

Adaptation and Innovation in Tlingit and Haida Salmon Fisheries

by Steve J. Langdon

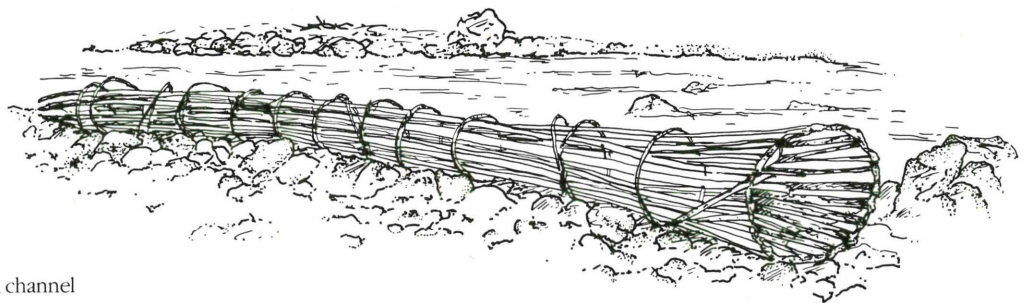
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Illustrations by Daphne Shuttleworth

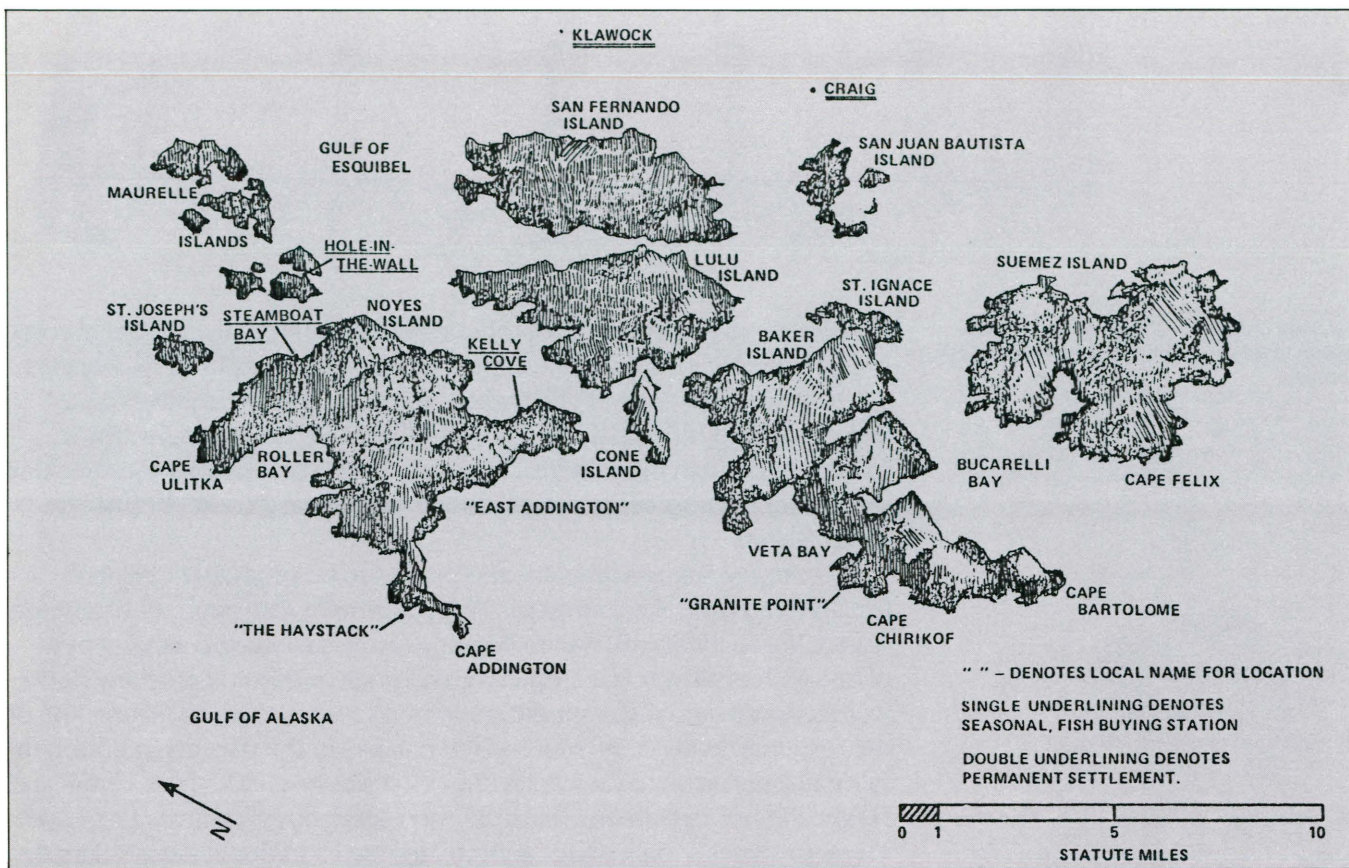
The first salmon cannery in southeast Alaska was established at Klawock in 1878, setting in motion an historical process of conflict over salmon resources, technological competition and innovation which continues to this day. One of the most interesting episodes in this story took place on the west coast of the Prince of Wales Archipelago, where the indigenous Henrya Tlingit and Kaigani Haida developed new fishing areas and techniques to adapt to Euro-American competition.

Salmon was the staff of life in precontact Tlingit and Haida society. The west coast of Prince of Wales Island is home to five species of Pacific salmon (*Onchorynchus* sp.). King salmon, the largest of the Pacific salmon, do not spawn in Prince of Wales streams, but, traditionally, migrating fish were caught out of canoes by trolling bone hooks through the water. Stone weirs (fences) were built in tidal estuaries and at other shallow locations where salmon were known to school on their migration back from the north Pacific to their natal streams. These devices were used for pink and chum salmon, the most numerous species returning to Prince of Wales streams, whose food quality quickly deteriorates when they reach freshwater. Cedar weirs and traps were erected in the streams to harvest the sockeye and coho salmon, the most valued of the species because of their retention of fat content in freshwater.

From May to October, harvesting, processing and storage of salmon for winter consumption was the primary activity of the Tlingit and Haida house group. The house group consisted of 20-40 matrilineally related kinsmen headed by the *yitsati*, or house chief. As a corporate descent group, the house held title to its cedar planked home, names, titles, crests, mortuary poles, masks and other ceremonial regalia. Because the house group held communal title to salmon streams, Tlingit and Haida recognized and honored the territorial rights of each house group to the tradi-



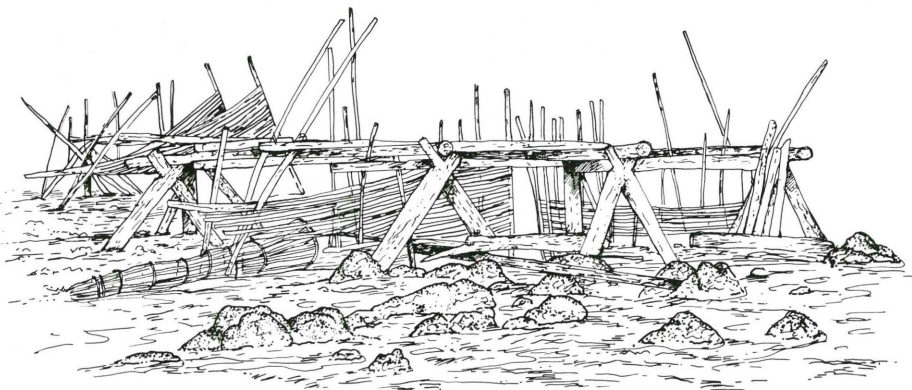
Indian salmon trap alongside artificial channel in stream.



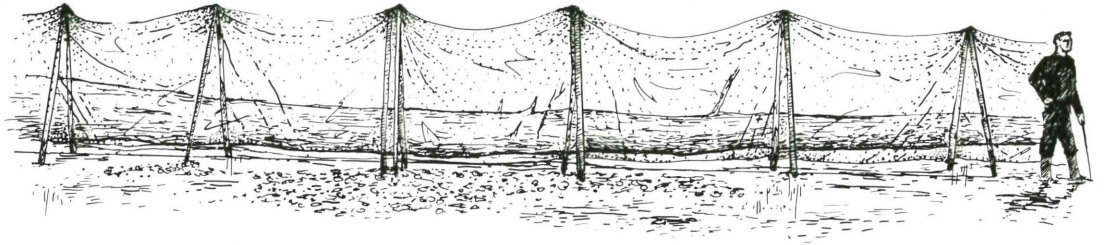
tional streams from which salmon were obtained. Use of the stream was restricted to its members; others were required to obtain authorization from the relevant *yitsati* before using the stream.

After the purchase of Alaska from Russia in 1867, several Euro-Americans came to the Prince of Wales Archipelago to establish salteries—commercial enterprises which salted salmon for shipment and sale outside of Alaska. In general, these enterprises respected the territorial claims and rights of Indian people and paid a rental fee to the appropriate *yitsati* for use of his house group's stream. At the same time, saltery men introduced the Tlingit and Haida to a new harvesting technique, the beach seine—a small 50-75 fathom net which was deployed by two skiffs and four to six men to harvest salmon on the sandy beaches in the small bays and estuaries below the mouths of the streams. The Tlingit and Haida quickly adopted this new technique and used it to provide salmon for the salteries.

Major fishing grounds in the vicinity of Craig-Klawock, Alaska.



Indian salmon weirs and traps in operation.



Barricade created by Euro-American cannerymen to block the ascent of salmon to spawning grounds.

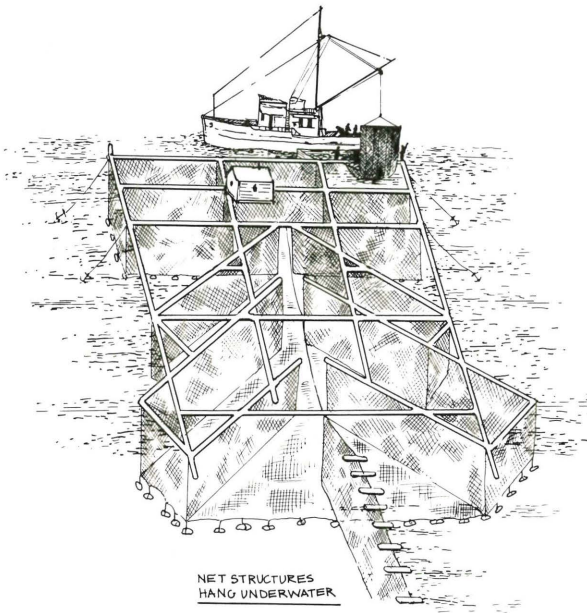
The demand of the salteries for salmon was limited due to capital costs and processing methods. The appearance of canneries in 1878 changed the picture dramatically. Even at this early date salmon canning was a highly efficient industrial operation which could process many times more salmon than the salteries. The cannery at Klawock was soon seeking sockeye from most of the major systems on the west coast of Prince of Wales Island.

The canned salmon industry also proved to be profitable, and in the late 1880s a spurt of construction spread canneries throughout southeast Alaska. When the Pacific Steam Whaling Company erected a major new plant south of Klawock at Hunter's Bay, Tlingit and Haida property rights were ignored, and the competition for sockeye soon led to the decline of the resource. Many canneries erected barriers in the streams to inhibit the salmon's migration to their spawning locations but, unlike the Tlingit and Haida, did not remove the barricades to allow enough salmon to escape. These practices soon led the canneries to need additional salmon supplies, so they turned to the seemingly inexhaustible supplies of pink and dog salmon found in virtually every stream on Prince of Wales Island.

These depredations caused serious hardships to the resident Tlingit and Haida. Federal Bureau of Fisheries researcher Jefferson Moser, who visited the area in 1897, reported that serious declines were occurring in runs to most streams due to the erection of barricades, as delegations of chiefs came to him at every stop to relate their concerns:

... Everywhere the Indians were greatly exercised over their condition. These streams, under their own administration, for centuries have belonged to certain families or clans settled in the vicinity, and their rights in these streams have never been infringed upon until the advent of the whites. They claim the white man is crowding them from their houses, robbing them of their ancestral rights, taking away their fish by shiploads; that their streams must soon become exhausted; that the Indian will have no supply to maintain himself and family, and that starvation must follow.

Although the Tlingit and Haida never regained their property rights to salmon, they fought back by adapting to the new purse seine gear which allowed them to catch the salmon in open water and by building mobile fishing vessels. In 1907 however, a new technology, the floating fish trap, was introduced which created fresh conflicts and threats to the Tlingit and Haida. A capital intensive harvesting technique, it could be placed in the bays and inlets further away from the stream mouths. The Tlingit, Haida, as well as Euro-American fishermen quickly perceived the danger posed to their livelihood by this new technique. By the mid-1920s, the cannery owners had deployed the traps throughout southeast Alaska and obtained the majority of their harvests from this device. Further, federal regulations



Floating traps, invented by J. R. Heckmann in 1907, harvested the majority of salmon from 1920 to 1960.



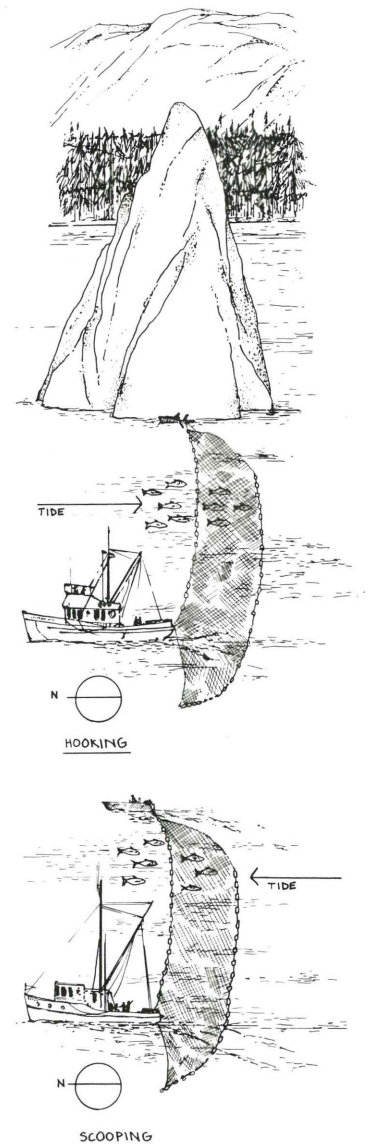
Purse seine fleet circa 1920.
Photo by John N. Cobb, courtesy of Historical
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were established requiring that no fishing, by trap or mobile gear (seines), could be conducted within a half mile of another trap. As locations by which salmon were known to travel were gradually preempted by trap sites, the Tlingit and Haida fishermen were continually forced to seek out new grounds. By the 1930s, advances in vessel design and seine construction allowed them to fish locations systematically on the west coast of Noyes, Baker, and Dall Islands, where salmon were known to appear regularly on their inshore migration. Only here were they able to realize some respite from the traps, as the waters of the north Pacific were too unpredictably tempestuous for the fish traps to operate effectively.

The search for new fishing grounds to intercept the salmon before they reached the traps was but one element in the Tlingit and Haida struggle against the traps. They used the Alaska Native Brotherhood, a fraternal order founded in 1912, to wage political battle against the cannery owners in an attempt to have the traps outlawed. In addition, they sabotaged the traps. Finally, they became “fish pirates” by stealing from the traps and selling the filched fish back to the cannery owner from whose trap the fish had been taken.

The ecological genius of the Tlingit and Haida fishermen is exemplified in their adaptation to the new north Pacific fishing grounds and conditions. In the period before World War II, the “hook-offs” (locations past which salmon migrated and at which seines could be used safely) could only be used at certain stages of the tide due to limitations of technology. The tidal flow in these areas generally sweeps north and south across the headlands at three to six knots. Salmon, however, are traveling from north to south on their homeward migrations, so that to catch them successfully, the seine must take the shape of a broadened U (called a “hook”). The effectiveness of this configuration stems from the salmon’s confusion, as they discover continuous net when funneled toward the deepest part of the U. The seine, if laid out well, functions like a three-sided corral, but, if flattened, loses its effectiveness, as the salmon are able to escape by swimming around each end of the net.

In the 1930s and 1940s, the seine fishing unit consisted of a 40-50 foot gasoline powered vessel on the stern of which was piled the seine and a small wooden skiff with oars. Locations to fish in the north Pacific were selected either where the small skiff could be tied to the shore or where a man could jump off and tie the end of the seine to a rock. The main vessel would then steam away from shore, playing the net out behind it. This technique could only be used when the tide was flowing in the same



“Hooking” and “scooping” at “The Haystack”
(see map).



Purse seiners (left) in operation circa 1950.
Photo by Robert J. Browning



Purse seiners (right) in operation off Noyes Island, 1974 (see map).
Photo courtesy of Don Kalk

Suggested reading

Browning, Robert J. *Fisheries of the North Pacific: History, Species, Gear and Processes*. Anchorage: Alaska Northwest Publishing Company, 2nd edition, 1980.

Cobb, John. *Pacific Salmon Fisheries*. Bureau of Fisheries Document No. 1092. Washington, D.C.: Government Printing Office, 4th edition, 1930.

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Moser, Jefferson. "Salmon and Salmon Fisheries of Alaska." In *Bulletin 18 of the United States Fish Commission* (1899): 1-178.

direction as the fish were migrating, that is, from north to south. When the tide changed back every six hours, the fishermen had to "anchor up" because the south to north tidal flow would flatten the seine. The salmon, however, were not inhibited by the tidal flow against them as they continued on by, often in massive numbers.

After World War II, gasoline outboard engines were added by the Tlingit and Haida to the wooden skiffs, which were then deepened to handle the greater power. In order for the seine to function when the tide was flowing from south to north, the main vessel and the skiff had to tow the seine through the water faster than the speed of the tide. Only in this way could the necessary U configuration of the seine be obtained. Such a maneuver required an enormous amount of horsepower to overcome the drag effect from the towed seine as well as coordination between the captain and the skiffman to insure that the "hook" was maintained as the unit moved north. Finally, a long stretch of shoreline with appropriate depth, unencumbered by reefs, rocks, or other obstacles was also required. This new technique, first developed around 1950, was known as "scooping" to indicate the manner in which Indians were gathering the salmon as they moved down the shoreline rather than waiting for the fish to come to them. It restructured radically the purse seine fishery by doubling the amount of time available to harvest fish.

Major changes have come to the purse seine fishery of southeast Alaska since 1950. Power blocks, half-purses, diesel powered aluminum skiffs, radar, radios, "fishfinders" and limited entry permits are now a part of the seascape. But when you go on the "outside," to Granite Point on Baker Island or the Haystack off Noyes Island, you will still find Tlingit and Haida fishermen "hooking" and "scooping" in the quest for salmon.