

Technical Paper No. 225

Subsistence Harvests and Trade of Pacific Herring Spawn on *Macrocystis* Kelp in Hydaburg, Alaska

by

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Alaska Department of Fish and Game

Division of Subsistence



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| | | | | | |
|--------------------------------|--------------------|-------------------------------------|---------------|--------------------------------|-------------------------|
| Weights and measures (metric) | | General | | Measures (fisheries) | |
| centimeter | cm | Alaska Administrative | | fork length | FL |
| deciliter | dL | Code | AAC | mid-eye-to-fork | MEF |
| gram | g | all commonly accepted | | mid-eye-to-tail-fork | METF |
| hectare | ha | abbreviations | e.g., Mr., | standard length | SL |
| kilogram | kg | Mrs., AM, PM, etc. | | total length | TL |
| kilometer | km | all commonly accepted | | | |
| liter | L | professional titles | e.g., Dr., | Mathematics, statistics | |
| meter | m | Ph.D., | | all standard mathematical | |
| milliliter | mL | | R.N., etc. | signs, symbols and | |
| millimeter | mm | at | @ | abbreviations | |
| | | compass directions: | | alternate hypothesis | HA |
| Weights and measures (English) | | east | E | base of natural logarithm | e |
| cubic feet per second | ft ³ /s | north | N | catch per unit effort | CPUE |
| foot | ft | south | S | coefficient of variation | CV |
| gallon | gal | west | W | common test statistics | (F, t, χ^2 , etc.) |
| inch | in | copyright | © | confidence interval | CI |
| mile | mi | corporate suffixes: | | correlation coefficient | |
| nautical mile | nmi | Company | Co. | (multiple) | R |
| ounce | oz | Corporation | Corp. | correlation coefficient | |
| pound | lb | Incorporated | Inc. | (simple) | r |
| quart | qt | Limited | Ltd. | covariance | cov |
| yard | yd | District of Columbia | D.C. | degree (angular) | ° |
| | | et alii (and others) | et al. | degrees of freedom | df |
| Time and temperature | | et cetera (and so forth) | etc. | expected value | E |
| day | d | exempli gratia | | greater than | > |
| degrees Celsius | °C | (for example) | e.g. | greater than or equal to | ≥ |
| degrees Fahrenheit | °F | Federal Information | | harvest per unit effort | HPUE |
| degrees kelvin | K | Code | FIC | less than | < |
| hour | h | id est (that is) | i.e. | less than or equal to | ≤ |
| minute | min | latitude or longitude | lat. or long. | logarithm (natural) | ln |
| second | s | monetary symbols | | logarithm (base 10) | log |
| | | (U.S.) | \$, ¢ | logarithm (specify base) | log ₂ , etc. |
| Physics and chemistry | | months (tables and | | minute (angular) | ' |
| all atomic symbols | | figures): first three | | not significant | NS |
| alternating current | AC | letters | Jan, ..., Dec | null hypothesis | HO |
| ampere | A | registered trademark | ® | percent | % |
| calorie | cal | trademark | ™ | probability | P |
| direct current | DC | United States | | probability of a type I error | |
| hertz | Hz | (adjective) | U.S. | (rejection of the null | |
| horsepower | hp | United States of | | hypothesis when true) | α |
| hydrogen ion activity | pH | America (noun) | USA | probability of a type II error | |
| (negative log of) | | U.S.C. | United States | (acceptance of the null | |
| parts per million | ppm | Code | | hypothesis when false) | β |
| parts per thousand | ppt, | U.S. state | use two- | second (angular) | " |
| | ‰ | letter abbreviations (e.g., AK, WA) | | standard deviation | SD |
| volts | V | | | standard error | SE |
| watts | W | | | variance | |
| | | | | population | Var |
| | | | | sample | var |

TECHNICAL PAPER NO. 225

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SPAWN ON *MACROCYSTIS* KELP IN HYDABURG, ALASKA**

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ABSTRACT

This report describes the subsistence use of Pacific herring (*Clupea pallasii*) spawn on kelp in Hydaburg, a predominately Haida community on Prince of Wales Island in Southeast Alaska. The history of herring spawn-on-kelp harvests, barter, and trade by the Haida is summarized as reported in historical and contemporary sources. Information on contemporary use patterns derives from interviews conducted in Hydaburg in 1992. The report discusses traditional and contemporary production strategies; characteristics of those who harvest spawn on kelp; the frequency and timing, as well as the location, of harvest; and the methods of harvesting, handling, preserving, and consuming herring spawn on *Macrocystis* kelp. It includes a brief history of Haida barter and trade, as well as contemporary trading practices.

Keywords: Pacific herring, *Clupea pallasii*, spawn-on-kelp, *Macrocystis* kelp, *Macrocystis integrifolia*, Hydaburg, Haida, Prince of Wales Island.

INTRODUCTION

The primary objective of this report is to document the traditional and contemporary subsistence harvest and use of the eggs of Pacific herring (*Culpea pallasii*) spawned on *Macrocystis* kelp (*Macrocystis integrifolia*) by the residents of Hydaburg, Alaska. The study focuses on the timing and location of historic and contemporary harvests, characteristics of those who harvest spawn on kelp, and their methods of harvesting, handling, preserving and consuming herring spawn on *Macrocystis* kelp. It also outlines the history of Haida barter and trade, and provides additional information on barter and trade of herring spawn on *Macrocystis* kelp in Hydaburg in the early 1990s.

Research consisted of field observations of the subsistence harvest of herring spawn on *Macrocystis* kelp off the coast of Fish Egg Island, near Craig, Alaska, in spring 1992, as well as quantitative and qualitative data collected through interviews with elders and key harvesters. Review and analysis of published and unpublished source materials and Alaska Department of Fish and Game (ADF&G) data files provided important historical information on the traditional and present-day subsistence harvests and uses of herring spawn on kelp, as well as on the barter and trade practices of the Haida people.

The literature review and field research confirmed that the subsistence harvest of herring spawn on *Macrocystis* kelp is a longstanding traditional activity in Hydaburg. Historically, herring spawn on kelp was a highly-prized dietary item harvested each spring. The methods of handling, preparing, preserving, and storing have been handed down from generation to generation and modified when appropriate.

This study found that herring spawn on *Macrocystis* kelp was widely distributed by noncommercial sharing, bartering, and trading throughout the northwest coast of the United States. Interviews with Hydaburg residents and a review of the literature revealed the Kaigani Haida's long tradition of extensive barter and trade of herring spawn on kelp. Through the years, they developed new, and expanded existing, trade networks while adjusting to the American economy, among other necessary adaptations. Historical trade conducted by Hydaburg residents includes sales to Native and non-Native customers, as well as U.S. and non-U.S. customers.

The State of Alaska began issuing harvest permits for subsistence herring spawn on *Macrocystis* kelp in 1967. Biologists established harvest limits prior to 1985, and the Alaska Board of Fisheries thereafter. Since 1985, the annual possession limit by regulation has been 32 lbs for an

individual or 158 lbs for a household of two or more persons, with additional permits allowing more harvest available at the discretion of ADF&G managers if a harvestable surplus is available (5 AAC 01.730 (g)).

Obtaining precise, systematic information for this study on the recent herring egg and spawn on kelp harvest amounts and patterns of distribution was difficult as a consequence of court cases in which individuals were charged with selling herring spawn on *Macrocystis* kelp to commercial buyers for Asian markets. Defendants in these cases used the affirmative defense that their transactions were customary trade, which is recognized in both state law (5 AAC 99.010b) and federal law (Title VIII of the Alaska National Interest Lands Conservation Act of 1980). The validity of these sales to the international East Asian market as bona fide subsistence uses was an issue before the Alaska Board of Fisheries, which regulates herring fisheries in Alaska, at the time this research was conducted.

Research also revealed the concerns of Hydaburg residents about the health and abundance of stocks of Pacific herring and of the kelp beds, especially in the Hydaburg area. Dunbar Inlet, and the waters adjacent to the McFarland Islands and the Corlies Islands, including the waters adjacent to Fish Egg Island, were traditional fishing grounds of the Kaigani Haida. According to Hydaburg respondents, these areas were always treated respectfully, so that fish stocks harvested for subsistence would be available in subsequent years. The amount of herring spawn on kelp harvested for subsistence uses by local residents, and their harvest methods probably did not have an adverse affect on either the herring stocks or the marine plants upon which the herring lay their eggs. The herring stocks in these areas have been taken intermittently in commercial fisheries for more than a century, and have been intensively managed by the state over the last several decades.

Chapter 1 of this report presents geographical and historical information about the Haida Kaigani territory, and a review of traditional Haida culture. Chapters 2 and 3 examine the traditional and contemporary harvests of herring spawn on *Macrocystis* kelp, and present herring spawn on *Macrocystis* kelp permit data recorded by ADF&G. Chapter 4 outlines the historic and contemporary Haida distribution and trade of herring spawn on *Macrocystis* kelp. It also discusses the late-19th century origins of the trade of herring spawn on kelp for cash, and the emergence of cash as one of several different commodities for which this particular item was exchanged. The final chapter summarizes the major findings of this study.

CHAPTER 1. THE HAIDA OF THE ALEXANDER ARCHIPELAGO

The Kaigani Haida are Haida Indians who migrated from Langara Island, of the Queen Charlotte Islands chain in British Columbia. They crossed Dixon Entrance to settle on Long, Sukkwan, Dall, and Prince of Wales islands¹ in Southeast Alaska in the late 17th and early 18th centuries. (Figure 1) “Kaigani,” or “crabapple town,” was the Tlingit name of a village at Cape Muzon on the southern tip of Dall Island. According to Boelscher² (1988), Haida living in Alaska are also referred to as “strait people,” *K'eey's Xaadee*, after their former home around Parry Pass on the Queen Charlotte Islands, from where they migrated.

Blackman³ (1977) and Brink (1974) attribute the emigration of the Langara Island Haida to a shortage of subsistence resources on the northern part of the Queen Charlotte Islands, specifically the absence of salmon streams and herring spawning areas. Langdon (1977)⁴ also identified, as further motivation for this emigration, the scarcity of food, especially the lack of sockeye salmon (*Oncorhynchus nerka*) streams on the Queen Charlotte Islands, and the availability of those resources just across Dixon Entrance on the Alexander Archipelago. One Haida from Masset commented that the Kaigani Haida were indeed attracted by the abundance of certain resources in the Alexander Archipelago:

G.M. Kelly, a prominent Masset Haida, comments that the presence and relative abundance of certain resources in the Prince of Wales Archipelago—resources that were either absent or scant in the northern Queen Charlottes, especially “herring spawning areas” and “wild meat source”—was more than enough to have attracted the Kaigani (Langdon 1977:110-111).

This chapter provides information about the research on the uses of herring spawn on kelp. It begins by describing the Haida territory on the Alexander Archipelago and listing their permanent winter village sites, and then continues by describing the ecology of the southern portions of the Prince of Wales Island, and surrounding islands. Descriptions of Kaigani Haida traditional culture, including their language, social organization, subsistence economy, and ceremonies also are presented. In addition, this chapter explains that the 1911 consolidation plan for the villages of Howkan, Klinkwan, Sukkwan, and Koianglas at Hydaburg was designed in

¹ “From the northern shores of Graham Island one can, on a clear day, look north across the expanse of water known as Dixon Entrance to the snow-capped mountain tops of the Alexander Archipelago in Alaska. To its southernmost islands the Haida came in the eighteenth century. Here they built villages on Dall, Long, Sukkwan, and Prince of Wales Island” (Blackman 1981:9).

² Marianne Boelscher, during her tenure as a researcher for the Shuswap Nation Tribal Council and a visiting assistant professor in the Department of Sociology and Anthropology at Simon Fraser University, collected data during extensive fieldwork with the Masset Haida during the late 1970s.

³ Margaret Blackman, during her tenure as a professor of anthropology at the State University of New York, conducted field research on the Queen Charlotte Islands and on Prince of Wales Island in the early 1970s. She returned to the Queen Charlotte Islands in the late 1970s to accomplish further study on traditional Haida culture.

⁴ Stephen John Langdon, during his tenure as a professor of anthropology at the University of Alaska-Anchorage, conducted field research on Prince of Wales Island from the 1970s to the early 1990s. His doctoral dissertation is an account of human utilization of the natural resources of the Prince of Wales Archipelago in Southeast Alaska.

part by the U.S. government to assimilate the Kaigani Haida into mainstream Euro-American culture. The final section discusses the involvement of the Kaigani Haida with the first salmon cannery in the area, which opened in 1878, and the further industrial development of Hydaburg.

KAIGANI HAIDA SETTLEMENTS AND AN ECOLOGICAL OVERVIEW OF THE KAIGANI HAIDA TERRITORY

Kaigani Haida Settlements

Prince of Wales Island, the largest island of the Alexander Archipelago, is 144 miles long and 32 miles wide at its maximum width. It is located north of the Alaska-Canadian border near Dixon Entrance, from approximately 55° 21' N to 54° 41' S and 133° 36' W to 132° 00' E. The 2,770-square-mile island is much larger than nearby islands in the Prince of Wales Archipelago (Langdon 1977).

Kaigani, located near Cape Muzon south of Dall Island, and Nichols Bay, on the southwestern point of Prince of Wales Island, are considered to have been the landing places for Haida emigrants (Figures 2 and 3). At the time of the Haida migration, the Prince of Wales Archipelago was inhabited by Tlingit Indians. According to oral tradition, one spring, a group of Tlingit Indians left their winter homes to go fishing and hunting and discovered that their seasonal site at Kaigani had been occupied by strangers (Langdon 1977:111). According to Langdon, before the emigrants started to settle in permanent villages, they may have made:

tentative excursions to locations in the far south of the Prince of Wales Archipelago, several of which were likely to have been seasonal camps of the Tlingits. These initial forays appear to have been an expression of Haida patterns of resource use and did not involve village formation, which came later (Langdon 1977:112).

According to Swanton⁵ (1905a), Kasaan (located on Skowl Arm near Clarence Strait), Sukkwan (on the north end of Sukkwan Island and previously inhabited by the Tlingit), and Howkan (20 miles north of Cape Muzon on Dall Island) were the initial permanent villages of the Kaigani Haida (Figure 3). Howkan was the largest village of the Kaigani Haida. Immediately prior to European contact, Kaigani Haida occupied Klinkwan (previously inhabited by the Tlingit, and located 2 miles from Hunter Bay on Prince of Wales Island), and Koianglas (7 miles south of Howkan on Long Island). The Tlingit village was destroyed by the Kaigani Haida, who built a new settlement there (Swanton 1905b). Kaigani Haida from Hydaburg say that Kaigani was the initial landing spot of the emigrants and the first settlement of the Haida from the mid-1700s until the early 1900s (Langdon 1977). However, according to Swanton, 3 of the Haida clans “lived there; but they did not stay there in winter. Only when spring came they began to live there; but they did not stay there in winter” (cited in Langdon 1977:122).

⁵ John R. Swanton was a member of the Bureau of American Ethnology. In the early 1900s, he studied (in the interests of the Jessup North Pacific Expedition) the religion, social organization and language of the Haida on the Queen Charlotte Islands. He also conducted research among the Kaigani people in Alaska.



Figure 1. – Map of the Prince of Wales and Queen Charlotte islands areas.

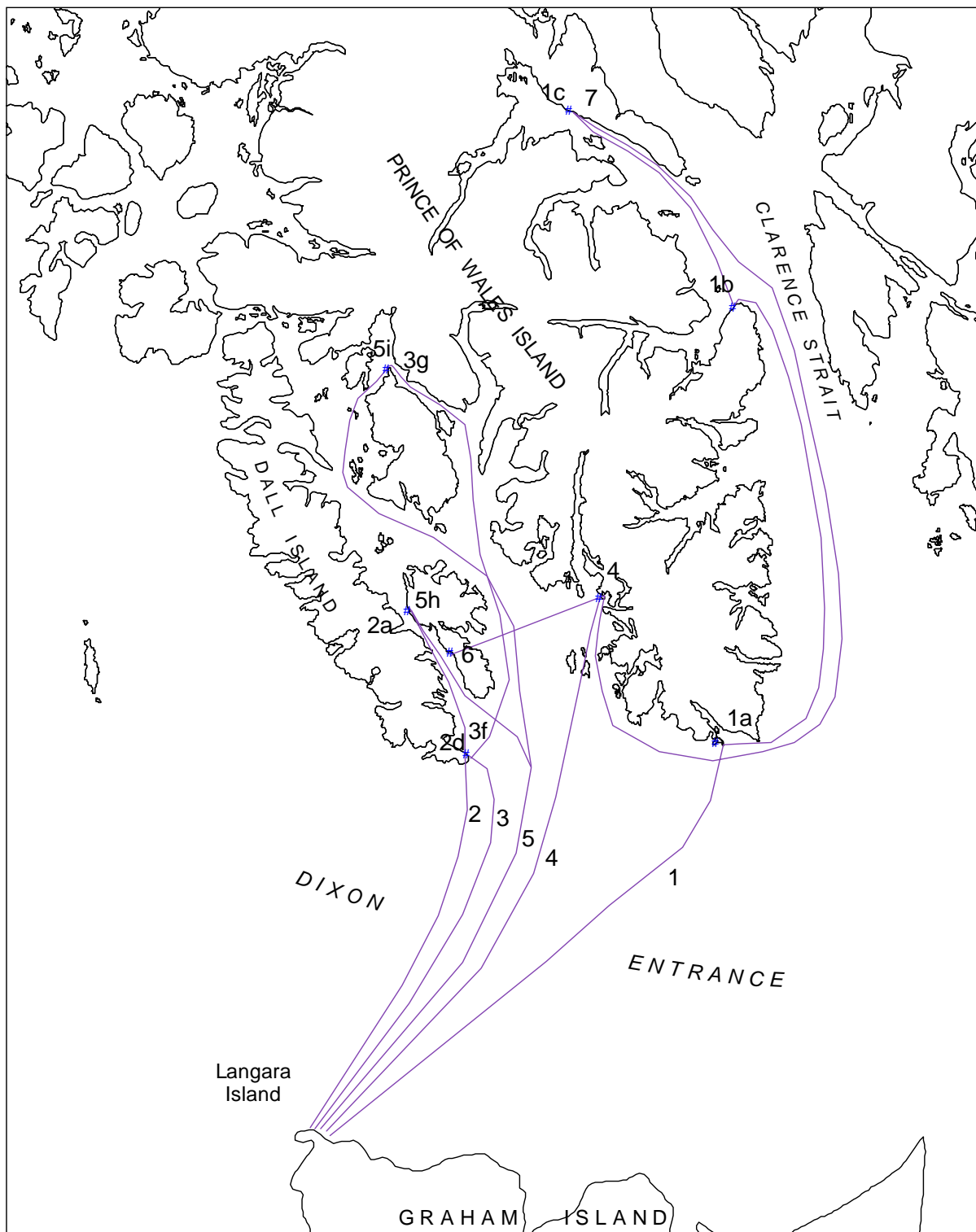


Figure 2. – Migration of the Kaigani Haida from the Queen Charlotte Islands to the Prince of Wales Island area.

Table 1. – Key to Figure 2.

| Line number | Event |
|-------------|--|
| 1 | The <i>Yadas</i> and <i>Taslanas</i> clans migrate to Alaska a. The clans first stop either at Bean Island near the entrance to Nichols Bay, or at Cape Chacon. b. The <i>Yadas</i> apparently stop at Chasina. c. The two clans eventually settle at Kasaan. |
| 2 | The <i>Tcaal lanas</i> and <i>Hauqewas</i> clans migrate to Alaska. d. Some apparently stop at Kaigani. e. After the defeat of the <i>Tantakwan</i> , these two clans found Howkan. |
| 3 | The <i>Qoetas</i> and <i>Salandas</i> clans migrate to Alaska. f. Some apparently stop at Kaigani. g. After the defeat of the <i>Tantakwan</i> , Sukkwan is razed and these two clans rebuild and settle on the site. |
| 4 | The <i>Yakulanas</i> later migrate to Alaska and settle at the abandoned Tlingit site of Klinkwan. |
| 5 | Several <i>Sta'stas</i> groups migrate to Alaska. h. Some settle in Howkan. i. Others settle in Sukkwan. |
| 6 | A <i>Yakulanas</i> lineage breaks off and founds Koianglas. |
| 7 | A <i>Yakulanas</i> lineage moves to Kasaan. |

Note: Events 1 through 3 occurred during the same time period, so the order of numbers does not necessarily indicate the order of occurrence. Other numbers indicate chronological order of events.

Sources: Blackman 1973; Swanton 1905a, 1908; Sealaska 1975.

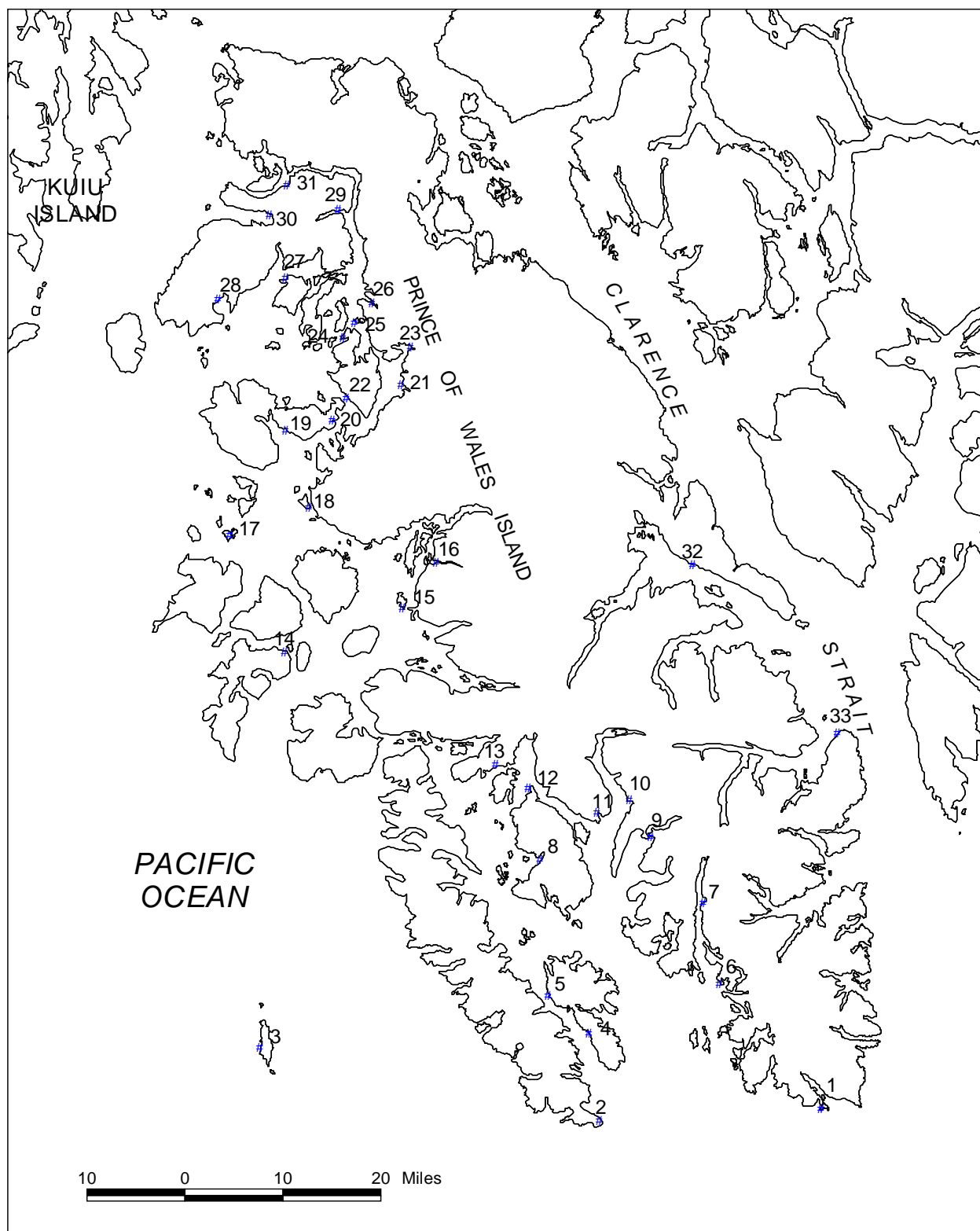


Figure 3. – Pre-contact Kaigani Haida settlements and seasonal sites.

Table 2. – Key to Figure 3.

| No. | Site Name | Tlingit | Haida | Comments (sources where mentioned) |
|-----|------------------|---------|-------|--|
| 1 | Nichols Bay | X | X | Possibly used by both at different times; used in immediate precontact period by Kaigani from Kasaan (M, Sw, S, O) |
| 2 | Kaigani | | X | Likely earliest Kaigani landing in Southeast Alaska; major seasonal resource site (N, Sw, S) |
| 3 | Forrester Island | | X | Major seasonal resource area with several different sites (N, Sw, S) |
| 4 | Koianglas | | X | Last Kaigani village established, possibly postcontact (N, K, Sw, S) |
| 5 | Howkan | | X | Largest Kaigani village (N, Sw, S, K, M) |
| 6 | Klinkwan | X | X | Kaigani village on prior Tlingit site (N, M, S, Sw, O) |
| 7 | Klakas | X | | Early Tlingit village prior to move to Klinkwan, likely later Kaigani seasonal site (Sw) |
| 8 | Dunbar Inlet | | X | Small village (S) |
| 9 | Nutkwa | | X | Likely seasonal resource site (S) |
| 10 | Hetta | | X | Likely seasonal resource site (S) |
| 11 | Eek | | X | Likely seasonal resource site; possible small permanent village site (S) |
| 12 | Sukkwani | X | X | Kaigani village on razed Tlingit site (Sw, S) |
| 13 | Natzuhin | | X | Small permanent village, close to nearby hot springs (Sw, S) |
| 14 | Port Mayoral | X | | Possible small permanent village (O, S) |
| 15 | Fish Egg Island | X | | Likely medium permanent village, major seasonal resource site (O, S, Sl) |
| 16 | Klawock | X | | Large permanent village; declined in late precontact time (K, M, N, O, P, S, Sl, Sw) |
| 17 | Hole-in-the-Wall | X | | Likely seasonal resource site for many west coast Prince of Wales Tlingit, includes several different sites in immediate vicinity (S, Sl, P) |
| 18 | St. Philip | X | | Medium permanent village (S) |
| 19 | Warm Chuck Lake | X | | Likely seasonal resource site, possibly first small permanent village for <i>Tagwanedih</i> (S) |
| 20 | Tonowek Narrows | X | | Medium permanent village (S) |
| 21 | Staney Creek | X | | Likely seasonal resource site (S) |
| 22 | Karheen | X | | Likely seasonal resource site; possible small permanent village (S, O) |
| 23 | Gutchi Creek | X | | Likely seasonal resource site, includes stone tidal weir and canoe skids (S) |
| 24 | Tuxekan | X | | Large permanent village; expanded in either late precontact or early postcontact times (O, P, Sl, Sw, S) |
| 25 | Kasaan Islands | X | | Medium permanent village (S) |
| 26 | Sarkar | X | | Medium permanent village (O, Sw, P, S) |
| 27 | Tokeen | X | | Possible small permanent village (S) |
| 28 | Charley Creek | X | | Likely seasonal resource site (S) |
| 29 | Devilfish Bay | X | | Likely seasonal resource site (O, P, S) |
| 30 | Shipley Bay | X | | Likely seasonal resource site (M) |
| 31 | Shakan | X | | Medium permanent village; declined in postcontact period (K, Sw, O, S, P, N) |

-continued-

Table 2. – Page 2 of 2.

| No. | Site Name | Tlingit | Haida | Comments (sources where mentioned) |
|-----|-----------|---------|-------|--|
| 32 | Kasaan | | X | Major village on the east coast of Prince of Wales Island (N, Sw, S, M, K) |
| 33 | Chasina | | X | Small permanent village settled after Kaigani landing near Cape Chacon; residents later moved to Kasaan (N, S) |

Sources: K=Krause 1956; M=Moser 1899; N=Niblack 1970; O=Olson 1967; P=Peratrovich 1959; S=Sealaska 1975; SL=Salisbury 1962; SW=Swanton 1905a, 1908.

In addition to these villages, the Kaigani Haida occupied several other sites for which “we have written and oral evidence but very little physical evidence” (Langdon 1977:123). They had seasonal resource sites or camps, such as Klakas, Nutkwa, and Eek in the southern part of the archipelago (Langdon 1977:116,118). The early Kaigani Haida sites and later permanent village sites resembled their former village sites on the Queen Charlotte Islands:

In this respect, the early Kaigani sites of Chasina and Kaigani, (and possibly the Cape Chacon-Nichols Bay areas) as well as the later permanent village sites of Koianglas and Howkan conform to the characteristics of the Queen Charlotte village sites. They emphasize access to halibut banks and likely other productive bottomfish grounds, either rockfish or cod, during the slack months (Langdon 1977:128).

In 1944, Frank Nix⁶, a Kaigani Haida elder residing in Hydaburg, testified at hearings on the aboriginal claims of the Indians residing at Hydaburg, Kake, and Klawock, and said that the Haida occupied the territory from Waterfall to Cape Chacon, including numerous islands adjacent to the southern part of Prince of Wales Island (Figure 3):

In the old days, the boundary set by the Haida was above Waterfall. And then, from there down as far as Cape Chacon. And from there, right across to Cape Muzon, and outside of Dall Island... There is a point above Waterfall where people used to gather fish for their use, and the white people named the place Blackie Joe Point.... There were a fight between Haida and Tlingit at Eek Point.... There were no treaty, but that point was just set between those parties without a treaty... When they gathered their food or hunted there, none of these parties would pass that point (Frank Nix, in U.S. Department of the Interior 1944:197, 235).

George Edward Haldane⁷ placed the northern boundary between Kaigani Haida and Tlingit lands at Klawock, and thus included Fish Egg Island (Figure 3) in Kaigani Haida territory:

⁶ Frank Nix, a Kaigani living in Hydaburg, belonged to the Bear House. He testified during the 1944 hearings conducted by Judge Hanna on aboriginal claims of the Indians of Hydaburg, Kake, and Klawock.

⁷ George Edward Haldane was a part-Tsimshian, part-Haida born in Port Simpson, British Columbia. He also testified at the 1944 hearings on aboriginal claims of the Indians of Hydaburg, Kake, and Klawock. Haldane's grandparents once resided at Koianglas, on the southwest coast of Long Island.

The boundaries as we were told by the elders reached as far as Klawock, and down as far as Cape Chacon.... I was raised by my grandparents and I traveled with them in the waters that they claimed belonged to the Haida people.... In my travels with my grandparents we traveled to Fish Egg Island... Up in here, in Klawock Inlet, this small strip of land and the entrance of that creek at Klawock is also claimed by the Haida tribe of Indians. That is, not by all the Haida tribe, but by a certain house of the Haida tribe.... The Klawock Indians and the Haida Indians had a war together.... Not all the Haida Indians were involved in this war. It was a certain party, a certain house of Indians, a certain house of Haida and a certain house of Tlingit had this trouble. And one of the Haida men was killed by a Tlingit man. So, in settlement the Tlingit had to pay so much to the Haida on their demand. They could not cover the demand with what they had. So they made up nine sticks. They put out nine sticks and put the sticks before the Haida people, and the Tlingit said: "Now, we have no money, or blankets, or slaves to fill your demand, but we will give you those nine sticks for securities." And then, they gave a certain portion of that Klawock Creek to Haida Indians, the Klawock Indians, the owners of that creek. They gave them half the creek, towards the Salt Water Bay, and the upper part they kept. And then, on the map you will see a mountain... That mountain back of Craig was also given to the Indians, from Klawock shore down to that mountain. And then, these Indians of Klawock said: "There is a little creek there, a little creek on the right side of that mountain that we want to give." And that creek today Libby McNeill and Libby took it over for the water site.... The boundary included from that clear down to half of the Big Harbor, half of Big Harbor, clear down to Blackie Joe Point, that was all taken in, just through that little treaty. And in order to stamp that treaty, this was done not very long ago, during Russian times, they took a handkerchief, a black handkerchief, and they tied it around one of the Haida men's hands and tied it over his hand, and that is how they stamped the treaty, you see. It means one hand pulls the other hand. That was the way. And since that time, the Haida people claimed part of Klawock Creek, and Fish Egg Island, and up to Big Harbor down this way.... The battle was right at Klawock (George Edward Haldane, in U.S. Department of the Interior, 1944: 441-480).

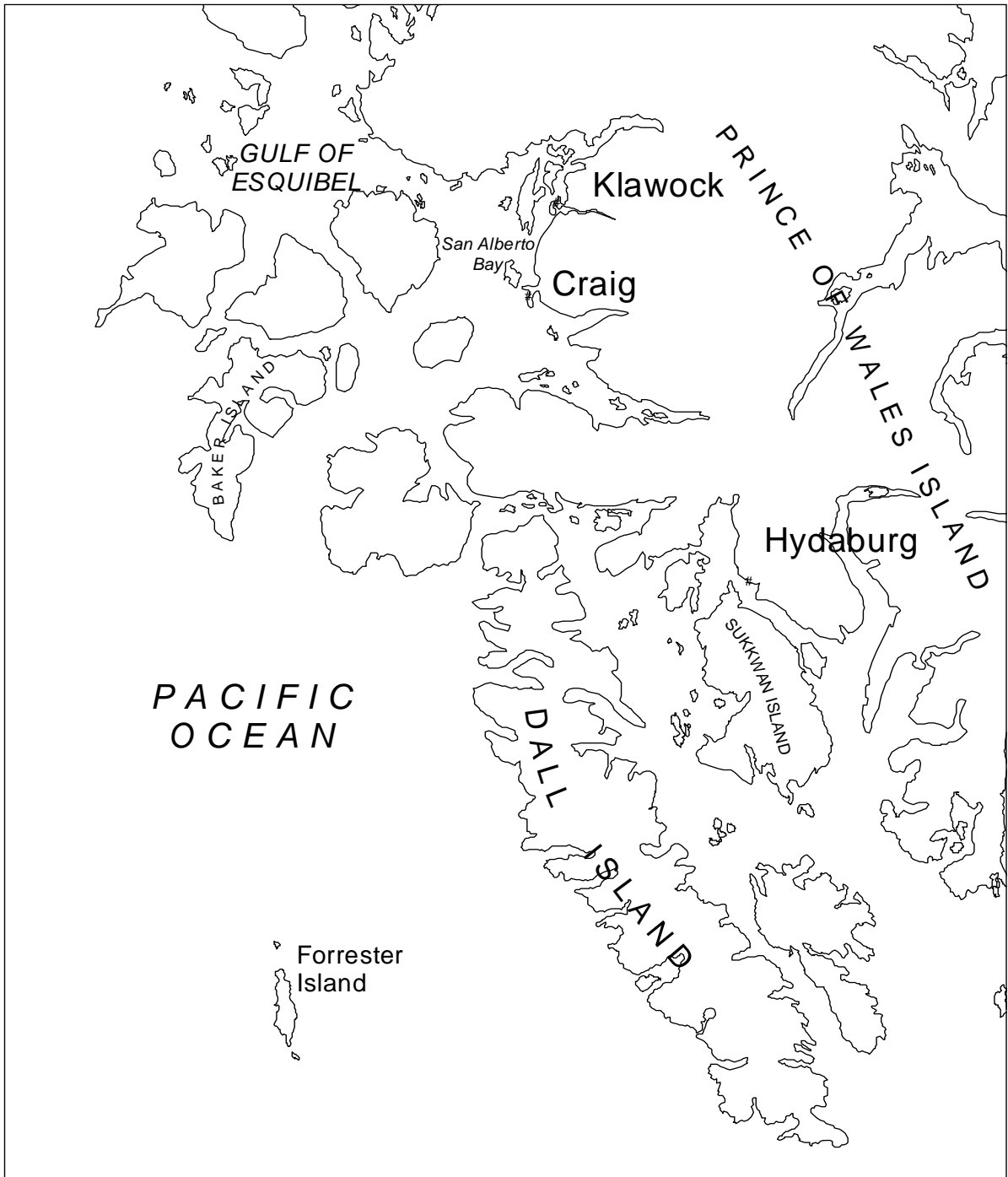


Figure 4. – Southwestern Prince of Wales Island.

The Haida elder Robert Cogo recalled when the Kaigani Haida had a fishing camp in Steamboat Bay area on Noyes Island (Figure 3):

There is a large garden camp outside of Steamboat Bay on Noyes Island. During my youth, this place was used as a fishing camp. Several hundred Haidas lived here for the fishing season in 1922. Large trees had grown over the places where there use to be gardens.... The people no longer used the place for gardens. They gave them up a long time ago, but they continued to use it for a fishing camp. It also served as a place where food was gathered during the spring and summer (Cogo 1983).

Robert and Nora Cogo recorded many Haida tales (e.g., Cogo 1983; Cogo and Cogo 1981). One story of the Beaver clan and the subclan of the Frog describes the visit of Spanish explorers to the west coast of Prince of Wales Island in the late 1700s and their encounter with the Kaigani Haida in Steamboat Bay:

They [Spanish explorers] used two large longboats from the frigates to explore the district. Then they came up with the most comprehensive survey yet made of Prince of Wales Island on the west coast. If you look at the map, you will still see all the Spanish names there.... When the Haidas saw the Spaniards, the Spaniards had their boats beached on the sand and they were getting wood and water.... They also carried on target practice session there with their pistols. It was because of what happened during this target practice that the Haidas tell this story.... It so happened that the Haidas did not believe that a small bullet could harm anyone.... One of them got in the line of fire.... He was instantly killed. It was purely an accident, and the Spaniards were much disturbed and sorry for the whole affair. They made some token reparations, and they offered to bury the dead Haida (Cogo 1983:8).

Ecological Overview

The southern part of the Prince of Wales Archipelago includes both deep and shallow channels, as well as semi-sheltered bays, fjords, inlets, harbors, rivers, and streams. There are also numerous lakes, the largest on Prince of Wales Island being Klawock Lake. A diverse mosaic of forest, muskeg, meadow, alpine tundra and exposed rock characterizes the habitat of the southern part of the Archipelago. The maritime climate has mild winters, cool summers, and a relatively high level of precipitation. The Alaska Current, flowing from south to north, is one of the major moderating climatic influences on the region and is responsible for the keeping the coastal waters ice-free during the winter months (Langdon 1977).

Prince of Wales Island hosts 3 major plant communities: 1) the true climax forest, below 3,000 feet in elevation, which is composed dominantly of western hemlock and Sitka spruce; 2) the alpine tundra, above 3,000 feet, which consists of low-lying shrubs, grasses, and herbs; and 3) the muskeg, or wet tundra, which is characterized by stunted spruce, hemlock, cedar, lodge pole pine, shrubs, sedges and mosses (Langdon 1977).

Sitka black-tailed deer (*Odocoileus columbianus sitkensis*), the terrestrial species most frequently harvested by the Kaigani Haida, are found on Prince of Wales Island as well as on many of the smaller islands to the west. Black bears (*Ursus americanus*), wolves (*Canis lupus nubilus*), and furbearers such as mink (*Mustela vison*), river otters (*Lontra canadensis*), beavers (*Castor canadensis*) and martens (*Martes americana*) are among the other terrestrial species available on the islands and harvested by local people. Birds are abundant on the archipelago and several species of ducks (various *spp.*), geese (various *spp.*), ptarmigan (*Lagopus spp.*), spruce grouse (*Dendragapus canadensis*), and seagull eggs (various *spp.*) contribute to the Kaigani Haida diet (Langdon 1977).

Prince of Wales Island is separated from the North Pacific by numerous islands. According to Langdon, “The marine interstices between these islands and Prince of Wales Island provide for a wide range of aquatic environments” (Langdon 1977:21). Consequently, marine resources also are available to and heavily used by inhabitants of the Prince of Wales Archipelago, the most important of which are anadromous fish, including 5 species of Pacific salmon. Other marine fish harvested included demersal or bottom-dwelling fish, such as Pacific halibut (*Hippoglossus stenolepsis*), and pelagic or free-swimming species, including Pacific herring. Additionally, at the time of this report, the Kaigani Haida harvested marine mammals, principally harbor seals (*Phoca vitulina*), fur seals (*Callorhinus ursinus*), sea lions (*Zalophus* or *Eumetopias spp.*), sea otters (*Enhydra lutris*), and stranded whales (various *spp.*). Marine resources of the coastal tidelands are also important to the Kaigani Haida, including abalone (*Haliotis kamtschatkana*); “black gumboots,” or chitons (various *spp.*); clams, including butter (*Saxidomus giganteus*), razor clams (*Siliqua spp.*) and fat gapers or “horse clams” (*Spisula planulata*); cockles (*Serripes* or *Clinocardium spp.*); sea cucumbers (*Parastichopus californicus*); crabs, including king (*Lithodes* or *Paralithodes spp.*), Dungeness (*Cancer magister*) and Tanner crabs (*Chionoecetes spp.*); limpets (various *spp.*); “blue” mussels (*Mytilus trossulus*); octopi (*Octopus spp.*); rock oysters (*Pododesmus spp.*); sea scallops (various *spp.*); black seaweed (*Laminaria saccharina*); shrimps (*Pandalus*, *Penaeus*, or *Pandalopsis spp.*); sea ribbons (unknown *spp.*); and sea urchins (*Strongylocentrotus spp.*). Beach asparagus (unknown *spp.*) was among several kinds of beach greens harvested (Langdon 1977).

PREHISTORY AND EARLY HISTORY

Prehistory

The rainforest environment and the active physiographic processes of glaciation, sea-level fluctuation, and plate tectonics combine to make archaeological work problematic in Southeast Alaska. However, Ackerman’s research on Heceta Island at Chuck Lake revealed 9,000 years of human occupation on this island (Davis 1990:198). Using Haida and Tlingit oral history and early ethnographic data, Langdon (1977) reconstructed the Tlingit settlement history of Prince of Wales Island. Fladmark (1986), who conducted archaeological investigations in the Queen Charlotte Islands, found evidence of human occupation there dating back to approximately 8,000 B.C.E. Archaeological research suggests that the earlier inhabitants came from the mainland (Skeena area) and settled first on the east coast of Moresby Island, on Rose Spit, and on the northeastern tip of Graham Island. According to oral tradition, human settlement moved from south to north, leading eventually to the Haida migration to the Alexander Archipelago (Langdon 1977).

Early History

Prior to the Haida emigration to the archipelago, there were 3 major Tlingit settlements on Prince of Wales Island: Shakan, Tuxekan, and Klawock. The Tlingit lived in permanent villages during the winter, specifically from November to May, and moved to seasonal sites from May or June to October. When the Haida migrated to the Alexander Archipelago, they displaced the Tlingit population living in that area. The Tlingit then moved north, leaving control of the southeastern part of the archipelago to the Kaigani Haida. According to Haida oral history, the migrating Haida consisted of two groups: *q'wiitaas xaataay*, the “muddy-mouth people,” and *yaadaas*, the “honorable people.” Apparently the first group landed at Cape Muzon, on the southern tip of Dall Island, where they found sockeye salmon streams in Hetta Inlet and spent a prosperous year. News of their success spread to Langara Island, and a second group traveled across Dixon Entrance, landing at Cape Chacon on the southern tip of Prince of Wales Island. In search of food and a better place to live, this group later moved to the eastern coast of Prince of Wales Island (Eastman and Edwards 1991). The migration of Haida from Langara Island continued after that time.

The Spanish explorer Juan Perez is believed to have established the first contact between Haida and Europeans in 1774, on northern Langara Island in the Queen Charlotte Islands and at Cape Muzon on Dall Island. Later, the Spanish, Russians, French, and Americans conducted trading expeditions along the northwest coast. However, Indians of the northwest coast retained substantial autonomy and control of their land, and were able to protect their traditional culture; they also sometimes intensified certain traditional activities, such as trading.⁸

The economy of the Kaigani Haida was significantly altered following western contact. Because European traders in the late 18th century were interested primarily in sea otter pelts, the Kaigani Haida hunted sea otters more frequently after contact. Kaigani Haida also engaged in gardening. Following introduction of the potato (*Solanum tuberosum*) by the Russians between 1810 and 1820, they started growing potatoes and selling large quantities to the Russian-American Company and the Hudson's Bay Company.

Ceremonies and ceremonial art were also affected by the introduction of metal tools, which made carving easier, especially wood carving:

Trade material was soon adapted into other art forms. The availability of copper allowed its increased use for decorative purposes and crest objects on masks.... Bells and thimbles replaced puffin beaks as rattles, and commercial paints made inroads on the use of Native pigments. Woolen trade blankets became common as ceremonial garments, often decorated with European buttons.... The increased wealth and the new tools and material combined with older techniques and uses to produce what is generally regarded as a golden age in Northwest Coast art (Cole and Darling 1990:132).

⁸ Haida were engaged in intergroup trade long before the arrival of European traders. Their trading techniques were so elaborate that journals of explorers and early traders contained many reports of the commercial aptitudes of the Northwest Coast Indians (Gibson 1992).

In 1843, many Haida people were attracted to Vancouver Island after a new trading post opened at Fort Victoria. A smallpox epidemic struck the northwest coast in 1862, when a non-Native spread the disease among the Indian population at Victoria.⁹ The Haida, both on the Queen Charlotte Islands and in Alaska, suffered the devastating effects of this epidemic.¹⁰

After Victoria was settled, flotillas of Haida canoes were continually resorting there.... Later the smallpox broke out and carried the people off by hundreds. Doleful tales are related at the present day of large flotillas of canoes which started from Victoria, leaving their dead all along the way, and landing with perhaps one canoe left out of six or eight. Those who survived, however, spread the disease to the islands, and the people died off there at the same rapid rate... of the eight thousand and over, estimated in 1840, however, only about nine hundred remain, largely mixed-bloods. Three hundred of these are settled in the Alaskan towns, Howkan, Klinkwan, and Kasaan. The remaining six hundred are divided between two towns on the Queen Charlotte islands, --Skidegate and Masset, -- the latter which is slightly larger (Swanton 1905a:106).

The Haida culture experienced many transformations between 1880 and 1910. With the organization of Presbyterian missions at Howkan in 1880, and at Klinkwan at a later date, the Kaigani Haida people left their traditional villages to consolidate in these two places. Evangelical activities introduced many changes to the ideological, linguistic, social, and religious spheres of Kaigani Haida culture. Missionaries promoted the assimilation into Western culture of many aspects of traditional Haida culture. They opened mission schools, and discouraged cultural practices and ceremonies such as potlatches in attempt to convert the Haida to Christianity (Swanton 1905a:106).

CULTURAL ABSTRACT

Language

According to the linguists Krauss (1973; 1979) and Levine (1979), the Haida language has no demonstrable genetic relationship with the Tlingit and Athabaskan languages. It is divided into two major dialects: Northern Haida, the Haida of Masset, spoken on the northern coast of Graham Island and at Hydaburg, Alaska; and Southern Haida, the Haida of Skidegate, spoken by the people now living at Skidegate, British Columbia. In aboriginal times a third dialect, the Ninstints, was spoken in the southernmost villages. The Hydaburg key respondents for this study said there were differences between the dialects spoken at Masset and Hydaburg, but that Haida from both villages could understand each other.

⁹ In 1836, an earlier smallpox epidemic broke out in Sitka. The Sitka Tlingit population was reduced to less than half of what it previously had been. Approximately 4,000 people died (Vaughan 1985:46).

¹⁰ In British Columbia, approximately 20,000 people died from the 1843 epidemic. The population of the Queen Charlotte Islands was reduced by at least half, and the Kaigani population, which was 1,735 in 1835, was reduced to 600 after 1862 (Vaughan 1985:47).

Social Organization

Historically, the Kaigani Haida were divided into two exogamous moieties, the Raven and the Eagle, which in turn were subdivided into matrilineal lineages.¹¹ Lineage members shared rights to fishing, hunting, and gathering locations, and shared ownership of symbolic properties. Lineages exercised control over myths explaining their origins, village sites, crests, names, certain songs and dances, and various ceremonial privileges. However, the management of tangible and intangible properties rested with the lineage chief,¹² who was the highest authority in the permanent winter village. The Haida from the Queen Charlotte Islands originally had one lineage per village, before they evolved into several lineages. Some, but not all the Kaigani Haida villages were multi-lineage villages.¹³ According to Blackman, the division of some Alaskan Haida lineages into sublineages or houses revealed Tlingit influences on this feature of social organization:

A few Haida lineages, whose members migrated to Alaska, were divided into sublineages which took their names from a “house” of origin. Thus, for example, there were the Dogfish House People and the Raven House People of the Yakulanas lineage. The division of the Alaskan Haida lineages into “houses” is attributed by Swanton (1905a) to Tlingit influence (Blackman 1981:16).

When a lineage was divided into sublineages, the chief of these divisions also asserted some authority. According to Blackman (1990), the authority of the house chief extended over all residents in his household.

The Haida recognized a class system consisting of nobles or high-ranking people who “as children, had had potlatches given in their honor by their parents and thus bore one or more potlatch names” (Blackman 1990:252), and commoners or the people who were not high-ranking. The noble class people were “the house owners and heirs to lineages and sublineages chieftainships and high names” (Blackman 1990:252). Slaves were war captives and the offspring of war captives, and “were perceived to be like dogs, always hungry, voracious, and subservient” (Boelscher 1988:61).

¹¹ Swanton referred to moieties as “clans” and to lineages as “families” (Swanton 1905a). Haida lineages differed from Tlingit lineages in that there was no larger group, like the Tlingit clan, where lineages were related (Blackman 1990).

¹² According to Swanton, each Haida winter village was originally the dwelling place of one lineage, and as a result there was only one chief per village. In single lineage towns, the lineage chief was the highest authority in the permanent winter village. In multi-lineage towns the highest authority was called the “town mother” in Skidegate and the “town master” in Masset. Swanton adds that this title was held by the highest ranking, wealthiest house chief of the lineage: “In this case the town chief stood first socially among the family chiefs, sat in the highest place, directly in front of the inside house-pole at feasts, and properly had his house in the middle of the town. His social prestige was considerably enhanced by the presence of several other families; and his war power generally increased correspondingly, especially if they were related to his” (Swanton 1905a:68).

¹³ “At the present time we find each town inhabited by several families, generally belonging to both clans. This does not seem to have been the original condition, but it would seem that in olden times each town was inhabited by one family only. The women in such a town would all have belonged to outside towns; but since it is customary for the children to settle and to build houses in the town of their mother’s brothers, whose successors they are, the unity of the population was preserved, and the continuity of population was secured through the return of the sister’s children to the male side of the family” (Swanton 1905a:66).

The traditional Haida household typically consisted of the house chief, his wife or wives, his young sons and unmarried daughters, a married daughter with her husband and children, a young brother with his wife and children, married and unmarried sisters' sons, a poor relation or two, and a few slaves (Murdock 1936; Blackman 1981).

Ceremonies: Feasts, Potlatches and Distribution of Property

Feasts, potlatches, and dance performances were given by upper- or noble class individuals.¹⁴ To achieve and maintain his prestige, a Haida chief was expected to stage successful ceremonies and to give frequent feasts:

One way of advancing a man's social standing was by giving feasts. The chiefs of the various houses were continually sending out invitations by crier, when every one of the right clan was at liberty to come and eat that portion dealt out to him. The principal guests sat in a circle or circles around the fire; the town chief, in the most important place in front of the inside house-pole; and the others, to right and left, at a distance varying to their social position; while the commons assembled around the door or sat outside... the servants or slaves brought out food in trays and distributed it, beginning, of course, with the town chief. Feasts were continually looked for, especially from the great family and town chiefs... These and the potlatches were the Haida roads to greatness more than war (Swanton 1905a:155).

The potlatch was the greatest event upon which Haida social life turned. It was essentially dominated by the aristocracy “whose greater wealth as well as superior ritual expertise and esoteric knowledge were essential for its success” (Kan 1989:231). Preparation for a potlatch required tremendously hard work to generate food and wealth objects,¹⁵ such as houses, slaves and coppers¹⁶, which were ceremoniously distributed from host group to guest group in order to establish and reaffirm interpersonal and intergroup ties. According to Blackman (1977), the labor and goods invested in a potlatch derived from the economic resources of both the husband and wife, and both actively participated in the distribution of properties. “For men, skill in hunting and fishing visibly marked the productivity of the household, which in turn formed the basis for feasting and potlatching” (Boelscher 1988:76). Carving was also a high-prestige activity which contributed to the acquisition of wealth by a high-ranking person. Between 1979 and 1987, Kan (1989) analyzed mortuary practices, including the potlatch ceremony, in the ranked society of the Tlingit Indians, and found that gift-giving also served to challenge the recipient to reciprocate with an equal, or preferably, a larger gift.

The largest and most elaborate Haida potlatch was given for the construction of a cedar-plank dwelling. It acknowledged the accession of the new house owner to the position of house chief

¹⁴ As stated above, traditionally Haida society was stratified into distinct groups, such as the chiefs or nobles (high-ranking people) and the commoners, who were lacking status (low-ranking people). According to Boelscher (1988), slaves remained outside of the Haida ranking system. They constituted the lowest stratum of the social order.

¹⁵ Food and articles of value accumulated by a chief who was going to stage a potlatch were often obtained by trade.

¹⁶ Sheets of copper shaped into a shield and highly decorated, used for ceremonial and economic purposes.

and served also to reimburse those who had performed important functions in the actual construction of the house (Blackman 1990). Another important potlatch marked the death of a high ranking person. Minor potlatches were given on the occasion of female puberty, adoption of another chief's son, the tattooing of his friend's children, and the cutting of apertures for labrets, earrings, and nose-ornaments (Swanton 1905a).

The accumulation of food and wealth items needed for a potlatch could take from one to several years. In order to show respect to his guests, a chief organizing a potlatch had to offer people large amounts of "high-class food," like halibut or sea lion, and include scarce food like herring spawn on kelp. Guests had expectations that donors were expected to meet. Therefore, to prepare for a potlatch a chief had to increase the subsistence and trade activities of his lineage.

Subsistence

The period of March through November was dominated by subsistence activities. The Kaigani Haida harvesting season started with the arrival of herring in March and April. It was the first fresh fish of the new year, and herring spawn on kelp represented both a delicacy for the Kaigani Haida people as well as a food item they exchanged or traded to groups who did not have access to it.

Fish, shellfish, and marine mammals were the most abundant resources harvested by the Kaigani Haida. The 5 species of salmon taken were undoubtedly the most important marine resource harvested. However, halibut and Pacific cod (*Gadus macrocephalus*) were often mentioned by Kaigani Haida elders during the aboriginal claims hearings (U.S. Department of the Interior 1944). These elders indicated that halibut banks, like salmon streams, were owned by lineages,¹⁷ and could be harvested at any season. Swanton (1905a) remarked that all the halibut grounds fished by the Haida of the Queen Charlotte Islands were named and owned by certain families. Villages were sometimes located on exposed sites for no other reason than to be near halibut grounds (Niblack 1970). Blackman (1981) further explained that Kasaan was situated near a Pacific cod bank, thus confirming the relationship between settlement patterns and resource use. Important fish resources, in addition to salmon, included halibut, Pacific cod, herring, trout (*Oncorhynchus* or *Salvelinus* spp.), Dolly Varden (*Salvelinus malma*), and rockfish (*Sebastes* spp.) (Langdon 1977).

Additional resources used by the Haida included marine mammals—seals (various spp.), sea lions, fur seals, and sea otters—as well as Sitka black-tailed deer and a variety of other land mammals. Seabirds, migratory waterfowl, and several other bird species were harvested and their eggs collected. Terrestrial and marine vegetation provided food for human consumption as well (Langdon 1977).

Consolidation

In 1911, the Kaigani Haida living in Howkan, Klinkwan, Sukkwan, and Koianglas consolidated in Hydaburg, on the western coast of Prince of Wales Island. According to Langdon (1977), a few Haida from these villages moved to Craig and Ketchikan, while people from Kasaan relocated to a new cannery site in 1901.

¹⁷ Authorization to access a stream controlled by a lineage other than the one to which an individual belonged had to be obtained by special request. Only with the permission of the highest ranking person of that lineage could an individual have access to the harvesting ground.

Historians and ethnographers have emphasized the role of the U.S. government in persuading the Kaigani Haida to relocate to Hydaburg. Blackman (1981) stated that the site selected for the new village had no traditional meaning for the Haida, while the anthropologists Drucker (1965) and Brink (1974) explained that the consolidation was accomplished through pressure upon the Kaigani Haida. The Kaigani Haida may have signed the consolidation document in order to obtain citizenship,¹⁸ believing the only way they could protect their resources was to obtain property rights by becoming citizens.

The relocation to Hydaburg had a fundamental impact on the Kaigani Haida people and marked a radical transition in their history. Historical photographs as well as archaeological studies of Kaigani Haida settlements illustrate changes in the material culture of villages after the Haida settled on the Alexander Archipelago. Over time, Kaigani Haida people abandoned their traditional large cedar plank dwellings for non-Native style housing (Blackman 1981). When Kaigani Haida resettled in Hydaburg, they left behind this traditional architecture. One of the main contrasts between the traditional and the modern settlements was that in Hydaburg the buildings faced the main street instead of facing the water. Adoption of Euro-American architecture and settlement patterns reflected a shedding of a substantial portion of the Kaigani Haida traditional culture, including lineage relationships and lineage organization.

The Early Economy of Hydaburg

After the U.S. purchased Alaska in 1867, naval vessels began to patrol the inland waters in order to exert American control of the area. Military exercises in Southeast Alaska alerted the Tlingit and Kaigani Haida to the strength of the U.S. government and its willingness to retaliate against those who did not comply with U.S. legal principles (Langdon 1977). The use of naval vessels reportedly was more effective than the American troops that were stationed at Sitka, Wrangell and Tongass:

Through the shelling of a number of Kake (perhaps Kuiu) tribal villages, both seasonal and winter varieties, in 1869 and of Angoon in 1882, the United States navy seemed to have established an environment in which the exploitation and expropriation of the fish wealth could proceed without violent reaction by the Tlingit and Kaigani (Langdon 1977:141).

The commercial harvest of salmon in the Prince of Wales Island area started a few years after the purchase of Alaska, when the first salteries and salmon canneries opened. In 1878, the North Pacific Trading and Packing Company built the first salmon cannery in Klawock, Alaska, and in

¹⁸ In order to secure the new school, get government support for founding the new village, and obtain full citizenship, Hawkesworth (Bureau of Education teacher) had villagers sign the consolidation document, which stated: "We, the undersigned, Alaskan Natives of Hydaburg, Alaska, hereby declare that we have given up our old tribal relationships; that we recognize no chief or tribal family; that we have given up all claim or interest in tribal and communal houses; that we live in one family house in accordance with the customs of civilization; that we observe the marriage laws of the United States; that our children take the name of the father and belong equally to the father and mother, and that the rights of the maternal uncle to direct the children are no longer recognized and that in the case of the death of either parent we recognize the laws of the United States relative to inheritance of property; that we have discarded the totem and recognize the Stars and Stripes as our only emblem; and that we are a self-supporting and law abiding people" (Blackman 1973:79, Langdon 1975:50, Vaughan 1985:161). This document is undated, although Blackman attributes it to the year 1912, and Langdon to either 1912 or 1915.

1886 a saltery opened at Hunter's Bay near Klinkwan (Langdon 1977). Several years later, the Pacific Steam Whaling Company built a salmon cannery on the north shore of Hunter's Bay (Langdon 1977). According to those Kaigani Haida elders who testified at the 1944 aboriginal claims hearings, the Kaigani Haida people who were employed in these salteries and canneries also contracted rent or lease agreements with the canneries' operators and owners for access to and use of the sockeye streams that traditionally belonged to a lineage. However, these lease agreements were soon neglected by the cannery owners and the local sockeye stocks were intensively harvested (Langdon 1977). Langdon indicates that at Hetta Stream, 24,022 sockeye salmon were commercially harvested in 1886; 47,769 in 1894; and 201,299 in 1896 (Langdon 1977:221). Kaigani Haida were seasonally employed by cannery owners to harvest and process fish, but later were replaced by floating fish traps operated by companies that employed immigrant laborers. (Vaughan 1985). The use of floating fish traps instead of purse seines and trolling gear put pressure on the Native fishers and threatened their roles in the fishing industry. One observer stressed that, in reality, "the companies controlled the Bureau of Fisheries, and the Fisheries were more inclined to the companies than to the Native people" (Frank Nix, in U.S. Department of the Interior 1944:203).

In 1911, the Bureau of Education, in return for previously encouraging the Kaigani Haida's acceptance of their relocation to Hydaburg, agreed to support their purchase of a sawmill. According to Vaughan¹⁹ (1985), the loan to the Bureau of Education was repaid and the Hydaburg Lumber Company assumed ownership of the mill. A trading company was also organized in Hydaburg in 1911, supervised by a board of directors elected by the community. According to Vaughan (1985), the company was successful and financed the initial construction of a salmon cannery in 1917. Unfortunately, a poor fishing season in 1920, as well as adverse conditions resulting from World War I and measles and influenza epidemics in Hydaburg thwarted development of this new industry. Two later attempts to establish a cannery in Hydaburg failed, and in 1935 the city leased the cannery property to William Epperson, owner of the Waterfall cannery. In 1937, the cannery ceased operation because of an accumulation of debts to the Hydaburg fishers (Vaughan 1985).

In 1937, Hydaburg residents became involved with the Indian Reorganization Act (IRA) program (Vaughan 1985). Residents were promised funding to build a modern salmon cannery and a reservation near Hydaburg to support the cannery's operation. The Hydaburg Cooperative Association (Cooperative) was created in 1938 and the Kaigani Haida of Hydaburg accepted the loan conditions of the Bureau of Indian Affairs (BIA):

When agreements were reached, the loans made to the Hydaburg Cooperative Association included \$140,000 for the cannery and \$75,000 for the fishermen revolving fund.

The conditions under which these loans were made, and thus the degree to which the Hydaburg Cooperative Council was restricted by the Bureau, were not revealed until after the agreements were

¹⁹ James Daniel Vaughan conducted field research among the Kaigani in the village of Hydaburg from 1977 to 1980. He focused upon collecting oral history regarding the development of Hydaburg and conducted several interviews with elders who were able to remember the traditional Kaigani villages and their consolidation into the village of Hydaburg.

reached.... It was during the period of cannery construction that the Hydaburg Cooperative Council relinquished much of what remained of their administration authority.... As a result of manipulative strategies employed by agents of the Bureau of Indian Affairs, Hydaburg's Association Council found itself having the appearance of an administrative body without the ability to perform as one (Vaughan 1985).

In the 1940s, the Cooperative's appeals for fish-trap sites were denied. Further problems arose during World War II, when most adult males had to enlist in the military. Following the 1943 fishing season, the BIA called for bids to lease the cannery. The facility was destroyed by a fire in 1948 and rebuilt the same year by the Cooperative. Unfortunately, in order to keep the operation open, the Cooperative had to borrow money from the IRA loan fund. At the same time, during the 1950s and 1960s, salmon runs were depressed, and competition had increased with the development of Japanese and Soviet fisheries. As a result, only half of the canneries in Southeast Alaska were open during the 1956 season. By the late 1950s, Hydaburg's seasonal operation debt amounted to over \$500,000, while the total unpaid balance due on the loans to individual fishers exceeded \$125,000. In 1959, the Cooperative secured an \$800,000 loan from the BIA to improve the cannery's seine fleet. By the mid-1960s, the liability of the cannery to the government totaled almost \$1,137,000.

In 1964²⁰, the BIA decided that the Hydaburg cannery would not operate during the next season. Hydaburg's loan²¹ was declared in default in 1965 and the BIA assumed full control and authority over the cannery. In 1973, the Council entered into a lease agreement with Cordova Bay Fisheries to reopen the Hydaburg cannery as a cold storage facility. When Sealaska purchased Ocean Beauty Seafoods in 1980, it became the lease holder of Hydaburg Cold Storage, because Cordova Bay Fisheries was a subsidiary of Ocean Beauty Seafoods. Since Hydaburg people are shareholders of Sealaska, this action renewed their interest in the IRA cannery facility.

In 1980, the Haida Corporation entered into an agreement with Sealaska to purchase all leasehold interests it owned in the cold storage facility. Haida Corporation directors also entered into a lease agreement with the Hydaburg IRA Council for all other buildings and cannery site properties owned by the IRA. This required the approval of the BIA, which still held a lien on these properties. Another pact was reached by the Hydaburg IRA Council, the IRA purse seine vessel owners, and the Haida Corporation directors, to collectively support the upcoming operations of the Hydaburg cold storage facility. Haida Seafoods, Inc., was then chartered as a subsidiary of the Haida Corporation, and the cold storage facility was operational for the 1980 fishing season. Haida Corporation failed to make payments to Sealaska, however, and the lease then went into default, thus the entire balance of the note became due immediately. Haida Seafoods' management decided not to seek financing for Hydaburg Cold Storage because of the poor economic conditions in the seafood processing industry. In summer 1984, fire destroyed the cold storage facility. The Cooperative was left in debt and bankrupt and the Hydaburg Cooperative Cannery was closed.

²⁰ This paragraph summarizes information collected by Vaughan (1985) during his field research in Hydaburg.

²¹ \$800,000 was borrowed from the Bureau of Indian Affairs to restore the Hydaburg fishing fleet.

The cash sector of the Hydaburg economy has been heavily dependent on commercial fishing, canneries and logging. The economic problems described above led to a population decline as families and individuals migrated elsewhere, seeking better opportunities. The population fell from 338 in 1930 to 189 in 1968. While the cash sector of the community economy has been insecure in recent years, Hydaburg residents have relied on subsistence activities to feed their families. In 1988, Hydaburg residents harvested an average of 337 pounds per capita of wild foods, compared to the average of about 200 pounds per capita for the Southeast region (Kruse and Frazier 1988). Herring spawn on kelp was one wild resource which helped to support the community during this period.

TRADE

Trade: A Fundamental Feature of Haida Traditional Society

If we had to select only two words to portray traditional Haida society, “maritime” and “mercantile” would certainly be appropriate. The Haida occupied a rich maritime environment, with a wide range of natural resources, including many species of marine mammals, fish and shellfish, as well as terrestrial fauna, plants, and fruits. This variety of edible fish and marine invertebrates was vital to their everyday diet and was also an economic stimulus to the circulation of local food items beyond the limits of the Haida territory.

The influence that the ocean exerted on the Haida and their adaptation to the ocean environment can be traced through an analysis of northern Pacific coast social organization, religion, cosmology, technology, and art. Haida people commonly undertook long and perilous coastal voyages and were renowned for their navigational skills. Traders traveled long distances by sea in their canoes after a new trading post opened at Fort Victoria in 1843 (Gibson 1992). It was not uncommon for the Haida to undertake trade journeys to Vancouver Island and to Seattle. Occasionally, their route may have followed the coast as far south as San Francisco Bay (Gibson 1992).

The structural design of the Haida dugout canoe is evidence of the Haida's adaptation to the marine environment. Large western red cedar (*Thuja plicata*) from the Queen Charlotte Islands and, to a lesser extent, from Prince of Wales Island, was the preferred wood for canoe manufacture since it was light, easily split, and durable. The type of canoe made by the Haida reflected the diversity of use: in rivers or in the ocean, for the harvest marine resources, and for trade and war expeditions. The largest canoes were 60 feet in length and could carry 40 passengers (Langdon 1991). Haida canoes attained such a high level of craftsmanship that they became valuable pieces of property and themselves were objects of trade. In 1944, Paul D. Morrison recalled canoe makers in Hydaburg who sold their ocean-going canoes to non-locals for large sums of money:

We had some canoe makers that made canoes and sold them in different places. They would paddle them to some other places and they would sell them. After they built them they would sell them to the Tsimshians over in British Columbia; most of them went up to Sitka. (Paul D. Morrison, in U.S. Department of the Interior 1944:300).

According to Emmons, Haida canoes were sold up and down the northwest coast:

The Haida traded their expertly-made canoes to all the other Northwest Coast peoples from Vancouver to Copper River. From the huge red cedars of the Queen Charlotte Islands they fashioned canoes which attained a [cargo] capacity of six to eight tons, and a length of over sixty feet. As late as 1900 I saw such canoes brought north and sold at Killisnoo for \$250 (Emmons 1991:85).

One of the more notable items in the Powell-Bishop Collection, purchased in the early 1850s by the American Museum of Natural History, was a 68.8-foot (21-meter) Haida canoe, decorated with calligraphic-like paintings, that could carry more than 30 people and “was sturdy enough to withstand the pounding of ocean waves” (Jonaitis 1988). This canoe, purchased at Port Simpson, was transported to Victoria by the Haida and arrived in New York City at the museum in 1883 (Jonaitis 1988:81).

Trade Organized by Leadership

The lineage chiefs and other Haida leaders (such as the house chiefs, who supervised domestic production) coordinated production of trade items by household members. Bargaining and trading, especially when conducted with nonresidents, was an important economic, political and social event for the community. The highest-ranking people in the tribe typically led those transactions.

During the maritime fur trade, commerce was conducted at sea and the chiefs sometimes were invited to board the Euro-American trading vessels. According to Gibson, the chief was responsible for conducting trade for his tribe while the captain directed his ship's trade:

A chief handled all the trade of his tribe. In doing so he was disposing of communal resources (not only furs but provisions too) for which he was responsible. If he were bested in trading, he lost not only wealth but also the prestige and perhaps even rank, and subjects as well; therefore, it was important to him to strike a bargain (Gibson 1988:382).

If the people of a certain lineage disapproved of a chief's trading methods, they could name a sub-chief to replace him.²²

Trading During Specific Seasons

Just prior to European contact, trading voyages generally occurred during spring and early summer, before the onset of major harvesting activities in July. However, in the late 1700s, during the maritime fur trade period, trade activities sometimes extended into the fall. Reports from the Hudson's Bay Company emphasized that Natives involved in maritime fur trading often would hold their furs until the trading vessels were about to leave in early fall:

In order to get a higher price some chiefs “held back” their furs until the trading vessels were about to leave in September and

²² The Kaigani of Prince of Wales Island did not have a town chief like their counterparts from the Queen Charlotte Islands. Instead, they resembled their Tlingit neighbors, with multi-clans and clan chiefs. Blackman (1973:149) described the resemblance of the Kaigani to Tlingit society as follows: “There were clan chiefs, and generally one of these was recognized as the most powerful in the village, but there was no position which was accorded the authority of the Queen Charlotte town chief.”

were therefore anxious to dump their goods and complete their cargoes (Gibson 1988:383).

In the early historical period, the Haida generally traded herring spawn on *Macrocystis* kelp soon after the harvest. Before any trading could take place, herring spawn on kelp was dried and packed in sealed bentwood boxes. Herring spawn on kelp was a highly-valuable food item among the Haida and large amounts of it were traded every year for eulachon (*Thaleichthys pacificus*) grease. Eulachon grease was also a specialty food for the northwest coast peoples and its absence was regarded as a sign of poverty. The Tsimshians of British Columbia harvested eulachon on the Nass River from February to April. The preparation of eulachon oil took from 10 days to 3 weeks and the production of grease coincided approximately with the harvest of herring spawn on kelp by the Haida. As many Hydaburg respondents reported in field interviews, for decades the producers of herring spawn on *Macrocystis* kelp products traded directly with producers of eulachon grease:

We traded our herring eggs on kelp for hooligan oil. At the time in the [19]30s, we could buy 5 gallons of hooligan oil for \$5.00, when today we have to pay between \$80.00 and \$125.00 for only one gallon (Victor 1992).

As indicated above, money was also involved in the herring spawn-on-kelp / hooligan oil trade. Both of these seasonal products were found only in specific areas of the northwest coast. They were highly valued by most aboriginal tribes and were available for trade at the same time.

MOVEMENT OF GOODS, VARIATIONS IN RESOURCE DISTRIBUTION, AND TRADE RELATIONSHIPS

Vast aboriginal trade networks extended throughout the northwest coast. The great distances products traveled reflected the great demand for manufactured items and food items not produced locally. The trade networks allowed for the beginning of trade specialization:

In a number of groups, and for a number of items, local production was for far more than merely local consumption. Demand for goods of a different nature or high quality developed due to information conveyed by the extensive interaction of trade, and this allowed for the beginnings of specialization. Although not fully realized by traditional societies, the seeds of a highly developed engine of economic expansion through trade and specialization were already germinating at the time of contact (Langdon 1991:12).

Extensive trade networks that existed before contact expanded when the British entered the northwestern trade in the late 1700s. The Haida traded items of material culture, such as canoes, woven hats and baskets, decorated wooden spoons and bowls, bentwood boxes, shells, and argillite pipes; food items like fish, marine mammals, fowl and their eggs, herring spawn on kelp and on branches, dried seaweed, abalone, invertebrates, vegetables, and berries; and other non-edible products, including furs and tobacco. Charles Webster Demmert, a Tlingit from Klawock who testified at the 1944 aboriginal claims hearings, said most trade goods were transported south:

They went down there with their furs, sea otter, land otter, bear skins, and mink. We traded fish, herring eggs, dried seaweed, dried clams, and dried abalone with the Masset tribe, with the Tsimshian tribe for dried hooligan, hooligan oil and soapberries... In 1894, I went over there myself, personally with my uncle, in a big canoe. Afterwards, the big canoe was taken to the St. Louis Fair... Later on, our elderly people were still making trips over there, trading food, but of course there was the international boundary line, and we could sneak across at night (Charles Webster Demmert, in U.S. Department of the Interior 1944:702-704).

The trade network for herring spawn on kelp was extensive because most Native groups were unable to harvest it, and it was a highly-valued, specialty food. Prior to the Russian period, the Kaigani Haida of Hydaburg traded a substantial volume of herring spawn on kelp and considered it a major trade item. Because herring and *Macrocystis* kelp were not available in many areas, people had to generate trade relationships to secure this food product. Furthermore, herring represented the first fresh migratory stock of the new year. Its arrival preceded salmon and was eagerly anticipated by many Northwest Coast Indians, especially those on the mainland who did not have access to herring. Following the harvest, boats loaded with fresh herring spawn on kelp traveled to nearby villages for exchange and trade. Historically, however, herring spawn on kelp for trade was usually dried, placed in waterproof packaging, and transported by dugout canoes. During the 20th century, changes in preservation methods (salting and freezing) and transportation systems (motorized fishing boats, barges, and commercial carriers) led to fresh herring spawn on kelp becoming the main trade item.

The Hydaburg people's anticipation of the arrival of herring and the harvesting of the spawn on kelp was still high at the time of this report. During field research in 1992, respondents expressed this excitement:

I have to ship to my daughter these herring eggs on kelp. She is living in Anchorage and is very anxious each year to get it; she generally freezes it or makes pickles. We used to harvest a lot of herring eggs because we had a lot of people to support, not just one household, but you have to send to all the relatives who don't have access to it. People in Ketchikan, they just called my house when they wanted some herring eggs.

I used to send a lot of herring eggs outside the community, in Seattle, to family members and to friends. I also used to sell it to pay for gas and expenses, like groceries (Victor 1992).

Elders recalled a time when they brought boats loaded with herring spawn on kelp and on branches to Metlakatla. They remembered the happiness of the whole town when they docked:

The whole town would come down, and we would sell herring eggs on kelp and on branches; they would pay what they could afford, few dollars. We were not really invited for dinner by the locals, it was strictly business (Victor 1992).

A respondent from Craig, born in Metlakatla, remembered when Hydaburg and Craig boats, loaded with fresh herring spawn on kelp, approached town in the spring:

I was born in Metlakatla, it is about 60 miles from here. I am full blood Tsimshian and I remembered looking forward every spring to the arrival of the spawn from Hydaburg and Craig. Two or three large boats used to come and trade. People really looked forward to it, because it was just about that time of the year when all the winter provisions were gone; they truly looked forward to the herring spawn which is a mark of another year, a new harvesting year, the first fresh fish. Then, from that time on, everything turn to life again, after herring eggs harvest it was seaweed time. We had about 1,000 people in Metlakatla in the '50s, so that represented a fair amount of transactions for a community like Craig or Hydaburg. Everybody in Metlakatla would buy herring eggs²³ (Victor 1992).

Describing the herring-spawn-on-kelp trade and other trade conducted by the Kaigani Haida on the northwest coast, a respondent in Hydaburg noted that as long as he could remember they had always traded, and sellers had always competed with each other:

As far as I can remember, and even before that, as far as my mother and other Haida used to tell me, we always traded, we traded our local resources, and we sold to who ever wanted to buy it.... You had to compete with other boats, in Metlakatla and in Ketchikan. We traded for grease, hooligan oil, but a lot of us made cash transactions. When I was a little boy, boats left Hydaburg for trading voyages; there were the *Alma*, the *Nora*, the *Elby*, the *Claudia*, and they had big load of herring eggs and this trade continued during World War II (Victor 1992).

The Kaigani Haida used to trade other food items, including dried salmon and dried halibut. The latter was a major trade item and considered to be a specialty product. An elder from Hydaburg recalled when the Kaigani Haida sold their fish:

They used to troll all around Forrester Island, and it did not matter how big a king salmon was, it used to be \$.50 apiece. We also sold our halibut after it was dried. We dried it at spring time because the north wind blowing constantly chased the flies away; it was the best time for drying. We took our halibut to Metlakatla, to Victoria and Vancouver.... We went to Fort Simpson, and all along the coast to trade our food, like herring eggs and halibut (Victor 1992).

During the 1944 aboriginal claims hearings, Paul Morrison recalled that, in addition to canoes, dried halibut was a major trade item of the Kaigani Haida people: "Other trading that we had was dried halibut, we traded it with British Columbia" (Paul Morrison, in U.S. Department of the

²³ The use of cash has been well established in Southeast Alaska since the late 1800s (Schroeder and Kookesh 1990).

Interior 1944:300). Charles Powell, a Haida born in 1887, testified at the same hearings that the Kaigani Haida traded dried halibut with the Tsimshians. According to Powell, when a chief prepared a potlatch, he obtained as much dried halibut as possible in order to trade it for food items he did not have:

One species of fish that we caught for trading purposes or commercial purposes was the halibut. We tried to trade with the Tsimshians, and we traded it for other stuff. We did not have any instruments to weigh things, so we used to count the pieces of halibut and we used certain instruments or pots to measure the oil in.... Supposing I was a chief, and I got a potlatch, I put up all I can for them in drying halibut so that I can trade and get grease in an amount maybe a thousand gallon (Charles Powell, in U.S. Department of the Interior 1944:326-327).

During the 1944 hearings, George Edward Haldane, who was Haida and Tsimshian, born in 1878 at Fort Simpson, British Columbia, recalled that, during his childhood the Haida traded with the Hudson's Bay Company. Later on, Haldane became a fur trader and sold furs to a trading post operated by the Goldstein family in Juneau:

In 1915, I started to buy furs for white people; but they did not go strong for trapping, the white race, until they paid \$10.00 dollars for one mink in 1940. That was a good price (George Edward Haldane, in U.S. Department of the Interior 1944:514).

The fur trade was a traditionally lucrative enterprise for the Haida, who had access to sea otters.²⁴ In the late 1800s, a sea otter pelt could sell for as much as \$800:

The Natives living adjacent to the ocean find lucrative employment in hunting the fur seal and sea otter. This is especially true of the Hydahs, who live near Dixon Entrance, of the Sitkans, who live on Norfolk Sound, and of the Hoonahs, who live on Icy Strait. These all have access to the ocean where the seal and sea otter are found. When a sea otter is seen he is quickly surrounded with canoes and speared or shot by Native experts. A single otter skin brings from four to eight hundred dollars... Bear skins would bring from five to forty dollars apiece according to their quality (Jones 1914:74).

Charles Webster Demmert, who was born at Shakan in 1880, recalled 3 primary locations at which Haida and Tlingit conducted trade: in the Bear Islands, at Edna Bay, and on the Stikine River. He also remembered accompanying his uncle on numerous trading trips to Juneau and Seattle at the end of the fur trade period (Charles Webster Demmert, in U.S. Department of the Interior 1944).

²⁴ In the spring of 1794, Captain Roberts of the *Jefferson* traded with the Haida and reported that at Kaigani on Dall Island the Haida chief brought him 1,146 sea otter skins which he immediately purchased (Gibson 1988). Commander L.A. Beardslee (1879-1885) discussed the value of the pelts in 1880. The Hoonah tribe, he recorded, killed 127 sea otters during the spring of that year and the fall hunt would increase the total to 200. According to Beardslee, these skins were worth \$50 to \$200 apiece (Beardslee 1882).

When fur trading started to collapse,²⁵ the Haida quickly converted to new activities, and by 1835 were supplying coastal forts of the Hudson's Bay Company with potatoes (Cole and Darling 1990):

With the disappearance of the sea otter, the Haida, with great foresight and judgment, began the cultivation of the potato, which was first introduced among them by an American ship captain. Dunn (1834) says: "I have known from 500 to 800 bushels being traded in one season from these Indians (Haida) at Fort Simpson." It is not unusual now to see fleets of canoes coming in from the Queen Charlotte Islands bringing potatoes, etc., and towing new canoes to trade or sell (Niblack 1970:338).

The Maritime Fur Trade Period

The Russians were the first Euro-American group to trade for sea otter furs with the Northwest Coast Indians. In 1742, hundreds of sea otter pelts purchased from the Northwest Coast Natives were sold later for handsome prices in northern China: "From 1743 to 1800 one hundred ventures obtained more than 8,000,000 silver rubles worth of 'soft gold'" (Makarova 1975:209-217, cited in Gibson 1992:13).

In 1799, the Russian-American Company was formed to develop and administer Russian-America. The Russians depended upon the Northwest Coast Indians to provide large quantities of pelts. These pelts were shipped back to Russia and sold to the Chinese:

More important was the long haul for Russian furs from the coast across the North Pacific and Eastern Siberia to the Mongolian frontier at Kyakhta, one of the only two border crossings where Russia was permitted to traffic with China (Gibson 1988:378).

Because the Russian-American Company could not match the goods or prices offered by their competitors—primarily the Hudson's Bay Company—they were unable to secure commerce with groups south of the Alexander Archipelago:

In 1839 Gov. Ivan Kupreyanov reported from Sitka that "year by year I see the Tlingit drawn more and more from our territory to English frontier" (U.S. National Archives 1802-1867, roll 42:403v., 446; cited in Gibson 1988:378).

American traders reportedly supplied the Tlingit with gunpowder, shot, and muskets and incited them against the Russians:

They [the Tlingit] destroyed Sitka itself in 1802 and threatened it as late as 1855, and periodically they killed the Russian-American Company's native hunters (Khlebnikov 1976:145).

The Tlingit were never completely pacified by the Russians, whose warships could seldom reach the main Indian villages far up the

²⁵ The maritime fur trade began its demise shortly after 1815, when trade shifted from sea mammals to land mammals. According to Gibson (1992), by the end of the 1820s land furs outnumbered sea furs.

tortuous inlets and “canals.” Thus, Russian participation in the maritime fur trade of the Northwest Coast did not extend south of the Alexander Archipelago (Gibson 1988:378).

When Spanish vessels first penetrated the waters of the Pacific Northwest in the 1770s (Juan Perez, commanding the *San Diego*, reached Langara Island in July 1774 and initiated the Spanish fur trade with the Haida), they entered “the pelagic mammal trade of the Northwest Coast” (Swagerty 1988:356). However, the Spaniards continued to obtain most of their sea otter skins from the California coast and introduced sea otter pelts into the Orient in the 1730s. In order to succeed in international commerce,

Spain enlisted as trading partners several Northwest Coast groups, including the Haida and Nootkans, who in turn traded with other coastal and inland groups within the Pacific-Plateau system (Fisher, cited in Swagerty 1988:356).

The Spaniards never succeeded at dominating their Native trading partners. They were impressed by the commercial aptitude of the Northwest Coast Indians, particularly the Haida, who were the best dealers of all and knew exactly how to dictate the terms of trade:

In the pre-industrial, pre-capitalist environment, Natives rather than Europeans dictated the terms of trade. It was quite common for Native traders to demand 100 percent more in goods per fur, only a year after first contact. At Nootka, for example, one piece of copper yielded 10 skins in 1786. By 1792, when 21 ships anchored to trade along the Northwest Coast, the rate of exchange was one piece of copper for each pelt, leaving one Englishman to conclude “we found to our cost, that these people... possessed all the cunning necessary to the gains of mercantile life” (Meares 1790:141-142).

Furthermore, the coastal groups knew high-quality iron and premium quality textiles and would not settle for less. Although this pattern lasted only until the 1820s, when the Hudson's Bay Company gained control of the land-based coastal traffic, no other trade relations in the annals of the West were ever so balanced as those of the Northwest Coast (R. Fisher 1977:1-23, cited in Swagerty 1988:356).

The British started trading with the Nootka in 1778. They bought sea otter pelts, which they later sold in Guangzhou (Canton). American trading vessels entered the trade competition along the northwest coast in 1788. The pelts they purchased from the Northwest Coast Indians were also sold in China:

After three weeks they made port in the Hawaiian Islands and continued to the Portuguese colony of Macao, where a licensed pilot was hired and an official permit was secured that allowed the ships to proceed to Whampoa Roads, the anchorage for all foreign merchantmen. From Whampoa the cargoes were lightered in chop boats a dozen miles upriver to Canton itself and stored in the large

warehouses that were rented from the security merchants (Meares 1790, cited in Gibson 1988:381).

During that period, the Northwest Coast Indians, particularly the Haida, tried to maintain their asking prices for sea otter pelts as high as possible. By 1792, when sea otter numbers were starting to decline in Nootka Sound, Euro-American traders shifted their commerce to Kaigani Harbor at the southern tip of the Alexander Archipelago. In 1799, Euro-American traders met upward of 2,000 Haidas at Kaigani. The commerce with the Haida was exciting and very competitive:

The Indians were just as eager to trade as the Euro-Americans. Apparently the Haida exceeded other northern Indians in 'keenness in trade'... In the middle 1830s the Kaigani Haidas were considered "the most difficult Indians on the coast to deal with," probably because they were in the best location for upping the bidding among competing Russian, American, and English traders (Work, cited in Gibson 1988:382-383).

In 1821, George Simpson became governor of the Hudson's Bay Company territory in North America. A decade later, in May 1831, the company founded a post at Fort Simpson, at the mouth of the Nass River, and hosted trade fairs there every summer. The Hudson's Bay Company was determined to obtain furs from the Indians, even at high prices:

Again in 1837 the Hudson's Bay Company resolved "to get the furs at any price or at least raise them so high that any which may fall into the hands of our Opponents will yield a loss or at least no profit," this being "considered the only means by which the Coast can be kept clear of Opponents" (Hudson's Bay Company 1831-1866:10, cited in Gibson 1988:381).

New Trading Centers and New Trading Fairs

The increasing movement of products as well as the volume of products traded allowed the establishment of new trading centers and trade fairs. As noted above, the Haida were renowned for undertaking long trading voyages in their large canoes, as long as prices were competitive:

Time and distance are unimportant factors in a bargain. If 200 miles farther on the price paid for a commodity is considerably greater, the distance is reckoned as nothing in going there to get the difference (Niblack 1970:337).

The Kaigani Haida embarked on trading journeys to the Nass River in spring and early summer. The trade fair at Fort Simpson, at the head of the Dixon Entrance, was reputed to be "the great emporium of trade for the surrounding region," and was attended by the Haida and Tsimshian (Niblack 1970:337). Approximately 14,000 people reportedly visited the fair each year (Niblack 1970).

Fur trading, mainly in beaver pelts and other land mammal furs, did not interfere with the trade of traditional food items like eulachon, which was harvested and processed each spring by the Nishga.²⁶

Indeed they (the Tsimshians) were so preoccupied with catching and trading oolachen to visiting Haidas, whose “vast number of canoes” left the Nass “loaded with dried Shrow²⁷ packed in boxes,” that they did little fur trading (Gibson 1992:231).

According to Gibson (1992:233), in the early 1840s the Tsimshian produced more than 30,000 gallons of eulachon oil, which was transported to Fort Simpson for trade.

In the early 1780s, Kaigani Harbor, at the southern end of the Alexander Archipelago, became the preferred American and British fur trade center:

Lieutenant Simpson reported in 1828 that the part of the coast “most visited” by American trading vessels was that between Dixon Entrance and Queen Charlotte Sound. The chief rendezvous, he added, were still Kaigani (especially) and Tongass (on Annette Island at the entrance to Clarence Strait), where the only two tribes considered friendly to the Americans were found.... As late as 1835 Kaigani was still the first port of call of American captains, whose “extravagant” prices, however, made the local Haidas the “most difficult Indians on the coast to deal with” (Gibson 1992:206-207).

In the early 1840s, Fort Stikine (later Wrangell) was established by the British and became another major post used by the Tlingit and the Haida of Prince of Wales Island (Langdon 1977). Fort Victoria opened in 1843, and from the 1850s to the 1870s attracted many Haida traders. In 1869, the Hudson's Bay Company established a trading post at Masset, which operated until 1898 but which never altered the trade of the Haida with the Tsimshian at Fort Simpson (Blackman 1981:24).

Trade Relationships

During the early period, the Haida applied principles of their traditional social structure when forming trade relationships. According to Blackman:

Trade with non-Haida was conducted sometimes under the prospective auspices of a formal relationship established between two chiefs of equivalent moieties (Tlingit) or phratries (Tsimshian), which established a bond of brotherhood between the two individuals, their lineages or clans and heirs, and prohibited warfare between them (Blackman 1990:246).

²⁶ The Nishga were a Tsimshian group who controlled the fishing sites and trade fair held at the mouth of the Nass River (Langdon 1991).

²⁷ Eulachon.

For example, the Haida made frequent visits to the trading post at Victoria. In order to strengthen his relationship with the traders, a Kaigani Haida chief from Howkan married his niece to a Victoria trader (Langdon 1977:139).

The Haida demonstrated their business acumen by attempting to control supply in the fur trade market. From the beginning of the maritime fur trade on the northern Pacific coast, a few Haida traders who had contact with trading vessels attempted to monopolize that trade in order to maintain high fur prices. To do this, they became middlemen between Indian suppliers and Euro-American buyers, trading Euro-American goods for furs from the more remote tribes and later selling those furs to trading vessels for great profit:

In the fall, after salmon fishing, the Haidas canoed across Heceta Strait and bartered Euro-American goods to mainland Indians at a profit of 200 to 300 per cent... In 1799 Captain James Rowan of the *Eliza* discovered that not one-fiftieth of the skins that were available at Kaigani had actually been hunted by the local Haidas; they acquired the “mass” of them from an “eastern mine” for only half the price that they received from shipmasters... At Fort Simpson Chief Trader Work acknowledged that “most of the furs these [Tsimshian, Haida, and Tlingit] people get are obtained in traffic” with interior Indians (Gibson 1992:133).

Haida and Tlingit intermediaries kept secret the location of their suppliers and warned the ship captains of the danger they would face by sailing in perilous waters and meeting with supposedly treacherous Indians. Cocklane's Harbor, north of Mitkof Island, was one place where the Haida obtained the bulk of their skins. They also purchased furs from another tribe in the area:

The Atahualpa learned in the middle of March 1802 that the Haida chief Cocklane bought furs from another tribe nearby for two fathoms of cloth or one blanket per pelt and then sold them to American vessels for as much as five blankets each (Gibson 1992:133).

Cultural Tastes and Preferences for Non-Local Food

Trade in certain items was tied to culturally-derived tastes. According to Boelscher (1988:73), the Haida traditionally categorized and valued food as “high-class food” or as “low-class food.” “High-class food” included 1) the meat from large animals, which could be used to feed a large number of persons and was distributed during feasts or potlatches; 2) food such as berries and salmon that demonstrated “the co-operation of lineages as resource corporation;” and 3) scarce foods such as herring spawn on kelp (Boelscher 1988:73). The distribution of these “high-class food” items through people within and without the community demonstrated “providence and industry” (Boelscher 1988:73) and therefore validated the high rank of the provider. On the opposite end of the scale, “low-class food” included seafood “scrounged off the beach,” such as shellfish, small birds, and small mammals.

Historically, Indians throughout the northwest coast particularly enjoyed and valued eulachon grease and herring spawn on kelp as specialty foods. Because the demand for these seasonal specialty resources was so important, the tribes with access to these quality food items harvested a surplus to trade for resources they lacked and that were equivalent in quality to their own

products. This was the case with the large quantities of herring spawn on kelp that the Kaigani Haida traded to the Tsimshians for eulachon oil. Not to possess such high quality items was considered a sign of poverty.

Prior to western contact, sea otter pelts were highly prized items among the coastal Indians²⁸ and used to make luxurious robes worn only by chiefs and nobles. Otter pelts were objects of beauty, wealth, and prestige and were traded up and down the coast, particularly for scarce and specialized items such as dentalia (*Dentalium spp.*) shells.²⁹ When the arrival of the Euro-American traders further developed the maritime fur trade, instead of having to begin a new activity, the Indians had only to intensify a traditional occupation (Gibson 1992:8).

Following western contact, Northwest Coast Indians continued their active and voluminous intertribal trading and also began trading with Euro-Americans for manufactured goods. These new items—such as metal, textiles, firearms, ammunition, blankets, food, copper tea kettles, alcohol, tobacco, spoons, scissors, mirrors, combs, and handkerchiefs—were introduced to the trade market and further intensified the trade networks of the northwest coast. Hudson’s Bay Company records from 1849 to 1866 documented the variety of items offered in exchange by the Haidas:

Records from the post during the 1855-56 year, for example, indicate that in addition to land otter, bear, marten, mink, and a few sea otter furs, herring spawn, dried halibut, and potatoes were traded by the Haida (Blackman 1981:22).

When the sea otter population declined, Euro-American traders shifted their commerce to alternative coastal products, like timber, provisions, and curios. Haida, adapting to the shift, started to grow and sell potatoes³⁰ to American sailing vessels and trading posts.³¹ Trade with Euro-Americans not only introduced new products to the northwest coast, they also fueled the taste of the Indian people for these new items: “New goods and new ideas were adapted by the

²⁸ “Before the advent of the whites, wealth consisted in the possession of sea otter skins, hunting and fishing grounds, slaves, and household and personal property, such as dance paraphernalia, household furniture, hunting and fishing implements, canoes, houses, and articles of trade. Practically, however, the unit of value was the sea otter skin, as it was also the basis of wealth. As the Haida were the most expert hunters of this animal in this region, they became in time the most wealthy and influential people on the coast...Amongst the coast Indians themselves, as stated, the sea otter skin was the basis of exchange, although the shell currency seems to have had a relative value. This latter lost its function when the whites began to import such quantities of shell later on” (Niblack 1970:334).

²⁹ “Dentalia shells - *haiqua* - were one of the most popular and widespread articles. They were round and hollow, from one to four inches long and half an inch thick, slightly curved and tapered, milk white, very hard, light, and fragile. They were graded into long, medium, and short sizes (the longest were the most valuable) and traded in cedar bark packets or fathom-long strings (the fixed standard was forty to a strung fathom)... They are very particular in selecting these shells; and I have occasionally seen a prime Sea Otter skin given for one in which I could scarcely discover a shade difference from others, of which 100 would not command a skin” (Gibson 1992:9).

³⁰ Trade of food items with Europeans started when explorers and traders first arrived on the northwest coast: “These early explorers began an active trade with the Tlingit and the Haida because of the Europeans need of fresh food and water” (Langdon 1991:14). Still later on, most of the food consumed in the forts, such as Sitka, Simpson, and Langley, was provided by the Indians (Cole and Darling 1990).

³¹ “When the Reverend Green visited the Haidas in 1829, he found them offering for sale not only potatoes but also “‘slate-stone’ (argillite) pipes, ‘grass’ (reed) hats, fish, fowl, eggs, and berries, besides furs” (Gibson 1992 246).

Indians to suit their own needs, and they stimulated the development of their culture” (Gibson 1992:269).

In the early 1800s, trade with Euro-Americans brought more material prosperity to the Northwest Coast Indians and strengthened the positions of leaders like Chief Kow of the Kaigani and Chief Cunneah of the Haida. Intensified potlatching activity was one result of increased trading activities on the northwest coast. The potlatch was a way to display an abundance of high-value objects not directly available to most Indian groups, and further stimulated Haida and Tlingit coastal trading activities. New materials, new ideas, and new food items never supplanted Native products, however, and basic Haida culture continued to evolve during this period:

The maritime fur trade brought the Indians not only to the outer coast but beyond to the world at large. Just as the Nor’west trade revealed the basic geography of the coast to Euro-American public and publicized its other resources, particularly timber and fish... so did it reveal the wider world to the Indians.... They were, so to speak, “cosmopolitanized,” being taken aboard the ships as pilots, interpreters, and passengers on the coast and as tourists to the Hawaiian Islands, Canton, and Boston. As early as 1792 Captain Caamano was amazed at the degree to which the Haida chiefs of Parry Passage, including Cunneah and his son, had become accustomed to European conventions and inventions. “They wandered all over the ship (the *Aranzazu*),” he reported, “without showing wonder at anything, nor was there any object of which they did not appear to know the use, until 9 o’clock, when I had them to supper with me. They ate of all that was on the table, showing no sign of dislike of anything, or wishing first to taste it; and were more at home in the management of fork and spoon than any Spanish squireen (pretty squire). They drank wine and spirits at first sight; and altogether, their behavior seemed to point to a considerable intercourse with Europeans.” Caamano added that they bore “comparison with the character and qualities of a respectable inhabitant of ‘Old Castile’” (Gibson 1992:272).

CHAPTER 2. TRADITIONAL HARVESTING OF HERRING SPAWN ON *MACROCYSTIS* KELP

Elder residents of Hydaburg interviewed in 1992 said they had been harvesting and eating herring spawn on *Macrocystis* kelp all their lives. Residents harvested herring spawn on kelp before western contact, and they have continued into the 20th century. Residents have harvested and processed herring spawn on kelp for personal and family consumption, sharing, bartering, and trading.

Historically, herring spawn on kelp added variety to the diet and was a prized food. It was eaten fresh or reconstituted from dried or salted. Harvesting herring spawn on kelp was a group activity, usually conducted by members of a family, and usually involving large numbers of people. Harvest areas were near, or reasonably accessible from, the village. Fish Egg Island near Klawock has been an important herring spawn-on-kelp harvest location for the Tlingit and the Kaigani Haida for nearly a century (Langdon 1977). As a key respondent in Hydaburg recalled:

Years ago, when we went to Fish Egg Island to harvest herring eggs, people came from Klawock, Craig, and Hydaburg, and everybody, including the children, gathered on the island, and it was like a big happy time (Victor 1992).

Respondents considered the period of harvesting herring spawn on kelp to be a time of happiness:

I remember we used to go to Fish Egg Island when I was a little girl; everybody would go out and get herring eggs, as much as they needed. Then, after the harvest, we used to have a big picnic on the beach. Some families camped right there, others slept on their boats. My grandmother had a brother who lived in Craig and we stayed at his place. It was a very happy time for everybody. Also, we were all together, it was a time when we visited with relatives and friends of other communities (Victor 1992).

For the Kaigani Haida, herring spawn on kelp was the first fresh resource of the year, and its harvest began the subsistence harvesting season. It was consumed by the community, or exchanged with communities that did not have access to it. The early springtime arrival of spawning herring and the harvest of herring spawn on kelp occurred when many winter food stores were depleted.

This chapter describes the harvesting patterns of herring spawn on *Macrocystis* kelp by the Kaigani Haida living on the southwestern part of the Alexander Archipelago, from the pre-contact and early contact period through the 1950s. Historical harvest locations and herring spawning patterns are also described, including when and where spawning occurred, its duration, and when herring spawn on kelp was suitable for picking. Additionally, this chapter discusses the segments of the population that harvested herring spawn on kelp, traditional Kaigani Haida harvest methods, and historical methods of preservation and utilization.

LOCATION AND TIMING OF HARVEST

Herring Spawning Habitat

After they reach maturity, spawning herring lay adhesive eggs. Most of these egg depositions are directed at aquatic vegetation, rocks, or along sandy beaches. Females seem to deposit eggs more often on solid surfaces rather than broadcasting them loosely in the water. Generally, the surfaces used for spawning are living plants, one of which is the *Macrocystis integrifolia* (Reid 1972:5).

Some offshore areas of Southeastern Alaska have a moderate to heavy density of aquatic vegetation, which include different species of macroalgae. Of these, *Macrocystis integrifolia*, a giant kelp that can reach 11 yards in length, grows in intertidal and subtidal regions. The narrow blades of *Macrocystis* are approximately 16 inches long, with a gas-filled float at the edge of each blade. Naturally-occurring beds are located in certain bays, inlets, and in somewhat protected waters.

Harvesting and Spawning Areas

Harvesting areas for herring spawn on kelp were near to, or reasonably accessible from, the community of Hydaburg. Herring spawn on *Macrocystis* kelp is harvested from naturally-occurring kelp beds. Residents of Hydaburg historically harvested in Dunbar Inlet,³² on the western side of Sukkwan Island, and south of Kellogg Point. Dunbar Inlet, about 6 miles from Hydaburg, is easily accessed by skiff. Herring spawn on kelp was also harvested from the waters adjacent to McFarland Island, across Dunbar Inlet. A third area was near Corlies Island, 3 to 4 miles north of McFarland Island. According to Hydaburg residents, the spawning in that area was particularly heavy in the 1950s. One key respondent recalled that Dunbar Inlet was a good spawning location for approximately 20 years. However, the spawning area seemed to alternate between McFarland Island and Dunbar Inlet. In some years, McFarland Island had a better spawning event than Dunbar Inlet, and vice versa.

The Craig-Klawock area was another historical spawning place, with herring spawn in that area sometimes distributed over 30 miles. A key respondent in Hydaburg recalled that an “average” herring spawn spread from 13 to 20 miles. However, the spawn was rather patchy in some years, and more uniform in others. According to key respondents, in some of the past 50 years, the abundance of spawn in the Craig-Klawock area exceeded the abundance of spawn in Sitka Sound.³³ The waters near Meares Island, (north of Tlevak Strait and south of Waterfall), Jackson Passage, (south of Sukkwan Island), and the waters adjacent to Blanket Island on the east side of Sukkwan Island were known to residents of Hydaburg as additional herring spawning areas. However, the spawning area near Blanket Island was much smaller than the others and there were no *Macrocystis* kelp beds. Herring also used to spawn on *Macrocystis* kelp near Jumbo Island, north of Hetta Inlet, and in the vicinity of Shipwreck Point, south of Kassa Inlet. Once (in the last 50 years) in the Craig-Klawock area, the herring reportedly spawned only on beaches, instead of on *Macrocystis* kelp beds.

³² The shore of Island Bay, at the entrance of Dunbar Inlet, was the site of a Native settlement.

³³ Sitka was known as the herring spawn-on-kelp capital of the northern portion of Southeast Alaska; there were years when the spawn in Sitka Sound was distributed over 70 miles (Schroeder and Kookesh 1990). Historically, Auke Bay was a third area in Southeast that had an abundant and lengthy spawning event.

Macrocystis kelp used to be particularly abundant in the area between Island Bay and Dunbar Inlet. The harvest there was considered excellent and the spawn characterized as “heavy.” A key respondent in Hydaburg recalled one season (in the last 50 years) when local commercial harvesters gathered 100 tons of herring spawn on kelp in that area.

Spawning Period

In general, herring in this area are mature when they reach a length of 8 inches (185 mm), or some age-3 and most age-4 herring (ADF&G 1992a). According to Victor Doherty, an ADF&G fishery biologist in Ketchikan at the time of this study, an average-sized female herring produces about 20,000 eggs per spawning. The eggs hatch after incubating for 12 to 20 days.

Respondents indicated that schools of Pacific herring usually approached the coastal waters near Hydaburg in mid-April, when they aggregated along the beaches and mature fish³⁴ would lay narrow bands of adhesive eggs onto solid surfaces. Thirty miles north of Hydaburg, around Fish Egg Island,³⁵ herring typically spawned earlier, during the last 10 days of March: according to a key respondent in Hydaburg, within a few days of March 20, 1992, the herring started to spawn in the Craig-Klawock area.

Biologists report that spawning events are significantly influenced by water temperatures. However, waters in the Craig-Klawock area do not appear to be any warmer than waters near Hydaburg. Historically, the herring usually spawned in the Craig-Klawock area first, and then, from a few weeks to a month later, in the Hydaburg area. Overall, spawning events historically followed this sequence: the first herring spawning event occurred in the Craig-Klawock area, then, shortly afterwards, another event occurred in Dunbar Inlet. The next spawning events occurred in Sitka Sound and in Kah Shakes, followed by Auke Bay, Seymour Canal, and Port Camden, where the spawning occurred in May. According to a key respondent in Hydaburg, one year at Shipwreck Point, the herring spawned as late as June.

Knowledge of When the Herring Spawned

According to respondents in Hydaburg, the spawning time of herring was very regular. Over the past 100 years, this spawn event reportedly occurred between April 14 and April 18. When herring arrived, hundreds of sea lions, hair seals, whales, and thousands of sea gulls and other waterfowl invaded the spawning areas. Chinook salmon (*O. tshawytscha*) and halibut also moved into the spawning areas. Birds, marine mammals, and fish preyed on herring. The surface of the water boiled as the herring leaped from the water to escape their predators.

In most years, hailstorms were common during spawning events, as were cold temperatures and a rather pale sky. “Fish egg weather” was the expression used to describe the weather during the herring spawning event. Also at that time of year, a large tide series was approaching. The herring usually spawned during that special high tide, at which time the water became discolored, turning milky from the spawn of thousands of fish. People knew that harvesting time was close.

³⁴ After they reach sexual maturity, Pacific herring normally spawn every spring. In Alaska, they typically spawn for the first time in their fourth year of life (Reid 1972:5).

³⁵ This area is called the “Craig-Klawock spawning area” by the residents of Klawock, Craig, and Hydaburg.

Duration of the Spawning

In the past, herring spawned in the Hydaburg area over a period of 2 to 3 weeks. According to a Hydaburg respondent, the spawning period lasted longer in the past than at the time of this study and herring moved from one spot to another during the spawning event. Residents harvested in each of the spawning areas, and harvesting commonly lasted about 15 to 20 days.

According to respondents, people did not harvest the first of the herring spawn on *Macrocystis* kelp: instead, they waited for a few days. Sometimes, several herring schools spawned in succession. The duration of the spawn could vary from a 2-day period to a maximum of 3 weeks. However, herring spawn on kelp was suitable for picking after one or two days. Some people used to wait 3 to 5 days, but never more than 5 days to initiate harvest activities. After 5 days, the eggs began “to eye up” and turn brown as the embryos developed, and thus were no longer desirable.

Infrequently, a “false spawn” developed, when male herring released milt but very few females released eggs. Another spawn could follow it, but usually the resulting product was not high quality, because the eggs from the first spawn matured under the new, fresh layer of eggs, and spoiled the new layer. If a second spawn followed immediately after the false spawn, however, the harvest was still considered to be of good quality.

HARVESTERS AND HARVESTING METHODS

Local Harvesters

Respondents said that every household in Hydaburg harvested herring spawn on *Macrocystis* kelp in the recent historical period. During the early 19th century, Haida household units numbered from 20 to 50 people (Blackman 1990); in the 20th century, household units contained nuclear or extended nuclear family groups (see Chapter 3). Elder respondents in Hydaburg recalled that, during their lifetimes (since the early 20th century) men, women, and even children participated in the harvest:

Everybody was picking herring eggs on kelp, men, women, children. Everybody who possessed a skiff joined the harvest and since we had no road almost everybody in town had at least a small boat (Victor 1992).

Occasionally, a few people came from Craig and Klawock to harvest in the Hydaburg area. In general, however, since a spawn also occurred in the Craig-Klawock area, the trip was not needed. The only other non-local harvesters came from Ketchikan.³⁶ During the 1950s, more people from Ketchikan, as well as several other Southeastern communities, began to travel to Hydaburg to harvest herring spawn on *Macrocystis* kelp. According to respondents, during the harvest, the public school was closed so that children could participate in the harvesting.

Herring spawning areas were open for use by other Haida early in the 20th century. According to respondents, Kaigani Haida living in traditional settlements on the Alexander Archipelago were allowed to collect herring eggs, including herring spawn on *Macrocystis* kelp, from any spawning grounds. This differed from the traditional Haida system of allocating resource sites

³⁶ Kasaan people traditionally harvested herring spawn on kelp in their own area of Kasaan Bay and did not need to come to Hydaburg harvesting grounds.

according to lineages within Haida society (Blackman 1981, 1990; Langdon 1977). The open access system was common for most resources during the 20th century; although people still may acknowledge the prior rights of clans or lineages to particular areas, they no longer are limiting access.

Methods of Harvest

People waited until sufficient spawning had occurred before initiating the harvest. Harvesting of herring spawn on *Macrocystis* kelp was done from canoe or skiff, or, when the kelp was accessible at very low tide, by hand. Kaigani Haida used gaff hooks or rakes to grasp the stem of the kelp below the surface of the water. When retrieving the plants covered by eggs, harvesters were careful to avoid breaking the fronds and damaging the spawn. Harvesters first selected the whitest kelp in the water, which was kelp covered by many layers of eggs. Then they pulled it to the surface with a rake and started to carefully separate each leaf from the stem, starting from the top of the plant. Each leaf was placed flat on the benches or floorboards of the boats, to let the water drain. In order to protect the kelp from damage, careful harvesters used their hands, instead of knives, to separate the leaves from the stems.

In the early 1900s, when residents were engaged in commercial salmon fishing, hand troll³⁷ and seine boats³⁸ were also used to access harvest areas. This was especially true when Hydaburg residents harvested herring spawn on kelp in the Craig-Klawock area. These boats pulled several skiffs at once, and families, including children, would board the larger vessels. During the harvest, Hydaburg residents who used large boats to reach Fish Egg Island either lived on board the boat or camped on the beaches; sometimes they built improvised shelters. Families that owned skiffs lived in more permanent camps:

When I was a kid, the harbor (at Hydaburg) was entirely occupied by the local float of seiners and hand trollers and when harvest time arrived these boats towed several skiffs behind them. They took families and children on board. They lived on board during the time of the harvest and also sometimes they camped on shore. Entire families used to camp on the beach along Fish Egg Island. With a seiner boat you could reach Fish Egg Island from Hydaburg in less than an hour. It's a 32-mile run (Victor 1992).

When selecting a kelp bed, harvesters chose one that was not contaminated by sand or mud:

³⁷ “The 3 methods for taking salmon that have been predominant in the Prince of Wales Archipelago during this [the 20th] century all took form during the first two decades of the century. The first was purse seining from an independently-powered vessel, the second was the floating trap, and the third was trolling from an independently-powered vessel” (Langdon 1977:239).... “After the turn of the century, trolling entered the commercial sector in full force” (Langdon 1977:242).

³⁸ Purse seines appeared on the west coast of the Prince of Wales Archipelago in the mid-1890s. “Even after purse seines were introduced, the purse-seine vessels lacked independent power and continued to be towed about the steamers (tenders) to various locations. In 1900 the first gasoline-powered tender appeared on the west coast of Prince of Wales to work for Hunter’s Bay” (Langdon 1977:227-228). Purse seining with independently-powered vessels, either from Puget Sound or built locally, began in 1910 to 1915. “The opportunity to become captain of an independently-powered vessel appears to have been a major cause of the boom in the building of powered seine boats by west-coast natives in the 1910s, 1920s, and 1930s” (Langdon 1977:240).

Sometimes, when the weather was too rough we were not able to harvest any herring eggs on kelp, because the eggs attached to the leaves were dirty with mud and sand. Kelps grew on rocky and sandy ocean bottom and during stormy weather the sand moved around and covered the eggs (Victor 1992).

Key respondents in Hydaburg said the amount of herring spawn on kelp harvested by one household varied from 200 to 300 pounds to approximately 10,000 to 15,000 pounds, depending on household size; the amount of herring spawn on kelp that was intended to be given, bartered, or traded; and the amount needed in anticipation of upcoming potlatches.

HANDLING, PRESERVING AND CONSUMPTION

Methods of Preservation

In the pre-contact and early contact periods, drying was the most common preservation method used by the Kaigani Haida to prepare herring spawn on *Macrocystis* kelp for storage. Kaigani Haida generally returned home with their harvest and placed the fronds covered with eggs on tree branches, outdoor racks, clotheslines, porches, or over mats or rocks. They turned the leaves daily to ensure complete drying. Hilary Stewart, best known for her research on the flora of the Pacific Northwest coast, also gathered information on their fishing technologies. In the spring of 1975, while on the Queen Charlotte Islands, she observed the methods of harvest and preservation of herring spawn on kelp and on branches used by Skidegate residents:

In the village of Skidegate long lengths of seaweed creamy amber with spawn hung from nearly every porch and sun deck; racks and clothes lines in gardens and carports were festooned with it. Some of the kelp was draped over the lines, but much of it hung down full length, held at the top with clothes pins, blowing freely in the breeze. The owner of the large hardware store in Charlotte City said he hadn't a clothes pin left in the place.

In the old days, spawn-covered branchlets were hung in the sun on racks or lines, or spread out on mats and turned frequently to ensure complete drying all over. In some areas the branches were taken down and the spawn wiped off and scattered on mats to finish drying (Stewart 1977:147).

In the spring of 1992, a resident of Hydaburg remarked that, after 3 or 4 days, and especially during a rainy period, the herring spawn on kelp was moved into the houses for further drying: "I remember we used to put them in pillow cases and hang them close to the stove." Generally it took 3 to 5 days for the herring spawn on kelp to dry, depending on the weather: with a good wind and no rain it could be ready to store after only 2 days.

When the herring spawn on kelp was thoroughly dried, the Kaigani Haida placed it in lidded bentwood boxes for storage. According to one Hydaburg elder, these boxes were stored in the attics to protect them against humidity. Later on, the herring spawn on kelp was stored in regular wooden boxes.

Kaigani Haida probably started to experiment with salting herring spawn on kelp in the 1870s, when a Scottish trader, George Hamilton, established what is recognized as the first commercial salmon saltery in Klawock. The saltery operated in Klawock until 1878, when the San Francisco-

based North Pacific Trading and Packing Company purchased it and built one of the first salmon canneries in Alaska (Langdon 1977). About the same time, Charles Vincent Baronovich,³⁹ an Austrian nobleman, opened a saltery at Kasaan Bay, near Karta Bay on the west coast of Prince of Wales Island. In the 1880s, James Millar opened a saltery at Nichols Bay on southern Prince of Wales Island near Chacon Point (Langdon 1977:140).

However, the Russians were probably the first to use salting to preserve their fish. Langdon observed that the Russians established the first saltery in Southeast Alaska in the early 1800s. This saltery, he wrote, was “in full swing in the 1820s and was used to feed the resident Russian population, and perhaps other Russian settlements to the west” (Langdon 1977:140). The Kaigani Haida may have obtained salt from the Russians in the early 1800s, but they more likely began using salt to preserve herring spawn on kelp after the first saltery opened at Klawock. When salt became more widely available, some herring spawn on kelp was soaked in brine for 2 to 3 days, then drained and the container packed with rock salt. Salting developed as an alternative method of preservation but never completely replaced traditional drying.

Home freezers, called “cold spots” by Kaigani Haida people, were introduced to Hydaburg in the 1940s and since that time people have used them to preserve a portion of the herring spawn-on-kelp harvest. According to key respondents, in the early 1940s most Hydaburg residents were using more than one method to preserve herring spawn on kelp. If they had a freezer, they occasionally froze part of their harvest. The first cold storage opened in Hydaburg in the 1970s, when Cordova Fisheries converted its cannery into a modernized cold storage facility. However, respondents said individuals never used this facility to store herring spawn on kelp from the subsistence harvest.

Consumption

Kaigani Haida consumed some herring spawn on *Macrocystis* kelp fresh, during and shortly after harvesting time. To keep the spawn on kelp fresh for several days, they soaked the fronds in water. Sometimes, before being consumed the herring spawn on kelp was rinsed in sea water in order to remove the milt. Fresh herring spawn on kelp was also eaten with eulachon oil or seal oil. Occasionally, herring spawn on kelp was briefly simmered in water before being dipped in the eulachon or seal oil.

Dried herring spawn on kelp was occasionally consumed, but more frequently, the dried product was soaked in salt water for a day, to reconstitute its soft texture. The soaking water did not need to be changed. Then, the herring spawn on kelp was cooked for one or two minutes in salted water. After it turned opaque, the spawn on kelp was ready to eat. When cooked too long, the eggs and the kelp become tough.

Salted herring spawn on kelp was soaked in fresh water in order to remove the excess salt. The water was changed until the taste of the eggs was suitable. The spawn on kelp was then consumed in the same way as the dried product.

Frozen herring spawn on kelp was thawed and cleaned in fresh water, then cooked and consumed like the dried and salted products. Respondents said herring spawn on kelp was also fried in oil, preferably in eulachon oil.

³⁹ Baronovich married the daughter of chief Skowl of Kasaan.

Herring spawn on kelp was a scarce food item, not available to everyone on the northwest coast. According to the anthropologist Boelscher (1988), it was valued as a “high-class food,” not a “low-class food” for “commoners,” like shellfish, small fish and small birds. In order to show respect, a host had to offer to guests “high-class food,” such as scarce foods (herring spawn on kelp was available only in specific areas of the northwest coast), foods requiring many hours of labor (e.g., food from large animals like sea lions or halibut), or foods that demonstrated the cooperation of both the household and the lineage, such as salmon and berries.

Boelscher added that it was improper for a Haida person of high rank to be voracious: “As high ranking people by definition are lucky and provident, they never suffer shortages of food, thus never needed to eat very much” (Boelscher 1988:74). However, a host had to offer a large amount of “high-class food” to show respect to his guests, and by offering large quantities of preserved food the host demonstrated the labor and other costs invested in it. Herring spawn on kelp was often secured for those who did not have access to the harvesting areas by barter or trade.

Hydaburg elders confirmed that herring spawn on *Macrocystis* kelp was highly-valued as a food item. Herring spawn on kelp represented the first product harvested, and herring provided the first fresh fish of the new year as well, and Kaigani Haida greatly enjoyed eating both. Herring spawn on kelp was stored and distributed as a “high class food” item during feasts and potlatches. Finally, prestige accrued to people who had herring spawn on kelp, since this product represented a commodity which could be distributed, bartered, or traded. These topics are discussed in more detail in Chapter 4.

CHAPTER 3. CONTEMPORARY HARVESTING OF HERRING SPAWN ON *MACROCYSTIS* KELP

The objective of this chapter is to describe the contemporary harvest patterns of herring spawn on *Macrocystis* kelp by residents of Hydaburg between the early 1950s and 1992. It includes a description of the spawning times and harvest locations, and an explanation of harvesting location changes and their resulting impacts on subsistence users. It presents information on contemporary harvesters, including their methods of harvest, preservation, and use. Finally, it presents data from a harvest survey conducted in 1988 (Kruse 1988) and summarizes an analysis of the harvest survey data performed by Schroeder and Kookesh (1990).

Hydaburg residents have always looked forward to spring, when schools of Pacific herring return to spawn. According to key respondents in 1992, locations where herring spawn on *Macrocystis* kelp was historically harvested for subsistence purposes (see Chapter 2) shifted from several sites to one area: Craig-Klawock. For approximately 8 years prior to this study, the subsistence harvest of herring spawn on *Macrocystis* kelp occurred only in this area, mainly in the vicinity of Fish Egg Island. This shift in harvest location is primarily due to reductions in herring spawn in historical spawning locations closer to Hydaburg.

Because they reported harvesting herring spawn on kelp only in the Craig-Klawock area, not every Hydaburg household has been able to participate. The distance between Hydaburg and Fish Egg Island, ocean and weather conditions (one passage is particularly rough with strong currents), the cost of making several trips, the time spent traveling, and the possibility of being stranded in Craig because of weather were the major problems reported as inhibiting participation by all households.

TIMING AND LOCATION OF HARVEST

Spawning Time

According to contemporary subsistence harvesters of herring spawn on kelp, people watch for natural signs that indicate the herring are about to spawn.

You can tell by all the birds flying around when the herring are spawning, also the water gets all white. The weather is another sign. When you see hail, according to the Haida people, it is fish egg time (Victor 1992).

In a three-week period during the spring of 1992, 3 separate spawning events occurred near Fish Egg Island in the Craig-Klawock area. A first school of herring deposited their eggs and milt around March 20, and then left the area.⁴⁰ Several days later, a second school migrated into the same area, spawned, and left; and 15 days after, the final school of herring arrived to spawn. According to Hydaburg respondents, these were 3 separate herring stocks. Respondents also reported that a three-week spawning event was rather unusual for Fish Egg Island: in prior years, herring generally spawned for only one to two weeks in that area.

⁴⁰ According to key respondents, the earliest spawning event recorded in the vicinity of Fish Egg Island was March 10, and the latest around April 4.

Reasons for Changes in Harvesting Locations

Traditionally, Kaigani Haida harvested from several spawning areas near Hydaburg and Fish Egg Island,⁴¹ and therefore the harvesting effort lasted for a one-month period. As of 1992, however, the traditional areas near Hydaburg (see Chapter 2) had not been harvested for 8 years. Instead, contemporary Hydaburg residents harvested only in the Craig-Klawock area, primarily near Fish Egg Island. Since only two places are used for harvesting herring spawn on *Macrocystis* kelp—Klawock and Fish Egg Island—residents have spent less time than in the past harvesting this food product.

According to respondents in Hydaburg, changes in harvest locations result from a decline in herring abundance due to commercial herring fisheries in the Hydaburg area. They cite as an example Meares Passage, about 10 miles from Hydaburg, where herring schools overwinter⁴² and where the commercial fleet has fished intensively, and where they maintain that since the 1970s the herring population has shown signs of long-term damage. The Meares Passage stock increased in abundance until around 1987-1988, at which time the commercial herring quota increased from 1,050 tons to 2,150 tons.⁴³ Since then, respondents in Hydaburg report that the abundance of this herring stock has declined drastically.

Fishery biologists report that herring abundance is naturally subject to dramatic fluctuations primarily due to environmental conditions. Accurate predictions of the abundance of fish from year to year are difficult to make (Reid 1972:10-14). The population dynamics are also more complicated and less predictable when external factors, like harvesting and human impacts on the environment, are added (Reid 1972:10-14). According to Robert Larson, ADF&G fishery biologist at the time of this study, herring in Meares Passage were abundant in the decade preceding this study. The absence of spawning in the Dunbar area south of Hydaburg during that time may not have been related to the commercial herring harvest in Meares Passage, because there is no scientific evidence that the herring stock in Meares Passage was the one that formerly migrated and spawned in the Dunbar area.

However, Hydaburg residents continue to attribute the depletion of herring in their area chiefly to the commercial herring fisheries. Specifically, respondents associate depletion of the Meares Passage herring stock with commercial fishing:

The herring I recalled used to be plentiful, they started outside of Steamboat Bay, and spread 7 or 8 miles across the Tlingit camp;

⁴¹ According to oral tradition, Fish Egg Island coastal areas have been harvested by the Kaigani for the last 100 years.

⁴² “In the waters surrounding Prince of Wales Island, the commercial herring harvest occurs in winter and a bait fishery is directed at two separate herring stocks. They have been identified by the Division of Commercial Fisheries as the Bocas de Finas stock near Craig and the Meares Passage stock near Hydaburg” (ADF&G 1988).

⁴³ “During the 1987-1988 season, the combined harvest quota for the food and bait fishery in the Prince of Wales Island area was 2,150 tons, a substantial increase over the 1,050 ton quota for the 1986-1987 season. The 1987-1988 harvest was 1,963 tons. According to Dennis Blankenbeckler, Commercial Fisheries Division, the reason for the quota increase was that ADF&G surveys had revealed a very large year class of four year old fish that was reaching sexual maturity. The forecast was borne out by the fact that the 1988 herring spawn in the Craig-Hydaburg area was the largest ever recorded, covering 27 miles of beach. In the 1970s, the spawn was perhaps 10 to 15 miles of beach, while in the early 1980s it averaged 5 to 10 miles” (ADF&G 1988).

the entire area was a solid mass of herring. We sent petitions years after years to try to stop commercial fishing in Meares Pass. Hydaburg and other surrounding Native communities tried very hard by sending petitions to the state to stop the bait fishery in that area. But we are outnumbered and overruled. Last winter, the seiners did get a lot of fish in Meares Pass, and as a result the herring started to spawn again around the McFarland Islands; it had not happened for 15 years or more. Elders are very well aware of the abundance of herring that used to be in our waters, the abundance of all the fish and all the food.

The bait fishery has deeply hurt this whole area. You can see on the map that there are three entrances: Portillo Channel, Bucarelli Bay, and Meares Passage. Herring used to migrate through these entrances. But today the fish are almost all gone in these places. Today, herring runs are depleted by overfishing. When I was a little boy, we used to run a rake through the water to impale the herring. We were very successful in catching them. We used them for bait. But today, because the herring stock is so low in our area, we have to buy our bait in the store, in frozen packages (Victor 1992).

Residents also attribute the decline in herring abundance to instances of abusive fishing practices by some in the early part of the 20th century. During the 1944 aboriginal claims hearings, Fred Thomas, a Tlingit born in Klawock in the late 1800s, described, through a translator, the fishing techniques employed by the crew of a Petersburg fishing boat near Klawock early in the 20th century and the resulting damages to the herring stocks:

This one particular time there was a boat that came from Petersburg, and he says that this boat was owned by some Norwegians, and instead of fishing like the other men did, he says that they used powder. They blew up the bay right off this point over here. They threw powder in the bay and blew it up. An when the herring died off and came to the surface, why, he says, all that they had to do was to shovel it aboard.... Now, he says there is an island outside of Craig that is known as Fish Egg Island. He says out of the whole district of Prince of Wales Island this is the leading place for the herring to spawn.... The results of this thing that I have related, he says, is that we haven't had any herring within this bay for the last ten years. It used to be common to have herring in abundance here in this bay, but for the last ten years we haven't had any.... About the only place you find herring now is on this natural spawning ground on Fish Egg Island (Fred Thomas, in U.S. Department of the Interior, 1944:739-741).

Major commercial fishing of herring stocks began with the establishment of herring reduction plants in Southeast Alaska in the late 1800s, coincident with the decline of commercial whaling (Larson and Minicucci 1991). Herring reduction, the process by which herring are “reduced” to

fish meal and fish oil, peaked in the late 1920s and 1930s, when annual harvests exceeded 100,000 tons. Herring continued to be taken for reduction through 1966, with as much as 21,000 tons harvested in 1964. Other early commercial herring fisheries were for bait and food. Important bait and food fisheries for herring continued through the time of this study. A commercial fishery for wild herring spawn on *Macrocystis* kelp operated from 1962 to 1967, with a peak harvest of 330 tons in 1966. Commercial herring fishing for sac roe began in 1970. This fishery became a limited entry fishery later in the 1970s with the implementation of limited entry laws enacted by the Alaska Legislature. Following Board of Fisheries approval in 1990, commercial herring pound fisheries opened in Hoonah Sound and in the Craig-Klawock area, and were in the process of development at the time of this study.

In the early 1990s, commercial herring harvesters primarily used purse seines. According to Larson and Minicucci (1991), the 1989-1990 herring catch in the Southeast Alaska-Yakutat district totaled approximately 8,056 tons, which included 3,843 tons of bait herring, 4,163 tons of sac roe herring, 11.9 tons of spawn on kelp, and 38 tons of bait herring from herring pounds. In 1989-1990, approximately 18 seine fishing vessels participated in the Meares Passage/Bocas de Finas commercial fishery and harvested 3,221 tons of herring (Larson and Minicucci 1991).

In Southeast Alaska, *Macrocystis* kelp beds are found only in Districts 1 through 4 (Figure 5). *Macrocystis* kelp for the herring spawn-on-kelp fishery in Prince William Sound was first harvested from these districts in 1969.⁴⁴ Larson and Minicucci (1991) report that increased amounts of *Macrocystis* kelp have been harvested from Southeast waters since 1985. This is the result of annually increasing quotas for herring spawn on kelp in the pound fisheries of Prince William Sound.⁴⁵ In 1992, there were 3 herring spawn-on-kelp fisheries in Alaska: the Craig-

⁴⁴ “*Macrocystis* kelp is currently harvested in Southeast Alaska (where it is native) and transported to Prince William Sound (where it does not grow). The kelp is used as a substrate for the commercial roe-on-kelp pound fishery. Regulations require kelp harvesters to obtain a permit, which specifies the area to be harvested, the amount allowed, and cutting restrictions necessary to maintain healthy kelp beds. Kelp harvesting permits are not issued for traditional herring spawning beds... Prior to 1984, the demand for *Macrocystis* kelp was minimal, amounting to 5 to 15 tons annually. In 1984, the harvest jumped dramatically to about 61 tons [note: the 84 permittees requested approval to harvest 232 tons (ADF&G 1988)]. This was due to a demand for *Macrocystis* to be spread out in the wild kelp of Prince William Sound; a variation on the open pound concept. The wild roe-on-kelp fishery did not open in that year and much of the *Macrocystis* harvest ended up rotting on the beach. In 1984, the Board of Fish adopted a regulation that restricted use of transported kelp to the enclosed pound fishery of Prince William Sound. The Department also limited the amount of kelp to be used per pound” (Alaska State Legislature House of Representative Research Agency, March 25, 1988; see also ADF&G 1988).

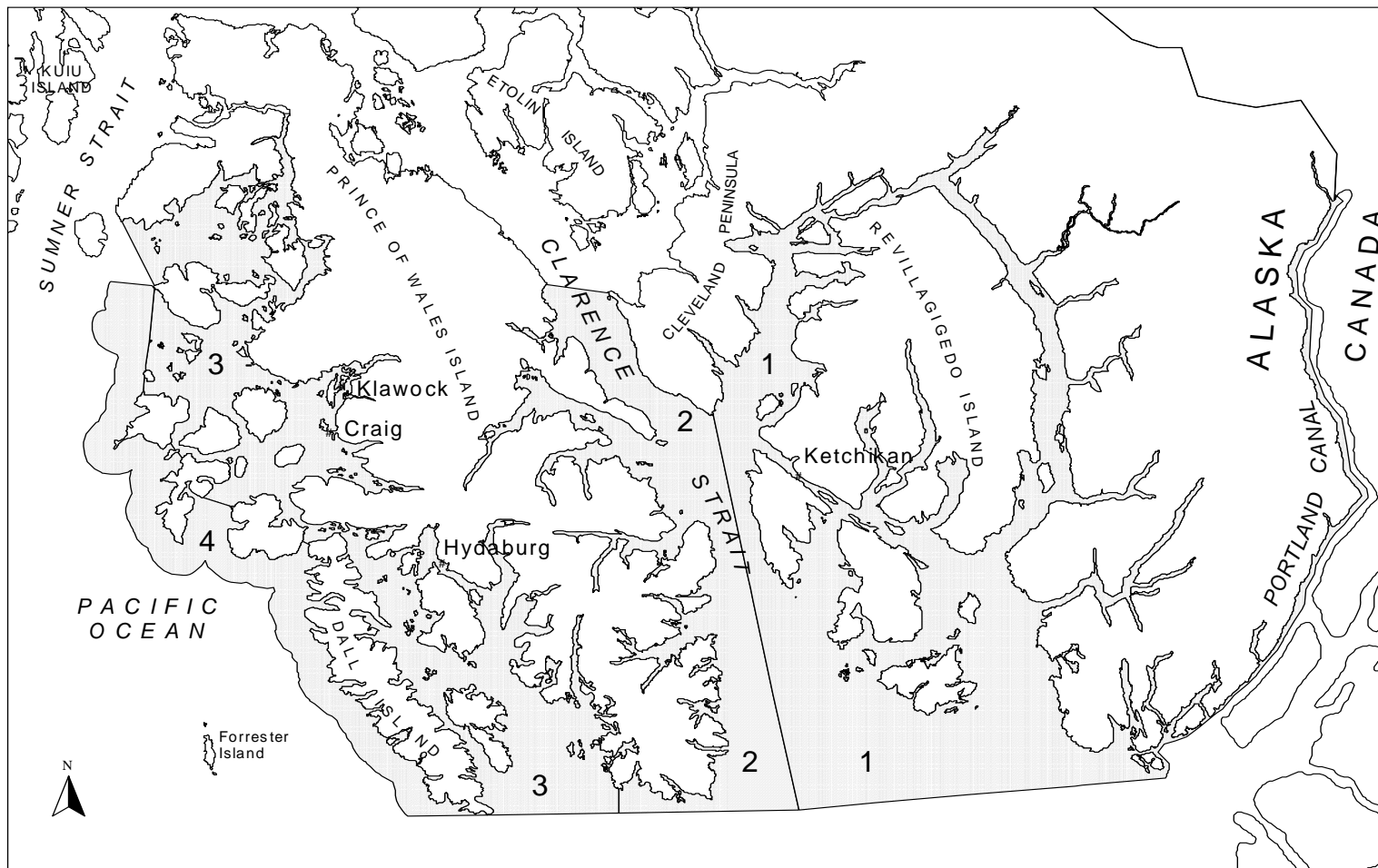
Demands sharply increased in 1984, with 84 permits issued that requested 232 tons. Preliminary estimates indicate the spread of the “wild” kelp fishery in Prince William Sound. “In 1984 the wild kelp fishery did not open and large amounts of kelp were wasted and deteriorated on the beaches” (ADF&G 1988).

⁴⁵ At the time of this report, a separate ADF&G permit was required to harvest kelp for use in the herring pound fisheries (5 AAC 37.900). The permits could be “pooled,” and one or more individuals could harvest for a group of operators. Approximately 8 tons of raw kelp is needed to produce 32.2 tons of spawn on kelp. The permit consisted of two parts: the first part authorized the harvest of *Macrocystis* kelp from Southeast Alaska for the purpose of transporting it to Prince William Sound for the herring spawn-on-kelp fishery, and the second part allowed the transport of *Macrocystis* kelp into the Prince William Sound area for production of herring spawn-on-kelp.

Klawock, Prince William Sound, and the Hoonah Sound pound fisheries. For 1992, Prince William Sound requested 33.02 tons of *Macrocystis* kelp and harvested 32.8 tons (all harvested in Districts 1 through 4), Hoonah requested 3.89 tons and harvested 3.81 tons (2.59 tons were harvested in Districts 1 through 4 and 1.22 tons in the Sitka area), and Craig requested 7.9 tons and harvested 7.8 tons (all harvested in Districts 1 through 4) (ADF&G 1992b).

In 1992, the following areas were closed to the harvesting of kelp: Section 3-A, which is Tlevak Strait north of the latitude of High Point and south of the latitude of Eolus Point; Section 3-B, which is south and east of a line from the westernmost tip of Point Lidefonso to the northernmost tip of Point Santa Rosalla to the northernmost tip of Point Santa Gertrudis to the northernmost tip of Triste Point and north of a line from the northernmost tip of Triste Point to the southernmost tip of Cape Suspiro; and Section 13-B, which is all waters north of the latitude of Rachek Island and east of a line from Shoals Point to the northernmost tip of Legma Island to Rachek Island.

To ensure the health of the *Macrocystis* kelp beds, harvest was restricted to the following methods (5 AAC 37.300): 1) *Macrocystis* kelp had to be harvested in a manner that prevented dislodging of the entire plant from the bottom and prevented straining or breaking of the plant; 2) *Macrocystis* kelp could not be cut at a depth greater than one foot below the surface of the water and only the upper portion of the plant could be retained for harvest. Kelp harvesters were encouraged to selectively cut only those portions of the plant that they retained; 3) The use of diving gear was prohibited; and 4) The areas in which herring were spawning were closed to the harvest of *Macrocystis* kelp.



"1" = Alaska Department of Fish and Game Salmon Regulatory District Numbers

Figure 5. – Southern Southeast Alaska salmon regulatory districts.

Many Hydaburg respondents expressed concern for *Macrocystis* kelp and its harvest by non-local commercial fishers during key respondent interviews in 1992:

The *Macrocystis* kelps are being destroyed. This whole area with kelp beds should be mapped. We don't know how much kelp there is. Before harvesting tons of kelp in our area and to send it to Prince William Sound some research should have been done to know exactly how much kelp there is.

Commercial harvesters come down here and take all our kelp and then they send it to Prince William Sound. Soon all our kelp is going to be gone, like herring, herring eggs and abalone.

Commercial harvesters cleaned up all the kelp around Craig. It's happened about 2 or 3 years ago. There is no more kelp around here. For example the kelp beds around Wadleigh Island (across Klawock), Abbess Island, Clam Island and in Mud Bay used to be plentiful. All these places used to be full of kelp, and today there is none. This year, for the impoundment in Craig I had to collect my kelp way up to Eleven Mile Pass because the fronds in Craig-Klawock were too small. The enforcement agent admitted that he never went out to monitor these guys.

The kelp beds are not the way they used to be. The *Macrocystis* is a pretty rare kelp in Alaska. There are only a few places where it can be found, in the Hydaburg-Craig-Klawock areas and in Sitka Sound. However, commercial harvesters do not care if the resource is limited, they just come and take all the kelp. The sea urchins are also eating the kelp. There are too many sea urchins (Victor 1992).

Weather, Sea Conditions, and Travel Distance Affect Contemporary Harvest

In the early 1990s, weather, sea conditions, and travel distance affected the Hydaburg residents' subsistence herring harvest at Fish Egg Island. During the harvest period for herring spawn on kelp, the weather commonly is stormy, with rain, hail, snow, and wind, and there are only patches of blue sky. According to Hydaburg respondents, because of inclement weather, larger boats were needed to reach Fish Egg Island and Klawock safely, and harvesters sometimes had to wait for the weather to improve before traveling. This created problems when using subsistence herring permits that had a smaller harvest quota:

The travel distance between Hydaburg and Fish Egg Island is over one hour by skiff. One passage is particularly rough with strong currents and winds. Since we got a road access between Hydaburg and Craig several people take their skiffs on trailers. However, most harvesters of herring eggs reached Craig by boats. With this type of permit you are allowed a limited amount of eggs on kelp and for Hydaburg

people it is particularly hard. You have to run back and forth and you end up spending all your money on gas. You should be able to take enough herring eggs on kelp in one day (Victor 1992).

One key respondent, who lost two brothers returning home from harvesting herring spawn on kelp near Fish Egg Island, also expressed concern about the bad weather and rough waters between Hydaburg and Craig: “I lost two brothers in 1967, they were coming back home from picking in Craig, they drowned by Waterfall. The water can be very rough over there. They were just picking in Craig, trying to make a dollar” (Victor 1992).

Only a few people in Hydaburg owned large boats at the time of this study, but almost everybody had a skiff. Respondents remarked that they could not take the entire family to harvest areas aboard these small skiffs; instead, they could have only one or two passengers aboard at a time. Following the shift of harvest locations from multiple harvest grounds to only two areas, (for Hydaburg residents, primarily around Fish Egg Island), the harvest of herring spawn on kelp, which was, by tradition, a family affair involving children and elders, became an individual activity. Fewer subsistence users participated in the harvest as a result and had to work longer hours to harvest herring spawn on kelp for people who could not do it themselves.

According to Hydaburg respondents, difficulty of access combined with increases in harvest costs (a harvester had to make several trips to get the amount of spawn on kelp needed) have resulted in fewer subsistence users harvesting herring spawn on kelp in the last decade. Several elders who used to harvest herring spawn on kelp near Hydaburg do not go to Fish Egg Island for these reasons. One common practice was for a harvester to obtain herring spawn on kelp for elders who cannot go themselves, although filling another person’s quota was not allowed by the nontransferable herring permit:

There are people like us who cannot go out and get eggs or fish. One Fish and Game officer said to me that I should get aboard and sit there while somebody harvested or make the set for me. But sometimes the weather is so bad, you can catch pneumonia. Who is going to be responsible? You cannot expect the elders, who sometimes have illnesses, to sit in an open skiff.

When I went harvesting I had my mother's permit with me, she is 83 years old, and the enforcement officer told me that I had to go back and get her on my skiff (Victor 1992).

HARVESTING METHODS

After herring start to spawn, harvesters generally wait a few days until the water is less milky and they are better able to check the thickness of the eggs on the fronds. In 1992, harvesting began when the layer of eggs on the fronds of the *Macrocystis* kelp was judged to be thick enough, and the kelp was exceptionally white. Harvesters, traveling in skiffs, select a kelp bed and use gaff hooks or rakes to grasp the stem of the kelp below the waterline. Harvesters break each leaf off the stem, starting from the top section of the plant.

In late April 1992, the author accompanied a couple from Hydaburg during their trip to Fish Egg Island to harvest herring spawn on *Macrocystis* kelp. Earlier that morning, the husband drove from Hydaburg to Craig towing a 16-foot aluminum skiff and 40-hp motor. The weather was favorable and he was able to reach Craig in a little over an hour. His wife and this author also traveled by car, and we met him in the harbor at Craig. Because the tide was low, we left almost immediately for Fish Egg Island. By the time of departure, the weather had changed and it was raining and windy.

The couple selected one of the whitest kelp beds, which happened to be near shore. Nearby, hundreds of seagulls were feeding on loose eggs that covered the beach. Several yards away, two men from Craig were already piling leaves covered with eggs into their small boat. Using his gaff hook, the husband grasped the stem of one *Macrocystis* kelp and delicately pulled the plant from underwater. Starting from the top section of the plant, he broke off individual fronds, being careful to exert as little tension as possible on the kelp. The frond was detached by breaking it away from the bulb (the basal pneumatocyst) attached to the stipe. The frond was then handed to his wife, who sometimes trimmed a small portion of the leaf adjacent to the bulb. Trimming an extra portion of the leaf, she explained, was a precaution that prevented the kelp from rotting. She spread each leaf flat on the bench of the skiff, to let the excess water drain off, and repeated this procedure for each frond handed to her.⁴⁶ After approximately 2 or 3 hours, the couple returned to the harbor at Craig and placed the *Macrocystis* kelp in plastic garbage bags. After loading it into the trunk of the car, the wife and the author drove back to Hydaburg. Her husband stayed in Craig to take care of his commercial herring impoundment.

Respondents considered the 1992 harvest to be of medium quality. The spawn was light (an eighth of an inch thick) and did not evenly cover both sides of the fronds. However, the eggs were not deposited in patches, or peeling off the fronds, and the kelp was firm and not breaking apart. According to Hydaburg informants, a good spawn was approximately one-half inch to three-eighths of an inch in deposition.

HANDLING, PRESERVING AND CONSUMPTION

Shortly after the herring spawn on *Macrocystis* kelp is harvested, a portion of the harvest is distributed and the remainder is processed for storage. Some of the fresh herring spawn on kelp is packed in garbage bags and medium-sized boxes for shipment to family and friends, frequently outside of Alaska. Fresh herring spawn on kelp is also distributed in Hydaburg to elders and family members who are not able to harvest for themselves. Some spawn on kelp is retained for consumption by the harvester. In 1992, most Hydaburg residents froze their herring spawn on kelp. However, many people use more than one method, including drying, salting, and pickling. For short-term storage, the spawn on kelp is covered with salt water. For long-term storage, most of the harvest is placed in home freezers. Generally, a woman processes the product by cutting the fronds into suitable pieces and placing them in reclosable plastic bags for freezing. Frozen herring spawn on kelp can be kept for a year.

⁴⁶ Usually, when harvesting herring spawn on kelp, more than one person is aboard, such as a husband and wife. While one person pulls the kelp from underwater the other spreads each leaf in the boat.

According to respondents, when air-drying the herring spawn on kelp, the fronds covered with eggs are placed on outdoor racks and on house porches. After the spawn on kelp has dried, it is carefully placed into lidded containers or wooden boxes and stored in the attics or kitchens.

We still dried our eggs today. I got mine hanging outside on the clothesline. The wind will dry them. When they are crisp they are ready for storage. It generally takes 2 or 3 days depending on the weather.

I dried the herring eggs on *Macrocystis* kelp outside on a string. You don't need to attach the leaves, you just hang them on a line and the wind dries them (Victor 1992).

In 1992, some herring spawn on kelp was also salted. Immediately after the harvest, it was brined for 2 or 3 days, then drained and packed with rock salt. The brine must be strong enough to preserve the product. When in the brine, the top layer of herring spawn on kelp must be checked regularly since exposure to the air would rot the product.

Today I salted 2 buckets because the layer of eggs was not very thick. I made strong brine with rock salt and water then I plunged a potato in it. When the potato floats on the surface you know that the brine is strong enough. Sometimes people mix a cup of soy sauce and sugar in the brine (Victor 1992).

A few people in Hydaburg pickled spawn on kelp in 1992. The fronds are cut into small pieces, placed in glass containers, and covered with vinegar and spices.

In 1992, Hydaburg residents also ate fresh herring spawn on kelp, during and just after the harvest. As stated above, to keep it fresh for several days, the spawn on kelp is soaked in water. When eaten, spawn on kelp is dipped in eulachon oil or seal oil. Fresh herring spawn on kelp is also lightly simmered in water, and then dipped in eulachon or seal oil. Sometimes, spawn on kelp is fried in oil.

CRAIG-KLAWOCK-HYDABURG SPAWN-ON-KELP HARVEST LEVELS, FROM ADF&G PERMITS

Since 1967, subsistence spawn-on-kelp harvests have been regulated by state permit, in part to prevent leakage of subsistence harvests into commercial markets. Harvest limits prior to 1985 were set by ADF&G management biologists, and by the Alaska Board of Fisheries from 1985 to present. Harvest limits have been 32 lbs per person or 158 lbs per household 1985 until the time of this study. Two results of the harvest limits have been restrictions to both the subsistence distribution and the subsistence exchange of spawn on kelp. Since the harvest limits have been in effect, no one may, as a specialized harvester, openly harvest thousands of pounds of spawn on kelp for subsistence distribution. The amount of distribution and customary trade in spawn on kelp appears dependent upon the

ability of these specialized harvesters to take quantities of spawn on kelp in excess of the needs of their own families.⁴⁷

Data from subsistence permits are one source of information about the harvest levels of spawn on kelp in the Craig-Klawock-Hydaburg area. In analyzing these data, it is important to recognize that reporting is voluntary and monitoring limited. Key respondent reports suggest that, in most years, actual subsistence harvests are higher than harvests reported on the permits, and that the magnitude of the unreported harvest cannot be determined.

Table 3 shows the number of subsistence permits issued, number returned, and the estimated total harvest of subsistence spawn on kelp, as reported on the permits, in the Craig-Klawock-Hydaburg area from 1966 to 1992. Both the number of permits issued and the reported harvest amounts are increasing, which may indicate increasing interest in this fishery. However, improved compliance with permit requirements and more accurate recording of harvests on the permits may also be major factors in the apparent increase over the last few years. In the early years of the permit program, not all harvesters obtained permits and reported harvests probably were lower than actual harvests. Increased compliance with the permit program may be a product of increased enforcement activities, including forfeitures by harvesters who failed to obtain permits. Key respondent interviews suggest that the number of permits issued between 1966 and 1984 probably does not reflect the actual number of harvesters from Hydaburg. Based on key respondent interviews, many harvesters were known to have no permits during that period. Thus, the increase in the number of permit holders in the last decade may not be indicative of an increasing trend in harvest amounts or in number of permittees.

While the data may seem to reflect more permit holders taking a greater harvest, key respondents in Hydaburg assert that the number of harvesters has actually decreased in the last 8 years. They explain that the increasing difficulty of access and the increasing costs in harvest activities have resulted in fewer subsistence harvesters from the Hydaburg area. Respondents also report that due to the enforcement of permit quotas and harvest limits, they were not able to distribute spawn on kelp to family members and friends or to trade as they did before the regulations were enforced.

⁴⁷ This paragraph summarizes major points of a report presented to the Alaska Board of Fisheries: Subsistence harvest and use of herring roe in Southeast Alaska, Southeast Region, ADF&G, Division of Subsistence, February 1993.

Table 3. – Subsistence herring spawn on kelp harvests, 1966 to 1992, Craig-Klawock-Hydaburg area.

| Year | Permits issued | Permits returned | Total pounds harvested | 3-year running average | | |
|------|----------------|------------------|------------------------|------------------------|------------------------|---------------------------|
| | | | | Permits issued | Total pounds harvested | Mean pounds/permit issued |
| 1966 | 145 | 86 | 5,200 | 145 | 5,200 | 36 |
| 1967 | 201 | 130 | 3,368 | 173 | 4,284 | 17 |
| 1968 | 130 | 95 | 2,260 | 159 | 3,609 | 17 |
| 1969 | 80 | 61 | 2,858 | 137 | 2,829 | 36 |
| 1970 | 103 | 60 | 3,213 | 104 | 2,777 | 31 |
| 1971 | 81 | 66 | 2,643 | 88 | 2,905 | 33 |
| 1972 | 102 | 44 | 4,250 | 95 | 3,369 | 42 |
| 1973 | 31 | 9 | 1,209 | 71 | 2,701 | 39 |
| 1974 | 159 | 39 | 3,087 | 97 | 2,849 | 19 |
| 1975 | 92 | 34 | 1,640 | 94 | 1,979 | 18 |
| 1976 | 54 | 12 | 1,728 | 102 | 2,152 | 32 |
| 1977 | 34 | 7 | 352 | 60 | 1,240 | 10 |
| 1978 | 109 | 83 | 3,521 | 66 | 1,867 | 32 |
| 1979 | 102 | 81 | 1,268 | 82 | 1,714 | 12 |
| 1980 | 309 | 189 | 3,721 | 173 | 2,837 | 12 |
| 1981 | 157 | 87 | 6,148 | 189 | 3,712 | 39 |
| 1982 | 187 | 81 | 5,485 | 218 | 5,118 | 29 |
| 1983 | 302 | 189 | 5,945 | 215 | 5,859 | 20 |
| 1984 | 261 | 159 | 4,972 | 250 | 5,467 | 19 |
| 1985 | 233 | 168 | 9,553 | 265 | 6,823 | 41 |
| 1986 | 241 | 142 | 5,565 | 245 | 6,697 | 23 |
| 1987 | 263 | 158 | 15,038 | 246 | 10,052 | 57 |
| 1988 | 191 | 124 | 6,354 | 232 | 8,986 | 33 |
| 1989 | 221 | 117 | 11,699 | 225 | 11,030 | 53 |
| 1990 | 245 | 172 | 10,158 | 219 | 9,404 | 41 |
| 1991 | 274 | 142 | 12,627 | 247 | 11,495 | 46 |
| 1992 | 417 | 290 | 13,740 | 312 | 12,175 | 33 |

The communities of residence of persons receiving spawn-on-kelp permits for the Craig-Klawock-Hydaburg area fishery for 1987 to 1992 are listed in Table 4. Residents of Craig, Hydaburg, Klawock, and Ketchikan accounted for most of the permits issued for this area during that period. At the time of this study, the residency data were not complete for all years, and some Saxman residents may be included in the Ketchikan totals.

Table 4. - Subsistence spawn-on-kelp permits issued by community for the Craig-Klawock-Hydaburg area, 1987 to 1992.

| Community ¹ | 1987 | 1988 | 1989 ² | 1990 ² | 1991 | 1992 ² | 1992 ³ | Total 1992 |
|--------------------------|------------|------------|-------------------|-------------------|------------|-------------------|-------------------|---------------|
| Anchorage | | | | | | 2 | | 2 |
| Craig | 49 | 64 | 30 | 65 | 66 | 93 | 27 | 120 |
| Hydaburg | 42 | 15 | 20 | 37 | 61 | 45 | 27 | 72 |
| Haines | | | 1 | | | | | 0 |
| Hollis | | | | | | 1 | | 1 |
| Juneau | | | | | | 1 | | 1 |
| Kasaan | | 12 | | 4 | 1 | | 2 | 2 |
| Ketchikan | 52 | 23 | 23 | 42 | 44 | 60 | 18 | 78 |
| Klawock | 85 | 73 | 43 | 67 | 78 | 81 | 20 | 101 |
| Metlakatla | 1 | 1 | | 3 | | 1 | | 1 |
| Petersburg | | | | | | 6 | 1 | 7 |
| Point Baker | | | | | | 1 | | 1 |
| Saxman | | | 2 | 2 | | 1 | | 1 |
| Sitka | | | | | | 1 | | 1 |
| Tanacross | | | | | | 1 | | 1 |
| Thorne Bay | | | 3 | | 2 | 3 | | 3 |
| Wrangell | | | | 1 | 1 | 1 | | 1 |
| Other | 2 | 7 | | | | | | 0 |
| Total permits | 231 | 195 | 122 | 221 | 253 | 298 | 95 | 393 |

¹ Residency data are incomplete for certain years. Table 3 presents the total permits issued.

² Returned permits only.

³ Permits not returned.

Source: ADF&G Sitka and Ketchikan data files.

Table 5 shows the number of subsistence herring spawn-on-kelp permits issued for the Kah Shakes area from 1978 to 1991. Both the number of permits issued and the reported harvests are low for this area when compared to the Craig-Klawock-Hydaburg area.

Table 5. – Subsistence herring spawn-on-kelp harvests, 1978 to 1991, Kah Shakes area.

| Year | Permits issued | Permits returned | Total pounds harvested |
|------|-------------------|---------------------|------------------------------|
| 1978 | 11 | 8 | 122 |
| 1979 | 16 | 6 | 0 |
| 1980 | 33 | 24 | 75 |
| 1981 | 6 | 5 | 12 |
| 1982 | 30 | 18 | 342 |
| 1983 | 33 | 24 | 103 |
| 1984 | 14 | 6 | 116 |
| 1985 | 19 | 10 | 0 |
| 1986 | 5 | 2 | 0 |
| 1987 | 5 | 4 | 0 |
| 1988 | 6 | 6 | 68 |
| 1989 | 10 | 9 | 0 |
| 1990 | 7 | 0 | 0 |
| 1991 | 4 | 4 | 60 |

Sources: ADF&G 1988, 1992b.

In summary, this chapter has described the contemporary harvest and use patterns of herring spawn on *Macrocystis* kelp among residents of Hydaburg. It has examined the reasons for change in harvesting locations and identified the concerns expressed by Hydaburg residents about the deterioration of the spawn-on-kelp subsistence fishery in the Hydaburg area. Spawn-on-kelp permit data for the Craig-Klawock-Hydaburg area were presented and critiqued. The number of permits issued between 1966 and 1984 probably does not reflect the actual number of harvesters, because many harvesters did not obtain permits. Consequently, reported harvests probably are lower than actual harvests.

CHAPTER 4. EVOLUTION OF TRADE

Trade in wild, renewable resources has a long history in the Haida tribe. The traditional economy included a trading sector in which production for exchange value was a common practice. During the pre-contact period, trade of wild resources, material items such as canoes, and intangible commodities and properties such as totemic crests, was a widespread feature of the Haida subsistence economy. Trade was characterized by special trade relationships between leaders. Haida traders frequently had trading partners in other communities. It was conducted mostly during specific seasons, and involved movement of substantial quantities of products.

Trade occurred through a system of direct barter involving the exchange of items for other items. Trade also involved the use of currencies. In the late 1700s, for example, dentalia, pieces of mother-of-pearl, canoes, and slaves served as media of exchange. At the time of contact, sea otter pelts, fur seal pelts, eulachon oil, dried halibut, dried seaweed and dried herring spawn on kelp was probably “cross-valued,” meaning that the value of one item could be expressed in terms of the quantities of another item (Schroeder and Kookesh 1990). Blankets, rifles, bullets, and beads became an introduced currency early in the 1800s and, along with furs, were used as media of exchange (Schroeder and Kookesh 1990). By the late 1800s, the use of cash was well-established in Southeast Alaska. The Haida utilized cash to purchase items from the Euro-American stores, from traders, and for items from the traditional economy.

Throughout the year, symbolic and material properties circulated not only within the boundaries of the community, but also extended beyond them. Trade occurred between neighboring tribes, as well as with larger groups of people who gathered at traditional rendezvous points and trading sites. The Haida embarked on trading expeditions to the mainland and to other islands, the chief purpose of which was the exchange of coastal products for inland products. Sometimes, interdependence developed between individuals, which then evolved into a more structured trading partnership.

The remainder of this chapter describes the traditional and historical trade patterns of the Haida. It shows that traditionally, the Haida traded a variety of wild resources beyond the limits of the Haida territory. It describes the involvement of the lineage chiefs during trade operations and shows that trade was conducted primarily during specific seasons. Information is presented on the movement of goods, the variations in resource distribution, and the trade relationships. The volume, quality, and diversity of items, including herring spawn on kelp, that were given and traded enabled the Haida to have a standard of living that was higher than some of their neighbors. The observations of non-Native explorers and traders inform us about the post-contact trading methods of the Haida and their highly developed mercantile skills. These reports also illustrate the adaptation of the Haida to new economic opportunities, such those emerging during the maritime fur trade period, and the progressive adoption of strictly commercial transactions with Europeans and Americans. The final section describes the trade of herring spawn on kelp in traditional and contemporary Kaigani Haida society. Table 6 depicts a general history of the herring spawn on kelp trade in Southeast Alaska from about 1880 to 1992.

Key respondents in Hydaburg provided additional information and data regarding the trade of herring spawn on kelp during the decade preceding this study. They indicate that

the trade of herring spawn on kelp, harvested by families at traditional locations, was part of the subsistence life, as well as an important part of the traditional mixed subsistence-cash economy. This trade allowed the Hydaburg residents a decent standard of living in a community where commercial and wage-earning opportunities were practically non-existent.

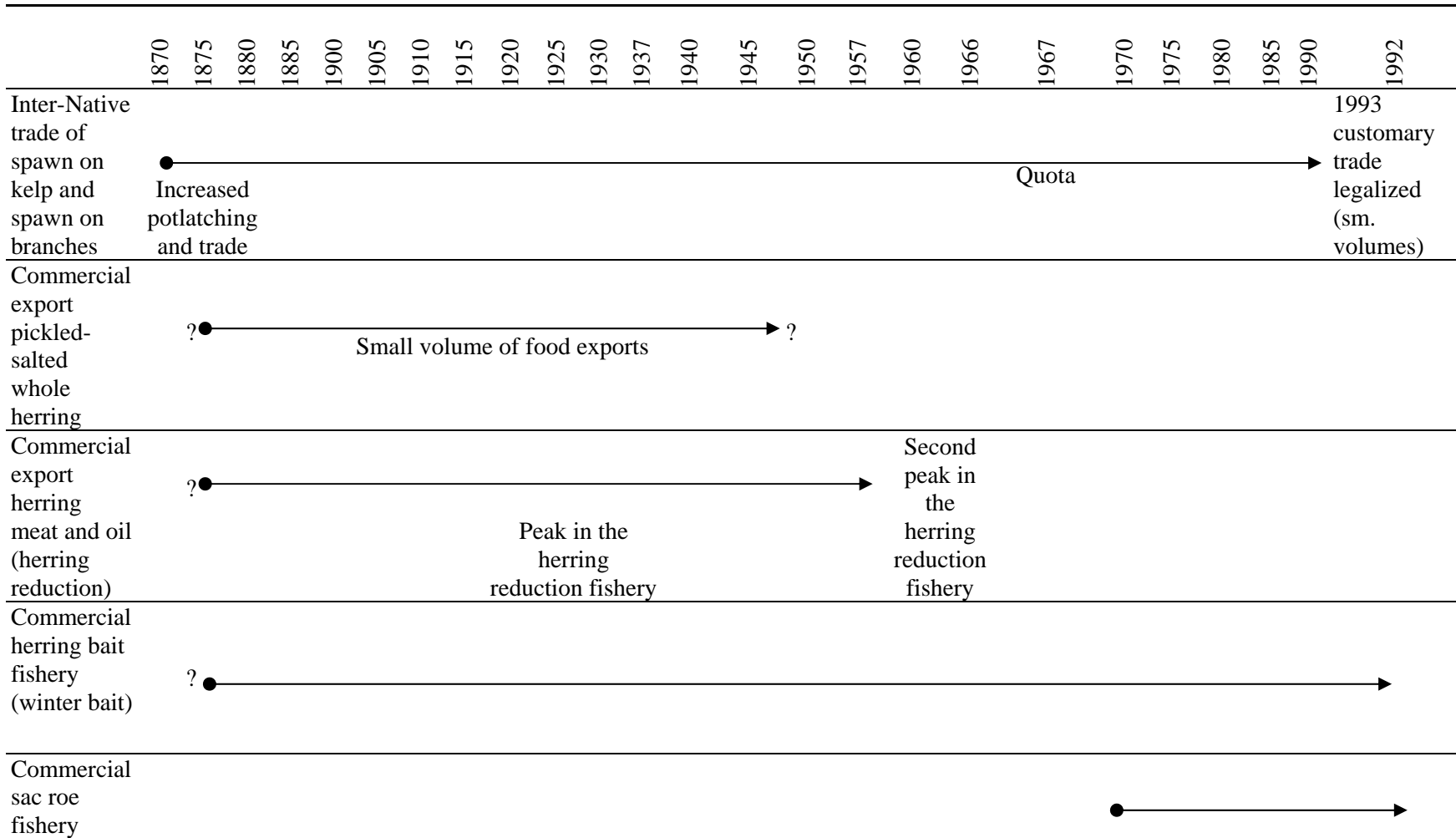
DISTRIBUTION AND BARTER OF HERRING SPAWN ON *MACROCYSTIS* KELP IN TRADITIONAL AND CONTEMPORARY KAIGANI HAIDA SOCIETY

As described in Chapter 1, at the time of contact, during the winter (November to May or June), the Kaigani Haida lived in villages. During the summer (May or June to October), many families lived in their fishing and hunting camps. Kaigani Haida winter villages were located along sheltered coastlines in Kasaan, Sukkwan, Howkan, Klinkwan, Koianglas, and Kaigani. At the time of contact, the Kaigani Haida resembled their Tlingit neighbors by inhabiting multi-clan villages (Langdon 1977). According to Blackman, only Klinkwan remained a single lineage village:

Though late in their history Howkan, Kasaan, and Sakwan had several houses owned by house chiefs of different lineages, Klinkwan remained, until its abandonment, almost exclusively a single lineage village (Blackman 1981:24).

Kasaan was composed of two major lineages, the *Taslanas* and the *Yadas*. Sukkwan, previously occupied by the Tlingit, was destroyed and then rebuilt by the Kaigani and was initially occupied by two lineages, the *Qoetas* and the *Salandas*. Howkan was the largest Kaigani Haida settlement after Kasaan and was inhabited by many lineages, the two major being the *Tcaal Lanas* and the *Haugewas*. At a later period of time, Klinkwan appears to have been occupied by Kaigani Haida of the *Yakulanas* lineage. Koianglas, according to Swanton, was the home of a *Yakulanas* lineage headed by Chief Yeltatzie (Langdon 1977:121). Kaigani, probably the first site occupied by the Haida following their departure from Langara Island, was inhabited by 3 lineages. In addition to these settlements, archeological and oral evidence suggests the occupation of several other locations in the southern archipelago (Langdon 1977:124-126).

Table 6. – History of herring spawn-on-kelp trade in Southeast Alaska.



-continued-

[illegible]

Kaigani Haida lineages exercised control over particular resource territories, village sites, crests, names, and ceremonial privileges. Concepts of property and ownership were well-established among the Kaigani Haida. The lineage chiefs and the house owners were trustees and administrators of property. In addition to house sites in villages, crests, ceremonial privileges, and shamanic spirits, lineage properties consisted of salmon streams (which were especially valued as food-gathering locations), halibut fishing grounds, hunting grounds, trapping sites, berry patches, bird rookeries, and seal rocks. If any member other than a member of the owner lineage wanted to harvest in the lineage's hunting and fishing areas, permission had to be obtained from the lineage leader (Langdon 1977; Vaughan 1985).

According to Hydaburg residents, at the time of contact, herring spawn on *Macrocystis* kelp was accessible to anyone. Lineages did not own herring spawning beds. Every house member had equal access to spawning areas. Herring spawn was harvested for immediate consumption or preserved for storage and later use. The number of pounds harvested per household was a function of the household size, the number of people to whom the product was distributed and bartered outside the household, the volume traded, and the possibility of a potlatch in the near future.

Hydaburg respondents said it was traditional for people in Hydaburg to distribute fresh herring spawn on *Macrocystis* kelp as food gifts, first to their relatives within the community for their immediate consumption. They also distributed dried herring spawn on kelp as food gifts to relatives outside the community, who could choose either to consume the product without delay or store it for later use. Dried herring spawn on kelp was also distributed as food gifts to relatives inside the community for special occasions during the year, such as birthdays, celebrations connected with success in hunting or fishing, and potlatches.⁴⁸

A similar distribution pattern was observed during field research in Hydaburg in 1992. Herring spawn on *Macrocystis* kelp was distributed both within and without the community, including outside of Alaska, mostly to relatives and friends who did not have access to this traditional food. After the harvest period, fresh spawn on kelp was distributed to relatives and elders in Hydaburg, while frozen herring spawn on kelp was shipped to relatives, elders, and friends living outside Hydaburg.

During the historical period, individuals bartered herring spawn on *Macrocystis* kelp, both within and without the community, for other food products, other items, or for services. Respondents reported that these exchanges, conducted by both men and women, were expressed as "gifts;" however, the exchange value of the gifts was always equivalent. Herring spawn on kelp, for example, a high-value food item, was exchanged for articles of equally high value. The value of food items and other articles was always very well known by both parties.⁴⁹ On occasion, herring spawn on kelp was bartered for more than one article, if it was an item of small value. During the 1992 field research in Hydaburg,

⁴⁸ These ceremonial gifts are described later in this chapter.

⁴⁹ "The value of objects are very well known, so that if one wishes an object of quality he is forced to give the maker a gift of the proper value in return. The craftsman can always retaliate upon a stingy giver by making a poor article" (Oberg 1973:94).

both men and women were observed distributing and bartering herring spawn on kelp within and without the community. The most commonly-bartered items were eulachon oil and fresh eulachon.

Historically, the status of individuals involved in barter was reinforced by the exchanges:

From the individual's point of view, the food gift and the feast provide a means for social approval and eminence...Social service is rewarded by social renown and prestige...The exchange of gifts and services add to the interdependence and thus to the cooperation of individuals...To this must be added the mutual obligations and reciprocal relations arising out of the giving and taking of food gifts and feasts (Oberg 1973:99).

When bartering with individuals of another community or a different tribe, the bargaining skills of a person were an important factor which could give prestige and recognition... the social products of barter included the provision of a direct sense of self worth, the value of one's labor, products, and skills, and the building or maintenance of relationships through reciprocities and obligations (Langdon 1986:21).

Upper- or noble class individuals maintained or increased their status throughout and beyond the community by distributing their wealth during potlatch ceremonies. Potlatches required the accumulation of food supplies and intangible properties that are ceremonially distributed to the guest group. Elder respondents in Hydaburg reported that herring spawn on *Macrocystis* kelp, a high-value food item, was accumulated in large quantities specifically for this purpose. It was dried and stored in bentwood boxes until the proper time. Additionally, households traded for herring spawn on kelp if they were unable to harvest enough for their potlatch needs. According to Charles Powell (U.S. Department of the Interior 1944:327), the Kaigani Haida had to acquire large amounts of eulachon oil for potlatches, and it was not exceptional for a chief to acquire, through trade, a thousand gallons. Households in communities that did not have access to herring spawning areas and wanted to give a potlatch often acquired dried herring spawn on kelp from the Kaigani Haida.

TRADE OF HERRING SPAWN ON *MACROCYSTIS* KELP IN TRADITIONAL AND CONTEMPORARY KAIGANI HAIDA SOCIETY

In traditional Kaigani Haida society, trade of herring spawn on *Macrocystis* kelp and of other items was organized by leaders of different clans or lineages and was conducted over an extensive area. Herring spawn on kelp was traded to obtain preferred food items, wearing apparel, ceremonially-important clothing and ceremonial gear, a variety of tools, and items of adornment.

Trade traditionally included currency exchange between villages and between tribes. Throughout the 1800s, items such as pelts, seal and eulachon oil, dried salmon and

halibut, dried herring spawn on *Macrocystis* kelp and on branches, and introduced items, such as blankets, rifles, bullets, and buttons were used as currencies.

Hydaburg residents explained that, traditionally, trade was an important business that required ceremonial introductions and the observance of protocols.⁵⁰ Members of the Haida trading party wore ceremonial clothing, and the chief opened the meeting with songs and elaborate speeches. Trade negotiations were conducted publicly and required considerable bargaining skills, as every item purchased was carefully scrutinized.⁵¹ According to the 18th century explorer George Vancouver (Niblack 1970:337), Kaigani women sometimes participated in barter negotiations.⁵² Generally, women served as the head of the family, and their agreement was necessary to conclude the transactions.

In traditional Kaigani Haida society, trade of herring spawn on *Macrocystis* kelp for cash continued, both within and outside of the community with 1) friends of the same tribe, 2) friends from a different tribe, 3) Haida from the Queen Charlotte Islands (people of Masset), and 4) members of other tribes. Trading expeditions involving the sale of herring spawn on kelp took place during specific seasons, principally in spring, or sometimes to trade fairs, such as at Fort Simpson, or Fort Victoria, where herring spawn on *Macrocystis* kelp was sold to people throughout the northwest coast. Kaigani Haida traders of herring spawn on kelp had partners in other communities with whom they developed personal trade relationships.

When new economic opportunities became available, the Kaigani Haida quickly adapted and by the early part of the 20th century were commonly using cash to obtain a variety of items, including both traditional and Euro-American products. According to respondents,

⁵⁰ “Although it would not be correct to say that the Tlingit considered trade a sacred enterprise, there was some ceremonial attached to it. Preparation for a trading expedition was accompanied by certain rituals, such as fasting for luck, getting a shaman to foretell the future, and holding a feast and dance several days before departure. The traders sometimes painted their faces as if going to war, but it was not certain whether this was connected with trade itself or was done to insure protection against enemies on the way. The return of a successful trading party was an occasion for feasting and dancing” (Oberg 1973:109-110).

The 18th century explorer George Dixon recorded this observation in his journal: “Whenever any large party came to trade these treasures [dance paraphernalia] were first produced, and the principal persons dressed out in all their finery before the singing commenced. In addition to this, the chief (who always conducts the vocal concert) puts on a large coat, made of elk skin, tanned, round the lower part of which is one or sometimes two rows of dried berries or the beaks of birds, which make a rattling noise whenever he moves. In his hand he has a rattle, or more commonly a contrivance to answer the same end, which is of circular form, about 9 inches in diameter, and made of 3 small sticks bent round at different distances from each other; great number of birds’ beaks and dried berries are tied to this curious instrument, which is shaken by the chief with great glee, and in his opinion makes no small addition to the concert. Their songs generally consist of several stanzas, to each of which is added a chorus. The beginning of each stanza is given out by the chief alone, after which both men and women join and sing in octaves, beating time regularly with their hands or paddles; meanwhile the chief shakes his rattle and makes a thousand ridiculous gesticulations, singing in intervals in different notes from the rest; and this mirth generally continues near half an hour without intermission” (Dixon, cited in Niblack 1970:338).

⁵¹ “Every defect is discovered and the value scaled down accordingly” (Niblack 1970:337).

⁵² “In all the commercial transactions the women took a very principal part, and proved themselves by no means unequal to the task” (Niblack 1970:337).

trade of herring spawn on *Macrocystis* kelp for cash continued both within and without the community, again, with 1) friends of the same tribe, 2) friends from different tribes, 3) Haida from the Queen Charlotte Islands (from Masset), and 4) members of other tribes. Trade with the Asians of herring spawn on kelp for cash started in the late 1800s, when several canneries opened in Southeast Alaska and use the traditional fishing grounds of the Kaigani Haida and Tlingit. Trade of herring spawn on *Macrocystis* kelp for cash expanded in the early 1950s, when Haida from Hydaburg established trade relationships with Japanese trading companies, Japanese importers of herring products, Japanese and American brokers, and Chinese buyers. Herring spawn on *Macrocystis* kelp also was sold to U.S. restaurants and food markets.

From the early 20th century on, the Kaigani Haida continued to sell herring spawn on *Macrocystis* kelp to many communities in Alaska, Canada, and on the northwest coast of the United States. A resident of Hydaburg remembered when large purse seine boats carried herring spawn on kelp for trade to many different places:

They loaded up these big purse-seine boats with herring eggs on kelp and on branches. They went to Metlakatla, Wrangell, Petersburg, Juneau and Ketchikan. They had a large Native population in Metlakatla, around 1,000 people and probably 1,400 to 1,500 hundred in Ketchikan. It took a lot of eggs to supply them. They would pile tons of herring eggs on kelp and branches in these boats. Sometimes 2 or 3 seiners at a time would leave from Hydaburg. I think my brother went on the last one. It was the time when we started to have road access. After that, people started to ship the herring eggs by plane; it was cheaper (a nickel a pound). The airlines (Temsco and Tyee) had a “fish eggs special” and they moved 15 to 20 tons of herring eggs. We shipped them in regular boxes (Victor 1992).

People interviewed in Hydaburg, including elders, recalled when boats packed with herring spawn on kelp left Hydaburg for Masset, Metlakatla or Prince Rupert:

There was some kind of competition between boats as far as prices go. In those days they took it to Ketchikan and Metlakatla before they went to Canada, Port Simpson and upper area for trading.... I can remember the names of some of these boats: the *Alma*, the *Nora*, the *Elby*, the *Claudia*, the *Moon Beam* (Victor 1992).

The commercial fishery for herring spawn on *Macrocystis* kelp began in the 1950s:

We developed that fishery ourselves. It was back in the '50s and it went along for about 10, 12, or 15 years. It was shut down and relocated to a bait fishery, a non-resident bait fishery, based out of Petersburg. That's the source of a lot of bitterness. Before the relocation at the peak of our herring eggs fishery, about 800 people participated in the harvest. It

was a very important source of income here in Hydaburg. But our fishery and livelihood was taken away and given to outsiders (Victor 1992).

Many employees of the Southeast salmon canneries were from the Philippines, Korea, and China. According to respondents, many of these Asian employees would buy fish and herring spawn on kelp, both for their own use and to send home. In the 1950s, Hydaburg residents established contacts with Japanese trading companies, as described by one respondent:

I believe it was the James brothers who started that export fishery, and it expanded very fast as the market for herring eggs on *Macrocystis* kelp became stronger in Japan. Our fishery was making a profit. At that time, it was still a Native fishery, with Native businessmen, Native agents, and Native pickers. All of them were from Hydaburg, Klawock and Craig; half a dozen were from Hydaburg.

At the beginning they sold herring eggs for \$.40 a pound. They made a few dollars on it. The following season they made more money. My dad in the last 2 or 3 years had 120 pickers working for him. Demmert had more pickers than my dad. They bought for several Japanese companies which had offices both in Japan and Seattle. They used to charter our seine boats to transport herring eggs on kelp to Seattle and from there they were shipped to Japan. These boats could carry 16,000 pounds of eggs. The herring eggs on *Macrocystis* kelp were salted and stored in barrels here in Hydaburg inside an old building. They hired the women, local women, to process the eggs. At its peak, our fishery probably produced 300 tons of herring roe on *Macrocystis* kelp: around 100 tons in Hydaburg and 200 tons in Craig.

I did not start to harvest myself until 1963 or 1964. But I used to make it a point to go by skiff and harvest. I took someone with me once; a couple of times my cousins came with me. I think at my peak I got 1,200 to 1,500 pounds. On a 20-minute season, I got 11,000 pounds. There was a lot of activity in Hydaburg and the harvest of herring eggs on *Macrocystis* kelp was an important source of income for all residents... They shut down our herring eggs fishery in 1968 or 1969 and local people who had invested capital in the fishery, like Joe Demmert (I think Joe Demerit bought around \$3,000 with Fish and Game licenses) lost money. At the same time Fish and Game created the limited entry (Victor 1992).

Herring spawn on kelp was also sold to Chinese living in the U.S.:

I remembered Elma Cook and the minister's wife who made \$300 apiece that day. It was a lot of money in those days. They were selling to Japan mostly and in the Lower 48, I think to Chinese.

Boats from California and Oregon used to come, and they buy herring eggs on *Macrocystis* kelp from us. We used to store them in barrels. One of the boats if I recall was named the *Eleanor*. I remember when in the '60s buyers came to Hydaburg to buy herring eggs on kelp. They later sold them for million of dollars. Most people in Hydaburg did not realize what they got for it down south (Victor 1992).

According to respondents, in the late 1960s, two years before the herring spawn on kelp fishery was closed, businessmen from Ketchikan and Seattle infiltrated the fishery. The demand for herring spawn on *Macrocystis* kelp became significant and started to be commercially profitable:

Lyold Wayley and several other people joined the fishery and it grew considerably. The number of pickers increased from a few hundred people to 1,400 pickers. People flew from Ketchikan and even from Seattle to harvest (Victor 1992).

Kaigani Haida have also traded with restaurants and food stores in the U.S.:

We have been trading with restaurants and food stores for over 20 years. The quality of our product got better every year and our prices went up. We sold to almost every restaurant in Chinatown in San Francisco. However, restaurants were a lot of work because they did not move a lot of merchandise at a time (Victor 1992).

Key respondents also explained that several Haida in Hydaburg established strong relationships with buyers, who, in turn, did business only with traders with whom they had developed quality partnerships. These individuals met the challenges required to develop such meaningful business partnerships:

A buyer would deal with you and not with somebody else. It took years and years of hard work from both parties to establish that kind of trust and business relationships, 'specially when you deal with people from a foreign country, like Japan, for example. It required dexterity, subtlety, and a lot of patience. However, our ancestors were expert in the art of dealing, conducting business with foreigners, and they excelled in establishing relationships with trading partners. It is something in our blood, we were born with these skills. The result of this effort from both parties was an increase in the demand for herring eggs on kelp. We knew we had the product and the market. When

we first started we had 6 barrels each holding about 50 pounds (Victor 1992).

Timing was a very important concept for those Kaigani Haida who marketed herring spawn on *Macrocystis* kelp. They tried to hold the product until the market price increased. The Christmas season was the best time to sell herring spawn on *Macrocystis* kelp to Japanese importers, since people in Japan consumed large amounts of this product to celebrate the new year. Although timing was already a well-developed concept in traditional Haida society, traders used to hold many products until they could get the best price. Trading methods and approaches did not change dramatically after the early days of trading. The Haida refined their traditional skills and adapted to the American economy, making necessary adjustments as needed to provide decent living conditions for their families.

Competing with others for profit was a skill inherited from traditional Kaigani Haida traders who were quick to take advantage of the presence of competitors to drive the best bargain. As described earlier in this chapter, in order to raise the price of their pelts, the Kaigani Haida used to travel between competing trading ships:

Haida traditionally loved competition. You always wanted to be the best, you wanted to be up there, be on the top. By taking our livelihood away, our right to harvest and to trade, our pride was taken away.

There was a lot of competition on the market but you always tried to be the best, you tried to be better than the other guy, be more professional. This was another value we inherited from our ancestors, the importance of striking a bargain (Victor 1992).

When harvesting and processing herring spawn on *Macrocystis* kelp for trade with Japanese importers or other brokers, the Kaigani Haida continued to use methods used by earlier generations without excluding recent technological advances when appropriate:

We made business, but we made it the Indian style, in a traditional way. We respected nature. We exactly knew what amount to take. We never went out there and damaged the bed kelps because we felt in our heart when we were going to endanger the resource. We never took and took until it was all gone. We selected only the grade A leaves by going through each vine and selecting each leaf individually. We worked very hard, we earned our money the hard way, just as our ancestors did. The most we ever made with the sale of herring eggs on *Macrocystis* kelp was \$5,000 per year. We just tried to make a living from our resources, like our ancestors did for decades. Everything was taken away from us, our religion, our language, our way of life, our beliefs, our rights to harvest resources and to trade them, and finally our rights to provide a decent living for our families.

I remember when we used to harvest for 20 minutes. Everybody in the community made a little money. It was enough to pay your bills and buy few things you needed, like clothes for children...We are so deprived of so many things. This income was important for every resident in Hydaburg, because there is nothing here for people to live on besides the harvest, the consumption, and the trade of our natural resources (Victor 1992).

During field research in 1992, key respondents agreed that the sale of herring spawn on *Macrocystis* kelp was an important component of the economy of Hydaburg and enabled people to make a living in a community where commercial opportunities were limited and a wage sector was practically non-existent.

CHAPTER 5. CONCLUSION

This report has shown that the subsistence harvest of herring spawn on *Macrocystis* kelp has a long tradition in Hydaburg. Prior to their consolidation at Hydaburg, the Kaigani Haida living in communities in the southern Prince of Wales Archipelago consistently harvested herring spawn on *Macrocystis* kelp as a subsistence resource. The harvest areas were near to or reasonably accessible by each of these communities. Traditionally, the Kaigani Haida harvested from several spawning areas around Hydaburg and Fish Egg Island. Almost everyone in a Kaigani Haida household, men, women, and children, harvested herring spawn on *Macrocystis* kelp, and they harvested for about one month each year. Herring spawn on kelp added variety to the diet and was a prized food. After the Haida consolidated in Hydaburg, they continued to harvest herring spawn on *Macrocystis* kelp for subsistence purposes. The methods of handling, preparing, preserving, and storing this important resource have been handed down from generation to generation and have been modified when appropriate.

This study also has demonstrated that harvesting methods and the amount of herring spawn on kelp harvested have not adversely affected either the herring stocks or the beds of *Macrocystis* kelp upon which the herring spawn. The historical locations of herring spawn on *Macrocystis* kelp harvest shifted over time, from several sites to one main area. The reasons for this change, and the concerns expressed by Hydaburg residents about the deterioration of their subsistence spawn-on-kelp fishery, have been explained.

Historically, herring spawn on *Macrocystis* kelp was a scarce food item accessible only to a few people on the northwest coast. For the Haida, it was valued as “high-class food,” and thus was a prime item to offer to guests during potlatches, for payoff parties, and during other cultural occasions. High-ranking people had to gather large quantities of dried herring spawn on kelp if they planned to give a potlatch. People who did not have access to herring spawn on kelp had to acquire this food item through trade.

The Haida of the Prince of Wales Archipelago, who traditionally harvested large quantities of herring spawn on kelp, were able to give, exchange, or trade it with other northwest coast tribes. Because it was a highly-valued and specialty food, an extensive trade network developed for herring spawn on kelp. Dried herring spawn on kelp stored in wooden boxes was transported by dugout canoes and traded, using the currency of the day, with kinfolk, trading partners, friends, and buyers with whom the suppliers did not have any particular relationship. Occasionally, the transaction was an exchange of herring spawn on kelp for cash, and in this case, the Haida supplied this food item to someone they did not know well.

While the Kaigani Haida continued their active and voluminous intertribal trading following contact, they eagerly began trading with Euro-Americans for manufactured goods. However, new materials, new ideas, and new food items never supplanted Native products. Through the years, the Kaigani Haida created new, and expanded existing, trade networks, while adapting to the Euro-American economy and making other adjustments when necessary. Trade of herring spawn on *Macrocystis* kelp and other items was, and, at the time of this report, conducted over an extensive area.

Trade of herring spawn on kelp expanded in the early 1950s, when the Kaigani Haida established trade relationships with Japanese trading companies, Japanese importers of herring products, Japanese and American brokers, and Chinese buyers. When harvesting and processing herring spawn on *Macrocystis* kelp for trade with foreign companies, the Kaigani Haida continued to use methods used by prior generations without excluding recent technological advances. The trade of herring spawn on kelp has always been an important component of both the traditional economy and the mixed subsistence-market economy of the Kaigani Haida.

Herring spawn on *Macrocystis* kelp was a very important food item in the traditional Kaigani Haida diet, featured at local and regional Native gatherings and served to guests at the potlatches and pay-off parties that took place as part of Haida funeral rites and other cultural ceremonies. Trade of herring spawn on kelp enabled the Kaigani Haida to supply food for these traditional events. Finally, trade of herring spawn on *Macrocystis* kelp with other interests enabled the Kaigani Haida to make a living in a town where commercial opportunities and a wage sector were practically non-existent. Interviews conducted in Hydaburg in 1992, along with review of other data sources, suggest that, under State of Alaska permit conditions for spawn on kelp implemented in 1967, the quantities of herring spawn on *Macrocystis* kelp harvested and traded have been insufficient to meet the Kaigani Haida subsistence needs and consequently have prevented them from maintaining their culture and their pursuit of a distinctive and fulfilling life.

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LITERATURE CITED

- ADF&G (Alaska Department of Fish and Game). 1988. Report to the Board of Fisheries: 1987 Southeastern herring fishery and *Macrocystis* kelp transport fishery. Alaska Department of Fish and Game, Division of Commercial Fisheries Southeast Region, Juneau.
- ADF&G (Alaska Department of Fish and Game). 1992a. Southeast Alaska sac roe herring fishery management plan, 1992. Alaska Department of Fish and Game, Division of Commercial Fisheries Southeast Region Regional Information Report No. 1J92-02, Juneau.
- ADF&G (Alaska Department of Fish and Game). 1992b. *Macrocystis* kelp harvest for commercial use. Alaska Department of Fish and Game, Division of Commercial Fisheries, Ketchikan.
- Beardslee, L.A. 1882. Reports of Captain L.A. Beardslee relative to affairs in Alaska, and the operations of the *U.S.S. Jamestown* under his command, while in the waters of that territory. Forty-seventh Congress, First session, Senate Committee on Naval Affairs, Executive Document No. 71, Government Printing Office, Washington, D.C.
- Blackman, M. B. 1973. The Northern and Kaigani Haida: A study in photographic ethnohistory. Doctoral dissertation, Ohio State University.
- Blackman, M. B. 1977. Historic changes in the Haida complex. *Arctic Anthropology* 14:39-53.
- Blackman, M. B. 1981. Window on the past: The photographic ethnohistory of the Northern and Kaigani Haida. National Museums of Canada, Mercury Series, Canadian Ethnology Service Paper No. 74, Ottawa.
- Blackman, M. B. 1990. Haida: Traditional culture. Pages 240-260 in W. P. Suttles, vol. ed. Handbook of North American Indians, Volume 7: Northwest Coast. Smithsonian Institution, Washington, D.C.
- Boelscher, M. 1988. The curtain within: Haida social and mythical discourse. University of British Columbia Press, Vancouver.
- Brink, J. H. van den. 1974. The Haida Indians: Cultural changes mainly between 1876-1970. Monographs and Theoretical Studies in Sociology and Anthropology in Honour of Nels Anderson, Publication 8. E.J. Brill, Leiden, the Netherlands.
- Cogo, R. 1983. Haida story. Ketchikan Indian Corporation, Ketchikan, Alaska.
- Cogo, R. and N. Cogo. 1981. Haida stories. University of Alaska Materials Development Center, Rural Education, Anchorage.
- Cole, D. and D. Darling. 1990. History of the early period. Pages 119-134 in W. P. Suttles, vol. ed. Handbook of North American Indians, Volume 7: Northwest Coast. Smithsonian Institution, Washington, D.C.
- Davis, S. D. 1990. Prehistory of Southeastern Alaska. Pages 197-202 in W. P. Suttles, vol. ed. Handbook of North American Indians, Volume 7: Northwest Coast. Smithsonian Institution, Washington, D.C.
- Dixon, G. 1789. A voyage round the world; but more particularly to the north-west coast of America; performed in 1785, 1786, 1787, and 1788, in the *King George* and *King Charlotte*, Captains Portlock and Dixon. G. Goulding, London.
- Drucker, P. 1965. Cultures of the north Pacific coast. Chandler Publishing Co., San Francisco.
- Eastman, C. M. and E. A. Edwards. 1991. *Gyaehlingaay*: traditions, tales, and images of the Kaigani Haida. Burke Museum Publications, Seattle.
- Emmons, G. T. 1991 [1930]. The Tlingit Indians. Edited with additions by Frederica de Laguna and a biography by Jean Low. American Museum of Natural History, v. 70. University of Washington Press, Seattle; American Museum of Natural History, New York.
- Fladmark, K. R. 1986. British Columbia prehistory. National Museums of Canada, National Museum of Man Canadian Prehistory Series, Archaeological Survey of Canada, Ottawa.

- Gibson, J. R. 1988. The maritime trade of the north Pacific coast. Pages 375-390 in W. E. Washburn, vol. ed. Handbook of North American Indians, Volume 4: History of Indian-White relations. Smithsonian Institution, Washington, D.C.
- Gibson, J. R. 1992. Otter skins, Boston ships and China goods: The maritime fur trade of the northwest coast, 1785-1841. University of Washington Press, Seattle.
- Jonaitis, A. 1988. From the land of the totem poles: The Northwest Coast Indian art collection at the American Museum of Natural History. American Museum of Natural History, New York; University of Washington Press, Seattle.
- Jones, L. F. 1914. A study of Tlingets of Alaska. H. Revell Co., New York.
- Kan, S. 1989. Symbolic immortality: The Tlingit potlatch of the nineteenth century. Smithsonian Institution Press, Washington, D.C.
- Khlebnikov, K.T. 1976. Colonial Russian America: Kyrill T. Khlebnikov's reports, 1817-1832. Translated, with an introduction and notes by B. Dmytryshyn and E.A.P. Crownhart-Vaughan. North Pacific Studies No. 2. Oregon Historical Society, Portland.
- Krause, A. 1956. The Tlingit Indians: Results of a trip to the northwest coast of America and the Bering Straits. Translated by E. Gunther. University of Washington Press, Seattle.
- Krauss, M. E. 1973. *Na Dene*. In T.A. Sebeok, ed. Current trends in linguistics, Volume 10: Linguistics in North America 1:11. Mouton, The Hague, Netherlands.
- Krauss, M. E. 1979. *Na-Dene* and Eskimo Aleut. Pages 803-901 in L. Campbell and M. Mithun, eds. The languages of Native America: historical and comparative assessment. University of Texas Press, Austin.
- Kruse, J. and R. Frazier. 1988. Report to the community of Craig: Tongass resource use cooperative study. University of Alaska, Institute of Social and Economic Research, Anchorage, in cooperation with the U.S. Forest Service and the Alaska Department of Fish and Game, Division of Subsistence, Juneau.
- Langdon, S. J. 1975. A social and educational history of Craig, Alaska. In S.J. Fitzsimmons and P.C. Wolff. Rural America: A social and educational history of ten communities, vol. 1. Abt Associates, Cambridge, Massachusetts.
- Langdon, S. J. 1977. Technology, ecology, and economy: Fishing systems in Southeast Alaska. Doctoral dissertation, Stanford University, Palo Alto, CA.
- Langdon, S. J., editor. 1986. Contemporary Alaskan native economies. University Press of America, Lanham, MD.
- Langdon, S. J. 1991. *Unpublished*. Affidavit: Tlingit and Haida Indian harvest, use and trade of herring roe on kelp in Southeast Alaska. Attached to memo addressed to Andy Hope. On file at the Alaska Department of Fish and Game Division of Subsistence, Juneau.
- Larson, R. C. and T. A. Minicucci. 1991. Report to the Board of Fisheries: 1989/1990 Southeast Alaska-Yakutat herring fisheries. Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau.
- Levine, R. D. 1979. Haida and *Na Dene*: A new look at the evidence. International Journal of American Linguistics 45(2):157-170.
- Makarova, R. V. 1975. Russians on the Pacific, 1743-1799. In R. A. Pierce and A. S. Donnelly, trans. and eds. A History of the Russian American Company. Materials for the study of Alaska history, No. 6. Limestone Press, Kingston, Ontario.
- Meares, J. 1790. Voyages made in the years 1788 and 1789, from China to the north west coast of America. Logographic Press, London.
- Moser, J. F. 1899. The salmon and salmon fisheries of Alaska. Government Printing Office, Washington, D.C.

- Murdock, G. P. 1936. Rank and potlatch among the Haida. Yale University Publications in Anthropology 13:1-20.
- Niblack, A. P. 1970 [1890]. The coast Indians of southern Alaska and northern British Columbia. Pages 225-386 in U.S. National Museum, Annual Report, 1888. Reprinted by Johnson Reprint Corporation, New York.
- Oberg, K. 1973. The social economy of the Tlingit Indians. Monographs of the American Ethnological Society, No. 55. University of Washington Press, Seattle.
- Olson, R. L. 1967. The social structure and social life of the Tlingit in Alaska. Anthropological Records 26. University of California, Berkeley.
- Peratrovich, R. J. 1959. Social and economic structure of the Henya Indians. Masters thesis, University of Alaska, Fairbanks.
- Reid, G. M. 1972. Alaska's fishery resources--the Pacific herring. Fishery facts 2. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Seattle.
- Salisbury, O. M. 1962. Quoth the raven: A little journey into the primitive. Superior Publishing Co., Seattle.
- Schroeder, R. F. and M. Kookesh. 1990. The subsistence harvest of herring eggs in Sitka Sound, 1989. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 173, Juneau.
- Sealaska Corporation. 1975. Native cemetery and historic sites of Southeast Alaska: Preliminary report. Sealaska Corporation, Juneau.
- Stewart, H. 1977. Indian fishing: early methods on the northwest coast. University of Washington Press, Seattle.
- Swagerty, W. R. 1988. Indian trade in the trans-Mississippi west to 1870. Pages 351-374 in W. E. Washburn, vol. ed. Handbook of North American Indians, Volume 4: History of Indian-White relations. Smithsonian Institution, Washington, D.C.
- Swanton, J. R. 1905a. Contributions to the ethnology of the Haida. Publication of the Jesup North Pacific Expedition, vol. 5, pt. 1. Memoirs of the American Museum of Natural History, New York.
- Swanton, J. R. 1905b. Tlingit method of collecting herring-eggs. American Anthropologist 7(1):172.
- Swanton, J. R. 1908. Social condition, beliefs and linguistic relationship of the Tlingit Indians. Pages 391-485 in 26th Annual Report of the Bureau of American Ethnology to the secretary of the Smithsonian Institution. Washington, D.C.
- U.S. Department of the Interior. 1944. Hearing on aboriginal claims of Indians of Hydaburg, Kake, and Klawock. Volumes 1-9. Testimony of: Demmert, Charles Webster; Haldane, George Edward; Morrison, Paul D.; Nix, Frank; Charles, Powell; Thomas, Fred.
- Vaughan, J. D. 1985. Toward a new better life: two hundred years of Alaskan Haida culture change. Doctoral dissertation, University of Washington, Seattle.
- Victor, A.-M. 1992. *Unpublished*. Field notes recorded in Hydaburg and Craig, Alaska. Located at Alaska Department of Fish and Game, Division of Subsistence, Juneau.