

Navigating Troubled Waters:

Part 1: A History of Commercial Fishing in Glacier Bay, Alaska

U.S. Department of the Interior

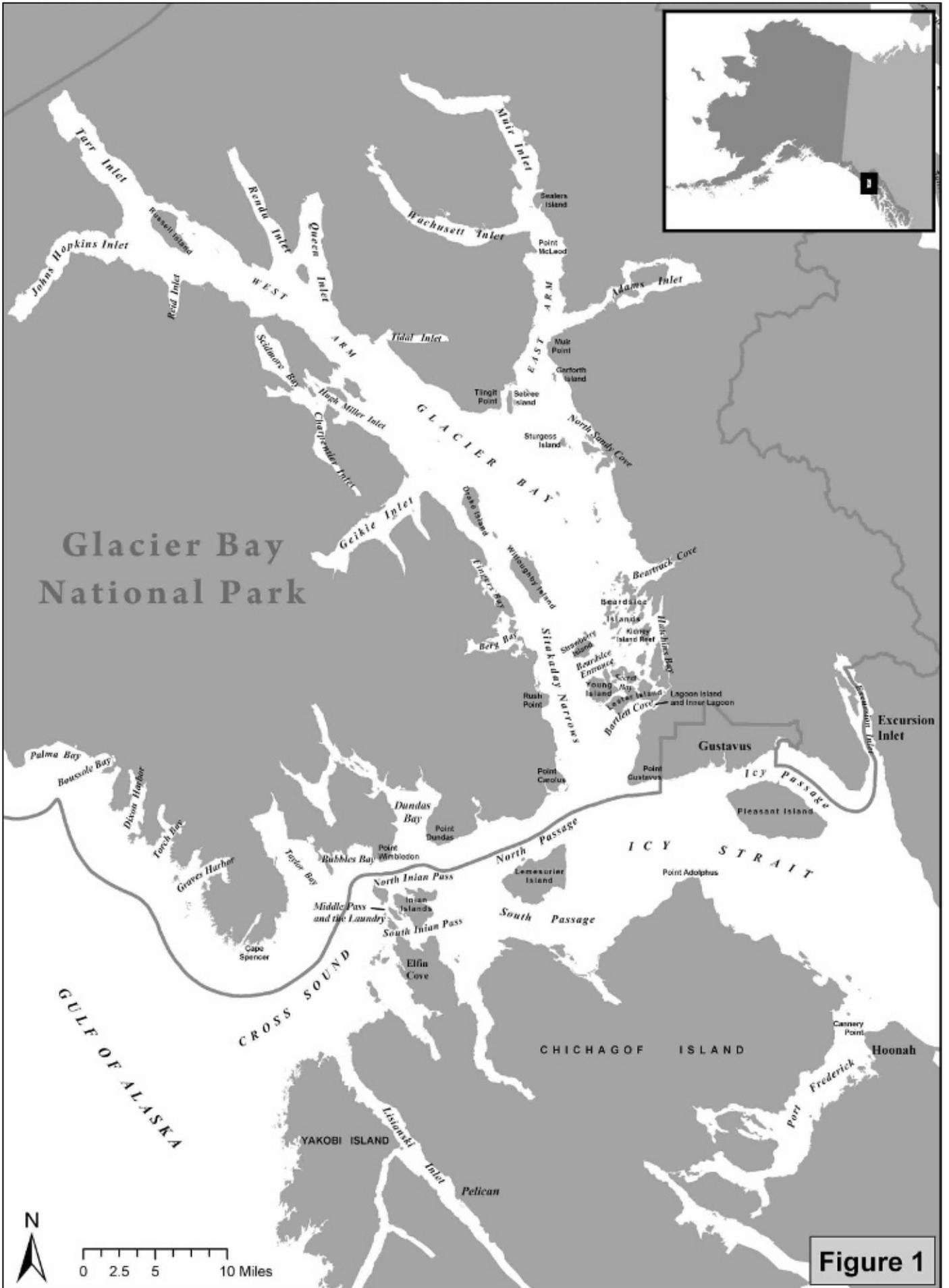
National Park Service

Glacier Bay National Park and Preserve
Gustavus, Alaska

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Chapter 1: Early Fishing and Fish Processing in Glacier Bay

Physical Setting

Glacier Bay National Park and Preserve is located in Southeast Alaska and is administered by the U.S. government's National Park Service, a branch of the Department of the Interior. The park encompasses approximately 3,225,284 acres, and consists primarily of mountains, ice fields, glaciers and marine waters (see Figure 1 opposite page). Much of the terrain is very severe. Within the park, Glacier Bay proper—the focus of this work—is comprised of the marine waters of Glacier Bay, including coves, bays and inlets, north of a line drawn from Point Gustavus to Point Carolus. Glacier Bay proper encompasses 326,720 acres.

Several hundred years ago, Glacier Bay did not exist. In its place was a vast glacier that flowed from the north. The glacier was in places more than 4,000 feet thick and up to 20 miles wide. It reached its maximum extent sometime around 1750, jutting several miles into Icy Strait. Climate change raised the snowline and starved the icefields that fed the glacier, causing it to begin a rapid retreat. In only two centuries the glacier retreated more than 65 miles, re-opening Glacier Bay in the process. The complex marine ecosystem that has evolved and continues to evolve in Glacier Bay is significantly dependent upon the nutrients contained in the silt-laden waters from melting glaciers that drain into the bay.

There are 762 miles of shoreline in Glacier Bay. The maximum depth of its waters is 1,200 feet. The average tidal range is about 14 feet, with a maximum of about 24 feet. Tidal currents at Sitakaday Narrows, a constriction in the lower bay, can exceed 8 knots. A dozen glaciers calve into Glacier Bay's tidewater.⁶

The climate of the Glacier Bay area is maritime. Summers tend to be cool, cloudy, and damp, though fairly long warm and sunny stretches are not uncommon. Winters range from moderately to severely cold, with rain or snow mixed with rain during warm spells, particularly in the lower reaches of the bay. During cold spells, pan ice often forms in protected areas of Glacier Bay. Cold spells also give rise to icing conditions that can be a hazard to mariners. Precipitation at Bartlett Cove, in lower Glacier Bay, averages 75 inches per year, a considerable portion of which falls as snow.

The fall and winter months are the windiest, though gale-force winds sometimes rake the area during spring and summer.

Glacier Bay is one of Alaska's premier tourist destinations. Steamships began regular tourist excursions to Glacier Bay in the 1880s. In recent years some 400,000 tourists visit the bay annually, the great majority on cruise ships that often accommodate more than 2,000 passengers.

Native Fishing

The Tlingit culture of northern Southeast Alaska represents a very successful adaptation to an immensely rich but very demanding and dangerous environment. Much of Southeast Alaska's natural wealth is concentrated in its marine waters: Icy Strait with Cross Sound are said by some to be the richest bodies of water, biologically speaking, in the North Pacific. The millions of salmon that pass through and are nourished in the area are an indicator of this wealth, but they are only a small fraction of the area's immense biomass that ranges from tiny plankton to 40-ton humpback whales.

But there is a catch: to utilize this wealth required skill and toughness. The waters of Southeast Alaska are cold and unforgiving. Large tides can cause standing waves, tide rips, and currents far stronger than one can paddle against. Storms roll in regularly from the Gulf of Alaska, particularly in the fall. Gale-force winds often result in 8-foot waves. The worst situation develops when a strong wind pushes waves against a strong current. The steep waves that result often frighten modern mariners in relatively large diesel-powered boats. This condition is often experienced near current-washed headlands and in channel constrictions such as Sitakaday Narrows in southern Glacier Bay.

In this harsh environment, where a simple mistake could be the difference between life and death, the Tlingits did not lead a hand-to-mouth existence. They thrived. The accumulation of surplus wealth, often redistributed at potlatches, was intrinsic to their economy. Also, in part because they were so efficient at utilizing the resources of the sea for food, the



Tlingits had time to develop an artistic style of a quality that rivals any Native culture.

Jefferson Moser, a government official who documented the turn-of-the-century fishing industry in Southeast Alaska, said that the Natives of Southeast Alaska were “essentially fish-eating Indians.”⁷ The most basic tool of a Tlingit fisherman was his canoe. In northern Southeast Alaska fishing canoes were hewn from a single Sitka spruce log and generally 15 to 20 feet long.⁸ The preferred material for paddles was Alaska-cedar.

Salmon were the most important fish utilized by the Tlingits. Sockeye (red) salmon were preferred, possibly because the flesh is attractive, tasty and easily preserved by smoking or drying. Streams were owned by individual families or clans. In early post-contact times, seasonal villages were established near red salmon streams at Bartlett Cove and Berg Bay. One visitor to Southeast Alaska in 1888 observed that: “Indian houses smell as did the quarters of Jonah when he lodged within the ‘whale,’ for the reason that salmon in every stage of freshness and dryness either boils in the pot on the fire or hangs suspended from the roof.”⁹

Salmon fishing was a social event as well as a subsistence activity. Men did the fishing, assisted by women and children who dealt with fish once they were caught.¹⁰ Salmon were caught with gaffs and beach seines and in long, basket-like wooden traps placed in streams. In 1899 Jefferson Moser recorded a location on the Bartlett River where such traps were formerly used.¹¹

Trolling was a natural for a people who traveled regularly by canoe. The speed of canoe travel was just right for trolling, and little extra effort was required to drag a baited hook or lure behind. The reward could be a nice salmon. In 1898, Moser reported that Natives at Killisnoo (Admiralty Island) often trolled for coho and king salmon.¹²

Salmon were filleted and dried or smoked in sufficient quantities to provide for each family’s winter needs. Excess salmon was sometimes rendered into oil from which a sauce was made. Salmon roe was eaten fresh or dried for winter, and on occasion fermented in a pit in the intertidal zone to make a delicacy called ‘stink eggs.’¹³

Halibut were available year-round and were usually eaten fresh, although drying was

occasionally employed to preserve it for later use. Because halibut were available year-round, they were not generally preserved. Cleverly designed halibut hooks were carved from two pieces of wood, often Alaska-cedar, but sometimes the top piece was Alaska-cedar and the lower of another type, such as alder. The pieces were tied together and fitted with a barb of sharp bone. Sometimes an elaborate design was carved into the hook’s uppermost wooden component (see Figure 2). The hook design favored medium-sized halibut—probably the most efficient size to catch. Lines were made by women from spruce roots that were split into thread-like strips that were then braided into lines about 3/8” in diameter. Fishing was done at slack water.^B The hooks were baited with fish skins or herring that were tied onto the hook, and taken to the bottom by a rock secured with a quick-release knot. A piece of wood or an inflated bladder or stomach of a seal served as a buoy. A single man in a canoe could fish a number of set lines, each with one hook. Like a bobber used by sport fishermen angling for panfish, movement of the buoy signaled that a fish was on. A quick yank released the anchor rock, and the fish was brought to the surface, clubbed, and placed in the canoe.¹⁴

Dungeness crab were speared and cooked by boiling.¹⁵ Other marine organisms utilized for food by the Tlingits included cod, herring (including the roe), clams, and chitons. Kelp was also eaten.

Living in a land of plenty came to have a major peril when non-Native people encroached on it. Moser summed up the situation the Natives of Alaska found themselves in when white men decided to exploit Alaska’s rich salmon resources:

These streams ... 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. No Indians would fish in a stream not their own except by invitation, and they can not understand how those of a higher civilization should be—as they regard it—less honorable than their own savage kind. They claim the white man is crowding them from

^B Slack water, when tidal movement is least, is generally considered to be the period beginning an hour before high or low tide and ending an hour after..



Figure 2: Traditional Tlingit halibut hook, created in Hoonah, Alaska, by George Dalton, Sr. (courtesy Bill Eichenlaub)

their homes, robbing them of their ancestral rights, taking away their fish by shiploads; that their streams must soon become exhausted; that the Indian will have no supply to maintain himself and family, and that starvation must follow... My own sympathy is with the Indian, and I would gladly recommend, if the way were clear, the establishment of ownership in streams; but it is impracticable, and I can only ask for him a consideration of his claim and, whatever law is framed, that a liberal balance be thrown in his favor.¹⁶

Other government officials were less sympathetic. George Tingle, “inspector of the salmon fisheries” for the Treasury Department, wrote in 1897 of Native rights to salmon streams:

We have in all instances impressed them with the Government’s right to control all streams, bays, and inlets where the tide ebbs and flows,

and their occupancy of a home on the banks does not, as they claim, extend their property rights over the waters, which must be maintained free, for all, under the restrictions of the law. I found in all cases the Indian had but to make the effort, as white people must, and do, in order to supply his family with all the fish they require for food, and when left without such supplies it is their own fault.

Tingle noted that canneries in Alaska had paid some 1,300 Natives about \$130,000 in 1896. He added that

Considering it is for work covering at most half the year, leaving them with the other half to hunt valuable game and otherwise provide for their families, it makes them quite independent. If you were to take out of the country the commercial companies, the living for natives would be gone and their means of existence become precarious.¹⁷

The Coming of Industrial Fishing: Sockeye Salmon Attract Salters and Cannerymen to Glacier Bay

Early fish processing at Glacier Bay was focused entirely on locally-caught salmon. Pacific salmon are anadromous: they spend parts of their lives in fresh water and part in salt water. All Pacific salmon die after spawning, their decaying bodies contributing nutrients to the environment upon which their progeny will depend. Alaska hosts all five species of Pacific salmon. Early salting and canning interests were primarily interested in only one, the sockeye (*Oncorhynchus nerka*). This species was favored primarily because of the attractive red color of its flesh, and is also known as “red” salmon.¹⁸

The range of the sockeye is from northern California to Japan. The species feeds primarily on zooplankton, but it also eats small fish. Mature sockeye salmon usually weigh about four to eight pounds and spawn during the summer months. Depending on her size, the female deposits 2,000 to 4,500 eggs in a “redd” excavated with her tail in a stream or lake’s gravel. The eggs are fertilized as they are extruded, after which the female fans gravel over them with her tail to bury them for protection until they hatch in the winter. Juvenile sockeye usually spend about two years in fresh water before migrating out to sea, where they spend about two or three years before returning to their natal stream.¹⁹ During the latter part of the 19th century, the Bartlett River in Glacier Bay was host to a considerable run of sockeye salmon. This fact was not unnoticed by those who endeavored to become salmon processors.

Unnamed Saltery at Bartlett Cove

Captain W. E. George, who was associated with the steamer *Idaho*, named Bartlett’s Bay (Bartlett Cove) after Charles C. Bartlett, who bought a “fishing property and claim” at that location in 1884.²⁰ An 1882 chart included in the 1883 navigational guide *Pacific Coast Pilot* shows a “fishery” located near the present-day Bartlett Cove dock (see Figure 3).²¹ This was almost certainly a saltery, and was likely a modest facility. (A saltery on the Copper River portrayed in a 1914 government report, for example, was nothing more than a large wall tent with a wooden floor.)²² This structure was likely being improved upon when travel writer Eliza Scidmore visited Bartlett Cove in 1883. Scidmore wrote: “The packing-house had

just been built, and the ship unloaded more lumber, nets, salt, barrel-staves and hoops, and general merchandise and provisions for the new station.”²³

No records exist of the production at this saltery. Although some fish may have been obtained from Berg Bay or Beartrack Cove, the likely source of the saltery’s supply of fish was the Bartlett River, which then hosted an annual run of what one experienced canneryman estimated to be 75,000 to 100,000 “beautiful large red salmon.”²⁴ In 1901, government agent Jefferson Moser estimated the sockeye catch in a good season could be 50,000, but could vary considerably.²⁵ An agreement was likely made with the Native owners of the stream to pay for fish taken from the river and/or to purchase fish from Native fishermen.²⁶ At that time there were no regulations governing where fishing could occur, what type of gear could be employed, or how many fish could be caught. Barricades—semi-permanent wooden structures that concentrated salmon by blocking their further ascent up a stream—were made illegal in 1889, but there was little enforcement of the regulation.²⁷ A 1901 fishery survey of the Bartlett River, however, found no evidence of barricades.²⁸

In preparation of their fishing effort, fishermen likely stretched a net across the Bartlett River just upstream of a location suitable for the use of a beach (drag) seine. Salmon, following their instincts to swim upstream, would become concentrated below the net. Fishing for these highly-vulnerable fish would likely occur at whatever stage of the tide that was most advantageous to the fishermen.

Beach seines were the preferred gear for catching salmon in locations such as the Bartlett River. A beach seine is a shallow net with corks along the top (“corkline”), lead weights along the bottom (“leadline”), and hauling lines at both ends. Although such nets can be fairly long, it is likely that because the Bartlett River is a relatively small stream, those employed there were on the short side.

In normal use, the seine was loaded into a boat and, with one of the hauling lines paid out by a man ashore, the boat rowed or poled away from the beach until it reached a point beyond where the salmon were schooled. The boat then turned parallel to the shore and the net was run out its full length. The boat then returned to shore with the second hauling line, and the net was then rapidly hauled until

production when it ceded the southern half of Sakhalin Island to Russia in the Treaty of Saint Petersburg.³⁴

Bartlett Bay Packing Co.

As the major salmon runs on the Sacramento and Columbia rivers declined precipitously due to overfishing, the salmon canning industry looked to Alaska. Although Alaska possessed no individual salmon runs to match those of the Columbia, numerous smaller runs added up to make it home to the largest salmon resource in the world. The first salmon canneries in Alaska were built in 1878 at Klawock and Sitka. In 1887, the Alaska Commercial Co. (the direct descendent of the Russian-American Co.) constructed a cannery along the Karluk River on Kodiak Island. Karluk Lake, from which the river flows, was the spawning ground for one of Alaska's premier runs of red (sockeye) salmon—the only type of salmon of interest to the early canning industry. The following year, the company barricaded the river and caught virtually every red salmon that entered it—some 1.2 million fish. Over 100,000 cases of salmon (a case is equivalent to 48 one-pound cans) were packed, the sale of which yielded a tremendous profit.³⁵ Word of the company's success soon reached investors in Seattle and San Francisco, and a boom in cannery construction in Alaska ensued.

The lack of a reliable water source rendered Lester Island a marginal location. The source of some or perhaps all processing water was a small stream west of the cannery, from which a small diversion canal routed water to the cannery site.³⁶ August Buschmann, who operated a modest saltery on the same site in 1899 and 1900, said that the water available from the stream was “barely enough for our needs.”³⁷

The Bartlett Bay Packing Co. cannery had an agent—Williams, Brown & Co. of San Francisco—that financed the salmon pack (see Figure 5). Funds were needed primarily to purchase tin plate from which cans were made, and to pay fishermen and cannery workers. Williams, Brown & Co. was also the agent for two other canneries in Southeast Alaska.³⁸ As opposed to the normal process of cans being manufactured on site, those used at the Bartlett Cove cannery during the 1889 season were transported from elsewhere, possibly Seattle. Cookers were improvised and the pack made by hand.³⁹ Natives were likely at least part of the cannery crew. An 1888 report in *Harper's Weekly* described Native women working in a Southeast Alaska cannery as “arrayed in bare feet and odiferous calico, standing in more or less slimy salt-water, mingled with souvenirs of departed salmon.”⁴⁰ The *Alaskan* (Sitka) reported that production that year at the Bartlett Bay cannery was 4,600 cases (about 221,000 individual cans).

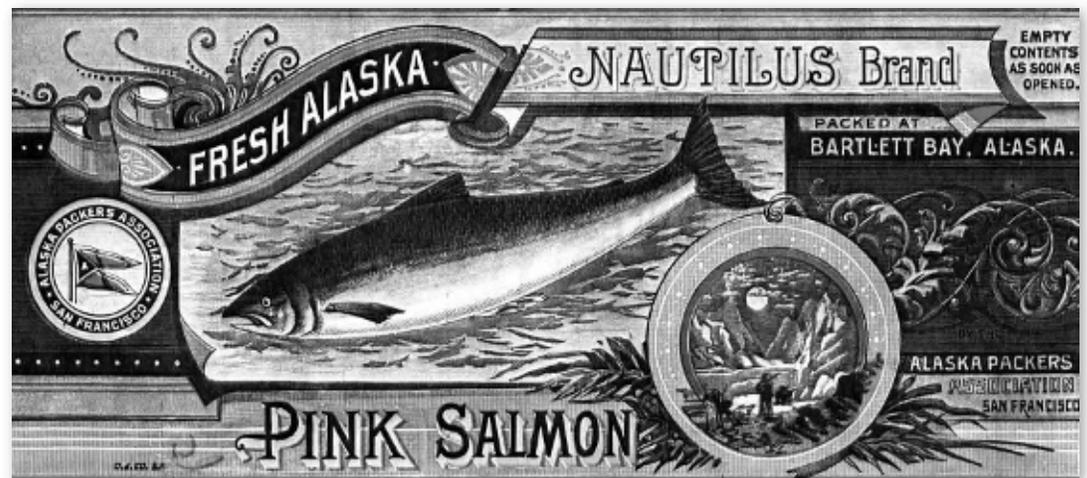


Figure 4: Salmon can label, Alaska Packers Association. Pink salmon were not often canned in the early years of the Alaska salmon canning industry. (courtesy James Mackovjak)

In 1889, the Bartlett Bay Packing Co. constructed a cannery in Glacier Bay (see Figure 4). It was a makeshift affair on Lester Island, on the north shore of Bartlett Cove near the location of a Hoonah Native seasonal fishing village. It was one of only six canneries in northern Southeast Alaska.

Canning machinery, such as it was at the time, was installed for the 1890 canning season, during which some 12,000 cases (nearly 600,000 individual cans) were packed. Live sockeye salmon in the Glacier Bay region probably average about six pounds each. Since it took 65 to 68 pounds

Figure 5: Salmon can label, Bartlett Bay Packing Co. (courtesy James Mackovjak)



of live salmon to make a case, 12,000 cases represented about 133,000 fish—a number that far exceeded the highest estimate of the Bartlett River’s production. The steamer *Chinook*, which had been built on the Columbia River for the Bartlett Bay Packing Co. in 1889, was used as a tender (transporter of fish) that year, and it is likely the additional salmon came from Berg Bay (on the west side of Glacier Bay) and possibly elsewhere.⁴¹ Though most of the fishermen were likely Native, contracted Chinese labor was used at the cannery. The laborers apparently rioted in the fall in the belief that they were to be kept at Bartlett Cove over the winter. The riot was quelled when the steam schooner *Signal* arrived to transport 73 of the “most turbulent Chinamen” to San Francisco, where they arrived in early December.⁴²

Prior to the 1891 canning season, the Bartlett Bay Packing Co. cannery, described by the *Alaskan* (Sitka) as a “remarkably fine piece of property,” and the tugboat *Chinook* (both owned at the time by A. B. Ford) were sold to Williams, Brown & Co. for \$40,000.⁴³ In 1891, some 7,600 cases (about 365,000 cans) were packed, the reduction from the previous year possibly due to ice clogging Glacier Bay.⁴⁴ That was the last year the Bartlett Bay Packing Co. operated. The demise of the cannery was the result of overproduction of canned salmon in Alaska. In 1888, the year before the cannery was built, there were a total of 17 canneries in Alaska. A year later there were 37. Production nearly doubled and inventory began to accumulate because the market could not absorb the higher level of output at prices profitable to the canneries.⁴⁵

The industry’s solution to the overproduction problem was to consolidate operations into what were termed “combinations,” the largest of which became the powerful Alaska Packers Association (APA). APA grew out of the Alaska Packing Association, which organized in January 1892. The Bartlett Bay Packing Co.—even though it was idle—was among the 31 Alaska canneries that comprised its membership. Twenty-two canneries were shuttered, the result being that the Alaska canned salmon pack was reduced by half.⁴⁶ The Alaska Packing Association was dissolved, and in February 1893 the Alaska Packers Association was incorporated to take its place. The shuttered Bartlett Bay Packing Co. was issued 240 shares valued at \$65 per share (\$15,600, equal to about \$300,000 in year 2000 dollars). In 1894 the cannery was dismantled and torn down, likely for its lumber.⁴⁷ The APA was very successful. It packed 72 percent of Alaska’s salmon in 1893, and remained a major player in Alaska’s canned salmon industry until the 1960s.⁴⁸

Icy Strait Packing Co. Saltery

The Bartlett Bay Packing Co. site was purchased in 1897 by pioneer canneryman Peter Buschmann.^c With his sons, August and Eigel, Buschmann had ambitious plans to construct and operate a number of canneries and salteries in Southeast Alaska. Buschmann reportedly paid \$1,200 for the Bartlett Cove site, and intended to build a cannery that would operate as part of the Victoria, British Columbia headquartered Icy Strait Packing Co., in which he was a principal.⁴⁹ It was soon decided that the company’s site at Bartlett Cove would be

^c In 1899 Peter Buschmann began construction of a cannery on Mitkof Island at the north end of Wrangell Narrows. The town of Petersburg, named after Buschmann, grew up around the cannery.



Figure 6: Photo of Bartlett Bay cannery taken in 1901 from aboard the U.S. Fish Commission steamer *Albatross*. The cannery had ceased operating after the 1891 season, but was used to salt fish in 1899 and 1900. (courtesy National Archives and Records Administration)

used initially to salt salmon, with a cannery to be built later. August Buschmann, who was 18 years old at the time, was detailed to supervise the salting operation for the 1899 season. Buschmann, who remained active in the seafood industry into the mid-20th century, left a fairly comprehensive record of his activities at Bartlett Cove.

He recalled the saltery site as a string of small buildings and cabins just above the high-water mark (see Figure 6). The saltery itself was equipped with twelve salting tanks, each with a capacity of 12 barrels. There was no dock, so barrels of salted salmon were loaded by hand onto small scows and towed to deep water. The saltery was periodically serviced by the steam-powered, 34-ton cannery tender *White Wing*, which would hoist the barrels into its hold for transport to the company's main facilities at Petersburg.^{D 50}

Buschmann's crew consisted of 40 to 50 Native men and women from Hoonah, plus three or four white men. Of his Native crew Buschmann later said that the men were "very cooperative and competent fishermen" and the women were "competent saltery helpers."⁵¹ Cannery wages in Alaska at that time were \$2 per day for fishermen, \$1.50 for laborers, \$1.00 for boys aged 12 to 14, and \$0.50 for younger boys.⁵² Saltery wages were likely similar.

Salmon were caught using beach seines. Most of the effort was in the Bartlett River, but

fishing was also done in Berg Bay. In a 1960 letter, Buschmann related a harrowing experience returning to Bartlett Cove from a fishing expedition to Berg Bay:

About once a week I used to pull [row] across Glacier Bay in a large seineboat, completely equipped with crew and seine, to a bay called Berg's Bay where there was a small salmon stream and at times we would make a good catch to augment the supply from our local stream. On one of these trips coming back from Berg's Bay with a fairly good catch of salmon we saw a very large iceberg that looked as if it was grounded in the middle of Glacier Bay. It looked as tall as the [42-story] Smith Building in Seattle, about a block in diameter, and was just about on our course home from Berg's Bay when allowing for the strong 8 to 10 knot tide running out of Glacier Bay on spring ebb tides. I decided to steer for this iceberg and run as close to it as possible since it fascinated me. It was an unusual sight and I steered as close as I thought safe to allow us to pass on the lower side of it. As we drifted by close to the berg at 8 or 10 miles per hour we got the surprise of our lives. Behind this iceberg there

^D At least one government report refers to the vessel as *White Wings*.

had formed the largest and deepest whirlpool I had ever seen and small icebergs the size of large trucks or small dwellings were circling around in this whirlpool at tremendous speed and as deep as we could see. Fortunately we were just on the very outer edge of this whirlpool, or just outside, and our boat was whipped around that half circle in jig time. We were then across and outside on the opposite side before we knew it. We all looked at each other in amazement after it was all over and we finally realized what actually happened. I believe that if we had been 10 to 20 feet closer when first passing the berg we might have been drawn into the whirlpool. After that experience I have always been careful when passing close to large icebergs.⁵³

Perhaps because it comes in the most temperate season, Independence Day may be Alaska's most celebrated holiday. The tug-of-war at the July 4, 1899 celebration at Bartlett Cove particularly impressed August Buschmann:

Our celebrations consisted of the usual sports, such as canoe races, foot races, high and broad jumps, pie eating contests, etc. and the final was a tug of war between two native teams. This took place on a cleared portion of the sand dunes above the saltery, where all our celebrations were held except the canoe races. This tug-of-war stands out as one of the toughest struggles of this kind that I have seen. The men, 6 or 7 on each side, were at this tug-of-war for almost an hour. It was very interesting and exciting since the men while digging in gradually dug deeper and deeper into the sand, until finally they were buried up to their arm pits and the 1" diameter rope used was surging back and forth in the sand. The men had become very dry and exhausted and the excited women folks stood by with coffee pots filled with water and dripped cold water on the tongues and into the mouths

of these exhausted men. The elders and I finally made them stop by calling it a draw but it was an experience never to be forgotten.⁵⁴

The September 10, 1899 earthquake at Yakutat provided additional excitement for Buschmann. His account of the event:

On a beautiful summer day while sitting in our small modest log cabin dining room [at Bartlett Cove], waiting for the cook to announce lunch, I suddenly felt a very severe and unusual movement, and to my surprise I saw my trunk across the room moving toward me. I then realized we were having a very severe earthquake that lasted several minutes. The cook's helper, a boy of twelve, ran into the cabin as white as a ghost. He had been walking around in a large Indian cemetery located on top of sand dunes behind the camp and while this severe movement was on he thought the Indians buried there were coming to life. This was the worst quake I have ever experienced...

Ice broken from the glaciers by the earthquake of 1899 formed bergs as large as buildings and jammed Glacier Bay and Icy Straits almost solid, making it dangerous and almost impossible for large steamers to navigate this area for several days. For some time thereafter, steamers often made long detours to escape the many large ice floes while going to and from Juneau and other local ports to the westward. The tender *White Wing* that generally served our salting station could not push her way into Bartlett Bay for two weeks and even then with difficulty on account of floating ice.⁵⁵

Production at the Bartlett Cove saltery in 1899 was 600 barrels that were each considered to contain 200 pounds of salmon, for a total of about 120,000 pounds.⁵⁶ In 1900 fishing for sockeye began on June 25 and ended August 7. Production was 530 barrels (about 106,000 pounds).⁵⁷ Between August 20 and September

30, 120 barrels (about 24,000 pounds) of coho (silver) salmon were salted.^{E 58}

August Buschmann was busy with more than salmon during this period. During the summer of 1899, the Icy Strait Packing Co. constructed a cannery building and wharf on the south side of Bartlett Cove, near the location of the outflow of the inner lagoon. The likely reason for this location was its proximity to Alder Creek as a water supply. The wharf was usable only at high tide.⁵⁹ The company's plan was to install cannery equipment in the spring of 1901 and to can salmon that summer.⁶⁰ The cannery equipment was never installed, and the project was abandoned. Part of the reason was the area's remoteness and the problems with ice, but the major reason was that Peter Buschmann was nearly bankrupt, and in the process of selling the Icy Strait Packing Co.^F It was purchased by Pacific Packing and Navigation Co., which in turn went bankrupt in 1903. Various of the company's properties, which August Buschmann thought included the Bartlett Bay saltery, were purchased by the Northwestern Fisheries Co., which also purchased the Dundas Bay cannery.⁶¹

Glacier Bay as a Source of Salmon, Fish Traps, and an Effort at Conservation

A major change was taking place in the canned salmon industry around the turn of the century. While sockeye salmon remained the preferred product, markets had developed for all five species of salmon, and canneries expanded their operations accordingly. Severe overfishing lowered the production of sockeye salmon, but overall production of canned salmon increased due to the utilization of heretofore mostly ignored chums, pinks and cohos. King salmon were not often canned, but were salted or sold on the fresh market.

Although Glacier Bay after the turn of the century was without a salmon processor, its sockeye salmon resource became an important component of the production of a cannery constructed by the Western Fisheries Co. at Dundas Bay in the spring of 1900. Dundas Bay is about 10 miles west of the mouth of Glacier Bay.

The Western Fisheries Company's "Point Santa Rita cannery" was relatively small, but among the company's resources was a considerable number of vessels, including five oar-powered seine boats and two steam tugboats, the latter used to transport fishermen and their gear and to tender (transport) fish. Of the 35 fishermen employed in 1900, 26 were Natives. Some 13,800 cases of salmon were canned during that season, 6,130 of which were sockeye. Though no quantity was reported, Glacier Bay was listed as a source of some of the sockeye salmon, and may have been the source of some cohos as well.⁶²

The total pack of salmon during the 1901 season at the Dundas Bay cannery was 21,750 cases. The total pack of sockeye is unavailable, but by August 17 some 8,000 cases of the species had been packed.⁶³ Both Bartlett Cove and Glacier Bay were listed as sources of sockeye salmon.⁶⁴

Prior to the 1902 season, the Dundas Bay cannery came under the ownership of the Pacific Packing and Navigation Co. Financed by East Coast interests and organized similarly to the Alaska Packers Association, Pacific Packing and Navigation had acquired some 23 canneries in Alaska and Puget Sound.⁶⁵ The 1902 season was the best yet experienced at Dundas Bay, with a total pack of 29,800 cases.⁶⁶ The total pack of sockeye is not available, but by August 22 some 15,000 cases of the species had been packed. The source of the fish is unknown, but it is likely that a portion came from Glacier Bay. Two stationary salmon traps were employed by the cannery's new owners during the 1902 season, but were considered to be a total failure.⁶⁷

Despite some problems with early designs, salmon traps quickly gained favor with cannery operators in Alaska, and would later be the Dundas Bay cannery's primary source of salmon. The traps were basically large mazes that fished round-the-clock with little labor (see Figure 7). They revolutionized salmon fishing. Traps were preferred by the canneries because they offered a means to maintain control over the cost and supply of salmon, and they even allowed the canneries to stockpile live salmon to smooth out operations.

^E Buschmann would have no doubt been flattered to know that his humble operation nearly a century later would be praised on the floor of the U.S. Senate by Alaska's Senator Frank Murkowski as "one of the first great salmon salteries in Alaska."

^F Despondent over his financial situation, Peter Buschmann committed suicide in 1903. His son, August, became an innovative and successful leader in Alaska's fishing industry, where he remained active until the 1950s.

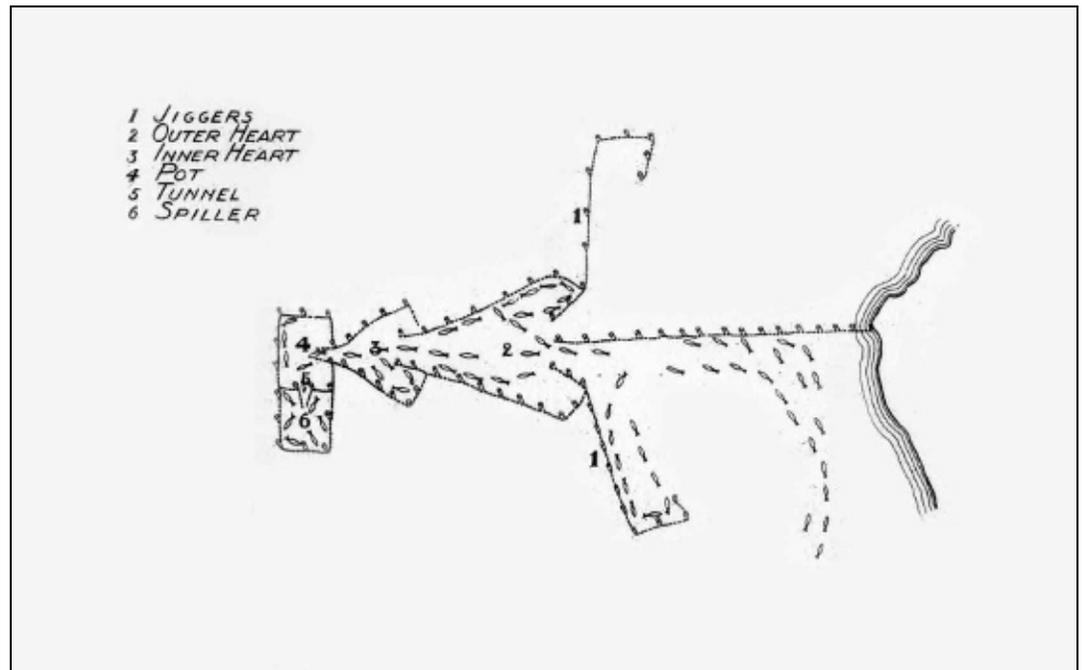


Figure 7: Early diagram of salmon pile trap similar to that installed at Pt. Gustavus. (*Pacific Fisherman*, 1903 Annual Number)

Government regulators defended salmon traps because they were stationary and thus could be easily monitored. Fishing boats, on the other hand, could surreptitiously enter a closed area, catch as many fish as they could, and leave with no one the wiser.

Fishermen hated the fish traps, which they considered unfair competition that put them out of work. Among fishermen, robbing salmon traps (often with the co-operation of unscrupulous watchmen) was considered good sport and an honorable thing to do.⁶⁸ The elimination of fish traps became a populist issue that figured prominently in Alaska's desire for statehood. As a state, Alaska would have the authority to outlaw fish traps.

Salmon traps had been first employed in Alaska in about 1885.⁶⁹ The first salmon trap in Icy Strait was established near Point Couverden in 1901 by August Buschmann.⁷⁰ The average annual production of salmon traps in Alaska varied, of course, with fluctuations in the numbers of returning salmon. The seasonal production among individual traps varied due to factors such as location and competition from nearby traps. Well-situated traps in exceptional seasons were known to catch in excess of half a million salmon.

The 1903 season was good as well, with a total pack of 25,400 cases.⁷¹ By August 26 some 15,000 cases of sockeye had been packed.⁷² Pacific Packing and Navigation Co.

went bankrupt after the 1903 season, however, and the Dundas Bay cannery was not operated during the 1904 season. The assets of the company were purchased in 1904 by the Northwestern Fisheries Co., which operated the Dundas Bay cannery for most years before it was permanently shuttered in 1931.⁷³

The Bureau of Fisheries kept records of the salmon caught at Bartlett Cove for the years 1905 to 1924 (see table below). It is likely that all the salmon caught in Bartlett Cove during those years were canned at the Northwestern Fisheries Co. cannery at Dundas Bay, despite the fact that three additional canneries had been established in the Icy Strait District. Two canneries (Pacific American Fisheries and Astoria & Puget Sound Packing Co.) had relocated in 1908 from Haines to Excursion Inlet because the sockeye salmon in the Chilkat River and other Lynn Canal streams had been "fatally overfished." Both relied almost exclusively on salmon traps.⁷⁴ Likewise the Hoonah Packing Co., which was established at Hoonah in 1912, relied on traps. Hoonah Packing started out with four traps, which was increased to six the following year, and to 12 in 1915. In 1922, the last year Hoonah Packing canned salmon, it operated fully 25 traps.⁷⁵

No commercial salmon traps were sited in Glacier Bay proper, although a number of pile traps were located along the Icy Strait

⁶⁸ Icy Strait was a hot bed of trap robbing. During the 1924 salmon season, cannery operators in the region organized a private patrol under the direction of the U.S. deputy marshal at Hoonah that practically eliminated trap robbing.

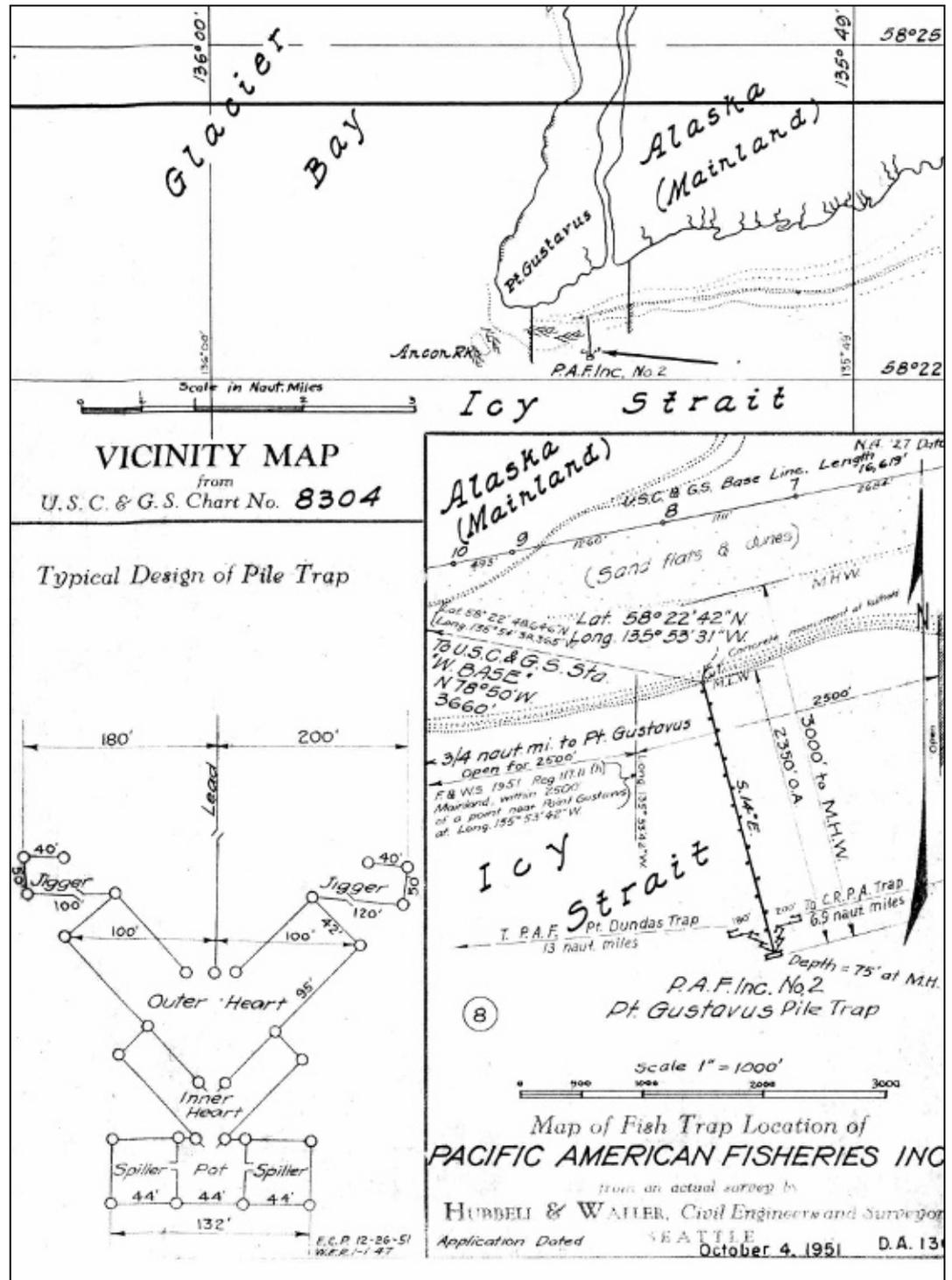


Figure 8: Diagram of what some called the "million dollar trap" at Pt. Gustavus. The trap caught a lot of valuable sockeye salmon, but was also expensive to maintain because of damage from icebergs. (Pacific American Fisheries records, Center for Pacific Northwest Studies, Bellingham, Wash.)

shore with several between the Good River at Gustavus and Point Gustavus. A floating trap may have been sited off Point Carolus in 1918, and two floating traps were operated in Dundas Bay for many years. A number of traps were eliminated in 1925 when federal regulations declared that the interval between fish traps north of 58° north latitude be a minimum of 1-1/2 miles.⁷⁶ More were eliminated in 1941 when the federal government limited the areas open to fish traps. One area that remained open was at Point

Gustavus, specifically "within 2,500 feet of a point near Point Gustavus at 135 degrees 53 minutes 42 seconds west longitude."⁷⁷ Although the trap may have been operated earlier by other interests, the Pacific American Fisheries Co. and its successors at Excurion Inlet operated the "Point Gustavus Pile Trap No. 2" from 1918 until fish traps were outlawed shortly after Alaska became a state in 1959. This trap, which was fully 2,350 feet long, was known to some as the "Million Dollar Trap"⁷⁸ (see Figure 8). It had the

Table 1: Bartlett Cove Salmon Production, Numbers of Fish Caught, 1905-1924^H

| YEAR | COHO | CHUM | PINK | KING | SOCKEYE | TOTAL |
|------|---------|---------|---------|---------|---------|---------|
| 1905 | 1,546 | 364 | 208 | - | 9,783 | 11,901 |
| 1906 | 5,314 | 371 | 3,520 | - | 11,305 | 20,510 |
| 1907 | 191 | - | 3,404 | - | 7,514 | 11,109 |
| 1908 | 254 | 674 | 880 | - | 7,990 | 9,798 |
| 1909 | - | - | 149 | - | 13,334 | 13,483 |
| 1910 | 3,358 | 2,133 | - | - | 8,933 | 14,424 |
| 1911 | 5,468 | - | - | - | 21,191 | 26,659 |
| 1912 | 4,408 | 1,087 | 351 | - | 9,122 | 14,968 |
| 1913 | 317 | 906 | 4,193 | - | 8,729 | 14,145 |
| 1914 | 3,032 | 745 | 74 | - | 10,079 | 13,930 |
| 1915 | - | 1,264 | 3,756 | - | 12,256 | 17,276 |
| 1916 | NO DATA |
| 1917 | - | 2,172 | 978 | - | 7,015 | 10,165 |
| 1918 | 2,844 | 3,527 | 1,864 | - | 11,460 | 19,695 |
| 1919 | 2,201 | 1,167 | 177 | 48 | 2,965 | 6,558 |
| 1920 | 184 | 240 | 301 | - | 2,923 | 3,648 |
| 1921 | NO DATA |
| 1922 | 584 | 298 | 563 | 48 | - | 1,493 |
| 1923 | - | 8 | 336 | - | 2,910 | 3,254 |
| 1924 | 3,615 | 1 | 103 | - | 1,665 | 5,384 |

name for two reasons: (1) it caught a lot of valuable sockeye salmon, and (2) it required a lot of expensive repairs due to damage from icebergs from Glacier Bay. Gustavus Pile Trap No. 2 was officially licensed by the NPS in the 1950s. Though located at the entrance to

Glacier Bay, the trap was actually designed and sited to catch salmon migrating east along the north shore of Icy Strait.

As noted in Table 1 above, after 1918 fewer than 3,000 sockeye were caught each year. The diminished catch was considered

^H There is no record of king salmon spawning in the Bartlett River. Those caught in 1919 and 1922 were likely feeders caught incidentally in Bartlett Cove by seiners or by trollers.

an unmistakable sign that the Bartlett River resource had been depleted by overfishing.⁷⁹

The preservation of Alaska's salmon was the responsibility of the federal government. To that end a few laws were promulgated, but the actual enforcement effort was woefully inadequate. In 1908, for instance, the enforcement of existing salmon laws in all of Alaska was part of the duty of the three agents of the Alaska Salmon-Inspection Service (Bureau of Fisheries).⁸⁰ As of 1914 there had apparently not been a single conviction by a jury in Alaska for violation of fishery laws.⁸¹ The attitude that persisted in the canning industry is illustrated by an observation made in a 1900 report by Howard M. Kutchin, the Treasury Department's Special Agent for the Protection of the Alaska Salmon Fisheries:

The [cannery] superintendents, as a rule, are a fine class of men, who could be trusted outside of Alaska to scrupulously observe all the requirements of good citizenship. But once they get up there, don their sweaters, and go to 'hustling' for salmon—bound to 'fill their tin' and beat their nearest competitor at any cost of effort or infraction of some inconvenient law—they seem to lay off their home characters with their home clothes.

Kutchin added that "It is my dispassionate conviction that [except for the fish wheel] every one of the forbidden practices in fishing are more or less in vogue at one or the other of the salmon fisheries." He wrote also that

It would not be just to the people engaged in salmon packing in Alaska to accuse them all of wanton contempt of law. I do not believe such to be the case. Those who would prefer to be law-abiding excuse themselves for these deplorable practices by assuming that they are forced by the principle of self-protection to do as their competitors do. And besides this, there is the common notion, often stubbornly maintained by the best of men, that the fish of the sea, the birds of the air, and the game of the woods and fields are free to all men. Experience shows that laws for

the protection of game are the most difficult of enforcement. Offenders are not regarded as exhibiting any moral turpitude, and their lawlessness is apt to be condoned by public sentiment.

Kutchin also made a very important observation: "... with the salmon packing business of Alaska there are great interests at stake, and the enforcement of the law not only affects the rights of the public, but should appeal to the permanent self-interest of the packers themselves."⁸²

Within Alaska there was considerable concern over the depletion of the salmon fisheries. But there was little Alaskans could do: their official voice in Washington, DC was little more than an annual report of Alaska's affairs prepared by the federally-appointed governor and submitted to the Secretary of the Interior. The situation improved slightly in 1906, when Alaska was accorded an official, though non-voting, delegate to Congress. The delegate could at least make known on an ongoing basis the concerns of Alaskans.

Congress formally created the Territory of Alaska in 1912. With territorial status, Alaska gained limited self-government by an elected legislature. Among the limits Congress put on the new territory's government was a provision that the legislature was not permitted to "alter, amend, modify, [or] repeal" federal laws in certain matters. Among them were laws that pertained to fish.⁸³ Gaining territorial jurisdiction over Alaska's fisheries, nevertheless, continued to be an issue, and would ultimately prove pivotal in Alaska's long road toward statehood.

E. Lester Jones, an agent of the Bureau of Fisheries, explained the jurisdiction issue from his agency's perspective in 1915:

Any division of authority between the Department of Commerce and officials of the Territory of Alaska in administering the Alaska fisheries laws would be detrimental to the salmon and other fishery industries. It would so confuse conditions that neither the officials of this Department nor the Territory would have adequate authority. What is needed is not divided power, but the concentration of authority under

one responsible administrative department.

It is my undivided and unbiased belief that a continuation of the present investment of such authority in the Department of Commerce will be fruitful of much more real good to the fisheries of Alaska than any division of authority.

The contention of some in Alaska that the Territory can better administer its own fishery affairs is susceptible to adverse criticism because of the strife and friction between the diverse local interests that would almost inevitably follow such efforts to handle the situation. This has been the result in some States, and it is therefore my honest belief that full Federal control of the fisheries of Alaska, as impartially and honestly administered by the Department of Commerce through the Bureau of Fisheries, will result most beneficially to all interests concerned. And, furthermore, owing to the vast amount of practical and scientific knowledge and information acquired and developed during an extended period by men of unusual training and experience in the Bureau of Fisheries, any idea or thought of transferring jurisdiction over this highly important industry to another institution or board of the National Government should be dismissed at once, as such action would be a serious mistake and would prove a handicap to the greatest development of Alaska's rich fishery resource.⁸⁴

In 1920 Bureau of Fisheries personnel in Southeast Alaska—a region that contained hundreds of salmon streams—included an assistant agent, four wardens, the officers and crews of three patrol boats, and a token complement of four stream guards.⁸⁵ The job of the stream guards was to watch the mouths of streams to prevent encroachments by fishermen into the streams and the closed areas at their mouths. The guards, however, lacked the authority to arrest transgressors or

to seize illegal gear.⁸⁶ The number of stream guards increased to thirty in 1922. Of those, Earl C. Bright was detailed to watch streams in Glacier Bay and Cross Sound.⁸⁷ Bright's detail represented the federal government's first substantial presence in Glacier Bay. In 1923 Charles E. Ferdine spent approximately 60 days guarding streams in Bartlett Cove and Taylor Bay.⁸⁸

While Ferdine was busy guarding salmon streams, Southeast Alaska was hosting an important visitor: President Warren G. Harding. Harding was the first U.S. president to visit Alaska, and his entourage included his secretaries of agriculture, commerce, and interior. How and for what ends Alaska's resources were managed was causing a deep division within Harding's administration, and the men were in Alaska to see for themselves how the various federal agencies operated.

President Harding commented on Alaska's fisheries in a public address in Seattle on June 27, 1923. The fisheries, said Harding, were "the greatest Alaskan industry" and that salmon, in particular, were "an important contribution to our national food supply." He cautioned, however, that harvest levels were "too great for the good of the territory." If allowed to continue, the resource would ultimately be exhausted, leaving no basis for the industry. The fisheries, according to Harding, were imperiled by a lack of effective regulation. More restriction was "necessary and urgent."¹ Harding admonished Congress to act on this matter, and threatened executive action if it did not do so.⁸⁹

Congress acted. To address the decline of Alaska's salmon it passed the White Act of June 6, 1924. Designed to secure a larger escapement of salmon into streams, the legislation gave the Secretary of Commerce broad powers to limit or prohibit fishing in any of the waters of Alaska, and to "fix the size and character of nets, boats, traps, or other gear and appliances used therein."⁹⁰ J. M. Wyckoff, a U.S. Forest Service official who spent considerable time on Southeast Alaska's waters and had a substantial understanding of the region's salmon fisheries, thought in 1928 that it was "doubtful if there is on record any other single Federal act which has done so much for the preservation of our food supply."⁹¹

¹ This was President Harding's last public speech. He died several days later of natural causes.

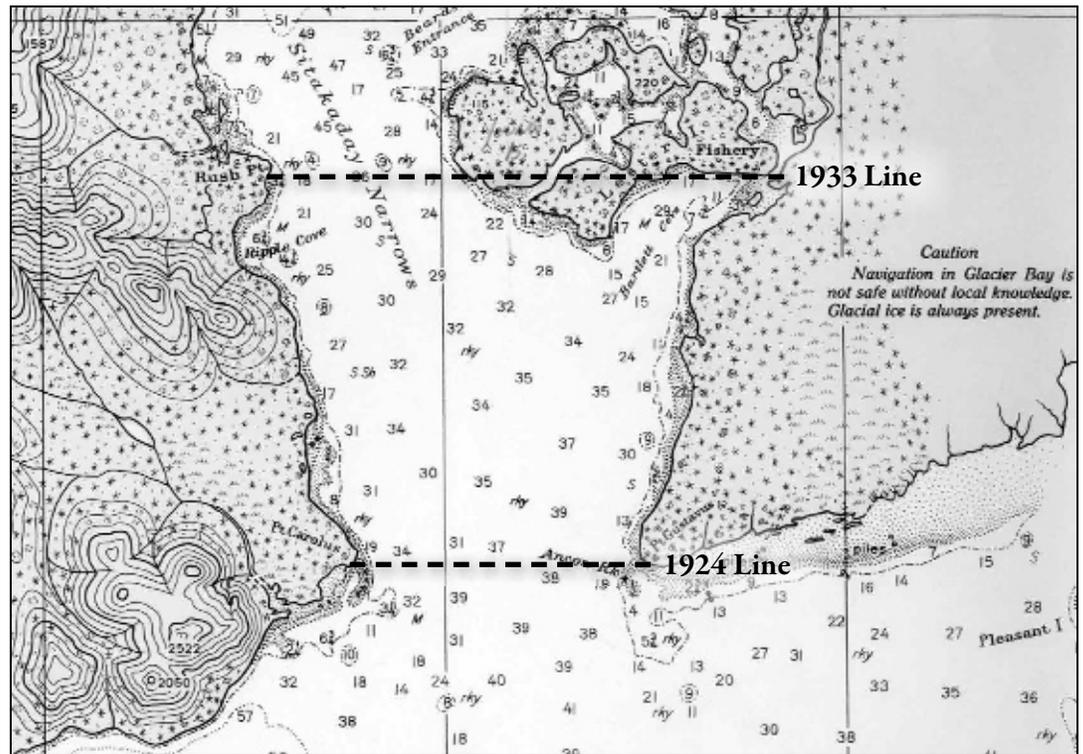


Figure 9: The White Act authorized the first regulatory lines to limit salmon fishing in Glacier Bay.

The legislation was implemented almost immediately through the use of supplemental regulations that closed fifteen areas in Southeast Alaska in which salmon runs were considered to be depleted.⁹² Glacier Bay was one of those 15 areas, so pursuant to regulations issued on August 20, Glacier Bay in its entirety (“all waters within a line drawn from Point Carolus to Point Gustavus”) was completely closed to all types of fishing for salmon (see Figure 9).⁹³

Though considered depleted, Glacier Bay must have retained an attraction to fishermen, because for the years 1925 through 1959 (when Alaska became a state) federal fisheries officials continued to maintain seasonal stream guards in the bay. James Russell, who was Glacier Bay’s stream guard for the years 1925 through 1927, lived aboard a launch he provided.⁹⁴ H. M. Wyatt, Glacier Bay’s stream guard in 1928, also furnished a live-aboard launch. Wyatt was paid \$7.00 per day, a dollar more than guards without a launch. In the years leading up to Alaska’s statehood, a one-man portable camp near the Beardslee Islands was maintained for about thirty days each season. As late as 1964, the NPS planned to detail seasonal rangers to help prevent “creek robbing” in the monument by “unscrupulous commercial fishermen.”⁹⁵