80 percent of the subsistence food harvest, and Dillingham showed very similar patterns. In this respect, Petersburg resembles Tyonek, in which 30 percent of households produced 63 percent of the harvest. The Petersburg curve is flatter, with more households active in the harvest, fewer households participating at the lowest levels, and maximum harvest levels less extreme, than in these

[23] In these Susitna communities, total harvest levels are about one-third of those in Petersburg. It is interesting to note that, even if we increase the Susitna harvest levels to equalize total harvests with Petersburg, it would still be the case that almost two-thirds of the middle Susitna households fall below 400 pounds.

Table 10. Levels of Harvest, Use, and Distribution by Resource in Petersburg, 1986-87.

Resource	Percent of Households (N=49)				Pounds	
	Harvest	Use	Give Away	Receive	Household Harvest	Per Capita Harvest
King Salmon	67.4	86.3	44.2	50.5	83.9	25.2
Sockeye Salmon	10.5	33.7	5.3	25.3	6.2	1.9
Coho Salmon	51.6	69.5	28.4	27.4	47.2	14.2
Pink Salmon	15.8	27.4	7.4	12.6	7.0	2.1
Chum Salmon	13.7	15.8	11.6	5.3	5.9	1.8
Cod	10.5	26.3	6.3	17.9	6.6	2.0
Halibut	63.2	81.1	47.4	35.8	106.3	32.0
Flounder, Sole	6.3	6.3	0.0	0.0	0.8	0.2
Rock Fish	22.1	29.5	8.4	7.4	5.5	1.6
Herring	30.5	33.7	8.4	4.2	14.4	4.3
Eulachon	1.1	4.2	1.1	3.2	0.1	0.0
Trout	36.8	49.5	13.7	20.0	20.4	6.1
Other Fish	10.5	11.6	3.2	4.2	4.1	1.2
King Crab	11.6	50.5	7.4	44.2	10.2	3.1
Dungeness Crab	26.3	68.4	18.9	53.7	23.3	7.0
Tanner Crab	11.6	27.4	10.5	24.2	3.5	1.1
Shrimp	24.2	51.6	18.9	38.9	33.2	10.0
Sea Urchins	1.1	1.1	0.0	0.0	0.1	0.0
Abalone	7.4	15.8	7.4	8.4	1.9	0.6
Octopus	9.5	13.7	6.3	5.3	5.9	1.8
Scallops	6.3	6.3	3.2	0.0	0.4	0.1
Gumboots	6.3	17.9	3.2	11.6	6.6	2.0
Sea Cucumber	0.0	3.2	0.0	3.2	0.0	0.0
Clams, Cockles	40.0	45.3	16.8	13.7	29.4	8.8
Other Invertebrates	0.0	1.1	0.0	1.1	0.0	0.0
Herring Eggs	4.2	14.7	0.0	13.7	0.7	0.2
Beach Greens	20.0	23.2	3.2	4.2	0.7	0.2
Seaweed	9.5	9.5	6.3	3.2	14.0	4.2
Berries	55.8	58.9	30.5	17.9	9.4	2.8
Firewood	56.8	62.1	13.7	7.4	NA	NA
Ducks	29.5	34.7	5.3	9.5	8.5	2.6
Seabirds	2.1	2.1	0.0	0.0	0.2	0.1
Geese	24.2	31.6	8.4	7.4	8.6	2.6
Seabird Eggs	0.0	0.0	0.0	0.0	0.0	0.0
Grouse, Ptarmigan	9.5	9.5	0.0	0.0	1.0	0.3
Deer	38.9	69.5	29.5	33.7	144.8	43.5
Moose	8.4	27.4	7.4	22.1	57.9	17.4
Mountain Goat	0.0	1.1	0.0	1.1	0.0	0.0
Black Bear	3.2	5.3	3.2	2.1	4.7	1.4
Furbearers	6.3	6.3	0.0	0.0	NA	NA
Harbor Seal	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	93.7	96.8	83.2	92.6	674.6	202.8

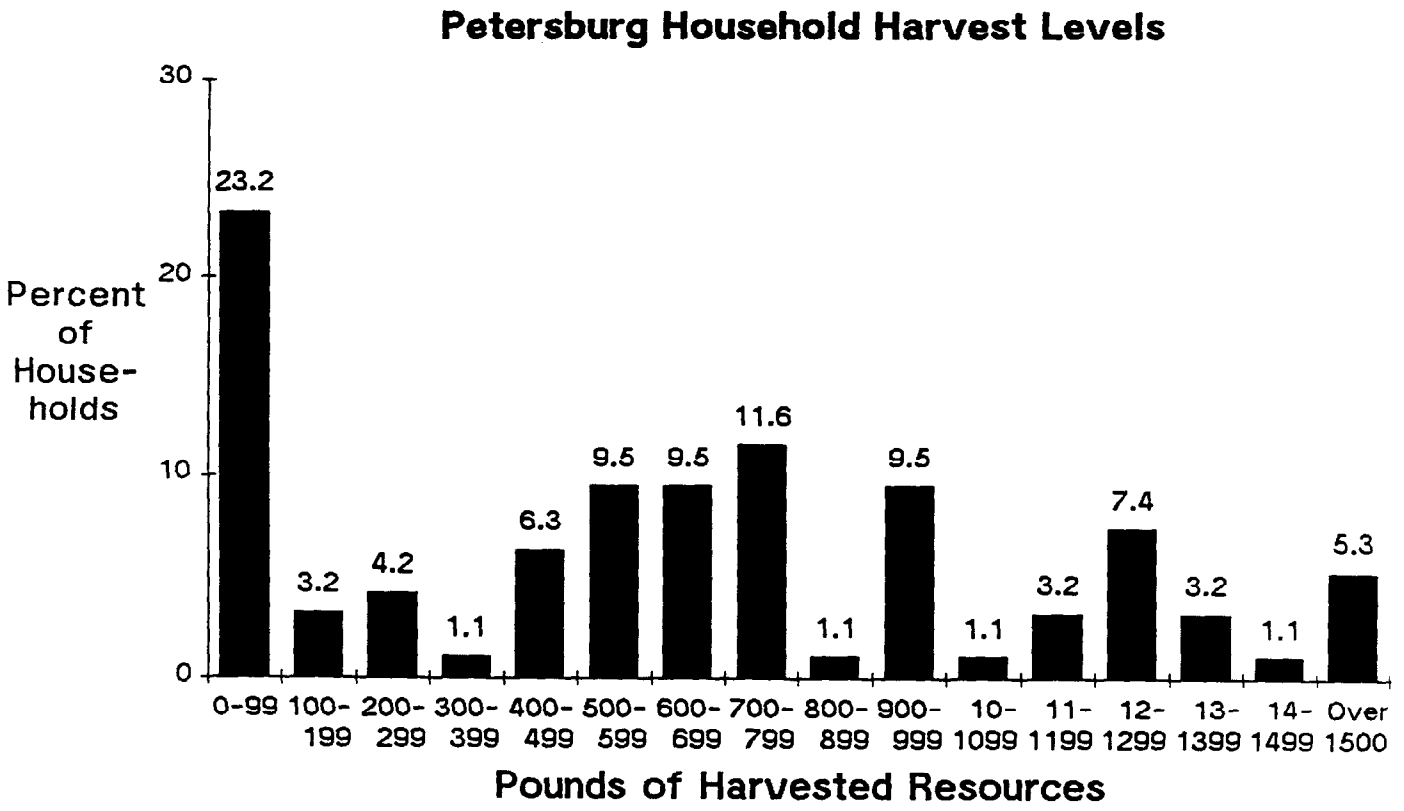


Figure 8. Petersburg Sample Household Harvest Levels, 1986-87.

other communities. The degree of household specialization in subsistence production is not as apparent in Petersburg as in some other rural Alaskan communities.[24]

Because commercial fishing activity is a major component in the Petersburg economy, it was expected that a substantial proportion of the harvested wild foods would be derived from resources removed from the commercial catch for home use. This is a common practice in other coastal fishing communities in Alaska with developed commercial fisheries and restrictive regulations pertaining to

[24] Wolfe (1987) has compared several communities using cumulative household harvests, and reported that, as a general rule, "30 percent of the households produces about 70 percent or more of the community's harvest." As this result was also shown in three communities in Southeast, it was integrated into the sampling procedure for this study, as described in Chapter 2. The Petersburg results indicate that our basic assumption for sampling purposes, that a smaller proportion of households is responsible for most of the harvest, was correct, although the proportions turned out to be slightly different than the general rule.

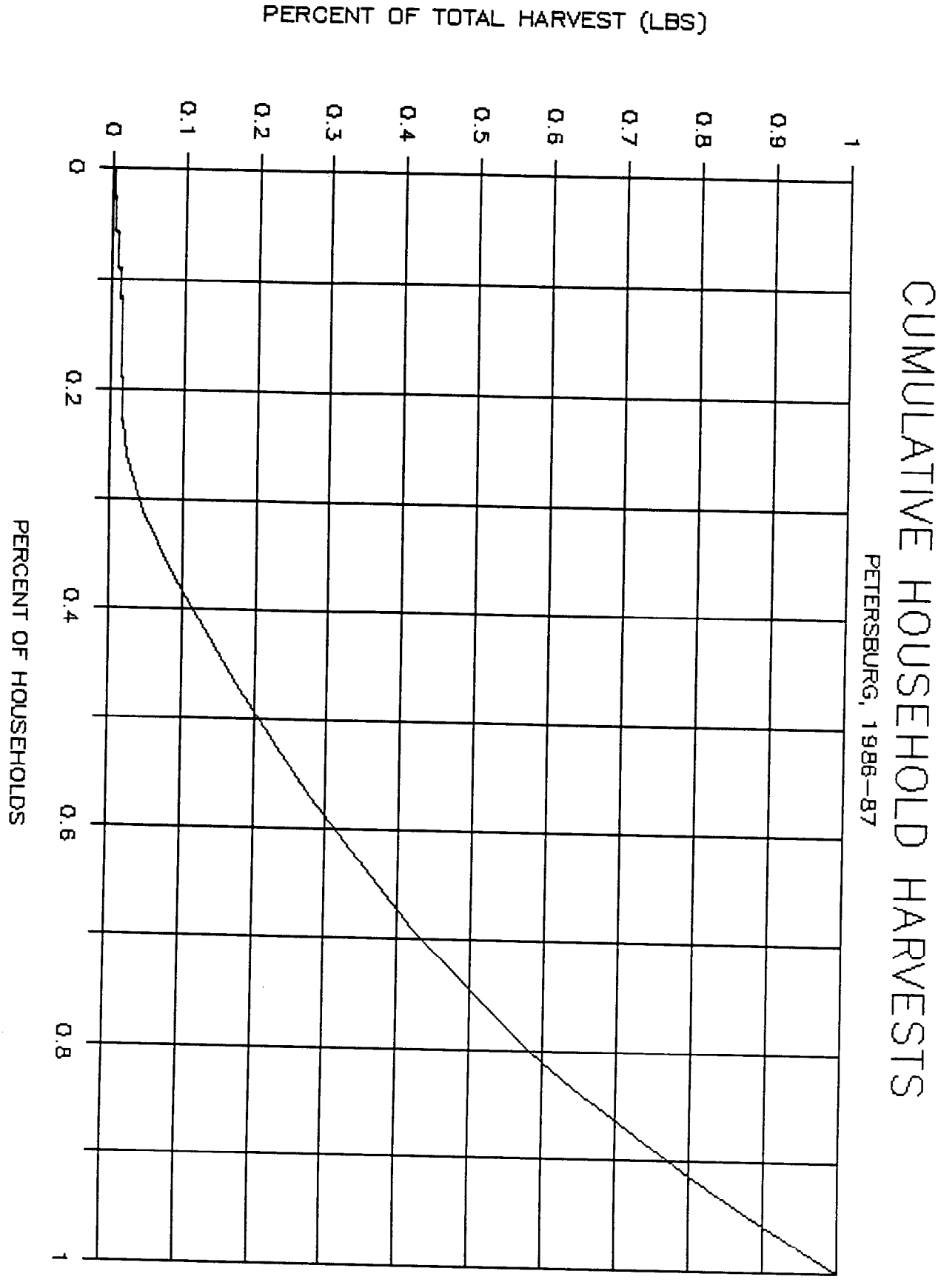

PERCENT OF TOTAL HARVEST (LBS)
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
0.2
0.4
0.6
0.8
1
PERCENT OF HOUSEHOLDS
CUMULATIVE HOUSEHOLD HARVESTS
PETERSBURG, 1986-87

Table 11. Sources of Total Household Harvest in Petersburg, 1986-87.

	Removed from Commercial Harvests		Non-Commercial Harvests		Total	
	Pounds	Percent	Pounds	Percent	Pounds	Percent
Salmon	1107	13.9%	6881	86.1%	7988	100.0%
Halibut	538	9.4%	5181	90.6%	5719	100.0%
Other Fish	223	8.0%	2569	92.0%	2792	100.0%
Crab	370	18.8%	1601	81.2%	1971	100.0%
Shrimp	1501	84.9%	2661	5.1%	1767	100.0%
Other Shellfish	56	2.4%	2301	97.6%	2357	100.0%
Deer			7706	100.0%	7706	100.0%
Moose			3080	100.0%	3080	100.0%
Birds			974	100.0%	974	100.0%
Other Game			252	100.0%	252	100.0%
Plants	___		1285	100.0%	1285	100.0%
Total	3795	10.6%	32096	89.4%	35891	100.0%

subsistence fisheries (for example, see George and Bosworth 1988; Fall and Morris 1987). However, in Petersburg the levels of home-use harvest taken with commercial gear was not high: only 11 percent of all harvest (by weight) was taken from the commercial catch (see Table 11). The one exception was shrimp, where 85 percent of the that used in the home was removed from commercial catches. As described below, this finding is primarily the result of one individual's use of shrimp. In terms of the total harvest of any resource, crab was second after shrimp in the magnitude of the amount removed from the commercial catch for home use.

SHARING AND DISTRIBUTION

Wildlife resources were distributed widely among Petersburg households. The proportion of households receiving at least one resource from another household was 92.6 percent of the sample, while 83.2 percent of households gave at least one resource to members of another household.

Shellfish was the most widely distributed resource in the community: 75.8 percent of households received at least one species of invertebrate from another household (see Figure 10). Invertebrates were given away by 43.2 percent of sampled households. Salmon was given away by more households than any other resource: 54.7 of sampled households gave salmon to others during the study year. Salmon was second in terms of receiving: 61.1 percent of the households received some salmon. Land mammals were received in 57.9 percent of households, and given away by 35.8 percent. Marine fish circulated to a significant extent: about the same proportion of households gave away a marine fish (49.5 percent) as

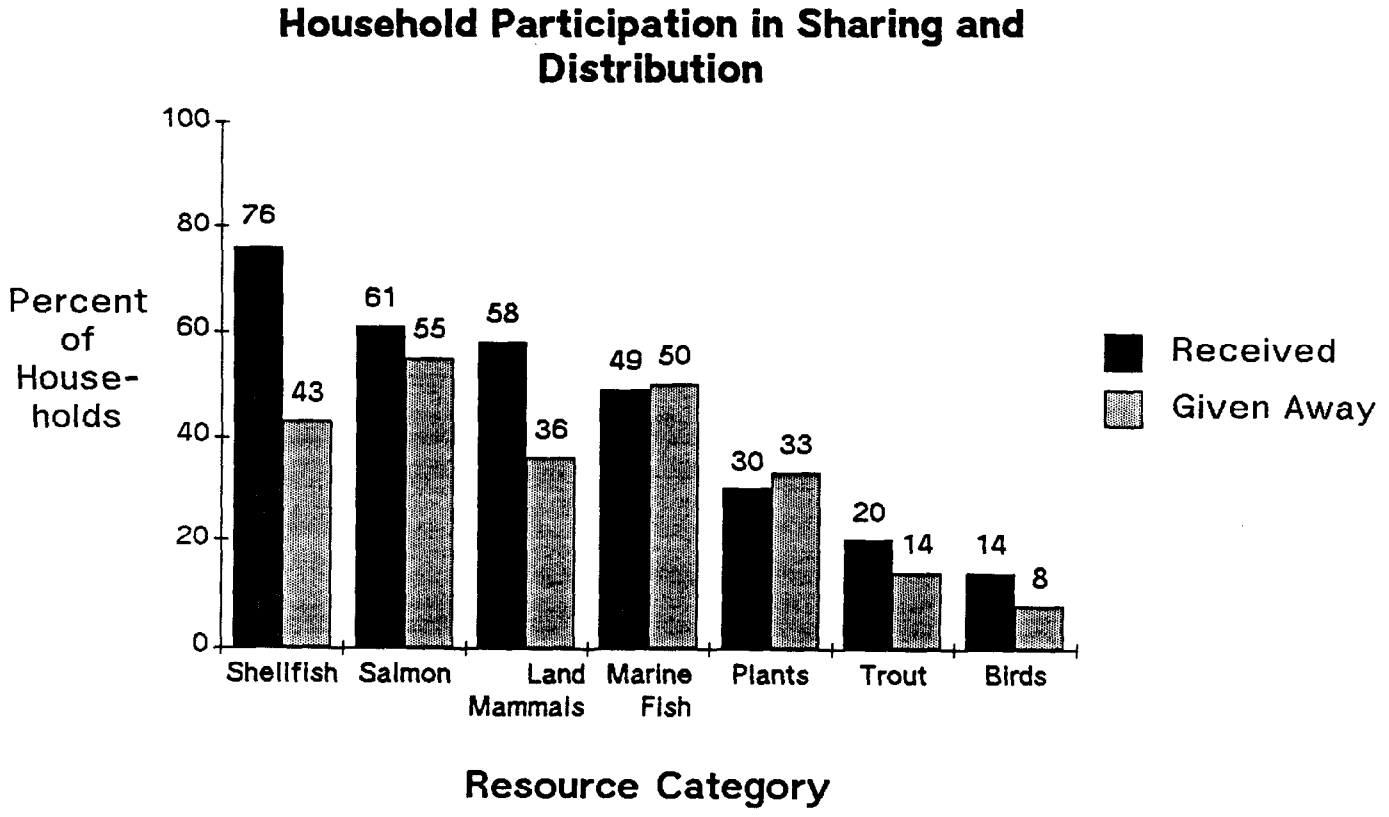


Figure 10. Household Participation in Sharing and Distribution, 1986-87.

received from others (48.8 percent). Plants, trout, and birds were shared by less than one-third of Petersburg households. Furbearers were not shared, probably because their harvest was confined primarily to furs for sale on the market and the meat was not used for home consumption.

HARVEST AND USE PATTERNS BY RESOURCE CATEGORIES

SALMON

As we described above, salmon species were harvested by 74.7 percent, and used by 96.8 percent, of the sampled households. A total salmon harvest of 7,988 pounds was produced by the households in the sample, comprising 22.2 percent of the total harvest for the sample. A mean household harvest of 150.7 pounds per year was produced, or 45.1 pounds per capita, during the study year. Nearly 90 percent of the salmon harvest was king and coho salmon (55.9 and 31.4 percent,

respectively), with sockeye (4.1 percent), pink (4.7 percent), and chum (3.9 percent) making up the remainder (see Table 12). Salmon was used in similar proportions: 57.7 percent of all salmon used was king, with 29.6 percent coho accounting for most of the remainder.

As presented in Table 10, kings were harvested by 67.4 percent of the sampled households and coho were caught by 51.6 percent. Harvest levels for the remaining species are substantially lower, between 10 and 16 percent. Levels of use are similar. Kings had the highest use, in 86.3 percent of the sampled households, followed by coho in 69.5 percent. Although sockeye harvests were infrequent, this species was utilized by one-third of the sampled households, or 33.7 percent. Pink salmon were used by 27.4 percent of households, and chum in 15.8 percent. Thus, although these other species do not appear very important in terms of harvest levels, they are more significant in the sharing and distribution patterns in the community.

Table 12. Total Salmon Harvest and Use Levels by Sampled Petersburg Households, 1986-87.

Salmon Species	Removed from Commercial Catch, Pounds	Removed from Commercial Catch, Percent	Caught with Nets, Pounds	Caught with Nets, Percent	Caught with Rod & Reel, Pounds	Caught with Rod & Reel, Percent	Total Harvest, Pounds	Total Harvest, Percent	Total Used, Pounds	Total Used, Percent
King	496.9	6.2%	25.7	0.3%	3941.3	49.3%	4463.9	55.9%	5543.5	57.7%
Sockeye	28.9	0.4%	0.0	0.0%	301.0	3.8%	329.9	4.1%	481.6	5.0%
Coho	314.8	3.9%	426.9	5.3%	1767.9	22.1%	2509.6	31.4%	2845.9	29.6%
Pink	103.5	1.3%	0.0	0.0%	268.6	3.4%	372.1	4.7%	393.0	4.1%
Chum	163.2	2.0%	10.4	0.1%	138.9	1.7%	312.5	3.9%	336.8	3.5%
Total	1107.3	13.9%	463.0	5.8%	6417.7	80.3%	7988.0	100.0%	9600.8	100.0%

About two-thirds of the Petersburg households (65.3 percent) fished non-commercially for salmon during the study year, which accounted for 86.1 percent of the total catch of salmon by weight (Table 12). The salmon harvest in Petersburg was primarily caught with rod and reel gear: 80.3 percent of all harvested salmon was caught with rod and reel (also see Figure 11). Of the catch with rod and reel, 61.4 percent was king salmon and 27.5 percent was coho. Over half of the sampled households (56.8 percent) caught king salmon, and more than one-third (35.8 percent) harvested coho in this way. Smaller proportions of households caught pink salmon (11.6 percent of households), sockeye (6.3 percent), and chum (4.2 percent) with a fishing rod.

Gill netting was the other method used for non-commercial salmon harvesting. In our sample, 4.2 percent of the households caught fish using this method; and 5.8 percent of the total salmon catch

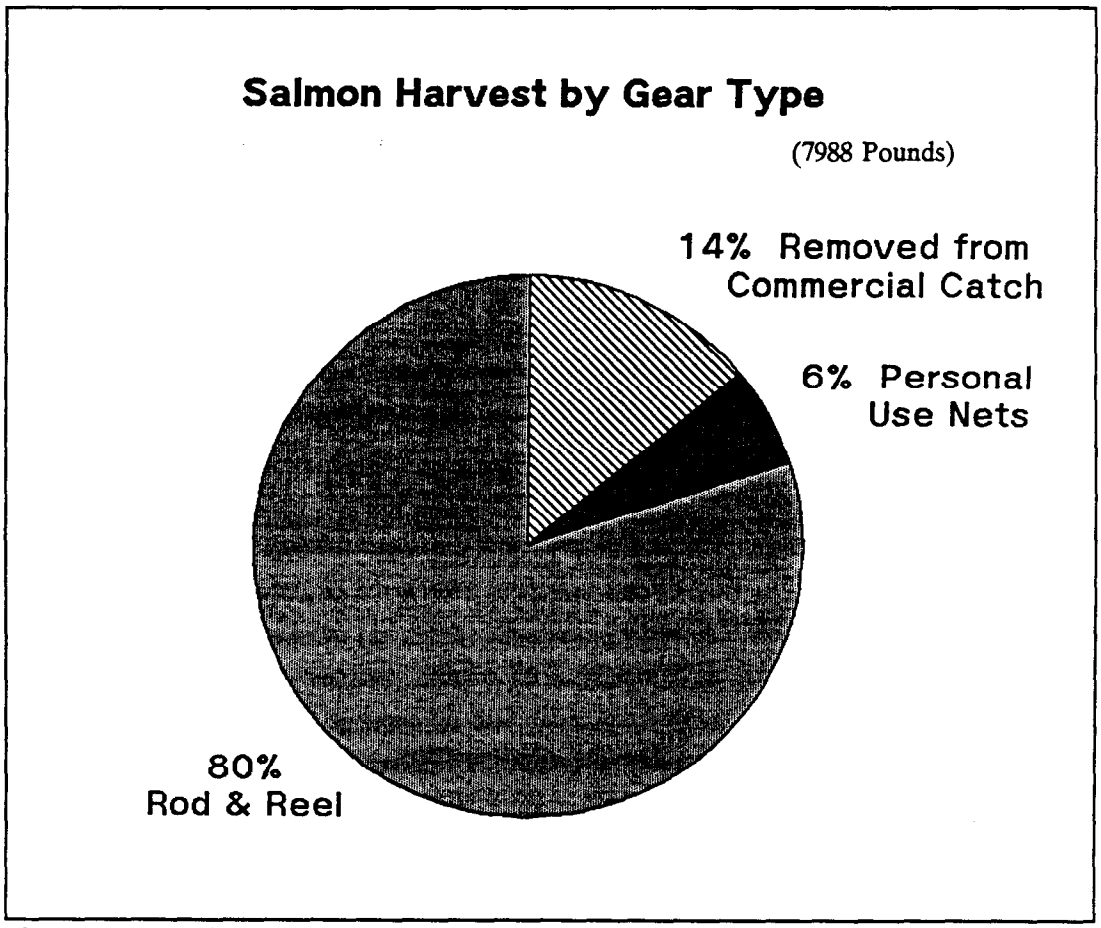


Figure 11. Petersburg Salmon Harvest by Gear Type, 1986-87.

was harvested with non-commercial gill nets. Nearly all of the catch from non-commercial nets (92.2 percent) was coho salmon, with the remainder reported as king and chum salmon. Some Petersburg residents participated in the personal use net fishery in Blind Slough, for excess coho salmon returning to the Crystal Lake Hatchery. This fishery was the only non-commercial coho net fishery open in the Petersburg area, and it is probable that the coho reported in the survey were from this fishery. Since the hatchery also raises king salmon, it is likely that the kings reported caught with personal use nets were late-returning fish into Blind Slough. A permit is not required for this fishery.

Eight subsistence salmon net permits were issued to individuals from Petersburg in 1987. If that year was similar to 1986, only a couple were fished: in 1986, nine permits were issued and only two were used. Subsistence gill net fishing is difficult from Petersburg because the locations of areas open to subsistence fishing lie some distance from town on neighboring islands or the mainland. In 1987, the areas open to subsistence net permits were in Farragut Bay (mainland), Gut Bay (Baranof Island), and the Bay of Pillars (Kuiu Island). Most of the eight permits were for sockeye; subsistence fishing is limited to sockeye, pink, and chum salmon. Fishing for kings and coho with subsistence nets is not

allowed in the Petersburg area.

One quarter of the sample (26.3 percent) included a household member who fished commercially for salmon during the study year. Many of these households, 84 percent, utilized salmon in the home derived from their commercial activity. However, the amount of salmon removed from the commercial catch was only 13.9 percent of the total edible salmon harvest of the entire sample of households, which is not a major portion of the total salmon harvest (see above, Table 12). Forty-five percent of this salmon was king and 28.4 percent was coho. There was also chum, pink, and sockeye taken in this way.

As mentioned above, salmon was given away by more households than any other resource category. By weight, 2,457 pounds of the 7,988 pounds of harvested salmon, or 30.8 percent, was given away by the sampled households (Table 13). Over half of the sample, 54.7 percent of the households, shared at least one species of salmon with another household, while 61.1 percent of households received some salmon. Kings were given away by 44.2 percent of the sampled households, and coho were shared by 28.4 percent (see Table 10). King salmon was given away in the largest quantity, accounting for 54.4 percent of the salmon distributed to other households (Table 13). Coho was the next largest species in quantity, comprising 29.1 percent by weight of the salmon given away, followed by chum, pink, and sockeye. Of the salmon taken from the commercial catch for home utilization, nearly half (48.0 percent) were then given away to other households, while only 28.0 percent of the non-commercial harvest was given away. However, the volume of the non-commercial harvest was substantially larger than that removed from the commercial catch, and more than three-quarters of all salmon given away, 78.4 percent, was derived from the non-commercial catch.

Table 13. Salmon Sharing and Distribution in Petersburg, 1986-87.

Salmon Species	Given Away from Commercial Catch, Pounds	Given Away from Commercial Catch, Percent	Given Away from Non-Commercial Catch, Pounds	Given Away from Non-Commercial Catch, Percent	Total Salmon Given Away, Pounds	Total Salmon Given Away, Percent	Total Salmon Received, Pounds	(N=49) Total Salmon Received, Percent
King	188.5	17.0%	1148.1	16.7%	1336.6	54.4%	1079.6	66.9%
Sockeye	24.1	2.2%	9.6	0.1%	33.7	1.4%	151.7	9.4%
Coho	181.1	16.4%	534.7	7.8%	715.8	29.1%	336.3	20.9%
Pink	2.5	0.2%	118.3	1.7%	120.8	4.9%	20.9	1.3%
Chum	135.4	12.2%	114.6	1.7%	250	10.2%	24.3	1.5%
Total	531.6	48.0%	1925.3	28.0%	2456.9	100.0%	1612.8	100.0%

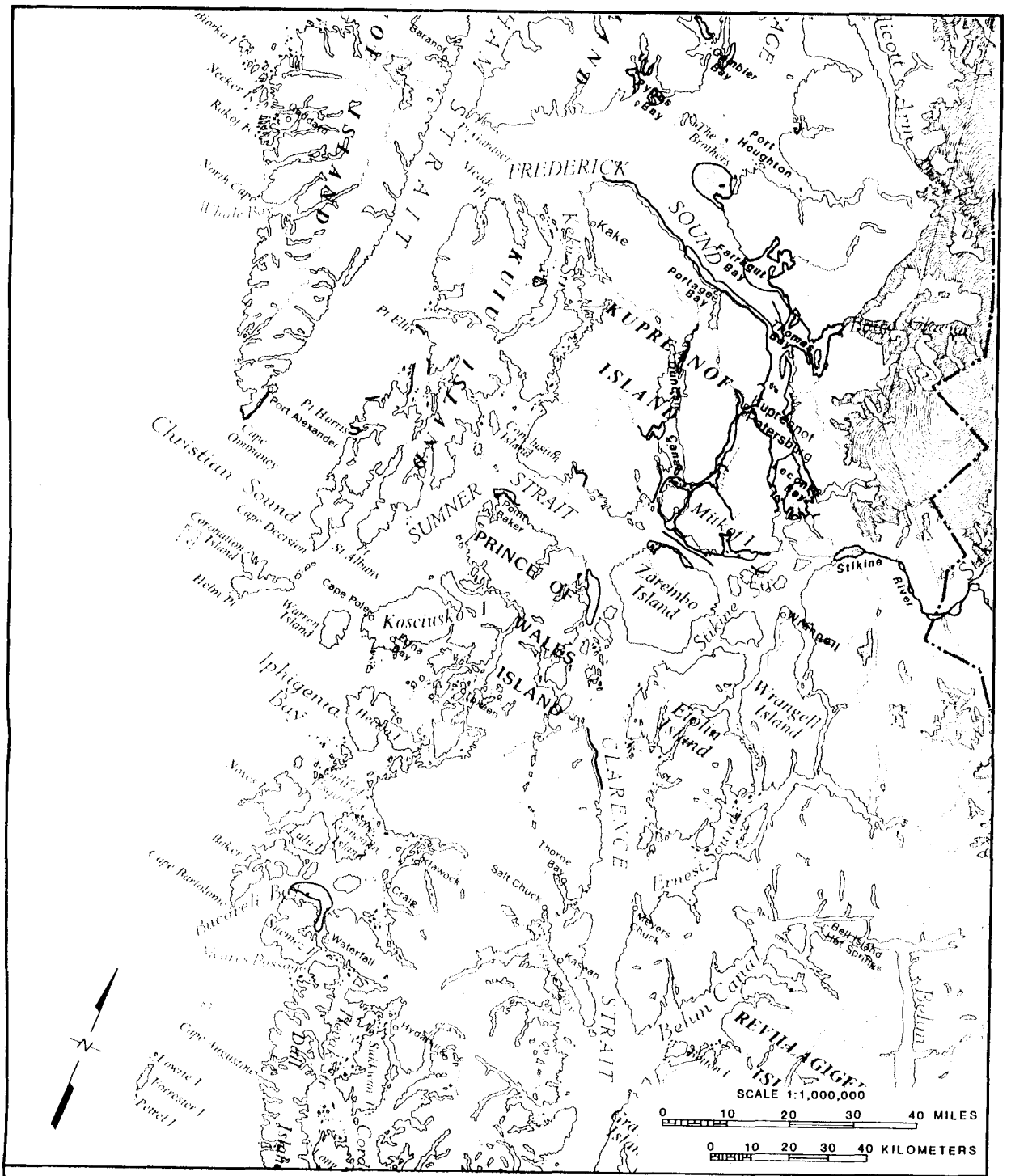
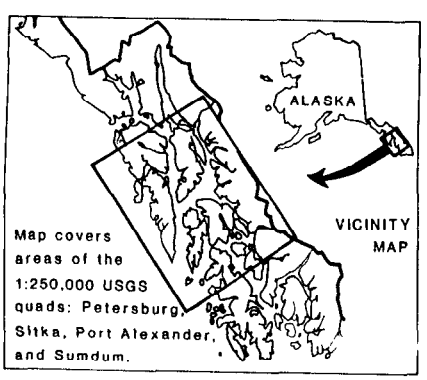


Figure 12. Areas Used for Non-Commercial Salmon Fishing During the Lifetimes of Petersburg Residents



This map depicts areas used for resource harvesting by a sample of Petersburg residents. Interviews were conducted with 10 Petersburg households from November to March, 1987 and 1988. Because not all residents were interviewed, it is likely that some use areas have been omitted. Therefore, this map must be considered to be an incomplete representation of all Petersburg use areas. See: Harvest and Use of Fish and Wildlife by Residents of Petersburg, Alaska,by Charles W. Smythe. Division of Subsistence Technical Paper No. 164 for more information.

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Of all the salmon used in the sampled households, 83.2 percent was acquired through household harvests and 16.8 percent was received as gifts. King salmon accounted for most of the salmon (66.9 percent) received by all households in the sample. Coho comprised 20.9 percent of the salmon received, and sockeye 9.4 percent. Among the households receiving salmon, 50.5 percent received kings, 25.3 percent received sockeye, and 22.4 percent received coho. Thus, although the harvest and distribution amounts for sockeye salmon are low as compared to king and coho, this species had the second-highest distribution rate in the community, indicating it is a highly valued resource.

As reported above, rod and reel was the primary method for harvesting salmon by Petersburg households. There are several techniques for using rod and reel depending on the species and location. Trolling for king salmon takes place in Frederick Sound and anywhere in the Narrows as far down as the Beecher Pass area (see Figure 12 for a map of the historical and contemporary areas of non-commercial salmon fishing). The most frequently used region in the Narrows extends from the northern mouth of the Narrows to Scow Bay. Fishermen use boats ranging in size from skiffs to fiberglass and wood cruisers as large as 35' in length, and commercial trolling boats may also be used. Trollers catch feeder kings passing through the area. In addition, spawners are caught in the area by both marine trollers and rod and reel fisherman on shore, from late May through June. In 1987, 30 percent of the harvested marine fish were these spawners, according to ADF&G. Spawners are comprised of both the Crystal Lake Hatchery fish and Stikine River stocks. The hatchery releases king salmon into Blind Slough, and for the last 10 years a rod and reel fishery has occurred in Blind Slough. Fishing is carried out from skiffs at the mouth of the Slough, and also from shore. Many non-residents participate in this fishery. The recently instituted remote release of hatchery fish in the common estuary of Ohmer and Sumner Creeks has resulted in another (much smaller) rod and reel king salmon fishery in this area.

Later in the season, an important rod and reel coho fishery occurs at Blind Slough. Other coho areas are across the Narrows in Petersburg Creek and at more outlying areas on the eastern shoe of Mitkof Island and in Duncan Canal. Coho fishing is carried out primarily from skiffs at the mouths of the creeks on the flats, although some fishing is done from shore. In this season, the larger wood and fiberglass cruising boats seen earlier in the year trolling for king salmon are out in deeper waters fishing for halibut, according to ADF&G observations. As described above, the Blind Slough coho fishery is for hatchery stocks and includes a personal use gill net fishery. Pink salmon are fished by rod and reel in the same manner as coho. Pink salmon are fished in Petersburg Creek, Five Mile Creek, Bear Creek, Fall Creek, and Ohmer Creek.

A small run of sockeye in Petersburg Creek is fished by a few local rod and reelers, but a larger return in the Kah Sheets system is fished more heavily by Petersburg residents, according to ADF&G. The productivity of this area, which lies about a day's run by boat from town, is susceptible to annual fluctuations in rainfall. Consequently, it is used more heavily in years when conditions are more favorable for rod and reel fishing.

In addition to the personal use nets and rod and reel sources reported above, some hatchery salmon finds its way into Petersburg kitchens directly from the hatchery stocks. The Crystal Lake Hatchery gives away surplus coho "to anyone who wants it." In 1987, an estimated 500 fish were given to local households. This fish adds 3,850 pounds of food to the total community use of local resources.

MARINE FISH

At least one species of marine fish was used in 84.2 percent of the households in the Petersburg sample, and at least one harvested by 69.5 percent of households. Marine fish accounted for 20.6 percent of the total harvest by weight in the community, with a mean household harvest of 139.6 edible pounds and a per capita harvest of 42.0 pounds (Table 9, Figure 7). Marine fish ranked third after land mammals and salmon in total harvest levels.

Halibut was the primary resource in this category; more than three-quarters of the edible marine fish (77 percent) harvested during the year was halibut (see Table 14 below). The average household harvest of halibut was 106 pounds, or 32 pounds per person. Herring was the next largest harvest amount (10.3 percent of all marine fish); herring was used primarily as food but was also a source of bait in small amounts. Cod and rockfish were next, but comprised only 4.7 and 3.9 percent, respectively, of the total marine fish harvest.

Halibut was the second most widely used resource in the community after king salmon. Halibut was used in 81.1 percent of the sampled households and was harvested by nearly two-thirds of households (63.2 percent) (Table 10). Herring was caught and used by members of about one-third of the households (30.5 percent and 33.7 percent, respectively). Although rock fish, such as red snapper, was harvested in minimal quantity, about one-quarter of the households participated in the harvest (22.1 percent) and used it in the home (29.5 percent).

Nearly three-quarters of the households (72.6 percent) participated in non-commercial marine fishing during the year. Non-commercial harvests in this category included halibut, cod, small flatfish (such as flounder and sole), rock fish, herring, herring eggs, eulachon, and miscellaneous fish. Sampled households produced 89.8 percent of their marine fish using non-commercial methods (see Table 14 and Figure 13, below).

As was the case with the salmon category, the largest portion of the marine fish harvest, 83.5 percent, was by rod and reel. Halibut was very significant in the rod and reel harvest: 82.6 percent of the rod and reel fish was halibut, accounting for 68.9 percent of the total marine fish harvest. A majority of the sampled households, 53.7 percent, participated in the rod and reel halibut harvest. Herring was the next most important catch, providing eight percent of the total rod and reel harvest. One-quarter of the households, 25.3 percent, were active in this harvest. Rock fish, cod, flatfish, and miscellaneous other fish were also caught in small quantities.

Table 14. Total Marine Fish Harvest Levels by Sampled Petersburg Households, 1986-87.

Marine Fish Species	Removed from Commercial Catch, Pounds	Removed from Commercial Catch, Percent	Caught With Nets, Pounds	Caught With Nets, Percent	Caught With Rod & Reel, Pounds	Caught With Rod & Reel, Percent	Other Harvest Method, Percent	Other Harvest Method, Pounds	Total Harvest, Pounds	Total Harvest, Percent
Halibut	537.6	7.2%	61.2	0.8%	5119.8	69.0%			5718.6	77.0%
Cod	125.4	1.7%	4.5	0.1%	221.8	3.0%			351.7	4.7%
Flounder	0.0	0.0%	0	0.0%	40.3	0.5%			40.3	0.5%
Rock Fish	52.6	0.7%	0	0.0%	238.6	3.2%			291.2	3.9%
Herring	44.8	0.6%	221.8	3.0%	499.0	6.7%			765.6	10.3%
Herring Eggs							36.4	0.5%	36.4	0.5%
Eulachon			4.5	0.1%					4.5	0.1%
Other			134.4	1.8%	82.4	1.1%			216.8	2.9%
Total	760.4	10.2%	426.4	5.7%	6201.9	83.5%	36.4	0.5%	7425.1	100.0%

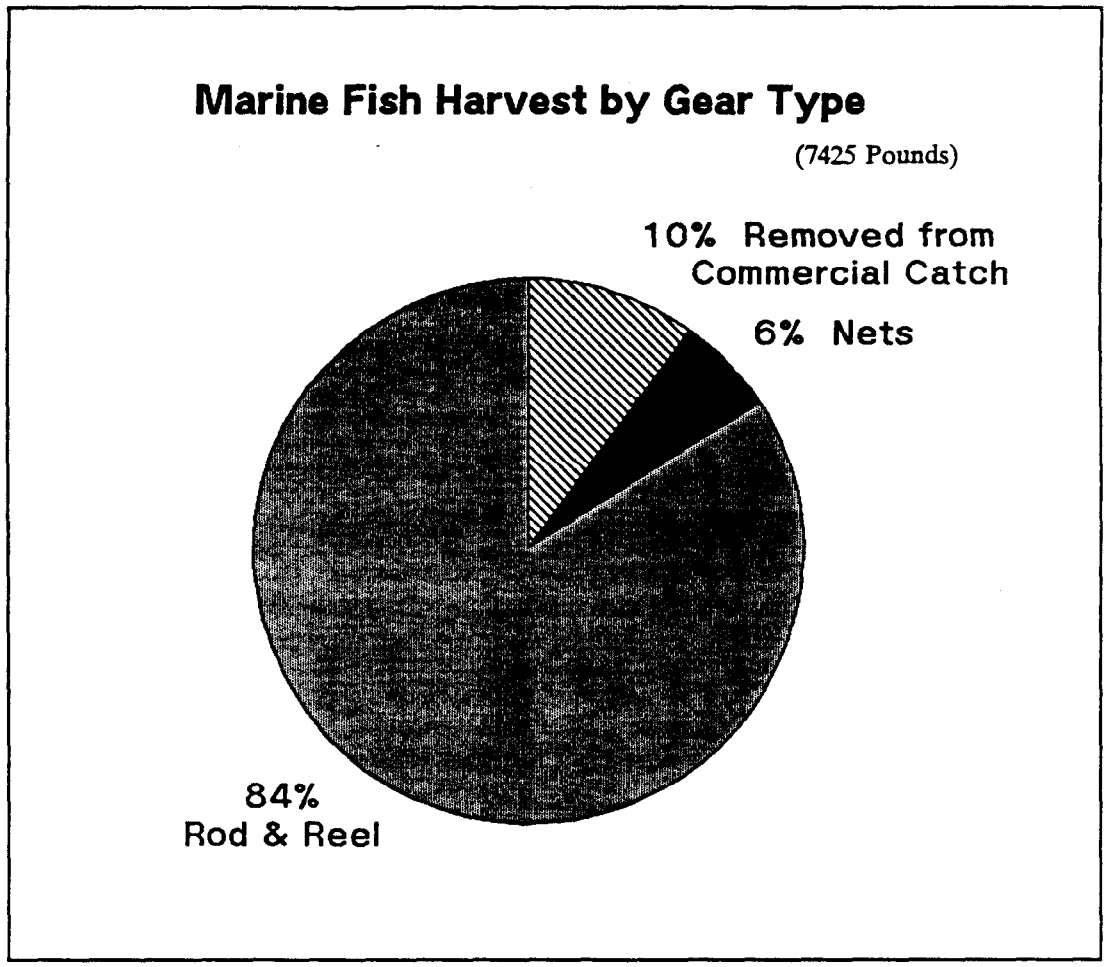


Figure 13. Petersburg Marine Fish Harvest by Gear Type, 1986-87.

Modest amounts of marine fish (426.4 pounds) were harvested with nets, amounting to 5.7 percent of the total marine fish harvest (Table 14). Most of this catch was herring, 52 percent by weight, and miscellaneous other fish also were important, 31.5 percent. Small harvests of halibut, cod, and eulachon were also reported with this gear. Less than ten percent of the households were involved in this method of harvest. Survey respondents reported that, often, small amounts of herring were harvested for use as baitfish, particularly for trolling for king salmon using a rod and reel. In small amounts, this use could not be distinguished from harvests for home consumption. However, larger harvests were determined to be for use as baitfish, rather than home consumption, and harvest amounts exceeding 400 pounds were classified as baitfish and were not included in the figures for household harvests and use. In Petersburg, one household reported harvesting 1,600 pounds of herring with nets; this was classified as baitfish for purposes of this analysis.

Pickled herring is a traditional food for the Norwegian families in Petersburg, and it is made for household consumption, gifts, weddings, and other community events. An annual competition for

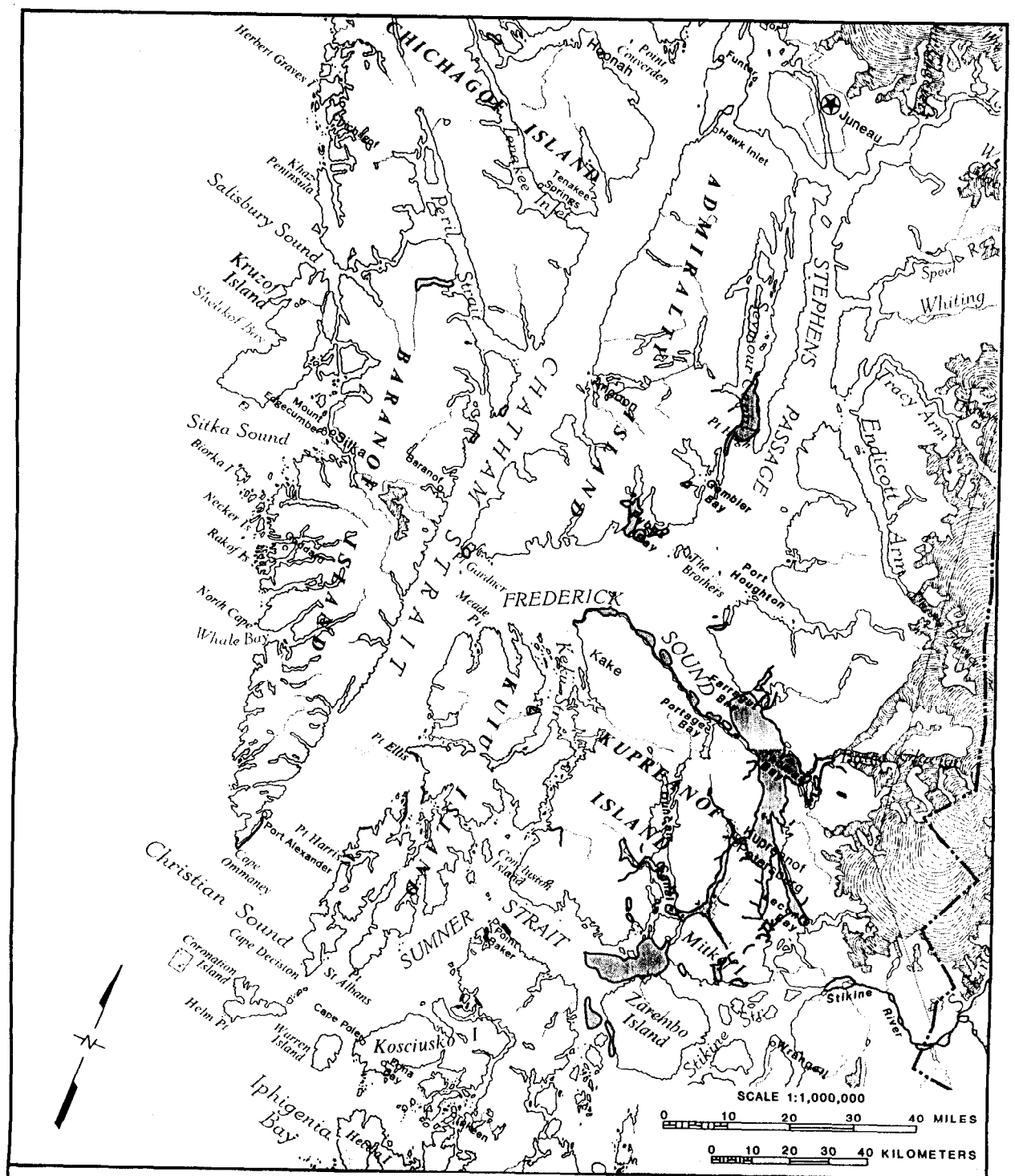
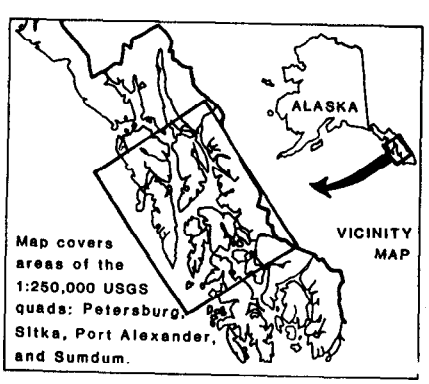


Figure14. Areas Used for Non-Commercial Harvest of Fish Other Than Salmon During the Lifetimes of Petersburg Residents



Fish other than salmon includes: cod, halibut, flatfish, rockfish, herring, herring eggs, hooligan, Dolly Varden, cutthroat trout, steelhead, and other finfish. This map depicts areas used for resource harvesting by a sample of Petersburg residents. Interviews were conducted with 82 Petersburg households from November to March, 1987 and 1988. Because not all residents were interviewed, it is likely that some use areas have been omitted. Therefore, this map must be considered to be an incomplete representation of all Petersburg use areas. See: Harvest and Use of Fish and Wildlife by Residents of Petersburg, Alaska, by Charles W. Smythe, Division of Subsistence Technical Paper No. 164 for more information.

More detailed 1:250,000 scale maps of these use areas are available at the Division of Subsistence.

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pickled herring is sponsored by the Sons of Norway. Herring eggs, a traditional Tlingit food item, were not harvested in substantial amounts in Petersburg. Accounting for only .5 percent of the total harvest of marine fish, herring eggs used by Petersburg households were usually received from households in other communities. This resource was received by 13.7 percent of the households, whereas only 4.1 percent of the households were involved in the harvest.

About one-third of the households (34.7 percent) included a member who fished commercially for marine fish during the study year. Species that were caught commercially, for which some fish were removed from the catch for home use, included cod, halibut, rock fish, and herring. A total of 760 pounds of commercially-caught marine fish was removed from the take and utilized at home in the sampled households; this comprised 10.2 percent of the total edible harvest of marine fish in the year (Table 14 and Figure 13). Halibut accounted for 70.7 percent of this harvest, and cod was 16.5 percent. Small amounts of rock fish and herring made up the remainder.

Half of the households were involved in the sharing and distribution of marine fish species. The portion of the sampled households that gave away at least one resource in this category was 49.5 percent, and 48.8 percent received a marine fish resource from another household. Halibut was shared by the largest proportion of households, given by 47.4 percent and received in 35.8 percent of households (Table 10). Among the households with commercial halibut fishermen, 42.4 percent gave away some of their commercial catch to other households. This represents 14.7 percent of all households in the sample. In comparison, 49.3 percent of non-commercial halibut harvesters gave away some of their catch, representing 35.8 percent of all households in the sample. Rock fish and herring were given away by an equal proportion of households, 8.4 percent.

Marine fish for home use is caught in areas in Frederick Sound not far from Petersburg, and sometimes halibut is taken in the Narrows (see Figure 14 for a map of areas used for non-commercial marine fishing). Residents also buy halibut and cod from local processors. PFI sells black cod which is popular among the Norwegian families for smoking. PFI also makes and sells lutefisk, another Norwegian cod specialty. Although there is no community contest for lutefisk and smoked black cod recipes, as there is for pickled herring, families have their special techniques for making delicious fare from these resources.

TROUT

Although trout was not a major resource in terms of harvest quantity, the use of trout was widespread in the community. Dolly Varden is the most frequent catch in this category, although the recorded harvest also includes steelhead and cutthroat. Half of the households (49.5 percent) utilized one or more species of trout during the year and over one-third (36.8 percent) were active in the harvest (Figure 6). Trout represented three percent of the total harvest of wild food (Figure 7). The sampled households harvested an average of 20.4 pounds of trout in the year, which is 6.1 pounds per person

(Table 9). In terms of distribution, 20.0 percent of the households reported receiving some trout and 13.7 percent gave some trout away during the year (Figure 10).

Dollies are taken with rod and reel in Petersburg Creek, Falls Creek, and Blind Slough, and in the flats at the mouth of Petersburg Creek (trout fishing areas are identified in Figure 14 above). Dollies and cutthroat are also harvested in streams that empty into Duncan Canal. Beecher Pass residents utilize Harvey Lake, on Woewodski Island, for trout. Steelhead trout are harvested in Petersburg Creek and Falls Creek, and in some streams the flow into Duncan Canal. Steelhead are sometimes taken in the incidental commercial catch for other fish; these steelhead commonly are bought by the local canneries. Community residents buy these fish from the canneries because the fish are popular for smoking and cooking for meals at home. Sometimes a resident will put in a request to the cannery to hold a number of these fish for purchase.

MARINE INVERTEBRATES

Over three-quarters of the sampled households (80 percent) used one or more species of marine invertebrates, making shellfish the third most widely used resource category after salmon and marine fish (Figure 6). At least one species of this group was harvested in 55.8 percent of households. Shellfish was the fourth most significant resource category in harvest level, accounting for 17 percent of the total edible harvest (Figure 7). The mean household harvest was 114.6 pounds of food, with a per capita harvest of 34.4 pounds, in the year (Table 9). Shellfish was shared more extensively than any other wildlife category, indicating that it is a highly valued resource.

Crab was the largest component of the edible shellfish harvest by weight, 32.4 percent (see Table 15 below). Shrimp (29.0 percent) and clams/cockles (25.7 percent) were also significant elements. Other invertebrates comprised the remaining portion (12.9 percent), including octopus, gumboots, scallops, abalone, and sea urchins. Most of the crab harvest was dungeness (20.4 percent of the total harvest), with about half as much king crab (8.9 percent), and some tanner crab (3.1 percent). Figure 15 provides the locations of harvest areas for non-commercial marine invertebrates.

Dungeness crab, shrimp, and king crab were each used by over half of the households in the sample (68.4 percent, 51.6 percent, and 50.5 percent, respectively) (Table 10). Nearly as many households, 45.3 percent, utilized clams, which include butter clams, pink necks, steamers, and cockles. Clams were harvested by the largest proportion of households, 40.0 percent, while dungeness crab and shrimp were harvested by 26.3 percent and 24.2 percent of the sampled households. King and tanner crab were each harvested in 11.6 percent. As can be seen, a much larger proportion of households reported using crab and shrimp than reported harvesting them. This indicates that dungeness crab, king crab, and shrimp are circulated widely in the community, which is confirmed by the high proportion of households receiving these resources. Dungeness crab was received by more households (53.7 percent) than any other resource, and king crab and shrimp ranked third and fourth after king salmon, in the proportion of households receiving the resource from others (Table 10).

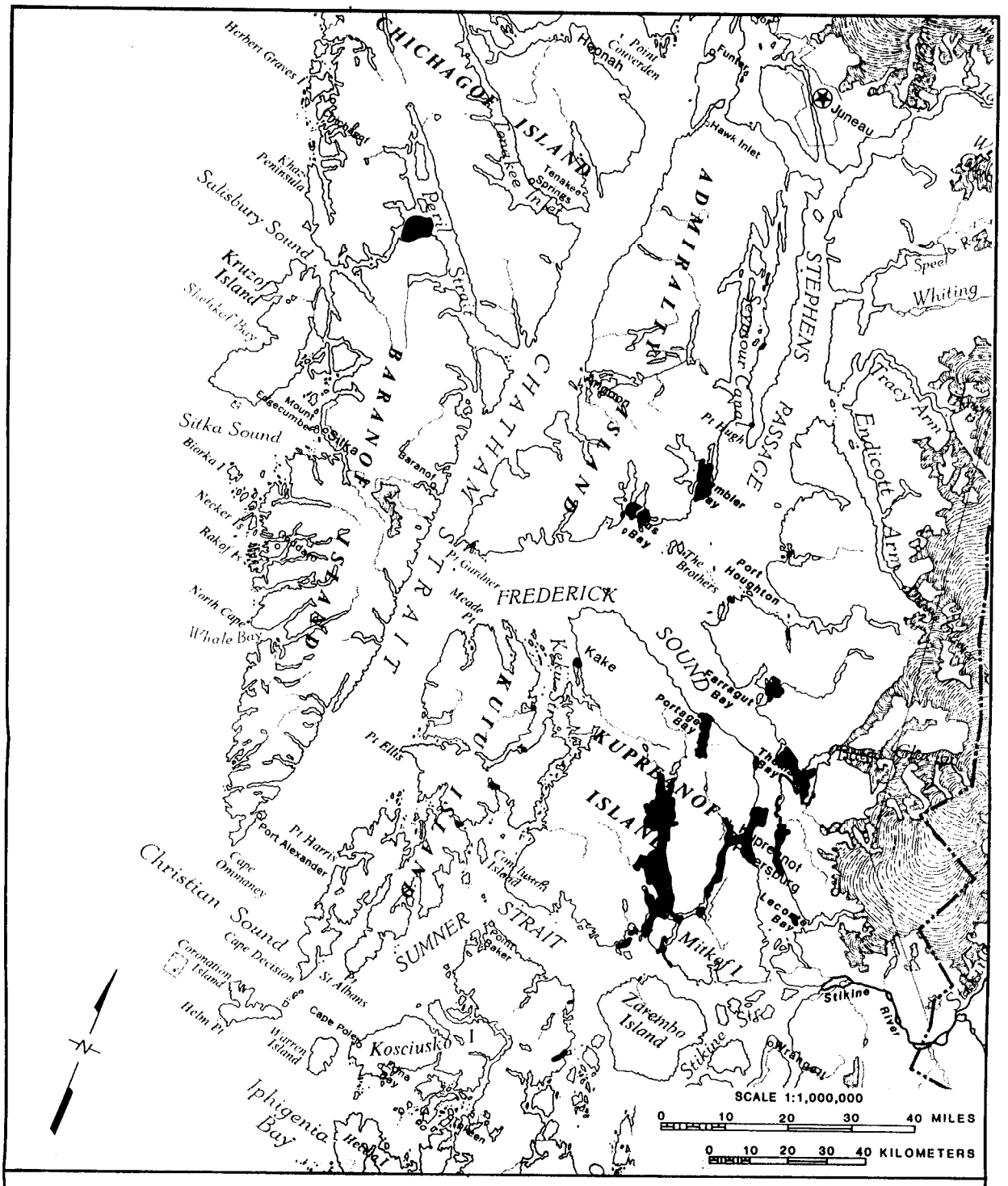
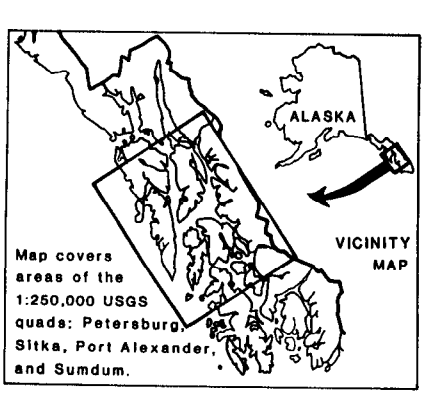


Figure 15 Areas Used for Non-Commercial Harvesting of Marine Invertebrates During the Lifetimes of Petersburg Residents



Marine invertebrates includes: king crab, dungeness crab, tanner crab, sea urchins, abalone, octopus, scallops, shrimp, gumboot, sea cucumber, clams, cockles, and other invertebrates.

This map depicts areas used for resource harvesting by a sample of Petersburg residents. Interviews were conducted with 62 Petersburg households from November to March, 1987 and 1988. Because not all residents were interviewed, it is likely that some use areas have been omitted. Therefore, this map must be considered to be an incomplete representation of all Petersburg use areas. See: Harvest and Use of Fish and Wildlife by Residents of Petersburg, Alaska, by Charles W. Smythe, Division of Subsistence Technical Paper No. 164 for more information.

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Table 15. Petersburg Shellfish Harvest Levels, 1986-87.

Shellfish Species	Removed from Commercial Catch, Pounds	Removed from Commercial Catch, Percent	Non-Commercial Catch, Pounds	Non-Commercial Catch, Percent	Total Harvest, Pounds	Total Harvest, Percent
King Crab	125.4	2.1%	415.5	6.8%	540.9	8.9%
Dungeness Crab	212.8	3.5%	1029.0	16.9%	1241.8	20.4%
Tanner Crab	32.0	0.5%	156.5	2.6%	188.5	3.1%
Shrimp	1500.8	24.6%	266.0	4.4%	1766.8	29.0%
Sea Urchins	0.0	0.0%	5.6	0.1%	5.6	0.1%
Abalone	50.4	0.8%	50.4	0.8%	100.8	1.7%
Octopus	5.6	0.1%	308.0	5.1%	313.6	5.1%
Scallops			21.8	0.4%	21.8	0.4%
Gumboot			349.4	5.7%	349.4	5.7%
Clams, Cockles			1566.0	25.7%	1566.0	25.7%
Total	1927.0	31.6%	4168.24	68.4%	6095.2	100.0%

As with salmon and some marine fish, several of these resources are fished commercially as well as non-commercially. Over half of the sampled households (52.6 percent) harvested one or more species of invertebrates non-commercially, while 17.9 percent of households fished commercially for shellfish. Although the major portion of the catch, 68.4 percent, was non-commercial, a larger proportion of this resource (31.6 percent) was taken from commercial catches for home use as compared to salmon and halibut (Table 15, and Figure 16 below). Shrimp accounts for most (77.9 percent) of the commercial shellfish removed for home consumption. This was due to a large extent to one householder who used commercially-caught shrimp for sharing, and bartering for other resources which the householder was unable to harvest actively. About half of the commercial shellfish removed for home consumption was comprised of this shrimp.

Shellfish is shared more widely in the community than any other resource category. At least one species of shellfish was received in 75.8 percent of the households. For comparison, the next highest resource category, salmon, was received in 61.1 percent of households (Figure 10). As mentioned previously, dungeness and king crab, and shrimp account for most of the distribution pattern: these resources were received in 53.7 percent, 44.2 percent, and 38.9 percent of Petersburg households, respectively. Shellfish were given away by 43.2 percent of households.

Shellfish is recognized as an important subsistence resource by some individuals. One person commented that exclusive areas should be made available for household use shrimping activities. "Too much commercial gear in the water; hard for subsistence individuals to gather any amounts. ...Same with

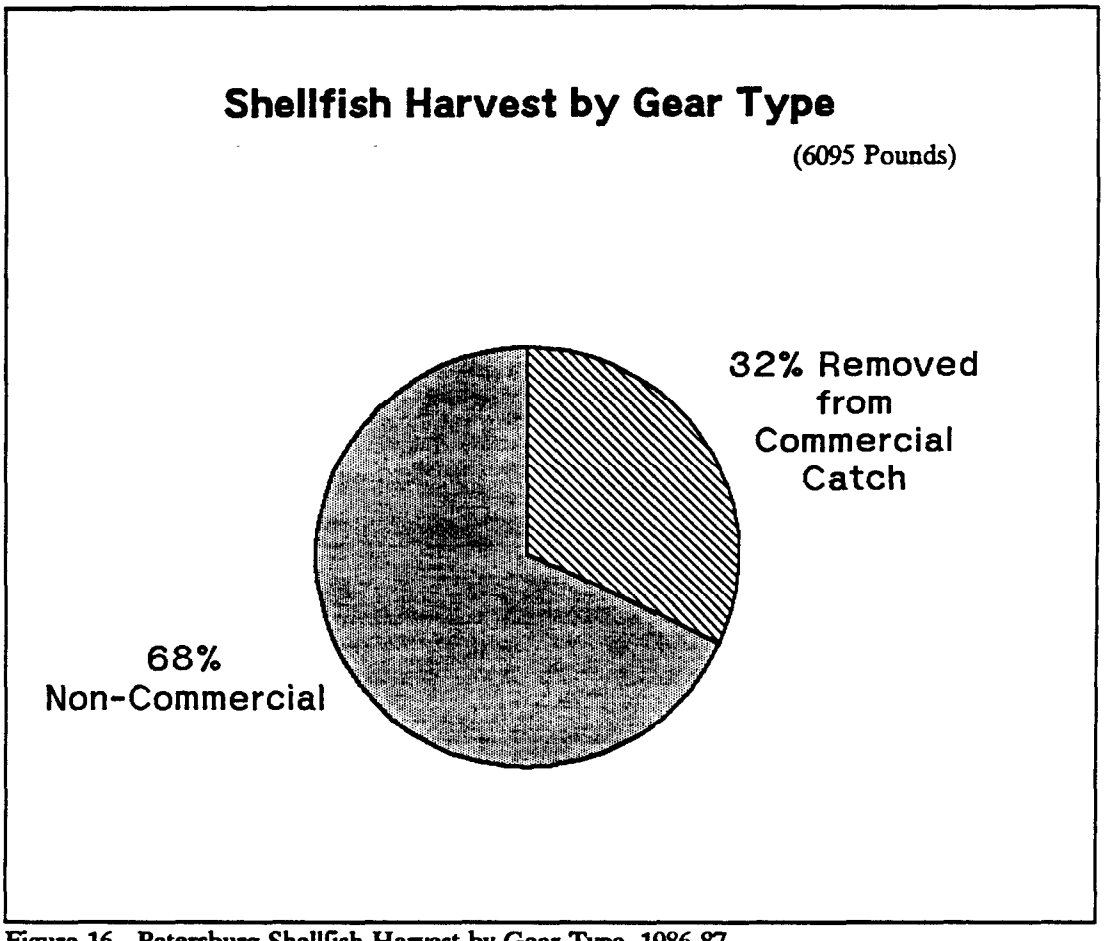


Figure 16. Petersburg Shellfish Harvest by Gear Type, 1986-87.

crab: closer areas [in proximity to Petersburg] should be open to sport, closed to commercial." Shellfish are harvested over a large area extending from Sandy Beach north of town down along the Narrows and through Beecher Pass to much of Duncan Canal.

LAND MAMMALS

Land mammals were the largest source of food for the sampled Petersburg households, comprising nearly one-third (30.8 percent) of the total household harvest by weight (Figure 7). The total harvest of land mammals was 207.5 pounds per household, or 62.4 pounds per capita (Table 9). Deer was by far the major component, providing 21.5 percent of the total community harvest. Moose was a significant harvest for a smaller proportion of the households, and accounted for 8.6 percent of the all harvested resources in the sampled households. Black bear was harvested for food by one household in the sample; other households in the sample hunted this animal for the skin but did not utilize the meat.

The deer harvest level was substantially higher than any other species during the year: the average household harvest was 144.8 pounds, with a mean per capita harvest of 43.5 pounds (Table 10). (Halibut, the second largest contributor, was harvested at 106.3 pounds for the household and 32 pounds for the per capita levels, in comparison.) Deer was used in 69.5 percent of the sampled households, and harvested by 38.9 percent, indicating that deer was widely distributed among households in the community.

Over two-thirds of the sample (68.4 percent) reported that someone in the household has hunted deer at some time while residing in Petersburg. During the study year (1986-87), 38.9 percent of the households successfully harvested deer. Twenty-five percent of the successful households reported there was one deer hunter in residence, 11 percent reported two hunters lived in the household, and three percent included three hunters.

Deer was given away by 29.5 percent of the sampled households, which is the fourth largest proportion of households giving away a resource (Table 10). Higher percentages of the sample gave away halibut, king salmon, and berries. Deer was commonly given away whole: 21.1 percent of all households gave away at least one whole deer. The majority of these households gave away more than one whole deer; 59.7 percent of these households gave away two or three deer. Deer was received in 33.7 percent of the households. The tendency to give away whole deer probably explains why the proportion of households reporting receiving deer is not higher. Deer was given most often to relatives (by 25.3 percent of households) and friends (20.0 percent), with meat being given to elders by 12.6 percent of households. However, the survey results show that the sampled households tended to receive deer meat more often from friends (in 29.5 percent of households) rather than from relatives (13.7 percent). Besides venison, deer sausage is made and given away to other households.

In 1986, there were 712 Petersburg residents with deer harvest tickets, compared to 740 in Wrangell and 120 in Kake, according to ADF&G records. This is down slightly from 752 Petersburg tickets in 1984, when it was estimated that 73 percent, or 549, hunters harvested a total of 750 deer (Alaska Department of Fish and Game 1987). The 1984 estimates indicate that each successful hunter averaged more than one deer (1.4 deer).

There are major constraints on deer hunting in the Petersburg area. The area close to town, on Mitkof, Kupreanof, and neighboring islands, has been closed to hunting due to the sustained decline in the deer population (see Chapter 4). This situation requires hunters to travel to other areas for deer. While deer hunters commonly stalk and kill deer individually, it is the custom in Petersburg for hunters to travel to deer hunting areas and to stay on a boat together in groups, with about six to eight persons in a party. The large commercial seine boats are most popular for these trips; seiners are comfortable and can traverse open waters to the better hunting areas on Admiralty Island. Residents often reported they have gone out with the same group of companions for several years. In addition to being a time for friends to socialize together, this practice provides individuals without boats the opportunity to go hunting in places to which they do not have ready access. On the other hand, individuals who are not

associated with a group may not get the opportunity to hunt the better areas: "He doesn't have a boat, so if he is not asked to join a group, or cannot find a group with space for him, he doesn't get to hunt. This happened last year." "It matters, who you're going with and where they want to go." Individuals who do not have friends with commercial fishing boats are limited to areas accessible by skiff or the ferry system.

Currently, the harvest areas most heavily utilized are on Admiralty Island, especially in Pybus Bay and Gambier Bay but also including areas in Seymour Canal and Hood Bay (see Figure 17 for a map of historical and contemporary deer harvest areas). The area on Baranof Island along Chatham Strait from Warm Springs up into Portage Arm is also occasionally used, as are areas in Peril Straits and to the south (Port Armstrong, Nelson Bay, Whale Bay, Yamani Cove, and Close Bay). Northern Prince of Wales Island is also used regularly today, but at a lower intensity than Admiralty Island. Access to Prince of Wales Island is by boat, or by car on the ferry. The Thomas Bay/Point Agassiz area south to Indian Point, including the Muddy River drainage, is also hunted but harvest levels are not as high as other areas. In addition to these areas, some respondents reported that some hunting occurs along the logging roads and shoreline south of town on Mitkof Island, which is a closed area.

The harvest of moose meat in the community was substantial, ranking fourth by weight among all resources. The mean household harvest of moose was 57.9 pounds; the per capita harvest was 17.4 pounds (Table 10). Compared to other resources, the harvest participation rate was low: moose was harvested in 8.4 percent of the households. The majority of the moose-hunting households (63.1 percent) also harvested deer during the study year.

Although successful moose-hunting households were relatively few, moose was used by 27.4 percent of the sampled households, indicating that moose is a significant resource in more then one-quarter of the community households. Moose, because it is a large animal, produces a lot of meat which can provide for more people compared to deer. One hunter estimated that 25-30 people receive substantial portions of their annual meat supply from the moose that his hunting party produces each year. Another man said, "For nine years running, I have hunted moose and I never got one when I didn't need meat." Observations indicate that regular moose harvests are significant sources of meat for a segment of the Petersburg population, which has been utilizing the resource for several decades. Deer, however, is a preferred ("better") source of meat because the amount of meat is smaller in quantity and consequently more fresh when consumed, while moose is often eaten after it has been stored, frozen or salted, for a longer period of time.

Petersburg accounted for 18 percent of the moose hunters on the Stikine River during the 1987 moose hunt, according to a fieldcheck by ADF&G. Out of a total of 212 people contacted in the area, 37 were from Petersburg; most were from Wrangell. A small proportion of Petersburg residents has hunted regularly in the Stikine area over the years. They use two areas, one on the north arm and another at a cabin opposite Kakwan Point. This cabin is known as "Petersburg Cabin" because it was built by a group of Petersburg hunters years ago.

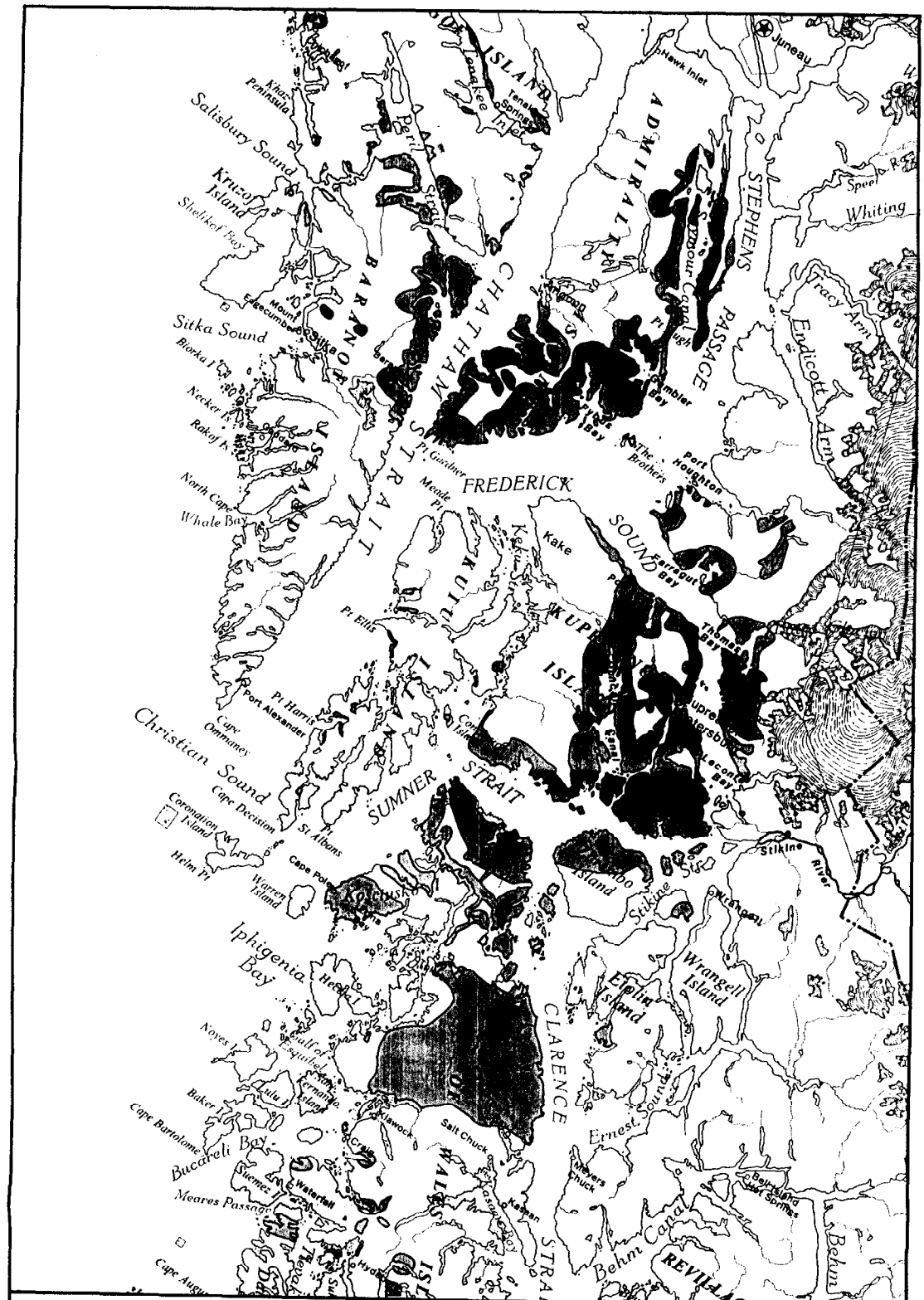
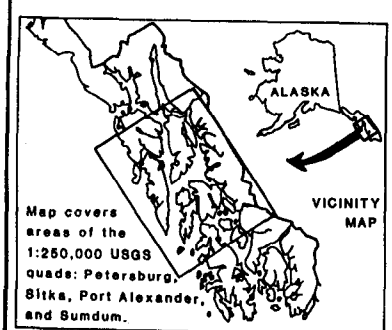


Figure 17 Areas Used for Deer Hunting During the Lifetimes of Petersburg Residents



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See: Harvest and Use of Fish and Wildlife by Residents of Petersburg, Alaska, by Charles W. Smythe, Division of Subsistence Technical Paper No. 164 for more information.

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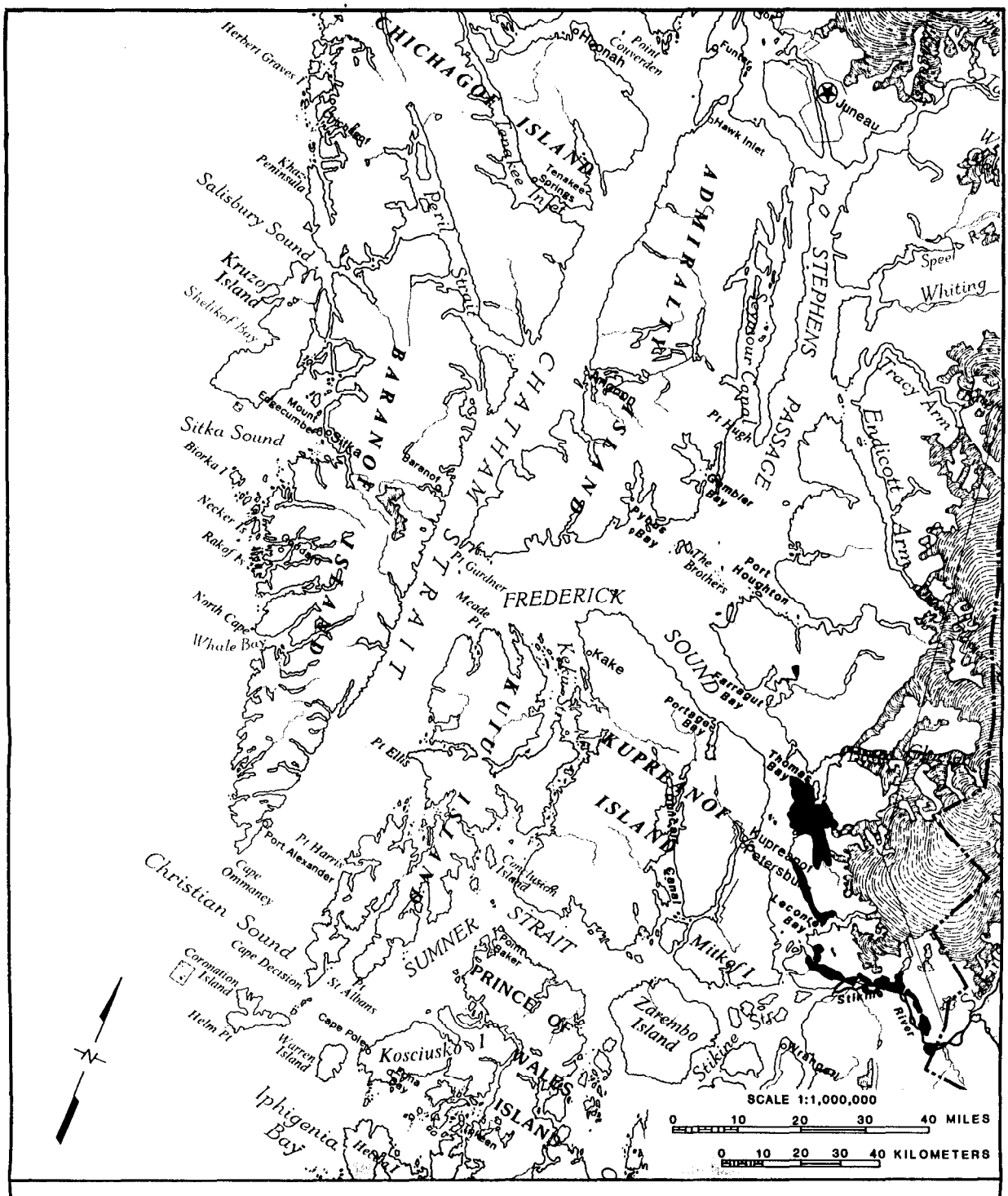
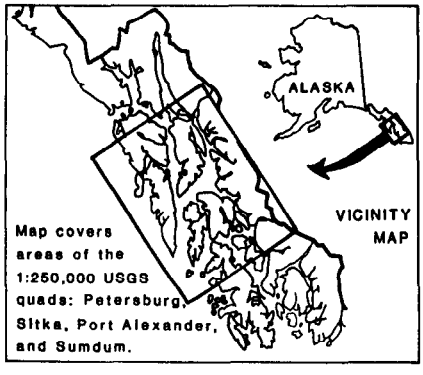


Figure 18 Areas Used For Moose and Goat Hunting During the Lifetimes of Petersburg Residents



Moose Goat

This map depicts areas used for resource harvesting by a sample of Petersburg residents. Interviews were conducted with 10 Petersburg households from November to March, 1987 and 1988. Because not all residents were interviewed, it is likely that some use areas have been omitted. Therefore, this map must be considered to be an incomplete representation of all Petersburg use areas. See: Harvest and Use of Fish and Wildlife by Residents of Petersburg, Alaska,by Charles W. Smythe, Division of Subsistence Technical Paper No. 164 for more information.

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The 1987 hunt in Thomas Bay involved 110 hunters who harvested 23 moose. ADF&G biologists reported that very few hunters in this area were from outside of Petersburg; few if any Wrangell hunters come to this area. A total of 159 permits were issued for this area, which extends northward to Farragut Bay. Petersburg moose hunters also travel to other areas in the state to hunt: recent harvests were reported in Tok, Yakutat, Talkeetna, and Cordova (see Figure 18 for a map of moose and goat harvest areas).

Mountain goat is a regular component of the annual harvest. Although no harvest of mountain goat was reported by the sampled households in the study year, this resource was used by contacted households in prior years. In 1985, 44 Petersburg residents held permits for the goat hunt. The Horn Cliffs area on the mainland is the regular goat hunting site for Petersburg hunters (see Figure 18).

Another wild resource reported for the community was caribou, which was received by one household in the sample. Caribou was harvested in the Glenallen area and brought back to Petersburg. Hare are also reportedly hunted in northern areas.

BIRDS

All species of birds contributed 2.7 percent of food by weight to the annual harvest in Petersburg during the study year (Figure 7). The average household harvest of all birds was 18.3 pounds, with a per capita harvest of 5.5 pounds (Table 9). The harvest consisted of ducks, sea ducks, geese, and ground birds. Ducks and geese were equal portions of the harvest, accounting for more than 90 percent of the total bird harvest (46.7 percent and 46.9 percent, respectively). The most favored species of duck was mallard, particularly the "greenheads" (males). Other duck species include black brant, pintail, wigeon, and harlequin. Canada geese and snow geese are the two varieties of geese reported by hunters. Ground birds include grouse and ptarmigan.

Birds were used in 43.2 percent of the sampled households, with a harvest reported in 34.7 percent (Figure 6). Households hunted and used ducks in slightly greater proportions than geese. Ducks were used in 34.7 percent of households, while geese were utilized in 31.6 percent; and ducks were harvested successfully in 29.5 percent while geese were acquired by 24.2 percent (Table 10). Nearly all of the households that harvested geese also hunted ducks; 23.2 percent of households hunted both ducks and geese.

The proportion of households giving and receiving wildfowl was not substantial. In the sample, 13.7 percent of households received at least one bird species, while one or more species were given away by 8.4 percent. Ducks were received more often than ducks, but geese were given away to a larger proportion of households. Ducks were received in 9.5 percent of households, and geese were given away by 8.4 percent.

Current bird hunting areas occur along the Narrows in localities accessible by road. Skiffs and larger boats are used to travel to areas in Beecher Pass and Duncan Canal. The extensive flats at the

head of Duncan Canal have been productive for years. Figure 19 provides the locations of bird harvest areas.

PLANTS

A large proportion of the sampled households participated in the use and harvest of wild edible plants in the study year: 77.9 percent of households utilized at least one plant resource, and 69.5 percent harvested one or more species in this category. Household participation in harvest and use was most widespread for firewood and wild berries; 62.1 percent of households used firewood and 58.9 percent used berries in the home, while 56.8 percent of the households harvested firewood and 55.8 percent picked berries (Table 10). Seaweed was also important; this resource was used in 23.2 percent of households and harvested in 20.0 percent.

Food from wild plant sources contributed 3.7 percent of the total harvest for Petersburg in the year. There was an average annual harvest of 24.1 pounds of plant foods, with a per person contribution of 7.3 pounds per year (Table 9). Over half of the harvest (58 percent) was seaweed; black seaweed and kelp are the most heavily utilized species. Black and red ribbon seaweed is dried and used at home; these are traditional Tlingit and Oriental foods. Kelp is pickled, and as noted above some households also use it in the garden (see Figure 20 for a map of plant harvest areas).

Berries accounted for 39 percent of the annual plant harvest. This resource is distributed widely throughout the community. Almost one-third of the households reported giving away berries (30.5 percent), often in the form of jams and jellies at Christmas time. Logging roads have opened large, cleared areas to berry pickers. Picking used to occur primarily along the beaches down along the Narrows, or on the muskeg in back of town. People also reported going to the Stikine area for berry-picking. After the construction of logging roads in the late 1950's, harvest areas shifted to cleared areas along these roads in the southern portion of Mitkof Island. Major varieties include huckleberries, blueberries, loganberries, low and high bush cranberries.

Chopping firewood is a labor-intensive work that is considered a homeowner's task, and sharing of firewood was not high: firewood is given away by 13.7 percent of the households and received by 7.4 percent. Seaweed and beach greens are not shared significantly. Harvested beach greens included goose tongue, wild asparagus, young ferns (fiddleheads). Mushrooms are also gathered regularly by some households.

Calculating the food weight contributed by plants was complicated by the harvest of seaweed for fertilizing gardens. Some households harvested substantial amounts of kelp for gardens. The survey did not specifically ask residents about the use of the seaweed harvested, whether for food or for fertilizer. In the analysis, seaweed harvests of less than 50 pounds were counted as harvested for food consumption, and amounts of 50 pounds or more were rated as used in garden fertilizer. There were no households in the Petersburg sample which reported large quantities of seaweed; and one household

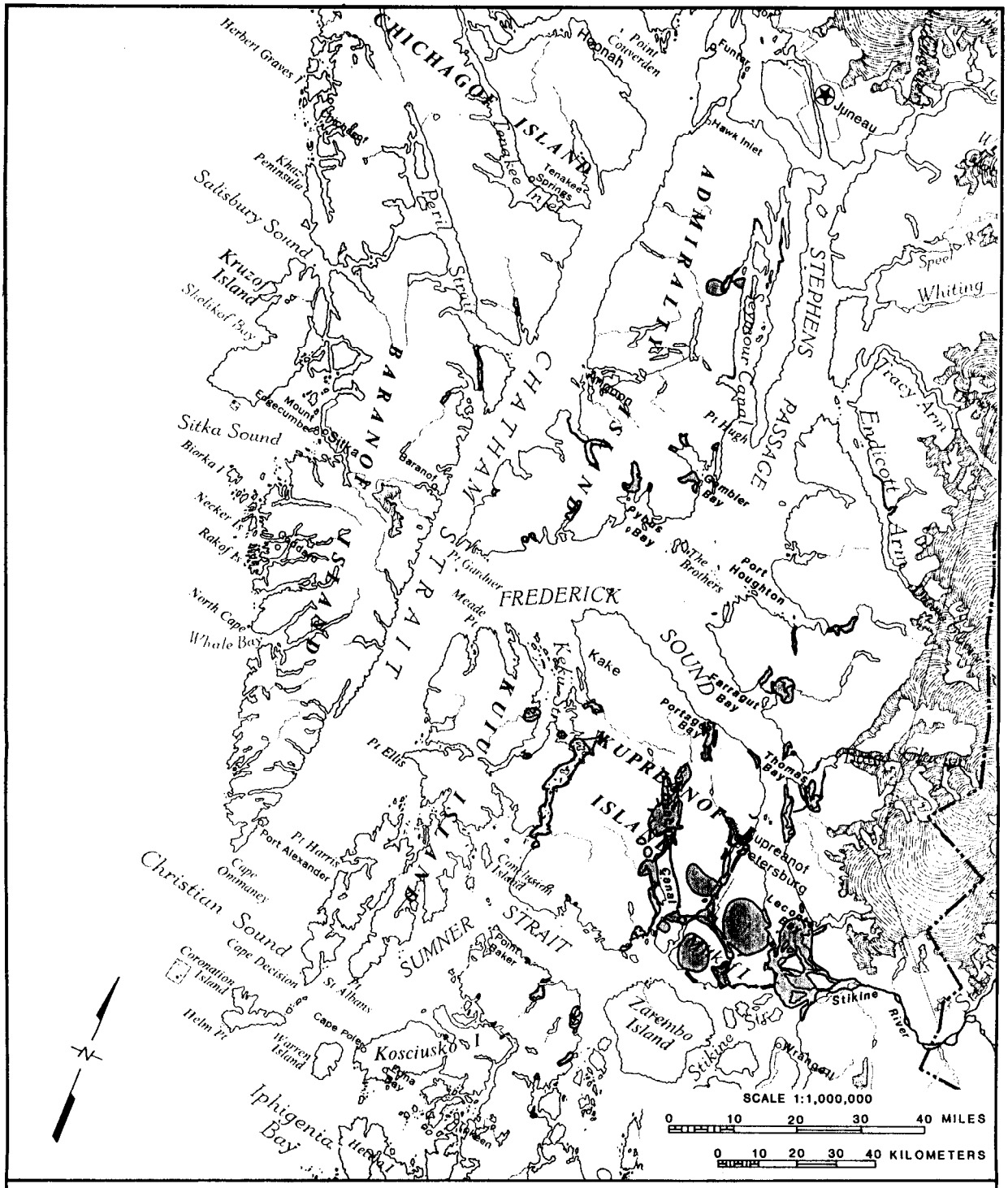
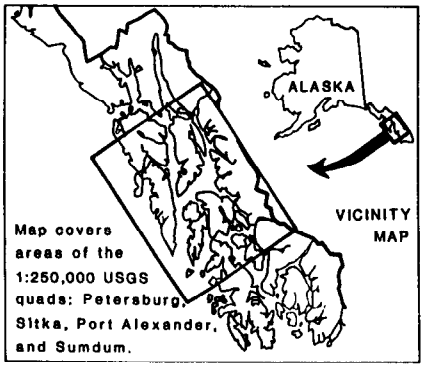


Figure 19 Areas Used For Hunting Upland Birds and Waterfowl During the Lifetimes of Petersburg Residents



Birds includes: ducks, geese, grouse, ptarmigan, sea ducks, and bird eggs. This map depicts areas used for resource harvesting by a sample of Petersburg residents. Interviews were conducted with 62 Petersburg households from November to March, 1987 and 1988. Because not all residents were interviewed, it is likely that some use areas have been omitted. Therefore, this map must be considered to be an incomplete representation of all Petersburg use areas. See: Harvest and Use of Fish and Wildlife by Residents of Petersburg, Alaska, by Charles W. Smythe, Division of Subsistence Technical Paper No. 164 for more information.

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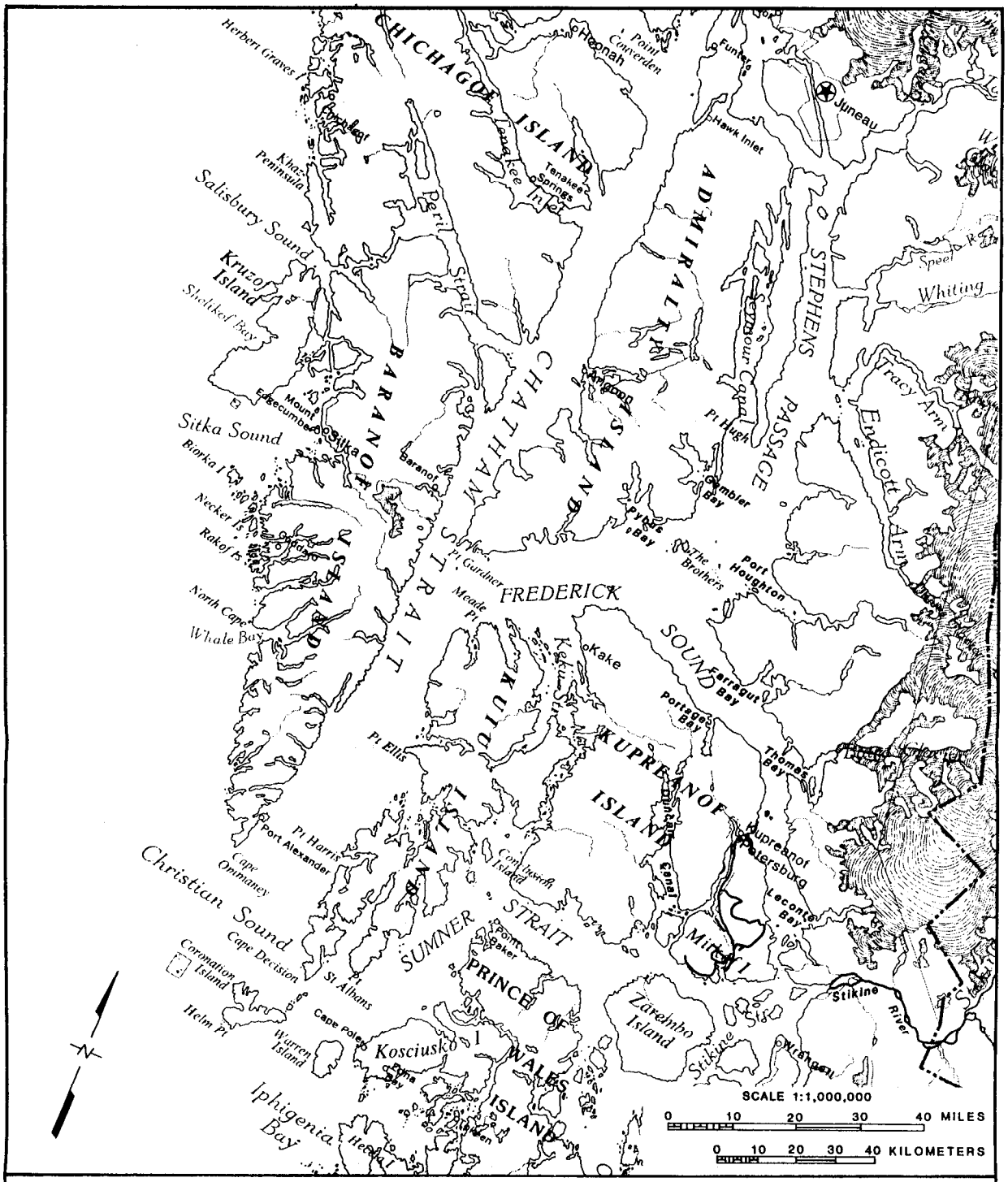
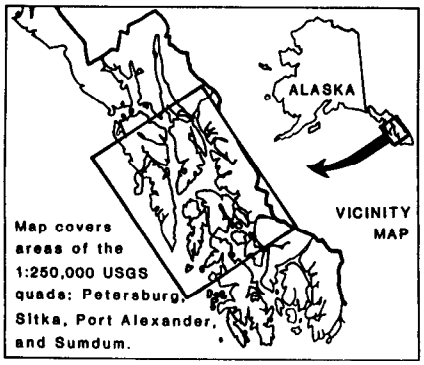


Figure 20 Areas Used for Harvesting Plants During the Lifetimes of Petersburg Residents



Plants includes: berries, seaweed, beach greens, and goose tongue.

This map depicts areas used for resource harvesting by a sample of Petersburg residents. Interviews were conducted with 10 Petersburg households from November to March, 1987 and 1988. Because not all residents were interviewed, it is likely that some use areas have been omitted. Therefore, this map must be considered to be an incomplete representation of all Petersburg use areas. See: Harvest and Use of Fish and Wildlife by Residents of Petersburg, Alaska,by Charles W. Smythe, Division of Subsistence Technical Paper No. 164 for more information.

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in Beecher Pass reported harvesting 1,500 pounds of seaweed in 1987, principally for use in the garden. Starfish were also harvested for gardens. Several respondents reported they planted a garden each year. Carrots, potatoes, and strawberries were the major crops.

A significant problem in the conservation of beach seafoods was reported by some of the older residents. They have noted the disappearance of black seaweed from two traditional harvest areas to the north and south of town. They also noticed that gumboots, clams, and sea urchins are being harvested in larger quantities, with less concern for conserving average-sized animals necessary for reproduction. Concern was expressed that increased harvest pressure on these resources by new Asian immigrants is reducing the local availability of these resources. The threat to black seaweed is traced to non-traditional harvest techniques. The traditional method is to pull the seaweed from the rock surface, which allows the plant to regenerate. Local experts reported that plants are being cut and scraped from the rocks at the root where they are attached to the rock. This method prevents effective regeneration of the resource.

FURBEARERS

The harvest of furbearers was carried out exclusively for the furs produced for sale; the harvest and use figures for this category thus represent the level of trapping activity in Petersburg. There was 6.3 percent of the households engaged in trapping during the study year. Trapping was significant in the economy of Petersburg in the first half of this century; one household in the sample represented the fourth generation of trappers in the family. Our observations indicate that trapping is more frequently pursued by young men in high-school or recently graduated. One household reported a total of 68 animals harvested including 30 mink, 22 land otter, 12 marten, and four beaver. The lowest harvest in the sample was nine animals.

There was no sharing of furbearers reported in the sample. This result was expected since there was no consumptive use of the meat from these animals at the time of the study.

At the present time, there are about seven active trappers in Petersburg and two trapping households in Beecher Pass (see Figure 21 for a map of trapping areas). One man has a cabin cruiser used to travel to trapping areas; he lives on board and uses a skiff for trapping along the shore. Two trappers spent 46 days camped in the Port Houghton area over the winter in 1987-88; they caught mink and marten. In addition, high school boys set traplines after school and on week-ends out the logging roads and along the shore of the Narrows south of town. The logging roads to Three Lakes and Woodpecker Cove are popular areas. Trappers stated that there are too many traps in certain areas on Mitkof Island and that there have been problems with the theft of traps. Presently, the area within the town limits in Petersburg and in the vicinity of property owners on Kupreanof are closed to trapping by local ordinance. In Beecher Pass, trapping is carried out extensively in the local area (Beecher Pass, Duncan Canal, southern Mitkof Island, Woewodski Island, and Kupreanof Island).

BEECHER PASS

The settlement of Beecher Pass has brought about an increased use of fish and wildlife resources in that sub-region by the new residents. The resource use pattern is similar to that of the larger community in Petersburg, and includes commercial fishing and trapping activities, with more intensive use of the area surrounding Beecher Pass and extending into Duncan Canal. Harvest levels for Beecher Pass households were substantially higher than in Petersburg households, according to preliminary results, and were among the highest in Southeast. Analysis of these results is beyond the scope of this project, however. Differences in residence patterns, and the sampling procedures followed in Beecher Pass, may explain part of the difference from Petersburg.

In addition to direct harvest and use of wildlife resources in the area, Beecher Pass residents also have brought a heavier recreational use to the sub-region. Local families described their activities which include beach walking and beach combing in Keene Channel and Beecher Pass. They hike into Harvey Lake along the USFS trail and swim, fish for trout, and picnic at the lake, using the USFS cabin there (without always signing the book as a record of their activity). In winter, they have ice-skated on the lake. Also, Harvey Lake is visited frequently by locals with out-of-town visitors.

The area in Beecher Pass has historical significance to Petersburg families, as described in Chapters 3 and 4. A member of a Petersburg family, whose grandfather first came to the community just prior to 1920, described his use of a family cabin in Duncan Canal that was built in 1960: "I have moved [back] to the land since 1975. I spend 25-50 percent of my time each year at the cabin, and use the local resources extensively."

Beecher Pass residents are aware of the patterns of historical resource use, and are concerned that they are not adequately recognized by state and federal agencies managing the area. They are also concerned that, because the area is closed at the present time, managers erroneously may assume that it would not have subsistence use if it became available at some time in the future. "Woewodski is one of the most productive islands I have seen. I don't think intended use for closed areas will show [in the TRUCS survey]." Deer hunting was extensive in the area historically, prior to the closure in the early 1970's, and it should be recognized as a potential use of the area should the deer population rebound to adequate levels. These sentiments were also expressed by Petersburgers in comments about the survey:

> [It is] important to identify deer harvest areas and fishing areas that have been used before. Now, because of regulations, restraints, they may not be marked as good, reliable areas, or as areas being used. But Forest Service, Fish and Game, should note or realize that such areas could be good harvest areas. Concerned that road access to areas may cause over-hunting, and could significantly decrease [deer] population. These areas should be monitored closely."

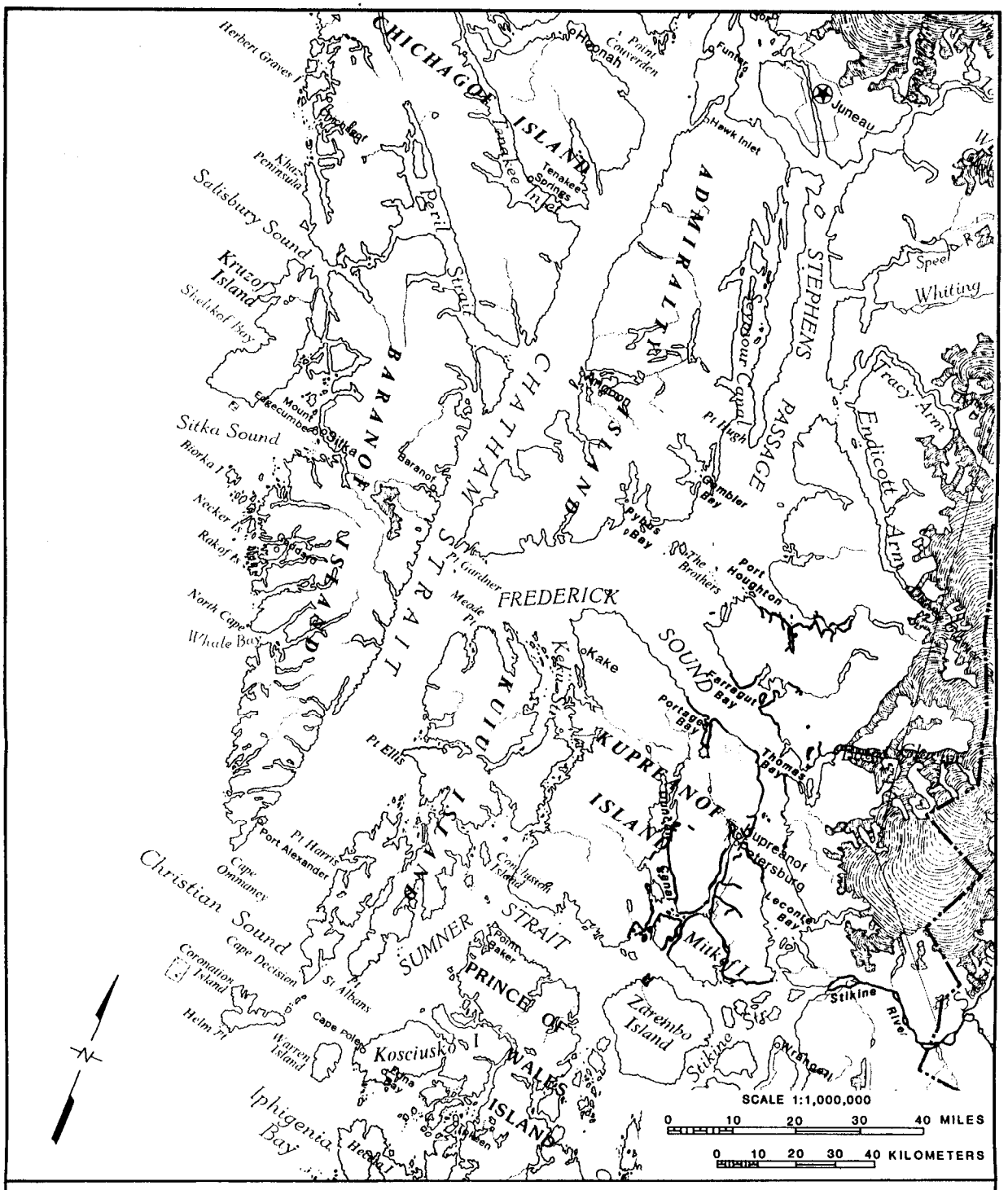
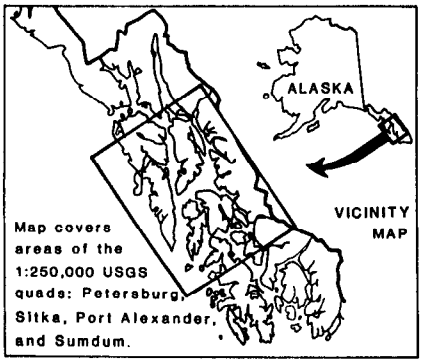


Figure 21 Areas Used for Trapping During the Lifetmes of Petersburg Residents



This map depicts areas used for resource harvesting by a sample of Petersburg residents. Interviews were conducted with 10 Petersburg households from November to March, 1987 and 1988. Because not all residents were interviewed, it is likely that some use areas have been omitted. Therefore, this map must be considered to be an incomplete representation of all Petersburg use areas. See: Harvest and Use of Fish and Wildlife by Residents of Petersburg, Alaska, by Charles W. Smythe, Division of Subsistence Technical Paper No. 164 for more information.

More detailed 1:250,000 scale maps of these use areas are available at the Division of Subsistence.

STATE OF ALASKA
Department of Fish and Game
Subsistence Division

CHAPTER 8
DISCUSSION

Developed at the turn of the century by Norwegian and American fishing interests, Petersburg was centered around the commercial fishing industry and a few smaller industries such as logging, mining, fur farming, and trapping. Petersburg fishermen competed successfully with their Seattle counterparts, particularly in halibut and salmon fishing, and ranged throughout Southeast building their enterprises. Through the years, Petersburgers continued these trends as they developed new fisheries (for example, shrimp, king crab, and herring roe), adapted to changing markets (halibut and herring oil, black cod, etc.), and ventured far from home. Today, Petersburg ranks second among Alaskan ports in the total value of landings and third in total volume, and local fishermen are represented in many fisheries throughout the state.

Currently, commercial fishing contributes between 20 and 25 percent of the total income earned by Petersburg residents (see Chapter 6). Manufacturing, which is primarily fish processing employment, also comprises a major income source. In addition to the favorable developments in the fishing industry over the last fifteen years, the community has benefited from substantial expansion in local government institutions. Government presently is the largest single source of regular wage income in the town. The Petersburg economy has remained stable during the recent period of change that has brought a downturn in the state economy.

Petersburg has grown to a town of about 3,280 people, a moderate-sized community by Alaskan standards. Since its formation, the ethnic composition of the population has been predominantly white with smaller than average proportions of Tlingit and other groups. Like most of the Norwegian and American migrants, these ethnic groups were first attracted to the community by the opportunities in the commercial fishing industry. Recent census figures indicate Petersburg's population presently is 85 percent non-Native, in contrast to neighboring communities.

This chapter provides a summary of the fish and wildlife harvest and use patterns of Petersburg residents, and a brief comparison with other Southeast communities. It also discusses the saliency of rod and reel and other sport harvesting methods which are prevalent in the community; in this respect Petersburg is unique among Southeast communities.

SUMMARY OF HOUSEHOLD HARVEST AND USE PATTERNS

The harvest and use of fish and animal resources in Petersburg for home consumption is comparable to other Southeast communities, including those with smaller populations and fewer economic opportunities. Petersburg households had high rates of harvest and use of fish and wildlife resources, with 98.6 percent of the sampled households reporting some use of wildlife resources and 93.7 percent reporting some harvest. More than 75 percent of the sampled households used resources in

most categories, including salmon, marine fish, shellfish, land mammals, and plants. Petersburg is similar to Angoon and Tenakee Springs in this respect. On the other hand, there was more divergence in household harvest participation rates. Petersburg households were slightly more active in salmon fishing than Angoon or Tenakee Springs, but had smaller proportions participating in the harvest of marine fish, invertebrates, and land mammals. Petersburg households participated at rates 15-20 percent lower than Angoon households in the harvests of these resources.

The annual harvest in Petersburg was in the middle range of annual harvests for Southeast communities (see Table 16 below). At 203 pounds per capita, Petersburg was slightly lower than the average annual harvest for nine other Southeast communities, which is 213 pounds (Wolfe and Walker 1987:65). Petersburg most closely resembled Hoonah, Angoon, Kake, and Klawock in total harvest levels. Tenakee Springs, which had the second largest annual harvest level (250 pounds), had unusual population characteristics for established Southeast Alaska communities: there were only about 100 individuals in residence, and the sampled population was 85 percent Caucasian.

All species of fish accounted for nearly half (46 percent) of the total annual harvest, by weight, in Petersburg during the study year. The largest single component of the annual harvest was land

Table 16. Annual Resource Harvests in Nine Southeast Communities.

Community	Annual Harvest (Pounds Per Capita)
1. Haines	114
2. Sitka	141
3. Klukwan	174
4. Petersburg	203
5. Hoonah	209
6. Angoon	216
7. Kake	217
8. Klawock	223
9. Tenakee Springs	250
10. Yakutat	369

Source: Wolfe and Walker (1987)

mammals, which was 31 percent of the total reported harvest. The annual harvest was comprised principally of seven individual resources: about equal proportions of deer and salmon, 22 percent; halibut, 16 percent; shrimp, clams, and crab, about 15 percent; and moose, about nine percent, of the total harvest by weight. All remaining resources were harvested at rather low levels, rarely approaching three pounds per capita (1.5 percent of the total harvest).

The composition of the harvest in Petersburg differs from other Southeast Alaskan communities that have been studied. Petersburg households harvested less salmon and all other fish, but more land mammals and marine invertebrates, than other communities in Southeast.[1] Petersburg households harvested salmon and deer in equal proportions (22 percent), while in Klawock, for example, twice as much salmon as deer was harvested in one year. Salmon comprised 33 percent of the total per capita harvest in Klawock, 34 percent in Angoon, and 28 percent in Tenakee Springs. In Petersburg, the primary fish species were salmon and halibut, whereas there was greater use of other fish species in other communities. The slightly higher harvest level of halibut in Petersburg did not compensate for the differences in total fish harvests figures from other Southeast communities, which as mentioned were higher than in Petersburg.

The deer harvest level in Petersburg was comparable to other communities in Southeast, and the inclusion of moose in the category of land mammals increases the total annual harvest for this category over that of other communities. In some communities, such as Angoon and Tenakee Springs, slightly more deer was harvested than in Petersburg, but there was no moose in the harvest.

Marine invertebrates were harvested at higher levels in Petersburg than in most other Southeast communities: Klawock and Kake, for example, harvested these resources at ten and five percent of the annual harvest, compared to 15 percent in Petersburg. Tenakee Springs, however, had a much higher harvest of shellfish, comprising 24 percent of the annual harvest. This preference for shellfish may indicate a similarity between the populations of Tenakee Springs and Petersburg, both of which are primarily non-Native.

SIGNIFICANCE OF REGULATIONS

A distinguishing characteristic of fish and wildlife resource use in Petersburg is that a great deal of the annual harvest was taken under sport and other general regulations. For example, of all the fish taken for home consumption during the year, 83.1 percent was caught with rod and reel. The remainder was removed from the commercial catch (11.3 percent), caught with nets (5.4 percent), or by other methods (.2 percent). Compared to other Southeastern communities, Petersburg had a very high level of sport harvesting for fish. Much of the remaining harvest was taken under general regulations.

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[1] These comparisons are made with research sponsored by the Subsistence Division, reported in Technical Papers Numbers 126, 138, and 159 (Ellanna and Sherrod 1987; Leghorn and Kookesh 1987; and George and Bosworth 1988).

(Under general regulations, the openings for "subsistence" and "resident" users coincide.) For instance, all of the harvested land mammals and birds was taken under general hunting regulations. There was no portion of the annual harvest which was taken under exclusive subsistence regulations.[2]

We became aware of this tendency during selection of the study sample, when we set out to identify households that were "active" participants in the harvest. As described in Chapter 2, knowledgeable local residents assisted in identifying which households contained "active" harvesters. It was reported that persons who were active in the harvest often fit into several user categories, employing more than one harvest method during a year. In discussing harvests of wildlife resources for home use, the types of users to which we are accustomed, as defined by regulation (such as "subsistence" hunter, "sport" hunter or fisherman, "personal use" harvester, and "commercial" fisherman) were not readily designated by Petersburg residents. That is to say, the differences between the harvest methods were not salient; often "sport" and "subsistence" were used interchangeably. When a contrast was made, it was usually to distinguish "sport" and "subsistence" uses from commercial activities which sometimes are seen to intrude on local users in areas close to town. The main consideration by local residents was that the "active" harvesters were successful producers. Primary distinctions between different types of harvesting were less significant to local experts than whether the household contained persons who were active and successful producers.

For most Petersburg residents, the fundamental issue is whether a resource is harvested, not how it is harvested. Petersburg residents consider themselves to be active users of fish and animal resources for home consumption, but they do not usually ascribe the term "subsistence" to their activity. Local residents are learning that the designation of "subsistence user" now is associated with special regulations under state law, but there is little use of these regulations in the community. In 1987, a total of eight subsistence fishing permits were issued (see Chapter 7). These permits were available equally to any Alaskan resident, however. In Petersburg, they were issued for sockeye, pink, and chum salmon, and the permits applied to specific locations which were placed some distance from town. At the present time, deer is the only resource that is classified as available for harvest by Petersburg residents under special subsistence regulations. However, neighboring communities are also included in this determination, and the areas designated as available to Petersburg hunters for "subsistence" hunting are extensive, incorporating most of the traditional areas reported in Chapter 7. At the present time, an exclusive opening for local residents has not been prescribed.

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[2] In order for local residents to qualify for hunting and fishing under exclusive subsistence regulations, a determination whether customary and traditional uses for the species exist in the area must be made by the Boards of Fisheries and Game. In the 1987-88 season, such subsistence determinations have been made in the Petersburg area for deer and moose. Petersburg residents have been classified as subsistence users of deer in game management areas 1 (B), 2, 3, and 4. On the other hand, Petersburg residents were determined not to have customary and traditional use of moose in the Stikine drainage, while Wrangell hunters *were* classified as subsistence users in this area. As noted in Chapter 7, there has been a sustained use of this area by Petersburg hunters, and an increased level of use was reported since the mid-1960's.

In Petersburg, local residents are interested in sustaining populations of wildlife resources and maintaining the opportunities for all community members to harvest them when they are available. A common value was expressed by numerous residents, that everybody in the community (and the state as a whole) has equal access to the wildlife resources. In discussions and public meetings, local residents expressed opposition to regulations which give some groups priority of access to resources, at the expense of other segments of the population. In discussions of regulatory topics, Petersburgers are concerned that the distribution of resources among different groups be equitable, after the health of the resource populations is assured. The sense we gained in Petersburg was that, from a local perspective, regulations giving priority to "subsistence" users are unfair.

It would be valuable to study in greater detail the historical development of regulations and their relationship to current patterns of resource harvest and use in the community. Harvesting fish and wildlife resources for home consumption under "commercial" regulations has been the norm in Petersburg since the establishment of the community at the turn of the century, as described in Chapters 3 and 4. There were general deer hunting regulations, and it was also common for community members to take resources as they were needed for home consumption. More recently, general regulations, and sport fishing regulations in particular, have become more salient. Local experts reported there have been several subsistence net permit fisheries open to territorial residents in the historical past. In this regard, the historical subsistence regulations resemble the sport and general regulations in use at the present time. In the earlier subsistence net fisheries, techniques were derived from commercial practices prevalent at the time. However, regulatory changes which prohibited beach seines, and the increasing complexities and economies of scale involved in the commercial fishing industry, brought about the replacement of beach seines and other techniques of shore-based gill nets and contributed to the shift to rod and reel as the prevalent form of home use harvesting of fish in Petersburg. On the other hand, continuities between contemporary "sport" and earlier "commercial" trolling techniques, and also with traditional Northwest Coast Indian fishing practices, are more obvious. Current rod and reel trolling methods are similar to early "commercial" trolling practices. The modern "sport" fishing techniques embody current egalitarian values and some of the technical traditions in the community; the current general regulations are also compatible with community values.

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APPENDICES

APPENDIX A

Wrg/Pb Version: 12/2/87

OMB #: 0596-0096
EXPIR.DATE: 7/31/89

U.S. FOREST SERVICE

ALASKA DEPT. OF FISH & GAME
SUBSISTENCE DIVISION

FINAL DRAFT

UNIVERSITY OF ALASKA ANCHORAGE

INSTITUTE OF SOCIAL & ECONOMIC RESEARCH

TONGASS RESOURCE USE SURVEY
FALL 1987

FACE TO FACE COVER SHEET

1. INTERVIEWER ID _____ 3. STUDY NO. _____

2. INTERVIEW NO. _____

4. COMMUNITY _____ 5. SEGMENT ____ 6.LINE ____

7. ADDRESS _____

_____

_____

CONTACT RECORD

	DATE	DAY	TIME	RESULT	INITIALS
FIRST CALL					
SECOND CALL					
THIRD CALL					
FOURTH CALL					
FIFTH CALL					

(1) Hello. I'm _____ with the [Alaska Department of Fish and Game.] I am working on the Tongass Resource Use Survey and I would like to ask your help. Your household has been randomly chosen in a survey on hunting and fishing in southeast Alaska. I would like to talk with the adult in your household who knows the most about hunting and fishing.

The survey is being jointly sponsored by the U.S. Forest Service, the Alaska Department of Fish and Game and the University of Alaska. The Forest Service will use the information to determine if timber harvest, fish hatcheries, or other activities could affect hunting and fishing in southeast Alaska. The Department of Fish and Game will use the results to help ensure that the management of wildlife resources is sensitive to the needs and concerns of local residents.

I will be asking you to show on maps the areas where members of your household hunt and fish. I will also ask for descriptions of selected locations where the household hunts, information on annual species harvests, and background characteristics that will help policy makers understand different types of resource use.

The interview takes about one hour. You can choose not to take part in the survey or to not answer any questions you don't wish to. Your answers will be kept strictly confidential and used only in combination with the answers of other residents. Do you have any questions before I begin?

(2) First of all, could you please list the persons who have been members of your household during the past year, giving their age, sex, ethnicity and relationship to you.

PERSON NO.	AGE	SEX	RELATIONSHIP TO R	RACE/ ETHNICITY *
1			RESPONDENT	
2				
3				
4				
5				
6				
7				
8				

* 1=ALASKA NATIVE, 2= WHITE, 3=OTHER

OMB #: 0596-0096
EXPIR.DATE: 7/31/89

1.START TIME ——:—— (1-2:3-4)

U.S. FOREST SERVICE

ALASKA DEPT. OF FISH & GAME
SUBSISTENCE DIVISION

FINAL DRAFT

UNIVERSITY OF ALASKA ANCHORAGE

INSTITUTE OF SOCIAL & ECONOMIC RESEARCH

TONGASS RESOURCE USE SURVEY
FALL 1987

2.	3.	4.	5.	6.	7.
INTW'R ID (5-6)	INT'W NO. (7-8)	STUDY NO. (9-12)	DECK 1 (13)	MONTH (14-15)	DATE (16-17)

8.———
COMMUNITY (18-19)

SECTION A
DEER HUNTING

A1. First, I would like to ask about deer hunting. Have you or anyone else in your household hunted deer while living in this community?

1. YES (20)
2. NO ——— SKIP TO P.11, Q.B1
8. DON'T REMEMBER
9. NOT ASCERTAINED

A2. I would like you to draw a line around each of the areas that members of your household have used to hunt deer while living in this community. (PROBE: CAN YOU BE MORE SPECIFIC? HAVE R DRAW AREAS IN GREEN ON MAP. ASSIGN AND LABEL EACH AREA WITH A UNIQUE NUMBER, A01-A99).

A3. Now I would like you to draw a line around each of the locations that members of your household think are most reliable; that is, locations where you are most likely to find deer some time during the year. (RECORD ON MAP IN RED AND ASSIGN EACH AREA A UNIQUE NUMBER, B01-B99).

A4. Now I would like you to pick one place that you think is particularly good for deer hunting. I won't record this place on the map but I would like to ask you a few questions about this place. Would you point to the place you're thinking about? (PROBE: CAN YOU BE MORE SPECIFIC?)

Thinking just about this place, how do you usually travel there? (PROBE FOR ALL MEANS OF TRANSPORTATION USED)

1. BOAT
2. CAR/TRUCK
3. FERRY
4. WALK
5. AIR
6. ATV
7. OTHER _____
9. NA

☐	☐	☐	☐
1st (21)	2nd (22)	3rd (23)	4th (24)

IF BOAT USED:

A5. What kind of boat or boats do you usually use to get there?

☐ BOAT 1 (25)
☐ BOAT 2 (26)

1. SKIFF
2. COMMERCIAL FISHING BOAT
3. CHARTER
4. PLEASURE CRUISER
7. OTHER _____
8. DON'T KNOW
9. NA

A6. Does the route you take to this place include open water that can get dangerously rough in stormy weather?

1. YES
2. NO
9. NA (27)

A7. Now I would like to measure how many miles you travel to get to this place from your community, from the beach, and from the nearest road. (RECORD BELOW)

DISTANCE TO PLACE IN MILES FROM: COMMUNITY	BEACH	ROAD
(28-29)	(30-31)	(32-33)

A8. Does this place include:

Y	N		
☐	☐	A8a. young clearcuts, where it is open and there is little brush?	(34)
☐	☐	A8b. middle aged clearcuts, where the trees touch each other and are difficult to see through?	
☐	☐	A8c. older clearcuts, where the trees are taller than houses and the ground beneath the trees is open?	
☐	☐	A8d. old growth forest?	
☐	☐	A8e. muskeg or meadows?	
☐	☐	A8f. open beach?	
☐	☐	A8g. grassy meadow?	
☐	☐	A8h. areas above treeline?	
☐	☐	A8i. and roads including logging roads?	(42)

A9. During what months of the year do members of your household hunt in this place? (1=YES, 2=NO, 9=NA)

☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
J	F	M	A	M	J	J	A	S	O	N	D

(43) (54)

A10. What is the first year that a member of your household hunted deer in this place?

☐☐ YEAR (55-56)

98. DON'T KNOW
99. NA

A11. Are there any past or present members of your family who do not live in this household who hunted deer in this place?

1. YES
2. NO

8. DON'T KNOW
9. NA

(57)

A11a. What is the first year that a past or present family member hunted deer there?

☐☐ YEAR (58-59)

98. DON'T KNOW
99. NA

A12. During the past twelve months, who from your household hunted deer in this place? (RECORD PERSON NO. FROM COVER SHEET)

[ ] FIRST PERSON (PERS.NO.) (60) [ ] SECOND P. (61) [ ] THIRD P. (62)

A12a. Could you please estimate on about how many days each of these household members hunted deer in this place?

[ ] FIRST PERSON (DAYS) (63) [ ] SECOND P. (64) [ ] THIRD P. (65)

A13. On your household's last deer hunt in this place, who from your household went?

[ ] FIRST PERSON (PERS.NO.) (66) [ ] SECOND P. (67) [ ] THIRD P. (68)

A14. On that last hunt, did (you/they) go with someone from another household?

1. YES (69)
2. NO → SKIP TO P.5, Q.A16
8. DK → SKIP TO P.5, Q.A16
9. NA → SKIP TO P.5, Q.A16

A15. Was this person a relative, a friend, a friend from work, or someone (you/they) know in some other way? (IF MORE THAN ONE OTHER PERSON, OBTAIN RELATIONSHIP FOR EACH OTHER PERSON)

A15a. (FIRST OTHER PERSON) (70)
1. RELATIVE
2. FRIEND
3. FRIEND FROM WORK
7. KNOW IN OTHER WAY ———————
8. DON'T KNOW
9. NA

A15b. (SECOND OTHER PERSON) (71)
1. RELATIVE
2. FRIEND
3. FRIEND FROM WORK
7. KNOW IN OTHER WAY ———————
8. DON'T KNOW
9. NA

A15c. (THIRD OTHER PERSON) (72)
1. RELATIVE
2. FRIEND
3. FRIEND FROM WORK
7. KNOW IN OTHER WAY ———————
8. DON'T KNOW
9. NA

A16. Are there any areas that have been reliable for deer hunting that your household no longer uses to hunt deer?

1. YES
2. NO ——— SKIP TO P.7 Q.A27 (73)

A17. Please draw a line around each of the areas that have been reliable for deer hunting that your household no longer uses to hunt deer. (RECORD ON MAP IN BROWN AND ASSIGN EACH AREA A UNIQUE NUMBER, C01-C99)

A18. Now I would like you to pick one place that was particularly good for deer hunting that for some reason your household no longer uses to hunt deer. Could you point to this place? Thinking just about this place, could you tell me how you used to travel there? (PROBE FOR ALL MEANS OF TRANSPORTATION USED)

1. BOAT
2. CAR/TRUCK
3. FERRY
4. WALK
5. AIR
6. ATV
7. OTHER ———————
9. NA

1st	2nd	3rd	4th
(74)	(75)	(76)	(77)

IF BOAT USED:

A19. What kind of boat or boats did you usually use to get there?

BOAT 1 (78)
BOAT 2 (79)

1. SKIFF
2. COMMERCIAL FISHING BOAT
3. CHARTER
4. PLEASURE CRUISER
7. OTHER ———————
8. DON'T KNOW
9. NA

A20. Did the route you took to this place include open water that could get dangerously rough in stormy weather?

1. YES
2. NO
9. NA (80)

A21. Now I would like to measure how many miles you travelled to get to this place from your community, from the beach, and from the nearest road. (RECORD BELOW)

DISTANCE TO PLACE IN MILES FROM: COMMUNITY	BEACH	ROAD
(81-82)	(83-84)	(85-86)

A22. Does this place <u>now</u> include:

Y	N	DK	
☐	☐	☐	A22a. young clearcuts, where the trees are short and there is heavy brush? (87)
☐	☐	☐	A22a. middle aged clearcuts, where the trees touch each other and are difficult to see through?
☐	☐	☐	A22c. older clearcuts, where the trees are taller than houses and the ground beneath the trees is open?
☐	☐	☐	A22d. old growth forest?
☐	☐	☐	A22e. muskeg or meadows?
☐	☐	☐	A22f. open beach?
☐	☐	☐	A22g. grassy meadow?
☐	☐	☐	A22h. areas above treeline?
☐	☐	☐	A22i. and roads, including logging roads? (95)

A23. During what months of the year did members of your household hunt in this place? (1=YES, 2=NO, 9=NA)

☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
J	F	M	A	M	J	J	A	S	O	N	D

(96) (107)

A24. What is the first year that a member of your household hunted deer in this place?

☐ YEAR

98. DON'T KNOW
99. NA

(108-109)

A25. Are there any past or present members of your family who do not live in this household who hunted deer in this place?

1. YES
2. NO
8. DON'T KNOW
9. NA

(110)

A25. What is the first year that a past or present family member hunted deer there?

☐ YEAR

98. DON'T KNOW
99. NA

(111-112)

A26. Why did your household stop using this place to hunt deer?

☐ _____

☐ _____ (113-114)

☐ _____

_____ (115-116)

☐ _____

_____ (117-118)

1. _____ 2._____ 3._____ 4._2_
INTW'R ID (1-2) | INT'W NO. (3-4) | STUDY NO. (5-8) | DECK (9)

A27. Now, I would like to ask you to draw a line around all the areas that you and other members of your household use the most often to hunt deer (RECORD ON MAP IN BLUE AND ASSIGN UNIQUE NUMBERS TO EACH AREA, D01-D99).

A28. I would like you to pick one location that your household uses most often for deer hunting. Again I won't record this place on the map but I would like to ask you a few questions about this place. Would you point to the place you're thinking about?

INTERVIEWER CHECKPOINT

☐ 1= SAME PLACE AS MOST RELIABLE PLACE: SKIP TO P.10 Q.A38 (10)

2= DIFFERENCE PLACE —— CONTINUE

Thinking just about this place, how do you usually travel there? (PROBE FOR ALL MEANS OF TRANSPORTATION USED)

1. BOAT
2. CAR/TRUCK
3. FERRY
4. WALK
5. AIR
6. ATV
7. OTHER _____
9. NA

☐ 1st (11) ☐ 2nd (12) ☐ 3rd (13) ☐ 4th (14)

IF BOAT USED:

A29. What kind of boat or boats do you usually use to get there?

☐ BOAT 1 (15)
☐ BOAT 2 (16)

1. SKIFF
2. COMMERCIAL FISHING BOAT
3. CHARTER
4. PLEASURE CRUISER
7. OTHER _____
8. DON'T KNOW
9. NA

A30. Does the route you take to this place include open water that can get dangerously rough in stormy weather?

1. YES
2. NO
9. NA (17)

A31. Now I would like to measure how many miles you travel to get to this place from your community, from the beach, and from the nearest road. (RECORD BELOW)

DISTANCE TO PLACE IN MILES FROM:		
COMMUNITY	BEACH	ROAD
(18-19)	(20-21)	(22-23)

A32. Does this place include:

Y	N	
☐	☐	A32a. young clearcuts, where it is open and there is little brush? (24)
☐	☐	A32b. middle aged clearcuts, where the trees touch each other and are difficult to see through?
☐	☐	A32c. older clearcuts, where the trees are taller than houses and the ground beneath the trees is open?
☐	☐	A32d. old growth forest?
☐	☐	A32e. muskeg or meadows?
☐	☐	A32f. open beach?
☐	☐	A32g. grassy meadow?
☐	☐	A32h. areas above treeline?
☐	☐	A32i. and roads, including logging roads? (32)

A33. During what months of the year do members of your household hunt in this place? (1=YES, 2=NO, 9=NA)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

J F M A M J J A S O N D

(33) (44)

A34. What is the first year that a member of your household hunted deer in this place?

☐ YEAR

98. DON'T KNOW
99. NA

(45-46)

A35. Are there any past or present members of your family who do not live in this household who have ever hunted deer in this place?

1. YES
2. NO

8. DON'T KNOW
9. NA

(47)

A35a. What is the first year that a past or present family member hunted deer there?

☐ YEAR

98. DON'T KNOW
99. NA

(48-49)

A36. During the last year, who from your household hunted deer in this place? (RECORD PERSON NO. FROM COVER SHEET)

☐ FIRST PERSON (PERS.NO.) (50)

☐ SECOND P. (51)

☐ THIRD P. (52)

A37. Could you please estimate on about how many days each of these household members hunted deer in this place?

☐ FIRST PERSON (DAYS) (53)

☐ SECOND P. (54)

☐ THIRD P. (55)

A38. How many deer, if any, did members of your household harvest altogether between November 1986 and October 1987?

☐ DEER (56-57)

98. DON'T KNOW
99. NA

A39. About how many deer or portions of deer, if any, did your household give away last year? (RECORD NO. OF EACH SIZE CATEGORY)

WHOLE	3/4	1/2	1/4
☐	☐	☐	☐
(58-59)	(60-61)	(62-63)	(64-65)

(IF GAVE ANY DEER MEAT AWAY):

A40. Did your household give any deer meat to:

Y	N		
☐	☐	A40a. relatives?	(66)
☐	☐	A40b. friends?	
☐	☐	A40c. friends from work?	
☐	☐	A40d. elders?	
☐	☐	A40e. people you know in another way?_____	

_____(70)

A41. Who from your household personally harvested deer in the last twelve months? (PROBE FOR ALL MEMBERS AND RECORD PERSON NO. FROM COVER SHEET)

PERS.NO.

☐ FIRST PERSON (71)

☐ SECOND P. (72)

☐ THIRD P. (73)

********** ALL RESPONDENTS **********

SECTION B

B1. Did your household receive any deer meat from another household between November 1986 and October 1987?

1. YES (74)
2. NO → SKIP TO Q.B4
8. DK
9. NA

B2. About how many deer or portions of deer did your household receive last year? (RECORD NO. OF EACH SIZE CATEGORY)

WHOLE	3/4	1/2	1/4
(75-76)	(77-78)	(79-80)	(81-82)

B3. Did your household receive any deer meat from:

Y	N		
☐	☐	B3a. relatives?	(83)
☐	☐	B3b. friends?	
☐	☐	B3c. friends from work?	
☐	☐	B3d. elders?	
☐	☐	B3e. people you know in some other way (SPECIFY HOW)?	

_____ (87)

B4. Now I would like to ask you about salmon fishing. COMPLETE CHART FOR SALMON FISHING; MAP SALMON FISHING NON-COMMERCIAL HARVEST AREAS AND CONTINUE WITH OTHER HARVESTS.

SALMON
HOUSEHOLD HARVEST & DISTRIBUTION
DURING LAST YEAR

Did someone in your household go commercial fishing for salmon last year? ____/____ [IF NO, SKIP TO NON-COMMERCIAL]
yes no

	KINGS	SOCKEYE (REDS)	COHOS SILVERS	PINKS (HUMPY)	CHUM (DOG)
COMMERCIAL FISH? (1=YES, 2=NO)					
How many were removed from the commercial catch for home use?					
How many were given to other households or at community events?					
NON-COMMERCIAL FISH? (1=YES, 2=NO)					
How many were caught with nets or gaffs?					
How many were caught with rod and reel?					
How many of these were given away?					
How many were received by your household					

MAP AREAS WHERE HOUSEHOLD HAS HARVESTED SALMON NON-COMMERCIALLY IN PURPLE. MARK EACH AREA WITH UNIQUE NO. E01-E99

FINFISH
HOUSEHOLD HARVEST & DISTRIBUTION
DURING LAST YEAR

Did someone in your household go commercial fishing for finfish other than salmon during the last year? ____/____ yes no
[IF NO, SKIP TO NON-COMMERCIAL]

	COD	HALIBUT	FLOUNDER SOLE FLATFISH	ROCK FISH	HERRING
COMMERCIAL FISH? (1=YES, 2=NO)					
How many were removed from the commercial catch for home use?		(lbs.)			(lbs.)
Were any given away? (1=YES, 2=NO)					
NON-COMMERCIAL FISH? (1=YES, 2=NO)					
How many were caught with nets					(lbs.)
How many were caught with rod and reel?					
Were any given away? (1=YES, 2=NO)					
Were any received by your household? (1=yes, 2=no)					

FINFISH
HOUSEHOLD HARVEST & DISTRIBUTION
DURING LAST YEAR

	HOOLIGAN	Dolly Vardon/ STEELHEAD/ TROUT	OTHER FISH
NON-COMMERCIAL FISH? (1=YES, 2=NO)			
How many were caught with nets			(lbs)
How many were caught with rod and reel?			
Were any given away? (1=YES, 2=NO)			
Were any received by your household? (1=yes, 2=no)			

MAP AREAS USED TO HARVEST FINFISH IN GREEN. ASSIGN UNIQUE NUMBER TO EACH AREA, F01-F99

SHELLFISH
HOUSEHOLD HARVEST & DISTRIBUTION
DURING LAST YEAR

Did someone in your household go commercial fishing for shellfish during the last year? ____/____ [IF NO, SKIP TO NON-COMMERCIAL]
yes no

	KING CRAB	DUNGENESS CRAB	TANNER CRAB	SHRIMP
COMMERCIAL HARVEST? (1=YES, 2=NO)				
How many were removed from the commercial catch for home use?				(lbs.)
Were any given away? (1=YES, 2=NO)				
NON-COMMERCIAL HARVEST? (1=YES, 2=NO)				
How many were harvested?				(lbs.)
Were any given away? (1=YES, 2=NO)				
Were any received by your household? (1=yes, 2=no)				

SHELLFISH
HOUSEHOLD HARVEST & DISTRIBUTION
DURING LAST YEAR
(PAGE TWO OF THREE)

IF NO COMMERCIAL FISHER IN THE HOUSEHOLD, SKIP TO NON-COMMERCIAL

	SEA URCHINS	ABALONE	OCTOPUS	SCALLOPS
COMMERCIAL HARVEST? (1=YES, 2=NO)				
How many were removed from the commercial catch for home use?	(5 Gal)	(lbs.)	#	
Were any given away? (1=YES, 2=NO)				
NON-COMMERCIAL HARVEST? (1=YES, 2=NO)				
How many were harvested?	(5 Gal)	(lbs.)	#	(lbs.)
Were any given away? (1=YES, 2=NO)				
Were any received by your household? (1=yes, 2=no)				

SHELLFISH
HOUSEHOLD HARVEST & DISTRIBUTION
DURING LAST YEAR
(PAGE THREE OF THREE)

	GUMBOOT	SEA CUCUMBER	CLAMS COCKLES	OTHER INVERT.	HERRING EGGS
NON-COMMERCIAL HARVEST? (1=YES, 2=NO)					
How many were harvested?	(Gal.)	(5 Gal.)	(5 Gal.)	(lbs.)	(lbs.)
Were any given away? (1=YES, 2=NO)					
Were any received by your household? (1=yes, 2=no)					

MAP INVERTEBRATE HARVEST AREAS IN RED. MARK EACH AREA WITH UNIQUE NUMBER, G01-G99.

PLANTS
HOUSEHOLD HARVEST & DISTRIBUTION
DURING LAST YEAR

	SEAWEED	Other Plants	BERRIES	FIREWOOD
How many (UNIT) were harvested?	(lbs.)	(lbs.)	(Qts.)	(CHRDS.)
Were any given away? (1=YES, 2=NO)				
Were any received by your household? (1=yes, 2=no)				

plants includes: beach plants, mushrooms, all other wild plants

seaweed includes: kelp, black seaweed, sea ribbons, sea lettuce, etc.

BIRD
HOUSEHOLD HARVEST & DISTRIBUTION
DURING LAST YEAR

	DUCKS	SEABIRDS	GEESE	SEA-BIRD EGGS	OTHER
HARVEST? (1=YES, 2=NO)					
How many were harvested?					
Were any given away? (1=YES, 2=NO)					
Were any received by your household? (1=yes, 2=no)					

NOTE: Ducks include: Mallards, Widgeons, Teals, Shovelers, Old Squaws, Golden Eyes, Buffleheads. Seabirds include: Scoters, Murres, Murrlets, Puffins, Seagulls, Commorants

MAP BIRD HARVEST AREAS IN BLUE. MARK EACH AREA WITH UNIQUE NUMBER, H01-H99.

LAND MAMMAL
HOUSEHOLD HARVEST & DISTRIBUTION
DURING LAST YEAR

	MOOSE	GOAT	BLACK BEAR	FURBEARERS
HARVEST? (1=YES, 2=NO)				
How many were harvested?				
Were any given away? (1=YES, 2=NO)				
GIVEN TO HOUSEHOLD? (1=YES, 2=NO)				

MARINE MAMMAL
HOUSEHOLD HARVEST & DISTRIBUTION
DURING LAST YEAR

	HARBOR SEAL	OTHER
HARVEST? (1=YES, 2=NO)		
How many were harvested?		
Were any given away? (1=YES, 2=NO)		
GIVEN TO HOUSEHOLD? (1=YES, 2=NO)		

MAP MARINE MAMMAL HARVEST AREAS IN BROWN. MARK EACH AREA WITH UNIQUE NUMBER I01-199.

SECTION C
BACKGROUND QUESTIONS

C1. During the last year, did your household harvest an unusually small amount of any of the animals and plants your household normally uses?

1. YES (10)
2. NO → SKIP TO Q.C3
9. NOT ASCERTAINED → SKIP TO Q.C3

C2. Please tell me which harvest amounts were unusually small and why you think they were unusually small.

C2a. Species 1: _____ (11-12)

Why: _____

_____ (13-14)

C2b. Species 2: _____ (15-16)

Why: _____

_____ (17-18)

C2c. Species 3: _____ (19-20)

Why: _____

_____ (21-22)

C3. During the last year, did your household harvest an unusually large amount of any of the animals and plants your household normally uses?

1. YES (23)
2. NO → SKIP TO Q.C5
9. NOT ASCERTAINED → SKIP TO Q.C5

C4. Please tell me which harvest amounts were unusually large and why you think they were unusually large.

C4a. Species 1: _____ (24-25)

Why: _____

_____ (26-27)

C4b. Species 2: _____ (28-29)

Why: _____

_____ (30-31)

C4c. Species 3: _____ (32-33)

Why: _____

_____ (34-35)

C5. What percent of all the meat and fish that your household ate in the last year came from your household's hunting, fishing, and gathering activities (as opposed to meat and fish purchased or given to household)?

[ ] (36-38)

PCT.

C6. What percent of all the meat and fish that your household ate in the last year came from people who live in another household (who may or may not be relatives)?

[ ] (39-41)

PCT.

C7. And what percent of all the meat and fish you and your household got from hunting, fishing, and gathering did your household give to others?

[ ] (42-44)

PCT.

C8. What percent of all the plants that your household ate in the last year came from your household's gardening, and gathering activities?

[ ] (45-47)

PCT.

C20. What is the longest total number of years someone in your household has been living in (COMMUNITY)?

[ ] (YEARS)

C21. What is the longest total number of years someone in your household has been living in Alaska?

[ ] (YEARS) (97-98)

EMPLOYMENT

C25. Have you had a job for pay in the last twelve months?

1. YES 9. NA (10)
2. NO

C26. Were you self-employed in the last twelve months?

1. YES 9. NA (11)
2. NO

C27. At any time in the last twelve months, were you unemployed and looking for work?

1. YES 9. NA — SKIP TO Q.C28 (12)
2. NO

C27a. How many weeks were you unemployed and wanting a job during that time?

[ ] (13-14)

WEEKS

INTERVIEWER CHECKPOINT

[ ]

1= R DID NOT WORK IN LAST 12 MONTHS: SKIP TO P.23, Q.C30 (15)

2= R WORKED IN LAST 12 MONTHS ——— CONTINUE

C28. How many weeks did you work between November 1986 and October 1987?

[ ] (16-17)

WEEKS

C29. For each job you had during the last year, please tell me what kind of work you did and what type of business you worked in.

JOB NO.	TYPE OF WORK	TYPE OF BUSINESS
1	(18-19)	
2		
3		
4		
5		

(IF NO MORE ADULTS, SKIP TO P.28, Q.C50)

C30. Did (PERSON NO.2)have a job for pay in the last twelve months?

1. YES 9. NA (38)
2. NO

C31. Was (he/she) self-employed in the last twelve months?

1. YES 9. NA (39)
2. NO

C32. At any time in the last twelve months, was (he/she) unemployed and looking for work?

1. YES 9. NA ——— SKIP TO CHECKPOINT (40)
2. NO

C32a. How many weeks was (he/she) unemployed and wanting a job during that time?

[ ] (41-42)

WEEKS

INTERVIEWER CHECKPOINT

[ ]

1= P2 DID NOT WORK IN LAST 12 MONTHS: SKIP TO P.24, Q.C35 (43)

2= P2 WORKED IN LAST 12 MONTHS ——— CONTINUE

C33. How many weeks did (he/she) work between November 1986 and October 1987?

[ ] (44-45)

WEEKS

C34. For each job (he/she) had during the last year, please tell me what kind of work (he/she) did and what type of business (he/she) worked in.

JOB NO.	TYPE OF WORK	TYPE OF BUSINESS
1	(46-47)	
2		
3		
4		
5		

(64-65)

(IF NO MORE ADULTS, SKIP TO P.28, Q.C50)

C35. Did (PERSON NO.3)have a job for pay in the last twelve months?

1. YES 9. NA (66)
2. NO

C36. Was (he/she) self-employed in the last twelve months?

1. YES 9. NA (67)
2. NO

C37. At any time in the last twelve months, was (he/she) unemployed and looking for work?

1. YES 9. NA → SKIP TO CHECKPOINT (68)
2. NO

C37a. How many weeks was (he/she) unemployed and wanting a job during that time?

[ ] (69-70)

WEEKS

INTERVIEWER CHECKPOINT

☐ 1= P3 DID NOT WORK IN LAST 12 MONTHS: SKIP TO Q.C40 (71)

2= P3 WORKED IN LAST 12 MONTHS ——— CONTINUE

C38. How many weeks did (he/she) work between November 1986 and October 1987?

☐ (72-73)

WEEKS

C39. For each job (he/she) had during the last year, please tell me what kind of work (he/she) did and what type of business (he/she) worked in.

JOB NO.	TYPE OF WORK	TYPE OF BUSINESS
1	(74-75)	
2		
3		
4		
5		

(92-93)

(IF NO MORE ADULTS, SKIP TO P.28, Q.C50)

C40. Did (PERSON NO.4)have a job for pay in the last twelve months?

1. YES 9. NA (94)
2. NO

C41. Was (he/she) self-employed in the last twelve months?

1. YES 9. NA (95)
2. NO

C42. At any time in the last twelve months, was (he/she) unemployed and looking for work?

1. YES 9. NA ——— SKIP TO CHECKPOINT (96)
2. NO

C42a. How many weeks was (he/she) unemployed and wanting a job during that time?

☐ WEEKS (97-98)

1. _____ 2._____ 3._____ 4._____

INTW'R ID	INT'W NO.	STUDY NO.	DECK
(1-2)	(3-4)	(5-8)	(9)

INTERVIEWER CHECKPOINT

☐ 1= P4 DID NOT WORK IN LAST 12 MONTHS: SKIP TO Q.C45 (10)

2= P4 WORKED IN LAST 12 MONTHS ——— CONTINUE

C43. How many weeks did (he/she) work between November 1986 and October 1987?

☐ WEEKS (11-12)

C44. For each job (he/she) had during the last year, please tell me what kind of work (he/she) did and what type of business (he/she) worked in.

JOB NO.	TYPE OF WORK	TYPE OF BUSINESS
1	(13-14)	
2		
3		
4		
5		

(31-32)

(IF NO MORE ADULTS, SKIP TO P.28, Q.C50)

C45. Did (PERSON NO.5) have a job for pay in the last twelve months?

1. YES 9. NA (33)
2. NO

C46. Was (he/she) self-employed in the last twelve months?

1. YES 9. NA (34)
2. NO

C47. At any time in the last twelve months, was (he/she) unemployed and looking for work?

1. YES
2. NO
9. NA ——— SKIP TO CHECKPOINT (35)

C47a. How many weeks was (he/she) unemployed and wanting a job during that time?

[ ] (36-37)

WEEKS

INTERVIEWER CHECKPOINT

[ ] (38)

1= P5 DID NOT WORK IN LAST 12 MONTHS: SKIP TO P.25, Q.C50

2= P5 WORKED IN LAST 12 MONTHS ——— CONTINUE

C48. How many weeks did (he/she) work between November 1986 and October 1987?

[ ] (39-40)

WEEKS

C49. For each job (he/she) had during the last year, please tell me what kind of work (he/she) did and what type of business (he/she) worked in.

JOB NO.	TYPE OF WORK	TYPE OF BUSINESS
1		
2		
3		
4		
5		

C50. Considering all sources of income you and all other members of your household received in 1986, what was your total household income for 1986, before taxes and deductions were made? Please just tell me the number of the category on this card that fits your income. (What is your best guess?)

[ ] (61-62)

CATEGORY

INCOME CATEGORIES

1. Less than $5,000
2. $5,000 to $9,999
3. $10,000 to $14,999
4. $15,000 to $19,999
5. $20,000 to $24,999
6. $25,000 to $29,999
7. $30,000 to $34,999
8. $35,000 to $39,999
9. $40,000 to $44,999
10. $45,000 to $49,999
11. $50,000 to $54,999
12. $55,000 to $59,999
13. $60,000 to $69,999
14. $70,000 to $79,999
15. $80,000 to $89,999
16. $90,000 to $99,000
17. $100,000 or more

98. DON'T KNOW
99. NOT ASCERTAINED

C51. Did any of the income you just reported go toward commercial fishing or other business expenses?

1. YES
2. NO
8. DON'T KNOW
9. NA

→ SKIP TO Q.C52 (63)

C51a. What income category would you choose if you took out your commercial fishing or other business expenses?

[ ] (64-65)

CATEGORY

C52. In case I need to call you to correct a mistake I may have made in writing down your answers, is there a telephone number that I can use to reach you?

[ ] ~~{DO NOT CODE}~~

C53. Thank you! That is all I need to ask. Is there anything that I can write down that you would like the Forest Service or the Alaska Department of Fish and Game to know about?

END TIME ———:———

THUMBNAIL SKETCH

Factors Used to Convert Harvest Data to Usable Weight
(Generalized for all Southeast Alaska Communities)

Common Name	Usable Weight
Seaweed: all species	20 lbs./5 gallon bucket
Berries: all species	1 lb./qt.
Plants: all species	1 lb./qt.
Black Cod	6.0 lbs
Grey Cod	4.0 lbs.
Ling Cod	5.0 lbs.
Tom Cod	2.0 lbs.
Cod (undetermined or combined species)	4.0 lbs.
Cutthroat trout	0.7 lbs.
Dolly Vardon Char	1.4 lbs.
Steelhead Trout	6.0 lbs.
Trout species (excluding steelhead)	1.0 lbs.
Trout species (including steelhead)	2.7 lbs.
Flounder	3.0 lbs.
Halibut	27.3 lbs.
Herring	0.4 lbs
Sculpin species	1.0 lbs.
Rockfish species	2.0 lbs.
Red Snapper	3.0 lbs.
Rockfish (including Red Snapper)	2.5 lbs.
Chum Salmon	6.2 lbs.
Coho Salmon	7.7 lbs.
King Salmon	15.3 lbs.
Pink Salmon	2.2 lbs.
Sockeye Salmon	4.3 lbs.

Common Name	Usable Weight
Abalone	20 lbs. /5 gal. bucket
Clam species	8.0 lbs. /5 gal. bucket
Cockles	9.0 lbs./5 gal. bucket
Clams (including cockles)	8.5 lbs./5 gal. bucket
Gumboots	20 lbs./5 gal. bucket
Octopus	10.0 lbs.
Sea Cucumbers	2.0 lbs./5 gal. bucket
Sea Urchins	5.0 lbs./5 gal. bucket
Dungeness Crab	2.5 lbs.
King Crab	7.0 lbs.
Tanner Crab	2.2 lbs.
Harbor Seal	90 lbs.
Marine Mammals (unspecified species)	90 lbs.
Brown Bear (assumes no use of meat)	50 lbs.
Black Bear	150 lbs.
Mountain Goat	120 lbs.
Moose	550 lbs.
Deer	80 lbs.
Duck species (including seaducks)	1.5 lbs.
Goose species	5.0 lbs.
Blue Grouse	.7 lbs.
Ptarmigan	.7 lbs.
Unspecified Birds (excluding ducks)	.7 lbs.
Sandhill Crane	8.0 lbs.
Eggs	0.2 lbs.