CHIGNIK

Geography

The Chignik region is located on the south side of the Alaska Peninsula and is sandwiched between the territory and waters of the Alaska Peninsula Aleutian Islands region to the east, and the Kodiak region to the west.

The Chignik region is roughly 450 miles southwest of Anchorage with a rich maritime environment that hosts salmon and other fish, marine and land mammals, birds, and marine invertebrates (Hutchinson-Scarbrough et al. 2016). The Chignik River system is the largest of nearly 100 additional salmon-producing waterways (ADF&G 1993).

Despite being the smallest salmon-people region of Alaska (6,587 km²), it is the 7th-largest producer of salmon. Chignik is remarkably rich in habitat diversity—which translates into biological diversity, especially within sockeye salmon.

Jared Kibele, Rachel Carlson, and Marie Johnson. 2018. Elevation per SASAP region and Hydrologic Unit (HUC8) boundary for Alaskan watersheds. Knowledge Network for Biocomplexity. doi:10.5063/F1D798QQ.
Early people and salmon systems

Archaeological research dates human habitation of the Chignik region to at least 9,000 years (Henn 1978). The first residents of the region were maritime hunters who primarily relied on marine mammals and fish for heating oil, clothing (ex. durable raincoats made from marine mammal intestines), and food supplies (ADF&G 1993).

Prehistoric excavations indicate later sites were located around salmon streams where people were extremely reliant on fishing (Dumond 1977; Hutchinson-Scarborough et al. 2016). The name Chignik comes from an Indigenous Alutiiq word translated as “wind” (Alaska Department of Community and Regional Affairs 1982).

Alexi, head man of Chignik Aleuts, and his two sons. Photo credit: UAF Digital Archives, Kenneth Chisholm Collection
Changes in systems

Russian fur traders came to the Alaska Peninsula in the 1760s and overpowered local Indigenous people during the second wave of Russian exploration, searching for land and resources (Haycox 2002). Oral traditions describe two cultural groups on the Alaska Peninsula that the Russians encountered during the contact era. Russians called Unangan speakers from the southwest Aleuts; Yup’ik speakers from central and eastern areas were descendants of Sugpiag or Alutiiq people. The Chignik region represented a cultural border between these groups.

Exploitation continued in this region until 1867 when the United States purchased Alaska; industry development included the continuation of the fur trade and whaling and the development of commercial fishing (Partnow 2001; Hutchinson-Scarborough et al. 2016). The first salmon cannery was built in Chignik in 1888.

Establishing the fishing village and commercial salmon fishing was and continues to be one of the key socioeconomic drivers in the region. The Fishermen’s Packing Company out of Astoria, Oregon, packaged 2,160 barrels full of salted salmon product that year and by 1893 three more canneries were built within the region. Subsistence and commercial salmon fishing practices have developed sociocultural values and key regional economic reliance as a result (ADF&G 1993).

Credit: Alaska State Library, Leslie Melvin Photo Collection (P222-458)
The Chignik commercial salmon fishermen undertook an experiment in harvesting organization by developing a fishing cooperative system that operated from 2002-2005. It was a stakeholder-initiated change that highlighted a collision of sociocultural values tied to fishing beyond neoliberal efficiency models. The effort resulted in social conflict between those who supported the co-op and those who did not. Fleet reduction manifested in what could have been 70-90 boats to 43 in 2003 and 33 in 2004 (Knapp 2004, 2007). As the co-op was eventually successfully challenged in court, it reverted to the previous structure in 2006. The co-op experiment was an example of how economic efficiency models and cultural values regarding fishing livelihoods can clash, ultimately representing a misfit between detached management theories and the realities among fishermen and their motivations for pursuing commercial livelihoods (see case study for further detail).

Regional Snapshot Today

Salmon and habitat

For its small size, the Chignik Region is a veritable wild fish factory with over 1100 km of known salmon-producing streams and rivers. Since 2001, approximately 2 million adult sockeye salmon have returned and have been caught in the region, with the vast majority of those returning to Black Lake (upper lake in the system) or Chignik Lake (lower lake). The approximate 1.75 million adult pink salmon that return each year are the aggregate product of countless small coastal streams in the region. With regards to average summer air temperature (9.6°C) and number of glaciers (45), Chignik shares similarities to the Kotzebue Region. Salmon habitats in Chignik are not only diverse, but also remain connected which gives options for rearing for multiple life stages and species of salmon.

Recent evidence has revealed that a substantial fraction of salmon born in the upper watershed move downstream and spend part of their life in Chignik Lagoon, a tidal estuary that provides additional rearing capacity (Walshworth et al. 2015). Natural changes of river flow, and loss of lake volume in Black Lake and more recently in Chignik Lagoon serve to highlight the dynamic nature of this largely pristine region. The natural habitat evolution appears to have influenced recent shifts in fish community (Westley et al. 2010).

Coupled with the natural change in habitat are long-term changes in climate that in some cases limit the potential mitigation responses by people. For example, artificially adding volume to the naturally shallow Black Lake (maximum depth
approximately 3 m) would not translate to cooler water temperatures given the air temperature is now markedly warmer than in the past (Griffiths and Schindler 2011).

Salmon and people

The contemporary village communities of the area are Chignik Bay, Chignik Lagoon, Chignik Lake, Ivanof Bay, and Perryville. Today nearly all residents of the Chignik Management Area (CMA) harvest and utilize salmon. As of 2015, 311 residents called the Chignik region home, and were dispersed across five communities: Chignik Lake, Chignik Lagoon, Chignik Bay, Perryville, and Ivanof Bay. The population of the region has seen a 31% decline from 518 in 1990 to 362 in 2010 (U.S. Census Bureau 2011).

Reasons contributing to this decline include employment and natural resource availability, commercial fishing changes, transportation opportunities, and overall increases in the cost of living (Hutchinson-Scarbrough et al. 2016). Chignik Bay functions as the hub for commercial fishing activities, where salmon is a primary fishery, and where early cannery-owned small vessels and fish traps have changed to fishermen-owned purse seine vessels.

Subsistence salmon fisheries are also fundamentally important to residents of the region. Subsistence harvests of salmon are affected by multidimensional factors, including stock abundance and run timing, weather cycles, fuel and gear costs, employment opportunities, commercial salmon prices, and access to traditional knowledge (Hutchinson-Scarbrough et al. 2016).

As sport fishing activities increase in popularity, the region has experienced similar issues prevalent throughout Alaska, namely how to balance the different types of fishermen and their diverse relationships to salmon. As one Chignik Lake resident explained, “More and more sport fishing – I don’t really like that deal. The kings are the ones that are pretty skimpy, and they are the ones that they’re [sport fishermen] mostly after. It really pisses a lot of people off; that’s for sure. One reason is they throw a lot of trash in the river” (Hutchinson-Scarbrough et al. 2016).

Percent of the population in the Chignik region living below the poverty line. United States Census Bureau, Juliet Bachtel, John Randazzo, and Erika Gavenus. 2018. Alaskan Population Demographic Information from Decennial and American Community Survey Census Data, 1940-2016. Knowledge Network for Biocomplexity. doi:10.5063/F1XW4H3V
Percent change from number of initially issued (ranging from 1975-1982) permanent commercial salmon permits held by Alaska residents to number of permits in 2016 by community. Alaska Department of Fish and Game, Commercial Fisheries Entry Commission. 2017. Commercial Fisheries Entry Commission (CFEC) Public Permit Holders by Community of Residence 1975-2016. Knowledge Network for Biocomplexity. doi:10.5063/F189144V

Salmon and economy

Historically, salmon fisheries in the Chignik region have been the seventh-largest in the state, generating almost $1 billion in revenue since 1975. Even though the Chignik commercial salmon fishery is not among the state’s largest, it is one of the most stable with the third-lowest variability in year-by-year fishing revenues. All five species of Pacific salmon are harvested in the commercial fishery, with sockeye being primarily targeted and the most important species in this region.

Interesting to note, despite the low risk for fishermen and the relatively high value generated in this fishery, the proportion of nonresidents participating in this fishery has been historically very low. Through the fishery’s history, local rural residents of Chignik have consistently retained between a third and half of the harvest revenue generated. Nonlocal urban Alaska residents retained the other third, and the final third is shared among nonlocal rural Alaska residents and nonresidents. The region has also seen the lowest permit migration of any region, as measured by the number of permit holders who either move out of the region or sell their permit to residents from elsewhere.


Salmon and subsistence

State Regulatory Framework

Participants in the Chignik Management Area subsistence salmon fishery must obtain a permit from the Alaska Department of Fish and Game, record their harvests on the permit, and return the permit to ADF&G at the end of the season. Harvest limits are 250 salmon per permit, which are issued to individuals—not households as in most other Alaska subsistence fisheries. Legal gear under state regulations includes set nets and seines. For a complete summary of state regulations, see 5 AAC 01.450 – 490.

The Alaska Board of Fisheries’ ANS finding for Chignik Area salmon (5 AAC 01.466(b)) is one of the most precise in the state in separating out stocks by species and subareas. In 1993, the Board had made an “administrative” ANS finding (i.e., one that had not been adopted in regulation) of 19,000 “salmon” for the Chignik Area, treating all salmon in the area as a single stock for evaluating whether reasonable opportunities for subsistence were being provided. In 2002, the Board changed the ANS to address concerns that residents of Chignik Lake and Perryville had expressed about management of late run sockeye salmon into the Chignik River system and their opportunity to harvest “redfish” (spawning sockeye salmon). The revised ANS was intended to reflect particular subsistence harvest and use patterns within the area.

This current ANS is as follows:

1. In the Perryville and Western Districts, combined:
   1. 1,400 – 2,600 coho salmon;
   2. 1,400 – 2,600 salmon, other than coho salmon;

2. In the Chignik Bay, Central, and Eastern Districts, combined:
   1. 5,200 – 9,600 early-run sockeye salmon;
   2. 2,000 – 3,800 late-run sockeye salmon;
   3. 100 – 150 king salmon;
   4. 400 – 700 salmon, other than sockeye and king salmon.

Federal Regulatory Framework

Federal regulations for the Chignik Area also allow subsistence salmon fishing by qualified local rural residents with rod and reel; these regulations apply to waters within and adjacent to the Alaska Peninsula National Wildlife Refuge (NWR), the Aniakchak National Monument and Preserve, and the Alaska Maritime NWR. In
2013, federal permits became available for federally qualified local residents who wish to take advantage of the federal subsistence fishing opportunities in the Chignik Area. ADF&G attempts to incorporate the data from this federal program in annual harvest assessment programs (Fall et al. 2018:127).

Subsistence Salmon Harvest Patterns

For the period 1977 through 2016, the average annual subsistence harvest of salmon in the Chignik Management area was 11,121 fish (Figure 4-1). Since 1994, the largest portion of the Chignik subsistence harvest was sockeye (74%) (including spawning sockeye taken as “redfish”), followed by coho (14%), pink (9%), chum (2%), and Chinook (1%) (Figure 4-2).
Most participants in the Chignik Management Area subsistence salmon fishery live in one of the five local communities; 73% of permits issued for 2012 – 2016 were local residents. Local residents accounted for 89% of the subsistence salmon harvest in the area and averaged a harvest of 102.5 salmon per permit. Non-local residents held 27% of permits, took 11% of the harvest, and averaged 32.9 salmon per permit (Figure 4-3). Most non-local participants are former local residents who return seasonally to participate in subsistence and commercial fishing (Morris 1987:210-212).

Based upon the most recent comprehensive household harvest surveys, salmon comprise approximately 46% of the total harvests of wild resources for home use by residents of the Chignik Management Area (which is a portion of the Lake and Peninsula Borough) (Figure 4-4). This includes salmon harvested in subsistence fisheries, sport fisheries, and retained by commercial fishers for home use (“home pack”) (ADF&G 2017). In 2011 (the most recent year for which comprehensive harvest data by gear type are available), 84% of the salmon harvest for home use was taken in subsistence nets or seines, 14% from commercial “home pack,” and 2% with rod and reel (N = 13,032 salmon); subsistence methods provided most of the salmon in all four local communities (Ivanof Bay had a very small year-round population in 2011 and was not part of the study). In all four communities, however, the majority of king salmon taken for home use were fish retained from commercial harvests, including 88% for the
four communities combined (N = 428 king salmon) (Figure 4-5; Hutchinson-Scarborough, Marchioni, and Lemons 2016).

![Composition of Wild Resource Harvests, Communities of the Chignik Management Area](image)

Fig. 4-4 Composition of wild harvest in Chignik region communities (381 pounds per person per year). Alaska Department of Fish and Game, Division of Subsistence. 2018. Subsistence harvest information by region, community, resource, and year, 1964-2015. Knowledge Network for Biocomplexity. doi:10.5063/F1S75DNC

![Percentage of salmon harvest for home use by gear type, Chignik Area communities, 2011](image)

Fig. 4-5 Percentage of harvest for home use by gear type in five Chignik communities, 2011. Alaska Department of Fish and Game, Division of Subsistence. Subsistence and personal use harvest of salmon in Alaska, 1960-2012. Knowledge Network for Biocomplexity. doi:10.5063/F18PSXTN
Until the early 1990s, most residents of Perryville and many residents of Chignik Lake moved in spring to fish camps on the north side of Chignik Lagoon. These camps were bases for commercial and subsistence salmon fishing. However, by the mid-1990s and early 2000s, most of these camps were no longer occupied, for several reasons. A key factor was the closure of the Columbia Ward cannery, which had been a source of supplies and facilities for the camps. A second factor was the imposition of use fees by the Alaska Native corporation that owned the land. Third, during the years in which the Chignik commercial salmon cooperative was operative (2002 – 2005), fewer Perryville and Chignik Lake residents directly participated in the commercial fishery as captains or crew and therefore discontinued their use of the camps. Since the mid-1990s, most subsistence fishing by Chignik Lake and Perryville residents has taken place near the communities, although commercial fishers continue to bring “home pack” fish back to their villages to share (Hutchinson-Scarborough, Marchioni, and Lemons 2016:176-182).

Salmon and governance

Governance actions under state jurisdiction in the Chignik region have recently addressed subsistence ANS levels, timing of commercial openings, and experimental mechanisms for distributing salmon harvests. The Chignik area commercial salmon fishery undertook a unique experiment between 2002 and 2005 as a co-op was created to allow a few designated fishermen to harvest the salmon and distribute the revenue equally among participating salmon permit holders. When the arrangement was legally challenged, the court determined that the Board of Fisheries lacked the authority to authorize the arrangement. Purse seine fishermen, the sole permitted fishery in the area, have been very actively involved with the Board of Fisheries and the biological managers.

Between 2000-2018, the Chignik area salmon fisheries were declared a disaster on two occasions, most recently the sockeye salmon return in 2018.

Land Ownership

Territorial governance units for the Chignik region are shown in the figure to the right. The US Fish and Wildlife Service is the major federal agency with jurisdiction in the region; the National Park Service governs lands in the eastern part of the region. Unique among the regions and due to the small spatial area encompassed, Alaska Native village corporations, primarily, own a majority of the land. Virtually all of the Native land holdings are in federal jurisdictions. There are a number of small private land holdings associated with salmon and seafood processing industry in the Chignik Bay and Lagoon areas, the primary location of salmon fishing in the region.
The region and its communities are a part of the Lake and Peninsula Borough. There are five recognized federal tribes in the region. There are no hatcheries in the region. The commercial fishermen of the region are organized as the Chignik Seiners Association. There are no nonprofit environmental organizations or habitat partnerships operating in the Chignik region.

Federal, State, and Native Land in Chignik

Emily O’Dean and Jeanette Clark. Land status in Alaska, 2018. Knowledge Network for Biocomplexity. doi:10.5063/F1NK3C9X.

Board of Fisheries

The Chignik region ranked ninth in proposals submitted to the Board of Fisheries over the study period. Proposals submitted addressed the co-op fishery through allocation and gear/vessel specifications in the period from 2000-2005. Nearly all of the proposals submitted from the Chignik region addressed commercial topics.

While ADF&G has had the most Board proposals for the Chignik region over the study period, the Advisory Committee, fishermen’s association, individuals and Village Council/Tribe have also seen proposals passed.

There is one rural, multi-community, non-road type Advisory Committee for the region. There are designated seats for all five communities in the region. The committee met approximately once per year over the period from 2000-17. The communities and their location can be seen here.

Federal Subsistence Board

Chignik is in Region 3 Kodiak/Aleutians of the Federal Subsistence program. The region ranks sixth in terms of proposal submission over the study period. Only six proposals have been submitted to the Regional Advisory Council concerning the Chignik subsistence salmon fishery since 2000. Half of these proposals were submitted by tribes. In 2018, the extremely low return of sockeye to the Chignik River led to federal closure of the river to nonqualifying rural subsistence uses. The state did not close the Chignik fishery to nonlocal subsistence fishermen, as that would have required implementation of a Tier II fishery. Since there were no nonlocal fishermen pursuing subsistence, it was thought unnecessary to pursue the closure.

Most proposals from the Chignik region to the Federal Subsistence Board have passed. Village Councils and tribes have been successful, with two out of three proposals passed.

Violations of fishing regulations are infrequently cited in the Chignik region – only ten occurred over the study period. All but one of the citations has been for the single commercial salmon fishery in the region.

The Chignik Commercial Salmon Fishing Co-op

The Chignik region has only one salmon gear type – purse seine. It also has a relatively small number of limited entry permits – fewer than 100. Over the years, local fishermen, including Alaska Natives, have maintained their ownership share relative to other residency cohorts. Over 90% of salmon earnings in the region are obtained from sockeye salmon that return primarily to Black Lake.

The Chignik purse seine fishermen undertook a unique experiment in the period from 2002-2005. The idea for a co-op was advanced to the Board of Fisheries after several years of discussion among the fishermen. A proposal was submitted to the Board of Fisheries requesting authorization of the co-op fishery with an allocated harvest “quota”, to which the board agreed.
The co-op was based on the concept of assigning a limited group of vessels to harvest the salmon, with the proceeds distributed equally among the co-op participants. The objective was to increase the earnings of the permit holders.

A substantial majority of the permitted fishermen participated in the co-op, but a much smaller number chose not to and continued to fish as independents. Co-op fishermen benefited by not having to pay crew and expenses. Independent fishermen, who fished during the same openings made available to the designated co-op fishermen, paid crew and expenses. Fisheries biologists viewed the co-op experiment as providing for better control over openings and harvest levels.

This case brought into sharp focus two alternate models of the aims and responsibilities of salmon limited entry permit holders characteristic of different cohorts of fishermen. One view, sometimes referred to as “business fishing”, is that the limited entry permit is an asset to be mobilized by the holder to obtain the maximum financial returns that can be realized. Typically, in such a view, the permit is used to catch and sell salmon, minimizing all the associated costs including payment of crew members in order to maximize the earnings of the permit holder.

The other view, sometimes termed “lifestyle fishing”, holds that fishing is a valued activity itself and further, the permit holder is a trustee whose use of the permit is to benefit not only himself but also others such as his family and community. Those benefits could be payments as crewman or assistants in preparing nets and other equipment for the fishing season. In the community of Perryville for example, there are four or five Chignik purse seine permit holders who, through their crew hiring practices, provide some level of support (income and subsistence salmon) to every household in Perryville.

The Board of Fisheries authorization to create the co-op was legally challenged in state court in 2005 after operating for three years. It was supported by the Chignik Seiners Association. In *Grunert v. State of Alaska*, plaintiffs contended that the co-op violated the State Constitution’s prohibition of the “establishment of a special right” in the fishery and the Limited Entry Act in that earnings were being realized by those not actually fishing the permit. The district court found in support of the co-op and the decision was appealed to the Supreme Court.

In 2005, the Supreme Court determined that the Board of Fisheries did not have the legal authority to create such a fishery, in that the co-op “quota” did violate the Constitution and the benefits to non-fishing permit holders violated the Limited Entry Act. The Board of Fisheries modified the authorization in light of the court decision and reauthorized the co-op, requiring all members to actually participate by making at least 10 deliveries. In 2006, however, the Supreme Court held that this modification did not address the underlying prohibition of establishment and again struck down the program. There have been no subsequent legal initiatives to make necessary changes to the Constitution to make such a program legal.
References


Hutchinson-Scarbrough, Lisa and James A. Fall. 1996. An Overview of Subsistence Salmon and Other Subsistence Fisheries of the Chignik Management Area, Alaska.


