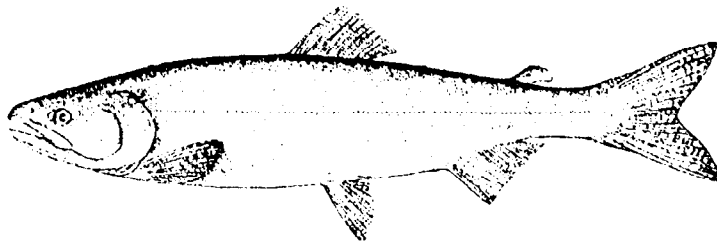


# **Use of Sockeye Salmon at Sitkoh Bay, Alaska**

Technical Report Number 174

by  
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*Oncorhynchus Nerka*

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## **ABSTRACT**

This report documents the historical and contemporary importance of Sitkoh Bay, on Chichagof Island in Southeast Alaska, for the harvest of sockeye salmon. This area has a rich history of use by the Tlingit inhabitants of the area, descendants of whom now reside principally in Sitka and Angoon. The bay became the site of a commercial salmon fishery beginning in the late 1800s, and a salmon cannery beginning in 1900. The cannery era coincided with a period of rapid socioeconomic and sociocultural change for the Tlingit throughout southeast Alaska, changes that were to a large degree precipitated by the commercialization of the salmon fisheries. Native inhabitants of a seasonal village at Sitkoh Bay worked at the cannery, while continuing to take sockeye for subsistence use from the Sitkoh Creek stock. This arrangement, in which the Tlingit seasonal fishing village became a cannery community, persisted until the cannery closure in 1974, despite the near depletion of the Sitkoh Bay sockeye stocks by commercial fishing. Recent dramatic habitat changes in the Sitkoh Creek watershed have occurred, due to clearcut timber harvest that took place between 1969 and 1974. Resultant impacts on sockeye spawning areas in Sitkoh Bay are believed to be having a negative effect on the health of the sockeye stock, which is additive to the effects of overfishing. The continued decline in run strength over the past decade is illustrated by declining subsistence harvests at Sitkoh Bay, and has led to the closure of the area to all sockeye harvests in recent years. Immediate, concerted efforts for the restoration of this fishery appear to be warranted in order to prevent its total demise.

## TABLE OF CONTENTS

	Page
TABLE OF CONTENTS.....	2
List of Figures and Tables.....	3
ACKNOWLEDGEMENTS .....	4
INTRODUCTION.....	5
ORGANIZATION.....	7
METHODS.....	8
BACKGROUND .....	9
Description of Sitkoh Bay.....	9
Ethnogeography of Sitkoh Bay .....	12
The Communities of Sitka and Angoon .....	15
Tlingit Social Organization.....	20
SOCKEYE IN THE TLINGIT ECONOMY .....	21
Sockeye as a Food Resource.....	21
Traditional Tlingit Stream Tenure and Fishery Management.....	23
HISTORIC MEANS OF HARVESTING SOCKEYE.....	25
Contemporary Means of Harvesting Sockeye.....	30
HISTORICAL DEVELOPMENT OF SITKOH BAY.....	31
Archaeological Studies of the Area.....	32
Tlingit Historical Sources .....	33
Early References to Sitkoh Bay.....	36
Commercial Fishing Reaches Sitkoh Bay.....	40
THE CANNERY ERA (1900-1974) .....	43
Cannery Operations .....	45
Changes in Management Practices .....	49
The Cannery Community .....	51
The Cannery as a Seasonal Village .....	57
FOREST MANAGEMENT AND IMPACT ON SITKOH BAY SOCKEYE STOCKS .....	58
SPORT FISHING AND RECREATION.....	62
SOCKEYE HARVESTING SINCE THE IMPLEMENTATION	
OF SUBSISTENCE LAWS.....	63
SUMMARY.....	68
REFERENCES CITED.....	71

## List of Figures and Tables

	Page
Figure 1. Sitkoh Bay Location map.....	6
Figure 2. Sitkoh Bay Place Name Locations.....	14
Figure 3. Population Profiles, Angoon and Sitka .....	19
Figure 4. Fish Traps, Leister Spears, and Dip Nets Used for Harvesting Salmon, Circa 1800s-1920s.....	26
Figure 5. River Weirs and Traps Used for Harvesting Salmon, Circa 1800s-1920s .....	27
Figure 6. Gaff Hooks Used for Harvesting Salmon, Circa 1800s-1980s .....	28
Figure 7. Beach Seine Techniques Used for Salmon Harvesting.....	29
Figure 8. Photographs of Chatham Cannery and Indian Village, Circa 1910.....	53
Figure 9. Photograph of Logged Areas at Sitkoh Lake .....	60
Figure 10. Percent of Angoon Households Using Sitkoh Bay for Subsistence Activities, 1967-1984.....	66
<hr/>	
Table 1. Geographic Place Names at Sitkoh Bay.....	14
Table 2. Quantity of Salmon Packed at Sitkoh Bay, 1900 through 1907 .....	48
Table 3. Subsistence Permits Issued for Sitkoh Bay, 1975 through 1990 .....	70

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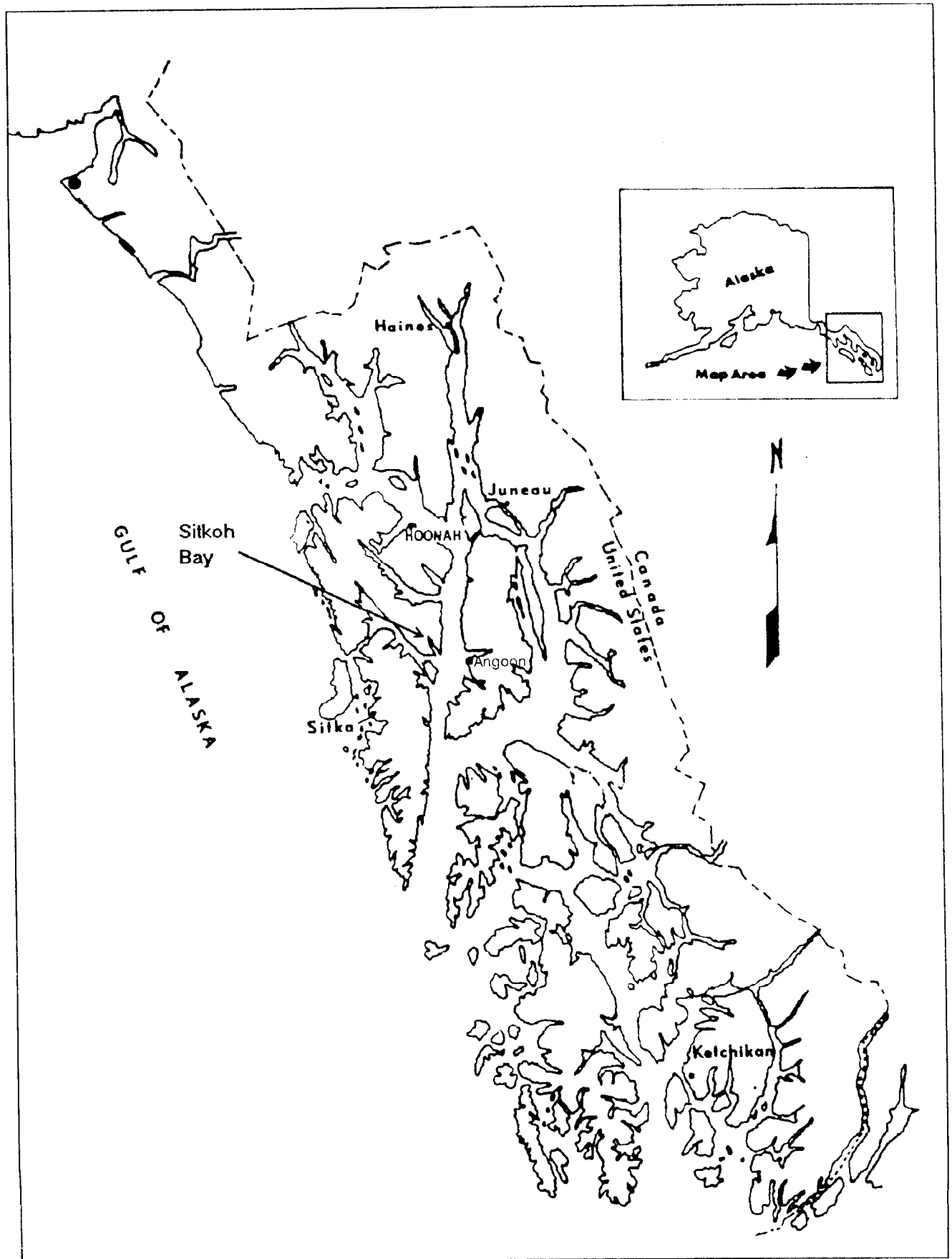
## INTRODUCTION

This study describes and analyzes the historical development and present use of the Sitkoh Bay fishery for sockeye salmon, *Oncorhynchus nerka*, also called red salmon. Sitkoh Bay is located on the southeastern side of Chichagof island, approximately 10 miles from the community of Angoon and 35 air miles from the city of Sitka (Fig. 1). Interview, written, and archaeological data show that Sitkoh Creek, which drains into Sitkoh Bay, has been an important sockeye fishery and village site for Tlingit Indians of southeast Alaska for centuries. Fishery records and interviews with fishermen and management personnel indicate that, although commercial harvests early in this century greatly diminished run strength, the run and the dependent subsistence fishery has generally been consistent, yielding fish of good size and quality.

A number of Tlingit groups have utilized Sitkoh Bay to harvest sockeye as well as other resources. Since the implementation of subsistence laws in the 1980s, Sitkoh Bay has remained an important fishery for subsistence harvesters from the communities of Angoon and Sitka. An Alaska Board of Fisheries' decision made in January, 1989, to limit Sitkans' subsistence access to Sitkoh Bay sockeye, despite the objections of Sitka residents, has created some controversy among members of both communities over traditional rights to the fishery as well as the current utilization and management of Sitkoh Creek. In addition, residents of both Angoon and Sitka are concerned about the U.S. Forest Service's 1989 environmental impact statement and project plans announced in 1990, which propose renewed logging efforts in the Sitkoh Bay and Sitkoh Creek area and use of Sitkoh Bay as a log transfer facility and log storage area.

Field research for this study was conducted in the summer of 1989 when the first author was an intern with the Division of Subsistence, Alaska Department of Fish and Game (ADF&G). To date, the division has conducted community studies in Angoon (George and Bosworth, 1988) and Sitka (Gmelch and Gmelch, 1985), the main communities that have traditionally used Sitkoh Bay. This project is designed to complement these studies and other community studies by providing a

Fig. 1. Location of Sitkoh Bay





description of historic and contemporary salmon fishing in Sitkoh Bay. As we will document, Sitkoh Bay is a particularly important fishery not only for its highly-valued sockeye but also because it has been and continues to be utilized by residents of more than one community.

This site-specific orientation offers some advantages. Foremost among these is the potential in this kind of approach to view the resource area as an ecological system. For Sitkoh Bay, this involves identifying the significant variables that have affected the bay as a subsistence fishery and understanding their interaction over time. These variables include factors which may have affected the fishery as a productive habitat as well as factors that have potentially constrained the fishing behavior of subsistence users. This study looks beyond the fishing activity at Sitkoh Bay to address the interactions of subsistence and commercial fisheries, human settlement and development in Sitkoh Bay, recent timber management practices, and changes in land ownership and fishery regulations.

Among the human variables, economic and managerial developments were found to have played a especially significant role in the ecology of Sitkoh Bay over the last 150 years. Most important among these was the penetration of the commercial fish processing industry into Sitkoh Bay. The opening of Chatham Cannery in the bay in 1901 marked the beginning of a new era at Sitkoh. The cannery had an immediate and profound impact on the ecology of the area as well as on the socioeconomic patterns of the surrounding communities and it remained a dominant presence in the bay for nearly three quarters of a century. Other significant developments which have affected both the fishery and its utilization include logging in the Sitkoh watershed, sport fishing, state and federal management regulations, and the closure of the cannery in 1974.

## **ORGANIZATION**

This report is divided into eight sections, organized to highlight the evolution of human use and management of the fishery and changes in the surrounding landscape. The first section provides a geographical description of the fishery today as well as sketches of the communities of Angoon and

Sitka. Section Two outlines the importance of sockeye salmon in the Tlingit economy and describes sockeye fishing and conservation methods which have been employed by Natives of southeast Alaska. Section Three provides a pre-1900 historical sketch of Sitkoh Bay and the communities of Angoon and Sitka drawn from field interviews and from archaeological and other written records. Section Four continues this history but focuses specifically on the establishment of commercial fishing and canning in Sitkoh Bay and the impact of these activities on the subsistence fishery and the communities of Angoon and Sitka. As the cannery was beginning to scale down its operation in the late 1960s and early 1970s, intense logging efforts were launched in the vicinity of Sitkoh Lake and other areas around the bay. Section Five summarizes the impact of logging on the fishery based on testimony from subsistence users and from management reports. Section Six examines the effects of sport fishing and other recreational activities in and around the Sitkoh Creek. Section Seven provides a profile of the regulatory process and fishing patterns in Sitkoh Bay since the implementation of subsistence laws. Finally, Section Eight presents a summary and suggestions for further research.

## **METHODS**

This report is a descriptive, qualitative analysis based on a review of the ethnographic and fishery literature, interviews with Angoon and Sitka residents and with Sitkoh Bay management personnel, and participant observation. Research had three basic aims: (1) to reconstruct the historical use, management, and development of Sitkoh Bay and its environs, (2) to assess the impact of commercial fisheries development on the Sitkoh Creek subsistence sockeye fishery, and (3) to describe the 1989 Sitkoh Bay subsistence sockeye harvest. Underlying this research is the assumption that historical analysis yields insights into the actions and motivations of both past and present harvesters, as well as those who have managed the fishery over the years.

Sources of data for this report include the following:

- (1) archaeological findings--including archaeological investigations in Sitkoh Bay as well as those in surrounding communities;
- (2) ethnographic literature--including general studies on the Tlingit, specific studies of Angoon and Sitka, as well as analyses of other pertinent issues concerning Alaska Natives, such as possessory rights over territory;
- (3) state and federal sources--including management reports, subsistence permit data, and interviews with area biologists and other management personnel;
- (4) field interviews--including data from more than 30 interviews with subsistence fishermen in Angoon and Sitka as well as Tlingit elders with historical ties to the bay;
- (5) other documentary sources--including reports from early voyages, military records, educational records, missionary reports, cannery records, and other written materials left by those who spent time in the area.

A total of 12 days were spent in the field on visits to gather information in Sitka (in mid-July) and Angoon and Sitkoh Bay (in late June and early August). Thomas Thorton conducted the field interviews in Angoon and Sitka, did most of the background research and initial analysis, and wrote initial drafts of this report in the summer and fall of 1989. Robert Schroeder and Robert Bosworth collaborated with Thorton in writing the final draft of this report.

## **BACKGROUND**

### **Description of Sitkoh Bay**

Sitkoh Bay is located on the southeastern side of Chichagof Island just north of the conjunction of Peril and Chatham straits. The bay itself is approximately seven miles in length and one mile in width and branches off from Chatham Strait in a northwesterly direction. The name Sitkoh

may be derived from the Tlingit word *Sit'Xoo*<sup>1</sup> which has been translated as *Among the Glaciers* (de Laguna 1960:65) and *Carved by Glaciers* (Matthew Fred, Sr. 1989). Several Angoon residents stated that the name derives from the fact that the area now occupied by the bay was carved out by a glacier. Mark Jacobs Jr. (pers. comm. 1989) noted that, even today, although there are no glaciers in the vicinity, winter snow cover, ice, and steep banks give the bay characteristics of a glacial inlet.

Sitkoh Creek or *Gaat Heeni*, *Sockeye Creek*, empties into Sitkoh Bay about five miles inside the mouth of the bay on the south side. Sitkoh Creek originates at Sitkoh Lake, 3.5 miles upstream. The lake and creek are lightly muskeg-colored, although the water is not turbid. The upper part of the creek is wide and relatively slow-moving, and the creek bottom consists mostly of gravel. Sparse western hemlock, Sitka spruce, and alder line each bank. Approximately .5 miles below the lake, the stream begins to gradually narrow, and its gradient and flow increase. Depth in this section is relatively uniform, with the bottom consisting of both bedrock and large rubble.

The lower half of the river begins with a narrow canyon-like section and a small falls. Directly below the falls the creek begins to widen again to a width of 60-100 feet, and the gradient decreases. There are numerous windfalls and log-formed pools in this area due in part to the heavy forest cover on both banks of the creek. A weir, used in some years by the ADF&G to monitor steelhead and sockeye runs, spans the width of the creek roughly .5 miles upstream from the mouth. The weir measures approximately 70 feet and was last employed to count sockeye in 1981.

At the mouth, or *Ish*,<sup>2</sup> of the creek, there are several deep tidewater pools where salmon school before ascending the stream. A small island located at the mouth of the stream once had smokehouses on it that were used by Natives to process Sitkoh salmon for future consumption<sup>3</sup>.

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1. In transcribing Tlingit words, we have tried to follow the system proposed by Naish and Story (Davis, 1976) as closely as possible.

2. This term refers to the deep pools, often at the mouth of the creek, where salmon school before ascending the stream to spawn.

3. This island was the site of a famous party given by Deisheetaan clan leaders in 1911. Mrs. Anne Turnmire of Angoon stated that this party was given around the time of her birth, July 4th, 1911, and that many guests from surrounding communities were invited. Mrs. Mary Willis of Angoon recalled that there was also a larger dwelling situated here, which was known as *Ish ka Hii*, "House [on the] Island [at the] Creek Mouth." Sitkoh Bay Chief, one of the clan leaders responsible for managing the sockeye creek, was Mrs. Willis' maternal uncle.

Several petroglyphs can be found on stones near the mouth of the creek. De Laguna (1960:64-67, 234) photographed and described each of the images depicted in these carvings. One of them, an image of a copper, is reported to have been etched to signify a transfer in ownership of the sockeye stream from the Ganaxadi Tlingit clan to the Deisheetaan, the Angoon-based clan that presently claims the territory.

Sitkoh Lake, approximately 2.5 miles long, is the site of one public-use and one administrative cabin maintained by the U.S. Forest Service. Trails, approximately four miles long, on both sides of the creek allow hikers and fishermen to travel back and forth from the bay to the lake. The Forest Service plans to convert the administrative facility to a public-use cabin. The public-use facility is presently well utilized, primarily by sport fishermen.

The area surrounding Sitkoh Lake was heavily logged during the 1969-74 period (Beier and Cooper, n.d.). Other areas around the bay were also harvested for timber during the 1970s. The results of clear-cutting continue to be visible today, and a network of inland logging roads surround the bay. A log transfer facility (LTF) is situated on the northern shore almost directly opposite the cannery. Presently, there are no active logging efforts in the area; however, Forest Service plans for the present (1986-1990) operating period include several alternatives which would reopen logging in the Sitkoh Bay area. The Forest Service's preferred alternative calls for the completion of a road system from Sitkoh Bay to Kadashan Bay on Tenakee Inlet, utilization of the LTF in Sitkoh Bay, and harvests in the vicinity of Sitkoh Bay (U.S. Forest Service, 1989). Forest Service planning began in 1990 for harvest of an additional 100,000,000 board feet from the area near Sitkoh Bay. Actual clear-cutting under the project plan is likely to take place in 1992 or 1993.

One half mile from the creek mouth lies the old Chatham Cannery<sup>4</sup>. Many of the cannery facilities are still intact, including much of the Native village, despite a 1978 fire which destroyed the main canning building. A couple lives here now year-round, serving as caretakers for the property, which was purchased in 1981 by a group of Juneau investors. The couple have been the only year-

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4. This was formerly known as the Chatham Straits Packing Company (Alaska Fisheries Board, 1949:30f).

round residents of Sitkoh Bay in recent years. They asked the Board of Fisheries to be allowed to subsistence fish for sockeye salmon in the bay; however, because they do not reside in Angoon or Sitka, they fail to qualify under existing subsistence regulations.

During two research visits to the bay in 1989, no one was encountered who was engaged in harvesting sockeye, although several people were seen fishing with rod and reel for pink salmon near the mouth of Sitkoh Creek during a field visit in early August. In late June, there were at least 20 crab pots set near the head of the bay<sup>5</sup>. Persons interviewed in both Sitka and Angoon said that the bay has been an excellent source of crab and other shellfish, although these resources have become increasingly scarce in recent years. The cannery fuel dock is still open to the public. Gas and oil, as well as snacks and other sundry items, are available there for purchase.

### Ethnogeography of Sitkoh Bay

De Laguna (1972:21) has stressed the importance of understanding the indigenous view of an environment in addition to describing it in scientific terms. This is because the environment's role in influencing the lives of an area's inhabitants *has been mediated by what they understand it to be and what they have made of it*<sup>6</sup>. Indigenous place names provide some clues as to how an environment has been conceptualized and utilized historically. Table 1 lists and locates some Tlingit place names in Sitkoh Bay; the site locations are shown on Fig. 2.

Nearly all the economically productive areas of the bay are named. At least three naming principles appear to be involved in identifying places. Some places, such as *Gaat Heeni*, *Sockeye Creek*, are named for the activities or species associated with them. Others, such as *Yeil Tatoogu*, *Raven's*

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5. This may have been a commercial enterprise.

6. For the Tlingit, she notes that, "The environment is not...simply the land and sea with natural resources to be exploited. It is... much more a community of living beings, where the lines which we would draw between man and beast or between the animate and the inanimate are blurred or do not exist. The Tlingit shares his world with his nonhuman relatives and fellow creatures just as he shares it with other tribes" (1972:21).

Table 1. Geographic Place Names at Sitkoh Bay<sup>7</sup>

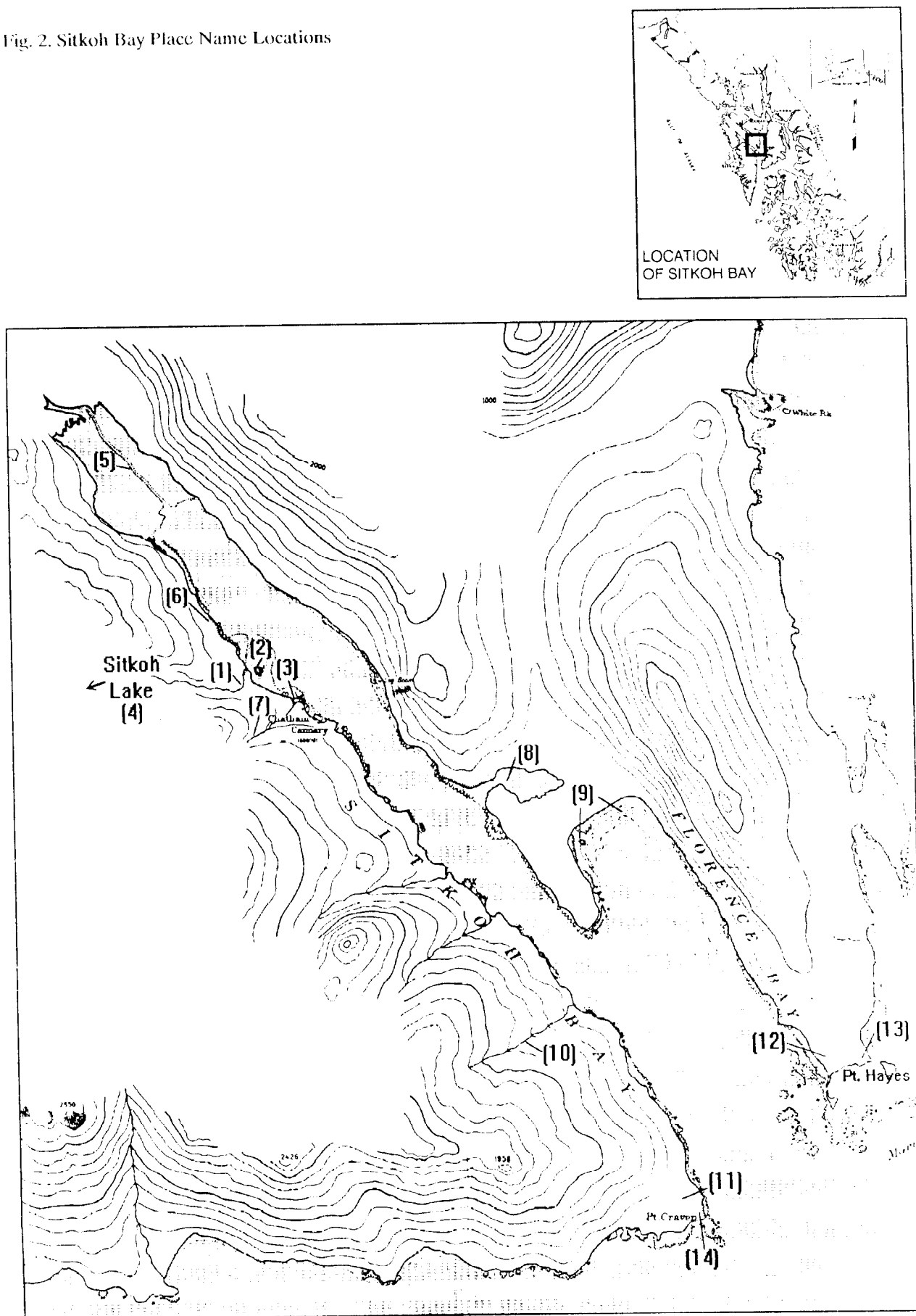
Tlingit Place Name	Meaning	Location
Sit'Xoo	Among the Icebergs [Glaciers]	Sitkoh Bay
1. Gaat Heeni	Sockeye Creek	Sitkoh Creek
2. 'Ish Ka Hit	House on Island Creek at Mouth of Sitkoh	Mouth of Sitkoh Creek
3. Luxoodegan	No Sun There	cove/beach facing Native Village at Chatham
4. Aa	Lake	Sitkoh Lake
5. Ata Heen	Up-the-Bay Creek	head of Sitkoh Bay
6. Ycil Tatóogu	Raven's Cave	near south shore above Sitkoh Creek
7. Tinaa Gooní	Copper Plate Spring Water	spring between Chatham and Sitkoh Creek
8. Yaxweh'i aak'u	Sea Otter Lake	Tidal lagoon above Florence Bay
9. Xakw Geeyí	Sandy Beach Bay	Florence Bay
10. Luka Héen	Creek at Point	near Point Craven
11. or 12. Ch'aatl K'aanoow	Halibut Fort (or Place)	On Point Craven or Point Hayes <sup>8</sup>
13. Xootsnoowoo	Bear Fort/Crabapple Fort	Point Hayes <sup>9</sup>
14. Keishish X'aak'u	Alder Point	possibly Point Craven

7. Sources: Mary Willis with assistance from Matthew Fred Sr., Mark Jacobs, Jr., Lydia George, and Nora Dauenhauer (orthography and translation).

8. Orth (1971) and de Laguna (1960) associate this place with Pt. Hayes. Mary Willis places it on the south side of Pt. Craven.

9. See de Laguna (1960:63)

Fig. 2. Sitkoh Bay Place Name Locations





Cave, are named for important historical or spiritual associations<sup>10</sup>. Finally, there are places, such as *Ata Heen*, *Up-the-bay Creek*, which appear to be named according to their value in orienting the traveller. Almost every place name incorporates at least one of these principles. With the exception of those that refer to settlements or forts, all the names listed refer to natural land and water formations. All significant bodies of water, including every creek but one<sup>11</sup>, as well as prominent land-water junctions within the bay, such as points, coves, and beaches, have names in Tlingit. Knowledge of such places was critical for both subsistence and navigation<sup>12</sup>.

### The Communities of Sitka and Angoon

Located on the west coast of Baranof Island, Sitka is a major community in southeast Alaska with a population of approximately 8,000, of which approximately 20 percent are Tlingit (Gmelch and Gmelch 1985). Tlingits have resided in the Sitka area and utilized the resources in the vicinity for many centuries. In 1799, the Russians established the first permanent trading post in Alaska at Old Sitka, just a few miles away from present day Sitka which was then the site of a large Tlingit winter village. Early Tlingit and Russian relations in Sitka were marked by intense conflict. In 1802 the Tlingits, under the leadership of Katlian and others mainly of the Kiks.ádi clan, attacked and destroyed the Russian settlement. In 1804, the Russians, under Lisiansky, succeeded in regaining their settlement and the Tlingits withdrew to a place near Sitkoh Bay<sup>13</sup> (Dauenhauer and Dauenhauer n.d.). Sitka became an important trade hub for the Russian American Company under the stewardship of Alexander Baranof. The city served as the Russian American capital until the sale of the Alaskan

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10. An emblem representing the Raven's Cave is embroidered on Mary Willis' ceremonial blanket, indicating her ties to this territory. We also heard of a painting in *Deishoo Hlit*, a Deisheetaan Raven clan house which depicts this place.

11. This creek name simply may have been forgotten.

12. Mary Willis was especially familiar with the most productive fishing and gathering areas in the bay because she was directly engaged in these activities for many years. She stated that many of the mountain peaks surrounding the bay also had Tlingit names, but she could not recall them, perhaps because she was not frequently engaged in activities, such as deer hunting, for example, in these upland areas.

13. This place is referred to as *Chaatlk'aa Noow*, "Halibut Place Fort", in Dauenhauer and Dauenhauer (n.d.); Mary Willis also identified this place as being located on Pt. Craven (see Figure 2).

Territory to the U.S. in 1867. By this time Sitka had become a population center for both Natives and non-Natives. The sea otter fur trade dominated the early economy.

After the decline of the fur trade and the U.S. purchase of Alaska from Russia in 1867, Sitka continued to be an economic and governmental center in southeast. Sitka served as the Alaskan territorial capital from 1884 to 1906, when the governmental seat was moved to Juneau. In the second half of the nineteenth century, when the regional economy began to shift from furs to commercial fishing and timber harvesting, Sitka helped lead the way. One of the first two commercial salmon canneries in Alaska opened in Sitka in 1878. A cold storage plant was opened in 1913. The efforts of the Presbyterian Missionary Sheldon Jackson helped make Sitka a center for Native education and vocational training. World War II brought a flood of military personnel and equipment to the city. In the post war period the expanding lumber industry moved into Sitka. In 1959 a large pulp mill, one of two in southeast Alaska, was constructed. The Alaska Pulp Corporation mill remains a major employer, providing about 400 jobs. Presently, Sitka is the third largest city in southeast Alaska. The city's economy includes a mixture of manufacturing, government, hunting and fishing, and services. Both subsistence hunting and fishing and commercial fishing remain vital sectors of the economy (Gmelch and Gmelch 1985; Wolfe and Ellanna 1983).

Less is known about the early history of Angoon from written records. Angoon developed into a large village, comprised of a number of different Tlingit groups from the area, only after European contact. Both Swanton's (1908:412) and Whidbey's (de Laguna 1960:172-173) accounts indicate that prior to 1800 there were two main Kootznoowoo or Angoon Tlingit settlements, one at Whitewater Bay and the other near Killisnoo. Some historical accounts suggest that the villages may have consolidated and relocated in Angoon shortly after the 1802 war between Baranof's Russian troops and the Sitka Tlingit<sup>14</sup>.

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14. Trade and defense considerations may well have prompted the move, as Angoon was favorably situated for both. The various local house groups also have stories about how their clans migrated to Angoon (see Swanton 1909, de Laguna 1960).

Lt. Whidbey, a member of Vancouver's expedition, was one of the earliest Europeans to visit the Kootznoowoo on Admiralty island. Whidbey traded with the Native groups for sea otters and fish and was impressed by the abundance of sea otters in Chatham Strait. Whidbey noted the superior craftsmanship of Hood Bay Tlingits' canoes. He also reported that these Tlingits had already traded for European commodities *in some port on the exterior coast*, presumably Sitka, which they reached via Peril Strait. By the 1870s there were significant concentrations of Kootznoowoo Tlingits at Killisnoo Island as well as present day Angoon (de Laguna 1960:173).

Commercial development in Angoon began in 1870 with the founding of the Killisnoo Trade Company on Killisnoo Island. In 1880 a whaling station and trading post was established at Killisnoo by the Northwest Trading Company. The company employed Tlingits from Angoon and Killisnoo as whalers and in other positions. The death of an Angoon employee in a whaling accident in 1882 led to a conflict between Natives and the management which culminated in the bombing of Angoon by the U.S. Navy. Like the battles of Sitka for Sitka Natives, this bombing remains an important event in the historical consciousness of Angoon residents. Although Angoon residents filed suit against the U.S. government and received a settlement of some \$90,000 in 1973, Angoon still has not received the formal apology that they requested from the U.S. Navy. There are many accounts of this event and its effects on Angoon (cf. de Laguna 1960; George and Bosworth 1988). In one of the most striking accounts a school teacher reports that 30 years after the bombing, some elders, wary of the potential for further violence, still refused to return to Angoon, choosing instead to remain in Killisnoo (BIA Records, Killisnoo, 1912).

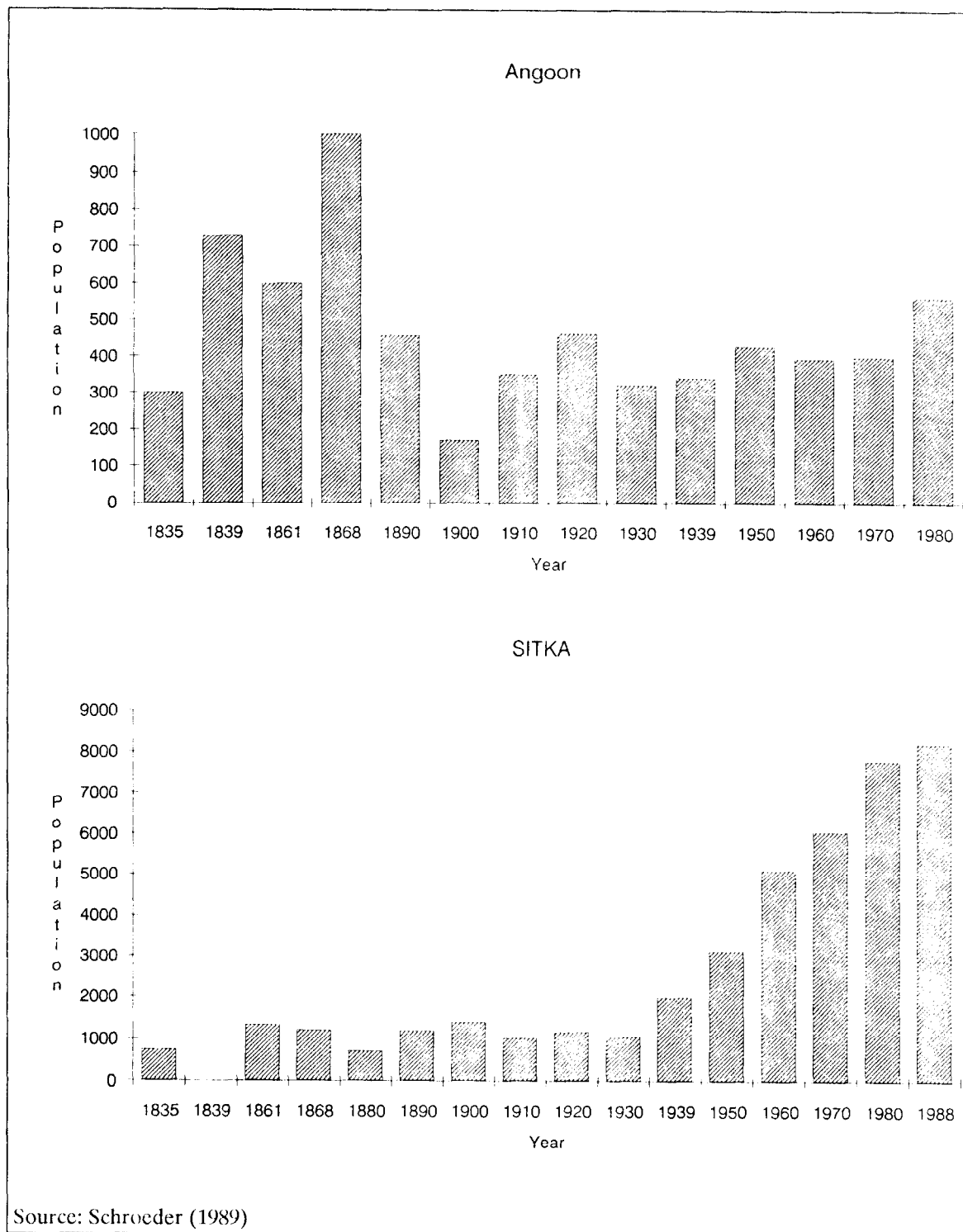
Over-harvesting of whales in southeast Alaska led to the end of whaling at Killisnoo in 1887. The Killisnoo facility was acquired by The Alaska Oil and Guano Company to process herring. Angoon and Killisnoo Tlingits also were employed at this plant, and the population of Killisnoo swelled during the operating season. In 1890, a European observer described Killisnoo as *the model industrial establishment on the coast* (de Laguna, 1960:174-75). Over 300,000 pounds of herring oil were being produced each year, and some 28 local Tlingit were employed as fishermen or laborers at a rate of \$1.50/day. In addition Natives were contracted to provide the company with *over 1000 cords of spruce*

*and hemlock for fuel.* A government school opened in 1888, and in 1890 the school had a single teacher and 35 students. The Russian Orthodox Church established a mission and school at Angoon during this period.

Angoon is currently classified as a second class city with a population of 638, 83 percent of which are Alaska Natives. Angoon has remained a traditional Tlingit village in many respects, and the majority of its people are lifelong residents. A 1985 survey found that 71 percent of the households participated in the harvest of salmon and 65 percent obtained subsistence permits for salmon (George and Bosworth 1988; ADF&G 1989). The contemporary economy includes manufacturing of computers, commercial fishing, charter sport fishing, recreation, tourism, schools, government, and service sectors. Participation in the commercial seine fishery has declined in recent years because of the costs associated with permits and gear. However, many residents still possess commercial hand troll permits (George and Bosworth 1988). The creation of Admiralty Island National Monument in 1980 has boosted tourism and recreation in the area. Commercial fishing, tourist and government services, and village corporation enterprises comprise the backbone of the contemporary cash economy. Angoon is accessible by aircraft on floats, via the ferry system which makes stops there several times a week, or by private vessel.

Fig. 3 illustrates the historical populations of both Angoon and Sitka. A noticeable drop in Angoon's population between 1880 and 1900 is characteristic of southeast villages during this time and may reflect employment migrations out of Angoon, fatalities due to disease, as well as changes in census boundaries and procedures. Angoon's population has been constant in comparison to Sitka's which has grown rapidly since World War II. Sitka's population increase reflects non-Native migration into the city as opposed to natural increase in the Native population.

Fig. 3, Population Profiles, Angoon and Sitka



### Tlingit Social Organization

Traditional Tlingit kinship organization is matrilineal with each individual born into his or her mother's family. Localized geographic populations, or *kwaans*, are divided into two major exogamous subdivisions or moieties known as the Eagle or Wolf side and the Raven side (de Laguna 1972). Each moiety in a community may contain a number of clans or lineages. A localized clan may include one or more sub-lineages, known as house groups. The moieties themselves function primarily for the purposes of exogamy<sup>15</sup> and reciprocation<sup>16</sup> and carry little or no political authority. Traditional Tlingit political authority is concentrated at the clan and house levels. Clan origins can be traced back to specific ancestors, events, and locations. Clan alliances and settlement patterns may change over time, and some new clans have been formed over the years. Clan and lineage remain important components of Tlingit self identification, and these ties continue to be reinforced in formal ceremonies and emphasized in discussions of territorial rights. The major Native clans in Sitka today include the following<sup>17</sup>:

Laavaneidec (Raven Side)

Kiks.ádi (Frog)

Aan Eegayaak Hit Taan (Dog Salmon)

L'uknax.adi (Coho)

X'atka Aayi [?]

Koosh'eidi (Land Otter)

Shangukeideci (Eagle Side)<sup>18</sup>

Kaagwaantaan (Wolf)<sup>19</sup>

X'ax'aa Hit Taan [?]

Chookancidi/Katakwa.adi [?]

Wooshkeetaan (Shark)

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15. Meaning that a Raven should marry an Eagle and vice versa.

16. Reciprocation is formalized through potlaches or payoff parties between moieties. Some researchers have posited that, among other things, these ceremonies were a means of redistributing resources to people and/or people to resources. For a review of theories on the potlatch see Kan (1986).

17. Both the Sitka and Angoon clan listings are from key respondent interviews. The ? symbol indicates that we are uncertain of the spelling of the clan name and/or identification of the main clan emblem.

18. There were nine houses in Sitka: Shark, Halibut, Murrelet, Brown Bear, Thunderbird, Eagle, Land Otter, Eagles' Nest, and Wolf.

19. Some informants say that Kaagwaantaan was a confederation of a number of clans.

Collectively, they are known as *Sheet'ka Kwaan*, People of *Sheet'ka* (Gmelch and Gmelch 1985:6-14).

The major Native clan houses in Angoon include the following:

<u>Laavaneidee (Raven Side)</u>	<u>Shangukeideei (Eagle Side)</u>
Deisheetaan (Angoon Raven)	Teikweidee (Brown Bear)
Dakk dain taan (Sea Bird)	Dukl'weidee (Killer Whale)
Kiks.ádi.adi (Frog)	Kaagwantaan (Sitka Eagle)
L'uknax.adee (Coho)	Tsaagweidee (Kake Killerwhale)
K'akweidee (Basket Bay Beaver)	Woosh kee taan (Shark)

Collectively, the people of Angoon are referred to as the *Xutsyadaa Kwaan*, or People of *Xutsyadaa*. *Kootznoowoo* is the Tlingit name for Admiralty Island as well as the village corporation; it is most often translated as *Fortress (or den) of the Bears* which refers to the island's large population of brown bears.

## **SOCKEYE IN THE TLINGIT ECONOMY**

### **Sockeye as a Food Resource**

Salmon has long been the most important subsistence resource for Tlingits in terms of weight consumed. A recent survey of harvest and use of fish and shellfish in southeast Alaska communities shows that salmon continue to be the subsistence resource harvested in the greatest quantity (ADF&G, 1989), and that sockeye continue to be highly prized. Sockeye are, in many areas, the earliest salmon species to return to freshwater spawning grounds in the summer. Consequently, sockeye are not only

some of the first salmon to be harvested, tasted and smoked, but also serve to herald the season of most active fishing<sup>20,21</sup>. According to legend the sockeye *sneak in [to Chatham Strait] with the fog* during late June and July. Sockeye were traditionally eaten fresh as well as smoked and dried (Jones, 1914:103). Sockeye were harvested both before and after spawning, with each harvest being processed into a different subsistence food. Salmon caught before the spawn were especially rich and filled with fat, which made them a delicious treat to eat fresh but difficult to preserve for a long period. Sockeye harvested just after spawning, often caught with gaffs, were leaner and could be smoked to last until the following season. Early sockeye salmon that were smoked were also usually the first to be eaten. According to one elder, this supply might last the family until November, after which time coho and chum salmon would be consumed (Patrick Paul, 1989)<sup>22</sup>.

Sockeye salmon in the Angoon and Sitka subsistence areas have for many years been recognized as a limited resource compared to other salmon species. This is due partly to the sockeye habitat requirement of streams associated with lakes; these systems are comparatively rare and unevenly distributed in southeast Alaska. Sockeye have also become a limited resource in the 20th century because of the depletion of sockeye stocks by commercial fishing that followed the establishment of canneries in southeast Alaska.

Because runs are concentrated in a few sockeye salmon systems, possessory and usufructory rights to these streams have always been highly valued. Most prominent Tlingit groups traditionally had possessory rights over at least one sockeye stream (Goldschmidt and Haas 1946; Olson 1967; Langdon 1977, 1989; Jacobs 1982). These harvest locations or territories were vigorously defended, and, like other property, they were kept within the clan through the matrilineal inheritance system. Langdon (1989:306) observes:

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20. King salmon have also been caught traditionally in spring on trolling gear. King salmon, however, were not available in quantity to Angoon and Sitka residents.

21. In fact June, the month when sockeye begin to return to Sitkoh Bay, was sometimes referred to as the "Month of the Salmon" (Swanton 1909:426).

22. Pink salmon are generally harder to preserve than coho and chum salmon and thus were most often consumed immediately.



*Unlike sockeye streams, streams with abundant runs of pink or dog salmon only are rarely explicitly claimed in clan accounts. Olson (1967:12) says that the Tlingit saw little reason to exercise proprietary claims to these resources due to the comparative abundance of such streams and fish. Additionally, runs to these streams of these species are less stable (higher degrees of variability year to year and breeding cycle to breeding cycle)<sup>23</sup> and more concentrated (fish return in a compressed time period, normally two to three weeks), and their nutritional value as measured by oil content is relatively low at the time they enter fresh water. Pink and dog salmon would thus be relatively less valuable than sockeye salmon to the Tlingit for a number of reasons.*

Thus, the productive sockeye streams tended to be claimed by a clan house and to have summer camps and smokehouses in close proximity. Petroglyphs are frequently found near sockeye streams, including Sitkoh Creek, perhaps signifying the importance of these resource sites as well as who held possessory rights over them (Goldschmidt and Haas 1946: see statement of Billy Jones; Stevens 1974:307).

Sockeye possess many unique qualities which make them especially desirable. Of all the salmon species in southeast, according to Mark Jacobs, Jr.,

*[p]robably the most favorite is the sockeye (gaat) or red salmon. It retains a high quality even after it has been in fresh water for some time, and retains its natural oils...Sockeye dries soft and pliable and [is] very delicious[;] [it] can be eaten as is or toasted in a hot oven or over an open fire. It is then that the natural oils begin to sizzle out. Talk about sizzling steaks—I think good toasted, sizzling sockeye dry fish cannot be surpassed (1982:114).*

Tlingit fishermen make distinctions between the sockeye of different streams on the basis of taste and preservation qualities in addition to their anatomical characteristics<sup>24</sup>. But in all cases, sockeye were and continue to be relished as dietary staple and thus remain an important cultural and subsistence resource to Tlingits.

### Traditional Tlingit Stream Tenure and Fishery Management

Early observers have emphasized the fact that Tlingit fishing, hunting, trapping, and gathering areas, as well as symbolic and other material property were traditionally owned and controlled by clans and their localized segments, house groups (cf. Swanton 1908, Olson 1967, Niblack 1970, Oberg 1973).

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23. Perhaps this is why the adjective *consistent* was so often applied to the Sitkoh sockeye fishery.

24. Usually the bay name is used as descriptive modifier, i.e. Necker Bay sockeye, Sitkoh Bay sockeye, Basket Bay sockeye, etc.

Ownership entailed certain rights, the most important of which was the priority right to utilize the fish and wildlife resources in the area. Non-residential kin could invoke lineage ties to acquire access rights to resource areas from the local owners (Olson 1967:56)<sup>25</sup>. Apart from using force, other groups could obtain access to a resource territory only at the indigenous leadership's discretion. The heads of localized clan house groups, known as *yitsati*, *keeper of the house*, (Oberg 1973:92) who were charged with coordinating the harvest and management of the lineage's resource areas. *Yitsati* were often called *chiefs* in the post-contact period, although this term probably imputes too much authority<sup>26</sup>.

Agreements permitting outsiders access to resource areas were very common, and they served to provide the corporate clan and house groups with a kind of buffer or a network of relationships that could be called upon in case of hardship in their own territory. Trade and other socioeconomic networks also could be tapped to alleviate shortfalls in resource production (Oberg 1973 93-94). For example, if the sockeye run in Sitkoh Bay was judged to be threateningly low, the clan house leaders might decide to harvest fewer sockeye than normal and seek to supplement their supply through trade or access to another fishery. By offering Tlingits an alternative to over-harvesting, such networks also enabled Tlingits to protect their resources for future generations<sup>27</sup>.

Ownership and control of resources, then, not only implied rights, privileges, and prestige but responsibilities as well. Tlingits have possessed the harvest technology and expertise to kill or severely deplete a salmon stream by over-fishing for centuries. They avoided resource depletion through

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25. Under present subsistence law, harvesting privileges are accorded to residents of geographically localized communities that meet the criteria established by state law, regardless of ethnicity. Nevertheless ethnicity, moiety, clan or house ties, and other principles of social organization continue to be important criteria many Tlingits for evaluating subsistence and territorial rights. Thus, Angoon elders felt compelled to establish not only that Sitkoh Bay was Angoon *kwaan* (localized community) territory, but also that it was Deisheetaan clan territory, and furthermore that only one side of that clan, those who could trace dependency from a particular house, had legitimate possessory rights to the bay. Many Tlingits are dissatisfied that their relatives, who meet Tlingit social criteria for subsistence use of an area, are denied access rights by the state simply because of they reside outside of Angoon. As one elder put it, "My grandfather will not slap my hand if I reach into his bowl", implying that kinship ties are just as important as areal residence.

26. De Laguna (1972) portrays the *yitsati* as a powerful steward who made important conservation decisions about where and when fish could be harvested. Olson (1967), in contrast suggests that the *yitsati* had little or no real power, while Oberg (1973) takes a middle perspective (see Langdon, 1989). His power may have depended on how well the *yitsati* fulfilled his responsibilities.

27. Elders often refer to these kin and trade networks when discussing history. And of course they are still utilized, both formally and informally, in distributing subsistence resources today.

traditional management of stream conditions, escapements, harvest levels, and other aspects of the fishery. Clan leaders were responsible for insuring that their territories remained productive, and they employed biological, social, and spiritual methods to meet their obligation. Many Tlingit elders use the English phrase *take care of* when referring to a relative's or ancestor's relationship to a stream or bay as in, *My uncle used to take care of that creek*. Such terminology emphasizes the stewardship responsibilities involved in territorial possession and utilization. Ownership and stewardship were important components of Tlingit land and resource tenure.

## HISTORIC MEANS OF HARVESTING SOCKEYE

Various fishing methods and gear were being employed by southeast Alaska Natives to harvest fish prior to European contact. These included: (1) trolling for salmon with a hook and line; (2) use of weirs,<sup>28</sup> stone and wood or basket fish traps for salmon and other species; (3) use of floats and lures for halibut, and (4) use of gaffs, spears, and leisters<sup>29</sup> for salmon (Wolfe 1989, Stewart 1977). Weirs and traps were a primary means for harvesting sockeye salmon that were returning to spawn in Sitkoh Bay and other narrow or shallow streams. An observer in Sitkoh Bay in 1890 recorded that Tlingits were using fish traps in Sitkoh Creek (Price 1990:120-122)<sup>30</sup>. Many different types of traps and weirs were employed within the Tlingit cultural area; some varieties are showing in Figures 4, 5, 6, and 7. Posts from a tidal fish weir in Favorite Bay, near Angoon, were found to be about 3000 years old, providing evidence of the antiquity of weir fishing (Moss 1989).

Gaffs and spears were used to bring in fish that had been trapped as well as to harvest sockeye in streams after they had spawned. A gaff consists of a pole approximately 15 feet long with a hook mounted on the end. Sockeye were gaffed at the mouth of Sitkoh Creek and a quarter of a mile up

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28. This technology was said by Tlingit elders to have been designed and operated so that sufficient escapement would take place. Some weirs only blocked the stream during low tide; at high tide, salmon were free to ascend the stream. Other weirs were opened to allow escapement.

29. A leister is a three-pronged fishing spear; it was used mainly in the Chilkat area (de Laguna 1960:116).

30. The Tlingit fish trap was generally a large basket-like container or stone corral. They were much smaller than the large, stationary or floating commercial fish traps that were used by the canneries beginning about 1907 (de Laguna 1960:116).

Fig. 4. Fish Traps, Leister Spears and Dip Nets Used for Harvesting Salmon, Circa 1800s-1920s. From Stewart 1977.

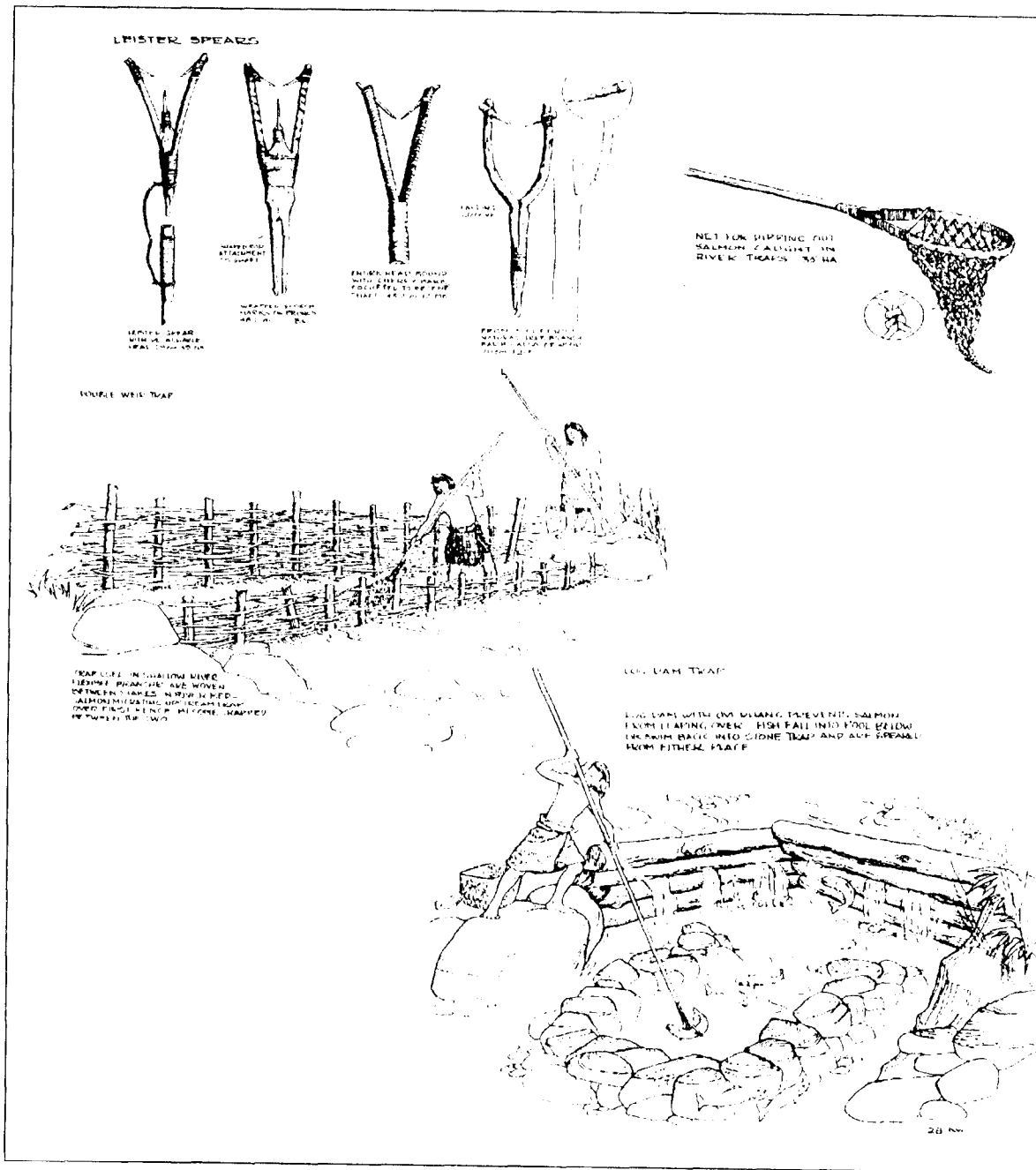


Fig 5. River Weirs and Traps Used for Harvesting Salmon, Circa 1800s-1920s. From Stewart 1977.

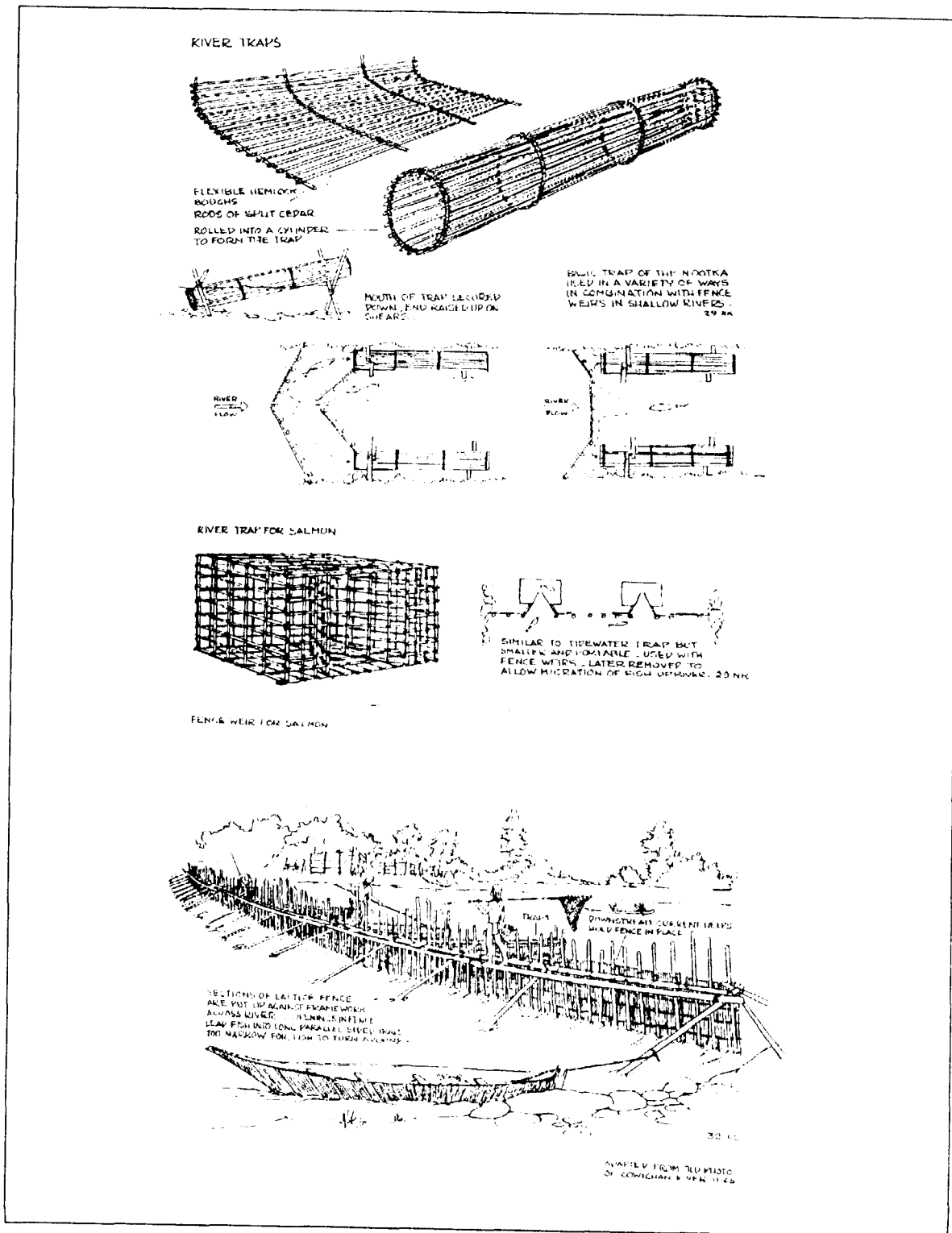


Fig. 6. Gaff Hooks Used for Harvesting Salmon, Circa 1800s-1980s. From Stewart 1977.

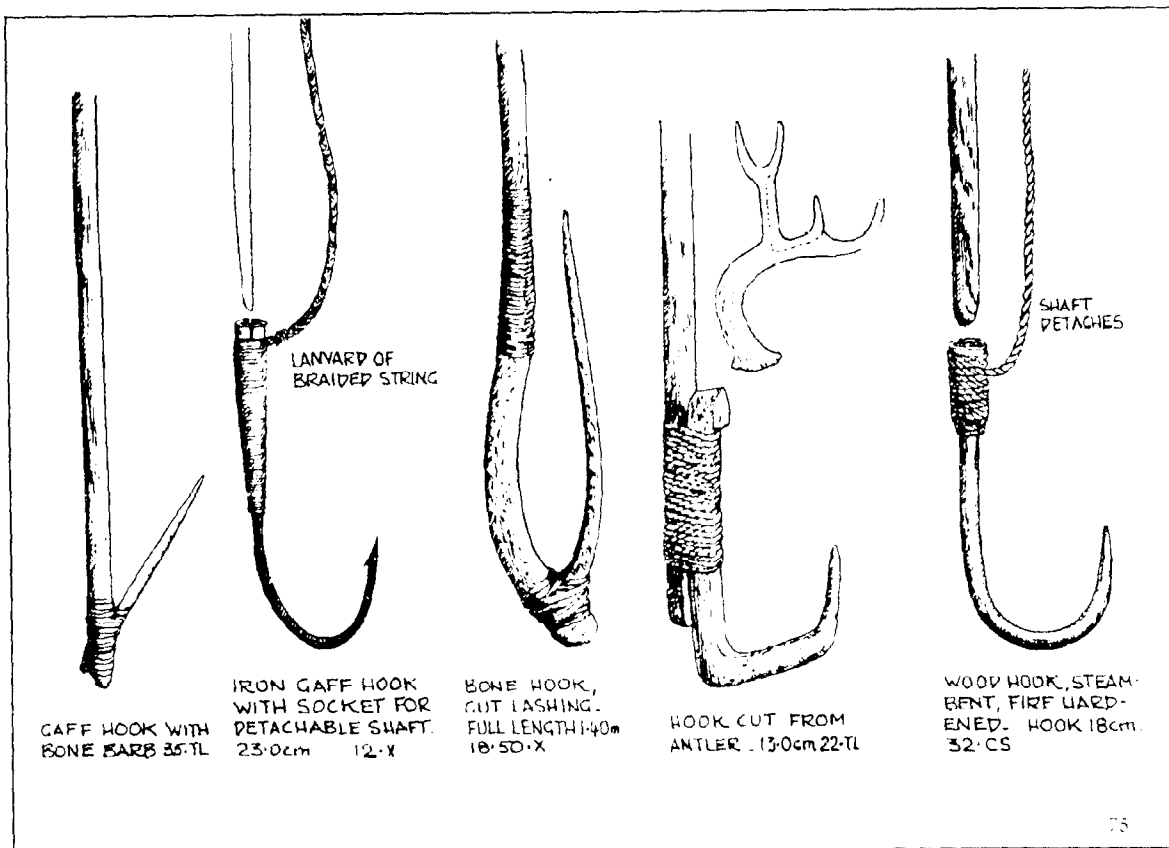
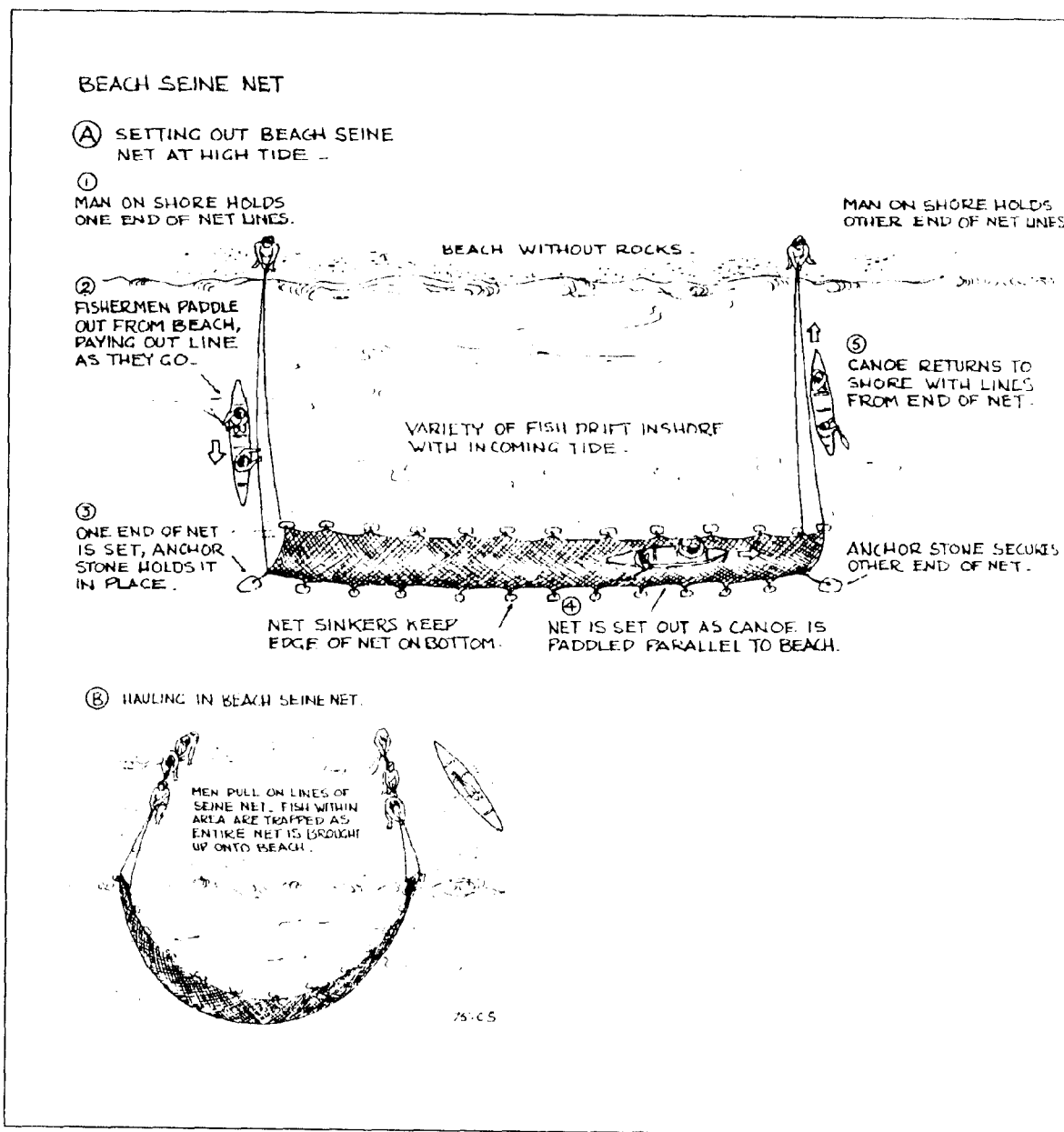


Fig. 7. Beach Seine Techniques Used for Salmon Harvesting. From Stewart 1977.



stream in pools where the salmon congregate before attempting to ascend the falls<sup>31</sup>. The deep tide water pools at the mouth of Sitkoh Creek were the most popular and efficient gaffing areas, as gaffing upstream could be limited by obstructions in the stream. Sockeye that were gaffed upstream were normally strung and floated downstream en masse to the mouth where they could be loaded into boats. In contrast to nets, traps, and weirs, gaffing is a selective method of harvest, meaning that fishers can choose their prey. Respondents recall selecting mainly bright male fish and avoiding females. Hook and line, while effective on other fish, has never been an efficient way to catch sockeye.

### Contemporary Means of Harvesting Sockeye

According to our respondents, with the introduction of European nets<sup>32</sup> and the effective outlawing of Native traps in streams in 1889, beach seining (see Fig. 7) soon became the preferred means for harvesting sockeye in Sitkoh Bay. Contemporary beach seines used in this fishery in the 1980s are 30 to 75 fathoms long and are deployed in various areas around the mouth of the creek according to the tide. At high tide, a rock, *Ish Ka*, on the shore of the island near the mouth of Sitkoh Creek, is used as an anchor for holding the beach seine while a skiff is used to tow the seine in a circle and close the set back to the beach. Before the island is used as a setting area, the beach must be cleaned of debris so that it does not interfere with the seine. At low tide, beach seine sets are made from shore near the mouth of Sitkoh Creek<sup>33</sup>.

Other contemporary means of harvesting Sitkoh sockeye include the seine boat and the drift gill net. The seine boat employs commercial gear to harvest for a group of individuals. Commercial nets are 250 fathoms long and depths vary. Seine boats are limited to harvesting in the middle of the bay because of the deep draft of their commercial nets. Both set and drift gill netting for sockeye salmon are relatively new gear in Sitkoh Bay. Subsistence regulations stipulate that a gill net may not

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31. Tlingits make a distinction between fishing at the mouth of a river, *heen wat*, and inside of the river (upstream), *heen vik*.

The two types of fishing in most cases employ different gear and tactics.

32. De Laguna (1960:116) suggests that nets made of spruce or baleen were in use prior to contact.

33. Matthew Kookesh for provided much of the information presented in this section on contemporary harvest patterns.



exceed 50 fathoms in length and the web must have 30 or more filaments. All nets are prohibited from blocking off streams, and drift gill nets must be marked by buoys. Subsistence sockeye gill nets must also be attended by a permit holder at all times<sup>34</sup>.

## HISTORICAL DEVELOPMENT OF SITKOH BAY

De Laguna (1960: 128-129) observed that non-Natives tend to divide Alaskan history into three distinct phases: (1) prehistoric, or antecedent to European contact; (2) early historic, commencing with discoveries and including reports of explorers, traders, and so on; (3) recent historic, extending from the purchase of Alaska to the present. This organizational scheme is both ethnocentric and incomplete, however, because it ignores Tlingit source material, oral history, and geography. In her endeavor to include Native traditions, however de Laguna repeatedly found that *temporal clues were lacking*, which made it difficult to incorporate them into a chronological history. To compensate for this, she divided Native traditions and oral history into four periods; this division provides a second schemata for looking at history:

- (1) a *mythical* group, dealing with the Flood, and with the adventures of Raven and of other beings that gave the world its present form;
- (2) a *legendary* group, overlapping in part with the former, in spirit if not in time, and telling how the present sibs had their origins, obtained their crests, and migrated to their present territories;
- (3) a more *clearly historical* set of stories, dealing largely with clashes between sibs, and including episodes that can be assigned to the days of the early explorers and Russians, or to the early American penetration of the territory. Some origins of recent sibs occurred during this period; and

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34. During the cannery era, Tlingits continued to use gaffs for selective harvesting of sockeye.

(4) and lastly, *modern* stories of events that occurred within the lifetime of the narrator or of his older relatives who witnessed the events and told the present narrator about them. (1960:129)

The historical information collected for this report pertains to events in each of these four periods. But there were other patterns as well. Most significantly, almost without exception, historical narratives of Sitkoh Bay and other fisheries delivered by Natives were structured according to a history of management practices. These management histories, furthermore, almost invariably were structured in the following way:

- (1) When Tlingits managed the fisheries;
- (2) When the commercial fishing industry penetrated southeast Alaska and there was lack of real management;
- (3) State or Federal Government management of the fishery; and
- (4) ADF&G management since the implementation of subsistence laws.

In some cases these periods are overlapping. For example, the second period is often characterized by Natives as a chaotic, transitional time during which Tlingits' management and control over their fisheries was being severely undermined, and non-Natives were failing to practice conservation at all. The two most clearly defined periods are the first and the last, but control and management are major themes in nearly every discussion relating to fishery histories. We have tried to take this framework into account in reconstructing the utilization and development of Sitkoh Bay.

#### Archaeological Studies of the Area

Archaeological investigations have been conducted in Sitkoh Bay (de Laguna 1960) as well as in Angoon (de Laguna 1960; Moss 1989), Sitka, and other areas in southeast Alaska (Arndt, *et al.* 1987). Dating of artifacts and other evidence suggest that humans have inhabited southeast Alaska for at least 10,000 years, although some areas along the coast were quite probably free of ice by at least 16,000 years ago (Arndt, *et al.* 1987). Significant sites uncovered within a 20 mile vicinity of Sitkoh Bay

have yielded artifacts which have been dated to signs of human habitation as early as 9,500 B.P. (Arndt, *et al.*, 1987:54-84).

Based on Carbon 14 dating of remains of a Tlingit-style fish weir discovered in Favorite Bay, Moss (1989) suggests that Tlingits as a distinct group have inhabited the southeast Alaska area for at least the past 3,000 years. Other archaeological estimates are more conservative. On the other hand, Tlingit oral histories date their presence in southeast Alaska to the last glaciation (Swanton 1908, 1909; de Laguna 1960). De Laguna (1960:64-67) found archaeological evidence of a small village site in her 1949 excavations near Sitkoh Creek, although no datable artifacts were unearthed. Her oral sources suggested that there was at one time a Ganaxadi clan settlement in this area. However, further investigations have yet to be conducted in this area; nor have any findings from sites within the bay been dated.

### Tlingit Historical Sources

Tlingits oral history dates Tlingit presence in the Sitkoh Bay area back many hundreds of years. Oral history recounted by Matthew Fred, Sr. and Lydia George testify to the Tlingit presence in southeast Alaska perhaps prior to the last ice age<sup>35</sup>. A number of creation and migration stories have been collected from Tlingit sources (de Laguna 1960, 1972; Swanton 1909). Migration stories chronicling Tlingits' endurance of a great flood as well as their subsequent resettlement in various areas of southeast Alaska have been collected from residents of Sitka (Swanton 1909, Tale 1:16) and Angoon (Alaska Consultants, 1976:27; de Laguna 1960:130-31).

We were unable to gather any stories detailing the discovery and initial settlement of Sitkoh Bay. However, de Laguna (1960:132-133) collected several histories regarding the founding of Angoon. Several of these stories go into detail about how the Ganaxadi clan, originally united with the Deisheetaan clan, became a separate clan after a conflict and willed their territory at Sitkoh Bay to the

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35. There is at least one song which describes the peoples' long journey south over frozen water many years ago. However, it is possible that this refers to a so-called little Ice Age within the last several millennia.

Deisheetaan as compensation for instigating the hostilities. Angoon elder Billy Jones stated in 1946 that this happened before the arrival of the Russians and that the land settlement was marked by a petroglyph, depicting a copper, near Sitkoh Creek (Goldschmidt and Haas 1946:118).

Other stories describe battles between clans and *kwaans* which took place in the vicinity of Sitkoh Bay. One important triangle of conflict involved the Kiks.ádi clan of Sitka and the Aan Eegayaak Hit Taan and Deisheetaan clans who had settlements in Whitewater Bay and Sitkoh Bay respectively. According to one version of the story, the Kiks.ádi attacked the Deisheetaan and Aan Eegayaak Hit Taan at Koosnoowoo, or Bear Fort, on Point Hayes near the mouth of Sitkoh Bay (de Laguna 1960:149). Other histories describe hostilities and fighting between clans presently centered in Angoon with those now centered in Sitka, apparently before the arrival of the Russians in the mid-eighteenth century (de Laguna 1960:145f). One Sitka Kiks.ádi clan member stated that many of the conflicts between the Kiks.ádi and the Deisheetaan pertained, among other things, to access and control over resources in Sitkoh Bay, which lay on the boundary between Sitka and Angoon *kwaan* territories<sup>36</sup>.

Several stories describe warfare and other incidents at a Teikweidee, or Brown Bear clan, village near where the remains of the present day Todd Cannery are located (de Laguna 1960:145-46). Other stories regarding the history of various subgroups in the Angoon and Sitkoh Bay vicinity were also recorded by de Laguna (1960:146-158). Two elders told a story to us about a murder there which caused the people to scatter. Different versions of the same story were also recorded by Garfield (1947:445-46), de Laguna (1960:145-146), and Sealaska (1975:610). According to Garfield (1947:446n) the murder took place before the German geographer Krause visited the area in 1882. Several sources in Angoon indicated that all of this took place before the Russians came or sometime after 1741.

Reconstitutions and movements of Tlingit settlements were common both before and after European contact. Tlingit stories reveal that villages relocated and realigned because of changes in

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36. It is quite possible that a struggle for the territory of Sitkoh Bay ensued after the Ganaxadi left the area. Swanton (1908:47) notes that the Ganaxadi were a particularly strong and well respected clan. The Deisheetaan, thus, may have been perceived by the Kiks.ádi and other groups as more vulnerable to territorial invasion than the Ganaxadi.

population, to improve harvests and trade, and because of warfare and political conflict. But there could be other motivations as well. The Deisheetaan claim to have moved into Angoon because that is where a beaver had led them. In fact the name of Sitkoh Bay chief's clan house in Angoon, *Deeshee soo*, Trail End House, reflects this origin (de Laguna 1960:183). Oberg observed that frequently it was a clan's totem animal or bird which had led them to their present village site.

*The story of the Kiks.ádi clan of Sitka is typical of these legends (Swanton 1909). It relates how the Kiks.ádi had been wandering northward for several years, never certain as to where to establish a village. One day, when they were off Sitka Sound in a dense fog, a frog appeared and circled about the canoes for some time, then started toward the land. The canoes followed and were led by the frog into Sitka harbor where the Kiks.ádi were overjoyed to find a pleasant village site. The frog was then taken as the crest of the Kiks.ádi clan. (Oberg 1973:64)*

Such mythological accounts not only explained where clans established new settlements, but also served to confirm their rights to the new territory's resources.

Winter settlements like those near the present site of Angoon were originally places where family or clan-house groups lived during this part of the seasonal cycle. Elders who were interviewed regarding the traditional seasonal round in Sitkoh Bay indicated that activities in this summer village might span almost half the year for some family groups. Halibut fishing might begin near Morris Reef off Point Hayes as early as late April, and preservation of salmon as well as other hunting and gathering activities might continue in Sitkoh Bay well into October. As one elder put it, Angoon *was like our capital..like Juneau for Alaska; but the bays were where we got our food* (Lydia George 1989). Thus, while winter villages, like Sitka and Angoon, traditionally served as places where clans could gather after food was put up for the winter and were the principle ceremonial sites, the tie with territory and resources was no less at summer villages than at the main winter villages.

The European invasion and the pressures of contact intensified the pattern of village reorganization and provided incentives for consolidation. In many areas, including Angoon, Killisnoo, and Sitka pressures which facilitated this process included trade and the establishment of trading posts

and schools at winter villages, disease and consequent population loss<sup>37</sup>, intra-Tlingit and Tlingit-European conflicts, and competition for and stress on valuable resources, such as furs, and trade routes. Nevertheless, despite physical relocations, ownership and rights to fishing and other resource territories continued to be scrupulously accounted for among Tlingit social groups.

### Early References to Sitkoh Bay

The earliest European reference to Tlingit habitation in Sitkoh Bay dates back to the Tlingit-Russian battle at Sitka in 1804. As mentioned above, the Tlingit withdrew from Sitka Sound to Point Craven near the mouth of Sitkoh Bay. The Russian military leader, Lisiansky (1814), left a detailed account of the battle, the withdrawal site, and certain aspects of early Sitka-Angoon relations.

Lisiansky's intelligence sources informed him that the Angoon Tlingits, referred to as *Hoosnoff*, a corruption of *Kootznoowoo*, were planning to aid and abet the Sitkans in an attack on the Russians. Upon learning this, the Russians demanded the immediate surrender of the Sitkans. However, instead of surrendering, the Sitkans escaped by land over the Nakwasina Pass to Hanus Bay and eventually Point Craven on the north side of Peril Strait. Lisiansky later learned that the Sitkans

*had passed the winter in a scattered state, but were now united again, and had built themselves another fort, opposite to the settlement of Hoosnoff [probably either Angoon or Killisnoo, (Krause 1956:34)], in Chatham's Strait, similar to the one we had destroyed. It is well situated in a small shallow bay, and is defended on the water by a large rock (Lisiansky, 1814:220).*

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37. In the early contact period, the introduction of European diseases proved devastating to the Tlingit population. Smallpox, probably introduced by the Spanish in 1779 around Bucarelli Bay, quickly spread as far north as Sitka. The number of deaths caused by smallpox is hard to establish because of the lack of early census figures. Veniaminov (1984:434) estimated that an 1835-36 epidemic of smallpox cut the Tlingit population (previously around 10,000) in half, causing many of the survivors to seek inoculations from the Russians, whose medicines they had hitherto spurned. According to Veniaminov's estimates this left Sitka with a population of 750 and Angoon with 300. Recently, a more conservative estimate has been put forth by Boyd (1985:238), who suggests that only 27 percent of the Native population perished. Still this represents a devastating loss. In addition to the physical suffering and depopulation caused by smallpox (1835-36, 1862-63), typhoid (1819, 1848, 1855), measles (1848, 1868), and other diseases, these outbreaks placed psychological and social strains on the Tlingit as well. One observer (1979:198) noted that in Angoon and other Tlingit settlements along Chatham Strait, smallpox *devastated some baraboras [Tlingit dwellings] to the last man* and severely disrupted trade patterns. The devastation to the Native population caused by disease also is reflected in the demographic data presented above in Figure 3 (see also Arndt, et al. 1987:152f, Schroeder, 1989).

Von Langsdorff visited this fort in 1805 and reported that it was located on the northeast side of Peril Strait near its junction with Chatham Strait. He provides a rather detailed description of the fort, which was situated,

*upon a rock which rises perpendicularly to the height of some hundred feet above the water. The only possible access to it is on the north-west side, and they have rendered this extremely difficult by strewing it all over with very large trunks of trees which they have cut down. The palisade of large trunks of trees is stuck close together, measuring from twelve to fifteen feet in height, and from three to four feet in thickness. A high natural wall of earth beyond the palisading on the side toward the sea, conceals the habitations effectually, so that they cannot be discerned by any ship (1813, II:128-29).*

The Yankee trader D'Wolf also described this fort as being located,

*upon a rock which rose perpendicularly to the height of several hundred feet above the water's edge. The only possible access to it was on the northwest side, and here it had been rendered extremely difficult by very large trunks of trees strewn over it. The rock itself was secured against the attack of an enemy by a double palisade, measuring from twelve to fifteen feet in height, and from three to four in thickness. A natural wall of earth beyond the palisading, on the side towards the sea, conceals the habitations so effectually, that they cannot be discerned from a ship. The houses within the fortress were placed in regular rows and built of thick plank, fastened to post which formed the framework, and covered at the top with bark. The entrance was at the gable end, and was often stained with different colored earths. (DeArmond 1978:101)*

Von Langsdorff (1813 II:130) also noted that the chief's name was Dlchactin, that he was the father of the expedition's interpreter, and that his house consisted of 30-40 people living under one roof. Von Langsdorff estimated the total population of the settlement to be between 1,300 and 1,400.

Based on evidence available when she wrote, de Laguna (1960:147) concluded that the fort and village probably were located at Lindenberg Head. A recent Sealaska (1975:632) survey, however, places the village site somewhat closer to Point Craven about 2 miles east of Lindenberg Head. Several Kiks.ádi sources in Sitka stated to us that their elder relatives had pointed to a small inlet in this vicinity as being the site of their ancestor's fort, *Chaatlk'aa Noow*. Lindenberg Harbor was the site of another Tlingit settlement inhabited by the Teikweidee clan. This village, known as *Ka-shot-oowa-ha-yeh*, was located where the remains of Todd cannery now sit. The creek behind this cannery was known as *Vt-tee-wootl-heen*, Warfare Creek, which would seem to corroborate stories which speak of the battles at this site (de Laguna, 1960:145; Sealaska, 1975:610).

The Sitkans' retreat to a village on Chichagof Island is well documented; how they crossed Peril Strait is a more problematic. According to one source, some Kootznoowoo Deisheetaan, fishing in the area of Sitkoh Bay, encountered the refugees and provided them passage to the north side of Peril Strait. This seems entirely plausible given the traffic in Peril Strait as well as the number of Tlingit camps that von Langsdorff encountered during his passage through this area. Another version of this history maintains that the Sitkans used canoes stored at Hanus Bay to cross Peril Strait<sup>38</sup>.

Lisiansky's encounter with a Kootznoowoo liaison led him to believe that Sitka-Angoon relations were less than amiable. This Kootznoowoo man, whose name was not recorded, was sent as a friendship ambassador to the Russians. Soon after being received favorably by Lisiansky, he requested that the Kootznoowoo *might be permitted to make war against and subjugate the Sitkans, who did not deserve to be considered an independent people* (1814:165). This representative went on to describe how the very word *Sitcan* was used as a term of reproach and insult among his people.

Lisiansky was skeptical of the ambassador's overtures, however, and it may be that this oratory was but a clever bit of diplomacy. Currying favor with the Russians in order to subjugate the Sitkans certainly would have put the Angoon Indians in a strategic position to control more of the flow of trade goods from the interior to Sitka. On the other hand, to achieve this it would have been necessary to control Peril Strait, which the Sitkans were now threatening to control with their settlement on Point Craven. According to Kiks.ádi oral tradition, the Sitkans actually lured the Russians into battle in 1804 and had planned all along to relocate near the east entrance of Peril Strait in order to blockade the Russian settlement's access to trade routes. Thus, Sitkans may have chosen *Chaatlk'aa Noow* on Point Craven as a fort site not only because of its defensibility but also because of its strategic location on the main trade route between Sitka and the interior<sup>39</sup>. Lisiansky also reported that,

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38. Hanus Bay was owned by the Angoon Brown Bear clan which maintained a fishing village at that site. There is a sockeye stream there which originates at Lake Iva.

39. If this was the case, it would explain the Sitkans' eagerness and apparent lack of fear in returning to Sitka for subsistence harvesting as well as their initial unwillingness to resettle there despite Baranof's invitation. See Dauenhauer and Dauenhauer (n.d.) for additional Tlingit perspectives on the Battles of 1802 and 1804.



*Other tribes residing about Sitka, had also...been busily employed in fortifying their settlements; so that, it is to be feared, our countrymen here will in a short time be surrounded by very formidable and dangerous neighbors" (Lisiansky, 1814:220).*

As noted above, fear of the Russian threat also may have stimulated the Kootznoowoos to build a fortified settlement at Angoon.

We do not know how the temporary relocation of Sitkans near Sitkoh Bay affected the prevailing relations between the two groups or their respective subsistence patterns. According to Matthew Fred, Sr. (1989), an oral agreement was negotiated between the Sitkan emigrants and the Deisheetaan possessors of the bay which entitled the Sitkans to some fishing rights within Sitkoh Bay waters. Historical records also indicate that Sitkans continued to return to Sitka for certain subsistence foods. According to one source, more than 1,000 Tlingit, some armed with guns, returned to Sitka to harvest herring and herring eggs in 1806 (Tikhmenhev 1979:222; Krause 1956:39).

Relations between Sitka and Angoon clearly improved over the next few years. A number of potlatches and dances were held to help heal old wounds and forge friendly links. Livingston Jones, a missionary in the area in the late 19th and early twentieth centuries, wrote that of all the dances he had witnessed, the largest was held at Angoon.

*On this occasion bands from the Hootz-na-hoos [Kootznoowoos] and from some of the leading tribes of Sitka performed. The dance, which was held in connection with a big potlatch, took several days, and the Sitka bands walked off with the honors and with a cargo of the spoils from the potlatch. The star dancer of the Sitkans, however, lost her heart to one of the young lords of the Hootz-na-hoos and she became his wife. So the Hootz-na-hoos had at least some compensation for their lavish entertainment of the Sitkans. This big dance was carried through in a harmonious spirit, and was such as no white man will probably never look upon again. (1912:145)*

Marriage and kinship ties continue to link Sitka and Angoon Tlingits.

### Commercial Fishing Reaches Sitkoh Bay

By 1890, commercial fishing and canning had become big business in Alaska<sup>40</sup>. One of the first two canneries in Alaska was located at Old Sitka in 1878, although it operated for only two years. Another cannery was constructed in Redoubt Bay by the Baranof Packing Company in 1889. During the next decade, canneries proliferated in southeast Alaska; by 1900 there were more than 20 canneries in the region (Moser 1899; Alaska Fisheries Board 1949; Price 1990). Even in the early years the effects of a single cannery could be widespread. The Redoubt Bay cannery is a case in point. In 1890, after only one season of operation, fishermen from this cannery were making inroads into fisheries over 50 miles away, including the sockeye fishery at Sitkoh Bay. This penetration in fact led to a standoff between the intruders and the Deisheetaan group that inhabited Sitkoh. This incident is the first record of commercial fishing at Sitkoh Bay. According to Price (1990:120), this conflict also marked first instance where U.S. military force was employed on behalf of a cannery against a Native group in Alaska.

The Alaskan, the Sitka newspaper, reported on July, 12, 1890 (p.3) that Indians were preventing non-Natives from fishing in Sitkoh Bay, *claiming exclusive rights to its open and navigable waters*. A week later, following the return of Marine Lt. Coontz, who was dispatched to adjudicate the situation, The Alaskan (7/19/90: p.3) offered this synopsis:

*It appears that the present Natives claimants of the exclusive right to fish in that bay are the descendents of the former villagers who had their permanent abode there while the present generation lives now across Chatham Straits in the Kootznahoo settlement. Two very good salmon streams empty into the bay in each of which a salmon trap is erected, in violation of the law, by Kachkawah and Santah, and the other which obstructs the larger stream, by Hukanah and Kakway. The mission of Lieut. Coontz assisted as was first supposed, in arranging an amicable settlement between the Indians and the men coming from the Redoubt cannery in this vicinity, to fish for salmon. When the Lieut. came upon the scene of the trouble, however, the tug from the Point Ellis Cannery accompanied by several fisherman was also there for the same purpose.*

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40. Little information on Sitkoh Bay or its fisheries was recorded between 1804 and 1890. The Pacific Coast Pilot of 1883 (1883:144) states that "Upon Point Craven are some Indian houses constituting the Tlikit village of Sitkoh," but no population figures are given. The village of Sitkoh may be a reference to *Chaatlk'aa Noo*, the Sitkan's fort site on Point Craven established after their withdrawal from Sitka in 1804.

*Mr. Coontz upon further investigation found, also, that the Indians holding the two separate streams were contestants in the claim to possess by hereditary right the entire bay, but that a truce existed between them to defend their rights in common against the Americans. A Tsimpsean Indian upon whom the light of British civilization had shone a little, was also on the ground, and filled the place of counselor-at-law and interpreter on the Native side; and of course was very pronounced in hostile denunciations during the interviews. In order to relieve somewhat the monotony of the negotiations, this individual held, also, daily religious meetings, after which he would gamble with the Indians coming from the neighborhood of Point Ellis. The Natives asked from every fisherman a royalty of 25 cents per day; which was not conceded. At last not being able to come to a mutual understanding in this imbroglio, the Lieut. proposed that the contesting Indians should proceed with him to Sitka in order to have the matter settled by the civil authorities. This proposition was readily accepted, and the Natives are now here awaiting the action of the civil government.*

Lt. Coontz also recounted the incident in his autobiography, which provides additional details of the incident:

*When we reached our destination I found the white men in the upper part of the bay with their seines and everything ready to haul, and a band of one hundred and twenty-five Indians on a point of land where a little stream enters the bay...I endeavored to get one or two Indians to come out and talk with us, but failed. We saw that they were all armed with shotguns, rifles and other implements of war. I picked out the leader whom I found to be Baptist Jim. He was a big fellow with a black beard and looked like a man of importance.....I demanded the surrender of the entire party at once. He demurred, but I told him that even if he did kill us, the federal government would sooner or later have its innings with them, and that if the Indians had real grievances, they could be adjusted by the governor [in Sitka]...*

*[W]e chose about twenty of the leaders...and at midnight hove up anchor and started for Sitka, leaving the families behind to come on later as best they could... Their troubles dragged for months, and the governmental investigation took so long that the poor Indians, who stayed with their friends at the Ranch in Sitka gradually became discouraged, and one by one went home.*

*As soon as the Indians surrendered I ordered the white men to start fishing, and I remember that on the first haul of the seine they took in more than a thousand salmon. (Coontz, 1930: 153-54).*

In addition to documenting the pattern of non-Natives' forceful usurpation of Tlingit fisheries, these accounts also testify to the fact that there was a substantial settlement of about 125 Natives at Sitkoh Bay, that Indians there were still utilizing traditional Native fish traps, in violation of the 1889 law prohibiting them, and that there were at least two groups contending for rights to the streams in the bay. Which clans were involved and how this inter-clan or inter-tribe dispute was resolved is not clear. Two residents of Angoon stated that they were descendents of Baptist Jim. Mary Willis recalled

that this name was applied to one of her uncles, and Matthew Fred, Sr. stated that Baptist Jim was his maternal grandfather.

The date of the encounter, early July, suggests that the salmon in question were probably sockeye salmon. Lt. Coontz' report also suggests that the 1890 salmon run was very strong, although, unlike The Alaskan, he mentions only one stream. It is not clear where the other salmon stream would have been. Pink and chum salmon often run in *Ata Heen*, the stream at the very head of the bay, but there is no record of there ever being two sockeye streams in the bay.

By the turn of the century encroachment by non-Natives on Native fisheries had become quite common. The excerpt below, taken from a petition on behalf of chief Khliantych and his Sitka Tlingit people, illustrates the pattern of encroachment as well as the Native response:

*We ask that Mr. Smith, the superintendent of the Baranof Packing Company, would be forbidden to take away our lagoons, bays and streams where we used to fish long before the arrival of white people. We wish that he would do the necessary fishing only with our consent. We demand that he stops throwing pieces of wood and tree trunks across the streams to prevent fish from going there to spawn. His fishing methods in the last eight years have made such places as Redoubt Bay, Cross Sound, Hoonah, Whale bay, Necker Bay, and Redfish Bay virtually empty. (in Kan 1985:135)*

A similar plea was entered on behalf of the Kiks.ádi leader, Katlian, by a school teacher in Sitka:

*Kat-le-an [Katlian], one of the head men among the Natives of Sitka has been in the habit of fishing during the salmon season at Red Fish Bay about forty miles south of Sitka on Baranof Island.*

*He informs me that last season crews from certain canneries came to the stream there and in the middle of the night would stretch their nets entirely across the stream and take every fish that attempted to ascend the stream and before morning clear it with their catch. This was done frequently. Not only this but some of the men represented themselves as U.S. Deputy Marshals (BIA Records, Sitka 1903).*

In a supporting letter, Katlian testified that his people had fished this stream for *fifty winters*, and that, *It is a good place for salmon, but the white men take them all out* (BIA Records, Sitka, 1903). The Baranof Packing Company's activity also extended to Sitkoh Bay.

Elsewhere in southeast Alaska, the pattern was the same. Before the dawn of this century, even non-Natives had begun to comment on the severity of this injustice:

*At Klukwan, Chacon, Klakas, Klawak, Metlakatla, Kasaan, Karta Bay and, in fact, everywhere, the Indians were greatly exercised over their conditions.... They claim the white man is crowding them from their houses, robbing them of their ancestral rights, taking away their fish by shiploads; that their streams must soon become exhausted; that the Indian will have no supply to maintain himself and family; and that starvation must follow...*

*My own sympathy is with the Indians and I would gladly recommend, if the way were clear, the establishment of ownership in streams; but it is impracticable, and I can only ask....whatever law is framed, that a liberal balance be thrown in his favor. (Moser 1899:43)*

## **THE CANNERY ERA (1900-1974)**

The penetration of the commercial fishing industry into Sitkoh Bay came full-scale in 1900 with the construction of Chatham cannery on the south shore of the bay. August Buschmann wrote of his role in the cannery's construction and early operation:

*My first experience as superintendent in charge of building and operating a salmon cannery was in 1900...This was at Sitkoh Bay...Father sent me out from Petersburg in charge of this crew and expedition with orders to build and operate a cannery there that year. Lumber and supplies were furnished by cannery tenders and scows from Petersburg, about 120 miles distant. The winter had been severe and unfortunately the ice remained late, which necessitated dragging a substantial portion of the lumber and supplies a couple of miles on sleds over the ice until the ice broke up. We were ready for canning when the fish came and had a successful season with a pack of 60,000 cases (1960:11-12).*

Buschmann makes no mention of an Indian settlement or negotiation with any Tlingit groups. However, according to Deishcheetaan elder Mary Willis, an agreement was in fact consummated with the Indians before construction of the cannery began. This agreement, she said, was written on a scroll-like paper, which was later read by her uncle Frank Mercy to her brothers. Unfortunately, she does not know what eventually became of the written agreement. Mrs. Willis also recalled that her uncles debated about whether or not to allow the cannery to be built:

*They [my family] all stayed there [Sitkoh Bay], put up their food for wintertime. And the boat came. They [the white men] asked them if they could put a cannery there. One of my uncles say "No, they're going to take it [the territory] away from us!" The other uncles say "We got lots of family. They always go to work to earn money...to Ketchikan...to Juneau, Petersburg. Over here, if they put the cannery here, the family gonna work here." Then he okayed it, [the] other uncle. They put it there.*

Thus, local employment was evidently a major factor in convincing her family to accept the cannery in their territory<sup>41</sup>.

In addition to first priority in employment at the cannery, the agreement also allowed for the Deisheetaan to retain ownership and control over their village and the bay. In fact, according to a recorded statement by Charlie Jim, Mary Willis' deceased brother, who assumed leadership over the territory after the death of Sitkoh Bay Chief, *He [Sitkoh Bay chief] also made clear that only the buildings would belong to the company, that the land would remain in the ownership of the [Deisheetaan] owners of the bay* (Alaska Consultants, 1976:27). In other words, the agreement was a lease arrangement rather than an outright sale or transfer of the territory. Furthermore, Mr. Jim notes, *The company promised to keep up the chief's house in the bay* (Alaska Consultants, 1976:27).

Such agreements were apparently not unusual. It was reported that the Killisnoo saltery paid the Basket Bay Chief unspecified amounts of money for fish taken from Basket Bay (Angoon Committee, 1947:2). The Russians apparently also paid rental or lease fees to Tlingit leaders for harvest rights, including the Sitka clan head in charge of Redoubt Bay, the sockeye stream from which Russians obtained much of their salmon. Langdon suggests that, *One can conceptualize these Russian payments as rental or lease fees, as they apparently did not transfer ownership rights, a practice which Oberg (1973) indicated was proscribed in Tlingit society* (1989:314). Like the Sitkoh agreement, these arrangements implied a recognition of Tlingit rights over their land and resources<sup>42</sup>. According to Mrs. Willis, however, the terms of the Sitkoh agreement were soon violated, and her uncles were restricted from fishing as well as from using their boat and parts of their old grounds. Her uncle's house near the Native village was also not kept up in latter years, although, she notes,

*they promised me they [were] going to rebuild it, a little bigger. The cannery superintendent (O'Leary) there used to know us. And they were going to fix it, rebuild...And they told me, "you're going to stay in there." Before they rebuild, they closed the cannery (Mary Willis, 1989).*

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41. Matthew Fred, Sr. and Mark Jacobs, Jr. corroborate that employment was a major factor in the decision to allow the cannery into Sitkoh. Mark Jacobs, Jr.'s grandmother reportedly received a box of butcher knives from the cannery management, which were then distributed to the families who were to be employed there.

42. However, the agreements may have been negotiated by the canneries purely out of expedience, to avoid the costly use of force, and/or to prevent potential Native sabotage of the company's operations.

In Sitkoh, as elsewhere, it seems that *lease relationships...were abandoned as quickly as the cannery men could do so without endangering themselves* (Langdon 1989:317). Tlingits' control and rights to the bay were gradually usurped. In the historic period, the U.S. Forest Service assumed control of the land, and the Federal and State agencies assumed control of the streams and fisheries.

### Cannery Operations

At the time of its construction, Chatham Cannery was heralded as one of the largest and most advanced canneries of the day. The cannery was sold after its first season to the Pacific Packing and Navigation Company, financed by eastern capital, and in 1905 it was purchased by George T. Myers and Sons. This company managed the cannery until 1929 when it was sold to the New England Fish Company which operated the cannery until its closure in 1974. In the early years, Natives, mostly from Angoon and Sitka, comprised the largest segment of the work force at Chatham. During Chatham's second season in 1901, A. A. Ainsworth supervised the 64 non-Natives, 120 Natives, and 79 Chinese to pack 49,000 cases (Roppel 1987:7). The 1901 Congressional Report on Salmon Fisheries provides some additional insight into the cannery's early operations:

*Visited the cannery of the Chatham Straits Packing Company...on August 16. This is a new first-class plant, operated by practically the same parties as own the Petersburg and Quadra Bay canneries. The same company built a cannery at Bartlett Bay, about 30 miles from this place, last season: but because of the inaccessible location on account of ice was compelled to abandoned it, and put up this plant instead. It is outfitted for 62,000 cases and had packed 29,000 at this date. But 9,000 cases of these were red salmon, and the latter had stopped running. This is evidently an excellent humpback location, and it was expected that at least 50,000 cases would be secured. Fishing is done along Chatham Straits for distance of 100 miles, entirely with seines. The company has no traps. There is no hatchery here, but it is intended to comply with the regulation by planting fry in these waters from the product of a hatchery operated by the company at Quadra Bay,]. There are good hatchery sites adjacent which would be available if required. (Kutchin 1902)*

Despite the good hatchery sites and regulatory requirement, no hatchery was ever located in the bay.

The next few years provided good fishing and full packs. Packs for the years 1900 to 1907 are summarized in Table 2.

Table 2. Quantity of Salmon Packed at Sitkoh Bay, 1900 through 1907.

Year	Sockeye Salmon (cases)	Total (cases)
1900		60,000
1901	9,000	60,000
1902	9,560	49,003
1903	16,000	35,780
1904	16,050	41,500
1905		55,000
1906		79,154
1907		91,332

Sockeye salmon were preferred for canning because they brought the highest market price. However, by 1911 fisheries agents were suggesting already that the harvest of this species had reached its maximum in southeast Alaska and that sockeye were now on the decline (Marsh and Cobb 1911:45). Accordingly, the proportion of sockeye salmon to other species packed at Chatham began to diminish. Detailed records, like those above showing the total number of each salmon species packed are not available for years after 1907. The overall salmon pack at Chatham Cannery, however, rose steadily until 1917, when the largest pack in the cannery's history, 121,667 cases, was produced. Altogether, during the Meyer's ownership period, 1905-1928, over 1.5 million cases of 48 one pound cans were turned out at Chatham (Roppel 1987:7).

The commercial floating fish trap, introduced in about 1907, had gained widespread use by the 1920s. One analyst has calculated that between 1907 and 1914, the percentage of salmon taken by floating traps went from zero to nearly 40 percent (Langdon, 1989:321). By 1928, Chatham was employing as many as six fish traps at locations in the Chatham Straits, including Peninsular Point, Point Hepburn, Parker Point, Point Sophia, Point Thatcher, and Wilson Cove. One elder observed that these traps *killed everything, including seals and whales* (Mark Jacobs Jr., 1989). Langdon



(1989:321) notes that from 1920 until the late 1950s, the percentage of the total catch taken by traps never fell below 50 percent.

The traps had a strong, immediate negative impact on the local sockeye salmon runs and the local economy. The estimated run of sockeye in Sitkoh Creek in 1928 was only 4565, about half what observers termed its normal run (U.S. Fish and Wildlife Report 1928). Of course, by the time of this observation, the sockeye runs had already been severely depleted from what they had been before the cannery era began. In addition, after traps were introduced, canneries needed the services of fewer Native fishermen. As early as 1909 a school teacher in Killisnoo wrote that she feared that, *the fishtraps are going to take the work out of the hands of the people* (BIA, 1909). Thus, both the Tlingits' subsistence and wage economies were affected.

Tlingits protested the use of these traps and in some instances tried to disable or interfere with them. Piracy was also a problem for the canneries for traps were often left unguarded<sup>43</sup> (Langdon, 1989:321). In a statement put out by a Committee of Angoon Tlingit correcting the 1946 Goldschmidt and Haas report, the negative impact of traps was clearly articulated: *The Committee wishes it to be known that cannery fish traps have greatly interfered with all Native fishing in all areas claimed under our possessory rights* (Angoon, 1947:2).

U.S. Fish and Wildlife reports from the Juneau District (which included Sitkoh Bay) also chronicled the deleterious effect of fish traps on the Native economy:

*Last season the canneries gave the Native boats the preference of taking salmon from them and turned the salmon in their traps loose. This year it was the reverse--they took very few salmon from the seiners and brailled their traps with the result that the Indians made very little.*

*It would be deplorable if the Indian seiners we have with us are not permitted to make a living... It will be noted that in 1930 there were 159 traps operated in the Icy Strait, Western and Eastern districts while in 1931 there were but 112 traps operated which is 47 traps less and yet the traps were sufficient to supply all the canneries operating in those districts and from every indication...even with fewer traps, the canneries will be able to operate even though they have no seine boats. (1931:22; see also 1943:54)*

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43. Alternatively stated, taking fish from commercial traps kept some Native commercial fishers in operation. Trap robbers or their sons tell of their exploits with pride.

Notwithstanding the early recognition of the negative effects of fish traps on salmon runs and local economies, they were not outlawed until after Alaskan Statehood in 1959.

The gas powered boat, which quickly rendered the sail-powered seiner obsolete, was another important technological innovation. By 1915, a teacher noted that many Killisnoo Tlingits already owned power boats, *which enable them to reach their trapping and fishing grounds more readily than with the old-time canoes* (BIA, Killisnoo 1915). Prior to that time, cannery powerboats had been employed to tow seine boats to prime fishing spots, but few local individuals could afford their own gas boats.

Langdon (1989:323) notes that, *After 1910, the Tlingit's and Haida's efforts seem to have been directed toward obtaining gasoline-powered boats.* But capital-intensive improvements such as bigger boats, engines, and modern gear required considerable investment. Some canneries, aware of the need to maintain a quality fleet and consistent work force, provided loans and credit to their workers, thus enabling them to purchase and maintain boats and gear. This created the potential for a long-term inter-dependency relationship, which the canneries often manipulated in their favor. A fisherman on credit to the cannery had little choice but to continue to work and apply his earnings toward the debt. Such a system apparently operated at Chatham, although there were no reports of usury or abuse of the system. One former Chatham fisherman recalled that New England Fish Co. gave his father a seine boat to use as long as he fished for the cannery (Herb Hope 1989). Nonetheless, few fishermen earned enough to maintain, much less purchase, their own gas or diesel powered seiners without help from other sources.

In 1938, at the request of several Native organizations, the Federal government started making loans to Native corporate groups, so that they, in turn, could finance individual fishermen. A U.S. Fish and Wildlife Report (1940:35) states that in 1939 the amounts of U.S. Indian Service loans granted ranged from several hundred to \$3,500 dollars, with loans for expenditures on seines averaging from \$800 to \$1,500 and on boats about \$1,500. The agent observed, *By this method the Natives are able to eventually own their own boats and while in the process of making payments they do not run payments as might be their ill-fortune were they financed by some means other than the U.S. Government.* After World War II, this loan fund was expanded to enable Native groups to purchase canneries. Angoon

took advantage of this opportunity in 1949, purchasing the Hood Bay cannery which they operated until it burned down in 1961.

### Changes in Management Practices

Within two decades of the advent of the commercial fishing and canning industries in southeast Alaska, Native control of local subsistence fishing areas had been severely curtailed, with no effective new management authority established in its place by the federal government. Especially in the early years, salmon seemed like an inexhaustible resource to the canning industry; if one stream was devastated by over-fishing, there were still other productive streams in which to fill the company's nets. It was not until statehood in 1959 that a coherent management system to harvest salmon stocks on a sustained yield basis was implemented. Prior to 1924, the Secretary of Commerce was only empowered to regulate a stream within 500 yards of its mouth. And even these regulations were not forcefully applied or enforced.

Because Chatham Cannery lay within a mile of the sockeye creek in Sitkoh Bay and its traps were located to intercept Sitkoh sockeye, the cannery represented a substantial threat to the fishery. As we have suggested above, Chatham Cannery very likely exploited Sitkoh Bay sockeye to near-depletion in its early years of operation, resulting in a very weak sockeye run in the Sitkoh Creek system by the mid 1920s. Although the commercial value of the run appears to have been greatly diminished by the cannery operation, fish reportedly continued to return to the Sitkoh Lake system in numbers sufficient to provide for a subsistence fishery<sup>44</sup>. In addition to exercising control over fish stocks in Sitkoh Bay, Chatham management encroached on other fisheries as far away as Sitka Sound. As early as 1907, the cannery attempted replace Sitka Tlingit fishermen in one of their most important territorial fisheries, Redoubt Bay. Marsh and Cobb (1907:14-15) reported the incident as follows:

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44. Respondents reported that the sockeye subsistence fishery endured despite commercial exploitation of the Sitkoh Creek stock. Possibly this was due to the provisions of the original agreement between the Deisheetaan and the cannery, and the strong Native presence. Alternatively, even a depleted run, too small to be of commercial significance, provided for the needs of the Sitkoh Bay Tlingit and other cannery workers.

*An occurrence this summer gave evidence of the possibility of trouble that lies in the failure to observe the customs governing the Indians in their fishing operations. A crew from the Sitka tribe fished for the Sitkoh Bay cannery in Redoubt Bay, a short distance south of Sitka, until early September, when they stopped, giving the scarcity of fish as a cause. Upon this the superintendent of the cannery sent over a crew of Killisnoo Indians to fish the bay. The Sitka Indians, however, claim the exclusive right to fish there and resented the coming of the Killisnoo crew, who, fully cognizant of their situation, refused to remain in camp on the bay, insisting on being carried back to the cannery with each trip of the launch. But for this and the lateness of the season, disorder and possibly bloodshed could not have been averted.*

This account reveals several things about management practices at the time. It demonstrates that Natives, despite their participation in the commercial sale of salmon they caught, remained sensitive to the need to conserve salmon fisheries and allow sufficient escapement to take place. In this case the Tlingits placed limits on their commercial harvests rather than face the long-term prospect of harming the subsistence sockeye fishery<sup>45</sup>. On the other hand, Chatham Cannery management could not face the prospect of sacrificing short-term profits. Chatham management ignored the Sitka Tlingits' directive to stop fishing, and chose instead to import the Killisnoo fishermen who traditionally had not been responsible for this territory. Yet, notwithstanding their reorganization under non-Native employers and management's attempt to exploit Native political divisions, Tlingit clans continued to respect each other's territorial rights and stewardship responsibilities. Non-Natives tended to see the whole incident as a labor management issue, rather than one of conservation. The preface to the account related above reported,

*The Indians of Alaska are an important factor in labor conditions, the cannery men drawing upon them for a very considerable portion of their force and frequently employing a whole village during the salmon season. The jealousies between the tribes, however, and various racial traits on all sides among the laborer are the occasions of a variety of complications (Marsh and Cobb 1907:11; Pacific Fisherman 1908:17).*

The issue of control over the Native labor force was a recurring theme in early fisheries reports. Ironically, Native behavior that non-Natives often attributed to laziness or poor work-ethic may have been aimed at minimizing devastation to fisheries due to over fishing.

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45. Thereby also incurring the wrath of the Sitkan owners of Redoubt.

The White Act of 1924 insured all citizens' rights to take fish from non-restricted waters. Because Indians had gained citizenship during this year as well, their rights were guaranteed along with non-Native citizens. Langdon notes that this was an important legal reform because it recognized fish stocks as common property, forcing canneries to halt their attempts to claim exclusive rights to fishing areas. This also eliminated the Tlingits' legal claim to traditional fishing areas; fish traps were not outlawed and remained the private property of the commercial fisheries (Langdon, 1989:323). New regulations placing controls on the existing fisheries were poorly enforced, due to lack of any federal commitment to personnel and resources<sup>46</sup>.

### The Cannery Community

Like most canneries in southeast Alaska at the time, the labor force at Chatham Cannery was composed of three groups: Natives, Asians, and whites. As noted above, in the early years Natives comprised almost half of the work force. In 1908 the U.S. Bureau of Education reported that 200 Natives were employed or residing at Chatham (BIA, Sitkoh Bay files, 1908). However, with increased technology and efficiency in fishing gear, the number of jobs for Natives was gradually reduced. In 1936, the number of Natives employed at Chatham was estimated to be between 160-180 (Lipps 1936:101). A survey of cannery records between 1970 and 1974 suggests that the percentage of Natives employed continued to decline; for these years Native employment in non-fishing jobs represented less than 20 percent of the total work force (New England Fish Co. 1970-74).

As noted above, the Native work force for the Chatham cannery came almost exclusively from Killisnoo or Angoon and Sitka, with a few Natives coming from Juneau and other southeast Alaskan cities. In the early years many of the families employed had ties to the Angoon Deisheetaan clan. Chinese and Japanese labor was imported through a San Francisco contractor; later this labor force

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46. As early as 1913, a schoolteacher in Sitka wrote "With a little training the Native people would make the best game wardens this part of the country could desire" (BIA, Sitka 1913). However, such a suggestion appears not to have been taken seriously. Wardens were scarce and almost invariably non-Native.

was supplanted by Filipinos. Whites came primarily from the U.S. Pacific coast. Labor was divided along ethnic lines. Whites occupied the management and most skilled maintenance positions. Native men typically worked as independent or company-employed fishermen, while Tlingit women tended various jobs in the cannery facility. The Chinese were considered expert at cleaning or sliming fish, although many soon were squeezed out of these jobs by a revolutionary fish-cleaning machine introduced in the early part of the century. This technology, which became known by the racial epithet of the *Iron Chink* because it replaced Chinese cannery workers, was deployed at Chatham Cannery in 1904 or 1905. Asian labor continued to be utilized for various jobs within the cannery facility.

Living quarters were similarly segregated. The Native fishing village, which had housed well over a hundred residents during the traditional salmon harvest season before the cannery was opened, continued to be utilized for Native housing. With the increase in the size of the Native labor force, however, new housing was needed and parts of the old village, including many of the original houses, were levelled<sup>47</sup>. The photographs below from the Case and Draper collection of the Alaska Historical Library (c. 1910) show both the cannery facility and the Native village in the early part of this century. The portrait of the Native village focuses on a cluster of nine houses near the water. There appear to be smokehouses behind many of these dwellings, an indication of the continuation subsistence fishing despite employment in a wage economy. Mark Jacobs Jr. noted that the early superintendents did not interfere with these smokehouses, but in the 1960s at least one superintendent attempted to prohibit their use during the canning season (1989)<sup>48</sup>. A former commercial fisherman, who did not work at Chatham, informed us that he and others used to stop by the Native village at Chatham to obtain smoked sockeye through kinship ties and trade. In addition to the cannery's production of canned salmon for the international market, there was at the same time a Native network of production and

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47. However, as Mary Willis showed me, her uncle's house was preserved and still stands just beyond the Native village toward Sitkoh Creek.

48. Mr. Jacobs also recalled that there was no safe walkway to connect the village to the rest of the cannery community until New England Fish Company assumed ownership and built one. Prior to that time, especially during high tide and darkness, it was difficult to commute between the cannery and the village.

Fig. 8. Photographs of Chatham Cannery and Indian Village, Circa 1910; (Alaska State Library, Case and Draper collection, PCA 39-683 (top) and PCA 39-684 (bottom))



distribution of Sitkoh sockeye which extended beyond the village at Sitkoh Bay and the communities of Angoon and Sitka.

The Asian workers were housed in a separate bunkhouse southeast of the Native village, closer to the canning facility. This bunkhouse had its own kitchen and dining hall. The remains of the brick ovens and huge iron woks used for cooking are still present in this building. The white bunkhouse was situated just beyond the Asian quarters moving toward the mouth of the bay and were much better equipped than those of the Asians. A new white bunkhouse and dining hall was opened in 1973 just one year before the cannery closed, even though the Asian bunkhouse was in a much greater state of disrepair.

In the early years, the U.S. Bureau of Education made an effort to provide educational facilities for Natives in many of the canneries in southeast Alaska. Motivations for opening the schools included concerns about the health and safety of Indian children as well as their education and development. As one teacher put it,

*If I could visit the canries [sic] where my people are working in July and August, I could teach them more than we can teach in months at the school. This is at this time more than at any other time that they need some white man that they can go to as a friend for advise and asistance [sic]. In the canries they come in contact with the lower classes of Oriental labor that scatters the worst forms of disease among them and is doing more to destroy the Native than any other one thing that we have contested with.. The people that operate the canries as a rule give no attention to the health of the laborers (BIA, 1914).*

In another letter this teacher expressed additional concerns about lack of ventilation and a clean water supply at the canneries (BIA, Sitka, 1914). A teacher was sent to Sitkoh Bay and a schoolhouse was built by 1908, but the school lasted only a decade<sup>49</sup>. In their annual reports to the Bureau, teachers spoke of problems with attendance, health, hygiene, lack of equipment, and a lack of support for their endeavors from the cannery management. Average attendance at the school in 1908 was fewer than three students each day. One teacher noted that most of her pupils were infants and the young girls assigned to take care of them. Boys who were old enough helped out with fishing, and girls as young as age 12 were already employed at the cannery. This teacher also suggested that friction

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49. Only one informant in Angoon, who is almost ninety, even remembers the school (Emma Hamburg, 1989 personal communication).



between Sitka and Killisnoo Indians was factor in attendance, as the Killisnoo Indians, who were the majority, would not attend school with the Sitka Indians present. However, several female Tlingit elders at Angoon, who worked at Chatham, denied that such tensions ever existed between Angoon and Sitka Tlingits at the cannery. And if they did, it seems as though they were perpetuated by older members of each group (BIA, Sitkoh Bay files, 1909).

Although teachers received some assistance from the Chatham officials, management was generally dubious about their efforts. One teacher wrote;

*But for our work [the cannery managers] have very little sympathy. The universal cry is, 'You can't do anything with those people. They won't go to school.' 'They are filthy and mean, and it's no use to work with them. You can't make them better.' (BIA, Sitkoh Bay, 1914).*

With neither the Natives' nor the cannery management's support, the Sitkoh school floundered. The first teacher at Sitkoh reported that she was *unknown and the Indians were suspicious of me*, and that *this was only beginning to wear off at the end of my six weeks*. She confessed having *never worked harder nor spent a more discouraging unsatisfactory six weeks in my life than I spent at Sitkoh Bay* (BIA, Sitkoh Bay, 1909)<sup>50</sup>.

Health issues became a concern as cannery operations grew. Waste generated from fish processing was originally dumped directly into the bay which fouled the water. Later scows were brought in to store waste, which was then towed into the Chatham Strait and dumped. However, according to several sources, much of this waste would simply wash back into the bay with the next tide. Diseases remained a problem. Smallpox was replaced by other killer diseases. A pneumonia outbreak was reported in Sitka in 1914 (BIA, Sitkoh Bay, 1914). Even more deadly was influenza which struck southeast communities in 1917-18, and again in 1934. The 1934 influenza epidemic killed 50 people from Hoonah and Angoon according one report (U.S. Fish and Wildlife, 1935:35).

Occupational injuries, many involving industrial equipment, were another threat to health. Of the more than 15 women interviewed who had worked at the cannery, all but two said they were injured

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50. She still nevertheless expressed the wish that she *should like to carry on the experiment*.

severely enough to require hospitalization at least once during their years of work at Chatham Cannery. Potential physical injury also was posed by a very different source: bears. The fish smell emanating from the cannery attracted a large number of brown bears. This was a constant source of concern for Natives because they frequently had to commute between the Indian village and the cannery after dark. Although there were no reports of injuries due to bear attacks, many former Chatham Cannery employees reported frightening encounters with bears near the cannery. Health related violations ultimately forced the cannery to close, as the facility was cited for failing to meet Environmental Protection Agency standards for cleanliness (Roppel 1987:7).

Although housing was segregated, relations between cultural groups in the work environment were usually friendly. Many Tlingits befriended Japanese and Filipino workers, many of whom were single males. White managers and teachers sometimes worried about such fraternization. One school teacher's report complained of the *promiscuous running of the Native people, after working hours, to the Chinese quarters. Men, women and children seem irresistibly [sic] drawn to the bunk house... Much of this is harmless gadding, no doubt, but not all, and there is certainly room to suppose that it is not good for the Natives--especially for women* (BIA, Sitkoh Bay, 1909)<sup>51</sup>.

One time of year when seemingly all divisions and prejudices were at least temporarily suspended was the 4th of July. At Chatham everyone celebrated the holiday together on a beach near the Native village. The festivities included food, music, dance, and various games and contests. Everyone brought food and dressed in their finest clothing. Tlingit elders still recall these celebrations fondly<sup>52</sup>. Other than this brief communal respite, however, the physical and social barriers separating whites, Asians, and Natives tended to be quite rigid. Living conditions reflected Chatham's physical and social stratification. In a discrimination suit filed against New England Fish Co. in 1976, one

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51. The ethnic groups that were housed in the Asian bunkhouse apparently did not always get along. Mark Jacobs, Jr. recalls that on at least one occasion violence erupted in the Asian bunkhouse between the Chinese, Japanese, and Filipino workers. He remembered that several people were killed, and that many Native women sought refuge from the conflict on boats out in the bay. In later years the Asian work force was almost exclusively Filipino.

52. The famous party of 1911 on *Ish Ka Ilit* mentioned above may have been one such occasion.

witness stated that he was *appalled by the living conditions afforded to non-white workers*. He recalled that in 1973,

*The building was old, listed to one side a good 12"-18". I was able to roll a stone the full length of the hallway. The walls were plywood, with peeling paint. The cannery workers slept 3-4 to a room in bunk beds, although they occasionally had a cot. There were no lockers or closets... In the kitchen, they had a rusty, old stove, and a domestic-sized refrigerator...*

*Native workers lived in the Village, a collection of small huts, and duplexes. Generally, each hut was a one-room cabin, with dividers. The plumbing often leaked around the joints. For the most part, the cabins were tiny, and cramped. Moreover, they did not have bathrooms. Rather, occupants of the Village all shared a bathhouse, which they had to walk to when the need arose...*

*In 1972, there were two mess halls at Chatham, one for the non-white members of Local 37, and one for everyone else, except residents of the Village [who cooked their own meals]...In 1973 a new mess hall was built at Chatham. However, it had partitions which effectively created three [segregated] dining rooms. (Nielson, 1976:2-4)*

Occupations remained divided along ethnic lines, according to testimony in this suit, and non-whites were rarely promoted.

### The Cannery as a Seasonal Village

Wage and subsistence activities are not exclusive but are often inter-woven and complementary. As noted above, the advent of wage labor in Sitkoh Bay actually helped to reestablish a clan population at Sitkoh Bay which had begun to become dispersed in summers, as people sought work at other canneries in the area. At their traditional summer village site, Tlingits at Chatham Cannery worked hard to harvest and prepare subsistence food for immediate and future use at the same time that they were working at the cannery. They fished, hunted, gathered, smoked, canned for home use<sup>53</sup>, and engaged in other subsistence activities after hours and on off-days, as well as before and after the cannery season. In some sense, Chatham continued to be used as a major seasonal settlement in much the same way as it had been before the cannery's presence although the cannery placed a host of limiting constraints on their community and environment.

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53. Canneries frequently allowed workers to use commercial steam cookers for putting up their own subsistence food.

The cannery's impact on the resources of Sitkoh Bay itself was significant. In addition to severely damaging the sockeye run, the cannery created water, air, and noise pollution and consumed water and upland timber resources. However, the Chatham Cannery management's initial recognition of limited Native rights to utilize and conserve Sitkoh Creek, may have provided some measure of protection to the sockeye run<sup>54</sup>.

Native production of sockeye for household consumption and trade continued in Sitkoh Bay throughout the cannery era, even though the Deisheetaan's control over their stream and the harvest and distribution of Sitkoh Bay sockeye had been changed by the commercial fishing industry. Just as the cannery era was coming to an end, a new extractive element, the timber industry, entered the Sitkoh Lake and Sitkoh Creek watershed in force.

## **FOREST MANAGEMENT AND IMPACT ON SITKOH BAY SOCKEYE STOCKS**

The land surrounding Sitkoh Bay lies within the Tongass National Forest and is managed by the U. S. Forest Service. In recent years Forest Service management of the Tongass has been constrained by 50 year contracts, signed in the 1950s with two pulp mills, and by congressional direction in the 1980 Alaska National Interest Lands Conservation Act (ANILCA) that set a target timber harvest level of 4.5 billion board feet per decade. These contracts and the ANILCA direction have been interpreted to oblige the Forest Service to provide a continuing timber supply for the pulp mills, located in Sitka and Ketchikan. Additional timber may be sold to independent timber harvesters through individual contracts<sup>55</sup>.

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54. It would have been a poor labor management practice to eliminate subsistence sockeye fishing in Sitkoh Bay or restrict Native subsistence harvest, production, and distribution of sockeye. In addition to the labor unrest or bad feelings that such elimination of subsistence fishing might engender in the Native work force, the cost for Native labor would have been higher if subsistence foods were not available.

55. Section 810 of the ANILCA of 1980 requires Forest Service to examine the potential impact of its management activities on subsistence uses of fish and wildlife. Five-year operating plans for 81-86 and 86-90 included 810 evaluations and determinations; these were challenged in court, and new Environmental Impact Assessments were done. The decennial revision of the Tongass Land Use Management Plan is in draft form at the time of this writing. An additional 100,000,000/30,000 board feet of timber, or about 3-4,000 acres, may be cut in southeast Chichagof Island in the next few years under a project plan.

Data showing the impact of logging on the Sitkoh Bay sockeye fishery are difficult to evaluate. In its planning documents and environmental impact statements the U.S. Forest Service states that mitigation measures have been implemented to insure that logging practices have had no deleterious effect on salmon production in southeast Alaska<sup>56</sup>. The magnitude and location of timber harvests near productive sockeye habitat at Sitkoh Lake are described below and possible effects on water quality, temperature, and water levels are briefly discussed<sup>57</sup>. Lastly, data from interviews and public testimony concerning the effect of logging on the sockeye run are presented.

Fig. 9 shows areas where timber has been harvested around Sitkoh Bay since 1969. The logging history of the area includes intensive clear-cutting close to Sitkoh Lake between 1969 and 1974. The photograph was taken in 1983.<sup>58</sup> As we have discussed above, hard data on sockeye run strength in Sitkoh are limited; only two weir counts have been reported for Sitkoh Creek (1933,1981), although estimates of the strength and size of the run are made regularly by management biologists<sup>59</sup>. The fisheries biologist who has monitored this area for the Department of Fish and Game for the past nine years stated the Sitkoh run appears to be well below its post-statehood average (Bob DeJong, 1989).

Interviews conducted with both Angoon and Sitka subsistence users of Sitkoh Bay sockeye provide a perspective on the effects of logging on the Sitkoh Creek sockeye fishery as experienced by fishers who know the area well. The ten informants interviewed who had fished sockeye in Sitkoh Bay both before and after logging gave three sets of responses: seven of the ten believed that logging had significantly harmed the sockeye run and that the run had not recovered; two respondents said that the sockeye run may have been damaged temporarily, but that logging had caused no permanent damage;

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56. Significant fish mortality in heavily logged drainages, due to high water temperature and low stream flow, has called this assurance into question. For example, a suit filed against Forest Service by the Salmon Bay Protection Association won injunctive relief against stream-side logging for an area of Prince of Wales.

57. To our knowledge neither the habitat potentially affected by logging nor the sockeye salmon run at Sitkoh Bay have been monitored closely enough to answer important questions concerning forest management. That is, adequate data are not in hand to either prove that deleterious effects have taken place or to indicate that damage to the sockeye run from logging has not taken place.

58. At the time this watershed was logged, timber management regulations that were aimed at protecting fish and wildlife resources were much weaker than they are today, and the Forest Service was not required to evaluate the effects of timber harvesting on subsistence uses of fish and wildlife.

59. State of Alaska funding has not been available to conduct yearly in-stream research. Assessments have been based on estimates of fish seen from the air.

Fig. 9. Photograph of Logged Areas at Sitkoh Lake, Sitkoh Bay in the Foreground.



and one person maintained that logging had not harmed the fish runs at all. The latter further stated that the charges of damaging effects of logging were promulgated by environmentalists, were tremendously overblown, and have yet to be proved with hard data. In other interviews conducted in this study we found a general concurrence among people who have fished for Sitkoh sockeye that logging has adversely affected the sockeye system, as well as other subsistence resources in the Sitkoh Lake area. Respondents described short term effects, including the impact caused by the actual logging operation itself, and the impact of the logging community that temporarily existed in the area. As an example of the short-term effects, several former Chatham workers recalled seeing heavy machinery employed to harvest logs working close to the lake and creek while the sockeye were spawning. They maintained that this environmental disturbance inhibited the salmon's ability to spawn, and affected salmon fry survival. The results of this impact, they claim, were evident in the meagre run of returning sockeye salmon from this generation several years later. Five interviewees noted that

sockeye runs were especially poor during 1973-1974. They attribute this to the effects of intensive logging near Sitkoh Lake<sup>60</sup>.

Some of the long-term effects of logging in this area, which were described in interviews, include water pollution, changing water temperatures, and changing water levels and drainage. According to our interviews, water quality changed because of the debris generated by cutting, increased erosion due to lack of trees, and the by-products generated by the breakdown of this organic material in water. Debris itself was thought to choke the stream, discolor it, or otherwise ruin choice gravel beds where sockeye would spawn. Several Tlingit respondents pointed to these factors, as well as suspected water chemistry changes produced by the breakdown of bark and other debris in the stream. One Sitka resident, who had fished for Chatham Cannery and had lived in the area for many summers, noted that many parts of the stream that once had a gravel bed are now covered by algae and slime, which he believed is harmful to the fish and does not provide habitat for spawning. He stated that this change was a direct result of logging in the area.

According to interviewees, a lack of trees in a drainage area to shade lakes and streams, as well their smaller tributaries, can be damaging to fish by affecting water temperature. As water warms, it loses oxygen, and respondents suggested that this affects both the sockeye salmon's ability to spawn as well as the fry's ability to survive. Some biologists and fishermen suggest that sockeye, because they spend more time in inland waterways, including lakes, than other salmon, are especially sensitive to such temperature fluctuations. The Forest Service's logging standards have attempted to maintain lake buffer and some stream buffer zones to protect important fish habitat. But nearly everyone interviewed, including representatives of the U.S. Forest Service, agreed that the buffer zone around Sitkoh Lake and the buffers around its tributaries do not meet current standards. Also, many of the trees originally left standing near the lake have subsequently blown down and been harvested in salvage cuts.

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60. The loggers' presence was also felt at Chatham. Cannery workers recalled that before the cannery closed the loggers used to walk down to Chatham regularly, and that some of them fished in the creek.

Interviewees also noted that rainfall run-off is slowed by trees. Specifically, it was mentioned that trees help stabilize drainage and runoff patterns in times of extreme dry or wet conditions. This was mentioned as being especially important for the Sitkoh system since it does not receive melt water from glaciers or a year-round snow pack. In addition to impacting water retention capacity, clear-cutting was thought to affect drainage patterns as well. Drainage patterns may be inhibited and/or altered by erosion. Only one source identified this second problem for Sitkoh Creek. The Sitkoh watershed hydrology was greatly affected by the drier than usual summer of 1989. Several fishermen pointed out that both sockeyes and pinks were having difficulty ascending the stream due to lack of water. Respondents did not recall that low stream flow was an obstacle for fish escapement before logging took place.

In the ANILCA Section 810 hearings held by the Forest Service in both Angoon and Sitka in summer 1989, many of those who testified expressed concern about further logging anywhere in the vicinity of Sitkoh Bay<sup>61</sup>. Several of those testifying stated that resources, including fish, shellfish, seal, deer, bear, and other fur-bearing animals, in the area had already suffered because of logging. Mark Jacobs, Jr. emphasized that sockeye streams are extremely important to Native people, and that they must be carefully protected. None of the Forest Service's harvesting alternatives were considered satisfactory by any of those who testified at the hearings in Angoon or Sitka, including the *No Action Alternative*, which still mandates substantial cutting.

## **SPORT FISHING AND RECREATION**

Sport fishermen in southeast Alaska know Sitkoh Bay for its trophy steelhead. Sitkoh Creek boasts an excellent steelhead run in the spring, where many people catch fish exceeding 30 inches in length. An unusually large minimum length limit of 33 inches was placed on Sitkoh Creek from 1978-83. According to Art Schmidt (1988), the area management biologist, the presence of especially large

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61. Hearings were required as part of the Supplemental Environmental Impact Statement for the 81-86 and 86-90 plans which found that logging activity may restrict subsistence uses.



fish is why people have come to pinpoint Sitkoh Creek for trophy steelhead. The possession limit is one fish, whereas most southeast streams allow two. Because it has a reputation for big steelhead, the stream is well utilized each spring. Between 200 and 300 anglers fish the stream each season, with most of them fishing the lower end of the creek. To see forty to fifty anglers on the creek in a weekend during the peak of the season is not uncommon. Most anglers come from Juneau and Sitka and access the creek by boat through Sitkoh Bay (Schmidt 1988). The Forest Service manages the Sitkoh Creek drainage as a recreational area. The trails on either side of the creek that the Forest Service maintains, and the Forest Service cabin on Sitkoh Lake are heavily utilized by hunters and fishermen. Plans are underway to convert a second cabin on the lake, presently reserved for Forest Service workers, into a recreational cabin as well.

Sitkoh Bay is also a popular inlet for recreational boaters. The cannery fuel dock attracts those who need fuel or supplies and serves to bring boat traffic into the bay. Sport fishing charters from Angoon and elsewhere sometimes fish in the bay. Development of a sport fishing business at the old cannery site has been proposed, and could add to the harvest pressure on Sitkoh Bay fish. Because of concerns about over harvest of sockeye in the bay, the Board of Fisheries closed the area to sport fishing for sockeye beginning in 1989. With the exception of the steelhead fishery, sport fishermen do not tend to concentrate in any single area of the bay. Because the steelhead run is well before the salmon season, the steelhead sport fishery probably has no direct impact on the sockeye fishery.

## **SOCKEYE HARVESTING SINCE THE IMPLEMENTATION OF SUBSISTENCE LAWS**

The passage of Alaskan Native Claims Settlement Act (ANCSA) in 1971, state subsistence laws in 1978, and ANILCA in 1980 have affected management of the sockeye fishery at Sitkoh Bay. ANCSA settled Native land claims with lands and nearly a billion dollars transferred to Native Corporations. Although about 44,000,000 acres went to the corporations throughout Alaska, this was not a sufficient amount of land to encompass all important subsistence use areas. Kootznahoo Inc., the

Native Corporation for Angoon, selected important subsistence lands adjacent and near the community, and productive timber lands far from Angoon. Sealaska, the regional corporation for southeast Alaska Natives, selected some land on Admiralty Island north of Angoon. Neither these two corporations nor Shee Atika, the Native corporation for Sitka, selected land at Sitkoh Bay; this has meant that management of land surrounding the sockeye system at Sitkoh Bay has remained with the Forest Service.

From 1978 to 1989, federal and state statutes mandated that subsistence use of fish and game be given a priority over commercial and recreational uses. Subsistence is broadly defined in ANILCA as the customary and traditional use of a resource by rural residents. Until very recently, the state was able to retain management of fish and wildlife on federal lands in Alaska by complying with the ANILCA subsistence provisions<sup>62</sup>.

The state subsistence law has been implemented by the Board of Fisheries, an appointed citizens' board that is empowered to manage subsistence, commercial, and sport fisheries. Based on established criteria, the board has determined which communities have customary and traditional subsistence use of which fisheries and has established seasons, bag limits, gear restrictions, and other regulations to provide for these subsistence uses. In the southeast region, and in some other areas of the state, subsistence permits are required for subsistence fishing. In southeast, these permits specify salmon species, harvest times, and possession limits and specify that harvesters report their catch in each salmon fishery<sup>63</sup>.

Studies have shown that Sitkoh Creek has been an important source of sockeye for some residents of Angoon and Sitka. In one study, Gmelch and Gmelch (1985:26) found that 41 percent of

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62. A case heard in the State of Alaska Supreme Court in December, 1989, found the special provision for rural residents in state subsistence law to be unconstitutional. After this decision, the state was no longer in compliance with ANILCA. As required by ANILCA, the federal government assumed management of fish and wildlife for subsistence on federal lands in July, 1990. At the time of this writing, the state retains management of most fishery resources, since their harvest occurs in state waters. The state subsistence law now requires that a subsistence opportunity and preference be afforded to all Alaska residents, not just rural residents. In the event of a resource shortage, eligible subsistence fishers would be identified through an individual application system.

63. The term subsistence has become a highly politicized term because of its legal context: community residents reminded us that subsistence use as defined in law and administered by the state and federal governments is not as comprehensive as the Tlingit understanding of what might be customary and traditional use.

the total subsistence salmon permits issued to Sitka residents in 1984 were for use at Sitkoh Bay. They found that fishing in Sitkoh Bay was desirable at the time of their study because the sockeye run had been consistent and predictable, both in size and timing, and because access to Sitkoh Bay from Sitka is mainly along sheltered waterways. Similarly, in their resource use survey of Angoon, George and Bosworth (1988:114-15) found that the sockeye salmon run at Sitkoh Bay was utilized by Angoon residents. Over the past 20 years, between 25 percent and 60 percent of Angoon households per year have used the Sitkoh Bay area (Fig. 10). Use of the area by Angoon residents declined significantly after the closure of the Chatham cannery. Those households reporting use of the bay and surroundings harvested sockeye and other resources, including king salmon and deer.

Subsistence permit data for Sitkoh sockeye since 1975 are summarized in Table 3.<sup>64</sup> Harvest estimates and the number of subsistence permits issued show that subsistence fishing in Sitkoh Bay has decreased substantially since 1984. This trend appears to be the result of declining fish runs. However, some harvesters who were interviewed in each community also stated that some individuals had taken many fish in recent years. If so, these records may also reflect a failure of fishermen to report all the sockeye harvested. Unfortunately, records for years before 1984 do not show how many fish were harvested by individuals or by community of residence.

Sockeye escapement information normally would aid in quantifying the rate and extent of decline in sockeye stocks at Sitkoh Bay. However in Sitkoh Creek only one reliable escapement estimate is available. In 1981, 7000 sockeyes were counted at a weir which was installed for that purpose. Since 1981, funding has not been available to permit a counting weir to be in operation. Since then, stream management has been accomplished based on population assessments made during overflights, during which run strength has been estimated but has not been quantified. These assessments, along with information provided by subsistence fishers, and trends in subsistence permits

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64. Although subsistence permits were issued prior to the passage of the state subsistence law in 1978, close tracking of subsistence harvests only began in about 1980. Data for 1980 to 1984 show harvests of between 2036 and 4756 sockeye per year. Compliance in reporting actual harvests limits the accuracy of the permit data. In some years Angoon residents make heavy use of Basket Bay for sockeyes, and Sitka residents may have good success in taking sockeye at Redoubt Bay. This may add to variability in Harvest at Sitkoh over the 1980-1985 time period.

Fig. 10. Percent of Angoon Households Using Sitkoh Bay for Subsistence Activities, 1967-1984.

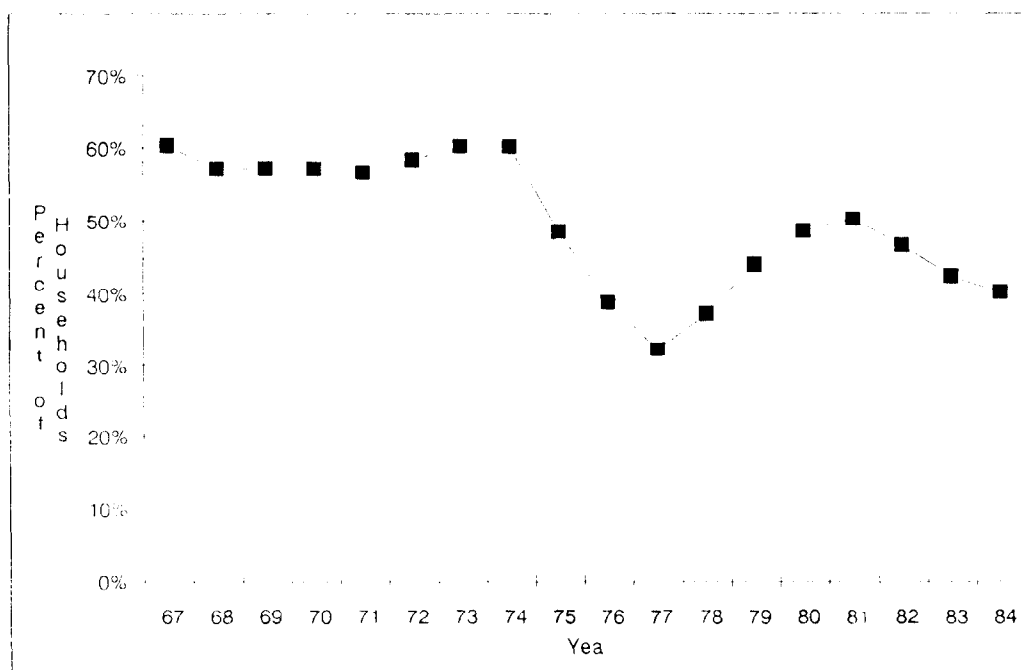


Table 3. Subsistence Permits Issued for Sitkoh Bay, 1975 through 1990.

Year	Total # Permits	# Angoon Permits	# Sitka Permits	# Sockeye Taken (est.)
1975	22			61
1976	48			392
1977	48			724
1978	71			975
1979	116			1861
1980	177			2063
1981*	238			3499
1982	288			4756
1983	229			1890
1984	228			3740
1985	156	5	145	506
1986	142	5	126	795
1987**	167	2	111	667
1988	17	1	22	300
1989**	16	2	14	238
1990**	5	1	4	53

Source: ADFG, Division of Commercial Fisheries. Permit data by residence of permit holder not available prior to 1985.

\* the sockeye escapement count taken in this year showed 7000 fish

\*\* early closures occurred in these years due to weak sockeye returns

Indicate that the Sitkoh Bay sockeye run is in serious decline. Collectively, this information has provided the basis for closing the area early to all sockeye fishing in three out of the past five years.

#### The 1989 Sockeye Harvest

The 1989 season brought several changes to the allocation and management of sockeye in Sitkoh Bay. A community organization in Angoon brought a proposal before the Board of Fisheries that sought to limit fishing in the Sitkoh Bay sockeye subsistence fishery to Angoon residents only. This proposal was tabled by the Board of Fisheries and, instead, the board recognized that both Angoon and Sitka had customary and traditional use of Sitkoh Bay sockeye. However, a harvest season for residents of Angoon was provided that, in effect, granted a greater harvest opportunity than the season provided for Sitka residents. Specifically, Sitkans were prohibited from subsistence fishing in Sitkoh Bay before July 4th, although salmon generally appear in Sitkoh Creek a week or so before that time. No other communities were found to have subsistence use of sockeye salmon in Sitkoh Bay, and personal use and sport harvest of these fish was closed<sup>65</sup>. A change was also made in the way that permits were issued. Permits were previously issued for fishery management districts, and a separate permit was generally issued for each different fishing site within the management district. The issuing of permits was restructured according to the newly defined customary and traditional use areas, such that an Angoon or Sitka resident need only obtain one permit to harvest salmon in all the open salmon systems in their area. These revisions had no effect on the steady decline in the Sitkoh subsistence fishery, however, which closed early in both 1989 and 1990, due to low numbers of returning fish.

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65. The Board of Fisheries prohibited non-subsistence fishing because they were concerned about further depletion of the Sitkoh Bay sockeye run, and because state subsistence statutes require closure of other fisheries before implementing restrictions on subsistence fishing.

## SUMMARY

This report describes and analyzes the historic developments and patterns of utilization and management that have affected the subsistence sockeye fishery at Sitkoh Bay. Sitkoh Bay has traditionally been an important sockeye fishing area for residents of Angoon and Sitka. The bay's historic and prehistoric links to the Tlingit settlements in Angoon and Sitka have made it an important cultural resource for those communities as well as a key subsistence harvesting site. This study has focused particularly on human interactions with the Sitkoh Creek ecosystem, especially those interactions which seem to have adversely affected the sockeye fishery.

Historically, commercial fishing put a tremendous strain on the region's sockeye resource, particularly after floating fish traps were employed, early in this century. Tlingits objected to this over-exploitation of salmon. However, delayed enactment of federal law to protect southeast Alaska's salmon resources, due largely to extensive lobbying from the canned salmon industry, and inadequate regulatory enforcement in the pre-statehood period, frustrated efforts to solve the problem. Many sockeye salmon systems in southeast Alaska, including the Sitkoh Bay system, were severely depleted from over-fishing and many subsequent years of inadequate escapements.

The establishment and operation of Chatham Cannery in Sitkoh Bay affected the Sitkoh Creek sockeye fishery as well as the social economies of Angoon and Sitka. Current sockeye runs undoubtedly remain substantially depressed from historic runs. During the years that the cannery operated, however, Tlingits continued to harvest sockeye for their own subsistence use as well as for customary trade, as they had done at the Sitkoh Bay summer village before the cannery was established. Seasonal employment at the cannery by Angoon and, to a lesser extent, Sitka residents accommodated continued participation in the traditional subsistence sockeye fishery in Sitkoh Bay. The subsistence fishery at the long-established village site remained an integral part of the subsistence economy. The importance of the subsistence fishery may have helped to conserve the sockeye run, at

least during the early part of the cannery era<sup>66</sup>. Since the closure of the cannery in 1974, there has been no Native settlement in the bay. Subsistence and sport fishers have continued to use the area, however, to fish for sockeye, steelhead, and other marine fish.

In addition to commercial fisheries, clear-cut logging in the Sitkoh Lake-Sitkoh Creek drainage from 1969-74 also may have affected the sockeye. The area surrounding Sitkoh Lake and many of the small tributaries supplying water to the lake were heavily logged, and interviewed respondents from Angoon and Sitka believe that this caused damage to sockeye spawning habitat, virtually all of which is found along the lakeshore. Impacts of logging practices identical to those employed in the Sitkoh Lake drainage include siltation and elevated water temperatures, both of which have known detrimental effects on spawning habitat. Such effects would be manifested for years or even decades after timber harvest has taken place. In this case, critical salmon losses have become apparent about a decade following major timber harvest activity. Declining water quality and habitat disruption are probably continuing threats to the sockeye population at Sitkoh. Recovery of the sockeye run under these conditions is problematic and may require mitigation or rehabilitation of any damage to spawning habitat.

Respondents also pointed to interception of salmon bound for the Sitkoh system by foreign and domestic fishing vessels, overfishing by local users, and mismanagement by the state as factors that have hurt or that threaten the Sitkoh sockeye fishery. Subsistence permit data suggest that, in retrospect, the reported harvest of several thousand sockeye per year in the early 1980s was not sustainable. Even greater harvests were sustained throughout many years of intensive commercial exploitation, however, and these subsistence harvests alone do not account for the recent near collapse of the run. Most observers believe the coincidence of continuing sockeye harvesting along with upland

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66. It is unclear to what extent traditional management of the subsistence fishery might, in the context of cannery exploitation, have had the effect of maintaining subsistence fisheries. It is conceivable that, for some period of time, the Angoon Deisheetaan's and other Angoon residents' presence in Sitkoh Bay may have resulted in cannery managers exercising some restraint in harvesting the sockeye run in Sitkoh Creek. In any event, any such local controls on subsistence fisheries would likely have had a diminishing effect in the course of the cannery era, as commercial pressure on depleted salmon runs intensified, and eroded further with the closing of the cannery in 1974.

habitat disruption caused by logging would account for the current condition of the Sitkoh Bay sockeye stock and the near extinction of the subsistence fishery.

Just how long the traditional Native fishery at Sitkoh Bay has been in decline is unclear; it may have been declining for the past several decades or even longer. New regulations that severely limit subsistence harvest opportunities at Sitkoh Bay are probably just the most recent expression of this decline. Restoration of this traditional fishery to a level that approximates its former status may yet be possible, with concerted land and resource management efforts, greatly intensified from those that are now in place. It is the hope of the authors that this report contributes to such an effort.



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