# *Sustainable Indigenous Harvest, Use, and Stewardship of Sea Otter in Sitka Sound and Southeast Alaska*

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Christy Ruby hunting sea otter (Photo: K. Yuyan, https://crubydesigns.com/)

## Final Report

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Ilegvak with sea otter fur products, Sitka (Photo: T. Thornton)

Sea otter on a floating dock at Port Graham village (Photo: T. Thornton).

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# ACRONYMS

Administration for Native Americans (ANA)

Alaska Federation of Natives (AFN)

Alaska Sea Otter Commission (ASOC)

Alaska Native Organizations (ANOs)

Atomic Energy Commission (AEC)

Certificate of Degree of Indian or Alaska Native Blood (CIB or CDIB)

Convention on International Trade in Endangered Species (CITES)

Code of Federal Regulations (CFRs)

Economic Development Administration (EDA)

Economic Development Administration - Social and Economic Development Strategies (EDA-SED)

Hudson Bay Company (HBC)

Indigenous People's Council on Marine Mammals (IPCoMM)

Indigenous Knowledge (IK; also TEK or Traditional Ecological Knowledge; or IEK Indigenous Environmental Knowledge)

Marine Mammal Protection Act (MMPA)

Maximum Sustainable Yield (MSY)

National Oceanic and Atmospheric Administration (NOAA)

Northern Southeast Region (NSE)

Optimal Sustainable Population (OSP)

People for the Ethical Treatment of Animals (PETA)

Potential Biological Removal (PBR)

Prince of Wales (POW)

Russian America Company (RAC)

Sealaska Heritage Institute (SHI), originally known as the Sealaska Heritage Foundation

Sitka Tribe of Alaska (STA)

Sitka Marine Mammal Commission (SMMC)

South Alaska Federal Subsistence Regional Advisory Council (SAFSRAC)

Southern Southeast (SSE)

The Alaska Sea Otter and Steller Sea Lion Commission (TASSC)

U.S. Department of the Interior (DOI)

U.S. Fish and Wildlife (USFWS)

# EXECUTIVE SUMMARY

Sea otter (*Enhydra lutris*) reestablishment in Southeast Alaska has come to be viewed as both a threat and an opportunity. The threat is based on the significant impacts that sea otters are having on select macroinvertebrate populations, many of which are of value to subsistence and commercial fisheries, such as abalone, crab, clams, and sea urchins. The opportunity lies in Alaska Natives being able to revive and expand aboriginal traditions of sea otter hunting and handicrafting, especially in areas of high subsistence value to their communities, thereby protecting local shellfish harvest areas and stimulating economic activity that will enhance rural livelihoods, based on value added goods produced from sea otter pelts for the retail market and the gift, trade, and ceremonial economies. Sitka Sound has been a center for sea otter repopulation and its Indigenous community a leader in engaging with sea otter threats and opportunities since the 1980s.

Sea otter and kelp/seaweed ecosystems are intimately linked in Sitka Sound and more broadly in the Gulf of Alaska and in Indigenous oral history, dating to Deep Time narratives of when Raven escaped the great Flood, settled on a kelp patch and, with the help of Sea Otter, rebuilt the world. Later Raven reeled in the great "Ark" or "Food Repository" near Dry Bay in order to feed the people; this "Repository" is also referred to as a giant "kelp coil" and was inhabited by Sea Otter, an other-than-human person, who helped sustain and balance the productivity of the kelp ecosystem. This was perhaps an early recognition of sea otters' ecosystem service values to kelp forests and food webs.

Aboriginal sea otter hunting practices (prior to the commercial trade era) were well developed and managed, to the point of being able to limit sea otter impacts on local shellfish beds by applying strong hunting pressure to "keep them out." Leaders also limited hunting to allow for the sustainable co-existence of sea otters and humans in places where sea otter did not threaten key macroinvertebrate resources, a practice that endured among the Tlingit even through the "tragedy of commodification" that occurred during the industrial fur trade era (1750-1911), when sea otters became exploited to point of extirpation in Southeast Alaska, spurred by a competitive "soft gold" rush of Russian, American, and European commercial traders. By the end of the nineteenth century only a small population of sea otters remained, largely on the Gulf Coast, especially off Icy Bay where Tlingits and Tsimshian (from British Columbia) competed for the last of the precious furs before an international treaty banning most sea otter hunting was implemented in 1911.

Sea otter fur was, and remains, highly valued and traded among Southeast Alaska Natives. However, due to the significant labor involved in acquiring and processing sea otter and the fur's heavy weight, its use in everyday clothing was limited. Robes and major garments were worn mainly by elites or nobles, especially on ceremonial occasions. Pelts were valued as sleeping pads and fur was also used as trim and in accessories. Sea otter meat was utilized as food but likely never constituted a significant part of Southeast Alaska Native peoples' diets; the meat was also used to feed dogs and for bait, and the bones and teeth have been used in a variety of manufactures.

Translocation of northern sea otters to Southeast Alaska in the late 1960s and 1970 by the Atomic Energy Commission (AEC) and the State of Alaska has led to a rapid recovery of the population, though it remains well below the defined carrying capacity. Southeast Alaska Natives peoples gained conditional hunting rights for sea otters under the Marine Mammal Protection Act (MMPA), and the U.S. Fish & Wildlife Service (USFWS) became the federal management authority for the species. Natives, managers, and other interest groups have been concerned about the rise of sea otter populations and their impacts on local shellfish harvesting areas since the mid-1980s, with many Natives suggesting that otters were "cleaning out" abalone, clams, crab, geoducks, gumboots, sea urchins and other choice prey in their customary and traditional use areas. Some commercial fishers began portraying them as "rats of the sea" and one industry group hired a research firm to calculate sea otters' negative economic impacts on commercial crab and dive fisheries. The economic damage was estimated at over $28 million (McDowell 2011). More comprehensive social-ecological assessments

of sea otter impacts, however, have found a net economic benefit to their presence (e.g., Gregr *et al* 2020).

The growing concerns of sea otter impacts on valued shellfish led to a significant increase in sea otter hunting and handicraft production between the 1990 and 2015, especially in Sitka Sound. Due to generations of sea otter absence, Southeast Natives had to re-learn traditional hunting, butchering, and skinning skills to harvest and process them, and handicrafters had to (re)learn how to make crafts from sea otter's uniquely dense and layered fur.

By 2010, the State of Alaska and commercial shellfish and dive fisheries were using the sea otter "overpopulation crisis" to raise calls for more aggressive management, including through bounties and other predator control measures, accompanied by calls for sea otter management to come under state control. These proposals were not advanced because, among other reasons, they were antithetical to MMPA. However, in 2012 the State of Alaska awarded a major grant to Sealaska Heritage Institute (SHI) to train new Native fur sewers to boost employment and trade opportunities in the expanding sea otter handicraft sector.

Beginning in the early 2000s, Southeast tribes, especially the Sitka Tribe of Alaska (STA) and other tribal organizations (especially SHI) moved to revitalize and develop a sustainable sea otter hunting and handicraft economy consistent with traditional cultural values and practices, but also stimulating innovation in processing, products, and styles. However, ambiguity and inconsistent interpretations of "authentic" and "significantly altered" by USFWS under MMPA (50 CFR 18.23) and its accompanying regulations, in combination with overzealous enforcement, led to legal conflicts between the USFWS and sea otter hunters. These tensions discouraged numerous hunters and handicrafters from participating in sea otter subsistence uses, including handicraft manufacture, for fear of running afoul of the law.

A positive step toward reducing these tensions came in 2012, when a workshop to clarify "significantly altered" was held with Federal managers, enforcement officials, attorneys, and tribal hunters and handicrafters and other stakeholders. This meeting was followed by an illustrative memo clarifying the meaning of "significantly altered." The clarification was followed by immediate jump in annual sea otter harvests from 2012-2015.

After 2015 sea otter harvests in Sitka Sound and regionally dropped somewhat. Reasons for this are multiple but include rising up-front costs to hunt and tan otters, quality control issues and long wait periods with tanneries, limited markets for sea otter products, declining "eligibility" (by the ¼ blood quantum criterion) in the Alaska hunter demographic, and others. These issues are currently being addressed by tribes and management organizations but are not fully resolved.

In Sitka Sound, while the initial reestablishment of sea otters produced a regime shift with negative impacts on many choice species of macroinvertebrates, including: abalone, clams, crabs, geoducks, gumboots (chitons), mussels, razor clams, sea cucumbers, and sea urchins, these impacts appear to have been mitigated by an increase in hunting, combined with adjustments in local biological conditions and sea otter foraging behavior. As a result, since about 2019 sea otters in Sitka Tribe's customary and traditional territory have become less concentrated in areas close to town, and shellfish are appearing again in subsistence harvest areas in Sitka Sound that once appeared "cleaned out" by sea otters. It is too early to tell if this marks a new stage of stabilization and co-existence in human-sea otter-shellfish relations or part of larger cycle or set of dynamics still not fully understood.

The report uses a historical ecological perspective to understand sea otter-human relationships over time in Sitka Sound and Southeast Alaska and their continuing dynamic, co-evolutionary role in shaping regional seascapes. Finally, the report discusses ways to achieve a sustainable sea otter subsistence economy amid changing social-ecological systems. A model for adaptive co-stewardship is developed with comparative reference to other cases in Alaska and British Columbia, with suggestions for how to develop such a model in the context of contemporary needs and priorities.

# ACKNOWLEDGEMENTS

The author wishes to thank the Sealaska Heritage Institute, particularly Chuck Smythe and Rosita Worl for conceiving of this study, and Lee Kadinger and Kari Groven for linking me with a wealth of information on SHI's work on sea otters and skin sewing classes. I am also grateful to the US Fish and Wildlife Service (USFWS) for funding and shepherding this study, especially Paul Schuette and Benjamin Weitzman, who reviewed the draft manuscript, provided important guidance, data, and mapping assistance, most importantly, recognized the value of Indigenous Knowledge and partnerships with Indigenous organizations like SHI and Sitka Tribe of Alaska's Marine Mammal Commission. Such collaborations are necessary to (co-)produce meaningful studies to gain a deeper understanding, through first-hand interviews with Indigenous experts, of the historical ecological dynamics of sea otter populations and their local impacts on communities, and how sea otter hunting and handicrafts have evolved in a complex, changing, and often challenging environment.

On behalf of Sitka Tribe, Mike Miller, the longtime head of the Sitka Marine Mammal Commission, gave generously of his time and contributed invaluable history, context, and nuance to my understanding of key events in the evolution of sea otter hunting and management of sea otters since the 1980s, not only in Sitka Sound, but also at the state and national levels. I am thankful for his longstanding attention to these issues," as well as his guidance in helping me navigate the many twists and turns that sea otters, hunters, and their mutual habitats and prey have taken over the past 35 years.

Elsewhere, on the federal level, I also received important direction and advice from Shirley Kelly of the Department of Interior's Economic Development Authority and Verena Gill, formerly of USFWS and now with the National Oceanic and Atmospheric Administration (NOAA), and detailed feedback on a draft version of the manuscript from Jim Bodkin at United States Geological Survey (USGS), I am very grateful for their expertise and input. In the end, however, any mistakes or misinterpretations concerning sea otter are solely my responsibility.

Jamie Hebert was of great assistance in transcribing the bulk of the interviews with hunters, handicrafters, and other editorial input to the first draft. And Taylor White provided very useful input and perspective on the most recent scientific findings on sea otter predation on local abalone and other shellfish.

Finally, and most especially, I am indebted to the hunters, handicrafters, tanners, and other skilled Alaska Natives who participated in this study and are listed by name in Appendix B. I sincerely appreciate not only their contributions, but all of their knowledge, skills, resilience, adaptations and innovations, which made the revitalization of sea otter hunting in Sitka and Southeast Alaska a success story, although there is certainly more work to do in developing an adaptive co-stewardship model for sustaining sea otters and Indigenous hunting and handicrafting for future generations.

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# I. INTRODUCTION: SUSTAINING SEA OTTERS AND RURAL LIVELIHOODS

Sustainability concerns for non-human species versus human livelihoods often erupt in contestation when significant social or environmental changes occur, prompting debates about resource management. The case of the northern sea otter exemplifies this pattern. Having been hunted and utilized, if not "managed," sustainably by Alaska Natives in the pre-contact era, then decimated by the social-ecologically destructive colonial maritime fur trade in the 19th century, then conserved and stewarded toward restoration in the 20th century by contemporary wildlife managers, only to be vilified for their overconsumption of culturally and economically important shellfish resources by the dawn of the 21st century, sea otters have been implicated in nearly every facet of (un)sustainability.

Sea otters, historically, have been a culturally, ecologically, and economically significant species for Alaskan Natives throughout the Gulf of Alaska and Aleutian Island chain. An indicator of wealth in Southeast Alaska especially, sea otter have been used for ceremonial regalia, clothing, bedding, accessories, and food for thousands of years among the Tlingit, Haida, and Tsimshian people that call Southeast Alaska their homeland. When the colonial fur trade decimated sea otter populations in the 19th century and sea otter hunting ceased by 1910, it created not only the loss of a keystone species and resulting ecological shifts, but also cultural and traditional knowledge gaps related to sea otter harvesting and crafting. However, a resurgence in both practices has occurred since the reintroduction of sea otters in the late 1960s. Sea otter fur has retained its importance in many communities as a material from which to construct culturally significant regalia, handicrafts, and in some cases, has become a source of income for Indigenous artisans.

The MMPA currently provides the following exemptions for Alaska Natives to hunt and use marine mammals:

> **Sec. 101. (b) [EXEMPTIONS FOR ALASKAN NATIVES.]** — Except as provided in section 109, the provisions of this Act shall not apply with respect to the taking of any marine mammal by any Indian, Aleut, or Eskimo who resides in Alaska and who dwells on the coast of the North Pacific Ocean or the Arctic Ocean may take any marine mammal without a permit, subject to the restrictions contained in this section, if such taking is:
>
> (1) For subsistence purposes, or
>
> (2) For purposes of creating and selling authentic native articles of handicraft and clothing, and
>
> (3) In each case, not accomplished in a wasteful manner.

Blood quantum restrictions are not specified for eligibility in the MMPA itself, but rather appear in federal regulations that that were promulgated by USFWS to implement the law. This Code of Federal Regulations (CFR) established specific criteria for eligibility but only implemented the blood-quantum criterion (see discussion on this criterion and eligibility below). As this report is being prepared, however, consultations are underway between federal agencies managing marine mammals and tribes to consider implementing alternative criteria to blood quantum for eligibility that are more consistent with notions sovereignty and self-determination in determining identity under current federal Indian policy (see further discussion below).

Sea otter populations have been proposed to correlate with populations sizes of other marine life, including shellfish and other macroinvertebrates. The hunting of sea otters in relation to these ecological dynamics continues to be the subject of study and the contemporary problems surrounding

sustainability and sea otters continue to be scrutinized in the 21st century by marine mammal managers, enforcement agents, attorneys, regulators, tribes, and local experts. Some of these sustainability issues were addressed at a "Southeast Sea Otter Stakeholder Meeting" in November 2019, involving more than 90 participants from among subsistence users and federally recognized tribes, the commercial fishing industry, scientists, conservationists, the tourism industry, recreational and personal use interests, artisans and handicraft producers, and federal and state wildlife and fisheries managers. As hosts of the workshop, the USFWS, charged with managing sea otters under the auspices of the 1972 MMPA, summarized the contemporary problem of management:

> Sea otter conservation and management in Southeast Alaska has been highly successful from the perspective of the recovery of an extirpated marine mammal population. Sea otter recovery in Southeast Alaska has resulted in reductions of some shellfish stocks of value to commercial, subsistence, personal use, and sport harvesters. Because of these economic and social impacts, many user groups wish to explore ways to mitigate sea otter and fisheries conflicts through collaborative management efforts (USFWS 2019).

The management of sea otters has become a highly charged practice in relation to other commercially significant marine resources. With divergent, potentially conflicting, interests among stakeholders regarding management of an important "resource" or species, the key question is always a political ecological one: what is to be conserved for whom, and how? The 2019 stakeholder meeting was intended "to solicit ideas from stakeholders about how to address the concerns of a variety of Southeast user groups," through more active and collaborative management "that could effectively address the issue within the framework of the Marine Mammal Protection Act, which sets the Service's management authority" (USFWS 2020). But debates erupted over the exact nature and boundaries of the problem as well as the right solutions in the very first break-out sessions. As the workshop report states:

> [I]t quickly became evident that there was not a general consensus on the definition of "the problem". For some participants, the problem is that sea otter populations are <u>already threatening shellfisheries as they move towards carrying capacity</u>. Others see the problem as a conflict in identifying ecosystem balance, and whether or not equitable management can be achieved in a balance between commercial industries, subsistence users, and recovering sea otter populations. Ultimately, the problem statement was defined as: *How to design and manage a system that supports commercial [fisheries], otters, subsistence, artists, and tourism, in a time of change?* [emphasis added]

Some recommendations towards addressing this multi-faceted sustainability problem emerged from the workshop, including to:

1. Increase state funding for artisan training and the marketing of Native handicrafts
2. Improve communication amongst managers, user groups and stakeholders
3. Conduct a new population survey
4. Update the species conservation plan
5. Create a working group with stakeholders
6. Evaluate resources for data collection

It also emerged that more information is needed concerning the interactions of the Indigenous hunters and artisans with the various sea otter subpopulations and other constituents in their respective ecosystems, or subregions, to assess both conservation and livelihood sustainability needs at a

meaningful level. This study seeks to synthesize and analyze this information for Sitka Sound with comparative reference to other communities, to generate specific recommendations on how sea otter management can evolve to support both the sustainability of the species and human livelihoods that depend on sea otters and their prey at relatively optimal levels, and to do so amid changing sociocultural and environmental conditions.

An "Optimal Sustainable Population" (OSP) is defined in the MMPA as the population level at which human harvests will not deplete the protected marine mammal population and is the goal for recovery of a non-strategic (non-threatened) stock like Southeast Alaska sea otters. The OSP for sea otters in Southeast Alaska was found to be 60% of carrying capacity (K) by Tinker *et al* (2021). However, this definition of "optimal" does not reflect the social construction of "optimal" by Alaska Natives or other stakeholders, which tends to be conceived of sub-regionally according to the human experience of sea otters at lived or interactional scales.

**Statement of Need**

From this workshop and ongoing engagements with tribes, research scientists, and other stakeholders, a statement of need was developed for this study.

> The United States Fish and Wildlife Service is charged with managing sea otter populations and preventing their killing, harassing, capture, or disturbance under the Marine Mammal Protection Act (MMPA). The Alaska Sea Otter Program strives to work with Alaska Native organizations on issues of mutual concern which include co-management of this resource and researching the impact of sea otter recolonization on subsistence fishing. In recent years Indigenous sea otter management practices were developed in the Sitka Sound area to help reduce sea otter predation of marine resources in key subsistence areas without impacting overall sea otter abundance. This study will document the ecological effects on sea otter populations and certain subsistence marine resources in the Sitka Sound area resulting from increased sea otter hunting and the traditional production of sea otter handicrafts that occurred through modern Indigenous sea otter management practices following provisions of the MMPA. Project deliverables will provide foundations for developing effective and sustainable co-management strategies for sea otters, offering insights for what makes a successful collaborative relationship between Indigenous hunters and handicrafters, Alaska Native organizations, Tribes, and the USFWS, and strengthening a collaborative relationship between Sealaska Heritage Institute and the Service. This project is in response to needs determined by the Southeast Alaska Sea Otter Stakeholder Working Group and a Congressional Request to better understand the ecological implications of sea otter recovery across Southeast Alaska and to assess management strategies.

**Purpose and Objectives of this Study**

The purpose of this study is to improve understanding of and responses to sea otter and human livelihood dynamics. Key pillars in the effort to advance collaborative management stemming from the 2019 stakeholder meeting were to: 1) listen to a wide variety of stakeholders; 2) improve understanding of options for management under current federal law; 3) build a "clear and accurate understanding" of what the latest research shows on otter population size, distribution (expansion), and impacts; and 4) bridge the gap between Western science and Indigenous Knowledge. This project addresses each of these pillars in some way but is focused on advancing understanding of the

Indigenous historical and cultural ecological knowledge of sea otters and their impacts on resources and livelihoods in communities. Although the study draws widely from the regional literature on sea otter ecology and Indigenous historical relations with sea otters, the main contemporary focus is on Sitka Sound.

Why Sitka Sound? As the center of one of the largest sea otter subpopulations in the Southeast region and home to the largest sea otter harvest among Southeast communities, Sitka is an important case study for sea otter sustainability. Sitka Tribe's traditional territory (Sheet'ká Kwáan) has exhibited, since the population's recovery, a high sea otter harvest compared to other Southeast communities (peaking in 2013 at 546 otters of 1497 total for Southeast; see Appendix F) with a harvest rate that reached its maximum in 1993 at a 39.3% (Raymond, *et al* 2019:11-12; USFWS harvest data). This harvest rate raised sustainability concerns among some groups, yet sea otter populations have continued to expand and grow steadily in both northern and southern Southeast. Their distribution has changed in Sitka Sound, however, potentially in response to hunting. This is one rationale for pursuing an in-depth analysis of Sitka area sea otter hunting as a case study of the development of and responses to sustainability issues concerning local sea otter populations and livelihood resources in Southeast communities. At the same time, during the course of the study it was deemed necessary to supplement the Sitka Sound case with some comparative perspective of developments in other communities through additional interviewing and background research.

In addition to these collaborations, this project will investigate previously identified ecological factors thought to cause variations in sea otter populations. Based on existing data, Tinker and colleagues (see USFWS 2020) developed simulation models to run with various assumptions about variation in sea otter harvest and ecosystem interactions. These simulations showed abundance and distribution of sea otter to be dependent on several factors and included a detailed history of harvest and use of sea otters, prior and during the Russian and American period.

The project objectives were as follows:

1. Conduct primary and secondary research to document the ecological effects on sea otter populations and certain subsistence marine resources in the Sitka Sound area resulting from increased sea otter hunting and Indigenous handicraft production.
2. Document Alaska Native-led initiatives and programs pertaining to the localized development of Indigenous sea otter management activities in the Sitka Sound area and their implications for collaborative resource management under the MMPA.
3. Develop a comprehensive written report describing the historical context, chronology, and observed impacts of Indigenous sea otter management practices at the local level in Sitka Sound.
4. Synthesize and complement other current/ongoing research by documenting previously unrecognized or not fully understood activities and initiatives by Alaska Native stakeholders.
5. Spur new and vital research questions and enhanced collaborative management activities and initiatives in Southeast Alaska and provide a model for other regions of Alaska.
6. Further the understanding – and perhaps future replication – of the Sitka Sound example in other communities as an applied local sea otter harvest management strategy.

**Methods and Milestones**

The research design for this project emphasized the following sources of data: 1) review of the ethnographic and biological literature on sea otter ecology and Alaska Native hunting and uses of sea otter in Sitka Sound and neighboring areas; 2) interviews with active and previously active hunters, tanners, handicrafters and others involved in activities related to subsistence hunting and uses of sea

otter in Sitka and elsewhere in Southeast Alaska, especially between from the mid-1990s to 2020, when both sea otter populations and hunting grew rapidly ; 3) other sources of relevant information related to the historical ecological development and sustainability of sea otter hunting in Sitka Sound and Southeast Alaska. Primary data from interviews and historical sources were then analyzed in relation to existent scientific and management perspectives on the status and trends of sea otter populations in relation to the development of sea otter hunting before, during, and after the industrial fur trade era (1780-1910).

Researchers undertook the following milestone activities to study the socio-ecological effects of modern Indigenous sea otter subsistence uses and management practices and their development and implementation, especially over the last 20-25 years in the Sitka Sound area, incorporating ecological and other cultural knowledge related to Indigenous sea otter engagement and management strategies, to prepare and submit a report transmitting those findings:

1. Conduct data review – review and synthesize published and unpublished sources about historical and recent sea otter population trends in Southeast Alaska; recent trends in ecological research related to effects of sea otter populations on the marine environment; patterns and effects of localized subsistence sea otter harvests; programs supporting sea otter hunting and handicraft production; recent co-management processes and strategies related to sea otter management as pursued by USFWS, Sealaska Heritage Institute (SHI) and participating tribal governments; and other topics. (Thornton: 2023-2024)
2. Inform the Sitka Marine Mammal Commission (SMMC) of the purpose and nature of the research and seek input on topics and possible interviewees. (Thornton via Mike Miller, October 2023)
3. Identify and interview 10-12 (actual 22, Tlingit, Eyak, and Haida) male and female Indigenous Tlingit and other experts holding traditional ecological and cultural knowledge concerning hunting sea otters or the manufacture of sea otter handcrafts. (Thornton: 2023-2024)
4. Identify 1-2 individuals within SHI who provided comments to USFWS on existing and proposed MMPA sea otter regulations, developed state-funded sea otter project, and funded/organized community and classroom instruction on sea otter skin sewing practices. (Thornton: October 2023)
5. Depending on time available, mapping of sea otter harvesting areas and observational changes in the distribution of marine resources such as abalone, crab, etc. (Thornton: 2024)
6. Prepare transcripts of the interviews. (Hebert, Thornton: 2023- 2024)
7. Analyze the transcripts and identify key themes concerning Indigenous management of sea otter populations (hunting and production of handicrafts) and subsequent effects on the health of marine resources. (Thornton: 2024)
8. Prepare draft report incorporating literature review, transcript quotations and analysis of key themes concerning the effects of sea otter management strategies on the marine ecosystem and within the context of Tlingit culture and society. (Thornton: 2024-2025)
9. Submit draft report to USFWS for review. (for Sealaska Heritage Institute: February 2025; for USFWS, April 2025)
10. Revise and submit final report to USFWS. (Thornton and Sealaska Heritage Institute: June 2025)
11. Share results with the Sitka community through written materials. (Sealaska Heritage Institute and Thornton: from June 2025)

# II. THE CONTEMPORARY STATUS OF SEA OTTER


Figure 2.1. Contemporary Status of Sea Otter. Source: International Union for the Conservation of Nature (IUCN 2008).

According to the International Union of Concerned Scientists (IUCN), which maintains a "red list" of threatened and endangered species at the global scale, sea otter populations are decreasing and threatened to endangered depending on their subpopulation (see Fig. 2.1). Despite having comeback from the brink of extinction in the early 20$^{th}$ century through conservation and relocation measures to restore populations, sea otter populations have not yet expanded enough to reinhabit all of their traditional range in the North Pacific, with some stocks showing declines. In the case of some subspecies, such as the Southern or California sea otter, the population remains both small (about 3,000) and geographically circumscribed and thus is still considered endangered. The Russian sea otter, found off the coasts of Siberia and Japan, boasts a similar status, though with a larger population and range. Finally, the northern sea otter (*Enhydra lutris kenyoni*, named for biologist Karl Kenyon, who helped pioneer sea otter studies and translocations to restore extirpated populations in Alaska) can be considered the most successful recovery to date. In Southeast Alaska, it boasts a population (about 22,000 as of 2022) and an expanding geographic range, covering much of its known traditional range within the Alexander Archipelago. A similarly successful northern sea otter population exists in the Southcentral parts of the Gulf of Alaska. As a result of this success, the northern sea otter is no longer considered endangered but rather stable or increasing in these areas. However, the Southwest Alaska stock of the northern sea otter was downgraded from "least concern" to "near threatened" status under the US Endangered Species Act in 2005 by the USFWS due to significant population declines.

| **Scientific Names and Status for** *Enhydra lutris* -3 geographically distinct subspecies |
|---|
| 1. *Enhydra lutris kenyoni* — Northern sea otter; found along the coast of Alaska and Washington (stable and increasing, except for the Southwest region of Alaska) |
| 2. *Enhydra lutris lutris* — Russian sea otter; found in the western North Pacific Ocean off the coasts of Russia and Japan |
| 3. *Enhydra lutris nereis* — Southern sea otter or "California" sea otter; ranges in California roughly from the coasts of San Mateo County in the north to Santa Barbara County in the south. |

**Northern Sea Otter (*Enhydra lutris kenyoni*)**

Northern sea otters are larger than their southern and Russian counterparts and occupy a wider geographic range. Adult males may exceed 100 pounds in weight and grow up to five feet in length. Females are smaller, averaging 50-70 pounds and closer to four feet in length. Unlike other marine mammals, sea otters, the largest members or the weasel family, rely on their dense fur coats (up to million hairs per square inch) and high metabolism (eating up to 25-30% of their body weight per day), rather than stored fat or blubber, to maintain warmth in the cold North Pacific waters. To prevent their precious fur from becoming matted or otherwise losing its ability to conserve body heat, it must be almost constantly groomed and fluffed. Thus, people observing sea otters from the sea surface normally see them either eating, grooming, or commencing a dive to find more food.

In Alaska, the northern sea otter diet mainly consists of benthic mega- invertebrates, including sea urchins, crabs, clams, abalone, octopus, small fish, mussels and other species, many of which live on the sea floor, on rocks, and along the coast. Sea otter dives can last up to five minutes (but typically are one-two min) and range from five to 250 feet in depth. This limits sea otter dwelling environments to the coastal margins with productive benthic zones of less than 300 feet. When busy feeding an otter may make more than 30 dives an hour, with some favoring shallower dives and others deeper or longer ones depending on their age and capacity and focal prey. In foraging, otters rely on a combination of visual and tactile senses to find and select their prey. After recovering food, the otter returns to the surface, rolls onto its back and consumes its food using its front paws, often supplemented with tools (rocks) stored in its arm pits to crack open shellfish. Sea otter home ranges are small, from just a few $km^2$ to about 40 $km^2$ depending on the density of prey, exposure, and other factors. After many decades of studying recovering sea otters in situ, it is clear that foraging strategies evolve, typically in response to declines in epifaunal prey and then infaunal prey. These changes may lead to greater intensity of general foraging or prey specialization, resulting in greater spatiotemporal variations in otter foraging behavior (ADFG 2025; Davis and Bodkin 2021; Fujii *et al*).

Sea otters are social creatures, and up to 1,000 individuals have been observed in concentrated rafts, although they will subdivide and redistribute according to gender and food supplies and depending on their reproductive cycle and environmental conditions, including hunting pressure. Groupings of more than few hundred otters are not a common sight in Southeast Alaska today, according to hunters, especially in areas with significant active hunting pressure. Thus, larger groupings may be a function of the unprecedented food supplies that developed as a result of otters' near complete absence from Southeast Alaska between the late nineteenth and late twentieth century and the lack of significant predation, including by Alaska Natives, during the early phases of their recovery (or in protected areas like Glacier Bay National Park, which prohibits hunting). Because sea otter subranges are small, with little migration, subpopulations may develop unique characteristics and specialized adaptations not found in other otter colonies. Thus, dietary behaviors, including tool use and prey specialization, may vary significantly, according not only to availability of prey but also to dietary preference and foraging skills, as pups learn to pursue and eat--and hence come to prefer--what their mothers eat (cf. Fujii, *et al* 2017).

Once they reach reproductive age, breeding males become territorial and will defend rafts of females, while non-breeding males may form their own herds and hierarchies. Generally, reproduction is highly variable, and survival most often depends on the availability of food. Female sea otters typically birth one pup once a year. While southern sea otters may give birth year-round, northern sea otters tend to be born mainly in mid-to-late spring. Male mating behavior can be aggressive with the larger males sometimes brutalizing and even drowning females when copulating at sea. The mortality rate for otter pups before weaning is high (~40%), but survivability is generally higher when mothers are more mature (females can usually conceive by age three), as the mother must be expert at continuously caring for her pup at the ocean's surface, except when she must leave it unaccompanied

to dive for food. Often the mother will place her pup in a patch of giant kelp—sometimes referred to in Tlingit as yáxwch'i daaw, or "sea otter kelp," for this reason— to keep it safe while she dives for food. Not only do males not play a direct role in raising their offspring but have been known, occasionally, to hold unaccompanied pups hostage in exchange for a share of the mother's food harvests when she returns to the surface (Cone 1993).

While hunters interviewed for this study rarely pursued sea otters hauled out on land, this has not always been the case. Indigenous accounts and early non-Native observations of sea otters suggest that sea otters were a common sight on land. This is confirmed by George Steller, naturalist on the 1741 Bering Expedition, who recorded sea otter behavior when his ship, the *St. Peter*, became stranded on Bering Island in the winter of 1741-1742, in what emerged as of the dawn of North Pacific sea otter fur trade (see Fig. 2.2): "We killed them [on land or tide flats] … with spears, and nets, and when they were lying asleep or in the act of copulating, with clubs…they were found in so great abundance that our numbers did not suffice to kill them, and if the narrow limits of the craft we constructed had permitted we should have killed three times as many" (Steller 1753, quoted in Sigman 2018:228).

By 1756, with the fur trade in full swing, sea otter were extirpated from around Bering Island, and otters in surrounding exploited areas modified their behavior in response to these heavy hunting practices, and were spending less time on land, where they might easily be clubbed or netted.

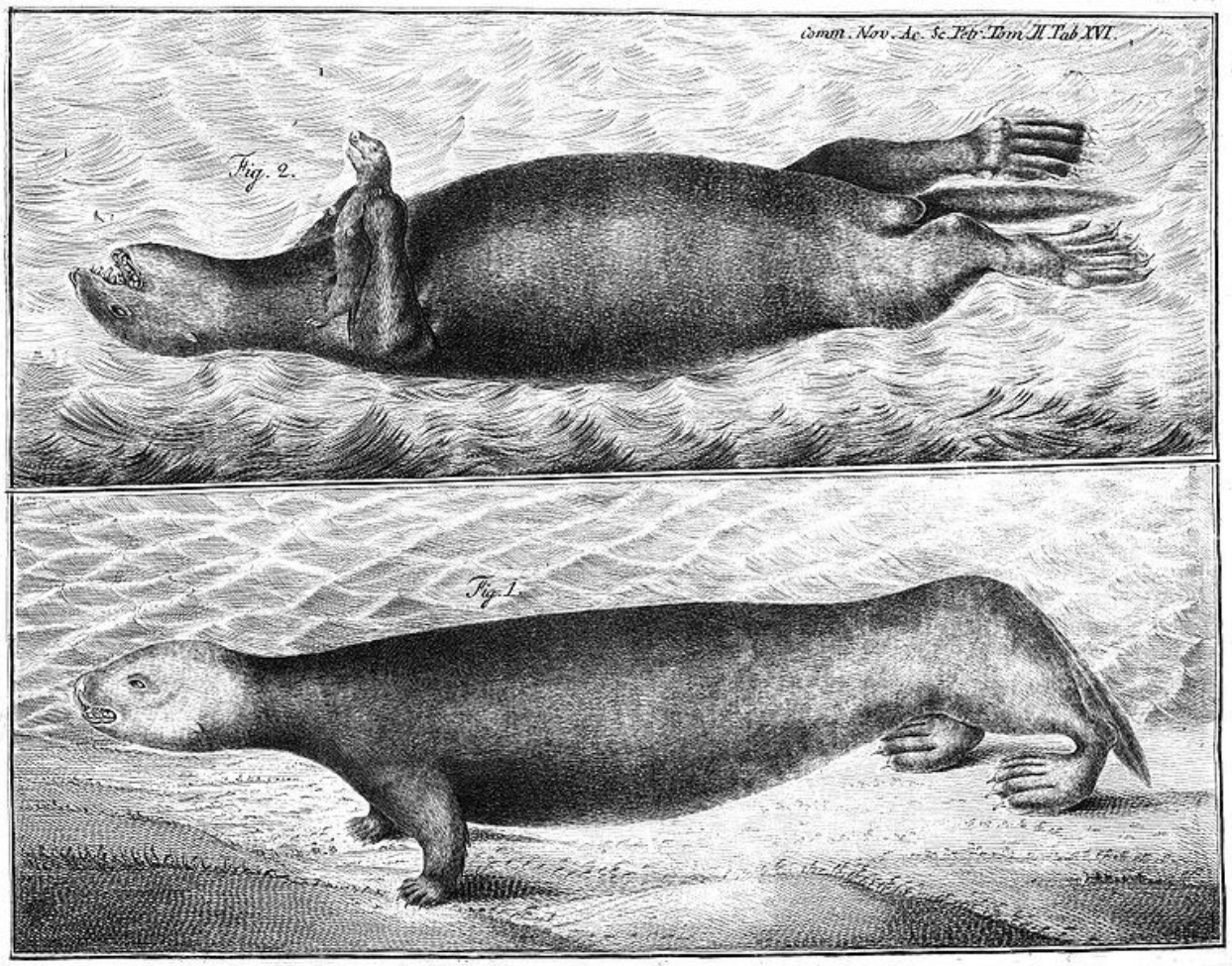


Figure 2.2. 1751 Sea Otter illustrations by Georg Wilhelm Steller, including on land, where they were frequently found by his party. (Image via Wikipedia Commons 2024)

Hunting has had the greatest impact on sea otter populations in during the maritime fur trade (1850-1910). Among the largest known anthropogenic threats to sea otters, beyond human exploitation, is pollution, especially from oil spills. For example, it was estimated that up to 5,500 sea otters in the vicinity of Prince William Sound perished within the first few months of the Exxon Valdez Oil spill in Spring, 1989, with mortality reaching 90% in some heavily oiled areas. Of non-human threats, predation by killer whales may be a major impact to some populations of northern sea otter, especially in Southwest Alaska, as well as bears and wolves (Katmai and Glacier Bay area coasts, while Great White Sharks, biotoxins from harmful algal blooms, and pathogenic diseases carry greater risk to southern sea otters in California (Griffin *et al* 2023; Roffler *et al* 2023;Tinker *et al* 2021; Tinker *et al* 2023).

Of particular relevance to sea otter hunting pressure and harvest management is the species' reproductive biology, spatial organization, movements and annual home ranges, and social structure that affects the spatial range at which sea otter populations are demographically structured. Also, important are studies modeling sustainable harvest rates and the effects of age and sex bias in harvests over time. A considerable body of research has been carried out and published on many of these topics, though not especially in Sitka Sound, which will be further referenced below in helping to understand and interpret the Sitka sea otter dynamics. A good primer for detailed studies on sea otter behavior, population dynamics, and conservation is Larson *et al* (2015).

The effects of sea otter reestablishment in Southeast Alaska and Sitka Sound at upwards of 20% annual population growth rates in some areas must be understood in the context of abundant food and space with little initial hunting pressure or other predation between their initial translocation to Southeast Alaska in late 1960s and the early 2000s when Indigenous sea otter hunting began to rise, especially in Sitka Sound. High food abundance and relatively low predation affects sea otters' biology in important ways. Of particular relevance to management are the elevated reproductive rates of adult females, including earlier maturation and greater survival of pups. Across age classes growth and overall size increase, resulting from (and in) elevated food intake. As James Bodkin (pers comm. 2025) points out:

> The result is that populations can increase at or near their theoretical maximums, resulting in very large groups (numbering into the thousands in some locations) early in recolonization. This will give the impression of hordes of invaders attacking what are viewed by humans as critical and important food resources, but it is unlikely that population growth rates or densities will remain high as food abundance declines.
>
> A less obvious effect of unlimited food and space is the breakdown of the social and behavioral mechanisms inherent in sea otter populations at or near K [carrying capacity] that serve to moderate growth rates, as well as the sizes attained by individuals. In long-established populations, sea otter distribution and behavior results from segregation by sex and reproductive status, where adult females and their pups occur across a range of relatively small territories held by dominant adult males. These territorial males exclude all other non-pup, males from their territories, thus reducing total densities in these high-quality habitats. These female home ranges are generally small (a few to a few 10's of km of coast), while male territories are usually a few km2 or so. Non- territorial males are relegated to suboptimal habitats, often in offshore areas without canopy forming kelp forests, and are termed "bachelor" groups. Such bachelor groups have persisted for many decades in well-established areas. It is also possible that those adult females that share small home ranges may maintain densities by deterring young females from establishing additional home ranges. Recently

weaned pups of both sexes may aggregate shortly after weaning before the males join "bachelor" groups and young females search out their own home ranges, in some cases near their mothers. In these long-established areas, the average size of individuals declines (and thus their food consumption) and we begin to see dietary specialization, at least in some instances. We also see large declines in energy intake rates (by 50% or more). As a result we see later age of maturation, lower survival rates across most ages, particularly males, overall resulting in much lower growth rates and densities as this equilibration takes place.

All the above is to say that what one might see early in recolonization (e.g., Sitka Sound or Glacier Bay late in the 20th century) will not likely be what you will see as the sea otter equilibrates with the food and space that become limiting resources.

Undoubtedly these factors are affecting sea otter population dynamics at multiple levels and in a variety of ways in Sitka Sound and beyond. Investigations as to how these dynamics work are ongoing, and the mechanics are still not fully understood beyond the fact that "demographic structuring (i.e. differences in age and sex specific vital rates) [affect] population growth rates at exceedingly small spatial scales where food and space are limiting." (Ibid). Human hunting and competition for sea otters' macroinvertebrate prey are other factors affecting these dynamics, typically at the seascape scale, as will be further unpacked in this report.

Understanding these effects from an Indigenous and scientific perspective is important because it is relevant to establishing sustainable harvest management and species conservation plans amid both locally varying social-ecological conditions and broader scale changes in North Pacific marine environments.

# III. HISTORICAL ECOLOGY OF SEA OTTER IN SOUTHEAST ALASKA

Historical ecology as a method that combines archaeological, geographic, ecological, ethnological, historical, and other relevant sources of information available to consider the co-evolution of humans and other species at the landscape (or seascape) scale over time (Balée 2006). This perspective can be important when long-term data sets and fine-grained analyses of human and other-than-human species interactions are lacking or uneven in scale or comparability. As such, historical ecology can provide resource managers with critical information about the dynamics of interactions among species of concern and how these interactions affect landscapes and seascapes over time. Often a historical ecology perspective will generate new research questions for further scientific enquiry as well.

As apex predators and keystone species, both humans and sea otters have major impacts on the benthic ecological zones they inhabit. A historical ecological perspective of changes in sea otter populations help reveal how sea otters, humans, and other constituents of their ecosystems have co-evolved over long timescales of up to 20,000 years to create seascapes of abundance (cf. Gill *et al* 2019). This section draws on, ethnological, historical, and palaeoecological records as well as interview data to develop this perspective and to assess especially the dynamics of Sitka Sound seascapes and select other areas in Southeast region.

Marilyn Sigman (2018:220) suggests that the evolutionary development of sea otters and proximal kelp ecosystems has been complex, dynamic, and contingent on species interactions over an even longer timescale..

> Before humans arrived on the scene, sea otters had their own lineage and baseline of a million-year history of foraging on prey animals that coevolved to survive their predation. The kelps in the North Pacific Ocean also coevolved with their urchin predators, but they seem to have coexisted with sea otters' hearty appetites for just as long. With otters to hold the urchins and other grazers in check, the kelps never evolved an abundance of toxins [or other weapons] to defend themselves from hordes of hungry grazers, which make them relatively defenseless when otters are removed from the system. Normally, red sea urchins stay on the floor of the kelp forest, feeding on bits of kelp that drift down to them. In the absence of otters, however, the growing mass of urchins eventually begins to starve. An order is given, in the chemical language of urchins, to join forces and march across the kelp bed in a wave, chewing up the bases of the kelps.

Removing sea otters from an ecosystem in which they are apex constituents often results in a trophic cascade like the clearcutting of a terrestrial forest; the system collapses from it's kelp-dominated state into a different, yet stable ecosystem state, devoid of the primary production and habitat afforded by kelp forests. This may take decades to recover, and typically only with further perturbation (such as a reintroduction of sea otters). In the meantime, without sea urchin predators, the kelp forests morph into "urchin barrens" devoid of macro-algae beds. With the balance tipped too far in their favor, the urchins may eat themselves out of house and home. Interestingly, unlike urchins, which can completely clearcut a kelp forest, there is no hard evidence (despite the cries of human predators competing with sea otters for shellfish) that sea otters have ever extirpated a shellfish prey population, though they have certainly contributed to severe short-term declines.

Just as red urchin populations can be held in check by a healthy population of sea otters in the marine ecosystem, other predators, including crabs, sea stars, and humans, may also play that role. In Southeast Alaska, red sea urchins are currently commercially harvested for their roe (gonads, or uni), which is valued in Japanese markets. However, commercial exploitation did not commence until 1980, roughly a century after the otter's extirpation from Southeast seascapes. Southeast Alaska now hosts the state's largest red sea urchin fishery, which peaked in 1997 at 6.5 million pounds. This was the

time when translocated sea otters were rapidly expanding and reoccupying areas where they had been extirpated in the 19th century and beginning to compete for urchin and other commercially valuable species. As of 2022, commercial red urchin harvests had dropped by almost half, with a total catch of 3.9 million pounds, and little opportunity for continued urchin harvesting in areas foraged by sea otters. The 2023-2024 harvest was expected to be less than 1% of the 2.3-million-pound allocation (at 6% of the estimated biomass; Smith 2024). This would seem to validate Estes and VanBlaricom's (1985) warning that "There can be little doubt that sea otters are incompatible with red urchin fisheries."

In short, when the balance is tipped too far in favor of the apex predators, their target prey populations suffer declines, but they seldom, if ever, disappear altogether. As an early study on sea otter-sea urchin interactions in British Columbia waters (Stewart, *et al* 1982) concluded: "In areas where sea otters were known to feed, preferred food items and red sea urchins in particular were scarce. Red sea urchins in such areas were hidden crevices or under boulders, and did not limit the downward distribution of micro-algae," in contrast to comparable areas where sea otters were absent and dense concentrations of sea urchins grazed the kelp forests barren. Studies in Cross Sound, a major commercial crab fishery in Southeast Alaska during the sea otter reestablishment of this area, showed a similar negative correlation, with more sea otters correlating with fewer crab (Pitcher and Imamura 1990), as did studies of clams and sea urchins (Smith 2024).

Add other drivers of environmental change to the mix of predators, such as pollution, ocean acidification, climate change, and disease and the balance that humans favor (or at least fisherman that compete with sea otter for prey favor) can become be quite complex to understand and maintain. The Indigenous inhabitants of Southeast Alaska tended to respond to these changes relationally. If more otters were present in their territories, and impacting their preferred food species, they might hunt more otters for fur and other subsistence uses. Correspondingly, if few otters were present, Indigenous hunters would focus on other species, though perhaps still taking some otters. Limiting or keeping otter out of certain food-gathering areas close-to-home was an explicit objective for some groups, as we shall see, but broader extirpation was never an objective or an outcome of Tlingit hunting, even in the fur trade era, because sea otters' values as a critical species within marine ecosystems had long been recognized, and their hides were associated with warmth and wealth in Southeast Indigenous economies.[1]

**Archaeology of Sea Otters and Indigenous-Sea Otter Relations**

The presence of sea otter in Alaska has proven to be of antiquity. Sea otter bones are found throughout the archaeological record in their historical range dating to some 10,600 years BP (Moss 2020).

In Southeast Alaska, Madonna Moss conducted a review of zooarchaeological data in Tlingit territories to assess the level and type of consumption of sea otters as food in the region over time. She notes, "Although Gibson (1992:7) suggested that First Nations did eat sea otter, contemporary groups appear to be primarily interested in acquiring pelts and controlling sea otter populations to protect important macroinvertebrates near their settlements" (Moss 2020; see also Popken, *et al* 2023; Pinkerton *et al* 2019; Salomon *et al* 2015). She notes that the ethnographic literature for Southeast Alaska has little to say about which parts of the sea otter were utilized or preferred as human foods, how much was eaten, or how sea otter were prepared (roasting, boiling, etc.)." Frederica De Laguna (1972:398) reported that Yakutat "people formerly ate sea otter meat, which is said to taste different

[1] In British Columbia, however, some scholars have found evidence that suggesting Indigenous hunting was responsible for widespread sea otter extirpation (see Salomon et al 2015).

from seal meat. If fresh, it spoils in three days' time, but is good when a day old. It can be preserved for a long time, 'two years,' by boiling it, smoking it, and putting it in a five-gallon can covered with seal oil." Among the aspects of Tlingit culture that fascinated the Spanish explorer Malaspina were watertight woven baskets in which the people insert fur seal and "nutria" (sea otter) meat "which they are accustomed to eat[ing], place it near the fire, put heated stones into it [the water] with two little sticks [palitos], take them out cooled, and repeat this action until that stinking food was boiled. [Malaspina, 1849, p. 288]" (de Laguna 1972:394). Stone boiling was a common technique used with both wooden box and woven basket containers and Yakutat interviewees reported that in a modest container one stone could keep water boiling for five minutes and would boil faster than over a fire (see Harrington in de Laguna 1972:418).

From her recent review of the zooarchaeological data in Southeast Alaska, Moss reports at least 16 archaeological sites as yielding sea otter bones with the oldest dates at approximately 4,000 cal BP (Moss 2020:206; cf. Moss *et al* 2016) but with evidence of a longer period of hunting on the neighboring island of Haida Gwaii, dating to 10,600 cal BP (Fedje *et al*. 2005). None of the sites are in Sitka Tlingit territory (Sheet'ká Kwáan), except on the margins (e.g., Hidden Falls, 49SIT119, Moss 2020:207, Table 1), but this is likely a function of the dearth of archaeological samples available to assess from the central Sitka Sound region rather than a lack of sea otter remains in the region. Among the neighboring communities, including Angoon, where both de Laguna and Moss carried out significant work, nearly a half-century apart, Moss was able to reconstruct a more detailed picture of sea otter hunting and uses over time. She notes that "The largest collections of sea otter bones in southeast Alaska derive from two archaeological sites near Angoon: Daax Haat Kanadaa (49SIT244) and Yaay Shanoow (49SIT132)." Both sites were excavated by Moss in the 1980s and prior to that by de Laguna and her research team in 1950 (de Laguna 1960). Moss found that in these two assemblages sea otter made up 49% of the bones, while harbor seals, another critical marine mammal used by the Tlingit, constituted 21%. This is significant in itself, given that sea otters were said to be less common (or even absent according to some of de Laguna's Angoon informants; 1960:93) in the inside waters than on the outer coast. For de Laguna however, the broader evidence suggested that sea otter harvesting was a prolific practice during this time; to the point, she postulates, that in "early days. . . even the inner bays swarmed with these animals."

There is a reason for this disparity, between observations of sea otter scarcity by de Laguna's informants and of high proportions of skeletal remains in archaeological sites near Angoon, noted by Robert Willard (pers. comm 1992-1993), a descendant of Angoon who served as the President of the Southeast Native Subsistence Commission in the 1980s and early 1990s. Traditionally, Angoon hunters targeted local sea otter around their village and camps in part so that the otters would not inhabit those areas and compete for favored shellfish in the village's local harvesting grounds. Was this pre-European contact hunting tradition primarily to protect local shellfish populations, or equally for food and fur (and other parts of the animal, such as its teeth, which were used as adornments)? Archaeological evidence assessing relative prevalence of sea coastal British Columbia also suggests that sea otter populations may have been "maintained well below carrying capacity near human settlements as a result of human intervention, "raising questions about contemporary conservation objectives for an iconic marine mammal and the social-ecological system in which it is embedded" (Slade *et al* 2021:548; see also Lee *et al* 2016, 2018), These and other studies also point to questions of how varied and sustained the ecosystem impacts of sea otters were under aboriginal hunting regimes, prior to their decimation in the maritime fur trade (cf. Lee *et al* 2019; Szpak *et al* 2012, 2013).

From her analysis of cut marks on the sea otter (and seal) bones and of techniques used for butchering the animals for various products, Moss concluded, in accord with de Laguna, that "Angoon Tlingit ancestors were skinning sea otters for their pelts. They also, at least occasionally, appear to have removed backstraps from some sea otters; whether they consumed these cuts as meat or fed them

to dogs cannot be determined" (2021:217). Similarly, Angoon Tlingits were skinning seals to process their skins and use their blubber to make seal oil. While seal meat and fat were primarily for human consumption, sea otter meat and both seal and sea otter bones were fed to village dogs who served important roles as sentinels, hunting partners, and companions, as well as in cleaning residential sites of waste (2021:216-217). Moss does not take a position on the primacy of various factors in motivating sea otter hunting over time, but emphasizes that regionally "[t]he ancestors of Indigenous groups have been networked within North Pacific ecosystems for more than 12,000 years, and they likely interacted with sea otters in variable ways: hunting them for pelts, as a food source, and/or for the purpose of protecting local shellfish " (2021:217).

In the Western Gulf of Alaska, based on cut marks on bones found in middens extending back 8,000 BP, it appears that otters also were used for food and for fur. Investigators there also found a pattern of alternating frequencies of sea otter versus sea lion (a more common subsistence food than in Southeast Alaska) bones in middens. As Marilyn Sigman reports, archaeologists at Sanak Island on the Alaska Peninsula "saw a pattern over the course of the last two thousand years… [but did not understand the cause] until they looked at climate records for the same period." A comparative analysis revealed that the number of sea lion osteological remains and the size of the human settlements were larger during cold periods. In contrast, sea otter osteological remains were more prevalent during warmer periods, when human populations were also higher. The reason for this difference, it is hypothesized, is that cod, a favored prey of sea lion, dwindled during warming periods and thus sea lions also become scarcer. As a result, hunters switched to sea otter, especially those close to shore, that did not require a covered skin [typically sea lion skin] boat to harvest (Sigman 2018:221). Although caution must be exercised in associating midden content with prevailing ecological or environmental conditions, this archaeological analysis raises the question: Could the same scenario have occurred between sea otters and seals in Southeast Alaska?

A similar complex relationship emerges between sea otters, red urchins and humans. Did humans attempt to keep sea otters in check because they threatened supplies of urchins and other key invertebrates? A team of investigators analyzing middens on the Aleutians has suggested that aboriginal Aleuts played a large role in "overexploiting the sea otter, thus minimizing or eliminating its keystone role in the [kelp bed] community" (Simenstad *et al* 1978:410). In this analysis, Aleut hunting led to "dramatic" changes in those communities, transforming them from macroalgae dominated to epibenthic herbivore dominated habitats, which, in turn, constrained Aleut prey choices, as evidenced in the stratified faunal remains. Sigman (2018:222) highlights counter archaeological evidence showing a pattern of "otters and kelp beds being scarce only in small circles around villages during the thousands of years that people lived in the Aleutians," disputing the Aleut overexploitation hypothesis.

The latter perspective is consistent with the Indigenous Knowledge and archaeological findings from Angoon (de Laguna 1960) and the coast of British Columbia (Slade *et al* 2021), cited above, that human hunting likely contributed to the low prevalence of sea otter around Pacific Northwest Coast settlements during the late Holocene but not to overexploitation. However, lack of otter bones in middens may also be a function of protocol, specifically Indigenous rituals of returning the bones of the sea otters to the sea (or burying them if they were hunted on land) after they were offered a last drink of fresh water (as practiced by some Sitka hunters) and then skinned and processed. This would have masked kills from the archaeological record as neither the bones nor the skins would be present in the midden. Given these multiple dimensions of sea otter hunting and post-harvest handling, it is difficult to draw strong conclusions about the arc of predator prey relationships between humans and sea otters from the archaeological record alone, including to what extent they were eaten.

Contemporary Indigenous Knowledge, also known as Traditional Ecological Knowledge (or TEK, see Berkes 2012) and Indigenous Environmental Knowledge (or IEK, see Thornton and Bhagwat 2021), is therefore important to consider, as it can add further dimensionality to the historical

ecological picture, through a process known as "Two-Eyed Seeing" (Bartlett *et al* 2012). This process helps to bridge the gap between Indigenous and scientific (or other mainstream) perspectives.

Indigenous experts consulted for this study spoke of several forms of consumption of sea otters, including as meat for humans (mainly from the backstrap cut), for non-human companions (meat and bones for dogs); and for bait (especially for shrimp, but also crabs). For example, Hydaburg hunter Sid Edenshaw notes, "That's the one good thing about the sea otter is I'm a subsistence shrimper and I'll put like a half of an otter in the shrimp pot and it'll last like about five days. You don't have to rebait the pot. Yeah, whereas sand fleas will eat up anything else real quick, the otter will last. And they really, really stink, but boy they do good for shrimp bait!" At Sitka's Mount Edgecumbe High School where Alaska Natives attend from around the state, Wade Martin regularly donates sea otter, seal, and (in the past) sea lion to their Founders Week cultural events and classes.

> Wade Martin: Yeah, the – there's a few elders [that eat it] . . . and I have some friends that like them. And Mt Edgcumbe school. . . I call Andrew Friske, he's the [Residential Principal]. And they'll use it [sea otter] in their culture classes over there, and the kids love it. I've taken it over before and it's all butchered and – I actually watched one young man just dig right in that bag, pull out a chunk of fat, and start eating it. I was like, 'Wow! No stove needed' (laughs). And they loved it. When they do the Founders Week over there, it's a real big deal. I'll take two or three of them over there and they put it away [process it], and their families will fly down for it [Founders Week], and it's just a really neat deal.

Positive, if not rave, reviews of sea otter meat are only occasionally found in the historical record. For example, when Vitus Bering's 1741 expedition became shipwrecked on what would later become Bering Island in the Commander Islands near Kamchatka, they were forced to rely on sea otter for sustenance, killing more than 900 in the vicinity of the island over a long winter. According to the voyage's famed naturalist, Georg Steller, sea otter saved the crew from starvation. He found sea otter meat tender and savory in comparison to seal, with young sea otter the most delicious of all, like an "unweaned lamb," though other crew members found it foul-smelling and "tough as sole-leather and full of sinews, so much that you have to swallow it in large lumps" (Sven Waxell, quoted in Sigman 2018:221). With the exception of carefully prepared (slow-cooked, well-seasoned) backstrap, this seems to be the more common sentiment expressed by interviewees today, though the meat is also used for bait and pet food according to our consultants.

Clearly the main use of the densely haired sea otter, was for its fur, which was considered a luxury item among Alaska Natives even before the time of non-Native contact. Several of the hunters and handicrafters I interviewed invited me to touch and marvel at the density, suppleness, and rich colors of the sea otter's pelt. Among the 12 facts about sea otters that the US Department of the Interior, Fish & Wildlife Service finds important, #6 is that sea otter fur is the thickest of any fur animal, containing between 600,000 to one million hairs per square inch (DOI 2024), rivaled only by the fur seal in the North Pacific.

While the sea otter, despite its humanlike qualities, does not seem to be closely associated with shamanism in Southeast Alaska, like the land otter, or strong spiritual powers, like bears, wolves, and other species, it is associated with luxury and finery, including in oral histories. One story from the Southcentral region (cf. M. Oleksa, quoted in Sigman 2018:224) tells of sea otters' origins as incestuous youth, dressed in their finest regalia, jumping off an ocean cliff to escape their family's opprobrium and shame, and reemerging from the sea as finely furred sea otters. The following Tlingit version of this story was recounted by Robert Zuboff to Nora Dauenhauer in 1972 (Zuboff 1972).

**Wáa Sá Yáxwch’ K̲uwusteeyí, Shaadaax’ X̲’éidáx̲ Shkalneek**
**How the Sea Otter Came to Be, Told by Robert Zuboff**

Recorded July 21, 1972, in Angoon, Alaska, by Nora Marks Dauenhauer.
Transcription and translation by Will Geiger and Jeff Leer, completed April 10, 2025.
Audio source is MC005, Dauenhauer Tlingit Oral Literature Collection, tape 343, side a, 56:13–56:49, and tape 343, side b, 00:00–04:19, William L. Paul Sr. Archives.

| | |
|---|---|
| Yáa— | The— |
| yáa yáxwch’, | the sea otter, |
| yáa yáxwch’. | the sea otter. |
| Ana.óot yéeyi áyá[2] | It used to be an Aleut, |
| yáa yáxwch’. | the sea otter. |
| Yáxwch’íx̲ wusitee. | They became the sea otter. |
| Ana.óot yéeyi áyá. | It used to be an Aleut. |
| Kakk̲walaneek yáa shkalneek. | I will tell this story. |
| Ana.óot shkalneegí.[3] | It’s the Aleuts’ story. |
| ⟨Ana.óot shkal⟩neegée áyá.[4] | This is ⟨the Aleuts’⟩ story. |
| Yáa—yáa Lingítch tlél— | The—the Tlingits do not— |
| tlél wuskú | do not know |
| wáa sá k̲uwusteeyí | how it was that the sea otter |
| yáa yáxwch’. | came into being. |
| Á áyá yáa— | So, there were these— |
| yáa— | these— |
| yáa naakée, | these Aleuts, |
| yáa Ana.óotx’. | up north. |
| Áyáa k̲áak’w áyá | There was a young man |
| k̲a shaawát | and a single |
| tléináx̲ yatee, | woman, |
| hasdu éesh | along with their father |

[2] False start edited for clarity. The unaltered utterance is *Ana—Ana.óot yéeyi áyá*. This and the following line together literally mean ‘the sea otter is a former Aleut’.

[3] End of tape 343, side a.

[4] Start of tape 343, side b. This side begins in medias res with only *…neegée áyá* audible. The portion in angle brackets is supplied based on the assumption that Zuboff began here by repeating his last line before side a ran out and the cassette had to be flipped.

| | |
|---|---|
| ḵa hasdu tláa. | and their mother. |
| Á áyá wóoch tin áyá kei s nadawádi áyá[5] | So, as they were growing up together |
| tle wooch tuwáa has wudzigóo | the young man and the woman |
| yáa ḵáak'w ḵa yáa shaawát. | developed desires for one another. |
| Tlákw wóoch teen— | Always together— |
| ldakát át wóoch tin yéi s adaadané. | they did everything together. |
| Wóoch tin át has kawdiyaa.[6] | They went about together. |
| Yankáx' wooch een.aax'w hás áyá. | They were each other's family in a true sense. |
| Á áyá hasdu daa yoo x̱'adul.atgi nuch. | So, the people got to talking about them. |
| Ana.óotx' hasdu daa yoo x̱'ali.átk. | The Aleuts were talking about them. |
| Wáananée sáwé yéi s yawdudziḵaa,[7] | Eventually the people said to them, |
| «Kadéix' áyá haa yáa yéi yiy.óo, | "You folks bring shame upon us, |
| kadéix'. | shame. |
| Tlax̱ ḵúdáx̱ wooch een.aax'w hásx̱ yee siteeyi yéix' | Being that you are much too closely related to one another, |
| yáa yee ḵusteeyí | you are not conducting |
| tlél ayáx̱ yaa yanaytéen.[8] | your lives properly. |
| Ḵúdáx̱ wooch een.aax'w hásx̱ yee sitee. | You are too closely related to each other. |
| Yak'éi woosh jiyiydanaag̱í. | It's right that you folks split up. |
| Yak'éi.» | That's what's right." |
| Áwé, «Tléik'!» | So then ⟨they said⟩, "No!"[9] |
| Ḵaa x̱'akaanáx̱ | Nobody |
| has yatee | could talk sense into |
| yáa shaawát | this woman |
| ḵa yáa ḵáak'w. | and this young man. |
| Ách áwé hasdu een yawdudziḵaa, | So the people told them |
| has gax̱du.een. | that they were going to slaughter them. |
| Has gax̱dujáaḵ | The people were going to kill |

[5] False start edited for clarity. The unaltered utterance is *Wóoch tin áyá kei has—kei s nadawádi*.
[6] This could perhaps be translated more colloquially as 'they were joined at the hip'.
[7] False start edited for clarity. The unaltered utterance is *Wáananée sáwé yéi s yaw—yéi s yawdudziḵaa.*
[8] False start edited for clarity. The unaltered utterance is *tlél ayáx̱ yaa n—yaa—yaa yanaytéen*.
[9] This line is literally, approximately, 'So, "No!"', with 'they said' implied but unstated.

| | |
|---|---|
| ch’u dáx̲náx̲ | the two of them, |
| yáa k̲áak’w | the young man |
| k̲a yáa shaawát. | and the woman. |
| «Seig̲áni aayí yakyee | Come tomorrow’s day, |
| ch’a k̲únáx̲ yáa g̲agaan | when the sun |
| kindachóon | overhead |
| diyínde daak sh wulleedí | starts gliding down, |
| aag̲áa áwé s gax̲du.een, hasdu gaawúde kagux̲daxéet.» | that is when they are to be slaughtered and their time will come.” |
| Yéi áwé hasdu een yawdudzik̲aa. | The people promised this to them. |
| Áwé hóoch’een yís áwé wooch x̲ánt has wudi.át, | So, for the last time they came together, |
| hóoch’een yís. | for the last time. |
| «Wáa sgí s’é gé k̲utuwanéekw gé, | “What, I ask you, shall we do |
| yáa hóoch’een yís? | in this final hour? |
| Haa gax̲du.een áyá de. Haa gax̲dujáak̲ áyá de. | They are going to slaughter us. They’re going to kill us. |
| Yáa g̲agaan | When the sun |
| daak sh wulleedí áyá haa gax̲du.een | glides, they’re going to slaughter us, |
| hóoch’een yís.» | once and for all.” |
| Áwé wéi shaawátk’íx̲ siteeyi aa áwé yéi yaawak̲aa | So, the one who was a young woman said, |
| «K’e hóoch’een yís ashkanax̲tudat’ájaa. | “How about let’s take a swim one last time. |
| Nax̲too.aadée ashkudat’ájaa.» | Let’s go swimming.” |
| «Ha góok.» | “Well, go ahead!” |
| Áwé tléix’ yateeyi yé áwé tlax̲ k̲únáx̲ áwé lishóo. | So, this one place had a very deep end. |
| G̲íl’ shakée áwé áwu á hás, | They were at the top of a cliff, |
| g̲íl’ shakée. | the top of a cliff. |
| Áwé shaawátk’ shóogunáx̲ náadáx̲ yéi jidané. | So, the young woman first took off her clothes. |
| Náadáx̲ kei shakawdajeilée áwé | When she had stripped everything off |

| | |
|---|---|
| wé g̲íl’ shakéedáx̲ áwé daak wujik’én héende | the young woman |
| wé shaawát. | leapt out from the top of the cliff toward the water. |
| Ch’a altín wé du éek’ch. | Her brother just watched. |
| Ch’áakw héen táade wuyeix̲í anax̲ kei sh wudix̲ích kindayígin. | After being gone for a long time underwater, she surfaced face up. |
| «P-x̲-x̲-x̲-x̲-x̲w!»[10] | “P-h-h-h-h-h!” |
| Wáa sáyú? | What happened? |
| Ch’a g̲una.átx̲ sitee | What had been his sister |
| yú du dlaak’ yéeyi. | was now a strange being. |
| Ch’a g̲una.átx̲—ch’a g̲una.átx̲ wusitee. | A strange being—she had become a strange being. |
| Áwé tlax̲ k̲údáx̲ áwé awsix̲án wé du dlaak’, | He loved his sister excessively, |
| ách áwé ch’u tle hú tsú daak wujik’én héen táade. | so he, too, leapt out toward the water. |
| Hás áwé | It was they |
| yáxwch’íx̲ has wusitee. | who became sea otters. |
| Yáa Ana.óot yéeyi áwé | They who were formerly Aleuts |
| yáxwch’íx̲ has wusitee. | became sea otters. |
| Yóo áwé ax̲ een | That is how |
| has sh kawdlineek. | they told the story to me. |
| Aadáx̲— | From this— |
| aadáx̲ áwé k̲uwdzitee | it was from this that the sea otter |
| wéi yáxwch’. | came into being. |
| *Okay*? | Okay? |
| ND: Mm-hm. Hasdu x̲oodáx̲—.[11] | ND: Mm-hm. From among them—. |

[10] This is an unvoiced and heavily aspirated sound effect representing the woman-turned-sea-otter sharply exhaling upon surfacing.

[11] Here Nora Dauenhauer (ND) appears to begin a follow-up discussion when the recording abruptly cuts out at 04:19.

Father Ioann Veniaminov, an early missionary and ethnographer of the Unangan, remarked on how hunters, perhaps following this logic, used to dress "in their finest clothes and adornments [in preparation to hunt sea otters] because they believed otters were attracted to human beauty and finery" (Sigman 2018:224). Even the hunter's harpoons and other implements might be carved to attract the attention of the sea otters. Other beliefs surrounding sea otters, included taboos involving the sexes. These practices included the fact that women were prohibited from stepping over sea otter hunting kayaks, and hunters only were permitted to sew the last seam on their skin kayaks, lest their luck seep away (de Laguna 1972; Sigman 2018:225). Sea otters with anthropomorphic features have been found represented in small stylized ivory carvings or etchings in Angoon (de Laguna 1960) and Kachemak Bay, which render them humanlike "with paws around the face, as if in surprise" (Sigman 2018:223). This humanlike conceptualization is further enhanced by the sea otter's sociality and use of tools, such as rock hammers to open shellfish. Indeed, it has been suggested by Sigman that the Sugpiat story of sea otter originally being a man who became trapped by an incoming tide while collecting gumboots (or chitons) and then being transformed when "he wished to become a sea otter," is also "imparting an eeriness to their killing" as "transformed ancestors." This closeness in ecological food webs is reinforced in anatomy, for "[w]hen their [sea otters'] fur has been removed, their skinned-out body is thought to look uncomfortably humanlike." (Sigman 2018:223).

In Southeast Alaska, the sea otter's anthropomorphic characteristics are recognized among Indigenous and non-Indigenous peoples alike. However, unlike land otter, which is associated with shamanism and some clan crests and had taboos on consuming its meat (Moss 2020:205), sea otter are less distinguished by such recognition or prohibitions. Nor are sea otter depicted as ancestors in stories or visual art in Indigenous Southeast Alaska, in contrast to Supiaq tradition. However, as noted above, they are consistently recognized as distinct and separate from land otters by all Southeast Native groups, and person-like in their characteristics. Sea otters are also seen as aids in navigation to food sources, safe harbors, and such. At least two related Raven coho clans, the T'akdeintaan of Hoonah and the L'uknax.ádi of Yakutat, Hoonah, and other northern Southeast communities, hold the sea otter as a sacred crest, based on their history of hunting and other encounters with them, especially on the Gulf Coast between Cape Spencer and Cape Fairweather.

**Tlingit Deep Time Perspectives on Sea Otter**

Sea otters appear in oral histories and narratives among all the Indigenous peoples that inhabit their range, including the earliest stories concerning Southeast Alaska's geography, ecology, and Indigenous inhabitants. In Deep Time (or Distant or Primordial Time, cf. de Laguna 1960, Nelson 1989) when Raven, the Trickster-Worldmaker in Tlingit, Haida, and Tsimshian historiography released sunlight into the world, many species we recognize today first took their present form. According to a Tlingit version of the story,

> Raven … came to a large town where [there] were people who had never seen daylight. They were out catching eulachon in the darkness when he came to the bank opposite, and he asked them to take him across but they would not. Then he said to them, "If you don't come over I will have daylight break on you." But they answered, "Where are you from? Do you come from far up the Nass where lives the man who has daylight?" At this Raven opened his box just a little and shed so great a light on them that they were nearly thrown down. He shut it quickly, but they quarreled with him so much across the creek that he became angry and opened the box completely, when the sun flew up into the sky. Then those people who had sea-otter or fur-seal skins, or the skins of any other sea animals, went into the ocean, while those who had land-

> otter, bear, or marten skins, or the skins of any other land -animals, went into the woods [becoming the animals whose skins they wore]. (Swanton 1909, Story 1, emphasis added)

This story underscores both the antiquity of the species and its kinship with other species as "persons" under different outer skins. It also reveals that land otters were distinguished from sea otters from the earliest times by Southeast Natives. This fact, bolstered by scientific investigations which suggest the species diverged some five million years ago in northeast Asia (Beichman *et al* 2019), is further supported by how the three major Indigenous languages of the three major Alaska Native languages of the Southeast region classify the two species, using separate basic terms (i.e., each species' name is not derived from the other and refers only to the species it identifies), in contrast to the English folk taxonomy that uses binomial compounds to modify a single generic (otter) for distinguishing the two species: land otter vs. sea otter. The separate terms in the major Native languages of Southeast Alaska are as follows in Table 3.1.

Table 3.1. Sea Otter Terms in the Major Native Languages of Southeast Alaska

| **Native Language** | **Sea Otter** | **Land Otter (River Otter)** |
|---|---|---|
| Lingít (Tlingit) | yáxwch' (yúxch') | kóoshdaa |
| Xaad Kíl (Haida) | ku | sdlagw |
| Sm'algyax (Tsimshian) | p*hl*oan | '*w*atsa |

In other Deep Time narratives of the development of the cosmos in Southeast Alaska, sea otters are depicted as the great helper of Raven. Sea Otter assists Raven to recover pieces of earth and stone after the great Flood. Raven escapes the inundation by clinging to a cloud in the atmosphere but has no earth to return to because of the massive flood. Thus, he alights on a patch of bull kelp floating in what is now the coastal waters of the Gulf of Alaska (perhaps near Dry Bay) and appeals to Sea Otter to dive beneath the flood waters and retrieve bits of earth and stone. Raven then sets about redistributing these materials to create the lands and waters we know today as Alaska (Swanton 1909; Thornton 2016).

It is also Sea Otter, at least in some versions of the story, who helps Raven locate a spiny sea urchin that the latter uses to "poke" the "Old Woman of the Tides," who was stifling the tide's flows. By this action, Raven stimulates the Old Woman to release the tides so they can again oscillate freely and regularly reveal the intertidal bounty of food that people enjoy and rely upon to this day.

Further, there is a Raven story, collected from Harry Bremner by de Laguna (1972:863-864) in Yakutat, in which the Trickster-Worldmaker deceives the sea otters into giving him plant medicines, which he spreads around the world.

> [Raven] say he's sick, but he ain't sick at all. He was just fooling, wanted to fool the chief of the Sea Otters. He said he was a prince from the earth. He said he run down from the hills, and he bumped his knee on all kinds of trees and bushes. But there weren't any. [There was only moss on earth then.] The Sea Otter [described in another version as "living in a coil of kelp"] said to his wife, "Why not marry this prince to our daughter?" She said, "That's all right for me." So they did. Sea Otter got all those roots that Raven never found on the earth. Raven said, "These spruce roots would help [i.e., help his injured knee]. This root, and this root, and this root—." He get them all. They were laid on his knee, and then Raven get them in his mouth. He flew away with them, spit them all out over the earth. . .

Finally, among the Raven cycle of stories, there is the narrative of Raven and the food canoe, set in the Akwe River/Dry Bay area. "Food canoe [or ark]" or "food repository," as it is often rendered in English is a limited translation, as it really signifies a "kelp coil [or patch]," or more accurately, a

kelp ecosystem atop of which sits Sea Otter, the “apex” of the system, as marine science now confirms. Raven borrows the powerful Devilfish Cane to haul in the massive “ark” or “kelp coil” that contains all the marine animals and plants that that the local people will need to thrive (cf. de Laguna 1972:866-67). As de Laguna’s interlocutors relate:

> [Narrator]: He hooked onto that thing that floated around the bay, and he trying to pull. And he talked nice to him; " 'ax yAqawu—my intimate friend," he call it, when Yel [Yéil, Raven] come to him. He knows something about that sea otter and all that stuff. Big bunch of kelp and all that stuffin there…
>
> [Discussant]: Got everything in there you can think of in Alaska—sea otter, sea lion—None of them until Yel [Yéil]—You see, every kind of animals come from that house. They call it YAxkAdAtAu-kA hidi [Yéil (or Yakw?) Kudatankahídi, Raven’s (or Canoe?) Repository House]. Because that thing just going alongside, toward the shore, when he pull it. All that stuff that was on that kelp, that's why sea otter goes in salt water, all seals goes in. [The narrator agreed that the "house" or coil of kelp was like Noah's Ark full of animals. . . “] . . .
>
> He [Raven] wanted it for his tribe. He wants to see people get their share instead of getting tied up by [the owner of the Devilfish Cane]. Keep everything to himself and make all the others suffer.
>
> That's why he [Raven] wants to do that.

Later the “Sea Otter People” insult Raven by inviting him to their party (potlatch) and then serve him rather lowly codfish heads, which he counters by scheming with his nephews, “the snipes,” to outwit the Sea Otter People and obtain more favored herring heads to consume instead (de Laguna 1972:871).

The Tlingit and Haida of Alaska were said to have hunted sea otter from the earliest times, especially for fur, to wear and to sleep upon. The historical land rights investigators Walter Goldschmidt and Theodore Haas note in their 1946 report (1998 [1946]:20), “In the early days sea otter and seals were cornered on the beaches and shot with bows and arrows.”

Specific sites in the greater vicinity of Sitka Sound are also mentioned in Deep Time oral narratives. These include:

1) Hunting highly valued sea otter from Sitka Sound to far out in the Pacific Ocean, from Sitka Sound and Yeil T’ooch (Gulf of Alaska and the Pacific Ocean). The well-known story of the famous Kiks.ádi marine mammal hunter Kaax'achgóok and his brothers is set in Sitka Sound and the North Pacific. Ronald Olson’s prefaced the version of the story he collected from John Darrow in Klawock with this contextual statement: “In the days before the white man came Sitka Sound was a great hunting ground for hair seal. sea lion and sea otter. When the east wind (kagetna xet {Kageit naxeit, “Silver Bay wind]), the hunter from Sitka would go out into the channel (citkagayik [Sheet’káxaiyík, “Inside of Sitka Sound”]) to hunt these animals” (Olson 1967:122). The following version of the Kaax'achgóok narrative was collected by Swanton from Sitka (see also Dauenhauer and Dauenhauer 1987; de Laguna 1972):

> They were fond of hunting [fur seal]. One morning they went out among the islands. Qâq!Atcgû'k [Kaax'achgóok] killed nothing. Again he went to the place where he had been in the habit of going [Low Island, Shandák'w, Seal Clubbing Area]. Then his name was mentioned among the fur seals. "It is he who is always hunting. Keep quiet, for he might hear you." Now when they were going shoreward the eldest brother said, "Pull ahead quickly, for the wind is beginning to blow." …The canoe, however, drifted out. It drifted far out for six days and nights. On the twelfth he awoke to find the canoe

drifting ashore. He saw an island on which were sea lions, seals, fur seals, sea otters, and sea-lion bristles [valuable for shakee.at dance hat trim, among other uses]. All had drifted on to the island. Then they took their things up. They stayed there one year. When a year and a half was completed, the man slept, thinking about himself.

One morning he awoke with a dream. He dreamed that he had gotten home. [And]… he said to his younger brothers, "Get up quickly. Let us head the canoe shoreward at random. The sun always rises from behind Mount Verstovia." So they headed shoreward. When it became dark they lowered their anchor into the sea in the direction of the sunrise, and after they had been out for many nights they saw a sea gull swimming about. It was really Mount Edgecumbe that they saw. When they got near to it they saw plainly that it was Mount Edgecumbe. "Head straight for the mountain," said [Kaax'achgóok], and toward evening they came near it. They named the place where they came in Canoe-resting-place [Yakwkalaseig.ákw, Canoe Rest Cove, Cape Edgecumbe; Thornton 2012:96, #234]. There he pounded out the figure of a sea lion so that people might know he had come ashore at that place. Then they came to Sitka [and were reunited with their people].

When they arrived in front of this town his old wife was weeping outside. While she was crying she saw the canoe come in front of the town. She saw the root hat she herself had woven. She started up, and went into the house. When they came in below the old woman felt happy. When her husband came up to her he gave away all sorts of things to the people-sea-lion whiskers, sea-otter skins, fur-sealskins. He shook hands with his brothers-in-law. Then they said to him, "This long time the death feast has been held for you." The young woman, however, was already married. She mourned much [to think that she had left her first husband who was now so wealthy]. (Swanton 1909: Story 101 [and 67]:103-105).

Olson's (1967:123) version of the story adds other important details about the distribution of sea otter furs as the first given and highest valued gifts among the Sitka Tlingit: "When the canoe had been made fast the brothers began giving out sea otter skins they had brought. They gave two to each high caste person, one to each of the others. Next they gave out the seal skins and last the sea lion whiskers. (These were valuable for they are used on dance hats.)"

Another important Deep Time narrative relates details about the history of sea otters at Cape Edgecumbe and outer Kruzof Island.

"At Sitka lived four brothers who were very fond of hunting. In those days people liked to hunt about the straits north of Sitka for fur seals, sea otters, etc. [for use and trade]. One day, while they were out, they were forced to take refuge from a storm at a place near Mount Edgecumbe, called Town-on-the-inside-of-blue-paint-point (Nexî'ntaiataq!-ân [Neixinté Yat'ak.aan, Village Beside Blue-Green Claystone Cliff; Thornton 2012:94, #229)], and while hunting about this place during their long stay they discovered a rocky cave or overhanging cliff from which soft blue stuff continually dropped. The youngest said, "I have discovered a valuable thing which will be used for painting and for everything carved."

[After they took the valuable blue-green paint from the island, the weather turned very rough, and the brothers believed they had committed a taboo by taking something valuable from the island [Lux', Kruzof Island] without permission (perhaps from the Volcano Woman, known as Shee) or reciprocation]

They were not drowned, however, and reached shore in safety, so people still speak of their bravery in not throwing the blue paint overboard. To this day they say

> that, if you take anything from there, the weather will be stormy, and people are still afraid to do it, but take the risk because the thing obtained is valuable. (Swanton 1909: Story #17)

Sea otter hunting sites around Kruzof Island are also recorded by Goldschmidt and Haas (1998 [1946]) as among those used traditionally (see Map 5.1), although it is not clear if there it was customary to leave something to the Volcano Woman, Shee, for otters taken on or near her shores.

Similarly, sea otter hunting in Yakutat predates Russian settlement, including by the Aleut, who were later enserfed by the Russians as sea otter hunters during the fur trade. Yakutat elder Harry Bremner told anthropologist Frederica de Laguna (1972:257): "The Aleuts came here sea-otter hunting way before the Russians. The Aleuts had a war with all the tribes. . . They talk a different language . . ." The local Tlingit and Eyak peoples had to forcefully resist them, laying the foundation for further hostilities during the colonial fur trade era. And the Tlingit went westward, including to Kaliakh River and Comptroller Bay to trade with Eyak, Chugach and other tribes. De Laguna notes, that trips to these areas offered opportunities to acquire both sea otter and beaver skins "through trade or hunting." The territory of the [Galyáx-Kaagwaantaan] was said to have been especially rich …[and] both sea otter and beaver pelts were standard articles of trade, in exchange for Tlingit and other Indigenous (and later foreign) items obtained from Yakutat, or further south. Traditionally (and even during the Russian and early American periods), "such trips were made every summer, and some would stay all winter with their relatives at Kaliakh River. Parties from Yakutat usually set out for these western settlements after the return of expeditions from Dry Bay to the interior, and probably carried Athabaskan articles obtained from the Dry Bay traders" (de Laguna 1972:350).

It is hard to know how much each of the various Tlingit groups traded sea otter prior to the fur trade, but the ethnographic record suggests it was significant, especially for outer coast tribes, including the Hinyaa, Sheet'ká, Xunaa, and Yakutat (Gunaxoo and Laaxaayík) Tlingit (as well Kooyu, Keex', and Xutsnoowú). Notably the ancestors of what became the Kwashk'ikwáan clan of Yakutat after migrating from the Interior to Icy Bay and down the coast, purchased their land at Humpback Creek (Kwashk') in Yakutat Bay from its original owners, bought it "with sea otter furs and coppers or with a large canoe hung with seven coppers on each side, each copper worth 10 slaves" (de Laguna 1972:354). Of Yakutat aboriginal trade more broadly, de Laguna (1972:348) concludes "I believe that the Yakutat area was always noted for its seals, sea otters, strawberries, and seaweed, and that sealskins [and sea otter skins, though perhaps to a more limited extent], seal oil, dried seaweed, and cakes of dried strawberries were exported" regularly. Undoubtedly, the total sea otter skin trade was but a small fraction as compared to the industrial fur trade, which eliminated sea otters the region. However, impacts of the aboriginal use and trade in particular areas could be still significant as suggested by Angoon's apparently successful efforts to strictly control sea otter populations in its village area.

2) Presenting sea otter fur as a high status gifts to other species, from Cape Fairweather Area (Gaanaxáa (?), the Arch at Boussole Head; Thornton 2012:96, #134) and Gaanaxáa Héen ([Gaanaxáa] Creek ; Creek at Boussole Bay; Thornton 2012:96, #134.1). This is north of Sheetk'á Kwáan territory proper but represents the adjacent northern outer coast. This area is of historical importance to Coho clans, which are prevalent in Sitka (e.g., L'uknax.ádi, T'akdeintaan, X'atka.aayí), and for hunting sea otter through to its banning in 1911.

> Near this place the daughter of a prominent Coho clan (T'akdeintaan) member was lost when a breaker overturned her canoe, drowning the other three women. She was saved by the Puffins [or Black-legged Kittiwakes?]

There is a place called GânAxa' [Gaanaxáa] and a creek close by called GânAXa'hîn [Gaanaxáa Héen; see Thornton 2012] whither many people used to go to dry salmon and do other work [including marine mammal hunting]. “One day some women went out from there at low tide to a neighboring island to dig shellfish. They brought their canoe to a place where there was a hole in the side of the island, but, when they endeavored to land, a breaker came in, upset the canoe, and drowned all of them except one. In former times, when this woman went by in her father's canoe, she used to think the birds here looked pretty and was in the habit of saying, "I wish I could sit among those birds." These birds were the ones that saved her. They felt so happy at having gotten her that they flew about all the time.

Meanwhile drums were beaten at the town to call people to the death feast, for they thought that she was drowned. One time a canoe from the village containing her father happened to pass this place, and they said to him, "Look among those birds. Your daughter is sitting there.

The puffin chief had ordered the lAgwâ'tc!, [lakwch’ísh, Rhinoceros Auklet, *Cerorhinca monocerata*] a bird which lives on the outer islands and is the puffin's slave, to braid the woman's hair, and she always sat on the edge of the cliff. Her father was very rich, so he filled many canoes with sea-otter, beaver, and marten skins for the birds to settle on when they flew out. When they reached the place, however, he could not see his daughter, for they had taken her inside. Then he became angry. They carried all sorts of things out there but in vain.

“At last, about four days afterward, the girl's mother thought of the white hair that had belonged to her grandfather. In the morning she said to her husband, "We have that old hair in a box. … Suppose we put boards on the canoes, spread the hair all over them, and take it out." They did this, and, when they got to the cliff where their daughter used to be, they saw her sitting on the edge with her hair hanging over. They went close in. Then all the birds flew out to them, and each stuck a white hair in its head where you may see it at this day. The girl, however, remained where she was.

Then these birds flew into the puffin chief and told him about the hair. They thought a great deal of it. Therefore the chief told them to carry the girl back to her father. But before she went he said to her, "If you are ever tired of staying with your father, come back to us." At that time she had a nose just like one of these birds, because she had wanted to be one of them. The sea gull is also the slave of the puffin. Therefore the Huna people say that when anyone goes to that place it calls his name, because it was the slave of the puffin at the time when this woman was there.

Because some of their people were drowned at that island, all of the T!A'q!dentân [T’akdeintaan] claim it. Later they built a house which they named after it [Gaanaxáa Hít?]. (Swanton 1909: 86-87, Story 25)

Significantly, just as Gaanaxáa (Bossoule Head) and its nesting Black-legged Kittiwakes were eventually taken as crests (*at.óow* or “owned things”) as a result of events that occurred there (cf. Thornton 2008: 180-184), so too did the sea otter ultimately become sacred crest of the T’akdeintaan, as a result of their predominance in sea otter hunting on the Gulf Coast from Cape Spencer to Lituya Bay (discussed further below).

**Earliest Encounters**

A separate category of stories relevant to the historical ecology of sea otters from an Indigenous perspective would include first or very early encounters with the "species" that came to be known as the White Man, but upon first contact was not necessarily classified even as human. A narrative collected by George T. Emmons in the late 19th century of a Tlingit account of the first encounter with the French explorer La Pérouse's expedition at Lituya Bay in 1786 (originally published in 1911 and reprinted in de Laguna 1972:259, emphasis added) provides one illustration of this genre.

"Native Account of the Meeting Between LaPerouse and the Tlingit"

> … Before the White man came, the people of Chilkat and Hoonah used to go to Yakutat to get copper from the Tlaxayik [Laaxaayík] people [of Yakutat Bay]. One spring a large party of Tl'uknaxAdi [L'uknax.ádi] went from the big village at KAxnuwu [Kaax' Noowú, Grouse Fort] in Icy Straits, under three chiefs... Four canoes were lost at the entrance to Lituya Bay, and the first chief was drowned…
>
> While the survivors were still mourning, two ships entered the bay. The Indians thought they were two great birds with white wings, perhaps Raven himself, and fled to the woods. After a time they came back to the shore and looked through tubes of rolled up skunk cabbage leaves, like telescopes, for if they looked directly at Raven they might turn to stone. When the sails were made fast, they thought the birds folded their wings and they imagined they saw a flock of crows [white Ravens?] fly up from the ships, so they ran back into the woods again.
>
> One family of warriors dressed in armor and helmets, and took their copper knives, bows and arrows, and launched a canoe. They were so frightened when thunder and smoke came from the ship that their canoe overturned and they scrambled ashore.
>
> Then a nearly blind old man said his life was behind him, and that he would see if Raven really turned men to stone. He dressed in sea-otter furs, and induced two of his slaves to paddle him to the ship. When he got on board his eyesight was so poor that he mistook the sailors for crows, and threw away the rice that was offered him, thinking it was worms. He traded his [sea-otter] fur coat for a tin pan and returned to shore laden with gifts of food. The people were surprised to see him alive, smelled him to make sure of his identity [[de Laguna:] that he had not been transformed into a Land Otter Man?], and refused to eat the food he had brought. The old man finally decided that it must be ships and people, so the Indians visited the ships and traded their furs. Then the White men lost two boats at the mouth of the inlet and many were drowned.

A similar first contact-first trade story from Klawock goes as follows:

> There were three Ganaxadi [Ganaax.ádi] brothers who were famous sea otter hunters. They were hunting at a place called Ayuktahklen [Ayakwta Tlèn]-in Port San Antonio on Baker Island. There came a big trading schooner with a Hawaiian crew. The men thought ship's boat was an akulsU'yat [?] (water monster) with long legs. and they ran ashore. They tried to run away but were caught. They called the white people "ktekaddilkwani [Kéidladi Kwáani] (sea-gull people) because of their "white" color. The Hawaiians looked like dark ducks (yuk), so were called yuk!kwani [Cormorant People, Yook Kwáani). It was thought that the rice of the strangers was worms or maggots. The captain of the boat gave them a warm bath. But they thought he was going to cook them, but the captain washed their hair. He gave them white men's clothes. Then the natives skinned the ten sea otter and five fur seal they had shot. The captain asked them if they ate sea otter and seal. The natives showed them how to draw blood

> out of seal meat with salt water and how to use stones for cooking. The captain showed them how to use iron pots and gave each of the three men one. Then they traded blankets and clothes for the furs. The captain gave them one gun each. and a keg of powder flints, and bullets. He also gave them hardtack, molasses, rice, and some calico. (Olson 1967:104, emphasis added)

These "discovery" or "first contact" stories (though some Tlingit groups had earlier contacts) have a number of important themes, most intriguing of which is the attempt by Tlingits to fit the white man and his social and material culture into their own cultural categories. However, we focus here on the protocol for "organizing trade," on which the Tlingit based these first encounters with whites and involved sea otter. Indeed, sea otter furs and handicrafts feature prominently in these first encounters. In the Lituya Bay case, the old man was dressed in fine sea otter furs, the highest valued fur and garments among the Tlingit, alongside that of arctic squirrel (from the Interior). The Tlingit man then offers this precious sea otter fur robe to the potential new trading partner to initiate peaceful exchange. After the initial exchange, the wheels of trade are greased, as it were, such that later "when La Perouse's ships were anchored at Cenotaph Island [in Lituya Bay] …The Tlingit came with canoe loads of sea otter furs, which were traded for hatchets, adzes, and bars of iron" (de Laguna 1972:117). Similarly, in the Port San Antonio case, sea otter were the initial gifts offered by the Tlingits, and significant knowledge was exchanged about sea otter and seal butchering, preparation, and use, including as food. This, in turn, opened up a wider array of trade and knowledge exchange.

Tlingits' organization of trade among neighboring tribes involved similar (though deeper) processes of ceremonial and social integration to facilitate the development of trade partnerships, "and of teaching the people proper intersib [between clans or matrilineages] and intermoietal (between "opposite" Raven and Eagle/Wolf super lineages) ceremonial behavior. Traditionally, trade partnerships were often cemented through marriage, and an enterprising noble or clan leader could become wealthy from multiple marriages, "since each brother-in-law gave him sea otter furs" (Olson, 1936, p. 214; de Laguna 1972: 356). While there was some intermarriage as well as adoption, naming, and other methods of integration of white traders into these traditional trading customs, it typically did not rise to the same level because the early non-Native traders (with the exception of the Russian American Company settlement at Sitka) were more transient and shipbound.

Together, these narratives stress important cultural themes regarding sea otters. The first is the sea otters' antiquity and status as non-human persons present in Deep Time at the "dawn" of daylight's release and after the great Flood. Second, Tlingit oral history emphasizes sea otters' skills as adaptive beings, who aid Raven in world (re)making and learn to thrive in the dynamic shallow littoral ecozones in ways that humans come to emulate as part of their own adaptations as "People of the Tides" (cf. Peck 1975). Third, the stories support the idea of the otter as a keystone species in the ecosystem that influences other species populations, such sea urchins, by consuming them as prey, or utilizing them for "tools" as Raven did with sea otter's urchin to prod the Old Woman of the Tides. Finally, the narratives point to the high economic value and prestigious nature of sea otter skins such that they would be: pursued across the Gulf of Alaska but out into the North Pacific; transported great distances for trade: offered as gifts to high status entities (like the white-winged Raven himself) and other potential trade partners; and highly valued by other species, such as the puffins in the T'akdeintaan story from Boussole Head area (Gaanaxáa). Together these Deep Time stories also establish Sitka Sound and outer Baranof and Chichagof islands, along with the Gulf coast above Cross Sound to the north and the outer Prince of Wales archipelago to the south as aboriginal centers of both sea otter populations and sea otter hunting and value-added products, which is born out in the historical record and the situation we find today in Southeast Alaska.

With a 10,000-year archaeological record of hunting sea otter in the region, we might expect that the geographical origins of sea otter hunting in the oral historical record would be hard to date. Ronald Olson's interlocutors suggest that by the time Tlingit migrated to northern Southeast Alaska,

they were already sea otter hunters, having discovered them on the outer islands of Southern Southeast Alaska, including at Duke Island and Cape Chacon. He records an oral history of Taant'a Kwáan in which Duke Island (Gix) is discovered to possess "[f]ringing rocks full of sea otter and all manner of other sea life," prompting the leader of the discoverers (Tlexih) to build a house there "on a flat-topped cliff" and develop special magic, or medicine, for hunting sea otter, fur seal, and everything that man needs," such that "[a]ll things he got easily in this way" (Olson 1967:84). Similarly, the discovery of Klawock as a biodiverse and bountiful habitat was informed by another leader, Tlawah, who when he first walked on the present village site "heard a sound like the roar of a gusty wind. It was the animals—hair seal, sea otter, and fur seal—on the reef," which, along with the rich vegetation and supplies of salmon, indicated a land of plenty and ideal place to establish a community (Olson 1967:103).

Significantly, in oral history record, there is also evidence of migration and changes in sea otter behavior, possibly in response to aboriginal hunting in the pre-colonial period. As the Klawock elder John Darrow recounted to Olson:

> About the time of the fourth set of houses [were built at the original Klawock settlement] the sea otter, fur seal. and sea lion started to leave this district, Up to that time the people of the village had no canoes. Now they built some. They cut a big red cedar. The Tekwerlih [Teikweidí] started to build one and the Ganaxadi [Ganaax.ádi] started a second. One was built at the site of the present town hall, where charcoal may still be seen…
>
> A fire was built on top of the logs, the charcoal scraped off with rough stones. Afterward the outside was also shaped with fire. This is called wuddutsganaya'k (fire-shaped canoe [wudatsgan yaakw [?]). Then they made other canoes of various sizes. With these they hunted sea otter and other creatures. Just below the island village a salmon weir was built (Note: salmon weirs in this vicinity have been dated to more than 3500 years BP; see Moss 2020).

This suggests that in the early days, sea otters could be taken on land or in shallows or with less specialized watercraft than those canoes which came to be specially constructed to pursue them offshore (see the discussion of Yakutat, below). Indeed, onshore and nearshore hunting may have contributed to a change in sea otter behavior, as suggested in a more dramatic way by Emmons (1991:123), a century after Tlingits first contact with LaPérouse in 1786:

> The incessant pursuit of the sea otter not only tended to its extinction but changed its habits by making it doubly shy and solitary and keeping it far from shore, which accounts for the fact that a few still remain. Thus in 1892, the Hoonah took sixty sea otter in Lituya Bay, and in 1889 when I was traveling with the Tlingit I saw four newly killed sea otter in a hut at the entrance to Cross Sound.

Other early camps associated with sea otter hunting identified in this region include one of the Teeyhittaan clan "at Ekhin (Egg Creek) just to the north [of Klawock] and another called Gáxaánk on the point opposite the Barrier Islands… an area famous for sea otter" (Olson 1967:106). Olson also identifies another village, known as [Yáxwch' Aan?], Sea Otter Town, on "the island near" Klawock (Olson 1967:109). Some of these camps may date to early or pre-colonial times. We find similar Indigenous place names sprinkled up and down the outer coast (and a few in central Southeast Alaska) of what is now Tlingit, Haida, Eyak, and Chugach country from Cape Chacon to Controller Bay (cf. Thornton 2012).

**The Sea Otter's Contemporary Status in Western Popular Culture**

Just as it is in Western science and Indigenous cultures, the contemporary status of sea otter in popular culture is an important consideration in understanding how sea otters and sea otter hunting are viewed today. In fact, the popularity and status of sea otters has risen along with their recovery in North America popular culture, except in cases where they compete very directly with human groups for resources of high value, like abalone, clams, and crabs. Otherwise, their cute, cuddly photogenic features and charismatic stature as keystone species that maintain kelp forest ecosystems are widely celebrated. Personified in children's books and anthropomorphized as critical environmental role players by ocean science and conservation organizations, sea otters may be depicted as not only as playful and intelligent but also valorized and "lionized" as environmental heroes. Some examples of the latter include the following:

- Sea otters as "furry climate warriors": "Sea otters can be furry climate warriors" with our help, the headline from Monterey Bay Aquarium reads: "In the face of climate change, sea otters can be a powerful ally. In places where they're thriving, they can maintain and restore kelp forests and coastal wetlands, strengthening our natural defenses against the worst impacts of a changing climate. But sea otters also depend on the health of these ecosystems for their own survival. They need people to act, by reducing greenhouse gas emissions that put sea otters and the places they live at risk." (Monterey Bay Aquarium 2025).

- Sea otters as "aquatic environmentalists" and "ecosystem superheroes": The Monterey Bay Aquarium (2025) website boasts: "By munching on urchins, it helps kelp forests *flourish*, and by crunching on crabs, it promotes eelgrass in estuaries."

  "The sea otter is . . . a keystone species, which means that the health of sea otters is a good indication of the health of other species and ecosystems nearby.

  "In the kelp forest, it eats sea urchins and other animals that graze on giant kelp. When urchins go unchecked, they create areas called "urchin barrens" where nothing else lives. With sea otters helping to keep the urchins under control, kelp forests can thrive and support a rich community of plants and animals.

  Similarly, in estuaries, otters keep eelgrass healthy by eating crabs, which in turn allows the sea slug population to thrive. These sea slugs then eat algae that would otherwise coat and smother the eelgrass that fish need for food and shelter.

  Similarly, an article posted on Oceana's website heralds "Sea otters may be one of the ocean's cutest critters, but did you know they also play an important role in maintaining the health of marine ecosystems? Playful and intelligent, sea otters are not only a joy to watch but also are guardians of the kelp forests they reside near" (McLean 2024).

- Sea otters as "assistant managers" of habitats threatened by invasive shellfish (e.g., green crab): While the notion of recovering sea otter populations as "invasive" competitors for valued shellfish runs high among Alaska's affected commercial and subsistence communities, when it comes to other (truly) invasives species, like green crabs, sea otters are coming to be viewed as allies—"assistant managers" of critical, diverse ecosystems and guardians against unwanted newcomers. Green crab has become a plague for many marine ecosystems and fisheries, and sea otters are put forth as a potential low cost, and sustainable "solution" to the problem. One sea otter in California's Elkhorn Slough was documented to consume some 30 green crabs in one hour (Melnick 2024)!

The keystone role of sea otters in marine ecosystems was recognized by J.A. Estes in his pioneering work on the Aleutian Islands from the 1970s (e.g., Estes *et al* 1981). At the time of his analysis, sea otter populations were pocketed along the coast and nearshore islands, and Estes could see that where otters were not present the sea floor was thick with sea urchins and little to no kelp forest remained. These ravaged seascapes came to be known as "urchin barrens." In the absence of predators, the herbivorous sea urchin population grew without restraint, and had literally consumed the kelp forests. In contrast, in places that held significant otter populations, which feasted on urchins and other kelp eaters, thus keeping the populations in check, healthy kelp forests could be found. This triadic relationship between the apex predator (the sea otter), the herbivorous urchins (its prey), and the kelp forests (habitat for both and prey for the sea urchin) is illustrative of a causal paradigm biologists call a "trophic cascade" in which a series of indirect, knock-on effects may occur down multiple levels of a food chain or ecosystem, when predators impact their prey. Sometimes, the effects can be devastating as in the urchin barrens, but dynamic ecosystems may rebalance themselves over time, often catalyzed by further disturbance, in this case by the recovery of sea otters. Hence, the sea otter's lionization as keystone species, aquatic environmentalist, ecosystem superhero, and climate warrior.

**Cultural Significance & Stewardship of Sea-Otters Prior to the Industrial Fur Trade (pre-1741)**

As noted in the Deep Time stories, the sea otter was held in high respect among Southeast Alaska Natives for 1) the supreme value of its fur in material culture and exchange; 2) its assistance to Raven and to the people themselves in finding inter and subtidal resources at critical times (e.g., the great Flood); 3) its prowess as hunter-forager in the coastal margin areas in which Tlingits and Haidas also hunted and foraged; 4) its role in maintaining healthy kelp forests (ecosystem functionality). Southeast Alaska Natives also recognized that the last two capacities needed to be balanced to maintain supplies of macroinvertebrates for local populations and marine ecosystems. Especially when moving into areas in mass, this balance could be easily disrupted with deleterious effects on Native food supplies.

**Sea Otters in the Annual Subsistence Cycle**

Today, sea otters are hunted year-round by some hunters (though less in mid-summer when salmon fishing is peak, see Fig. 5.1 below), opportunistically by others (e.g., when they are engaged in related activities such as seal hunting), and seasonally in some cases (e.g., according to qualities of fur, involvement in other activities etc.). Concerning seasonality, some hunters reported that they avoid taking females with pups, but this can sometimes be hard to gauge, so they may avoid taking females, or limit hunting during the birthing and pupping season (itself variable but generally spring or early summer in Southeast Alaska) to avoid injuring or orphaning pups.

Historically, aboriginal subsistence cycles were more extended and regularized, especially where significant preparation and travel were involved. For Yakutat, de Laguna provides the most detailed sketch of the historical ecology of humans and sea otters as it developed within the annual seasonal round on the Gulf Coast:

> "In spring they go to Icy Bay for sea otter and mountain goat. The women stay home and dig roots. Some men stay home and take the women to sealing camp in June." (MJ) Other late winter or early spring activities of February and March, were fishing for oelachon at Dry Bay

> and the Situk River, fishing for halibut in Yakutat Bay, hunting for seals along the ocean beach, gathering clams and cockles, and scraping off the inner bark of spruce trees.
>
> In April and May, some men went to Icy Bay to hunt sea otters, others fished for oelachon on the second run. But many families moved up Yakutat Bay to the spring camps near Knight Island and Eleanor Cove where they fished for halibut and hunted bears as the latter emerged from then" dens. Women gathered hemlock bark, the roots of the Kamchatka lily, seaweed, sea urchins, and the fresh wild celery stalks. Herring spawn was also obtained in May. Salmon began to run, the king or spring salmon running in April and May. In early May, seals were catching fish in the surf off Ocean Point, on their way to the breeding grounds [in Disenchantment Bay at the head of Yakutat Bay].
>
> In June, most families went still farther up Yakutat Bay to the sealing camps, and probably remained there until the end of July. During this time, birds' eggs, the last of the seaweed, "wild rhubarb," and the first berries were gathered. (In the old days, seal hunting would start at the end of June, when the last pups had been born on the ice.)
>
> In August came the second sea otter hunt, and the women picked strawberries and other berries, and again began to gather clams [the paralytic shellfish poisoning threat having passed, according to traditional Indigenous knowledge]. Many families were already back at the salmon streams, busy putting up fish for the winter, and picking berries. These occupations continued into October when the last fish (cohoes) were dried, the last roots dug, and the men left for mountain goat hunting in the mountains. (de Laguna 1972:360)

This suggests that sea otters were taken in spring and late summer (extending perhaps into early fall), but generally not in winter (Emmons 1991:124), in part because of challenging weather and short days in winter, but also because fall and winter (to early spring) were historically times for trade trips to other communities, including the interior. Sea otter might also be taken at other times of year, even in winter if they were holed up in accessible sheltered harbors regularly used by the Tlingit. For example, de Laguna reports that: “At one time sea otter were numerous in Yakutat Bay, for Deep Bay on Khantaak Island is known in Tlingit as 'Sea Otter Bay,' because the animals used to shelter here during winter storms . . . She also notes “The sea otter is not completely extinct in the area—one was seen near Yakutat in February 1954” (1972:378).

**Territories and the Organization of Hunting**

Traditionally, possessory rights (Goldschmidt and Haas 1998 [1946]) and the care or custodianship of territory were articulated and implemented by heads of matrilineal houses or sibs. These leaders are often referred to as ‘chiefs’ in the literature, though this is not a term preferred by contemporary Tlingit. As de Laguna (1972:464) points out:

> The chief, especially the head of his sib, was rich. He was not only custodian or trustee for the heirlooms and crest objects, but also of the hunting and fishing territories of his sib…. He not only determined when, where, and with what weapons his people and others might hunt or fish, but might specify how many animals each man might take. Such rules were not simply to insure a fair distribution to every man, but were also to protect the animals during their breeding season. The chief had the power of life and death in enforcing these regulations and in dealing with unauthorized trespassers...

The leader also ensured a measure of equity and redistribution in regulating hunters as well as trying to ensure the sustainability of prey.

> "Yaxodaqet [Yaa Xooda Keit] restricted all the land from Yakutat to Icy Bay. No one may hunt sea otter unless he knows it… Those chiefs [The first Yaxodaqet [Yaa Xooda Keit] and his successors] would say when it was alright for the people to start hunting sea otter. They watched how many each man got. If one man had four otters while others had only two or three, they would tell the man with the most to stop hunting. The chiefs saw to it that each family got the same number of skins.
>
> "The otter was hunted with bow and arrows. The people had plenty of guns then [presumably referring to the time of Chief George Yaxodaqet [Yaa Xooda Keit] who died about 1902], but the shooting would scare away the otter. If there was an unlucky man who got only one otter, or maybe none at all, the chief then gave an order that all of the hunters except that one man had to use the sticks of their arrows. Only that one man could use a regular arrowhead. Then they let him shoot and shoot until he killed an otter.
>
> "The chiefs restricted all the land, but it was for everybody's good.
>
> "Yaxodaqet [Yaa Xooda Keit] lived at Nessudat [Naasoodat, an early historic village on Lost River]. He would send his people out for otter. He would say how many canoes were to go out— 'Four canoes going out!' or 'Five canoes!' He'd tell them how many sea otters to get—no more, no less . . . The men could keep the skins they got, but his nephews would have to give skins to him. They could ask for valuables in return. [When the chief discovered or was notified of the presence of a sea otter herd, he would send word to all the villages to come and hunt.] "The chief used to say how many each man could kill-—maybe four, no more— so everybody would have a chance. Or he might say to the hunters, 'You're not going to use the point on your arrow, just use the end [socket piece],' and then mention some man and tell him he could use the point. When he got a sea otter, then he would name the next man."
>
> From the stories told by other informants, it was obvious that these measures did not equalize the fortunes of the different hunters. Some men were notably successful, and their luck and wealth sometimes aroused such envy among their less fortunate kinsmen that the latter might attempt to injure them through witchcraft (see pp. 739, 741). (de Laguna 1972:380)

Nobles also possessed other skills, such as weather forecasting and animal behavior, which brought success and lowered risk to their lineages:

> These included skill in hunting, and since chiefs either led or ordered major hunting expeditions, it was desirable that they should be experts in the habits of animals and in foretelling the weather [e.g. Mount Fairweather was a key weathervane for both Yakutat and Hoonah hunters, cf. 1972:803] … Yaxodaqet [Yaa Xooda Keit] the first one] was an expert. . . And then his nephew [was] just as good because he learn it from him. . . And then his grandson—that's Olaf's grandfather—he's just as good. And his nephew, Chief George, is good. But after Chief George, we're among the White people already, work in the cannery. He died just the year the cannery started [1902]. There's no more sea otter hunting, and nobody learn from him. (de Laguna 1972: 466)

As de Laguna's interlocutor suggests, the decline in sea otter hunting, especially after 1900, has affected both the organization and 'enskilment' (learning by doing in one's environment of inhabitation; see Ingold 2000) of hunting parties today.

Nevertheless, elements of this traditional system remain in some quarters, including the role of the uncle in training his (matrilineal) nephews, and the obligations of the latter. Traditionally, "It was

the duty of the nephew to keep his uncle supplied with firewood. He was also expected to give him the pelts when he had been successful in hunting sea otter. On the other hand, "The nephew can get what he wants, if he asks: canoe, valuable skins, bow and arrow. And he [the maternal uncle] would have to give it to them [his nephews]" (de Laguna 1972: 480). De Laguna provides further description of a nephew's [CW's] experience hunting sea otter with his uncle before 1900.

> Another man, CW, described a hunting trip with. his uncle: "I been hunting with my uncle two times up at Icy Bay. Long way—hand power [i.e., paddling the canoe]. One time I been there he killed two yuxtc [yáxwch', sea otter]. I was lonesome that time. I was little boy. I think of my mother. . . "He was teaching me. He told me, my uncle, 'You go with me now.' I say 'Yes, I go with you.' "Early morning we start way up to other side [of Yakutat Bay], All way hand power, hard work. That's one day up there. We stay all night. We get up early in morning, and started again. Go to Icy Bay. . . "Next morning, next day, go hunting sea otter. Come back same place [to the camp]. Next day going out, come back same place." The small boy paddled in the stern of the forked prow canoe while his uncle used a shotgun in the bow. Neither could eat while they were out in the boat (see the statement quoted on p. 378).
>
> "Wind blow all that time. ... Pretty hard staying with my uncle—talking, talking! 'Don't sleep too long. Wake up early in the morning!'. . .Every morning I heard no yel [raven—it was before the raven called]. It's pretty dark, dark two mornings. 'Make the fire! Make the fire!' my uncle [told me]. 'Cook some coffee!' " This was the first time the boy had left his mother. Most of what he learned on the trip, we gather, was how to handle a canoe, make camp and cook, and some of the magical rules to follow on the hunt. According to his sister (MJ), he was about ten years old when he went sea otter hunting with his uncle. (de Laguna 1972:518)

Finally, beyond acquisition of hunting and navigational prowess, care of the territory, and organizing and enskiling kin, another important role of house leaders was to defend territory. Kalyaan, for example, the Kiks.ádi leader in Sitka, fought valiantly against the Russians to protect his people's territory and resources. Similarly, Yakutat/Dry Bay Tlingits fought the Russians to maintain control over their territory in the early phases of the commercial fur trade.

Battles over territory also occurred between tribal groups. Among the most well-known of these was the conflict between the Yakutat Tlingit and Port Simpson Tsimshian, the latter of whom sought to hunt in Yakutat territory to pursue the last major concentrations of sea otter in the greater Southeast region. This version was recorded by Frederica de Laguna in the early 1950s and is illustrative of how traditional territoriality, resource conflicts, and peacemaking worked, despite the catalyst being a consequence of the modern fur trade. It also catalogs that sea otter hunting was taking place many miles from shore, perhaps in the vicinity of the Pamplona Ridge.

## An Averted War with the Tsimshian

> The waters off Icy Bay were famous sea-otter hunting grounds, visited by hunting parties from distant areas, although the hunt was supposedly controlled by the leading Kwackqwan [Kwashk'i Kwáan] chief. These parties of hunters were often brought up from southern Alaska or from British Columbia on sailing ships, as a White financial venture. Other parties of natives came in their own canoes. It was in these waters that the Yakutat natives nearly had a war with the Tsimshian. The following story was narrated in Tlingit by Annie Johnson, a Kwackqwan [Kwashk'i Kwáan] woman born about 1875, who also sang the commemorative song based on the incident. ... The characters in the story are Yakutat Chief George Yaxodaqet [Yaa Xooda

Keit], head of the ranking Kwackqwan lineage, Raven's Bones House, and as such, "owner" of the Icy Bay hunting grounds. …

These events occurred … probably after 1890.

[The following version of the story is based upon the recorded translation, supplemented by explanations given later the same day, but not recorded on tape. There has been a slight editing of some of the phrasing.]

… [T]hose Tsimshian came in four big war canoes. They used to go sea-otter hunting to Ivy [Icy] Bay, to Yakategy [Cape Yakataga], in little canoes [ch'iyáash]. . .

I was only a kid when this happened, when those four war canoes came up from Metlakatla [BC] to Yakutat. They generally travel all the way up from there to Yakutat . . . Chief George is taking care of them. They all start together and went to the place where they hunt. . .

So the Yakutat people is ready to go to Yakategy and Icy Bay. In the springtime they go there to hunt sea otter. They went as far as Yakategy. They were hunting for sea otter.

You know, long time ago there is no such a thing as gun or revolver here in Yakutat. They use bow and arrow and they go up sea-otter hunting with it. But these Tsimshians got all kinds of guns, revolvers, and big guns, and all that. . . . The Yakutat people has to load shells themselves, and use tcun6t [bow and arrow], and get after the sea otter until it is short winded, and that is the way they kill it . . .

So they went out together to kill those sea otters. The Yakutat people know how to hunt sea otter. They get after the sea otter until it gets short winded. It's easy to hit them with bow and arrow . . . The canoe is chasing from one end of the water to the other. Sometimes it goes way out of sight of shore. . .

So this sea otter was hit by Chief George with his bow and arrow. At the same time this Tsimshian got his gun out and take a shot at it. And he claimed that his gun killed the sea otter.

They are way out. They didn't even see the mountains, they were so far out [when] they chase the sea otter.

Then one of the Tsimshian jumped in Chief George's canoe and grabbed the sea otter and throw it in the war canoe. And Chief George's outfit didn't like that very good. That's an awful insult the way they do—come all the way up here from Metlakatla to get sea otter from Chief George which he's entitled to it. He is the one—his bow and arrow killed that. Every canoe that's around there—everyone that's around in the canoes sees that Chief George killed that sea otter. The Tsimshians tried to claim it, and then they grabbed that sea otter and throw it in the big war canoe.

Well, this here fellow, his Tlingit name is Txak-'ic, and his English name is Clarence [his English name was Shorty; Clarence now has his Tlingit name]—he took a tumble and jump aboard the war canoe, and he just walk through the Tsimshians and step on the cross pieces of that war canoe, and grabbed that sea otter and threw it back in Chief George's canoe. . .

Trouble begin. All the Tsimshians got revolvers. The Yakutat people got nothing with which to defend themselves. . . And then they start a war right in the water where they can hardly see the mountains. They didn't even know where they are, but they get in a war. And the Tsimshians are getting ready to get every native in Yakutat killed. The Tsimshians intend that, to kill every native. They took their revolvers and their guns out, but the Yakutats got nothing but bow and arrow. They got guns enough [i.e., muzzleloaders], but you know they got to load the guns themselves. At that time there's no such thing as ready shells. You have to load it by hand at that time. [See pp. 186-187].

That was a long time ago. I was only a little girl then when I see those four war canoes myself, landed in front of this village.

Then a fellow by the name of B. A. Jack—his Tlingit name is Watsii (or Wa£ix)—being he's traveled around Southeast of Alaska and he happened to be in Metlakatla, I guess. And he knows the meaning of this GIno [probably klnau; rendered as Mnayu in the song]. GIno, that's Tsimshian word. He just got up and say it, raised his right hand and said "GIno!"

All at once this here fellow that seems to be a head of the Tsimshian—he's big, husky, and got a patch on his eye—-he order the four canoe loads of Tsimshian to get their weapons down, get their guns down, be quiet. That means, Mr. B. A. Jack demonstrates to the sea-otter hunters that means "That's enough!" and "No more trouble!"

So this song that we sing here regards to that. The words are about that GIno business. So you hear the song, the song composed by Ckman, he's my uncle. It's composed like that:

"Grab hold of the word that means GIno! so everybody can use it." That's what the Yakutats captured from the Tsimshian. They know what that means, and find out from Mr. B. A. Jack what that GIno means. So the song is composed like that: "Grab hold of that word, so everybody can hear it, and keep it, captured." So that can be remembered by what happened, by what that GIno means to the Yakutats, [when] those Tsimshians intended to get into war with the Yakutat. But this word GIno means "Quit fighting!" So this song is composed about it.

"Grab hold of that Gino! So everybody can hear it!"

So they captured this song. That's when it was composed….

Mud Bay is called TsutsxAn geyi [Ts'ootsxán Geeyí], 'Tsimshian Bay.' It's on the west side of Icy Bay. . .

There's lots of songs like that they [Tsimshian] gave for forgiveness, and I guess that's the time they got that song. (de Laguna 1972:284-286)

This peace song not only avoided a conflict but was part of a larger set of cultural exchanges that took place between the Tsimshian as guests and Yakutat peoples creating protocol that define methods of co-hunting, trade, and other interactions, both before and after the Tsimshian group moved from British Columbia to Metlakatla in Southeast Alaska in 1887.

Throughout the period of industrial fur-trade, Tsimshian came to Yakutat as guests of the local custodial clan. As such, the visitors were expected "to obtain permission to hunt sea otter from the "Yakutat Chief," the leading chief of the Kwackwan [Kwashk'i Kwáan] sib who controlled the hunting grounds at Icy Bay" (de Laguna 1972:216). When visitors failed or refused to seek permission from the local custodial clan, or its prohibition not abided, then conflicts erupted, as will be seen below in the section on the fur trade era. This expectation of respect for local property rights remained in force through the end of the fur trade era in the early 20th century, though it was not always enforceable, due to incongruities between Tlingit communal property law and colonial property law which resulted in the loss of effective local control of sea otter hunting territories and other fisheries.

**Methods and Means**

Emmons' (1991:123-127) description of Tlingit sea otter hunts combine his own experiences in Southeast Alaska in the 1880s with information he obtained from Tlingit informants, other contemporaries, and historical sources, and includes supplementations by de Laguna. It offers perhaps the most comprehensive overview (with illustrations) of traditional methods and means of sea otter hunting as well as comments on changes occurring in the 19th century.

For a century after the introduction of firearms, the natives generally carried on the sea otter hunt with spear [harpoon] and bow and arrow, although they might carry a gun in the canoe.

The Yakutat, as late as 1885, hunted …with these implements, in the belief that firearms tended to drive away the animals. The [main] hunting season was from March to June, although individuals might hunt at any time. Prepatory to hunting, the man and his wife bathed and put on clean clothes. The wife tied a band around her waist which she was not permitted to remove until the hunters returned. Women never went in the canoe in hunting or in preparation for the hunt, for everything connected with the sex was believed to be offensive to sea otter.

The Yakutat were the last of the Tlingit to hunt in the primitive manner. They went out in the ocean, ten and twenty miles offshore, while the other Tlingit kept well inshore. They hunted in parties of ten to twenty canoes, stretching out in a line two to three hundred yards apart. When someone sighted a sea otter, he raised his paddle to indicate the direction, and the canoes would close in, encircling the prey. The sea otter then became the target for the arrows [of the whole fleet]. The object was not to inflict a mortal wound, but simply to penetrate the skin with the tiny, barbed copper head of the arrow. This was detachable, but secured by a line to the shaft in such a way that the latter acted as drag and impeded the movements of the sea otter underwater, bringing it quickly to the surface. When, with many arrows attached, the animal was exhausted and unable to dive, it was killed with a club and taken into the canoe. The arrows of each hunter were distinguished by private marks on the bone [socket piece] or [by colored yarns] interwoven in the sinew cord. By an agreement as to the [winning] location of the arrowhead in the body of the sea otter, the owner [or winner] would take the whole skin and pay a given number of blankets to the others. [The arrowhead nearest the tail was usually the winner.] The spear [ordinary harpoon] was always carried, and if the animal approached sufficiently near, it was used. Also a gun might be employed if the sea otter should break out of the circle.

Before starting out on the hunt, the weather was carefully considered, and the shaman might be consulted. In landing from the hunt on the open shore, which was always fraught with danger from the line of heavy breakers, the most expert canoeman would make the attempt first. If he were successful, it would be easy for the others to follow, since those on shore could hand the other canoes as they landed…The spirit, *Na goot ku* [?], birdlike in form, that lives in the Fairweather Range [Saint Elias Range?], is a friend of the sea otter hunters, and is invoked to send offshore breezes and calms.

The whole hunting paraphernalia of the Yakutat [used for sea otter hunting] differed from that of tother Tlingit. The canoe was the *tch-yosh* [ch'iyáash], large enough for only two or three occupants, very narrow and sharp at both ends, with the projecting ramlike [forked] bow, not found in any other type on the Pacific Coast [except among the Eyak]. The hunters knelt amidships and paddled together, two strokes on one side and then two on the other, using long paddles with narrow pointed blades. The whole outfit was designed for rough water in an open seaway.

The bow, *sucks* …[sáks], was made of a single piece of spruce: plain straight, broad, and from four to four and one-half feet long. . . . The bowstring was of porpoise or whale sinew, made of many fine strands twisted and laid up in a square or flat sennit. . .

The arrow, *tchunet* …[chooneit], was the most ingenious, most delicately proportioned and elaborately fitted of any on the continent. It was of the same type [harpoon arrow] as found to the westward as far as the Aleutian Islands…The Yakutat arrow is more uniform in its proportions, however, and more carefully made [than other Tlingit arrows], and the barbed head was always of copper.

[Although sea otter bones were very common in early historic sites in the Angoon area (de Laguna 1960:93), no small barbed heads suitable for harpoon areas were found there (p. 112), while such small heads were common at Yakutat sites (de Laguna *et al* 1964:135-136), where the sea otter harpoon arrow seems to have been in use in prehistoric times. Bone heads

were more common than metal, however, even though the prehistoric Yakutat people had native copper]

The arrow was about thirty inches long, and composed of two principal parts: a shaft of yellow cedar (sometimes pin or spruce0, and a foreshaft (socket piece] of whale bone. The shaft was very delicately formed, tapering to a bell-shaped nock with a rounded notch. It was uniformly painted with red-brown ochre. Three eagle feathers, symmetrically cut and evenly spaced, were seized at both ends with very fine twisted sinew thread. The fore end of the shaft expanded to a shoulder, the diameter of the bone foreshaft [socket piece], and the latter was cut to fit over a wedge-shaped projection [or tongue] on the end of the wooden shaft. When [these two parts were] fitted together, a thin strip of intestine or bark was wrapped about the juncture, over which a seizing of sinew was passed. The socket piece was about one-fourth the length of the shaft. Its head was hollowed out to receive a peg of wood, split in halves, and in the split thus formed, was fitted a very sharp copper head with three barbs, seldom exceeding one and one-fourth inches in length. Through a perforation in the base of the head was rove a sinew line, laid up round or flat, about five feet long. This terminated in a span [the two ends of which were] attached to a shaft [at widely spaced places]. When prepared for use, the span and line were closely coiled around the shaft, the barbed head fitted in place, and slip-loop hitch was taken in the slack, under the last turn around the shaft. When the barbed head entered the sea otter, it was automatically detached from the shaft; the slightest pull loosened the line, this uncoiled, and the arrow acted both as a drag and a buoy [The heavy bone socket piece steadied the arrow in flight, and after the sea otter was harpooned, it made the shaft float vertically … with the feathered butt sticking up above the surface]. An arrow that had taken a sea otter was considered lucky, and was consequently prized. [Yakutat sea otter bows and arrows are illustrated in de Laguna 1972, pls. 108-12…]

[In southeastern Alaska, the Indians are said to have hunted sea otter in fleets of canoes, each holding two to four men. This surround method was evidently introduced by the Russians and their Aleut or Pacific Eskimo hunters [and might involve as many as a hundred boats. . . The Tlingit arrowhead was detachable, but not barbed; it was not a harpoon arrow. Probably most sea otter were taken with a barbed harpoon, like those used for seals (de Laguna 1960:112).] [See also Kenyon [1955] and Thornton, 2005]

In shooting, the bow was held horizontally in the left hand, with the thumb and little finger in front and other fingers in the rear, so that the bow rested in the hollow of the hand. …The shaft was steadied between the first and second fingers of the left hand [which served as a sight]. The arrow described a curve in flight, unless the sea otter came up alongside, when it was fired direct.

The quiver, *tchunet tar-kate*. . . [*chooneit dakéit*], "arrow cover," was a cylindrical case of cedar enlarged at the mouth [to accommodate the feathered ends of the arrows]. It was made by splitting a small log in two, hollowing out the halves, and joining them together with seizing of spruce root, hide, or sinew, in countersunk grooves about each end and at the middle. A neatly fitted top was attached on a sliding loop, the ends of which were knotted through holes near the edge of the mouth. The quiver was often colored dark, red-brown . . .

The hunter often carried in his canoe box the right humerus of a sea otter. Before going out, he would hold it to his mouth and talk through the tiny hole at the [distal] end, asking what his luck would be. Then he took it between his thumb and forefinger and flipped it up in the air. If it fell and stood with the ridge up, he would be successful. [If it landed on the flatter side, he would get nothing.] . . .

The skin of the sea otter was opened at the rear, drawn [whole] over the body and head, and stretched on a drying board the shape of the pelt.

Additional details can be found in de Laguna's (1972:379) Yakutat fieldwork:

> The surround method was used in hunting sea otter. Five, ten, fifteen, or even "sometimes a hundred boats would go out, two men in each canoe. Sometimes they would go so far out to sea that they could just see the tip of the mountain." … The two men in the canoe were close relatives in the same sib, sometimes brothers; the older man in the stern watched and the bowman kept his bow and arrows ready to shoot. When a sea otter was sighted, a paddle [*axáa*] was raised as a signal, the fleet surrounded it, and all the bowmen shot at once. The first man to hit the otter so that the barbed head of the arrow held fast would call out that he had done so. He claimed the pelt, but would offer something, customarily a blanket, to the one who finally killed the animal. Sometimes the second man to shoot the sea otter also received a blanket; perhaps all whose arrows hit received something. The group would continue to shoot until the animal could no longer dive because of all the arrows in it. Then it was clubbed or killed with a "spear" … ('ada [*áadaa*, spear or harpoon]) …
>
> Hunters could recognize their own arrows because each man marked his shafts in a special way, the feathers might have distinctive colors or be cut in an individual style, or the sinew line might be different.
>
> "They used to go out twice a year for sea otters: in [bird, especially seagull] egging time [May or early June], and in the middle of summer, when strawberries are ripe [late July and early August]."

Technologies of the Yakutat hunting complex were documented by de Laguna (Figure 3.1) including the use of Native copper in sea otter arrow and harpoon tips.

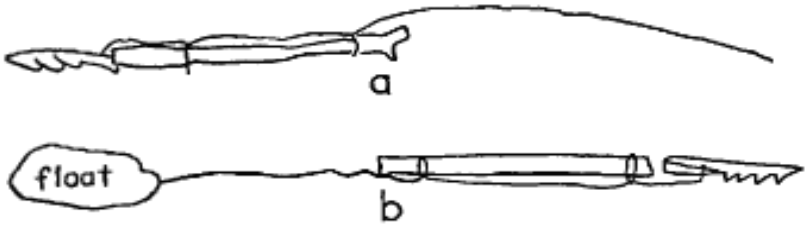


FIGURE 39.—Harpoon ('ada) for seals, sea otter, and fish. *a*, Sketched by Minnie Johnson on July 22, 1952. *b*, Sketched by Olaf Abraham on June 14, 1954. The barbed head (KAT) is attached to a line of spruce roots ('as ɣati). The line is then fastened to the forward end of the spear, run back along the shaft, and fastened again at the butt. Olaf made a halfhitch at each place in demonstrating, but was not certain if that was the correct knot to use. The attachment is such that, after the animal is harpooned, the line detaches from the shaft which floats away and is then picked up by the hunter. At the end of the line is a float made of a whole sealskin (KATSIS) and shaped like a seal. When the sea lion is harpooned, the buoy is thrown out of the canoe and the animal becomes exhausted quickly.

Figure 3.1. Sketches from Yakutat Tlingits of Marine Mammal Spear used for Sea Otter --from de Laguna (1972: 377).

Sea otter could be taken with toggle style harpoons, which in Yakutat were also fashioned successfully into arrows, but in many cases sea otter were harvested with simple harpoons Unlike seals, sea otters tend not to sink when struck in the water, and if they dive after being struck non-lethally, they tend to surface not far from the place of submersion. Because of this tendency and their buoyancy, sea otters generally were less susceptible to being struck and lost than seals or sea lions. Currently, based on hunter surveys, USFWS estimates the loss is likely 10% or less (Ben Weitzman, pers. comm. 2025).

De Laguna (1972:377) documents that,

> Iron images of crows [or Ravens], which the Russians assumed were amulets, actually functioned as detachable barbed harpoon heads: "With the beaks which they use for ornament, they harpoon sea-otters and seal, as they lie sleeping on the ice" [Coxe, 1803…]. Emmons collected a number of barbed heads at Yakutat, as well as complete spears. The heads were of iron, bone, or copper, and were used for seal, sea otter, or salmon (AMNH E/160, 473, 859, 1577, 2121, 2601; pl. 112).

Native copper was famously traded and shaped and hardened into durable shields (*tinaa*), harpoon tips and other manufactures prior to contact with European metals. Sea otter hunters utilized copper often in the making of harpoon arrows and spearpoints. According to de Laguna (1972:412), "The discovery of native copper and how to work it is credited to a poor Atna boy who received the knowledge in a supernatural way. Copper was received in trade from the Copper River Atna and possibly from the Nabesna, via the Southern Tutchone on the headwaters of the Alsek River. It was made into knives, awls (?), scrapers, tiny nails, arrowheads, and barbed heads for sea otter harpoon arrows." Copper from Russian and Euro-American trade goods was also used to make sea otter and other marine mammal spear points. Herman Kitka, Sr. of Sitka possessed a harpoon with a Native copper barbed tip which was used for seal, especially fur seal, and possibly sea otter (see Kenyon [1955] and Thornton 2005). A Yakutat leader in the 19th century, "Chief Yaxodaqet [Yaa Xooda Keit], cut a piece of copper, 2 by 3/8 inches, from the handle of his Russian copper kettle…This piece was just big enough for the sea otter harpoon arrowhead" (de Laguna 1972:352).

Missing from Emmons and de Laguna's ethnographies are characterizations of the use of clubs when harvesting sea otters (as illustrated in the Deep Time story of Kaax'achgóok above). This hunting tool, often shaped from yew or other hardwood, was ideal for islands with large tide flats, such as Low Island in Sitka Sound, where sea otter could be stalked while hauled out. Similarly, the practice of netting otter, likely a post-contact innovation, is also one that Natives were using by the 19th century, as is described further below.

An 1897 US government report commenting on early Native sea-otter hunting, focused on harvesting in the Aleutians, noted that at the dawn of the fur trade,

> The otter hauled out upon the land to feed on the sea urchins and other shellfish exposed at low water, to sleep and rest, and give birth to their young, and were taken in nets and killed by clubbing. The females were spared and one of the first lessons taught the young hunters after he had learned to manage the kayak and to throw the spear was how to distinguish the female from the male in the water by color and shape of its head and neck, which, unlike the fur seal, differ sufficiently to clearly mark the sexes. When hunting upon the shores, care was taken by the hunters to avoid any noise or disturbance, or leaving any mark or sign by which their presence might become known to the otter, which are exceedingly timid and suspicious and easily driven away from a locality if disturbed. The sea otter is very unlike that most stupid of all animals, the fur seal, which, commencing as a yearling, makes periodical trips to the killing grounds with the 'drive,' crawling over the bones of many generations of its ancestors, and nearly smothered by the high grass fertilized by their decaying bodies, presents itself for

> inspection year after year until of suitable age to be killed, when, surrounded by its dead companions, it takes the desired position and cranes it neck forward to meet the deadly club…
>
> Boots with iron nails were prohibited, and fires were built away from the hauling grounds and lighted only when the wind was from the sea to carry the smoke inland. No guns were used, only the noiseless but equally deadly spear. (Hooper 1897:4-5).

This is similar to Steller's account of the early hunting expeditions for sea otter on Bering Island in 1743 (Stellar 1751).

> We killed them on Bering Island with spears, and nets, and, when they were lying asleep or in the act of copulating, with clubs. . . They were found in so great abundance that from the beginning our numbers did not suffice to kill them. . .Nevertheless, we killed upwards of 800 of them, and if the narrow limits of the craft we constructed had permitted we should have killed three times as many (Stellar 1751, quoted in Sigman 2019:228).

It is evident from these descriptions that the approaches and tools for carrying out sea otter hunting were subject to local conditions and affordances. Accordingly, Tlingits developed their equipment and techniques to adapt to local hunting conditions. In the case of material culture, special nets, spears (including with Native copper and salvaged iron from shipwrecks and other pre-Russian era exposures) were used. Generally, among Alaska Native cultures, skin boats are seen as a transformational adaptation for the harvest of sea mammals, and these can be found throughout much of the Gulf of Alaska, including both the "umiak" style (broader open boat) and baidarka style (narrower, kayak style; see Fig 3.2), and are referenced in oral history. However, as de Laguna points out (1972:330), among the Tlingit at Yakutat five or six specialized dugout canoe (*yakw*) styles were also distinguished, including models especially designed for marine mammal hunting. The most important were locally innovated dugout canoes specially designed for marine mammal hunting. The first of these was "the small forked-prow sea-otter hunting canoe (tcAyac [ch'iyaash]) [and the second was a]… small thick-prowed canoe with a ram for sealing in the ice (gudiyii or gudiyi [gudiye])." These canoe styles are sketched in Figure 3.2 from de Laguna. She describes the sea otter canoe as follows:

> Two very unusual canoes were made at Yakutat. Of these, the best known was the forked-prow hunting canoe (tcAyac [ch'iyáash]) (figs. 26c, 27). The name is evidently Eyak [or Atna, cf. Emmons 1991:84] … This canoe was sometimes called the "sea otter canoe," even though it was used for hunting any sea mammal in open water. It had an elegantly undercut stern which looked so much like a prow that it has confused many ethnographers. The bow, on the other hand, was carved with a V-shaped notch which left a keel-like foot projecting along the waterline below the prow. All Whites and natives who were acquainted with this type of canoe have testified to its swiftness and seaworthiness. The foot or keel on the bow held the canoe steady in rough seas or swift currents, turned aside small cakes of ice, and served to moor the canoe when pushed into a soft mud bank.
>
> These canoes were carved from a single log, usually of spruce but preferably of yellow cedar (if a suitable drift log were found) ... The ordinary canoe was said to have been usually "three fathoms" or 16 to 18 feet long, and about 3-feet wide. It was intended for two hunters, although one man alone could manage it easily, or an extra passenger could be taken. Occasionally a "four fathom" one was built in which a whole family could travel. It was light enough to be carried across the short portages between the streams and lakes east of Yakutat.
>
> The tcAyac [ch'iyáash] normally had three thwarts, two set rather close together near the bow, and a third, slightly curved, midway between the second thwart and the stern.

(However, this arrangement was not seen on most models.) In addition, there were detachable shelf-like seats in the angles of the bow and stern. Normally the two paddlers knelt or rather squatted on two low hollow log stools, under which they kept their hunting gear. They paddled bidarka-fashion, first both on one side for two or three strokes, then on the other. No steering paddle was used—one of our informants explained that the forked prow prevented the canoe from sheering off when it was paddled on one side.

The outlines of individual canoes are said to have varied from maker to maker … However, there is little difference to be seen between models collected at Yakutat … There is no evidence that the Sitka Indians made such canoes, although they were undoubtedly familiar with them. …Especially speedy models were formerly built for the Fourth of July races at Yakutat (see p. 559), the secret apparently being the shape of the bottom, particularly toward the stern . . . In earlier times when the tcAyac [ch'iyáash] was used for hunting, its main virtues were that it "sneaks around—just slip by on the water—don't make a noise," and that it was "fast and steady" . . .

Small models (ku£wAts) of such canoes were made for little boys in which they could learn to paddle. (1972:336-337)

These canoes were typically painted black, perhaps as camouflage to match the Yéil T'ooch (Raven Black) color of the Gulf of Alaska, but with "an inch-wide band along the gunwale, about two inches below the edge" (Emmons 1991:85). Some modern hunters and biologists on sea otter captures also reported more success with darker boats, or by covering up contrasts, such as bright colored boat numbers on monochrome hulls.

FIGURE 23.—Yakutat dug-out canoe and two-hole baidarka as sketched by Suría in 1791.
(MS. sketch, courtesy Yale University Library.)

Figure 3.2. Sketch of Dugout Canoes and Two-holed Baidarka from Yakutat Area, as sketched by Suria in 1791 (reproduced from de Laguna 1972: 334)

The design of the sea otter canoe was both nimble and capable of riding steadily and high through the surf. These craft were coupled with the expertise required to paddle amid rafts of sea otters, roiling surf, and treacherous winds, swells, and shallows (including reefs) on the Gulf Coast was formidable, drawing the admiration of Westerners familiar with such skills (cf. de Laguna 1972:343; Emmons 1991:95).

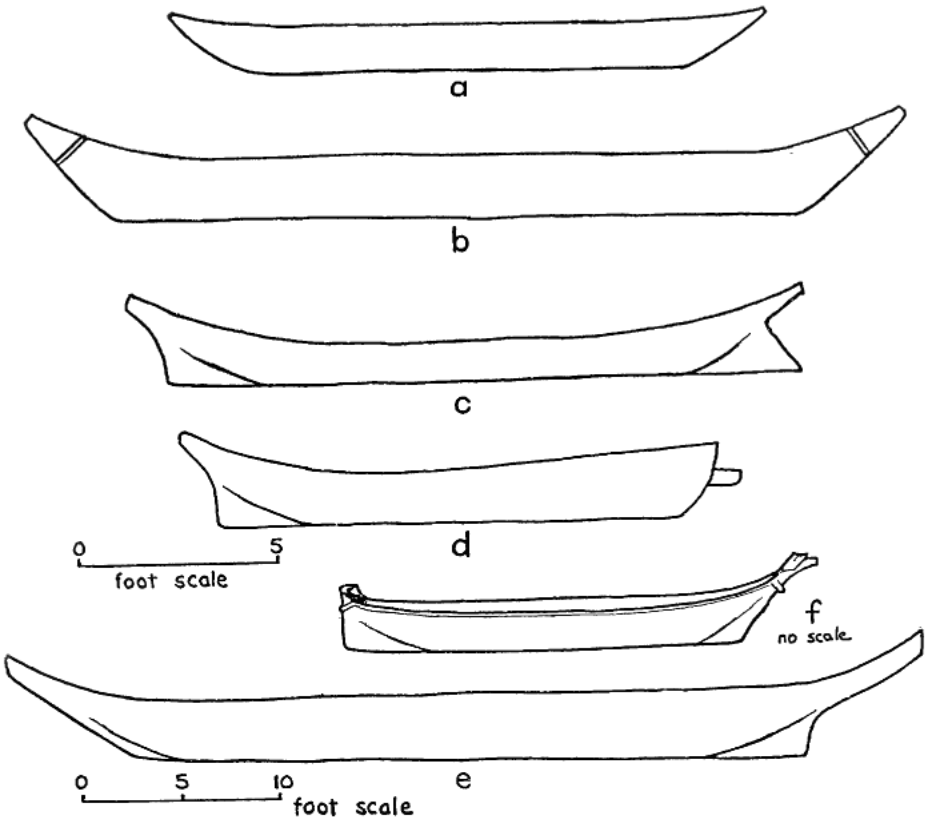


FIGURE 26.—Yakutat canoes. *a*, 'Village canoe,' made in 1953. *b*, 'Spruce' canoe. *c*, Forked-prow hunting canoe. *d*, Heavy prow sealing canoe. *e*, Haida-type "war" canoe or 'canoe's child.' *f*, Nootka canoe. All prows are to the right. (After de Laguna, 1963, p. 223.)

Figure 3.3. Yakutat Canoes, including for Sea Otter [c] (de Laguna 1972:336, Fig. 26)

Also important during sea otter hunting trips were lookouts and blinds from which to spot and (in some cases) shoot sea otter and camps where butchering and processing and overnight resting took place (cf.de Laguna 1972:864). Especially on the Gulf Coast from Cape Spencer to Controller Bay, these were utilized until the late nineteenth and early twentieth centuries.

Transport of sea otter pelts and other trade goods required not only larger canoes (such as the "village" and "Nootka" canoes in the Fig. 3.3 above), but also waterproof bags, which the Tlingit also excelled at producing. Specifically fit for the purpose of keeping supplies dry during canoe trips were the "globular bags of halibut skin (tcatl xasi gwel [chaatl xasi gweil]). "Some of these were up to 3 feet in height, others were smaller. They were used as containers for clothing, roots and straws used for basketwork, or supplies of food to be carried on long canoe trips. The Russians were believed to have come to Lituya Bay because they found the halibut skin bags full of sea otter furs which had floated out to sea after the Tl'uknaxAdi [L'uknax.ádi].canoes capsized in the bay" (de Laguna 1972:426). These bags could carry dozens of sea otter skins and were waterproof.

FIGURE 52.—Halibut skin bag sketched by Minnie Johnson.

Figure 3.4. Halibut Skin Bag for Sea Otter Skins, sketched by Minnie Johnson of Yakutat. (de Laguna 1972:426).

**Medicines (*Kayanni*) and Magic Associated with Sea Otter Hunting**

While Emmons describes the basic regimen and technology surrounding sea otter hunting, de Laguna (1972: 378-381) provides further insights into medicines (*kayaaní*) and magic (*héix̲waa*) associated with sea otter hunting, especially along the dangerous outer Gulf Coast from Lituya Bay to Controller Bay, which also became the last refuge for Tlingit sea otter hunting before the 1911 ban, with the last reported hunt occurring in 1909. "These expeditions were dangerous and the quarry valuable," she notes, "so it is not surprising that magical rules as well as the techniques of sea otter hunting should have been more stressed by informants than those which applied to the hunting of other sea mammals," or even sea otter in more southern Tlingit communities. At [one point of time] Native Alaskans from Sitka, Hoonah, and elsewhere consolidated in the village of Yakutat As a result, it is likely that many of the following customs were more widely shared, even if it was the case that these groups used modern guns, while "the Yakutat people still preferred the traditional bow and arrow".

Among the "magical" charms and prescriptions were the following:

> In addition to the usual purification and abstinence, the sea otter hunter fasted for two days before setting out. Probably he manipulated his amulets, and bathed. He might carry an amulet (danakw) in the canoe. Furthermore, the men in the party did not eat all day when they were out on the water.
>
> Charley White described his first sea otter hunt, taken with his uncle when he was a small boy:
>
> "No eat on canoe. Just come ashore to eat. All day long [without food]. That time no eat, make luck. He eat—no luck. He see, yuxtc-qwani [sea otter souls] see it—no luck! Ligas! [taboo]." The sea otter hunter would rise in the dark, make a fire and eat before the raven called. A part of what he ate was put into the fire, while he wished for luck, saying "xAt gax ttAxetl]]," freely translated as "Come to me, luck!"
>
> A woman told me: "In sea otter hunting, they used dope of some kind. The men keep away from their wives for several months. The women are quiet when the men are out after sea otter." … Almost certainly the taboo against becoming angry and punishing children would have applied to sea otter hunting, perhaps even more strictly than to sealing (see p. 373).

Because the men had to travel and hunt on the open sea, forecasting the weather was very important, and those who could do so were highly respected. Chief Yaa Xooda Keit, who controlled these hunts (see below), was noted as a weather prophet. There were also a number of charms or rites to control the weather (see pp. 805-807).

Tikhmenev (1863, vol. 2, pp. 347-349, Petroff's translation) has described sea otter hunting as practiced in the first half of the 19th century [especially at Sitka]. While it was the Tlingit of southeastern Alaska who used guns (not the Yakutat natives), the magico-religious practices and the activities of the shaman which are described are stated to be especially characteristic of the Indians of Lituya and Yakutat Bays.

"Of the various Kolosh tribes only the natives of Yakoutat and Ltua Bay employ themselves at the present day in hunting sea-otter, i.e. a locality abounding in these animals, compared to other points on the coast of Northwestern America. The height of the season for this pursuit falls in the Spring, before the fish begin to run. About this time the Kolosh assemble from the various villages on a locality previously determined upon, and in parties of sometimes over a hundred canoes they go in pursuit of their game. Only the prominent chiefs and their relations among the Kolosh living in the villages on Vancouver Sounds where sea-otters are scarce, are allowed by the Yakoutat and Ltua people to participate in the hunt. Like the Aleut the Kolosh [there] surround a flock of sea-otters—but not with spears, but guns. The Sitka Kolosh kill a small number of sea-otters annually in the neighborhood of the Sulphur Springs and around Mount Edgecumbe.

"While fitting out for hunting sea-otter, the Kolosh, especially those living at Yakoutat and Ltua observe certain customs, upon the strict observance of which depends, in their opinion, their success in hunting.…

"For two months before the departure of the party, i.e., in the month of March, at the time of full moon the hunters make offerings to the Shaman (sorcerer) and ask him to tell whether they will kill many or few sea-otters and if they shall return home in safety. The Sorcerer who has been consulted [generally] observes a strict fast of eight days, taking food only once in every 24 hours, having drunk for some time before nothing but sea-water, so that his present food cannot mingle with any taken before. Fresh sea-cabbage, mussels and other shell food are entirely banished from his table, but even the hunters must not eat them during that time, since that might cause misfortune, as they believe, or even danger of life in pursuit of the animal. During the fasting neither Sorcerer nor hunter must live with their wives or have intercourse with them.

"At the close of this observance they have taken upon themselves, i.e. on the 8th day, the hunters assemble in one barabor, in the middle of which a fire is burning. Soon after the Sorcerer appears also and in measured steps walks around the fire, when each of those present must strike him with his open hand and then he begins his deviltry and prophesy.

"The Sorcerer nearly always escapes the danger of being deprived of his remuneration, and if his words do not come entirely true, he is generally left in possession of his gifts or at least half of it, since ill success in hunting or any other disaster happening to the party is always ascribed by the Shaman to a failure on the part of the hunters to live up strictly to their observances. And even half of the reward is only returned if it happens that a party returns from an unsuccessful hunt in less than 20 days; a longer absence makes it impossible, according to custom, to recover anything and places the prophet in full possession of everything he may have received. Sometimes these misfortunes are ascribed to incontinence on the part of a hunter's wife, etc. If a man is wounded while hunting sea otter an investigation is made to discover the cause of it among his wives or their relatives.

"Before the departure of the party the hunters and their wives clothe themselves in clean white, use the skins of animals only for blankets and cloaks, and do not change them until their

return. The washing of the white clothes is strictly forbidden, as well as of anything else, and a breach of this observance is considered a very bad omen."

The power of the shaman in sea otter hunting was also related to de Laguna (1972: 712-713) in a story that describes the life of an exceptional female shaman, Daxodzu, who gifted her brother, the famous Kwáashk'i Kwáan leader Yaa Xooda Keit, a magic arrow that made him a champion sea otter hunter, but also came with a limit on how many sea otter he could take.

DAXODZU AND THE ARROW

> The last, best chief around here used to have an arrow called qácgÀl [sp? Perhaps a variant of gútl] a blunt-headed arrow, made for children]. You can shoot anything with it. That chief never uses it until he's really ready to kill something. He used to take a lot of people out seal hunting, and when he picks up that one, the people tell each other that he picked up that qdcgll. It was a magic arrow something to do with shamans. (JE)
>
> Daxodzu, sister to the Kwackqwan chief, Yaxodaqet [Yaa Xooda Keit], was a powerful Indian doctor [shaman]. She was a young girl when she received her spirit, reputedly from her uncle or a brother. . .She gave it [that arrow] to him [Yaa Xooda Keit]. and said, "That's going to be the one you use. This is sure kill."
>
> When they went out hunting sea otter, he used it. It goes right through the heart. She blessed the arrow. Other people would pay a thousand dollars for that arrow, but she gave it to her brother. . .
>
> He always used it right. He could kill anything with it, but he had a limit, maybe two seals, or three. When he became a chief he had stream guards put on to see that nobody fools around—like now [i.e., like fish and game wardens]. When they start seal hunting up the bay, he sent a guard up there to see nobody fools around [i.e., frightens away the game]. He let's everyone get satisfied first, then he hunts with his qácgÀl. They claim he was one of the best chiefs in Yakutat.

As noted above by Emmons, the humerus of the sea otter's right leg was traditionally kept, not as a trophy but as a tool of divination for hunters. It would be saved and carried on otter hunts as a "charm"—to speak to and sing to as well as to "roll" like dice in order to read the fortunes of the upcoming hunt. One Yakutat hunter reportedly "kept all the right humeri of all the sea otters he had killed, "just for the fun of it." These filled a big wooden box, about 2 feet square and $2^{1/2}$ feet high, "Everyone came to admire them." They were kept as heirlooms after his death (MJ)." Similarly, by way of reciprocation (and perhaps reincarnation), "After the hunt, the head of the dead sea otter was probably returned to the salt water with a song and prayer, although informants gave no specific information on this point" (de Laguna 1972:380).

Another practice to ensure success in the hunt was the use of "grabbing medicine" (Swanton 1908:447; de Laguna 1972:661), which operated at least partly on the principle of sympathetic magic, wherein scripted actions are designed to produce analogous effects (Frazer 1922). As de Laguna relates:

> Swanton (1908, p. 447) describes 'grabbing medicine' (dji'yAUAXAc nak"^ [ch'iyáwch'náakw [?]] that was used by hunters, primarily for seals and sea otters. The maker had to remain continent for a month, and let no one else touch his urine box. Then he killed an eagle, from which he cut off the foot, itself apparently an effective amulet because of the grasping talons, and tied the medicine flower to it. The eagle's foot might be made to grasp the thwart of a miniature canoe in which was the figure of the hunter aiming at a sea otter. Then when he went out, he took the foot with him and either put it in the same place in his canoe, so that his prey

could not escape, or fastened it to a piece of floating wood, so that the sea otter would rise up to be shot. If he blew some of his urine at it, the animal would become confused and approach.

In this deployment the "medicine flower" (*kayaaní*) was part of more elaborate technique often referred to in Tlingit as *héix̲waa*, typically translated as "magic," or supernatural techniques for influencing nature.

Sea otter hunting "medicine" also featured an unspecified root, from which men getting ready for hunting "made a kind of dope" that could tell them "how many otters they're going to get." (de Laguna 1972:665)

> At Lituya Bay, [a man named] Qanuk' [or Qanuk] did it. They take hemlock bark and roots and they're going to make a dope for sea otter. "If I prove [test] it, I stay so many months—8 or 9 months—without my wife. Don't take no water, not
> sleep too much. Then for 2 or 3 days, he don't eat or drink at all,
>
> "Afterwards he went where there is a swamp, like the village lake here where there is always grass. He put the bark on the water like he is washing gold. And he makes a strong \^ish. He lifts it up and sometimes there is a little rock on it. And then he puts it with the roots. Sometimes he's got four rocks. He can't get more. . .
>
> "…They claim the person who had that kayani would have lots of money and luck, but that it would go right into the air." That is, the riches would not last.

In Yakutat, in some cases the roll of bark was substituted with a Native copper tube. One of de Laguna's (1972:665-666) consultants referred to "the root, or the root [and beads/rocks] in the copper tube as an amulet (wuxf) [sp? xuts?]. When shown a coal bead from the same archeological site (de Laguna *et al* 1964, pi, 17), he failed to recognize it as a bead, but said: "You tie up that [xuts] with it. They call it 'wish stone'." These special rocks or beads (perhaps coal or petrified plants of some sort) were also known as "firewood eggs" or "Sun's excrement [*Gagan hatl'i*]," from their origins in fire. De Laguna reports (1972:665):

> The maternal grandfather of two of my informants, Lusxox of Coward House, is supposed to have owed his good fortune to the possession of four amulets (danak' [sp.?]) that were believed to be the excrement of the Sun (gAgan hatl'I [G̲agaan háatl'i]) . . .
>
> The four amulets were kept in a little wooden box, about 3 to 6 inches square, tied up tight. With them were put sea otter fur, or the hair of any other game animal he wanted to kill, as well as bits of calico, wool from clothing, bits of new blankets—"anything he wish for . . .
>
> "There was always a certain day of the month when [after bathing, fasting and refraining from drinking water], he opened the box, but his grandchildren do not remember which it was. He did this before he went sea otter hunting, and this was why he always came home with one or more (MJ, CW)."

**Uses of Sea Otter Fur**

Among the most important aboriginal uses of sea otter pelts were the following:

- Sleeping pads/ bedding: Early explorers commented on use of sea otter pelts as sleeping mats by Natives of the Gulf of Alaska, although it is not clear how widespread this practice was among the Tlingit at Sitka.

- Baby wraps: Due to its softness, warmth, and high status, sea otter fur might also be used to wrap infants for display or travel, with the skin turned inside out, “like a pouch”, and perhaps attached a cradleboard.
- Robes: A wide variety of robes were fashioned, from full length robes to shoulder robes and dance aprons. Full length sea otter robes were made especially for nobles and could require up to 12-16 sea otter skins and could be hot and heavy as compared to ground squirrel robes (interviews, e.g., Steve Johnson). Other robes might be trimmed with sea otter fur or decorated with “feathered butts of sea otter arrows” (de Laguna 1972:688) and other such paraphernalia.
- Shirts and capes: LaPerouse observed, "Some of the Indians had complete shirts of otter-skins” (in de Laguna 1972:432), while Malaspina recorded: "The clothing of the men is regularly a cape of nutria [otter] pelts, of wolves or of martens over the body, with a band (sash) on the lower part of the abdomen. They cover their heads with hats of straw [spruce roots] in the form of a truncated cone. The women are decently clothed with a kind of under tunic of tanned skin, and on top wear a cape of nutria or marten which is very well sewn together with thread” (in de Laguna 1972:434).
- Rugs: Sea otter was thick and warm and comfortable to sit or walk upon.
- Fur trim on blankets [including Chilkat style blankets] and other garments (hats, legging, etc.): “LaPerouse noted cloaks woven of animal ‘hair’ (wool) mixed with slips of sea otter fur at Lituya Bay in 1786, Ismailov and Bocharov noted a cape of wool (lined with fur?) and ‘woolen clothes of their own manufacture’ at Yakutat in 1788 (p. 134), and Malaspina in 1791 remarked at Port Mulgrave (near Yakutat) blankets of bark with [sea] otter fur on one side (see pp. 433, 434, 435)” (de Laguna 1972:431).

Steve Johnson, a hunter in his 40’s, whose grandfather, A.P. Johnson, was an expert in furs and taught courses in tanning at Sheldon Jackson College in the mid-twentieth century, states that, because of its weightiness and other qualities of fur, use of sea otter was rather limited prior to the fur trade.

> Steve Johnson: It really wasn’t [heavily used, traditionally]. I mean sea otter fur is not really that great of stuff. . . It doesn’t wear super well. It’s obnoxiously hot in this climate, and so early uses of it, you know, they would wrap babies in it for canoe journeys and things. And they would just make like a little pouch, you know, they would turn the skin inside out, put the kid in there and wrap them up and then put them in the cradleboard. But, I mean, really it wasn’t heavily utilized for garments or regalia . . . They would occasionally use it like, on their beds or like rugs.

More commonly, he adds “robes were made of ground squirrel skin,” which was also considered a high-status fur (often acquired through trade), and “had the advantage of being lightweight, shedding water, and not super-hot.” While sea otter fur is heavy and dense, arctic ground squirrel “fur is light and dense.”

Regarding the intricate Chilkat style woven blankets with designs and fur fringe that he observed at Lituya Bay, La Perouse concludes that the Tlingit could "spin the hair of divers[e] animals, and form with the needle of the thread thus procured, a stuff not unlike to French tapestry. They intermingle with this slips of [sea] otter-skin, which gives their cloaks a resemblance of the finest silk plush. Hats and baskets are no where woven with more skill; and they ornament them with pleasing figures [Ibid., pp. 406-407.]” (in de Laguna 1972:433). Similarly, Malaspina contemporaneously observed: "Finally among the woven materials, special attention is merited by the blanket made of pine [cedar] bark, spun and woven, on which is inserted on one part with good symmetry the fur of the skin of an otter” (de Laguna 1972:435 [Malaspina,1885, p. 348.]). Some of these products, such as sea otter robes, have been revived in the contemporary era, while numerous innovations and new handicraft products have also emerged as will be detailed below.

The values of these products were not consistent across time and space, it seems, but rather relative to local supply and demand, level of quality and craftsmanship, and bargaining skills. However, de Laguna (1972:470) concludes that among pelts there was an equivalence of sorts in that a sea otter, like a slave "seems almost to have served as a standard measure of value in reckoning the worth of a canoe or a copper."

**Hunting and Sea Otter Populations in the Fur Trade Era (1741-1911)**

Vitus Bering's 1741 expedition, which only temporarily penetrated the waters of Southeast Alaska, had direct implications for what followed in the Gulf of Alaska and Southeast.

> The direct effect of Bering's expedition upon the Gulf Coast natives could only have been slight, aside from the green cloth, iron kettle, iron knives, iron pipe and tobacco, and Chinese beads that were left in the hut on Kayak Island (Birket-Smith and de Laguna, 1938, p. 350); but the ultimate indirect effects were incalculable. On the homeward voyage the St. Petr was wrecked on one of the Commander Islands between Alaska and Kamchatka (named for Bering, who died there), and here the survivors found the sea otter. Not only did they eat the flesh, but preserved the skins, and when the castaways finally succeeded in returning to Kamchatka with their furs it was the high prices paid for sea otter pelts that led within a year to what Bancroft (1886, p. 99) has aptly called "the swarming of the Promyshleniki [self-employed Russian and Indigenous fur hunters]," destined to overwhelm the newly discovered lands and their inhabitants. (de Laguna 1972:108)

Thus, it is appropriate to place the origins of the industrial fur trade within the broad time frame of the very early Russian presence in Alaska (1741) to well into the American period (1911), when sea otter hunting was largely banned through an international treaty.

Impacts of the Fur Trade

By 1911, when the international treaty was put in place ending the maritime fur trade, sea otter had been commercially exploited as the "soft gold" (OHS 1982) of the fur trade and effectively extirpated (made locally extinct) in 99% of its original known range across the north Pacific, including Southeast Alaska.

In Sitka Sound the harvests were intense, involving the conscription of Unangan (Aleut) and Koniag (Kodiak) Natives, and incorporation of other Indigenous hunters. Sitka had become the center of the Russian America Company's (RAC) fur trade operations in Southeast Alaska by the early 1800s. Britain and American ships were also deeply involved in the region, and the Tlingit, fiercely independent traders, preferred dealing with the Anglo-American ships. The latter had not attempted to usurp their territory, as the Russians had done at Sitka, leading to the Battles of 1802 and 1804 (Dauenhauer *et al* 2008). Spanish colonial operations also penetrated Southeast Alaska, but their sea otter harvests were concentrated mainly in California, including Baja, until 1789, and to a lesser extent British Columbia (Gibson 1992).

Earliest among these explorers encountering opportunities for significant sea otter harvest and trade along the Alaskan coast, as we have seen, was the French explorer, La Perouse, who encountered Tlingits at Lituya Bay in June 1786, and found them ready to trade sea otter, among other items:

> During our forced stay at the entrance of the bay [before the anchorage was shifted to Cenotaph Island, July 4], we had been continually surrounded with the canoes of the savages, who offered us fish, skins of otters and other animals, and different little articles of their dress, in exchange for our iron. To our great surprise they appeared well accustomed to traffic, and bargained with as much skill as any tradesman of Europe. Of all our articles of trade, they appeared to have no great desire for any thing but iron: they accepted indeed a few beads [rassades]; but these served rather to conclude a bargain, than to form the basis of it. [LaPerouse, 1799(1): 365; quoted in De Laguna 1972:115-116].

According to Emmons (1991:5):

> In ten days in 1786 La Pérouse procured upwards of a thousand skins in Lituya Bay [and could easily have obtained five or six thousand by visiting other bays. Yet the majority of these kins, obtained in trade, were in rags. (Chinard 1937: xxxix, xl-xli, summarizing La Pérouse 1797, vol. 4.). In fact it was largely the quest for this fur that influenced the Russians to expend their operations from the Aleutian Islands to the continent, and then eastward along the coast to southeastern Alaska. Greed and lack of government regulations [until early in the twentieth century] have rendered this animal virtually extinct.

By 1789, The American Dixon was trading in Yakutat's Port Mulgrave and other parts of Yakutat territory but struggling to land many furs, harvesting only "about sixteen good sea otter skins." Moreover, his crew "found the natives scanty stock of furs not only exhausted, but that they had stripped themselves almost naked, to spin out their trade as far as possible" (Beresford, quoted in de Laguna 1972:127). The previous year, Russian traders prospecting for sea otters to trade for in Yakutat Bay, had been met by two large wooden canoes in the middle of each of which "sea otter skins were fastened" as a signal for trade (de Laguna 1972:133). The Russian Golikov-Shelikov Company arrived in Yakutat Bay offering protection for those tribes that traded with that company exclusively.

> On June 15, then, this great chief, Yelxak [sp.?]], came to the Russian ship, ac[c]ompanied by a native artist … and insisted upon being told all about the royal portraits hanging there.
>
> "Although we had already given the Toion [leader] and his subjects an account of these august personages, we again gratified his wishes" (Coxe, 1803, p. 330). The Russians… gave the chief one of the copper coats-of-arms with which the expedition had been provided, in order to claim land for Russia. The chief "was requested to wear it upon the fore-part of his garment, and it would serve as a mark of fidelity, and protect his subjects against all foreign ships" (ibid, p. 331). The chief is reported to have listened to the discourse on Russian rule "with veneration and astonishment," and "received the coat of arms with extreme joy" (ibid., pp. 330, 331). The next day he returned with two elders, <u>proudly wearing the emblem on his robe of sea otter</u>, this time to request one of the [Imperial] portraits. On the engraving of the Grand Duke Paul, which was given to the chief, the Russians wrote the following message: "In June, 1788, the Factor of the company of Golokof and Schelekof, the pilots Gerassim Ismaelof, and Dmitri Betscharof, of the galliot the Holy Fathers, with forty men, being in the bay of Yakutat, carried on a considerable traffic with the Toion Ilchack and his subjects the Koliuski, and finally received them under the protection of the Russian Empire. As a memorial of these events, we gave the said Toion a Russian coat of arms, on copper, and this engraving of his Imperial Highness the successor to the Russian throne….
>
> [This was reportedly reciprocated with gifts from the Yakutat Tlingit, including:] "an iron image of a crow's [Raven's] head, which he considered as sacred; a bag woven from grass, and striped with various colours; <u>six sea-otter shirts</u>…" [but likely without the Tlingits'

> understanding of this transaction as signifying] "subjugation to Russia" [as the Russians interpreted it] (de Laguna 1972:135-136, emphasis added)

The Spanish, under Malaspina, also anchored in Yakutat Bay (Port Mulgrave) to trade in 1788, noting that "many canoes came out to meet us, repeating several times the hymn of peace, at other times a general harmonious call apparently of invitation or admiration, and offering for trade more salmon and wooden artifacts than sea otter ["nutria"] pelts which could yield a considerable value," and that one of the items received in trade was a beautiful "pine" (cedar) bark and trimmed with sea otter fur" (in de Laguna 1972:141-144). Later the party met a group from Galyák-Kaagwaantaan country at Icy Bay (Yahtse River) that came to trade, the leader of whom "gave them some strawberries, and traded his robe of otter furs [which the receiver wore as a cape], even though we did not give him the axe that he so coveted" (in de Laguna 1972:152, emphasis added).

Geographer James R. Gibson (1992; 5, 18) describes the period from 1743 to 1799, as the boom phase of the sea otter trade. It was during this period that the major colonial fur traders moved into Alaska to obtain the prized pelts; the Russians coming from the east through the Aleutians, and others arriving from the Southeast.

The commercial exploitation of Southeast Alaska sea otter population began in earnest in 1788 with the newly formed Golikov-Shelikov Company's (later to become the monopolistic RAC) penetration into the region. As Gibson (1992:13-14) relates:

> In January 1795 Alexander Baranov, the company's colonial manager, sailed in the *Olga* to Sitka Sound, raised a cross on shore, and named the waters Cross Bay. In July of the following year [company employee James] Shields and a party of Aleuts from Kodiak arrived on the *Oryol* and bagged 1,847 sea otters; two years later another party of Kodiak Aleuts killed up to 1,000 otters [6]. Finally, in June 1799 Baranov returned on the *Oryol* with 550 kayaks of Aleuts to hunt, and in late July he established the settlement at Arkhangelsk [7] [Old Sitka at Starrigavan Bay]. (It was destroyed by the Tlingit in July 1802 but re-established on a nearby kekur [rocky promontory [known today as Castle Hill, or Noow Tlein "Big Fort" in Tlingit] in September 1804 as Novoarkhangelsk [New Archangel], whose population as the colonial capital at the beginning of 1810 numbered 621, including 199 Russians, 411 Konyags [Kodiak Eskimos [Koniag]], and 11 Tlingit hostages [8].
>
> By 1800 three-quarters of the RAC's sea-otter skins were coming from the vicinity of Sitka Sound;[9]; here Aleut hunting parties killed more than 2,000 otter in July 1800 and up to 4,000 in June 1801 [10]. Here, too, the Russians finally encountered their American rivals who were likewise seeking fresh sources of sea otters (this imperialist overlap was reflected in the areas dual toponomy: the Alexander Archipelago and Sitka Sound to the Russians but the King George Archipelago and Norfolk Sound to the Americans and British… In late April 1799 the American ship Hancock met "Canoes coming from all parts of the Sound appearing to have many Skins," and in two weeks of trading some 250 pelts were taken from the Tlingits; at the end of the spring the Hancock was joined by the *Caroline* and the *Despatch*, and they hailed the Russian brig, the *Oryol*, whose commander said that its owners had 1300 Aleut and Kodiak hunters "out after Otters" [11]. At the end of 1805 the Russian navy's Neva…. left the port for Canton with 442,819 rubles worth of furs, including 151,000 fur seals, 9,288 foxes, and 4,220 sea otters [12].

The price for furs became somewhat volatile during this period as furs flooded into the market. As a result, the RAC began to exercise more coordination and supervision over hunters, including strict restrictions on quantities of sea otter to be hunted.

> The demands of the market were considered and the catch apportioned to the different districts with reference to the number of hunters, etc. The natives were held strictly to the number allotted, and any otter killed in excess were carried over until the next year. They also laid down certain rules for the hunters to avoid disturbing the otter, lest they should be driven away. (Hooper 1897:3)

Ultimately, the RAC's enforcement of Indigenous Aleut and Kodiak hunters under a strict low-wage system (30 rubles for a first grade sea-otter pelt, 15 for a second-grade, and 3 for a third-grade skin) proved more efficient than the American and early British piecemeal bartering and trade for skins with independent groups like the Tlingit (who negotiated expertly for firearms, metals, blankets, and other manufactures and materials, in addition to specie). Later the British Hudson Bay Company's (HBC) entry into the Northwest Coast fur trade provided stiff competition for the RAC, as HBC had a more flexible pricing scheme with local discretion for discounting in competitive markets, whereas RAC pricing was tightly controlled by the central office in St. Petersburg (see Gibson 1992:15).

The Russians tried to combat the American and British competition more directly by instituting a ban on all foreign vessels in Russian Alaska north of 51 ° N. This proved costly, however, as the RAC settlement at Sitka was highly reliant on the "Boston traders" for vital supplies, which they paid for mainly in fur seal skins—approximately a half million pelts between 1799 and 1814 (Gibson 1992:263). "So in 1824 and 1825 Russia signed conventions with the United States and Great Britain, respectively, that readmitted the American and British Ships to the coast between 54°40'N and Lynn Canal (and British vessels to the rivers flowing through the *lisière*, or mainland Alaska panhandled) and prohibited the sale of ordnance and liquor to the Indians" (Gibson 1992:77).

In the first two decades of the 1800s, Tlingits preferred trading with the Americans and British, given that, as Von Langsdorff observed at the turn of the century, the Tlingit [or Kolosh], as the Russians called them,

> had not only been driven from their hereditary possessions by them, but they have also been deprived of their great means of wealth, nay, even of subsistence derived from sea-otters, the fish, and other marine productions, with which the coast they inhabit so richly abound[s]…[As a result, Gibson adds, further quoting Von Langsdorff] As late as 1821 Russian-Tlingit trade was 'very insignificant" [29]. This situation did not change until the middle 1820s, by which time American trading vessels—the Tlingits' traditional customers—were quitting the Nor'west trade. Even then, however, the HBC outcompeted the RAC for Tlingit furs. (Gibson 1992:17, emphasis added)

The decline of American sea otter trade with Southeast Tlingit was driven by both stiff competition with the Russian market and declining sea-otter numbers in Alaska. Yet the thirst for furs continued, such that,

> The Natives were literally stripped of furs, since, as Captain Dixon found, "the cloaths wore universally on the coast are made of skins sewed in various forms. Each of these robes or cloaks, termed "cotsacks' or "cutsarks" by the white traders, consisted of three to five sea-otter skins; they lent their name to "Cloak Bay" in the Queen Charlottes. And the Natives were eager to shed them. For Captain Dixon the Tlingits of Yakutat Bay "stripped themselves almost naked, to spin out their trade as far as possible." No wonder that textiles, particularly blankets, became one of the most popular Euroamerican trade goods for the Indians. (Gibson 1992:175-176)

By the second decade of the 1800s, sea otters were becoming scarce in Sitka and elsewhere due to relentless hunting pressures driven by the lucrative prices their pelts commanded—more than three

times the value of a beaver skin at Canton, China in 1811. Tlingits were among the first to raise the alarm about impacts to the health of the sea otter population as both a "tragedy of the commons" (Hardin 1968) and "tragedy of commodification" (cf. Thornton and Moss 2021:6) were emerging from the "soft gold" rush for sea otter fur.

> As a Tlingit said to the Russians at Sitka, "cod lay eggs but otters are born in ones and twos, and because of this disparity alone they can be completely annihilated." Perhaps because of this low rate of reproduction, the mother is exceptionally regardful of her young, so much so that she refuses to abandon her pup under any circumstances, with the fatal result in the era of the Northwest Coast fur trade that both were bagged…Also, because the dam's pelt is more valuable than her mates, females bore the brunt of hunting. Furthermore, lacking the protective layer of body fat of other marine mammals, the creature retains a prime pelt all year as insulation against cool ocean waters, unlike the coat of land fur bearers; this fact invited year-round hunting and hastened depletion. The hunting proficiency of the RAC's Aleut and Kodiak kayakers accelerated the sea otter's demise too. As early as 1802 the Tlingits of Frederick Sound in the central "straits" were complaining to shipmasters that they had few skins because Russian hunters had decimated the animal" (Gibson 1992:178).

Altogether, from 1790 through 1818 some 300,000 sea otters were slain, skinned, and shipped to Canton from the Northwest Coast by American traders alone, an average of about 10,000 a year. However, annual harvests became more variable after 1800 and began to decline significantly after 1812 (perhaps initially partially due to the War of 1812), dwindling to just 329 skins by 1830 (see Gibson 1992:315). For a summary of the harvest of sea otters from 1950-1900, see Bodkin (2015).

Tlingits' intimate knowledge of sea otter biology and ecology lead to their early recognition of the unsustainability of the multi-national commercial fur trade (Gibson 1992:178, quoted above). This realization, combined with the loss of effective control of their marine territories, furthered their enmity toward the Russians. It also made them distrustful of the intentions of other foreign interests that were also fueling the emerging "tragedy of the commons" without due consideration for sustainment of sea otter or other species targeted by the traders. Based on their Indigenous ecological knowledge, Sitka Tlingits grasped the possibility of extirpation of even the most abundant marine species in a way that Russians and Euro-Americans were just beginning to comprehend in the late 19$^{th}$ century (cf. Thornton and Moss 2021; Pálsson 2024). Thus, despite their newfound wealth in trade (with ammunition, axes, blankets, blue cloth, buttons, fearnought and other made clothing, muskets, rum, and traps being among the most desired goods by the 1820s, (see Gibson 1992:216), Tlingits and other Northwest Indigenous groups were concerned about the havoc wrought by the fur trade, which.

To mediate these perceived dangers, many Indigenous groups made it their goal to engage in the fur trade to "supplement rather than supplant" Indigenous products.

> Thus, trinkets did not replace dentalia as valuable or ornaments; blankets did not replace cedar bark or even fur robes; muskets and pistols did not replace lances, bows and arrows, and knives; sails and rudders did not replace paddles in canoes (if only because sails were used before the wind only); fishing line did not replace harpoons, nets, or weirs; farming did not replace fishing or hunting; bred, rice, and potatoes did not replace smoked salmon, dried herring roe, pounded hemlock cambium, venison, and berries …; broken English or even Chinook jargon did not replace Native languages; metal tools did not replace stone or bone implements; and so on. Yet all of these innovations were accepted and put to good use. …In other words, the maritime fur trade did not revolutionize coastal Indian society, unlike plains Indian society, which was fundamentally altered by the introduction of the horse and gun. After all, the Northwest Coast

> Indians were decidedly mercantile and commercial before white contact, and the fur traders came to them, not vice versa, and the Indians readily accepted them on their own terms.

At one level, this form of adaptive and selective incorporation was less revolutionizing and devastating than some colonial encounters, but for Sitka Tlingits, it brought significant ecological, epidemiological, sociocultural stress. Ecological stress was caused not only by the massive removal of apex, keystone predators like sea otters from the marine ecosystems, but also the overexploitation of other terrestrial and marine resources to scarcity —including salmon, which Tlingits had previously cared for sustainably through a well-developed tenure system--, especially in the vicinity of major colonial settlements like Sitka and Wrangell.

Occurring at the same time, and compounding these ecological factors was the epidemiological trauma brought on by epidemic diseases that ravaged populations up and down the Alaskan coast, reducing the regional Native population by 80% (Gibson 1992:272), with smallpox being the major killer. The 1835-36 smallpox scourge claimed more than 400 Tlingit adults (nearly half the Native settlement's population, though few Aleuts or Russian's perished). And this was not the first wave: "Chief Saiginakh [sp?] of the Sitkan Tlingits told the Russians that smallpox had struck them around 1770, when he was a boy and spread from Stikine River and ceased at Sitka, leaving no more than one or two members of each family alive… They believed that to the death tolls of these epidemics could be added victims of a range of "diseases of civilization" from alcoholism to syphilis to tuberculosis, adding to the demographic devastation. By 1840 the Sitka Tlingit population seemed nearly as decimated as the sea otter stocks.

In turn, this multi-generational demographic trauma wreaked havoc on critical sociocultural determinants of Tlingit wellbeing, including a balanced social structure, traditional clan leadership, intergenerational transmission of cultural knowledge and practices, effective tenure and organization of labor for food procurement, ceremonies (including an avalanche of funerary rites and memorial ku.éex') and other functions basic to cultural welfare, reciprocity, and continuity. As has been argued in the ethnographic literature, this trauma combined with an increase in material wealth from trade, simultaneously stimulated an exaggerated stress on potlatching (memorials ceremonies for the dead) to cope with, and even combat, the waves of mortality striking them, while continuing to assert cultural prerogatives, property ownership, political status, and social identity in a radically changing sociocultural and material world (cf. Codere 1950 and reassessments by Kan 2015 and Lovisek 2007).

The introduction of guns, particularly rifles, changed the nature of sea otter hunting, but not right away. Early muskets were notoriously inaccurate and prone to misfiring. In addition, ammunition was an additional expense and often in short supply. Thus, it was not until the mid-to-late nineteenth century, and especially after 1867 when the Alaska Territory was sold to the United States that rifles effectively replaced clubs, spears, bow and arrow, and other Native means of hunting otters. Sitka Tlingits, due to their longer and deeper engagement with European and American traders, who traded firearms and ammunition for sea otter and other furs whereas the Russians officially forbid this, were an exception to this. In Yakutat, however, bow and arrow were still being used to take sea otters in the more northerly Cape Fairweather to Controller Bay region. This was despite their significant trade with Europeans which focused on "steel knives and axes, or iron they could shape into adz blades and weapon points, but what they desired next, as was noted by Malaspina, were articles of European clothing … Uniforms, above all else, were prized by their chiefs, and we have seen these dignitaries at Yakutat donning naval uniforms to welcome Captain Belcher in 1837, and Captain Nichols of the U.S.S. Pinta in 1886 (see pp. 178, 190). This interest in acquiring foreign costumes seems to antedate White contact, for LaPérouse's artist sketched Indians at Lituya Bay who seemed to be wearing the fringed tanned skin garments of the interior. . ." (de Laguna 1972:348).

**The American Federal Era (1867-1959)**

Based on his surveys of Alaska Natives and resources in the mid-1880s, Ensign Albert P. Niblack stated in his report for the Smithsonian:

> The custom in former days was to hunt the sea otter either from the shore or in canoe parties. They were shot with arrow from behind screens when they landed to bask on the sand or on the rocks, or approached noiselessly by canoe parties when asleep on the water. Very thin paddles were used, and if the Indian could get near enough the sleeping animal was harpooned. The common custom, however, was to hunt in parties. An otter, being sighted, was surrounded by canoes in a very large but gradually lessening circle, advantage being taken of the necessity of the animal to come to the surface to breathe, when it would be shot with arrows or harpooned from the nearest canoe. The Thlingit and Haida were not so expert as the Aleut, because their canoes were not so well adapted to the exposure of sea. In recent years the few remaining sea otters have been hunted with firearms. …By a curious rule the otter and all other game belongs to the one who first wounds it, not matter who kills it. As the otter floats when killed, the same skill is not required as in seal hunting, but so scarce have they become now that not more than 40 or 50 are killed in a season throughout the northern coast Indian region. (Niblack, quoted by Scidmore 1893:62)

Similarly, US Commander L.A. Beardslee (1882:175-176), patrolling Southeast Alaska on behalf of the American government, reported that the Natives of the region "have very few fire-arms, and such as they have are mostly old-fashioned flint-lock muskets, which are preferred to percussion-locks inasmuch as flints are plentiful and caps scarce. Very few use the bow and arrow, or spear, except in securing seals, sea-otters, etc. With their muskets they generally use buckshot, very seldom balls."

The ethnographer Aurel Krause assessed the status of sea otters during his stay in Southeast Alaska (largely in Chilkat country) in 1881-82 as follows:

> The most valuable fur-bearing animal, the sea-otter …can now be found in inaccessible places on the outer coast, on the Forrester Islands, west of Prince of Wales Island, and on the coast north of Cross Sound [The scene of the conflict between. In Vancouver's time, they were plentiful in Chatham Strait and their presence in Norfolk [Sitka] Sound was the reason for the founding of Sitka. Here, as in the whole archipelago, they were completely exterminated by the devastating hunt of the Russians, who, in 1804 alone, took two thousand skins in one expedition through Cross Sound and Chatham Strait. (Krause 1956:58)

Yet, competition for remaining pockets of sea otters in the American era also became more intense, especially between the "King George" Indians, Tsimshian from British Columbia (hunting for the HBC), and Tlingits from Hoonah and Yakutat.

In 1880, Beardslee wrote to Major William Gouverneur Morris, Special Agent of the US Treasury Department, to alert him to potential "serious trouble between the Alaska Indians at Hoonah and the British Columbia Indians from Fort Simpson…[with a large number of the latter (27 according to managers of the Northwest Trading Company)] being…actively engaged in killing with rifles the sea otter and fur seal on the hunting ground of the Hoonahs [and the latter threatening to retaliate by killing them all]…I am requested by the chiefs of the Hoonahs to either take steps to drive off these strange Indians or give them permission so to do." Morris later accompanied Beardslee on an investigative patrol to Hoonah aboard the USS Jamestown in August of 1880. At Cross Sound they

learned that contested sea otter hunting grounds lay approximately “30 miles northwest of Cape Spencer, and it was upon these grounds that a company of (thirty canoes of three men each) of Fort Simpson Indians had been depredating.” However, the Hoonah leaders told them that the Tsimshian had already departed, aware of the Hoonah’s appeal for federal law enforcement, but had vowed “to return in September, with sixty canoes, and would not care then for the Jamestown, as they were ‘King George’ Indians and the ‘Bostons’ could not touch them.” Morris thanked the Hoonahs for reporting the territorial violation and, for his part, promised to “get the English authorities at Victoria to stop the projected raid” (Beardslee 1882:71). The Hoonah Tlingit (and Beardslee, not wanting to be caught in an international conflict), were pleased with Morris’s intervention and the Tsimshian apparently did not return in force (Beardslee 1882:68). Was it the following year that the “An Averted War with the Tsimshian" occurred, as narrated to de Laguna by her Yakutat informants?

Years later, as part of the 1946 land and possessory rights claims investigation, elders from both Yakutat and Hoonah reported on the use of the Cape Fairweather area for sea otter hunting, primarily by Hoonah people during this period:

> Jack Ellis (Yakutat): A long time ago, there was a village at Lituya Bay on the bite on the north side…The Hoonah [T’akdeintaan clan] people claim that area for sea otter hunting. Our people don’t use the slough north of Lituya Bay and don’t use Cape Fairweather because the Hoonah people come up that far to go sea otter hunting. It used to be part of our territory, however. There was a camp there for stopping over night (Goldschmidt and Haas 1998 [1946]:45).

De Laguna records a stream in this vicinity “immediately southeast of Deception Hills” below Dry Bay as "Sea Otter Creek, but I did not learn the native name” (1972:31; cf. Thornton 2012:25, which documents this as a translation of the Tlingit, Yáwch’I Héeni) and notes that it belonged to the “DAqdentan [T’akdeintaan]. The latter were really a branch of the Tl'uknaxAdi [L’uknax.ádi] of Gusex. When that town was abandoned, about half of the sib moved to Lituya Bay, where they split into the XatliA'ayi [X’atka.aayí] and the DAqdentan. The latter are those who went on to Hoonah. On this journey they received their present name because they camped at a point, DAqden [T’akdein]. However, they still claim Lituya Bay as their territory, and "still" (i.e., until recently) hunt sea otter near Lituya Bay and Cape Fairweather. Their rights to Lituya Bay are generally acknowledged” (1972:229). Their oral history speaks to this bay as being strategic for sea otter but also deadly because Giant Wave disasters. According to de Laguna (1972:275-276, quoting Williams who gathered the oral history in 1936):

> They say that at one time a large native village stood near the bay entrance. The place was much favored as a base for sea otter hunting. Inherently weatherwise, and using Mount Fairweather as a barometer, the Indians ventured to sea when the weather was clear and scurried for the shelter of the bay when the storm clouds began to gather on Fairweather's high snow cap. There came a day, however, when the returning hunters faced a scene of wreckage and destruction far greater than that of 1936. The village had been completely wiped out and the only person who remained alive was one woman who had been able to reach high ground and escape the flood. She had been gathering berries well up on the slopes of the hills."
>
> Although Williams believes that this disaster occurred "175 or 200 years ago"—probably dated from his own visit to Lituya Bay in 1936—it seems to be more likely that this was due to the giant waves of 1853 or early in 1854 (p. 94).

The T’akdeintaan also have the Wave Song commemorating the giant wave event, which washed out their village into the Pacific Ocean, resulting in a significant loss of clan members. According to

Chuck Smythe of SHI (pers. comm. 4/10/2025), the "Lituya Bay Blanket (recently repatriated from the UPenn Museum) . . . also memorializes this occurrence."

Other choice sea otter hunting areas along the Yakutat area Gulf Coast included Yakutat Bay and Icy Bay. These were also controlled by clans. The Kwashk'ikwáan clan, which migrated to Yakutat from the interior via Icy Bay, continued to hunt at Icy Bay even after settling in Yakutat Bay. They also purchased "Humpy Creek" in Yakutat Bay (from which their clan name is derived) from its (Hinyeidí) owners in part to correct a transgression, but also because the place afforded rich sea otter hunting, As one elder stated, "That was valuable . . . Yakutat [Bay] was pretty rich then. They hunted the sea otter right among the islands, all over" (de Laguna 1972:233). This clan, like the T'akdeintaan also had a special relationship with sea otter on account of a woman having taken care of one at Icy Bay. In return the "sea otter went and put sea boots [chitons] right on its chest and take them to its mother [the woman] . . . They stay in Icy Bay a long time [before migrating to settle in Yakutat]" (de Laguna 1972:237).

Hunters from Yakutat favored hunting grounds, closer to home, especially in Yakutat Bay, where otters could sometimes be taken traveling overland.

> The large bay on the east, which almost cuts Khantaak Island in two, is 'Sea Otter Bay,' Yuxtc geyi [Yáwxch' Geeyí] Harrington: ytjxt6ikkeevyii), because the sea otter used to shelter in it during storms. The isthmus here is only 150 yards wide and Harrington's informants reported that the sea otter used to cross overland by it (de Laguna 1972:63).

Of the quality and quantity of sea otter in the Yakutat area, Harry Bremner, in his 1946 testimony to Goldschmidt and Haas (1998 [1946]:122) emphasized that when his clan settled in Yakutat Bay, it was "considered the best hunting in Alaska for fox and sea otter." In fact, during the Russian settlement of Yakutat, the colonizers were reported to have set up a "gate" at Tawah Creek, between Rocky and Aka Lakes, and charged Natives a toll of one sea otter skin to pass (de Laguna 1972:75).

Sea otters continued to be hunted above Yakutat Bay, too, in areas between Pt. Latouche and Cape Suckling, including Kayak Island, though the latter was primarily utilized by Chugach and Eyak hunters (de Laguna 1972:102). Pt. Guyot on the Northwest side of Icy Bay was one of several "safe harbors" used when hunters were going offshore for sea otter, including the Tsimshian during the late 19th century (de Laguna 1972:97). Further west was another prize sea otter ground, used only until the time of Russian settlement. Now known as the Pamplona Searidge, this 15-mile-long reef was once a navigational hazard and the site of at least one major shipwreck referenced in Galyáx-Kaagwaantaan history but was also exploited by the Natives and Russians (under Purtov) for sea otters (referenced as the "Pamplona Shoal," by Arteaga's expedition in 1779; se de Laguna 1972:157). Later the sea ridge evidently "sank, perhaps gradually or suddenly during an earthquake" and now lies under 400 feet of water, making it less attractive for sea otter (see de Laguna 1972:99).

A sea otter hunting camp at Cape Yakataga was still used in 1887 when Emmons visited the area (de Laguna 1972:100). And the Kaliakh River area, whence the Galyáx-Kaagwaantaan took their name, was also a major sea otter hunting area (de Laguna 1972:101; 152). By 1794, the Russians were bringing some 50 Kodiak (Koniag/ Sugpiaq) Natives down to Yakutat Bay with baidarkas to hunt for sea otter in groups including in the vicinity of the Tlingits' village at Port Mulgrave in Yakutat Bay. Nearby the Koniag made an encampment and processed and ate their otter catch each day. Purtov describes the scene as follows in early July:

> The whole encampment was planned to resist a surprise attack, with spears, daggers and other weapons at hand near the shelters occupied by the natives. These were made by placing two baidarkas on their sides, about 4 feet apart, and roofing the space between with skins laid across the paddles. Here the Koniag were busy skinning the sea otter they had caught, which

> they did by pulling the entire pelt over the body without making any cut in the back or belly [termed by contemporary hunters as round skinning]. This method had perhaps been taught them by the Russians, and Puget notes that it was not practiced by any of the other natives on the coast. (At Yakutat today, it is used for small furbearers, like mink, and even for land otter.) The Koniag ate the sea otter with relish and scrupulously saved the bones, "with those of all amphibious animals," although Puget did not learn why (ibid., p. 401). (The Yakutat save only the humerus of the sea otter, however.) (de Laguna 1972:156)

Despite the inherent tensions of establishing sea otter hunting grounds among a territorial people who were already trading sea otter pelts to the American and European ships in exchange for guns, ammunition, iron and other goods (de Laguna 1972:164), Alexander Baranov, the head of the newly established Russian American Company, was said to be delighted with the discoveries at Yakutat, as

> Purtov's party saw many sea otter near Yakutat Bay and at other places along the coast, and easily secured 400 skins. They cruised about for some time, until the weather became bad, and the native "Kolosh" [Tlingit] began to show a hostile disposition. On their way back, Purtov met an "English vessel from Boston" under Captain James, and told the latter that "our [RAC] stations extended from Kadiak to Ltua Bay" (Tikhmenev, 1863, vol. 2, Suppl., p. 44). This, of course, was a lie intended to discourage foreigners from trying to obtain furs in these regions. (de Laguna 1972:164)

The Tlingit also asked the Russians “for guns and ammunition, but we refused firmly and they did not repeat their demand" (Purtov, quoted in de Laguna1972:164). This was Russian policy towards all Natives, as was the custom of exchanging “hostages” to ensure promises were kept, a practice the Tlingit also abided by. Once hostages were returned the Russians departed Yakutat Bay with some 515 sea otter pelts.

Returning the next year, in 1795, a separate Russian and Native party was also successful in hunting at Yakutat, but by then the Tlingit were souring on the heavy infiltration of their hunting grounds:

> Bancroft (1886, p. 350) … reports that in 1795 Baranov sent Zaikov to Yakutat Bay in command of a "sea-going vessel," because Purtov in 1794 had brought back a promise from the Yakutat chief that many sea otter skins would be waiting for the Russians. However, the chief did not live up to his promise and the only furs secured were the 400 taken by the native hunters with the Russians. Their activities were bitterly resented by the Yakutat people. "What the result may have been is difficult to say, for just then two Aleuts were seized with small-pox, and panic stricken the party hastened away" (in de Laguna 1972:166)

Early success prompted Baranov to undertake the establishment of a settlement in Yakutat Bay in 1796. Two ships were sent to Yakutat to carry out the building, reaching Yakutat on June 25th, “while Baranov followed in the Olga on July 15. The Ekaterina also brought some of the exiles for the colony. Shields in the Orel also visited Yakutat, while convoying a fleet of 450 baidarkas to Lituya Bay, where 1,800 sea otter were killed in a very short time” (de Laguna 1972:167). Despite this promise, a hard winter, an attack on the Russians’ Aleut otter hunters by the Tlingit and Chugach near Controller Bay, and other privations and deaths (including from disease or food poisoning) at Yakutat in 1799 dissuaded Baranov, and by 1800 he’d turned to Sitka, the center of Southeast sea otter country, for the establishment of his major settlement, from which he hoped to claim exclusive hunting rights over sea otters. Among Baranov’s strategic concerns was the penetration of the American traders into Southeast:

> American traders who had been sending from six to eight ships to the Northwest Coast for the last 2 or 3 years. These Boston men not only gave the natives far more for then furs than the Russians could afford, but furnished the Tlingit with pistols, muskets, four-pound cannon, and a few weapons of even heavier caliber. It was natural that with such arms the Sitka Tlingit soon became bold. Even during the winter of 1799-1800 their initially friendly attitude towards the Russians underwent a marked change, and an armed clash at the newly established Fort St. Michael (at what is now called "Old Sitka") was narrowly averted by Baranov. (de Laguna 1972: 170).

In June 1802, the Russian fort at Sitka was destroyed by a well-orchestrated Tlingit attack, bolstered by weapons (and perhaps intelligence) obtained from the American traders, allies in the quest to undermine Russian's would-be monopoly and exclusion of others pursuing the sea otter trade in Southeast. The attack was made when the fort was relatively defenseless. The Russians and their Aleut serfs were dispersed, including a major sea otter hunting party in 90 baidarkas having been sent to Sea Otter Sound/Meares Passage area (and/or possibly Sea Otter Harbor on Dall Island) in Hinyaa Tlingit territory, where they took some 1300 animals and were attacked upon their return in the vicinity of Kuiu Island by Kooyu or Keex' Kwáan warriors. One of the Russian officials, Kuskov, asserted that the attack was a conspiracy involving numerous Tlingit groups spurred by European and American fur trading interests. He asserted, for example, that an "American vessel which wintered near the Khutznoff village [Angoon] told the [Xustnoowú Tlingit/Kolosh] inhabitants that they would not visit them with their ships any more as they did not have sea otters enough to trade and said plainly that if they did not destroy our Fort Novo-Arkhangelsk at Sitka the Kolosh would deprive themselves of great advantages" (in de Laguna 1972:171). The same manner of collaboration and strategic planning evident in the Sitka revolt, which was avenged in 1804, was also at play in the revolt in Yakutat (Dry Bay) in 1805 (de Laguna 1972:170-172).

By the 1820s, sea otter hunting from Yakutat to Lituya Bay was already showing signs of diminishing returns, if not for the Tlingit, then for the Russian-America Company's large-scale expeditions.

> Khlebnikov, writing in 1833 (1861 b, p. 73), provides also given a list of sea otter hunting expeditions in the area. These consisted of "Aleuts" (including Koniag and Chugach) in baidarkas escorted by an armed sailing vessel. Two parties, totaling 60 to 90 baidarkas, went to Yakutat and to Lituya Bay each year from 1822 to 1825, inclusive. On these trips, from 250 to 460 sea otters were taken. ... These expeditions were eventually discontinued, for Tikhmenev (1861, vol. 1, p. 325) observed that: "The experiment of sending (in 1832) hunting parties to localities where sea-otter had been abundant in former years., i.e. in the Bays of Ltoua [Lituya]and Yakoutat [Yakutat], proved entirely unsuccessful. [In a later chapter he adds (1863, vol. 2, p. 326):] Sea otters are found in the vicinity of Yakoutat and Ltua Bay to the present day, but not in such multitudes as in early days, and besides, the entrance to these bays is very dangerous so that the Company does not hunt there any more."
>
> The Russians continued to obtain a few furs from these areas through trade. These were from sea otter killed by the local natives and by those Tlingit from southeastern Alaska who were permitted by the Yakutat and Lituya Bay people to join in their hunts. Such privileges were accorded only to "the prominent chiefs and then* relatives among the Kolosh living on Vancouver Sounds [southeastern Alaskan waters] where sea-otters are scarce." These expeditions, which met in the spring at some predetermined locality, might consist of over a hundred canoes, which followed the Aleut method of surrounding the sea otters, but used guns, not spears (Tikhmenev, 1863, vol. 2, p. 347). The furs so obtained were apparently traded south, some passing through the hands of the southern Tlingit to be exchanged with the

> Kaigani or the Haida of the Queen Charlotte Islands for slaves, some of whom had been captured as far away as the Columbia River. Other furs went into the hands of the Hudson's Bay Company's agents, and others were bought by the Sitka Tlingit for resale to the Russians at Novo-Arkhangelsk (Tikhmenev, 1863, vol. 2, pp. 349-350). In this way European goods such as Hudson Bay blankets and dishes, beads, pearl buttons, cloth, clothing, metal tools and utensils, guns and ammunition, dentalia and abalone shell ornaments (which even the Whites bought in the south for resale to northern tribes), came to Yakutat, as well as fine Haida canoes, Tsimshian carvings, and Flathead slaves. (de Laguna 1972:177)

By the late 1880s at Yakutat, sea otter were becoming more scarce but maintained their high value on the market, averaging $75 a pelt. Quoting the explorer Russell from 1890, who was in the vicinity of Icy Bay:

> “During the summer of our visit [1890], about thirty sea-otter were taken. They are usually shot in the primitive manner with copper-pointed arrows, although repeating rifles of the most improved patterns are owned by the natives, in spite of the existing laws against selling breech-loading arms to Indians. The fur of the sea-otter is acknowledged to be the most beautiful, and is the most highly prized of all pelts. Those taken at Yakutat during our visit were sold at an average price of about seventy-five dollars [Russell, 1891 b, p. 80]. . .The money derived from this source, and from the sale of bear, goat, and hair seal skins, and from baskets woven in large numbers by the women for the tourist trade in Sitka, brings a comparatively large revenue to the village and enables the natives to live in comfort" [Russell, 1891 a, pp. 872-873.] (in de Laguna 1972:205-206).

Still alive from the last throes of the commercial sea otter era off of Icy Bay in the late 1880s, when de Laguna conducted fieldwork in Yakutat in 1949, was Peter Lawrence (1871-1950), a Kaagwaantaan man “born in Sitka . . . He had apparently served on a number of trading schooners, and came to Yakutat in 1888 as interpreter for Chief Jeff King, a trader. On this voyage they took 600 sea otters for which they obtained $70 apiece, and claimed to have discovered gold on Yakataga beach” (de Laguna 1972:206)

Sea otter were also hunted by Hoonah Tlingits on the Gulf Coast. According to Krause: “In the summer the Huna leave their village, while they travel out to fish or hunt sea otter, which latter activity they carry on n the coast between Cape Spencer and Yakutat” (in Goldschmidt and Haas 1998 [1946]:53). Fishing and other subsistence activities were carried out at stopovers near salmon streams, halibut banks, and other resource areas on the outer coast from Cape Spencer to Lituya Bay upon the returning from the sea otter grounds in T’akdeintaan clan territory, many of which had names (Goldschmidt and Haas 1998 [1946]:56; 56-57). Emmons (MS., quoted in de Laguna 1972:95) reports that the campsite used during the salmon runs and during sea otter hunting season was located on the Huagin River, "Ka-huagh heen, (fish egg water)," obviously Kahakw hln (or hini), was called "De-yaghe (on both sides) [of the river]," and was occupied by DAqdentan [T’akdeintaan] of Hoonah and X^atkA'ayi and [Xat’ka.aayí].

Hoonah witnesses remember that the primary sea otter hunting place was above Lituya Bay, along with other hunting camps inside Icy Point and Cape Spencer as mentioned by Albert Jackson, Kendall Williams and Mark Williams:

> Kendall Williams (Hoonah): Our people went northward, up the mainland coast past Lituya Bay to a place about at Cape Spencer [sic, Cape Fairweather] called Yakwdeiyitá [Canoe Trail Behind] to hunt sea otter. The whole village went there, but it was a special claim of the

T'akdeintaan clan. I went there one time before the government closed up sea otter hunting, when I was a little boy. My grandfather and uncles told me that this place belonged to our people…

Icy Point is one place we used to stop on the way to get sea otter. We fished for halibut there. The T'akdeintaan people owned from Icy Point northward. East of the point, inside the bay, was a place called Gaanaxáa. I used to purse seine there. The last time was in 1919, when I caught six hundred king salmon there. It is now only used for trolling because the sockeye run is too early. In the old days,
we used to gather seagull eggs there. (1998 [1946]:136).

James Young (Hoonah): The people used to go beyond Lituya Bay, just this side of Dry Bay, to a place called Yakwdeiyitá to hunt sea otter. There used to be a log cabin there. I went there with my father when I was small, and quit going there when the area was closed to sea otter hunting. People used to make a lot of money there in the old days, hunting sea otter. (1998 [1946]:137)

Albert Jackson (Hoonah): There was a camp inside Icy Point where they camped when they went seal hunting up in Lituya Bay. They usually left the women there. The last place northward along the coast that we went was just below Mt. Fairweather. We got sea otter, seal, marten, and wolf. We hunted there until it was closed [in 1911]. I did this hunting myself. The area is claimed by the T'akdeintaan clan. (1998 [1946]:135).

Mark Williams (Hoonah): The Hoonah people went up the coast as far as Yakwdeiyitá, a place near Dry Bay. I have gone up there and shot seal. This place was claimed by the T'akdeintaan, but they let all the people hunt there. When I first went there, it was in a canoe. Since then, I hunted there in larger boats, and continued to hunt there till it was closed. Lituya Bay was a place with many camp houses. It was one of the main places they hunted sea otter. The Yakutat people did not come down this far. We went up there to hunt sea otter. There was another place where the people used to stop to camp in the olden days, but this campsite was covered up by the glacier when it came down. I never saw that place, but was told that by the old people when we went by that place. Inside Icy Point, there was a place where the people camped called Xagauta.aan [?]. This was not a place to fish, but a place to stop when one was hunting. The next camp to the south was at a hot springs, somewhere between Icy Point and Cape Spencer. It was called T'aay X'é. At Cape Spencer there were smokehouses in the old days. Jackson had a house there. Now, there are no houses. There was a good place to get sockeye there.

Beyond Ilin Bay, just south of Yakobi Island [identified by Goldschmidt and Haas 1998 [1946] as a joint use area with Sitka Tlingits], there were no permanent camps, though the Hoonah people would go past there to hunt. (1998 [1946]:137).

Hoonah, T'akdeintaan elder Elsie Greenwald testified, "A few from Sitka would also be invited to join a sea otter hunting trip with the Hunas. There was much intermarriage between the Hunas and the Sitkas. Our clans and theirs were the same, except that the Kiks.ádi were in Sitka and not in Hoonah" (Goldschmidt and Haas 1998 [1946]:130).

Sitka Tlingits also continued to carry on trade for sea otter into the late nineteenth century. Krause notes that Yakutat people also hunted sea otter, presumably above Cape Fairweather, during the early American colonization period, and that these were of interest to Tlingits in Sitka (as a center for maritime trade) and Chilkat country (as a center for interior trade, including to the HBC in Canada).

Up to the present time the Chilkat and Sitka have carried on a lively trade with the Yakutat who now are almost the only people who have valuable sea otter pelts. The Sitkas now claim

this trade for themselves alone, and during our stay in the territory, in the winter of 1881–82, this privilege was accorded them by the Chilkats after long negotiations (in Goldschmidt and Haas 1998 [1946]:46).

Sitka Tribe's customary and traditional sea otter hunting grounds are also identified by Goldschmidt and Haas's 1946 possessory rights review, especially by witnesses George Lewis, Andrew Hope and Thomas Sanders:

George Lewis: The hot springs at Goddard belonged to my grandfather, whose slaves fixed a tank out of logs so that he and his people, also his children, could bathe there. These hot springs were called T'aay X'é. These springs were taken by a man named Goddard, who sold them for twenty-five thousand dollars… This made me feel so bad...We used to trap and hunt seal and sea otter in that area. We hunted the islands, from Biorka down to Crawfish Inlet. We also hunted outside, among the rocks. government has stopped the taking of sea otter. Our people still regularly hunt in that area. I, myself, go there at least once every year, and am planning to go there this week to get hair seal. I will stay at a camp on Elovi Island, where there used to be a fox farmer. We also fish for king salmon in that area…

The Khaz Peninsula is called Xas, and was an important place for hunting seal, sea otter, and fur seal…

Shelikof Bay was a place to hunt sea otter, and there were camps all along which were used for hunting them. Also, used to get fur seal there. It belongs to the Teikweidí people. There are many boats in there trolling, and the fur seal have been driven away. Both Natives and whites fish there now (1998 [1946]:144).

Thomas Sanders (Sitka): [I] have heard that Angoon people used to come down into this [Kruzof Island] area—especially Shelikof Bay—to hunt sea otter. (1998 [1946]:146)

Amelia Cameron (Sitka) [born circa 1846]: The Sitka people went to Lituya Bay to hunt sea otters. This place belonged to the T'akdeintaan people of Hoonah.
We gathered food there too. (1998 [1946]:146)

These sea otter hunting areas were broadly mapped by Goldschmidt and Haas as part of their 1946 report; this map was redrawn for the publication of the report in 1998 (see Map 5.1 below), covering Sitka and parts of Hoonah Territory). For Sitka and Hoonah, the areas identified are remarkably consistent with the areas referenced in the Deep Time stories above and have been recolonized by sea otters in the present era. The testimonies also make clear that sea otter hunting was often an extended undertaking requiring remote camps and was typically carried out in conjunction with other subsistence (and later commercial) activities. Finally, the statements of Goldschmidt and Haas witnesses also suggest encroachment upon and competition for these spaces, by both other Natives and non-Natives. Significantly, however, the boundaries among Tlingit groups seem to be respected, even where the involved traditional hunting "pocket" grounds within another tribe's territory. This was the case not only between the Yakutat and Hoonah Tlingit at Cape Fairweather, as illustrated above, but also between the Sitka and Angoon Tlingits at Kalinin Bay on north Kruzof, where the Angoon Teikweidí had ancestral rights to hunt sea mammals, based on their early inhabitation of that place. As Angoon Teikweidí elder Ike James explained in 1946:

We had a winter village on Kalinin Bay, on Kruzof Island, in the old days. It was called KutiX'an* [Kutixán?] and belonged to the Teikweidí clan. We used that to hunt

> sea otter, but it was abandoned long ago, when sea otter hunting was stopped. The Angoon people didn't own all the land between there and here, but they owned that one place. (Goldschmidt and Haas 1998 [1946]:147; see also the statements of Peter Tom, p. 152 and Billy Jones, p. 149)

Because of competition for the waning and patchy supply of sea otters, the lack of recognition for Indigenous territorial rights (as illustrated in the conflict with the Tsimshian above), and limited capacity for basic data collection or wildlife management by the nascent US government in the Alaska territory, Beardslee concluded that:

> It is very difficult to obtain any very exact data as to the number of these animals killed yearly, and this difficulty is increased by the fact that the Indians lie about their luck. If they have a got a good place, they keep others from coming to hunt on it by giving it a bad name, and send the inquirers to unprofitable grounds by exaggerated stories. I found from a person who had the confidence of the chief of the Hoonahs, Kah-hoo-dosak, that his tribe killed 127 during the spring of 1880. And they had yet the prospect of fall hunting, which it was hoped and expected would bring it up to 200. As these skins are worth from $50 to $200 each, say $75, the six or eight hundred people who constitute the Hoonah tribe are kept very comfortable from this resource alone, and are certainly not blamable; if other resources failing, they go to war with the English Indians, who molest them by shooting their otters, a practices which produces great damage, in addition to that of killing more or less otters, as the shy animals soon leave a ground where they discover that they are molested, and the report of the fire-arms frightens them. This peculiarity has caused certain places, once favorite resorts, to become comparatively deserted; for instance, on our westernmost island, Atton, only seven otters were killed by its natives, who, thus deprived of almost their only source of revenue, would be reduced to starvation but for the benevolence of the Alaska Commercial Company, which allows to each family what may be considered in the light of a pension unless through a revival of the resources the natives become enabled to pay off the debts they are steadily increasing. (Beardslee 1882:185)

On the decline of the sea otter and the US Government's (weak) ability to arrest it after Alaska's transfer from Russia to the US, an 1897 report on the "Sea-Otter Banks of Alaska" affixes the blame not only on commercial hunting, now including many non-Natives, but also on the wanton waste and other negative impacts of the emerging industrial fisheries, concluding:

> In spite of precautions taken, the sea otter appear to have decreased from year to year, and in some parts, notably the Pribilof Islands, to have entirely disappeared before Alaska came under the American flag. After the transfer, although the same rigid rules could not be enforced, the effects of them were felt for some years. From habit many of the native hunters continued to spare the female, but gradually all precautions came to be ignored. Hunting schooners came yearly to the otter banks [and often carried the Aleut hunters to the more distant and dispersed sea otter hunting grounds]; cod fisheries were established in the vicinity of them, and the offal lined the shores and filled the water. One of the best otter grounds in Alaska, the Sannak Reefs, is said to have been greatly injured by the cod fisheries established there.
>
> On account of the vast extent of country and the limited force at its command the Government has not enforced the law prohibiting white men from killing fur-bearing animals in Alaska, and the sea otter, being the most valuable, has received its full share of attention. Being constantly harassed, clubbed and shot on shore, caught in nets by white men, their hauling grounds made uninhabitable by the camp fires of the hunters and defiled by fisheries and the

> decaying bodies of their slaughtered companions, the sea otter of the Aleutian Islands has not only decreased in numbers, but has actually changed its habits. It no longer comes out upon the land to feed, rest, or give birth to its young. A floating raft of kelp serves as its only resting place, and banks of 30 fathoms of water are its feeding grounds. Even there it is hunted and harassed by hunting schooners from March until August. Having been driven from the shore it is being exterminated on the sea by a fleet of hunting schooners, and the native hunters of the Aleutian Islands are being deprived of their chief means of subsistence. In addition to its change of habits and decrease in numbers, the range of the otter is very much reduced. (Hooper 1897:4-5).

The report's author, C.L. Hooper, ended his rather sober report with a proposed set of regulations for conserving the sea otter trade which anticipates some important aspects of the MMPA in mitigating both commercial hunting and fisheries impacts on marine mammals. Key among these were restrictions on non-Native hunters and stricter regulations on the transport methods and means of hunting sea otters. Hooper proposed that only Alaska Native watercraft should be deployed, for example, and some means, such as the netting of otters, would be prohibited altogether. Firearms could be more wasteful than spears in landing sea otter, Hooper noted, but they were not necessarily more "destructive to the herd than spears." In contrast, netting otters, typically done during stormy weather by non-Natives, who would stretch fishing style nets "from the shore to a convenient outlying rock," was deemed wasteful because the nets harvested indiscriminately and often could not be checked regularly due to storms, resulting in degraded pelts. Hooper further proposed, despite previously having "urged upon the Government the justice of allowing the white men married to native women and actually settled with the Territory to take sea otter by means of the net" (1897:9), that "this necessity no longer exists," due to the opening of canneries, mines, and industries with wage opportunities in rural Alaska. He argued that the sea otter fishery thus should be conserved not only exclusively for US vessels but primarily for Alaska Natives who were dependent on the trade. Particularly for the Aleut, Hooper (1897:9) reasoned:

> The sea otter has been, since the first advent of the Russians, the principal means of support of the natives of the Aleutian Islands. The decrease in the yearly catch has already brought some of the settlements to a state of want, and if they are allowed to become exterminated, actual suffering and even starvation can only be averted by Government aid. Properly protected and reserved exclusively for the use of the natives, the otter while it can probably never be brought up to its former numbers, can be preserved from extermination and will furnish a means of subsistence for these people for many years.

For the Tlingit, the decline of the sea otter was less economically damaging than for the Aleut, because they were less dependent, overall, on this specific trade item. However, sea otters were the most highly valued and culturally significant fur in the Tlingit portfolio, and, accordingly, groups like the Hoonah Tlingit continued to hunt them through the late 19th century and actively tried to conserve the last pockets of sea otter in Southeast from rival fur trade hunters, such as the HBC-supported Tsimshian, who threatened their existence.

Evidence of significant ecosystem change to places like Sitka Sound in the wake of the sea otter's precipitous decline is hard to find in the historical record. The (perhaps restored) abundance of marine invertebrates, including sea urchins, is mentioned by late 19th century chroniclers such as *Appleton's Guide-Book to Alaska and The Northwest Coast* author Eliza Scidmore (1899:124), along with the abundance of seaweeds, including kelp. Scidmore writes: "The growth of sea-weed and submarine plants are of tropical luxuriance. Fronds as large as a banana or lysichton leaf crowd stems 80 ft. long; kelp lines 100 and 200 ft. long are coiled on the surface and their 'orange heads' float in groups." However, these observers had not surveyed Sitka Sound prior to the sea otter trade, or at the height of it, for comparative reference.

Hooper's regulations may have been prudent and prescient for sea otter conservation and Alaska Native livelihoods, but they couldn't prevent the broader decline of the global sea otter trade. A telling blow to this trade was the "withdrawal of the Alaska Commercial Company's stores from the different settlements," and its credit and supply system, thus leaving "the natives…dependent upon [regional centers like] Unalaska for the necessaries of life…" (1897:11).

By the dawn of the 20th century, the sea otter and fur seal trades were on their last legs and perhaps officially ended in 1910 with the last recorded sea otter kill in Washington. The North Pacific Fur Seal Treaty was signed in 1911, banning the hunting of sea otters and fur seals but only beyond three miles from shore, ironically, where sea otters generally do not dwell (VanBlaricom 2015). The treaty also protected remaining colonies of sea otters and fur seals, mainly in Alaska's Pribilof Islands.

For Southeast Alaska, the economic anthropologist Kalervo Oberg (1973:111), writing in the 1930s, summed up the impacts of fur trade on the Tlingit as follows:

> It is important to note that the coming of the white man change the economic value pattern of the Tlingit. For instance, before the advent to the white man the Indian valued furs in the following order: sea otter, marten, beaver, otter, black fox, cross fox, mink, wolverine, wolf, and bear. The sea otter was the highest and the bear was the lowest in value [elsewhere (p. 112) he records the value of a slave as equaling 2 sea otter pelts]. White traders set the following sequence: sea otter, black fox, cross fox, beaver, marten, otter, mink, wolf, wolverine, and bear. The sea otter appealed to the Indian as it did to the Chinese mandarin and the European aristocrat. The fur of the sea otter was of ideal size, reaching from the shoulder to the ankle. The fur was fine, glassy, dark brown, extremely durable, and warm. Hence the general demand for it and the fact that the sea otter has gone the way of the American bison and the passenger pigeon.

While USFWS biologist Karl Kenyon (1969) estimated that fewer than 2,000 sea otter remained in thirteen colonies in 1911, extinction was not to be the animal's fate. Remnant populations persisted after 1911, mainly in the Alaska Peninsula, Prince William Sound, and Aleutian Islands, and Monterey California, while remaining absent from Oregon and Washington, British Columbia, and Southeast Alaska (with few exceptions). The remnant colonies were isolated from each other, however, and population recovery, while significant, was geographically constrained until otter relocations were carried out in the late 1960s and early 1970s.

# IV. REINTRODUCTION OF SEA OTTERS TO SOUTHEAST ALASKA (1965-1970)

What was the motivation for the reintroductions of sea otters into Southeast Alaska from Amchitka and Prince William Sound in late 1960s? The most immediate reason was pending nuclear testing to be carried out on Amchitka Island in the Aleutians, and the fact that otters in the area could be harmed or killed. A nascent Greenpeace pressured the US government to take action to mitigate the potential adverse impacts of nuclear bomb testing on area wildlife. This stimulated discussion of broader translocation and recovery program for sea otters to capture populations from Amchitka and Prince William Sound and move them to areas of the US Pacific Coast which had suffered extirpation under the colonial maritime fur trade, including Southeast Alaska, Washington, and Oregon. For Alaska, the State was interested in revitalizing the sea otter fur industry and supported the translocations in-state with the Atomic Energy Commission (AEC, carrying out the tests) and USFWS. Despite this cooperative effort, scholars have remarked on the absence of a coherent set of objectives or management plan between the State of Alaska (ADFG) and the federal government (USFWS) in carrying out the translocation effort. Ecosystem restoration was not the goal, as the role of sea otter in maintaining kelp forests was not well understood outside of Indigenous communities. Conserving the species in its ancestral habitats was an aim of the USFWS, but there was also the Alaska ethos, baked into the State's constitution, of sustainable uses of fish and wildlife for the benefit of Alaskans, which meant sustainable harvest for subsistence and commercial products, including furs. As Carswell *et al* (2015:350-351) observed:

> [A]lthough neither the State of Alaska nor USFWS documented clear objectives for the reintroductions, both the translocations and the "experimental harvests" that occurred in the 1960s (which yielded 1,000 pelts for public auction in 1968, the first that had occurred since 1911) were apparently viewed in the practical context of game management, with incidental benefits for scientific study.

Indigenous subsistence needs were not an identified concern for managers until the passage of the MMPA in 1972. However, USFWS moved to eliminate sea otter subsistence (handicraft) uses under MMPA in the 1980s, based on lobbying from environmental groups, such as Friends of the Sea Otter, prompting formation of the Alaska Sea Otter Commission (ASOC) in 1988. ASOC marshalled evidence and support to rebuff this effort and maintain sea otter under the subsistence uses exemption for Alaska Natives.

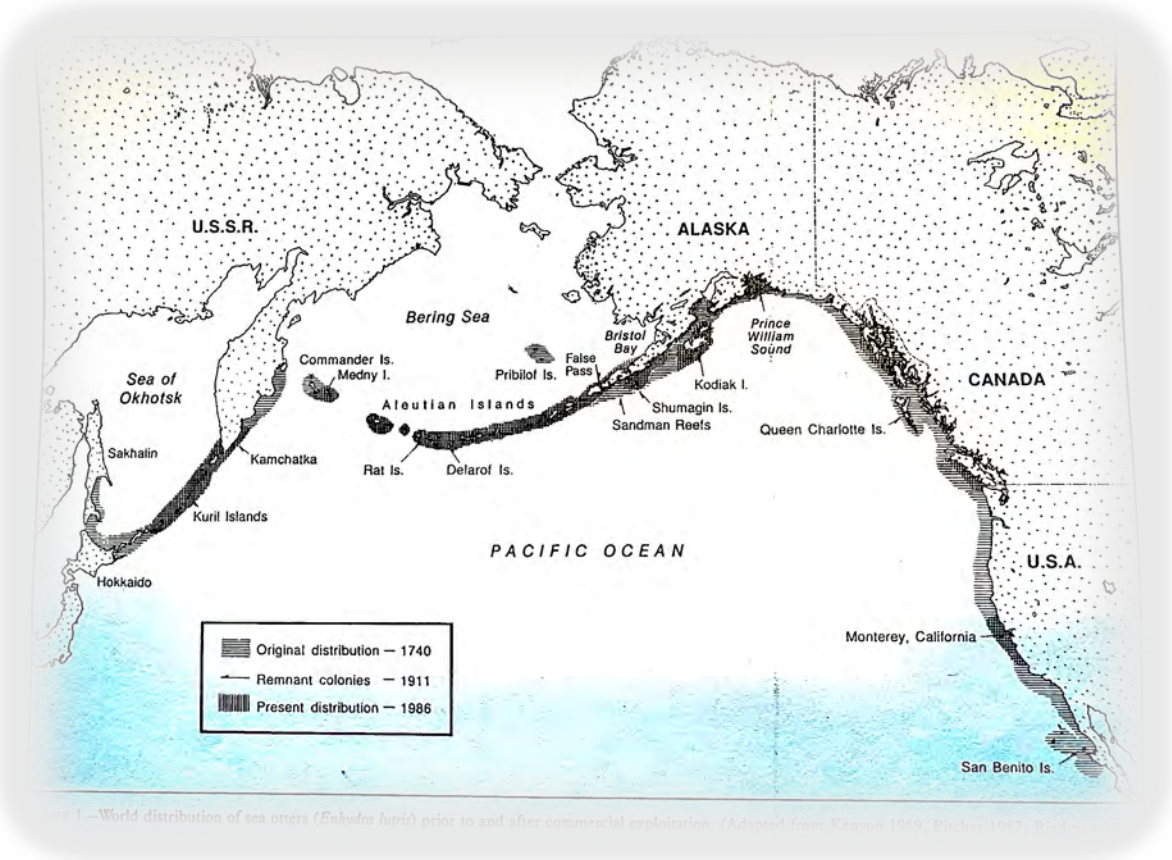


Figure 4.1. World Distribution of Sea Otters (*Enhydra lutris*) Prior to and After Commercial Exploitation (Adapted from Kenyon 1969, Pitcher 1987, Riedman 1987.) (Rotterman and Simon-Jackson 1988, Figure 1; see also Larson *et al* 2015 for more recent maps of the range and recovery of sea otter).

The translocations of northern sea otters to Southeast Alaska took place between 1965 and 1970 in both Northern and Southeast Alaska, particularly within the traditional territory of the Sitka Tlingit (Sheet'ká Kwáan), including the outer coasts of both Baranof and Chichagof islands.

Table 4.1. Reintroduction of Sea Otters to Southeast Alaska, 1965-69 (from Burris and McKnight 1973, Pitcher 1989, USFWS 2014)

| **Release Site** | **Year** | **Translocated Otters (402)** | **1980s Stock Assessment (Pitcher 1989)** | **2014 Stock Assessment** |
|---|---|---|---|---|
| **Northern Southeast (NSE)** Sheet'ka Kwáan +Cape Spencer to Icy Point) | | *296* | *2301* | **2717** |
| Northern Sitka [Outer Coast to Cross Sound] | 1980s | | (Sitka-Yakobi) [1062 (1983)] 2099 (1987) | |
| Khaz Bay | 1965-1969 | 193 | See N. Sitka | |

| | | | | |
|---|---|---|---|---|
| Yakobi Island | 1968 | 30 | See N. Sitka | |
| Kruzof Island (outer) | 1986 | | 106 (1986) | |
| Biorka Island | 1968 | 48 | 106 (1988 @ Necker Islands) | |
| Cape Spencer | 1968 | 25 | 229 (1986) | |
| **Southern Southeast (SSE)** | | *106* | *2167* | **12873** |
| Maurelle Islands | 1968 | 51 | 861 (1988) | |
| Barrier Islands | 1968 | 55 | 243 (1988) | |
| Coronation Island | 1988 | | 1063 | |
| **Yakutat Bay** | 2005 | | | **1582** |
| **Glacier Bay** | 2012 | | | **8508** |
| **North Gulf of Alaska** | 2000 | | | **32** |
| **TOTAL** | | **402** | **4704** | **25712** |

Table 4.1. In the first two decades of reintroduction to selected sites along the outer coast of Southeast Alaska the sea otter population grew by approximately 10-fold. Concerns arose as to what extent this rate of growth could be sustained. Two limiting factors to populations expansion are habitat and food supply. From the late 1960s until the late 1980s, the distribution of sea otter from their translocation sites proceeded in all directions where suitable habitat and prey populations could be found. Suitable habitat included rocky shorelines, eel grass and kelp beds, with some mixed sediment environments from deglaciating bays (e.g., Glacier Bay and Yakutat Bay), preferably without precipitous drop-offs, as sea otters are most comfortable diving between 30 and 150 feet, although mature sea otters reportedly can dive up to 300 feet (see Larson *et al* 2015).

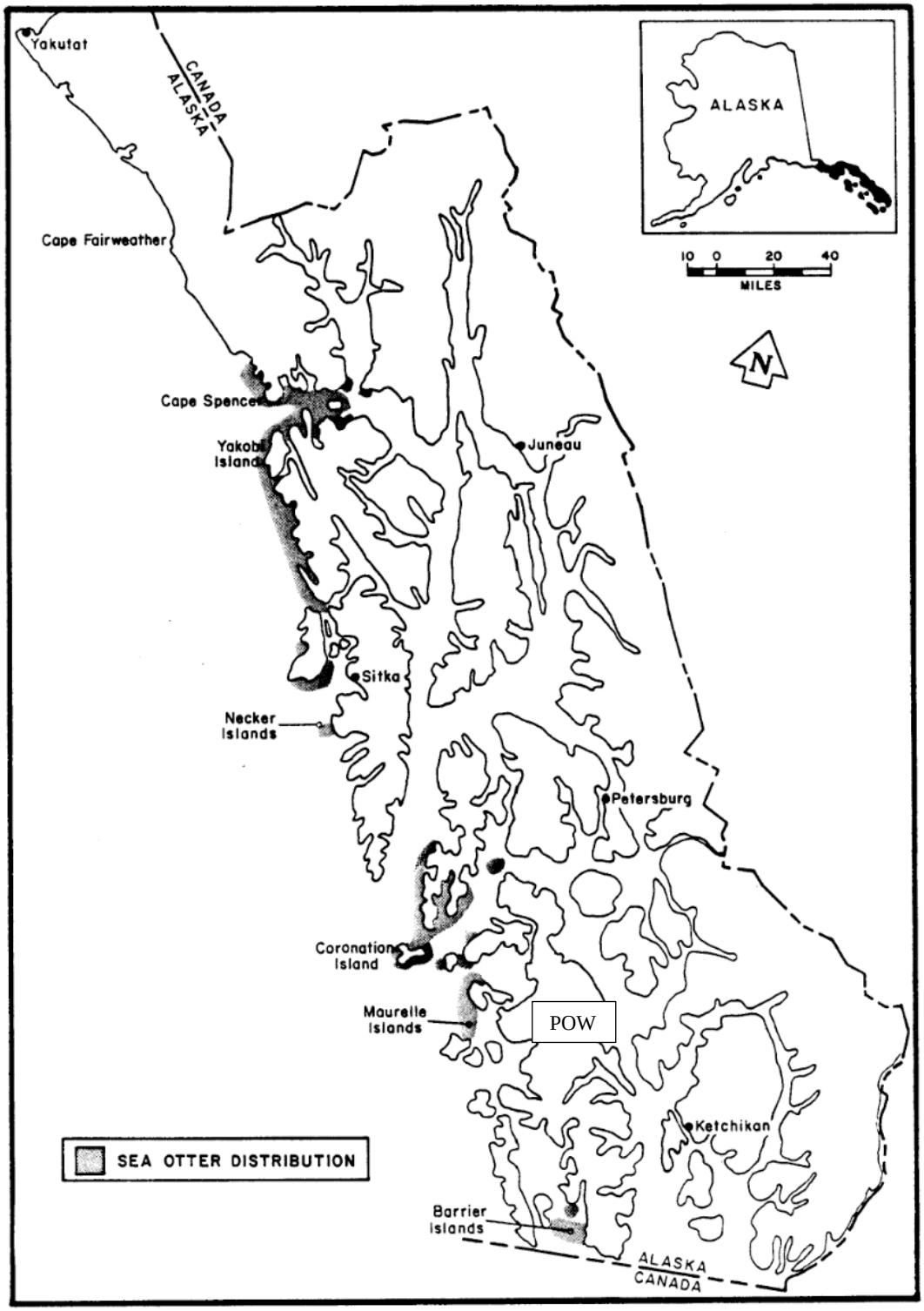


**Figure 1. Distribution of sea otters in Southeastern Alaska, 1987 and 1988.**

Figure 4.2. Distribution of Sea Otter in Southeast Alaska, late 1980s (from Pitcher 1989:4), when concerns from commercial and subsistence shellfish harvesters were first being raised.

Craig hunter Mike Douville suggests that suitable habitat for sea otters is greater on the outer coast of Prince of Wales Island (POW, the large island just east of the Barrier Islands in the Fig. 4.2) than in the greater Sika Sound and outer coasts of Baranof and Chichagof islands, which has led to

greater expansion of the populations in the Hydaburg, Craig-Klawock, and Kuiu-Kake traditional territories from their original Maurelle and Barrier islands (and later Coronation Island) relocation sites. The increasing populations of sea otters in Southern Southeast Alaska in the 2014 census (USFWS 2014) suggests that POW is being colonized by sea otters at rates exceeding those in northern Southeast Alaska, with the exception of Glacier Bay.

**Subsistence and Commercial Concerns with Sea Otter Recovery (1980s-)**

Subsistence hunters, fishers and shellfish gatherers were among the first to provide details on the impacts of reintroduced sea otters on their favored seascapes, beginning in the late 1980s. As Rosita Worl stated, from her work with the Alaska Federation of Natives (AFN) and other organizations concerned with Alaska Native subsistence issues: "We used to have subsistence phone calls, and I was hearing you know, from all parts of the region that the sea otter population was eating subsistence food. And at the same time, I was on the Sealaska Board, and a concern that I had was in rural economies."

Rather than focus on subsistence uses, however, scientific studies put their attention foremost on the impacts on the larger more financially legible commercial shellfish fisheries in Southeast Alaska. Was there a fundamental conflict and potential incompatibility between commercial shellfish fisheries and sea otter reestablishment? Following earlier studies in California and British Columbia, ADFG became interested in this question, especially concerning potential conflicts between lucrative commercial Dungeness crab fisheries in Cross Sound (Hoonah Káawu and the local sea otter population, which was gradually recolonizing bays there, having moved north from Sitka territory on the outer coast. Pitcher and Imamura (1990). The results of these studies found a (negative) correlation between higher numbers of resident sea otters and lower abundance of Dungeness crab, but suggested follow-up studies as the area that was in the process of re-inhabitation. These studies were followed by additional investigations and modeling of sea otter repopulation (e.g., Esslinger and Bodkin 2009; Eisaguirre *et al* 2021, 2023) and economic surveys showing sea otter impacts on crab and other shellfish fisheries.

The McDowell Group (2011 [2005]), a Juneau-based research firm, funded by Southeast Alaska Regional Dive Fisheries Association (SARDFA) carried out the first major studies of economic impacts of sea otters. Their report found that between 1995 and 2011, sea otter predation on Dungeness crabs, geoducks, sea cucumbers, and sea urchins cost the Southeast Alaska economy $28.3 million. The report estimated that sea otters in Southeast Alaska consumed approximately 2.7 million pounds of Dungeness crabs (2000-2010), a half million pounds of geoducks (2005-2011), 3.2 million pounds of sea cucumbers (1996-2011), and 3.1 million pounds of red sea urchin (1995—2005). These numbers dwarf the quotas on commercial catches, which are set by ADFG according to Maximum Sustainable Yield (MSY), leading the report to conclude, as had been suggested earlier regarding commercial red sea urchin fisheries, an incompatibility between large sea otter populations and commercial macroinvertebrate fisheries: "In short, commercial dive fishing and large populations of sea otters cannot coexist in the same waters. In addition, once the commercially viable biomass of crab and macroinvertebrates—such as sea cucumbers and geoducks—is gone, it likely will not return given sustained sea otter predation" (2011:11).

The McDowell report was cited by Sealaska Heritage Institute as reason to support the development of a sustainable sea otter handicraft economy that would directly support hunting in rural communities by eligible Alaska Natives. As a next step, SHI began applying for grants through their Sustainable Arts Program to fund sea otter fur sewing classes in 2010-2011 (SHI's Sustainable Arts Program is discussed further below).

However, the McDowell report's broad and dramatic conclusions have been challenged by some recent scientific studies and Indigenous knowledge. For example, Estes and Tinker (2023:55) conclude that the impacts of the reintroduction of sea otter are variable, although generally more disruptive in Alaska (Prince William Sound) than California (central coast). They attribute this to several factors, including: 1) population (fewer otters, though still densely concentrated around some crab fisheries, in California); 2) bathymetry (deeper nearshore waters, beyond sea otter diving depths, provide a "depth refuge" for California; 3) variation in the larval supply (whereas many Alaska Dungeness crab populations are largely self-recruiting within protected inside waters, California crab populations recruit from "vast larval pools in the offshore California Current ecosystem"). Thus, sea otter impacts on Dungeness crab "may expected to be strong in shallow-water environments and weak to nonexistent in deeper-water habitat" like California (2023:55). Also, missing from the crab and dive fisheries impact discussions is any analysis of the positive fishing benefits associated with the presence of sea otters. Evidence suggests that sea otters can have positive effects on fin fish populations via kelp enhancement, kelp being important habitat for many fish species of value to trollers, seiners and other fishers, such as cod, halibut, herring, rockfish, and salmon (cf. Larson *et al*. 2015).

More fine-grained ecological studies are needed in Southeast Alaska to understand the nature of sea otter impacts at the seascape level across the ecosystems they inhabit, particularly on the dynamics between invertebrate species, sea otter subpopulations, and the human communities that depend upon these marine ecosystems. Some studies of this nature have begun to appear in more recent years, and several are discussed in more detail below (e.g., Gorra *et al* 2021; Ibarra 2021; Leach *et al* 2024; Raymond *et al* 2019; White and Ramondi 2024).

**Response from Alaska Native Communities to Sea Otter Expansion and Impacts**

By the early 1990s, residents of Sitka, Kake, Craig, Klawock and other non-Native communities were publicly commenting on the impacts of sea otter recovery on their subsistence species. USFWS personnel (A.R. DeGange 1992, pers. comm) reached out to the Alaska Department of Fish and Game, Division of Subsistence to better understand the interactions of sea otters and rural community subsistence patterns.

In response, a memorandum on "Sea Otter and Shellfish Conflicts in the Kake Subsistence Use Area" was produced in August 1992 (Thornton and Betts1992). At the time, Kake Kwáan was being recolonized by sea otters, with observed high concentrations (up to 500) in the major bays on western Kuiu Island from the southern end to Washington Bay and in areas closer to Kake. Residents observed that the otters were "cleaning out" abalone and gumboots in choice areas and were concerned about their potential impacts on crab. In addition, they anticipated that sea otters would soon move into Frederick Sound and the area surrounding Kake on Kupreanof Island, causing a decline in local shellfish populations. Elders reported that, prior to the fur trade decimation, sizeable populations of sea otters dwelled in the Kake-Rocky Pass area, and there was general concern that if local populations became reestablished it could significantly impact subsistence harvests of marine invertebrates in the high use areas around Kake, particularly top prey choices for both species: abalone, crab, and clams. Few Alaska Natives were actively harvesting sea otter in 1992 in Kake or other communities, according to community consultations and USFWS tagging records. Production of handicrafts was similarly limited. This situation stimulated USFWS to initiate a series of meetings with tribes and other Native entities to clarify policies concerning sea otter subsistence hunting and uses in the face of rising concerns of the growing Southeast population. Perhaps not coincidentally, with this convergence of attention on the abundance and impacts of sea otter populations, the number of sea

otter hunters registering harvests rose from just 8 in 1992 to 55 in 1994 (Raymond *et al* 2019:16). Many of these hunters were already established marine mammal hunters and significant subsistence harvesters in their communities, who had the equipment, knowledge, and skills to comfortably expand their portfolio to include sea otters.

The issue continued to be elevated through regional subsistence organizations, including the Federal Subsistence Board and USFWS. According to Robert Willard, former head of the Southeast Native Subsistence Commission (pers. comm. 1992-1993), the Tlingit traditionally sought to limit sea otters impacts on key shellfish beds and other food sources by increasing hunting pressure or otherwise driving them out of those areas important to community food security. This also involved coordinated efforts among hunters to prevent sea otters from moving into community food gathering areas. Mr. Willard described this process for his community of Angoon, where he reported that sea otters were actively discouraged from "moving into inside waters." Specifically, special effort was undertaken to limit them from to occupying Kootznoohoo Inlet, the "breadbasket" for Angoon, as well as other important bays along near Angoon.

In other parts of Angoon territory, covering much of the west coast of Admiralty Island and parts of Baranof and Chichagof Islands on the opposite side of Chatham Strait, hunters similarly sought to limit sea otters from consuming key shellfish patches. Ideally, Willard related, the otters would not be allowed to permanently establish themselves "inside" of Baranof and Chichagof islands, in the part of Chatham Strait controlled by Angoon Tlingits, but rather would remain confined to the outer coast. Because otters could be hunted most anywhere in their territory and transported for processing, it is difficult to tell from the archaeological record alone what the distribution of otters was with any given Indigenous territory, but we know from Indigenous oral histories and geographic nomenclature many of the places otters could be found. For example, a small inlet within Sitkoh Bay near Morris Reef and the intersection of Chatham and Peril straits carried the Tlingit name Yáwch' Geeyí, Sea Otter Bay, suggesting their historical presence in this locale. Because Sitkoh Bay was an important salmon fishing and subsistence area, and the site of an aboriginal village, it is assumed that hunters sought to limit the subsistence impacts of sea otter in this bay once it became a Tlingit settlement.

Harold Martin, a Tlingit descendant of Kake and Robert Willard's successor as President of the Southeast Native Subsistence Commission, commented similarly in his testimony to the Southeast Alaska Federal Subsistence Regional Advisory Council (SAFSRAC) on March 17, 1999.

> There is one issue that bothers me in Southeastern Alaska, and that's sea otter. The sea otter, as you know, is normally an outer coast animal, and that's where we want to keep them but it's becoming impossible to do. These cuddly little animals are nice to look at, the tourists love to sea [sic] them. But these animals weigh anywhere from 60 to 120 pounds, and these animals must consume at least 25 percent of their weight every day to sustain themselves. And these animals are not seasonal; they mate all year-round. The problem we're having with sea otters in Southeast is that they eat the same things we consider subsistence foods. They eat crab, they eat clams, they eat sea urchins, they eat the octopus, everything we consider subsistence. And there's getting to be more and more of them on the inside waters. And I know [outside] the Kake area, there's been sightings off Kikahe [Kaigani] Point, Lonnie can speak to this in Hydaburg, I believe that people are having to go further and further from town to get their abalone. I know around the Roland [sic, Rowan] Bay area when I was hand trolling, I used to get my gumboots and there was abalone in that area. Well, there's nothing there now. It's been all cleaned out.
>
> I recall one year we had a meeting in Nanwalek, it used to be English Bay [in Lower Cook Inlet]. And during our meeting we had a big minus tide, so the Chairman called a one-hour recess so we could go down to the beach to look for some gumboots. Well, there's a lot of

sea otter up there and you know, the sea otter, they've cleaned up all these sea urchins, and the sea urchins control the growth of kelp. It was surprising to me because I couldn't get down to the rocks, the kelps were about maybe a foot, foot and a half deep, you just couldn't dig underneath there. So this is the kind of destruction sea otters cause.

Now, I'm not sure what the answer is. I'm not sure how we can keep them out of the inside waters. The last time I talked to U.S. Fish and Wildlife Service person, they stated that it's not up to them to control the populations of sea otters. But they're the ones that introduced it back into our waters. Only Natives are allowed to take sea otters, but there's not really that much interest in the harvest of sea otters. Not that many people are involved in arts and crafts and it cost a lot of money to have them tanned. So I'm not sure what the answer is, we'll have to get together with the Sea Otter Commission and look at this more carefully, but you will be hearing from us on this. (SAFSRAC 1999:136-138).

Mike Smith, now of Sitka but who grew up in Kake, remembers learning to hunt sea otters in the late 1980s and early 1990s around Kake, and seeing firsthand the population grow and the impacts on invertebrates multiply way.

Mike Smith: We did it off and on, you know when the other hunting was slow. . . we'd shoot them because my dad [Henry Smith] said they'd take away all the clams and gumboots. He used to call them 'the rats of the sea.' And sure enough, over in Kake now, they're – most of the gumboots and all the clams are gone.

. . . [We hunted to] keep them from coming in to Kake area. Now, they're just everywhere over there. . .[T]he way I thought of it and the way my dad taught me was, you know, we're helping out our subsistence food, our way of life [by hunting sea otter]. And being able to keep those critters away from, you know, getting into the regions where all of our clams and gumboots and everything were, crab. . .They weren't around town like they are now up there.

Rocky Pass, Entrance Island, that was where we'd notice them really starting to migrate [from the south towards Kake, trying to you know, move into the closer territory. . . We'd shoot them there or out at Keku Point and my dad would skin them out, send the hides out. [And his mother, Katherine would make handicrafts from the tanned skins]. . .Yeah, she knew how to sew skins, make teddy bears and stuff. She didn't go out of her way to, you know, make the prettiest things, but people knew what she was making and stuff. She did very well. [She would take that stuff to AFN Convention and other places] like Celebration. . .But as she got older, her [arthritic?] hands didn't allow her to make them quite often.

Similarly, in Sitka, Tlingit elders, such as Isabella Brady, wondered, with the proliferation of sea otters in Sitka Sound, whether local tribal members will ever be able to harvest abalone again in Sitka Sound (Robi Erickson, Interview). At the same time, commercial fisheries biologists were by 1992 observing impacts on the developing sea urchin fishery at Sitka Sound (see Thornton and Betts 1992) and elsewhere, such as Prince of Wales Island (cf. Bolwerk 2021).

The resurgence in hunting of sea otters as a means of population control and the related handicraft production associated with the practice faced some surprising complications as the number of participants grew. During this time several high-profile sea otter handicraft court cases were brought against Alaska Native handicraft producers whose products were deemed by the USFWS to be not sufficiently "traditional." One of Sitka's most productive Native sea otter hunters and handicraft producers at the time, Boyd Didrickson, was prosecuted by USFWS enforcement division because his sea otter products did not meet inexplicit standards of "traditional" or "significantly altered" maintained by USFWS enforcement division. It was in this context that Sitka Tribe of Alaska (STA)

began to tackle the issues surrounding the hunting of sea otter and other marine mammals through the establishment of the Sitka Marine Mammal Commission (SMMC).

The 1990s proved to be a decade of awakening as to impacts of the recolonizing sea otters, and of revitalization of sea otter hunting in communities across Southeast Alaska.

**Who Defines "Authentic" Sea Otter Handicrafts? Challenging Federal "Moving Targets"**

Boyd Didrickson was a pioneer in sea otter hunting in Sitka and an integral participant in the defining of handicraft production statewide. He is remembered as a local hero for advancing the handicraft industry when MMPA regulations were interpreted by USFWS enforcement division in restrictive ways that hindered Alaska Native participation. He also co-owned an artist gallery/shop next to the Russian Orthodox Church in Sitka, conveniently named "Three Guys by the Church," for many years, where he exhibited and sold a selection of his handmade sea otter products and other handicrafts, including the famous "oosik" mobiles and cocktail stirrers made from sea otter penis bones. He was recognized by interviewees as a skilled hunter and artisan, who taught himself new techniques to develop niche products for the handicraft trade. Hunters and artists also appreciated that Boyd was generous in sharing his knowledge with others, especially in matters related to the legal context of handicraft production. He served on the Sitka Sea Otter Commission from its origination in the late 1980s through its transition to the Sitka Marine Mammal Commission until his death in 2016.

> Reg Peterson: I knew Boyd for about sixty years. . . and when I moved here [to Sitka] in '77 … after being here for several years, we both got involved with something we hadn't even participated in. . . and that was sea otter. . .
>
> I'd never been around that animal, and Boyd and I were learning together, everything about them. We were fascinated with them. They're a totally different creature. It's a mammal, but not like the ones in the woods. So, lot of things we learned. One of them was that when they dive, and this is to their detriment, but when a seal dives, it'll go laterally in, underwater. Sea otter, when he dives, he just goes straight down and comes straight back up. . . So, you can just stay there [waiting for the sea otter to surface] and like seal would just be miles away now. Sea otter, when you shoot at him here, you just sit there and wait because he goes down and he comes straight back up. . . When I first started – Boyd is the one who brought it to my attention: 'Reggie, we don't have to move. We shoot right there. They go down and they come right up, right where they went down.' No kidding. And so, they're a big animal to bring aboard a boat. I mean, they're huge. You grab their legs, or wrist area. That's when you wouldn't want to encounter one of these animals in the water if it got mad at you.
>
> We've had them attack our boat. . . A wounded – come right at the boat growling like a bear and… Felt bad we had a wounded one, and we don't care to have anything suffer. We'd rather it die quick. But to see a sea otter that's alive, wounded and coming at you madder than… And his wrist is bigger than the human wrist. And it takes two guys to bring one aboard, and you push it down water, push it down in the water, 'One, two, three,' and barely get it in, so huge and heavy. We were just shooting the males and we could tell the males because their whole head would be white, and the females, they just stay dark brown, their whole head. It's just the males that, as they age, the brown turns into a yellowish. So, that's how we'd pick out the males in the water. . . The females are . . . not very big, they're small. . . [Y]ou can make a coat or a blanket out of a males more than you could getting a pile of females. The females, we didn't know when they would be carrying pups or having pups, so that's why we didn't want to shoot them.

Became, back in the ‘90s, kind of a delicate subject with State and Federal agencies and the Native groups throughout Alaska. And because of [FWS] litigation with Boyd . . .there’s no clarification of what could be done [legally under MMPA] with the furs; what did the people do a long time ago with the furs? The one that prompted the federal government to take Boyd to court was him making pillows, and they declared that couldn’t be a ‘cultural’ – how do you say. . . Handicraft, made in the traditional manner. And he challenged them that they couldn’t prove otherwise.

And so, they went to court and the court finally realized they were on the losing sides because they could not interpret what was culturally done thousands, hundreds of years back. They could not, with any clarification, state emphatically that Boyd was wrong in making pillows. They finally realized that they couldn’t prove that . . . they never made pillows here, centuries ago. So, after that court case, the Fish and Game [USFWS?] suggested to Boyd that he form a mammal commission, which he did. There was about five of us in the beginning. He came to my studio back in the ‘90s and [asked:] Would I be interested in joining?

I told him, ‘Of course,’ because we’d already been out shooting, hunting sea otter. We knew we could do it [under MMPA] without recourse, without any threat because it was on the books that the only people that can touch sea otter in Alaska were the coastal Native groups. And so, that opened the door for us to go hunting without further ado. And it was that period of time that Boyd got involved that making various things out of sea otter from huge bedspreads to women’s clothing, coats, fashionable coats.

Boyd went out of his way to find out how coats were made, so he bought tons of coats from the thrift store and tore them apart. For several months he’s sitting there in a cloud of thread and dust, just ripping coats apart. I thought, ‘He’s crazy, but he’s right.’ He’s – he had no idea, a clue how a coat was made. So, he literally taught himself how to do the sewing, the interior work, lining. He even created his own label for the coats.

When he started, he couldn’t keep up with the demand of coats. So, that is our involvement with sea otter. And we became the first [marine mammal] commission in the state of Alaska. There are now eleven commissions. And since Sitka was the first creation, all the other commissions considered Sitka the leading component of commissions, and so they told Boyd and all of us at a grand meeting that we’ll be the designated leaders, and everybody will abide by what Sitka makes as rulings.

So, from the ‘90s to about beginning of 2000’s, we were totally involved with each other, a lot of traveling, going between each community. . .

[As an artist] I was just using it [sea otter fur] as a trim, as an adornment. I wasn’t making sea otter products like Boyd was-- sea otter coat, women’s coat, lining, everything, silk lining, large bedspreads. And he’s making a fortune off of both of them. I remember one time, he had a list of five, seven people for bedspreads. . . And he’s selling them at fifteen thousand [dollars] apiece.

A lot of it [the business] was Juneau [buyers]. I remember Boyd was just sewing coat, women’s coats for a whole pile of people for several years in Juneau. Some lady would buy one and right away somebody else would see it, and they wanted one. So, Boyd is busy with all these orders from Juneau. I remember that. When I came to see him, he was – he didn’t even lift his head up [from sewing/crafting]. He was just so [busy].

. . . At first it was by hand, then he started buying leather sewing machines. And like I said, he bought all these coats where he tore them all apart, just to learn how a coat was made.

Even the fur coats, and he didn’t realize even a mink fur coat, how much they take off the inside of the fur, fleshing it. So, he bought a fleshing machine where you just slide it over the table and this blade slices it thinner and thinner. . . so it’s real thin.

[Shearing of the outer fur also?] Everything, yeah. He was doing it in a professional sense, and when he got his first sewing machine, I remember him all excited, coming over to my studio and asked me to come over and see it. He had just sewn full-bore there. So, he got into it very serious. And probably the only person in Sitka that was producing nothing but otter products for about five years. …

I forgot about his [hanging] mobiles. When I first saw that, my first thought was, 'Where the hell did you get this idea? . . . [trying to think of the famous, portly artist who has 'mobiles all over the world']. They're beautiful mobiles. When Boyd showed me his I was . . . I couldn't believe he had little sea otter penises and then making a mobile of them. Oh geez. But they sold! Who would buy them? But people on this earth have great taste and questionable taste and . . . I asked him . . . 'Boyd, do they know what his really is here hanging?' (laughs) I think he said, 'My first one I sold, I didn't want to tell them. The second, I decided I should tell them.' . . . In his little house, he had about three or four hanging there. Like I said, we'd go in various directions of art ideas. And when he got that, I didn't know what to think. I almost wanted to tell him, 'Stick to your pillows!'

[W]hen we went to Santa Fe [Indian Market], we'd be exposed to all these different concepts of art. So, I'm sure that's where he picked it up. Even I picked up ideas for art from Santa Fe, by the other Native artists doing something in wood that I never thought of. . . And that's all art is, is ideas stolen from each other.

He was going in various directions, and after he did about five, seven years of sea otter products, he went into ivory. Started going north for ivory. Then we he went north, too, that's what he would take up with him, would be about ten furs, [sea otter] pelts.

And he'd visit these villages, and he would bring up – he would – like the previous year, he'd get a list of what they needed; bullets, outboard motors, tools, rifles, baby diapers. So, all these villages, he visited three of them at a time, and he would have a list of everything that they would need, a lot of Coleman lanterns, various things for family. What he would do down here is he'd buy all these children's clothes and when he went north he'd give all the children all these clothes for free. It was just PR to have a good relationship with the people. And he knew the way they get good relationship is through their children, so that's why he took all these [clothes for children]. He'd buy them at the thrift shop, box loads full of everything. He'd go to the grocery store and get boxed loads of diapers, baby formula, bullets from the sporting goods store; he'd have a list of bullets that they needed. Skinning knives, maybe somebody lost their skinning knife and they'd ask Boyd if he was bringing another skinning knife. So, tools, you know, just regular mechanic tools. . .He would go up there with box loads of stuff. . .loaded on planes and they'd take several hours to just unload, you know, get all this stuff oriented. And he'd have them in several houses. And everyone knew when Boyd was in town, now everybody's coming over with ivory to trade.

That's how he did business. He'd ask them if they wanted cash or did they need clothing, or whatever. Sometimes they had enough material that maybe they just needed money. So, he'd take up a few thousand dollars with him, and he – because he wanted to accommodate everybody in the village. So, and they all knew this too, that they'd get free children's clothes from Boyd when he'd come to town because kids are growing like, you know…He was bright about that. So, and he knew how to get on the good side of the people up north, and that was through their children.

[What villages?] Shaktoolik, Kotzebue. He'd go to Diomede Islands. When they moved to the mainland, he moved with them. But he went out to the island for about three different years.

Today, Boyd Didrickson remains an inspiration to many Alaska Natives who followed his trail into the sea otter handicraft market and the making of innovated products of interest to contemporary buyers. He is admired not only for his artistic skills and pioneering handicraft manufacturing, but also because he was willing to publicly push back against the ethnocentric, inconsistent, and ambiguous interpretations of "significantly altered" and "authentic" that reigned among USFWS officials enforcing the 1972 MMPA. This included going to court to defend Alaskan Native rights to define their own handicraft culture.

Initially, in 1986 Didrickson joined an earlier case brought in 1985 by Marina Rena Katelnikoff Beck, an Aleut Native of Kodiak Island, which had challenged USFWS's regulatory requirement that "handicrafts made for sale be of a type "commonly produced on or before December 21, 1972," when the MMPA was passed. (She had apparently made a teddy bear with a "growler" noise mechanism inside that was activated upon handling, according to Lee Kadinger.). The impetus for Didrickson joining her case was USFWS' confiscation of a hat and parka that he had crafted from sea otter fur "because they contained metal snaps and zippers, which did not qualify as traditional, according to the USFWS' interpretation of MMPA. Didrickson's parka and hat were later returned to him, after the USFWS regional director issued a memorandum stating that traditional parkas could be made from sea otter pelts and could be sold by Alaska Natives. However, Didrickson was also informed by the USFWS that the offer for sale of some of those items to non-Natives would continue to be illegal. The government was joined in its case by environmental groups including: The Friends of the Sea Otter, Greenpeace, Alaska Wildlife Alliance, and the Humane Society of the United States, while the Alaska Sea Otter Commission aligned with Didrickson and Beck.

After Didrickson filed a motion to intervene which was granted, the case took a number of interesting turns, as follows:

> II. . . [On July 21, 1986, the [Federal District] court granted the Government's motion for partial summary judgment and upheld the regulation. The district court found that Congress's intent in passing the native handicraft exception was to protect existing "cottage industries," but not to encourage "a greatly expanded cash economy" based upon those industries. Katelnikoff v. United States Dept. of Interior, 657 F.Supp. 659, 665 (D.Alaska 1986). The court held that the USFWS regulation was a reasonable interpretation of the statute and thus was valid. Id. at 667. . .
>
> The Government sought dismissal of Didrickson's action, and Didrickson amended his complaint to allege that the regulation approved by the district court was void for vagueness. The Government moved for dismissal again, but the district court denied the motion and advised the Government to review administratively the regulation as it applied to the taking of sea otters. The judge was concerned with the requirements that the items be "commonly produced on or before December 21, 1972." He described the Government's position on what uses of sea otter pelts were permissible as a "moving target," and expressed "doubt ... that the Government has fully and adequately considered the possibility of establishment of bona fide, eighteenth century uses of sea otter pelts which would not be precluded by the clear language of 50 C.F.R. § 18.3."
>
> The Government began a review of the regulation by publishing a proposed amendment to the regulation, to ban all takings of sea otters for purposes of creating handicrafts or clothing for sale, on the ground that Alaska Natives had not "commonly produced and sold handicrafts or clothing from sea otters within living memory." 53 Fed.Reg. 45,788, 45,789 (1988). The litigation was stayed pending issuance of a final rule.

After extensive hearings in which the Alaska Natives and the FSO participated and submitted evidence, the USFWS amended the regulation on April 20, 1990, to provide in effect that items created in whole or in part from the sea otter did not meet the exemption from the MMPA. 55 Fed.Reg. 14,973 (1990). The USFWS based its conclusion upon the finding that "no handicraft trade using sea otters by Alaska Natives was in existence prior to passage of the Act that would allow the utilization of sea otters under the handicraft exemption." Id.

III. The Alaska Natives vigorously contest this factual determination on the basis of extensive evidence of centuries of use by Alaska Natives of the sea otter for many purposes, including clothing, handicrafts and items of barter and trade. They point to the fact that after the Russians' occupation and their discovery of the uses of the sea otter in 1741, the Russians, using the Alaska Natives to harvest the sea otter, banned the sea otters' use by Alaskan Natives. This restriction continued after Russia sold Alaska to the United States, as a practical matter, because their American traders who dominated the sea otter fur trade acted just as the Russian predecessors had. Through excessive hunting of the sea otters, they virtually became extinct by 1899. From then on, various restrictions by the United States on the harvesting of sea otters precluded Alaska Natives from using sea otters as they had done for centuries. The Natives point out that for centuries the sea otter had been an intrinsic part of the subsistence way of life of the Alaska Natives. The sea otter had been used for items of clothing, rugs, blankets, bedding, and items of handicraft that were traded and bartered by the Alaska Natives. The centuries of use were interrupted during the period in which Natives were banned from using the sea otter by the Russians and, in turn, by the United States prior to 1972. The Alaska Natives point out that although once virtually extinct, the sea otter has rebounded in recent times to the point that the USFWS now estimates the current sea otter population has regained, if not exceeded, its historic levels of 150,000 to 200,000 animals. 50 Fed.Reg. 49,577, 49,579 (1985).

The pertinent part of the regulation, as amended, reads: “Authentic native articles of handicrafts and clothing means items made by an Indian, Aleut, or Eskimo which (a) were commonly produced on or before December 21, 1972, and (b) are composed wholly or in some significant respect of natural materials, and (c) are significantly altered from their natural form and which are produced, decorated, or fashioned in the exercise of traditional native handicrafts without the use of pantographs, multiple carvers, or similar mass copying devices. 50 C.F.R. § 18.3 (1991) . . .”

Didrickson filed an amended and supplemental complaint challenging the regulation, and Katelnikoff Beck filed a complaint in intervention. The Alaska Sea Otter Commission filed a separate action also challenging the regulation; that case was later consolidated with the Didrickson case.

The FSO [Friends of the Sea Otter] were permitted to intervene as defendants in support of the regulation pursuant to Fed.R.Civ.P. 24(b). Both sides moved for summary judgment, and the court struck down the amendment to the regulation, holding that "part (a) of 50 C.F.R. § 18.3 and the portion of 50 C.F.R. § 18.3 that expressly relates to sea otters are each inconsistent with the [MMPA] and are invalid." Judgment, Sept. 9, 1991. The court determined that this part of the regulation that excluded any handicrafts made from sea otter was contrary to Congress' express definition of "authentic native articles of handicraft or clothing" in 16 U.S.C. § 1371(b)(2), 796 F.Supp. 1281.

> The Government filed a timely notice of appeal, but later moved to dismiss its appeal. The motion to dismiss was granted on March 30, 1992 (United States Court of Appeals, Ninth Circuit 1992).

With the Government's abandonment of the appeal, the new regulations that USFWS had promulgated to restrict sea otter handicraft production were nullified. Perhaps the most objectionable finding ultimately undermining the USFWS' attempt to regulate sea otter handicrafts out of existence was its curious claim that "no handicraft trade using sea otters by Alaska Natives was in existence prior to passage of the Act [MMPA] that would allow the utilization of sea otters under the handicraft exemption" (Ibid). This is clearly false, as detailed in sections above, but it was also a willful denial of a cultural keystone species' role in a vibrant Indigenous economy that was only made unsustainable by colonizers' all-out pursuit of sea otter to the point of extirpation in the Southeast region.

In rejecting this claim, the court's judgement was definitive but also focused less on colonial history than the MMPA's language and intent: "Neither the statute nor the legislative history [of MMPA] reveals any intent to exclude sea otters, or any other species, from Native uses. Application of the 1972 cut-off results in the artificial and unintended exclusion of any uses of sea otters or other natural materials." (United States Court of Appeals, Ninth Circuit 1992). The court further determined that "The USFWS is not without other authority to regulate any excesses in the takings of sea otters or other marine mammals," including conservation imperatives. Unfortunately, however, a door was left open for USFWS to pursue another wedge of ambiguity within the MMPA's language to restrict sea otter hunting and handicraft production, namely the meaning of "significantly altered." This issue is discussed further below.

Victory in the Didrickson case not only brought some clarification regarding the definition of 'significantly altered' sea otter products, it also emboldened other would-be Alaska Native sea otter hunters in Sitka and elsewhere to pursue subsistence opportunities. As Reg Peterson suggested, it also benefitted Boyd, as after winning his several court cases against the federal government, "It got to the point where Boyd was hands-off. They didn't even want to touch him" after many years of pursuit. In fact, "the judge in the case reportedly asked him what he wanted from the Government, after his victory in court, "'Only one thing,' he says, 'I want that head [of] Fish and Game [Wildlife?] in Anchorage to come to Sitka and knock on my door and apologize.' Which, that judge told him to do. He did." Reg Peterson notes that, although Didrickson prevailed in the end, it was a costly victory, in terms of legal fees and other stress. "Boyd was just grief stricken with this 'pillow case' because he didn't know whether he could win. And it drug on and drug on. And he kept having to go to Juneau, and finally he came to my studio one day and he says he won. And I was amazed. 'You won?' He says, 'Yeah, I won. I won. Now, I'm just going to wait for head game man from [FWS enforcement in Anchorage] – he's ordered to come to my home and apologize' . . . [It] got to the point where they knew about it [in] Washington, Congress, they knew about this case because there's a big interest in sea otter fur."

Two hunters who really appreciated Boyd Didrickson leadership in defining Alaska marine mammal subsistence rights, when they were learning the sea otter trade, were Robert Miller and Shawn Chandler.

> Shawn Chandler (Sitka): Yeah, so you know, starting out, it's really – it really is intimidating because you know, the hide that you get is worth so much and you can destroy that hide if you don't know what you're doing. And when I first started out hunting, I did get hides tanned, but I didn't even know where to begin because there was no one teaching at that time and I was using a pair of scissors to cut the hide, you know (laughs). And so, it totally destroyed the fur. And so, having someone in the community that can . . . teach you right from the beginning,

where to start. You know, here in the next ten years, there's probably going to be, you know, skin sewers everywhere and more hunters that are willing to get into this trade because right now there's not, besides Robert, I don't know of anyone else that's willing to teach it in Sitka alone. And so, you know, just starting out hunting, that's a trade in itself. That's how I got started. I started working for Boyd Didrikson. . .

I don' t know how he got started with that, but you know. . . He's like the grandfather to all this!

He fought for like nine, ten years, to be able to even collect you know, sea otters. And so, we definitely owe it a lot to him. . .

[On avoiding waste and pushing the boundaries of significantly altered] [W]hat he would do, he'd give me five bucks extra to keep the sea otter *oosik* [bacula or penis bone] … And what he would do would make cocktail stir sticks for the tourists (laughs). And people loved them! He was – you know that guy thought outside of the box. . . And he knew people all over the state and they were always ordering for that. And you know, it was the darndest thing, but . . . all he would do is boil them and, you know, get all the flesh off, and then put them in a cup and sell them as [swizzle sticks]. And the tourists just ate that up.

Robert Miller: And that is a prime example of Boyd pushing the limits …
I think the feds actually got scared of Boyd over time and they stopped messing with him because he was selling patches of polar bear fur and just drilling a hole and putting a key chain thing on it with no backing or nothing. And I called the feds and said, 'Can I do this?' And they go, 'No.' But I go, 'But Boyd did.' 'Well, we kind of a have a history with him, so we kind of let him go a little bit.' And that was a true story on a call I made.
. . .
[On his use of zippers, etc.]: Yeah, zippers and buttons and I mean, if they wanted to get me, I would be in jail so many times. But they just – you know, he [Boyd] set the precedent on a lot of that stuff for us and allowed us to do that.
. . .
Shawn Chandler: Yeah, really, you know, just like Robert said, I think he always wanted to push the limit. . And it showed with everything he did because he would go all the way up north just to get stuff like this and meet the people there, but he also brought gifts with him. And so, whenever he would go up there, he'd bring clothes and stuff that you can't get [in those remote communities]. And so, he was always pushing it to the limit, but he knew what to bring to the people to, you know, be able to even push it to the limit. And I really enjoyed that about him, because he was a successful man and it's sad that he passed on. . . He never stopped, and that's the reason why we get to hunt today.

Robert Miller: I never experienced what Boyd and them went through because they were the true warriors fighting the feds to get us where we're at today.

Other handicrafters also appreciated Boyd's pioneering efforts:

Ilegvak (Peter Williams)(Sitka): There are some pretty funny stories about Boyd. . .He put like dog food or food on top of his van when he'd drive through the village so the ravens would always follow him. … I had some conversations with Boyd. It was more of him inspiring me, you know, it was more of him, through his work, through what he accomplished, through . . . his court case opening those doors for me and having that respect for someone who did that. … that was huge for me. You know, that was very formative, but it wasn't, 'Let's hang out. Let's

have some coffee. Let's talk about the business or industry, or let's talk about culture. Let's talk about technique.' It wasn't that, but it was just as important, if not more important. And there is something to that, kind of like has moved me when I hear some people be like 'Hey, you inspired me. What you did in fashion week inspired me to do this thing.' And just like, 'Wow, that's awesome!' So, I kind of look at that and … what I've done and what I do is trying to also give back, or to pave ways and make things a little easier for other people. . .

Mike Miller (Sitka): [on how he got into sea otter hunting in the early 2000's]. [T]hey [sea otters] were here [in Sitka Sound] and . . . the laws had been a little bit better defined because of Boyd Didrickson's case, and I knew Boyd. And we started seeing them a lot more in the far north areas of the local waters. And so we just started doing some harvesting. I had some friends that were going to college here [at Sheldon Jackson] from Northern Bering Straits region, and they were really interested because everybody knew in their villages that skin sewers wanted sea otter but really had no way to get it. [At that time only Didrickson and a few others had begun to sell skins to Native sewers northern Alaska communities].

Steve Johnson (Sitka): [Boyd was active] from the early '70s on until early 2000s.
He faced numerous charges over the years, and . . . a big part of our case law now is directly because of . . .those charges and the legal outcome of them [i.e., no convictions].

Boyd Didrickson's fight for the right to hunt sea otter and for self-determination in designing contemporary handicrafts became an inspiration to other hunters and artists throughout Southeast. In addition, his court cases were a driving force for the development of organizations like the SMMC and the statewide Sea Otter Commission to advocate for subsistence rights under MMPA and to seek a greater role in (co-)management. Many sought his advice directly in efforts to achieve greater clarity on handicrafts.

Christy Ruby (Ketchikan): [M]y favorite one was Boyd Didrickson. You should look up his court cases. They're fun. He's a rusty old codger. . . [People told him,] 'Boyd, I don't think you're allowed to make placemats out of sea otter.' (imitates Boyd making curmudgeonly noises.) 'Alright, well I think they don't want you doing that. And no more swizzle sticks either.' So, I met him, and I'm like, 'You're my hero. You went up against the feds four times and got busted four times, and you still keep doing it and you know. So, you're invited to the meeting, but I want you to put your different hat on. When you go through that door, you don't hold any grudges against the feds, because we're trying to make a change this time. And we need all your cooperation even though I admire what you've done in the past, we need to have you have an open mind because we're going to do this; we're going to change this. He goes, 'Alright. Just for you.' So. He was really cool.

The meeting went well. It could have done a lot more, but we were – we had Slow Mo at the front of the House there, so it took forever. I had more questions. We did ask a lot of questions and an eleven page handbook was produced, finally, of what they considered 'altered,' what the hunting laws were, what they would incarcerate on, and plus…[some of us also wanted a statement] 'that proved that they were [had been] harassing us for forty years, entrapment [which was not included in the handbook, but is reflected in the minutes].

The statewide Alaska Sea Otter Commission, formed in December of 1988 to promote Alaska Native voice and involvement in management and policy decisions regarding northern sea otters, also supported Didrickson's legal efforts to seek clarification on sea otter subsistence rights.

Boyd Didrickson lived to see the tides of enforcement turn--through his legal victories over USFWS, his input into the Marine Mammal Commission's statewide workshop of clarifying the language concerning "significantly altered," and finally in vocalizing his determination to stand up against a misguided culture of enforcement. In a meeting with the USFWS Director Dan Ashe and other hunters, artists, and commercial divers, held in Sitka in August 2012, he summed up his experience:

> Seven years, thinking I was going to go to prison, because you guys told me I broke the law, because I put a zipper in my coat, and I put two snaps in my hat. For seven years I was scared to death. . . "You busted me three times on three things. . .And I won every case. It's just that it's 'significantly altered.' I know what that means." (in Ronco 2012)

He was also a champion of developing a local tannery to facilitate the processing of skins and stimulate the local handicraft industry (RC).

**The Establishment of the Sitka Marine Mammal Commission (SMMC) (1995)**

Concerns over the impacts of rising sea otter populations, limited hunting response, and the management and enforcement issues emerging in the context of subsistence production of sea otter handicrafts (see discussion of Didrickson and other cases), stimulated the establishment of the Sitka Sea Otter Commission by STA in the late 1980s.

The mission of this body was "to manage sea otter populations for the benefit of the indigenous people of Sitka. In cooperation with the Sitka Tribe of Alaska, and according to the customary and traditional uses of the indigenous people of Sitka, the Sitka Sea Otter Commission will manage harvests in the Sitka Tribe's sea otter management area." The overarching aim of the Commission was further "to strive for a balance between maintaining a sustainable sea otter population and providing beneficial use opportunities for Alaska Natives" (STA 1988).

Key objectives for Sitka Territory (Sheet'ká Kwáan) included:

- Maintain a sustainable sea otter population in the management area
- Maintain a viable cottage industry and ensure cultural uses of sea otter for arts and crafts
- Protect local subsistence shellfish resources from sea otter predation
- Work to reduce conflicts with other user groups
- Coordinate and maintain research activities on sea otter biology, habitat, and human impacts

Concerns surrounding marine mammals continued to grow, and as a result, the Sea Otter Commission expanded and transitioned into the SMMC by 1995 (STA 1995) with a mission as follows: "The Sitka Marine Mammal Commission documents the use of marine mammals in the traditional territory of Sheet'ká Kwáan, establishes guidelines for the take of marine mammals consistent with the Marine Mammal Protection Act of 1972 as amended, and monitors compliance with these regulations. All Alaska Natives who reside within Sheet'ká Kwáan are considered to be members of the Commission; members elect nine commissioners. The purpose of the Commission, further defined in Ordinance 95-10 (see Appendix D) issued by the Tribe is to conserve, protect, and regulate marine mammals "consistent with the tribe's customs and traditions" under the MMPA and STA's status as a sovereign tribe with stewardship responsibilities for culturally important species within its traditional territory. Although it concerned all marine mammals, the main concern continued to be the expanding population of sea otters, which was beginning to draw negative attention from commercial

shellfisheries and concern from other interests, including a wider range of tribal members. A set of governing bylaws was put in place for the selection and appointment of nine commissioners, including a chair, vice-chair, secretary and treasurer, as well as a position of harvest monitor to record marine mammal takes and other data as relevant. Early commissioners included Boyd Didrickson (member), Reg Peterson (Secretary), Mike Miller (Chair), Dan Marino (Vice-Chair), and John Littlefield (member?), among others. Diana Reidel also served as Vice-Chair during her time in Sitka around 2010.

It was important to have both hunters and artisans on the committee to address concerns over subsistence uses.

> Reg Peterson: I've been an artist my entire life. I studied art in Chicago and had various tutors, master artisans over the years helped me in what I pursued in life and that was Northwest Coast art. And I do large-scale totems, all the way down to jewelry…. I never got into sea otter products per se, it was just a trim, adornment, pieces of stripped [fur]– I did part of a mask, whatever. Or helping somebody create their vest and where to put the fur and all that. So, I'd help out the women with designs and designing hats, putting the design on a woven hat. [Otherwise], I was tied up with a lot of – just trying to learn totem carving. . .
>
> [Regarding the work of the Commission. . .] Mike Miller, he did all the traveling. Boyd introduced him to a lot of the villages up north and the hunters. And then our committee, mammal commission, Mike Miller did all the [coordination] - keeping us all on the same page by traveling to the interior, to the coastal communities for a long time, many years.
>
> What we found fascinating back in the '90s, and it could cause us concern, was one, the commission group (members). . . from the Pribilof Islands, they declared at a meeting we had down there, annual meeting, that killer whales were now eating sea otter, which they've never, ever seen before. And right then and there, we all realized one thing that could make that happen would be climate change. The world is changing so much that killer whales are pursuing this furry little animal to eat because it's not getting enough sea lions or seals or salmon. . . Our evaluation of what was happening was that it has to do with the climate change. And this is late '90s, like '97 or '96, that we discovered this. It is quite alarming to hear because we all knew that killer whales had never had anything to do with sea otters.

By the early 1990s, the impacts of increasing sea otter populations had begun to attract the attention of commercial fishers, especially those in the crab and dive fisheries (for abalone, sea urchins, geoducks, etc.), who felt that invasions of sea otters were damaging their livelihoods. This spurred broader discussions regarding management needs and expanded sea otter hunting.

> Reg Peterson: We'd have various people in the different professions – some are just local people, come to our meetings to encourage us to shoot more. I remember. . . Herman Kitka [Sr.] . . . He came to one meeting. . . 'What's he doing here?' [I'm thinking] because he wasn't part of our group. . . Because he's a favorite [elder] in Sitka, I thought, 'Oh, boy, we have a treat. Herman's here with us tonight' . . . The meeting started, and he came to plead with us to go shoot more otter in this area. He said . . .his family had a secret spot for clams. They'd go there for centuries. . . And he said he went out there and he couldn't believe there wasn't a clam anywhere, just all these shells from sea otter. . .. 'I want you guys to go out there. I can't believe . . . our family spot for generations, and not a clam there.' He was just outraged. So, that happened several times.
>
> Fishermen, trollers, they'd come to our meeting. 'You know, I'm out fishing and…' They'd have problems with seals, sea lions and – what can you do? . . . Because under our commission, we're to manage and keep the profile on not just sea otter-- spotted seals, sea

lions and sea otter was under our jurisdiction. The fourth one, . . . they [federal managers] wanted to see if we would take killer whales under our jurisdiction. We told them, 'That's a little too far. . . We're having a hard time keeping up with sea otter and sea lions and spotted seal. . . what they wanted [was] necropsies and all of this [and for] us to manage it. So, we had to have a scientific group, a lab and everything. So, we had to learn all of that – take samples from the sea otter, where to find the sample on them. So, anyway, there was a lot of learning done and a lot of interests were being revitalized then. So, various groups would come to see us at the Commission to see if we could help out with [protecting] their [fishery or other interest from sea otters] . . .[; They] realize that maybe the Commission could help out, so they'd show up.

A major step for the Commission towards achieving its objectives was to develop a sea otter management plan for a local sea otter population that exhibiting a rapid 13-15% estimated annual population growth (STA 1995; Appendix D). A draft management plan was published in 1995 and shared throughout the region for comment. Key provisions included:

- Harvest boundaries: Corresponding to Sheet'ká Kwáan traditional use areas
- Harvest guidelines: Total harvest not to exceed 6.5% in the management area
    - No hunting of females with pups.
    - Hunters are encouraged to target adult males.
    - Harvests in individual areas may vary depending on the designation for the area.
    - The harvest ratios of male to female and sub-adult to adult will be monitored through the tagging program. In-season management measures may be taken if tagging data indicates a high harvest of females or sub-adults.
- Eligible participants: Alaska Natives of coastal communities (per the MMPA) to
- Local permit, tagging, reporting system: to ensure eligibility and timely collection of harvest data (via tagging)
- Harvest limits: only if total harvest guideline is exceeded or near a maximum
- Designated areas: "In complying with certain management objectives (e.g. protecting shellfish beds) areas may be slated for different harvest targets (e.g. intensive harvest zones, no-harvest zones). Designated areas may be changed due to changes in sea otter migration patterns, or human concerns. Designated areas will be identified on a map and made available to hunters."
- Use and sale of pelts sold, traded or bartered to other Alaska Natives; altered for sale to non-Natives (per MMPA; no mass production of sellable art or cottage specialization in the production of sellable art).
- Enforcement: based on voluntary compliances with judicial adjudication and penalties for non-compliance determined by Sitka Tribal Court and the Tlingit and Haida Central Council Tribal Court.
- Cooperative Agreements: with USFWS on sea otter surveys and biological research; Federal (638) contracting through STA to manage tagging operation; collaborate with ADFG, Div. of Subsistence to secure research funding; STA to purse grants to manage program and for research.

The Sitka Tribe shared their plan with other Southeast Native communities and encouraged them to prepare their own management plans. Several communities did, including those at Kake and Klawock, following Sitka's basic template.

The provisions of the plan were based on input from Indigenous hunters and other experts, and the explicit harvest guidelines were helpful for hunters new to sea otter hunting or wanting to support

the tribe's efforts to promote responsible hunting, subsistence uses, and management of the Sitka territory's sea otter population for eligible hunters and artisans. Many hunters appreciated the harvest guidelines as expressions of Indigenous hunting ethics; for example, one commented: "[T]here's definitely a code of conduct that we follow. And seeing a mom with pups, you know, we'll definitely leave those alone" (Shawn Chandler).

Many tribal members appreciated the tribe's support of local hunters with information and, as appropriate, advocacy regarding their subsistence rights.

> Robert Miller: I shot my first three otters – I remember doing this vividly, and brought them back and … I was completely intimidated after I got them because I thought I was going to go to jail. I knew I was legal – I was one-quarter Alaska Native or more – [but it] scared the hell out of me. It wasn't long after the whole Sitka Tribal tannery thing [FWS sting operation in 2008] went down and a bunch of these big, giant federal marshals, bigger than me, came pounding on people's door and their kids are answering and they're intimidating the shit out of them, because I've heard all the stories; were having Christmas dinner with people and then trapping them. You know, those are stories that really happened in town.
>
> Or people getting taken to court because they put a button in a piece of fur. You know, thank God those people were true warriors for our people and fought it and won those battles, a lot of them. You know, they're our – soon as Alaska became a state, and then when the Russians over and enslaved us before that, we were just who we were. We've had to rebuild ourselves to even get close to being back to that. And that's been real difficult. And so, when you have federal oversight, and you hear these stories – now I've never had a problem with US Fish and Wildlife federal marshals because I'm really careful and it scares the hell out of me to be quite frank. So, I just cross my t's and dot my i's and so I can sleep at night. I have kids too, you know. I don't want to be in – made an example out of and get sent to a high security federal prison in New Mexico like our friend Mike Smith did here, because someone befriended him for a year, invited him over for dinner and then he sold him that [fur], because he thought he trusted him, you know. Those stories scared the hell out of me.
>
> . . . I've never had an issue with them because I think I feel like they've settled down quite a bit in the last ten years probably. I also feel like there's a lot of warriors in Marine Mammal Commission, Sealaska Heritage Institute, and a bunch of people that have gone to war for us, to do this. And so, I give them a lot of props, a lot of respect too. But I like to feel like I've been that warrior since I've been in it too, because I've worked hard [to respect the law]. You know Facebook banned a hat sale post of mine like eight or nine years ago. If you Google 'Robert Miller, fur hat.' It went viral around the world in ninety-seven different countries because… You know, and Sealaska helped me with that. You know, we got Dan Sullivan and Lisa Murkowski on the lines, and it got big.
>
> [Facebook banned it] . . .because it was fur. They say no skin sewing, no skin stuff or anything like that.
>
> Now, I have a Facebook page, my business page. They don't seem to mind it on there because I think they – for advertising, they make money off me on that.

While no designated areas for hunting (or no hunting) were formally adopted by the Sitka Sea Otter Commission (or the later Sitka Marine Mammal Commission,) the Commission did report on changing patterns of sea otter abundance, distribution and feeding behavior in Sitka Tribe's traditional territory, especially Sitka Sound. This is consistent with one of Pitcher's (1988) recommendations concerning expanding sea otter populations, namely to monitor their movement into Sitka Sound as the Biorka Island-Necker Bay population merged with the rapidly southward expanding Khaz Bay population, which was already colonizing the outer coast of Kruzof Island by the 1980s. According to

hunters interviewed for this project, expansion of sea otter populations that began in the 1990s continued apace through the first decade of the 2000s. Wade Martine remarked: The first time I ever saw a sea otter around here was in the early 1980s, around Cape Georgiana, Salisbury Sound. . .”And it wasn’t long after that we started seeing them closer to town.

**Sitka Tribal Tannery: An Investment in Sustainable Handicraft Development (2005-2020)**

A significant relationship for Alaska Natives entering the marine mammal handicraft trade is with a tanner. While some traditional tanning techniques are still practiced in places, these techniques are generally laborious, time-consuming, and may create challenges in achieving uniform quality and commercial standards. Thus, nearly all subsistence users of sea otter pelts seek to have them professionally tanned.

In the late 1990s, Southeast Alaska was without a fur tannery, and hunters and handicrafters had no choice but to send them to Anchorage or out of state (including California, Idaho, Montana, New Jersey, and Washington) or even to Canada. Tanneries are typically small businesses that can struggle to cope with spikes in demand for their services and must be registered with the federal government to handle sea otter. The expansion of sea otter harvesting brought a more robust stream of raw sea otter skins into circulation, but without a comparable expansion of tanneries. This often led to long wait times (up to a year or more) to get furs back due to tanners’ limited capacities.

Additional factors complicated the process of tanning with the growing number of sea otter hides being submitted to tanneries. Quality could be uneven for species that tanners had limited experience processing. Professional tanning also is expensive, with sea otters currently around $150 a pelt plus shipping and handling and seals between $400 and $800 a pelt, depending on size. As a result, hunters and handicrafters considering working with or selling tanned pelts are faced with significant upfront costs, such as fuel for boats, bullets for firearms, significant time put into hunting, butchering, skinning and professional processing at a tannery, before they can realize a return on their investment as a tanned pelt or begin to produce a value-added handicraft.

Recognizing the difficulties their local sea otter hunters and artisans were facing, Sitka Tribe saw the development of a local tannery as an opportunity to reduce the expenses and wait times for getting skins tanned and to build local capacity and jobs to support a sustainable marine mammal fur economy. They applied to the federal government through the Administration for Native Americans (ANA) program and received their first grant through the Economic Development Administration (EDA) under the Department of Commerce to establish and equip a local tannery. Among other components, their proposal needed to have a business plan to project how the tannery would develop and impact the local economy over 10 years. STA received their first EDA-SED (Social and Economic Development Strategies) grant in 2004 to establish the physical tannery in a suitable building and furnish with the necessary equipment to get it up and running. In 2006 STA received a second EDA-SED award for $248,167 to further support development of the handicraft sector through a Sitka Tribal Artist and Small Business Development Certification project designed to “provide the skills and training necessary for the tribal citizens to capitalize on integrated opportunities. . . through two tribal arts-based businesses”: 1) “Made in Sitka”- a tribal artists cooperative and 2) expansion of the Sitka Tribal Tannery to co-house this effort. Through this grant and other funding, the tribe was able to purchase a building large enough to house the tanning facility, and space for artists’ work and classes.

> Robi Erikson: I started to work at Sitka Tribe in 1996. I was hired under an ANA, Administration for Native Americans grant, to do sort of an environmental assessment. And I

conducted a lot of interviews with elders and harvesters. . . And it soon became apparent that there were some individuals in the community who had some deep-seated desires . . . to better understand what is 'significantly altered,' basically. Boyd Didrickson . . .was involved in a number of lawsuits that related to 'what is – you know, 'what is altered sufficiently,' in order to be sold.

And along with him there were a lot of people who were missing, being able to harvest shellfish, and primarily abalone came up a lot. And in 2002 . . .the Tribal Council conducted a strategic prioritization . . . a ten-year plan. . . And it was Isabella Brady who was on the Tribal Council at that time, who put up the comment on one of the main posterboards that were around the room for that [prioritization] event – 'Harvest abalone again.' And like I said, there must have been at least ten of these sheets all around the big conference room. And then the Tribal Council . . . put stickers on the different comments that were meaningful [priorities] to them as Tribal Council members. And that 'able to harvest abalone again,' rose to the top. You know, it was one of the top ten . . . approximately ten long-term, strategic visions were chosen. . . And so, the 'able to harvest abalone again,' became the foothold for pursuing work with sea otters.

Concurrent to that there were people who were using Shishmaref's tannery at that time, and it seemed to be the only [tribal] tannery in [the state].

When the tannery at Shishmaref operated full-time, revenues averaged around $600,000 a year (Shirley Kelly, EDA, pers. comm. 2025). However, successful operation of the tannery relied on an experienced full-time manager. When that manager retired, the tannery was unable to maintain pace with the demand for services for all-species tanning and moved to become more of a seasonal operation to align with the spotted seal harvest, their main product, and to accommodate the now, limited workforce capacity.

Robi Erikson: And people were interested in trying to do something more local in Southeast Alaska. And so, those two desires, you know, kind of merged together between Mr. Didrickson's concerns about the legalities of what, you know, he was struggling with, as well as people wanting to harvest abalone again. And people were taking sea otter, but were having a very long wait period to have that otter processed. And there was, as you know well, from what Sealaska picked up on is that there was a need to revitalize handicrafts in general to use those tanned sea otter. . .

[T]he first tannery grant was in 2004, and that was an Administration for Native Americans grant, and it was for two years. . . for about $100,000.

Jeff [Feldpausch] was kind of a [co-manager], but the other fella [John] was kind of out in front, because he could and he was using sea otter. But he took another opportunity and Jeff stayed with it. . .

What Jeff brought to it was what kept it kind of going. . . He was working out of a garage. . . just against all sorts of odds. And he had a biology background, and he was able to sort out how to actually tan something. . .

They met this gentleman. . .[Bruce Rittel]. He was wonderful .. . [He] really saved us. [. ] He actually came to Sitka and helped us get it going. He provided us with his products [known as the EZ-100 tanning kit]. He provided us with a lot of in-kind services, which we needed. . . I mean, this whole thing was on a shoestring. There was never enough money and with ANA grants you have to match them [with in-kind services]. So, we're constantly trying to find people to match time. . .

Anyway, so, that was through the first grant, and that as a two-year grant. It was . . . about $100,000. ANA took a shine to it, quite honestly. There was a commissioner at the time.

> . . she really liked the project because she saw it as potentially being economic development, which is one of the cornerstones of the Administration for Native Americans. And so, I think it was in that first year they actually gave us supplemental funding. They gave us supplemental funding a couple of times. They apparently keep some discretionary money. And so that was extremely helpful as well. . . And then, we received the second grant for it, which it wouldn't have continued without that second grant from ANA in 2006. And that was a significantly bigger grant. . . ~$250,000.

Sitka Tribe sought to avoid a tanning process involving heavy chemicals and their byproducts, which could be detrimental to the quality of the fur and hazardous for employees and the environment. The implementation of an "environmentally friendly" tanning process, taught and supplied by Bruce Rittel, was innovative for Alaska. According to Mike Miller, Rittel's EZ-100 process was "all natural, no harsh chemicals, non-allergenic, unlimited shelf life for the furs and the most hazardous by-product was salt. Also, the finished furs could get wet without ruining the tan." Without the harsh chemicals, the end product didn't have a harsh smell either.

Beyond getting the tannery running sustainably and dealing with the regulatory issues suppressing harvest, like "significantly altered," another element of Sitka Tribe's strategy was to support the revitalization of sea otter hunting, especially the development of new hunters among tribal youth. This aim was also supported through a grant to educate hunters on how to shoot, butcher, and skin sea otters, use the tribal tannery, and do basic skin sewing.

> Robi Erikson: we had another project too, where a grant where we took out young hunters. We took out young males and females . . . [hunters], but they were pretty young. I remember being scared watching them take off on skiffs from the dock. They were middle schoolers and maybe some early high schoolers, mixed, . . . which was great to see. And it was really a neat program in that you know, the men who were the hunters, it just happened that there were men hunters who were leading the project, . . .[at least] the hunting portion, brought all the youth together and trained them as they . . . had been trained by their uncles, and as they thought was appropriate. . . [They learned how to] be in the right place and mindset and [how] to take an animal and to fully use an animal.' So, they went through that training with the youth and then they went out and did hunt. And they actually did come back with sea otter, and the youth, they cleaned their otters on site there. . .It was about a week of programing, full on, you know, with them spending several days learning about how to skin-sew and make the pillow and all of that.

According to Mike Miller, one of the instructors for the STA course, they taught gun safety, hunting, skills, and cold-water survival in addition to specific sea otter hunting skills. There were three students, two young men and one young woman around middle school or young high school age. Two boats were taken out with the students and instructors. The other hunting instructors besides Miller were Phil Neilson and Dan Marino. Together, they searched for rafts of otters near a good shooting perch (within about 150 yards) and then landed the boat and set up to target individual sea otters. Females with pups were avoided.

> Mike Miller: We didn't get that many otters to be honest. . . I think we only got two with the three kids. I didn't want all kids shooting at everything, so we took one gun.
>
> And you know, we put them up in the rocks . . . [at] a good otter place. Two teenage boys about twelve, thirteen, and a girl. And the typical boys were, you know, anxious to hunt. The girl didn't necessarily want to. And so, she was watching, and the two boys were shooting away and never hit anything. And after, probably about ten shots at the otters, and the otters kept kind of moving in, but the boys were missing it every time, but they were trying to show

off for the girl. And you know, they were kind of talking big and everything. And they were doing that. And finally – we'd been there for almost two hours, on just one rock, and the otters were kind of going back and forth. But it was 150-yard shot. It was quite a ways away, but she finally was, 'Can I try?' And she killed two otters in a row.

And so, when we came back, the boys didn't get anything, and they wouldn't say a word. It was fun to watch that.

The two otters taken were cleaned, skinned, and tagged and then brought to the STA tannery in town. Students were given their (or a comparable) sea otter skin, along with the other necessary materials needed to sew a pillow. Skin-sewing for pillows was taught by knowledgeable tribe members. Courses like these were designed to create intergenerational spaces for the transmission of sea otter hunting and handicraft knowledge. The long-term impacts of such courses are not fully known, however, as STA has not tracked the students hunting or sewing activities since completing the course.

Jeff Feldpausch took over managing the STA tannery development grant in 2005.

Jeff Feldpausch: It started before I came to work with the . . . Administrative for Native Americans [ANA] grant. . . [to support] a feasibility study, just to see if they could do [a tannery]. And we went through that first year, and it was a real learning curve. You know, I had done some home tanning and lots of trapping and skinning before and was hired on just to put the tannery together and get the permits that we needed and that kind of thing. Somebody else was going to manage it, and then that person decided they weren't being paid enough and left. So, they hired me . . .

I started working for the tribe January 3rd, 2005. So, it would have been 2005, 2006. After we got into the business and started generating some revenue off of it, we reached out to ANA again and went after a larger multi-year grant to actually get the tannery up and to become a production facility, basically. Worked up the proforma and the business plan and everything for it and there were some real stretches that we made. Basically, when I went through and did the – set the prices, I looked at who around us is tanning and what their prices are. What tanning prices were . . . in the lower-48 at some of the places [Alaskans used], took into shipping costs, tried to make us competitive. We must have been. I know we kicked out a really good product. The first year we went up to AFN to sell hides. Shishmaref was there and they had tables just stacked with hides. We were put off in another building because we got registered late, and we laid our hides out and there was – our hides were so much better, the shine, the quality. Actually had one of the previous managers of Shishmaref sitting behind us at another table and he was pretty impressed with the quality of work we did. And then in subsequent AFNs, you know, Mike – I know one year, Mike was up there laying out hides. That's when he got approached by the undercover agent. But he was laying out hides on the table and somebody was coming along looking at them and putting them in a pile. Mike goes, 'I'm putting those out to sell,' and he goes, 'I know I'm buying them.' So, he was buying them as quick as Mike could get them out of the box. So, we had a quality product.

Our problem was, or at least my problem was. . . how to make it commercially viable. And there was just three of us working at the tannery at the time, and I was the manager, managing the ANA grant, and trying to put a curriculum together that was part of the grant for teaching sewing classes, and at the same time, trying to jump in and help with production. So, one thing I looked at was trying to automate the tannery a little more. And there's some special equipment out there. I didn't know enough about it. We bought from some company on the east coast – bought a [hide-shaving] machine. And basically, it's a corkscrew-type blade but you're supposed to be able to feed whole hides through, and it would shave them down. The

shavers that we had [previously] were more taxidermy type shavers. They're a circular blade with a cut to it, and you would draw the hide across there multiple times, taking swipes off where this other one, you could just put it [the hide] in and run it through, and it was supposed to take it [shave it] down. Well, when we got it here-- by that time I had left the tannery--we had someone else come in with a guy… [who] was going to train us. We were hoping to do seal hides, because seal hides have been a real challenge for us. Evidently, it ate the first hide or two they put through it. They said, 'Well, this isn't going to work.' But it was like a twenty-five-ton piece of equipment! It was massive. I don't know where it finally went, if somebody ended up using it as an anchor or what.

But that was our challenge [in trying to move to a commercially viable level] . . . especially in a tribal setting. We offer employees a benefit package-- I think thirty five percent on top of their salary is what we consider for their benefits. We guarantee forty-hour or thirty-seven and a half hours a week for the pay period. If I look at other tanneries that are out there, [Some of them would hire low wage workers part time and without benefits] . . . to keep their costs down . . . [Some] also had a secondary business associated with the tannery; [e.g.,] they were taxidermists. So, they were running a couple businesses.

Another strategy we tried that kind of helped us out [against the low wage competition] is that we did a barter and trade on sea otter for folks who couldn't pay. And initially, I did a 'bring us three hides, we'll take one, you get two,' and . . .we could recoup our tanning costs [on the one sold]. And they would get two hides, we'd get the tanning prices, cost out of the whole deal. . . My goal was, 'If we tanned three hides, I needed to get the money back from three tannings,' ultimately at the average. So, that's where I tried to do a secondary business on top of just tanning. We also tried picking up work from taxidermists. I looked at the numbers, and the number of sea otter that were harvested at that time was about six hundred a year and I figured we could do every sea otter in the state and still not make this thing break even. I need more (laughs): We need to feed this beast. So, we started teaming up with a local taxidermist and doing some work for him. At the same time, I looked at the number of black bear that were harvested in the state. There's an incredible amount of black bear that are harvested, and I figured if we could get a decent percentage of that, keep it within Southeast, or keep it within Sitka, those revenues, I was just trying to get that mass coming in. But then in was running into the other side of it is. . . – we're getting a backlog. We can't get the processing out. So, if I hire another person, then I need more hides. It's that never-ending, Catch 22.

[The three skins for two returned was a] . . . sweet deal for a year or two now. They [hunters] keep bringing them in. They don't want to [or can't] come up with any money to tan.' And we were starting to get, I think, enough of an inventory, I said, 'Ok, we're going to do a one-for-one, even split. We're going to make some money on this deal if you can't come up [with the tanning fee]. So…' Over time, I started stepping back from that a little bit and realizing we need to get a little more revenue. I think the best we ever did when I was working there, is we brought in $51,000 one year. . .

So, that's why I don't think it'll work for tribes [as business venture]. I know Scott [Jackson] is doing one right now [in Kake]. And he's a private entrepreneur. He's probably working sixty hours a week, below minimum wage, but it's his business, that kind of thing. And that's what it takes a lot of the times [to make a small tannery work] . . .I know when we started, all the other tribes were like, 'Well, we're going to do our own tannery too.' I was like, 'Guys, there's not enough hides out there for one tannery, let alone ten of you. And none of us are going to make any money.'

And actually, I just don't think tribes can make it work, unless they structure it to piece work; we're going to pay you – you know, we're going to charge a hundred dollars per hide, fifty of it's going for you to do all the work on it, you know that kind of thing. But I don't

know if they'll get people even interested then. And not doing it on an hourly basis because you're paying them whether the hides are there or not, or whatever, so it's . . .better left for entrepreneurs who can develop the equity in it and cash out. Tribes just – it won't work. It isn't working.

I talked with the gentleman who was working with Scotty [Jackson] over there [in Kake], and he goes, 'Oh yeah, we got everything in a room this size [~10' x10']' (laughs). He said, 'It's a real challenge sometimes.' Between the, you know, they do the pressure washing for the initial fleshing and then bring the hides in and shave them. But he said, 'Yeah, it's a challenge in that small space.'

[And tanning can be smelly]. [Most visitors/tourists] couldn't handle the smell of a tannery. So, I said [as a way to host visitors], 'You know, we could do that big viewing window and they could go through at the end and see the hides that would be available.' And at that time, the only thing we had to sell was sea otters. Most people wouldn't get it, but I figured if we start doing barter and trade on non-marine mammal, or bear, big game; you can't do that with trophy bears and stuff, but like lynx and river otter, and different things we could potentially sell hides to people. So, we – I was trying to work every angle on this.

. . . What sold the best [for handicrafters] . . .were those subadults [juveniles], those jet-black ones without the guard hairs. They each had their different marketing qualities. The older ones, with the guard hairs, what we were finding is during the tumbling process, those guard hairs could singe or start to curl over. Some of them may have been curled before that. So, we tried to do, in our tumbling process, normally it was three hours of tumbling, we would tumble for an hour, shut it down, let things cool down. It's just from that friction and the heat build-up [that the fur singes and curls] . . . So, we were trying to limit that singeing of the guard hairs. Lillian [Feldpausch, his wife] made - she did the teddy bears. And she made one that was super, super soft. It was a subadult, jet-black. I mean, it was really gorgeous. The other ones are unique. They're all – none of them are alike, but that one really stood out for me.

[After leaving primary management of the tannery in 2008] [STA]. . . kind of kept me managing, overseeing the tannery, but having a manager out there. [Ed Gray became the manager] . . . his wife was on the [STA] Council, she was Native. . . Yeah, him and I butted heads and he finally quit and went out to the mill and started his own tannery out there. . . Monarch Tannery. Was only in business for a very short period of time, and then, yeah, he was gone [i.e., he passed away. And his wife passed away too, from cancer.]

[So, it was a challenge to implement the business plan] . . .You needed the extra hides to run through the facility to bring in additional revenue, but in order to process those hides, you had to hire another person. Which means you needed more hides then, and it was just this never-ending circle. So, we – what I was hoping to do, and what I tried to encourage them to do out there was pay people minimum wage. If you've got people who just aren't production minded and getting the hides out, pay them a limited salary. They may not be happy with it, but they go, 'Every hide you kick out that is quality work, we're going to give you an extra ten dollars, or twenty dollars, or whatever.' It's kind of profit sharing on that. . . So, that, that will help spur production up, but at the same time, you have to watch quality, because they may be so focused on just kicking hides out to make money that the quality drops. So, it's – it's a real balancing act all the way through the whole process.

And that's something the tribe had to realize was, if you want the tannery to keep operating. . .you're going to have to put money into it every year. And where are you going to get that money? I don't know. You can't rely on grants. And that was the big challenge. They got to the point where they were losing a couple hundred thousand a year on it. Council just finally said, 'We can't keep doing this.' So, they finally pulled the plug, and it got real bad.

The effect of the October 1, 2008, sting operation by USFWS enforcement on the tannery was detrimental.

> Jeff Feldpausch: When they came through and did the bust, it was like everybody took a step back from the tannery. 'You guys did something wrong out there.' When in reality they said we had some of the best records they'd seen. And they never came back and did anything to us at the tannery. But I know darn well they had. . . I know they had mics in [i.e., were bugging] the office. I know they sent agents in at times, trying to get us to do things [that would have violated the law and triggered enforcement action].

The Sitka tannery carried on activities until funding dried up, and STA formally notified federal agencies that it had suspended all tannery activities in July 2020, STA. Many were surprised and disappointed by this news because the quality of the tanning had been improving, and the business had been growing throughout the early 2010s. Mike Smith, who worked there for a few years with Jeff Feldpausch, commented:

> Mike Smith: It was pretty amazing where people would call from and ask to send us some hides. And working on musk ox and all of that was pretty cool. When Jeff was running it, we were busy all the time. Didn't have enough freezer space. . .Him and Bill [Mork, a.k.a. 'Gig'] were really good at tanning, being able to shave hides down and get them tanned up. . .
> My job was to stay on top of. . . advertising, looking for different ways to advertise, updating the website, putting [pictures of] hides up there. Then, when I wasn't doing that, I was helping out in the tanning process. . .
>
> [We] had it down to where it would go pretty fast. Like, during bear season though, we'd be swamped by bears and… But Jeff and Bill worked pretty fast. They were able to make a good product out of everything out there.

The STA tannery had held the potential to boost the local handicraft economy, as it cut out the shipping fees for Sitka hunters to process their skins. However, the quality of the processed hides had to meet standards set by the artisanal market; to be considered optimal for garments, for example, hides had to be uniform and shaved to what is considered 'garment weight,' a standard that requires specific equipment and a high level of skill to meet.

> Robert Miller: You got to pay the shipping for them to [go up and] come back. Pay the tannery guy. There's an overhead cost in this business; you got to be kind of sharp up here [points to his head] because it's a lot. . . I'm always writing checks and paying people (laughs). . .
>
> I think the financial burden is the key stickler for why people don't get involved more with it. It's a – it's so expensive. I think, when Sitka Tribe had their tannery here and they were doing, bringing me three otters and 'We'll keep [one], and you keep [two],' or one-for-one trade, that gave people an opportunity to work with it because it wasn't so much money out of their pocket. . .That was just a very special – you know. [But early on] to be honest with you, Sitka Tribal tannery was – their product was terrible. It was worthless, so I didn't even use them. I tried to use them and then it was just useless. You'd get it a year later; it would rip like cardboard because their acid base was too strong; they didn't neutralize it. Or it would be too thick [i.e., they didn't shave it properly] and you couldn't sew with it. I can understand why people would say, yeah, we didn't like the big ones because they were too thick. It has nothing to do with the animal and everything to do with the tannery.

Wade Martin: Bad subject (laughs). Yeah, I've had a lot of bad experiences with that outfit. . . Quality control. They've ruined so many of my hides. . . my customers' hides and… I'd get sea otters back that were six-foot, six-and-a-half foot and they come back and . . . come to find out they cut the sides off it, and everybody is making scarves and stuff of off my furs! . . Yeah, I come back, I was like, where in the heck did we get this [skinny] otter from, you know? The damn thing was like thirty-eight inches wide, and you get it back and there's – I was like, 'Something ain't right here.' . . .

But they always had a problem with labor. . . because it's labor intensive. But there's a way to do things, you know. There's machinery, equipment out there to make your products better . . . that are less labor intensive. You know, the shaver. It looks just like – it works the same principle as a planer. . . You can stretch them and run them through. They're set up like on a micrometer, you could take a thousandth of an inch off. And once you establish where the follicles are on the backside of a sea otter, you can pretty much set your gauge to where you're not going to hit the follicles. Because if you hit the follicles the fur will slip. But you get them just perfect where they're thin enough to what they call 'garment weight,' but not so thin that . . . the hair's going to slip. It's a real fine line with sea otter. But the tribe never did invest in any [proper] equipment . . . they round-knifed everything. [So despite wanting to support the local tannery, he went back to shipping his furs to Anchorage]

Yeah, that was a no-brainer after a few bad experiences . . . I got those guys started up several times. And it was always the same thing; too labor intensive, their people would suffer burnout, and they'd quit. They couldn't keep a crew. . .And then when you did get somebody [skilled] in there, they're not managerial material. And they were having people oversee these tanneries that had no clue what it was all about. . . Somebody that was actually hands-on from the bottom up, knew how to – knew what quality was and what you needed to do to achieve it.

I loved it when they were here, but I really don't miss all the calls [from Alaska Native fur buyers, his customers] when they'd get their stuff and they were hootin' and hollerin' and jumping up and down pissed because their stuff was. . . They were round knifing them and cutting holes in them and… They were smelly, or the seals were yellow because they were throwing them in the freezer.

But yeah, it would have been nice – it really still would be nice to have a tannery here but done right.

Kenyatta Bradley: I've lived in Sitka, Alaska most of my life. . . I'm Tlingit and Aleut. My grandma's from Atka, my grandpa was from Wrangell, and they met here in Sitka at Mount Edgecumbe and had a big family down here in Sitka. . . I started getting involved in the culture and probably started hunting around [age] sixteen. . .

I started kind of [working with otter] on my own, inspired by my Uncle Ed and my Aunt Claire. My Uncle Ed [Gray] owned a tannery [Monarch Tannery] and my Aunt Claire was doing fur sewing and everything, and I just kind of talked to them quite a bit and saw the potential and saw what [sea otter handicrafts] she was making, and I learned the tannery process from him. I actually worked at his tannery for a while. Also worked at the STA tannery. So, I was pretty well involved when I first started out.

He [Ed] ran it [Monarch Tannery] for maybe almost four years. But it was fairly small. He was trying to find funds to get the proper equipment to make things go smoother and more efficiently, but yeah, I don't know. He wasn't able to get the funds. He actually gave some to STA and STA wasted it on buying the wrong machine.

[Then both Ed and Aunt Claire passed away] . . . these last couple of years, from cancer.

[My uncle] worked for STA for like six months [around 2005] and saw that they were terribly inefficient and inconsistent, and they didn't have the big picture in mind, and he saw so

much more opportunity. And since they wouldn't listen to him, he just kind of went for it on his own. . .

Yeah, he was as busy as he wanted to be. Especially when he allowed bartering. Since he wasn't a Native, but his wife was, so he said like 'Two for one – I'll give you two hides, if I get to keep one.' And then he got a lot of hides, and he was able to give them to his wife for sewing... [similar to what STA] may have done . . . to clear their books. Like, with people that hadn't paid for a long time [or couldn't pay upfront] they'd offer that deal.

The majority of [his uncle's business was sea otter] . . . He did like one goat, two sea lions and a few . . .seals. People don't get a lot of seals, but he did seals. . . And he sold his stuff [his equipment] to Scott Jackson [when he decided to close the tannery] . . . He came [from Kake] and learned and travels here on occasion . . .

I did a lot of fleshing for him [my uncle]; there's always hides. . .probably over a hundred [per year in the early years]. Closer to two hundred when it really got going. . .

He didn't like working with people. It was only me. I was just part-time. I was mostly fleshing and like transferring tubs. Just kind of labor work. I only did a little. I only did my own shaving. He allowed me to shave my own otters in his shop….

I just sent off a seal to Arctic Wolf [tannery in Anchorage], and I'm just starting to deal with them. I was trying to support Scott [at Rocky Pass Tannery in Kake], but I can't really wait that long [up to a year or more to get it back]. And like, when I first started, it was like a hundred and thirty dollars to tan a hide. So, everybody was trying to go for that two-for-one. I mean, you bring in ten otters, a hundred and thirty dollars apiece and it just [adds up] . . .

And for other people, just knowing how to process it. It'd be like, you're trying to get out to the tannery, you just skinned it out. If you don't flesh it, you probably want to freeze it. If you're going to salt it, you got to salt it and let it drain for like four or five days and then you can ship it and it'll be dry. Fleshing it out is usually with a pressure washer and then you can salt it and it'll save twenty bucks or so, usually with any tannery.

[Pressure washing takes] all the flesh, all the way down to the membrane. Sitka STA tannery had an electric pressure washer that they used that was pretty good. . .

I think STA really did a big damage to the [local] fur industry by being inconsistent, not returning furs, charging too much, not being helpful at all. . .Furs would disappear. People would say, 'I didn't – why did I get this hide? That's not my tag number?'

[They] would go through good times like [when] Bill Mork . . .worked at STA tannery, and he was a really good shaver. He was an honest guy, but then he quit and then they didn't have a tanner for a while. . . [When my uncle took over] it took him a while to figure things out, so he sent off a few hides that were kind of thick, or kind of rough, or inconsistent. And then he figured it out and he got a good process going, but then he moved to his own tannery. . .

Rocky Pass was like just, as of the last year, to the point where he's got good, consistent quality, but now he's just too backed up and I think he's doing a bunch of hides for Sealaska and not doing my hides, which [have been with him] over a year now.

[STA was] trying to get them out the door [quicker] within the month or whatever, but I mean, they just weren't paying their tannery workers enough. It's backbreaking work the way they got it . . .These other tanneries, like I think Arctic Wolf tannery, they got the big machines where you just send it through and you can dial it into whatever thickness you want it, and everything. And like, my uncle, STA and Scott are all just doing round-wheel shaving which is basically a backyard tannery, and it's just backbreaking work. It's just a lot of labor. Nobody wants to do that anymore. But those machines are like a hundred thousand dollars, and STA, against my uncle's advice even, bought one that's for cow hides. And they shipped it all the

way here and they paid for electrician, and they wasted all this money and they tried to put a hide through, and it just ate it up.

[If I could] I'd just give them a grant for the price of a quality machine. Like, if Scott could get that. . . he wouldn't be breaking his back. He'd be able to hire somebody because people would actually be willing and able to do the work.

[STA's] got this tannery up here and it's just sitting there. They're just letting the grant money run out. . . I mean for the money they spent they should have flown down to look at [the expensive shaving machine] and had an expert talk to them, but they just bought that machine and got conned. . .

I think if STA opened up their tannery to allow people to learn the tanning process in their shop and to – they have an upstairs, they could have a sewing class upstairs. Which, they talked about it before, but nothing ever happened. That could be their niche, helping assist people, rather than what it seemed like before, just trying to make money off of them. . .

The tanneries are a big holdup [in the sea otter subsistence economy] . . . If you go up north where they still eat seal, and they got ringed seals and harbor seals and they harvest it regularly. But they [often] don't retain the hides because it would just be too expensive to ship it to a tannery and get it back. But a lot of them do fur sewing, and a lot of them just end up buying from other people . . . [For many] it's prohibitively expensive. Like, a seal hide can cost $400 to 800 hundred bucks. Four hundred would be a good price for maybe a small one; that's for a hide [i.e., tanning not shipping, etc.]

Steve Johnson [Kiks.ádi]: I started hunting and trapping when I was a teenager in the early '90s, early to mid- '90s . . . And I've been sewing as long too. But I didn't really start like, professionally sewing until fifteen years ago or so. . .

My grandfather was a tanner and taught tanning and wrote many books on tanning, specifically on seal/sea otter and investigating cultural uses and economic viability of such. And when Mount Edgecumbe High School started, that was his first job was teaching tanning and the business of tanning. At the time, you know, there was a pretty ample supply of fur and leather between fox farms and hunting specifically on Pribilof's and caribou and reindeer. You know, there appeared to be quite a market and cottage industry there at that time. . . Yeah, [that was in the] late [19]30s, early '40s . . .

And then myself, I helped start the tannery here in town. I worked on the original ANA Grant, and did a lot of, kind of on the ground research and figuring out volumes and processing metrices and things along those lines, and profitability. . .[and] went back there off and on over the years to help continue it.

Yuri Lisianski [officer in the Imperial Russian Navy] in his ship logs and notes. . . he wrote a number of ships log entries specifically about sea otters and their numbers and his perception and some of it might have been inflated a bit, just for the marketing of it [to the Russian emperor], you know. . . [He said] you could 'walk on' sea otters [they were so thick] from what I hear (laughs) in some of his early descriptions. And then later, you kind of see a tempering of that. And even Beardslee noted that the population seemed to be much less dense than people had initially proclaimed. It was kind of [an] El Dorado Complex [Note: the abundance that was in Sitka Sound c. 1800 was nearly extirpated by the time Beardslee arrived on behalf of the United States government more than a decade after the 1867 purchase of Alaska from Russia.]

The El Dorado or "soft gold" complex is indeed a tempting vision, but walking on a carpet of sea otters was most likely nothing more than picturesque marketing. Nowadays sea otter pelts

themselves have limited marketability (unlike gold) as compared to the fur trade era. Additionally, the require significant production values (alteration) to be saleable to non-Natives.

> Ilegvak (Peter Williams): I got involved working there – I was like fleshing hides. I was doing kind of piece work. Ed Gray was managing it after Jeff [Feldpausch], briefly. And so, I was doing . . . fleshing. Just kind of doing like a side hustle-ish kind of thing for money and then Ed quit. And then, they needed someone.
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> I was also working for the tribe when [RJ/John, a tribal member]] was going to be the original manager, and Jeff Feldpausch was [supporting him]. And . . . from my recollection, [he] didn't feel like he . . . had the skillset to be ready to be manager. He felt like he needed more skills and training. And I think that also speaks back to like issues of worthiness in general [among Indigenous people] that talked about. . .of like, are we – can we do this? And I struggle with that too, right? Like, these feelings of like, 'Oh, I'm not prepared.' And they're trying to be like, 'Well, that's why we have Jeff,' you know 'to help support you in those areas that you don't have…' Because he [John] had a massive of knowledge. And I mean, just like he made a sea otter parka that he wore around. I mean, that right there is his resume (laughs). And then he understood like, how to traditionally do bark tanning and all kinds of stuff. So, he had this massive knowledge. . .
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> So, that relationship to the tannery and getting [to see how it was done] … Jeff really taught me a lot about like skinning and preparing. You know when I have a question of how do I take care of the hide. . .That was like . . . 2010-ish.
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> It was a challenge too because like, yeah, I went into a place where, like, there were hides that weren't marked. We didn't know – we couldn't find certain hides and things. . . I definitely think the disorganization, lack of follow-through and the tannery getting a reputation for not being reliable and not being timely with returning things-- That damaged us . . .
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> And then there was a massive amount of turnaround, which was really hard, and then also hard because the [of the advanced] skillsets needed in particular for shaving the hides. It takes like a – it takes like a month before you stop putting holes in a hide with shaving. And it's super labor-intensive and skill involved. And it's really necessary. And so, I was actually doing a true garment weight. But I think in retrospect, I should have just been trying to crank out the hides instead of [trying to] get to that like high-quality, industrial standard of high-end fashion.
>
> And so, that's what I was doing and also using that mentorship [received at the tannery to improve my skills in working with hides].

Ilegvak went on to produce high-end fashion pieces that have been displayed in museums and on fashion runways. He credits his Sitka Tannery mentors for contributing to his success.

According to Jeff Feldpausch and others, the sweeping USFWS enforcement operation of 2008, which included the interrogations of STA Tannery employees and arrests of hunters in several Southeast Alaska communities, also had an impact on the tannery's business. Don Young, Alaska's Congressmen at the time, referenced the incident disparagingly in a speech before the Chamber of Commerce in Sitka in May of 2012

> "Young linked a federal sting operation at the Sitka Tribe of Alaska's tannery on Halibut Point Road to his overall criticism of the federal government. Young visited the tannery prior to speaking at the Chamber and spoke to officials there about the case of Sitka resident Michael Smith, who got a six-month prison term in 2011 for illegally selling two tanned sea otter pelts to an undercover federal agent. Young said he was told the Fish and Wildlife officer investigating the case spent nine months befriending Smith before asking him for the pelts. He

estimated the investigation probably cost $700,000.

"We have to rein in the idea that the government is always right," Young said, drawing a connection between the sting and the botched investigation of Sen. Ted Stevens" (Daily Sitka Sentinel 2012).

While the sting operation brought significant public criticism on USFWS enforcement division, it also had a chilling effect on hunters, handicrafters, taggers, and the tannery itself.

Robi Erikson: You know, it scared people. It scared the person who was running it. You know it scared his wife who was teaching the classes. …There were other people off making teddy bears too, you know, who were scared; it scared people. . .[T]o go to people's homes, to take their books [taggers' logbooks]. People had been successfully tagging sea otters for a very long time. . . it really pulled the rug out from under a number of people. . . They [FWS] lost a lot of ground with the tribal community, and it wasn't just in Sitka. It happened in other communities too.

Ilegvak (Peter Williams) [who had worked at the tannery prior to the sting]: It's – yeah did that. We were definitely a bit cautious and kind of overly cautious with what we were doing because of law enforcement. And there would be times where we would like, think there was various undercovers which, you know, they probably did have some interaction, but I think we had a lot less than we thought. I think we were imagining there would just be like some weird stuff with a customer, and we'd be like…

Despite these unfortunate events which clearly damaged the reputation of the STA Tannery, the question remains as to whether it would have been a sustainable model for Southeast had it continued to operate. The answer seems to depend on how you view its aim.

Robi Erikson: I would say that it [the tannery] was a successful model. What I would also say though is that a number of other individuals, and maybe entities, have tried. Right? And you're probably aware of that. And – to varying degrees. . . But it doesn't seem like anything is really [profitable]– I think it might be more, you know, much more local. . .maybe serving their community more. And you know, maybe that is a good model.

I think that they started to get a lot of different species and so there was constant learning. You know, like a bear would come in and be like, 'Oh gosh, we've got to figure out how to tan a bear.' And so, you - I think that there was a lot of that. [Some thought] that seal would be good [along with sea otter as marine mammal with high subsistence use], you know, and if we could try to specialize. . .Here we're specialized with the sea otter. Seal is another one, because it's food, it's down here.

The STA tannery was not conceived to be an engine of profit, but rather as a service to tribal members in Sitka sea otter hunters and handicraft artists in the region. It was designed to be catalyst for boosting and sustaining the local sea otter cultural economy. Developing a quality tanning service that could be financially solvent, community-serving, and sustainable was the major aim. However, the tannery operations faced many complications while carrying a full-time staff, as they tried to hone quality products and diversify tanning to include other species of interest, including seals and terrestrial animals.

At same time, the tribe also sought to support the development of young sea otter hunters and sewers through courses. Lillian Feldpausch, a Native of Kake and a sewer, taught some of the first hide sewing classes offered through STA and making use of otter skins produced by the tannery.

> Jeff Feldpausch: She had 101, 200 and a 300-level course [through the University of Alaska]. Nobody ever made it to the 200 or 300. They just wanted her to – they wanted her patterns. They didn't want to go out and develop their own. . . She goes, 'I'm not giving you my patterns. I developed those! Do it yourself!' You know, and she had classes to train people on how to do that, but they . . . [many of them] wanted the shortcut, that kind of thing. I think there probably are more people out there. (Jeff Feldpausch)

Students taking hide sewing classes at STA were supplied with skins from the Sitka Tannery, and learned about its operations, as well as the laws, regulations, development and sustainability of the local sea otter population and hunting and handicraft economy. However, it is not clear how the training of artists in sea otter skin sewing affected orders at the tannery, overall. With additional sewers being trained the demand for tanned skinned seems to have increased, but the tannery struggled at times with quality and timeliness in fulfilling orders.

> Lillian Feldpausch: I hear it was popular, but I think they had issues with staffing and turnover. And not only for employees, but for their management, and to be able to have that consistency. If it weren't managed by the tribe, maybe somebody else could do it. You know, I know Scott's [Scott Jackson is] doing it over in Kake. But you have to have a good quality hide, product to be able to work with, to be able to have that flexibility to be able to sew with. So, you're not, you know, bending your needles. You're not, you know, it's not thick. It's not too thin, and you know, there's… Some people come in and say, 'Well, you know, it's the way they're doing, and you know one of the managers [at STA's tannery] cut my guard hairs off. I was pissed.' I was like, 'Why'd you do that?' I said, 'You don't have that. You know, that's not what I want, and they want to charge me full price for a product you damaged?' 'But that's the way they're doing it in New York' [the manager said]. 'I don't give a crap.' Yeah, because . . . those make the best for the teddy bears.

Nearly everyone agrees that making tanneries sustainable, much less profitable, is a formidable challenge.

> Lillian Feldpausch: To be able to do a tannery, it's – you know, I've been on the [STA] finance committee and whatnot, but to be able to . . . have our [tannery] profitable, you'll never, ever be profitable. That's the bottom line; you're more of a service.

> Scott Jackson (Kake): My name is Scott Jackson. My Tlingit name is Gus'tú. I am from Kake, Alaska. My clan is Tsaagweidí. We 'be the wolf.' And I'm a hunter, a harvester... I am a sewer. I am also a teacher, and I've taught at the school, Kake High School. I've taught at Kake High School an accredited class in the state of Alaska for fourteen years [with a focus on Alaska Native culture and subsistence] . . .
>
> I was one of the first people that started harvesting. . . My first interest came from my . ... uncle, Mike Jackson – we would hunt for him, and as we started hunting for him, we realized, you know, we could probably make a living out of this or at least make a little bit of extra spending money. So, that's where my interest started. And it started even more when my friend Robert Miller was just now breaking into the industry. So, a year later, he came through here for a moose hunt and he said he was just – decided that he'd start venturing around with sea otter and we went out and harvested a good number with me and my wife. . . You know, we – and it was a great situation to see where he started from . . .

I was like, 'Man, this would be a great...' Because I work for SEARHC – Suicide Prevention for ten years as well as I was a VPSO, I've worked for Mt. Edgecumbe High School for a couple years. I've worked for Juneau Youth Services for a while. And I've coached [basketball]. . it's just a fact I work with kids. I've always worked with kids in general, boys and girls. And it's been more about seeing individuals succeed, or a team succeed in life, on and off the court. And the prevention aspect – I was one of the guys that first took the paddle at Celebration. And this has a lot to do with what we did, because . . .we use [sea otter hunting, tanning, handicrafting] as a [suicide, drugs, etc.] prevention activity. . . Doug Chilton came to Kake with his son Michael Chilton [and the help of Jeff Jackson] we took about another ten guys. There was like twelve of us, and we went out in a canoe, and we harvested about five sea otters. . .

So, it was the type of thing where you look back at your culture and say, 'What they did [do or] used to [do]...' You hear about what they used to do and paddle hundreds of miles just to harvest [sea otter] . . . You know, because you got to paddle back... The way they had to time the tide, that's why we went into Rocky Pass. We wanted to see how we would have to time the tide, and we understood that, you know, dating back hundreds of years that when they were using canoes, they had to time the tides probably – time the tides, probably perfect . . .

We started it as a hobby but it really, really took my interest once we realized we can really use a prevention activity around them and at the same time not just helping us but helping the people that struggle with everyday life. And this would help on a positive note. Because that, you know, as the interest grew and I started learning as a hobby, you know, my – the bells in my head started going off a little bit, right. So – and the modern day, we all struggle with something, whether it's drinking alcohol or addiction or stuff like that. So, I started messing around with teaching myself how to tan sea otter. So, we started with bark tanning and regular salt, and we had no idea how to get them soft until we just realized that we tanned something. And this is after, you know, my uncle Mike would send us out. . . Me and my friend Kelly Brown, we started messing around with it, you know. And I said, 'Man, we ended up tanning five,' And everyone said, 'Man, the fur is so good. You know, we're very impressed.' And they go to sew, they went to sew with it and they're breaking needles because one thing is ... Because we weren't even a furrier by then. We're just like, 'Oh man, that was so beautiful,' but one thing we realize is once they dried all the way up, you couldn't even get a needle through them. They're more of a decoration. . .

Yeah, they just weren't soft. So, as I started messing around with it more and more and more, you know I actually end up tanning some up, and I started reading into it and I started making visits to tanneries and I started... I said, 'Man, I – you know it'd be great if we could learn how...' And the biggest reason is, you know – and this is what I find with myself is, sometimes people don't understand all the hard work that goes into this. And as a furrier, you know, you run into a bad... We all – we all try to live life, but sometimes you have a bunch of hiccups in the road, you know, having a bad week, having a bad month. You run into medical, and that's what they don't understand about the tanneries is, sometimes, just sometimes, you know, you find a lapse for three to five months, or you know, give yourself a break because . . . I'm going to be honest . . . it's hard work, and it's a hard life running a tannery by yourself. . .

And then I started teaching them [students and those with needs in the community] to flesh the hides with a power washer] to run the auto tanner. And that same person that washes the hide, washes them real good and then throws them in the auto tanner and then that same person throws them on the line and lets them start to drip dry, and then I come in and shave. But after a while, I'm like, 'Man, I'm so busy, sometimes I couldn't get to them.' So, I taught my brother-in-law how to shave. And then I taught my cousin, so. So, that was one of the things I did, is I used it as a prevention activity. Had a cousin that came up from down south

and he was just coming off a couple runners and he'd been about six months clean; when you come off a runner, you're still very, very antsy, right. So, I said 'I'll tell you what. Let me teach you how to do this stuff. Whether you figure it out or not is on you.' I said, 'I'll work with you.' So, I worked with him, and honestly, we picked – I let him pick his hours and his hours are like ten o'clock (at night) to four in the morning. And I said, 'Why do you pick those hours? Why don't you just come up in the afternoon and be done by midnight?' He said, 'Well, those are the hours that I'm most susceptible to using again.'

So, I started staying out there to supervise and help them from that time. For instance, one time – and this is a lot of work – like, we went out and got seventy pelts, right? And we're harvesting, we're using them to sew or selling them. And I said, you don't got to do them all tonight, but it is freezing and if you stop that pressure washer, it's going to freeze up. So, he ended up staying there all night long and finishing them. So, the next day, I said, 'How many did you get done?' And he said, 'Seventy-two.' . . You know, he made a lot of money . . . He made seven hundred and twenty dollars that night. And then I said, 'Man, you'll really start racking in if you learn how to shave.' Then we can really keep you busy. So, we taught him how to shave and so he became one of my best shavers and one of my best pressure washers for fleshers.

And so, now you see – you get to see how this is going and just like... You know, you realize everything in your head starts going off and saying, 'Man, if the right entities got ahold of this. If I can supervise some guys, especially guys.' Just because when people are using, they come out of – they'll go, and they'll get treatment. They'll be done with treatment and then they'll go back to doing the same thing. But if you make it like a work-type thing where, 'We'll teach you how to do this after you're done. You'll know how to – you'll have some things that you might fall back on.' You know, and if a big entity like Sealaska or Tlingit and Haida's running something like this, you know, they can actually pay the employees, under employee nets and stuff like that. But you can also make it – because this is just my thoughts, right? Is that you make it – a portion of it can be non-profit, you know, to where you're picking up these workers. And another portion can be a company like mine that's buying the hides.

... And you know, we got pretty good at doing the seal too. And it's just a big work in progress, especially for that aspect. You know, and just like I said, it was more of a successful feeling knowing I can live off of something I started. You know, but it's being able to maintain it. Like, right now, we're in a down year. But like I said, when you run into medical and things are going great, you're just trying to get back on top, you know. Because we're back tanning again, and – but looking at the youth it has rebooted everything, and everybody wants to learn. And – but that's my story of how it all started. You know, once people figured out I can do this, like I said, Mike Jackson walked in, he looked at the hide and he's like, 'Holy cow! This one is really good.' You know, I started messing around a little bit [with different tanning mixes] . . .

I used citric acid. Because citric acid, you use it in candy, you use it in food. So, still – we're still in an environment-friendly state. . . using that. As I started to teach myself how to use citric acid, a lot of it was watching video and you got to tweak the mammal that you're tanning. Because none of them have a sea otter and sea otter is way more oily than what they have. So, there's a process of degreasing and... But as you start to do this, you realize how much homework and studying you actually have done (laughs [this includes experiments with brain tanning, smoke tanning and other traditional Alaska Native forms]. Because I have ingredients that are written down, from citric acid that – I wrote them down in ten sea otter hide increments; how much time it takes to do the sea otter. The sea otter from pressure wash – from hunting, to skinning, how much time is done. How much time it takes to flesh the sea otter, ten of them. How much time it takes to tumble them. How much time it takes to shave

ten of them, and then on to the next steps. Because you're – so technically – I'll just do a quick rundown. And I know this – like I said, I told you this is going to be a lot, so. . .

So, as we started doing this, you're going to take ten, you know, to skin them. You'll probably have ten done in like, an hour, you know, if you're the harvester but you're still hunting them for the day. Drop them off, tag them, get me through the process of, my flesher will come in. They'll probably flesh ten hides in an hour and a half, two hours. And then they'll clean them with soap and then they'll put it in the auto tanner, and then we'll start spinning them, right. So, three hours later, they're dripping dry because they take them out of the auto tanner, they'll drip-dry on a line. And twenty-four hours later, we're shaving them. Used to take us about forty-five minutes to shave, but we got it down to fifteen minutes to shave them. So, technically – so after the ten, you go into five hide increments because the chemical you mix up is citric acid, so you're doing separate batches, you know. I'll shave five. Probably take me two hours to shave five. I'll have one of the guys make me a citric bath, we'll test it, throw the hides in there. So, that batch is done, and then you'll go back, and you'll shave for another two hours and get your other batch done, so.

We just settled on if we can shave ten a day and have – because we would technically shave thirty a week, but like I said, there's processes to it. And this is what I come to find out is like – there's just a game plan and a plan. So, we'd shave those hides, batch. You think about it, we had ten before that, so every day you have hides coming out of the – you're neutralizing with baking soda after three days and you agitate it every day just to mix up the chemical. So, you neutralize it with baking soda and then goes out on the lines outside, and I have fans or... If it's a north wind, it dries real fast. And this is where your breaking processes starts. So, you're pulling and breaking and you're seeing that hide turn beautiful white. And you're like, 'Man this is a good product.' And then, from there, it goes inside, and we start oiling them. And we oil them and turn them on each other for probably ten hours. And then they – after that, they start drying, you pull on them some more and start working the fur dry with a blow-dryer I have. Then they go into this little homemade tumbler we made. My cousin made one for me. Yeah, sawdust in there from down south, you know. Well, the hardwood sawdust and then that's where I spray stuff that they spray on horses so it can't be that bad, and some house cleaner stuff.

That's stuff that we learned, you know; we never used to do that. But as we learn, you know, we started taking smells out of it. We tumble it for like thirty minutes real good, take them out, break them some more. Get them to where they're just ready to dry, right. And, you know, you're through the drying process. Like is said, it's just a process where you're finishing ten every two days. And you have the steps down now. You're moving, you're going, you have your hunters doing their thing and then – but sometimes people call and say, 'Hey, can you tan these?' I'll say, 'Sure,' you know. And we tan them for people. Like I said, we've ran into hiccups. Some batches didn't turn out the best and we fell behind, you know. But that's where you believe in workers, you believe that people are going to do what they're supposed to do; but sometimes you believe in them too much and you think they can do it, and it doesn't work out, but... You're not going to demoralize them. You're just going to say, 'We'll fix it.' And that's what we're leveling up on now, is hides, right? So, if I ruin something – if it takes me five years to pay them back, I will. But we're trying to . . . learn the process. We taught people a process. And we have a good team. If there was increments of money to run it ... And we had done this all off of a cottage-industry, like making everything ourselves…

[But they had only that initial grant through SEARHC to run a program for troubled youth, with the provision] that if you come back and show that you can work with the youth and show that you can work with the community with this stuff, then you can technically keep it. So, that's what we did. . .

I have sixteen kids for two class, and what we had to do – we had to make a blanket because our second semester – we got budget cuts this year. Right, because the school would pay for hides, and then we would have the kids use them. But I told the kids if they tanned the hides, it would be better because then the school and the community don't complain, or whoever's complaining that the school's buying all these hides and you know, supporting this class and... They shouldn't be selling them, but if they're tanning their own hides, then they won't have to worry about it. So, that's what we're doing now. And you can see where it started. I mean, it started from prevention activities. And if you look at it, all this stuff can be used for prevention activities. And . . . [with a hefty] grant that can happen – [but] because I'm not a grant person. . . I'd probably have somebody running a big grant and I'd be part of it, you know what I mean. . .

I'm a small cottage business. And you know, now I'm getting big contracting, and I've lived off doing contracting, small business, and . . .

So, in order to turn stuff, you know, unless you're doing contract – because I did a contract with SHI for a couple years, but that just got hard, you know. I was – I needed my sleep. I'm getting older. It'd be easier for me to run a team, so that's what we're kind of looking at doing with Tlingit and Haida, hopefully, it sounds like. But people are like, 'Sell your business to them. Don't fall short. Don't listen.' There's a lot of politics involved, because people see what I was doing and I was like, 'Man, it's not easy. I'd rather work for somebody.' That's going to pay my wage, let me contract on the side, teach classes. You know, I can run two or three tanneries in Southeast. You know, pay me for my knowledge now, now that I've done a lot of the dirty work (laughs).

I was able to tan more sea otters a month than Sitka Tribal Tannery and they had all this expensive machinery, they had all these workers, and... You know, my biggest thing is – you can probably maintain and keep the workers if you pay them really good. Like, if they get a certain amount of hides done in a month, you give them a bonus. You know, and that's how you spike the interest, right?

And you're going to want to highlight these people that are working so hard in your tannery because you know, if you're on a council or something, you're not going to understand how hard it is until you actually put a week in at that tanning. And people would stop in, there'd be interviews, and people would document it, and they'd come in. To me, you know, as I was doing – when I was in the thick of it, I probably made it look very easy. But sometimes people would be watching me break hide, they'd go to break the hide, and they'd be like – after one, they'd be like, 'Holy cow, that's a workout!' (laughs).

Because that was the plan after ten years, like nobody was moving on doing a tannery, so that's where I came in. And once I started getting into school – I actually gave up my numbers to the Organized Village of Kake and said, 'Can we start a tannery?' And they started a grant off it, and... At the time being, I'm out of the grant for a little bit. You know, I was trying to recollect thoughts and get motivated again. You know, because it was so hard, you know, for about seven years we tanned you know, at least five to seven – five to eight hundred hides in a year. You know, but as you're doing it now, you realize that you don't need to do it in the summer because the best coats are in the winter, you know. And like I said, you want to do it. You do it for activity, you do it for prevention, you do it for recreation. But when we harvest these animals, they're so delicate to our people on our resources, you know. I think you only want to get them when you have a way of teaching, or way of culturally being bonded to such a beautiful craft. You know, and that's the way I've been taught, you know, Robert – as I watch Robert, he's just so into his craft and he's so good at it. Very impressive. And it's something I look up to.

You know, there used to be fur trade as far back as you can think of because . . . I had a chief contact me from down south. Said, 'I got a seal and a sea otter in my wardrobe, and it's been there – this wardrobe was passed down to me for generations. And he told me three or four generations, right. And this thing was old. We're talking – at this time, it might have been seventy to eighty years old, but it was when I first started [c. 20 years ago], and he . . . was in Oklahoma. . .And he sent me a picture. . . And it had seal and sea otter on it. And [it came from up here] . . . because we always bartered, and we always traded a long time ago. . . I made a vest for [that chief.] . . . supposed to be for his son, but he ended up – and this is something that I really cherish – it ended up he liked it so much, that they buried him in it.

. . .If we can increase everybody's knowledge to at least try a tanning class, or to live the life, a traditional life, you know, a cultural life, it might enhance their strength, enhance their power. And you know, give people a new respect in the industry or you know, in something that was... where Sealaska's fighting to sustain it. Tlingit and Haida's fighting to sustain a tradition that was probably once lost, you know. But you really look at it, it's like – we used to be tanners too. I mean, a long time ago, did we have tanners? And we'd send our stuff off to a big tannery in Idaho, or...

I think you can have an industrial operation, but . . I wouldn't put it here. You know, if you have more of an industrial operation, I, honestly, would look to put it where there's more people or more help. But you know, one of the bigger problems right now they have is Prince of Wales and they have how many villages on the [1:17:18] community. Like, if they had it centralized in Klawock, and you have two really good shavers, one from Craig and one from Hydaburg, they can go up and go to work, right? And you just develop a team; say 'We're going to train this many guys up.' . . . If you had the main hub that has the [heavy equipment] down there, right. And this is just the idea I have for them. And then, you also have some stuff going on in Hydaburg where they're a small-base tannery and you also have one in Craig, small-base, something that's not going to cost you a lot of money per year, you know. And you just get these industries going, it's going to help you work on that otter population. You know.

Yeah, it was, but you know, they eventually got to start centering everywhere. They can't just keep hitting Kake because there's more interested hunters. You go and teach these guys how to be interested in Hydaburg and there are hunters in Klawock and Kasaan; but sometimes they only take them from certain areas to help the population in that area. You know what I mean?

[There is a] demand for teaching people how to tan. [In terms of priorities] harvesting should be number one, number two . . .[should be] tanning, and number three . . . sewing, because that's how they fall in line. . . . That's just my thought. Like, when are the tanning courses tanning because there would be a lot of people that want to learn.

Finally, Christy Ruby has a vision for a tannery that combines a lot of these needs, including teaching about hunting, tanning, and handicraft traditions, and other aspects of culture and the environment. The tannery would also serve as a hub for marketing quality handicraft products. With Scott Jackson, she suggests that it would have to be in place where both skilled tanners and handicrafters would be available to work, and buyers (e.g., tourists) would be visit in significant numbers.

Christy Ruby: You will not be successful with just a tannery alone. It's too expensive to run. And you cannot process enough hides, especially – you could do probably with sea otter, but not enough seal because they take longer to do professionally. But if you combined that tannery with a pre-contact tour, meaning that you had a tour that was attached to the tannery that was something different. Like, what I want to do is have a pre-contact tour, where you take people back into the past. So, I need my tour to be near some woods and you take them back in

> the past, and show them our past, how we used to live 2,000 years ago. And you have the plots for – I mean, I drew this all out. This is all in my proposal; you have plots for the Tsimshian, the Tlingit and Haida areas where we used to do stuff. And we have a garden center where we'd sell plants and . . . we harvest out berries and stuff and show people what we eat. How we use toilet paper, which was moss. How we survived. How we gathered our food. How we stored our food. That's all interesting to the new people nowadays that don't – they live in a cubicle. They want to see how things started, how they began. And that's a drive – plus it's also cultural and cultural [information] is huge with tourists nowadays. So, if we had a tour that went through the backwoods and . . . then it filtered through a corridor and the tannery that had the tanning going, operational in the summer, but very, very slow. We wouldn't be at full capacity. We'd have a few people working, and we'd filter them through the tannery and do explaining about what the processes are.
>
> And then at the end, there would be this huge gift shop, but it's not a gift shop, it's actually a sewing center. All my machines that I have, everything I have, would move down there. You would be able to sew anything. I have lots – I have a 900 square-foot studio with every machine you could possibly think of in it. So, you can sew anything. And you have this sewing center that has two people, one or two people that work during the summer, and there's twenty on staff. They're on rotation so we don't get, you know, crazy, burnt out with art. And they're sewing. That's what they're doing. That's their job. Tourists get to talk to them. On the side of the sewing center there will be a wall of merchandise. And there would be anything under fifty you can take with you. And you buy it online with a QR code; click on the website, you purchase it and you take it away. If not, you want to order, there's three sizes of hats. You try on which one, you click on and order, and the QR code directs you to exactly where you need to go buy that hat. You click on it, buy it, and then see you later, and we'll ship it to you when it's done. That way you don't have to worry about a register. So, the tours will bring about 600 thousand a month. The actual sewing center won't make a whole lot of money because we're working on, you know, paying the people also to work there. And paying them to do what they want to do.

Professional tanning, including shaving, shearing, and other finer points, takes a high degree of knowledge and skill and specialized machinery. Shearing is especially important for achieving evenness, softer texture (i.e., without guard hairs), and lighter "garment weight." Christy Ruby fears, with the loss of some of the experienced tanners like Ralph Ring at Frontier Tanning in Anchorage, which specialized in seal skins and was used by Alaska Native sewers all over the state, it will be hard to obtain the kind of quality tanning needed to produce garments for higher end fashion markets, which are an important sector in the marine mammal handicraft economy.

> Christy Ruby: I went onto the air with . . . Native American Calling – I talked about the otter issues . . . and everything, and why we have [them]. . .I put out articles and stuff. . . I keep telling everybody that seal skins are going to be a thing of the past because, you know, there's no tanners left, and nobody would listen to me. They wouldn't get the tannery going. . . or anybody wouldn't even step up to the plate. I've tried corporations. I've tried everybody to step up and they won't do it because it's too much work. So, now seal skins go for $600 apiece, easy.

Ruby's vision for sustainability of the sea otter economy is to have a multi-functional tannery facility that offers professional tanning and bespoke sewing services, as well as tours, merchandise, and shipping on custom orders, to make the Alaska Native cultural economy of marine mammals both visible and viable as part of a sustainable blue economy in Southeast Alaska Native communities.

**Enforcement Actions and the Maturing Sea Otter Subsistence Economy (1990-2012)**

Appropriate regulation, consistent enforcement and established norms are important to the governance of common pool resources especially as standards are being developed for their sustainable harvest and use. We have referenced the detrimental effects that ambiguous regulations and uneven or overzealous enforcement (as in the 2008 USFWS enforcement sting operation in 2008) can have on sea otter hunters and handicrafters participation in the sea otter economy. In this section, we examine more deeply the enforcement actions carried out in Southeast Alaska, especially between the early 1990s and 2012, when sea otter hunting and handicraft production was growing, including through tribal investments, such as STA's tannery.

> Wade Martin: Well, it was years ago when I first started – it was back in the early-[19]90s when this happened. And my son was working with a charter guy, sport fishing, and he was interested in hides. And my son told him, 'Yeah, well I could talk to my dad,' you know. And I talked to him; told me he was . . . a quarter Native. He was legal to [buy] – and so we got him his hides and a couple years passed and then one day, I was bringing my boat, driving my boat home, just got in from hunting. I was backing into my drive when I see these cars pull in right in front of me and I was trying to pull back out to reposition my boat because it wasn't where I wanted it. And these guys just surrounded me; jumped out ten millimeters blazing, you know, waving around with ten millimeters and they're all in flak jackets. I was like, 'Holy cow! Who are these guys?' And it was an eye-raising experience to see people come out with loaded pistols in their hand and rushing up to the car like I was Charles Manson or somebody. I was like, 'Wow, what is this? Who the hell are you and get the hell off my property.' 'Are you Wade Martin?' 'Yeah, yeah. What's going on?' 'You know this…?' 'Yeah, yeah, I know that guy.' 'Well, did you sell him sea otters?' 'Yeah.' 'Well, he's not Native.' 'Well, that isn't what he told me.' And so, after that experience, anybody I ever deal with, if I don't see a certificate, a CIB [or CDIB- Certificate of Degree of Indian or Alaska Native Blood] card, forget it. That was the worst time in my life. They were telling me I was going to go to jail for a year and a hundred thousand dollar fine. And that had me spooked.
>
> And the way he [the buyer] got caught is he had a Christmas party and Ben Johnson, he's another guy used to work for the tribe in my old position, the traditional food job, he was at a party at his house and he saw it displayed on his wall and he ratted him out over it. And they raided his house, confiscated his hides. Come to my house, and my son was working at that time at Subway, and [the enforcement agent] asked me . . . about where he was at, and I was like, 'Why? This is just on me. Don't bother my son.' And I told him where he was at; he was working at Subway, the next thing you know--he's a teenager--and the next thing you know, he's calling me up saying, 'Dad, these cops have got me all pinned into this booth and asking all these questions and telling me not to be deceptive,' and this and… I went down there; I went ballistic. But that's the way that they conducted themselves around here for a long time. It was like a witch hunt. They come into town, and they'd threaten you, be real assertive, very intimidating, and you know, you'd swear we were Taliban the way they were treating us. I'm not kidding. It was bad.
>
> In my case… I'm a little bit smarter than your average bear, you see. 'You think you're going to put me away for a year?' And I started researching federal laws. . . They didn't have enough to really go after me. They wanted to, so they did a 'catch all,' a Lacey Act. . . I said, 'This isn't right.' And so I called the . . . the *Wall Street Journal*. . .. I said, 'You want a really

good story? Here.' And then they sent an affiliate from Seattle up here to… And I've got the [article]. I'm one of the very few Alaskan Natives that have been in the *Wall Street Journal*. They got a big picture, even a rifle on the rock, and a big two pages on it. [See Fields and Emshwiller 2011]

Lillian Feldpausch: October 1, 2008 [when their house was visited by USFWS enforcement agents].
. . . A couple weeks before that, I ended up having surgery. I had my, part of my thyroid, one side of my thyroid taken out. So, I was having issues, you know, moving around. Was getting better, where I could [drive again] . . .; took our daughter to school. And it was interesting, because I dropped her off at Baranof Elementary and there was a vehicle that just – I just kind of noticed you know, seeing. It was a purple Suburban or SUV. It was kind of following me around. And then found me when I dropped her off and then followed me again and I went to go check the mail and then came back home. And it – they pulled up right behind me. They came up and asked if they could talk to me, identified themselves and said, they – you know, they'd like to talk, and it's like, 'Sure.' We went into the house, and I found out there was already some Fish and Wildlife staff inside.

Inside the house talking to our oldest son, Jonathan, who was 18 at the time. [T]he lady . . . talked to me while there was another person talking to Jonathan in the kitchen . . . And it was just kind of odd because she – you know, I was trying to figure out what was going on and what was – what they were talking about, what they were concerned about. And yeah, I said – and then she goes, 'Oh, are you ok?' And then she goes, I said, 'I had surgery a couple…' She goes, 'Oh yeah.' She goes, 'What did you have to do?' I said, 'I had my thyroid out.' And then she goes, 'Oh yeah, I had my thyroid out too.' And I'm just like – she showed me. There was a scar there, but you know, what are the coincidences. And so, it's like, 'What the hell, ok.' And then the conversation went back and forth for a while. They were asking about who was hunting, and how I hunted, or how I obtained stuff and sea otter. And one of the things I said, 'Well,' I said, 'are you looking for a certain tag or something?' But I had – because I kept all my scraps; I don't throw anything away whether it's unusable or whatnot. So – and I had all my tags and I kept them in the trunk. And I said, 'Would you like to see them?' They're like, 'Oh! You have those?' It's like, 'Well, yeah. Is there a certain – something specific you're looking for?' And then they kept asking, does – you know, wanted to know if Jeff hunted. I said, 'Well. . . it's our boat. . . 'You know, when the hunt's on, he doesn't participate. He can't point, you know. 'Well, how do you know this?' I was like, 'Because we've taught classes. This is what you do and what you can't do.' So, I said, 'We go out to, not just hunt, but we also go out to get halibut, to get fish.' I said, 'We have to be able to multitask, and to be able to harvest.'

They – in the meantime, in the kitchen, you could hear it getting heated. And they kept asking for a specific gun. And we were just…And you can hear that [agent's] conversation [with Jonathan], so I get up there and they're trying not [to get] me too excited because . . . I'm like, "What the hell?' You know. I was getting to the point where I was like, 'Y'all need to go leave.' But they were asking for a .223 and for a gun that we didn't have. So, they go into the gun cabinet, and I said, 'What are you looking for?' We didn't have anything to hide. You know, 'Are you looking…?' They end up taking one of my receipts for the tags and we never did get that back.
. . . In the meantime, I get a call from my brother, Dan [Williams]. They're down knocking on his door and questioning him, asking about hunting and Jeff and the boys, and who hunts, and whatnot. And he just stopped and shut down and didn't want to, you know – told them to – told them what they could do. It wasn't you know – such kind words, but they left.

Yeah. What was interesting is they had a folder, and they had some paperwork you know. One of the things that I seen when they opened it up to grab something, was a picture of our youngest son. It was his school picture from Jostens. We couldn't figure out how they got it. I had called the school to find out. If, you know, they had released it, you know pictures of our boys. They did have pictures of – they did have – they were seen on school property because you know, Jonathan was a senior – or he had just graduated that year, but Seth [our youngest] was a freshman. . . But yeah, for them to have [a photo of him]. . like matching it to footage that they took [as he went to school]?

[That same morning] during that time, Jeff had gotten – it was early on, before I took Morgan. . .Jeff had received a call that he needed to go out to - the staff needed him out at the tannery, and they [the agents] proceeded to talk with him [at the tannery] and they wore him down and when we talked to one another, because I wanted to talk with him and I was in no shape or form to be able to – I was in duress.

It created a lot more [stress]. I think the stress prolonged the illness recovery and [caused] hardship on [top of] that. It was mentally grueling. The attitudes, the behaviors, the trust, you know. When they come in and they shake up a tree, in a sense, to see what falls out, and you wonder why… Some people wonder why, in the smaller communities, people are hesitant and untrustworthy toward the government. Pretty much why. . .

Apparently, our youngest son, he was fourteen, you know, Seth, he had opened the door. It was previously to me coming home. He had opened the door and those people had asked to come in, but you know, here you have a fourteen-year-old, and they're coming into the house. That was – you know, when we kind of were piecing everything together and trying to figure out what happened, how this happened, or. . But for a minor, who doesn't [have] that authority to allow people in like that. And they didn't have a warrant. They didn't tell us who they were and what they want. . .

They were talking about their survey questions [to Jonathan]. I mean, that's how it kind of all started out. But they had, began to raise their voice a couple times, and their questioning was just off. It was just [supposed to be] – you know, for a survey.

They had been trying to intimidate Jonathan because of his age. And he was very adamant. You just, you know, because we teach our kids to be, you know, upfront and honest, but they kept raising their voices and they didn't like what he was responding. And, you know, sometimes kids can be a smartass, but the way that behavior was reflecting, they were losing – he had lost it, basically, their trust and whatever they wanted and how they wanted it. But they were kind of [harsh?]. Our son had worked at Ryan's, and – Ryan's Sporting Goods. [The owner] Bert's a good friend of ours, but we had found out that they had come into [Jonathan's] place of work, later on, and they were kind of following him and staring him down, and you know. And Bert asked them to leave. So, you know, harassing at place of work and home and whatnot. . .

They all kept saying the same thing– 'You can't hunt. You can't fish.' You know, 'You don't have that ability to hunt. Your dad does the hunting.' They kept trying to frame him or . . . to put words in [his mouth] … Jonathan is our 'Baby Huey!' He's as tall as Jeff. He's broad built. . . Our kids are hard workers. They like to hunt and fish and run up the woods and whatnot. So, I guess growing up in the village, they're exposed to a lot more. But it was interesting, but… It pretty much – we had to call a friend to obtain an attorney.

We obtained Louie Menendez who's now, you know, a judge. But since Jeff was non-Native, he represented him, as that's who they were after. It seemed to be after we were going through everything that they were determined to try to do whatever they can to get him. So, he was retained for him, but we all talked. Louie called them for a cease and desist and to return products back. And too, you know, they communicated – they kind of backed off pretty quick

after, you know, we retained our attorney. But we didn't – not going to mess around (laughs). It was still – as soon as the – you know, basically, if he was charged with something, they would, you know, he would step up the game a bit. But . . he helped us through and tried to figure out what we needed to do. But I tell you what: They come in and they turn your lives upside down. They shake whatever they can come into, whatever falls. . . 'Do you know of anybody else who's doing anything?' . . .

[On knowing what you could do and couldn't do under the MMPA] I mean, that's just it; everything that we taught in the classes, kept drilling. This is what you do. This is what you can't do. This is why you can't do it. And they – for them to be able to know what we do for me to have surgery, to have pictures of our boys, to have all these different things, they'd been watching and kind of, you know, building up this here, to have this whole big sting operation that failed miserably. There may, I don't know of other, besides Michael [Smith], and I'm not sure if anybody else got – I don't think anybody else got in trouble. . . [maybe because they implicated others]

[FWS had an] affidavit that they had drafted up and asked Micheal [to affirm and sign it] . . . And he goes, 'I don't want anything to do with it.' But this is what they were trying to implicate Jeff on [participating with his sons in sea otter hunting], which he had nothing to do with. But some of the conversations, you know, he was telling me about it later, is that the only time . . . he was beginning to wonder if they had the area [the tannery?] bugged. . . This is what they do.

It was a whole Southeast thing. They brought people in from Kansas City. The one guy who came to our house that was talking with Jonathan, he was from Kansas City. He had no clue about anything. . .

It just – it popped that bubble, and it took a while for me to be able to . . .You know, I still did things here and there. . . on consignment. I sold my machine. A Bonis sewing machine is very hard to find – that is functioning and working. I just – it was sitting collecting dust and I just had heartache about it. I still have hides that are still hanging up. You know, I've cut and stretched them. They're still hanging. . . It took me a while, but I started working to be proactive a little bit more. But, you know, it still baffles me; try to figure out how they obtained this information on us, because it's not something you come up with overnight, or in a week or two. They were working on this for a while. I had reached out to our senators, and I didn't get anything back. . .But for them to be, you know, come through – [pressing] a minor to come through our door, there's no. . . I'm not sure whatever happened to them [those agents]. But I just kind of stopped and gave up. . .

Sea otter's great to work with as a medium. But Fish and Wildlife, well– they don't give a shit. Sorry. It's just they come in and they can turn your lives upside down, deflate you. . . I'm a Tribal Relations Specialist with the Forest Service. I see what it's like. I know that – and just from family history – and how the government can be . . . The Fish and Wildlife is – they don't really want to work with tribes or tribal citizens and whatnot. . .

One of the things when we were working on the ['significantly altered'] pamphlet, you know, a couple years later, [I thought]: why should we? When we tried to say, 'Provide a pamphlet to people.' And they go, 'Why would we want to do that? We want to catch them.'

It was unsettling. It took a long time for us to just – it was battered and bruised. I've never seen my husband so beaten and torn in a sense, emotionally, because they picked and they kept asking him, trying to basically coerce him, trying to get him to say what they wanted, and what they thought to make an example of somebody. . .

And it's interesting because . . . I've tried to take the class that they offered here with SHI [on sea otter skin sewing]. It was painful because . . . [w]hen I sat in there, I talked to the teacher and I said, 'You know, you got to be careful when you say this and this [i.e., about the

laws governing sea otter hunting and handicrafts], and don't just, you know, lead up to it. People can and will get in trouble if they're not aware.' Because it's just kind of like that. They knew that we – how Fish and Wildlife [came after us]. Everybody in town knew and what was interesting is that we weren't guilty, but they assumed – even to the tribe, having to prove that [even though] no charges were brought, nothing. . .never done anything wrong. . .Some other people who have had this – similar charges, who are non-Native, got off easier than the Native. . .A lot of the Natives are held to a – you know, to a more stringent [standard]; they'll [be] harder [on them], you know, [in bringing] charges. The leniency isn't there. . .

I know how SHI, what they'd like to do, and how they'd like to revitalize. They're working to revitalize the traditional and our cultures and whatnot. And it's really – I don't know. I don't feel that our tribe or our corporations take it seriously. They act like, sometimes they, 'Whatever.' This was huge and no one stood by us. And to be able to – because it was doing a lot with sea otter, breaking ground, you know, with a couple of the, you know, the oldtimers and working with sea otter. Right now, there's a lot of people out there who are now working with sea otter who may or may not understand what they're doing [vis-à-vis the law] . . .

I come from a generation, my parents went to boarding school, were disciplined harshly for speaking their language, and for that, I am impacted because I don't speak – I can understand, but I don't speak our language because it's not something that was taught. So, and that goes along with a lot of our traditional arts . . .

We are a sovereign nation, and when we go to, you know, when we hold government-to-government, those are some things that are valued. We, as a local tribe, work within our traditional territory. We don't like to tell other tribes how to do their business. Tlingit and Haida will come in and tell everybody what they think, and how they want to do it. . think that they can speak for them, which isn't true. We would love to be able to manage our area, to be able to help with our population, to be able to, you know, just – we don't have that authority, unfortunately. . . I don't think there's an easy solution. . .

Early on. . . we got all the tribes together. It was part of one of the grants they had to be able to talk a lot about sea otter [management] and whatnot. It just, some tribes, they're on a varying scale. Some tribes are ready – have that capability and some don't. . . it all depends on the scale and the knowledge, the ability to be able to carry it out. . .We can issue hunting permits. That's about it. Can we – can we police it? We can't police this land. So, that draws up more problems and more issues if each of the tribes were able to say, 'We're going to give it to here. We're going to give it to there.' . . . You see what it's like with herring. Everybody comes here. How can we police that? How can we enforce that? We're not able to do that. Even if we turn around and ask them to, tell them to. You know, we know that those individuals who come here to harvest herring, you know, herring eggs, they're also hunting, but they're not [our tribal citizens] . . .

I think that would be an issue [to restrict harvest by tribal territory?]. And to be able to have it region-wide, then you get the polar people unhappy, you know, the walrus people, because you're opening up a can of worms that just – nobody wants that touch. If they do, it's going to, you know, they're happy with the way it is. The only ones that aren't happy are the crabbers who are decimating all the crab and everything else. Sea otter was introduced, you know, a long time ago.

Jeff Feldpausch: Before they came through on October 1st, 2008 [the date the USFWS enforcement operation entered the STA tannery. . .Oh, that date is etched . . .Yeah, we were up and booking a lot [of furs] and I was looking for other solutions, and you know, it was… Yeah . . . Had our customer base., [then]. . . somehow, we got swooped up into all this other stuff . . .

Yeah, Mike [Smith] was targeted up at AFN. That was when he first met that guy up there and the guy – you know Mike called me up and said, 'You know, this guy really wants a hide.' I go, 'Mike, unless he has a CIB card or some identification that says he's one quarter blood quantum, you can't sell to him.' And he just kind of. . .befriended Mike; spent two weeks with Mike down here.

And then finally got him to – what he did was, the – he got him to sell the hides and then he said, 'I don't want to take these with me through the airport. Can you send them to me in Washington.' As soon as you cross state lines, you've violated the Lacey Act. And they set him up all the way, yeah. I really feel bad for Mike. He got the shaft on this.

[On why the tannery was targeted]: Because we were the only tannery in Southeast and we were working with a couple of – one of the guys who got busted… I can't remember his name now. Roger [Alexander. . . He was out of the Ketchikan area. He got house arrest. They were after him. He was selling hides he shouldn't have been selling too. But since we tanned for him, we were part of this whole sting operation. I actually got a call one day from somebody out of – and I don't know if this was the Wildlife Service or not, but somebody out of Skagway or Haines. I think they mentioned the fur gallery and they wanted to buy hides from us, sea otter hides. It's like, 'I can't do that to you – or sell that to you.' So, I know we were probed several times, and I stood my ground on a lot of this.

Then they tried coming after me for going out with my boys on the hunt. They could not believe that my oldest son, or my boys were able to do all the hunting and fishing. My oldest son [Jonathan] was fourteen at the time. He had his first shotgun at ten. He was running trapline with me at eleven. He wasn't some city kid from down south. He lived in a rural village, lived the life, and was a big kid, you know.

So, they were trying to get me for participating in the hunt. I did not do that. Jonathan had already known how to skin animals because I – if he's going to run a trapline, I'm not skinning them for him. So, he did it. But they just couldn't believe that. And that's what I told them when they – when they showed up at our doorstep that morning – or actually, I got a call from Bill Mork. (He was the only one at the tannery they didn't come after.) . . . And he goes, 'Yeah, there's federal agents out here. You might want to come out.' So, I left the house. My wife went to take my daughter to… was she going to preschool at the time, or Kindergarten, or just what. My two boys were home alone. Seth was like eleven and he answered the door when the agents showed up and we had like an Arctic entry. There was a lower apartment and then we were in the upper one. There was an Arctic entry. Well, they said, 'We want to speak to Jonathan.' He goes, 'Ohhhhkay. Let me go get him.' He left the door open. Well, they walked right on in. So, a minor let him into the house. And they brought in State Troopers with them. This just wasn't the feds. They brought everybody with them; State Troopers, they brought cadets out from the academy to sit out at the tannery to make sure nobody went into the building. And my oldest son, Jonathan . . .-- and he was a minor at the time, he wasn't an adult, Federal enforcement agent with him and John Crier who's a State Trooper. We checked him out. He's been slapped for excessive force and all this other stuff, but Jonathan really pissed him off. They said, 'Well, when you go hunting, we want you to go detail by detail.' He goes, 'Well, I go off the boat. I see the otter. I lift the gun. I pull the trigger and the bullet goes out.' It just pissed him off (laughs). . .

We didn't deserve what happened to us.

Mike Smith: I'm originally from Kake. I grew up over there doing a lot of the subsistence hunting for deer, seal, catching fish, king salmon, halibut and I moved over here, and I started hunting sea otter with my friends. I did it before for my parents, for my mom's arts and crafts and then I got into it over here with my friends and – for the same purpose. And my mom

would go up to AFN and different places there. . . selling her arts and crafts and… That was when she met the guy, supposedly name's Eric, and said that he wanted to meet me, and I wasn't really for it. 'This guy really wants to meet you, [she said]. And I was like, 'Oh, that's weird.' . . . and then . . . finally told her, 'Ok,' . . . 'What's his number?' [this was in 2009, he recalls]. And she said, 'Well, he's coming into town.' And so, I met up with him with my dad and he took us around and we had, I believe it was a lunch, but he came down for a visit. And then the next time he came back was for a hunting trip. And then he came back the following spring [2010] to go out fishing. And that, on that trip, he stayed by me a couple nights.

One of the trips . . . he wanted to witness us shooting a sea otter. And we didn't see one. We went on my cousin's boat and… So, he wanted to shoot ducks. And he was shooting them from moving boat and… everything you're not supposed to do. . .

Eric Marshall [is the name he went by]. He showed me a fake picture of his, supposedly, wife. Said he was from down south, New York or somewhere over there. . .

And the whole time, he was really convincing, and you know – I introduced him to my family, my wife, everybody. And when I first kind of had a, you know, first hint of him being undercover was I told him, 'Yeah, my wife's pregnant and I have a kid.' It was like he went into shock and got quiet and I was like, 'Are you still there?'

. . . And the whole time [he kept telling me he wanted a sea otter hides]. I kept telling him, 'It's against the law. I can't do this; this is against the law. I have to make something out of it.' And he was like, 'No, no, no, just cut it, leave it whole and ship it to me.' And he was calling me, three, at least three times a day. First thing in the morning and just keep calling: 'When are you going to send the hides?' [He wanted six.] 'When are you going to send them?' I kept telling him, 'No, it's against the law. I can't do it.' And he was – you know, he kept on insisting and you know.

. . .He said that his wife was really into arts and crafts and wanted to make the adjustments to them herself or some BS like that. And you know, I just kept telling him flat out, saying, 'No. No, I'm not going to do this.' And you know, when somebody's calling you that many times and bugging and bugging and bugging. . . Finally, I gave up, you know, because he gave me the check [for $800] right before Christmas. And you know, I was like, alright, 'I'll just send the hides.' I was finally like, 'Alright, I'll put them in the mail. I'm done. I'm tired of this. Tired of dealing with it.' You know, it took how many years to finally cave and do it? And as soon as I put them [two hides] in the mail, they seized it. Had all these different pictures of it everywhere; out at the tannery [where he had the hides done], pictures of everything. . .

[A]nd then after I told him I sent it, he was acting all happy. And then he was, 'Alright. Thank you.' Hung up the phone. Tried calling back, no answer. Then my mom calls me up and she says, 'Is that you in the paper?' I was like, 'No, I didn't do anything. Why?' She said, 'It says Micheal Smith, indicted on federal charges.' . . . And I was like, 'No way! That can't be me.' And then I started thinking and I was like… 'That is me!'

. . .They even had a name for it [the sting operation], 'Operation,' something. And they were really proud they caught somebody. And it had to be me. And, yeah, it was a bunch of BS, I think. . .

[And then they came for him]. Yeah, one morning – you know, I'm an early bird, I always get up four or five in the morning, have coffee. And one morning, my daughter, she was still a little girl, barely higher than the doorknob. And I hear this knock and I'm just getting out of the shower, and she runs over, opens the door. And then she comes . . . back, yelling for us. My wife gets up. She was pregnant at the time, and she goes out there and then she comes back and says, 'Mike, it's for you.' I was like, 'Who is it?' She's said, 'I don't know. It's cops. They have badges.' So, I get, you know, whatever's around me, I throw it on,

and I go running out there, and they're already standing inside the door in my house. I'm like – they said, 'Are you Micheal Smith?' I said, 'Yes, I am. And I didn't invite you inside my house. Now, please step out on the porch.' And they said, 'Well, we have a right to be here.' I said, 'But I didn't invite you in.' 'Well, your daughter did.' I said, 'Look at my daughter. She's not of age.' I said, 'We can talk outside.' So, there was three of them and they were trying to act all 'buddy, buddy' and stuff, and they asked if I knew Eric. And you know, I told them, 'No,' just to see their reaction. The lead guy starts you know, 'We know you know him. We know you're in contact.' I said, 'Well, why did you ask me? I already know he's an agent.' And they said, 'Well, you know why we're here.' And they're looking at my rifles. They're like, 'Which one of these were you using for shooting the otters?' I told them, 'That one right there.' And they're like, 'Well, we have to take that eventually.' And I told them, 'Do what you have to do.' But yeah, they – it was, from that time on they went out to the tannery. They talked to Jeff then. And went through files. They went through everything.

[Were they also investigating the tannery?]: Yeah, and then they were even trying to have me say stuff about Jeff that would get him in trouble. I told them, 'You're messing with peoples' lives. You can't do that. And I'm not going to do that.' And after that, they knew not to try to push that on me anymore. [The hides had been properly tagged and logged]

. . . And as far as I know, from what was written up in the reports, the hides didn't even make it past the post office. . . [They were] kept as evidence. But then from what I saw, they had a huge sting operation, you know. Something they should be investing their money on people that are doing all the drugs here in town and stuff. But nope….

Yeah, and they tried to mix up my words, saying that I was saying 'this' and 'that.' And I told them, 'No, that's not what I said.' And so, I went to trial and their – they didn't give me any leeway or nothing. You know, I thought I was going to Seattle at worst. So, I agreed to everything and they're like, 'You'll be . . . six months in a federal prison, and we'll be calling to let you know when you have to report and where.' I was like, 'Ok.' So, they called me up and they're like, 'You have to report to Yankton, South Dakota, end of July [2011]. You'll do your six months there.' I was like, 'What?!'

[I had to] pay a fine [and] pay for my own tickets or else ride the…Con Air [Justice Prisoner and Alien Transportation System]. And I didn't want to do that. I ended up getting my own ticket.

[Did they prosecute others at that time, or go after others as well? I believe they were after another guy, a local, and he spilled his guts . . .And got of Scot free. . . So, they came after me. **. . .** And you know, even my wife, she was like, 'If they're offering you anything on the table, take it. At least you won't have to go away for so long.' I said, 'That's not who I am.' I said, 'I'll take it. But when I come back, I'm going to be really mad.' And yeah, I'm trying to get over that part. You know, life's too short. Try to be a better person overall, but you know… I haven't talked about it in a long time and that kind of gets me stirred up . . .

And they sent me to a place that was full of, you know, guys that did drug crimes and did bad things to people. And out of all the inmates, there was twenty-seven Natives. So, I was able to defend myself and gain my respect there. And I don't wish that on anybody. And I kind of get worked up talking about it.

My little, my youngest boy is not so little anymore, and he's like a couple inches shorter than me [i.e., over 6 feet tall]. He was about that big [approximately three feet high] at the time. And it was pretty tough being away from my family knowing they were struggling. And you know, just being away from them overall because I did all the hunting and fishing for our, you know, big family.

[The attorney—public defender? - assigned initially said] 'We're going to fight for this. We're going to do this,' this and that. You know, got my hopes all up and then come to court.

> Whatever the judge said, she was like, 'Yes, your Honor, we'll take it.' I was like, 'What?!' . . . [In the end] She said it wasn't entrapment. It was because she didn't want to do the fighting. Everywhere I reached out to here, said, 'No, we can't help you.'
>
> Everybody that I've talked to… You know, I don't really spill my guts and tell everybody everything. I just give them little parts about the story. They're all like, 'That should have been entrapment.' I said, 'I know, but I had to go halfway across the US and serve six months away from my family.'
>
> . . .I wouldn't wish that, what I had to go through, I wouldn't wish that upon anybody; getting ripped away from your family and being that far away, having to adjust to, you know, the weather, to people. You know, its prison, they're not there to be your friends. That's for sure. Respect is earned and not given there. It was quite the change. I'll tell you that much. You go from making good money to making ten cents an hour. . . As mad as I am, I just hope that people learned. And this is nothing to mess with.

The US Attorney's Office official press release (see Fig. 4.3) notes that the convictions brought against Mike Smith relate to both violations of the MMPA's subsistence provisions ("commercialization") and the Lacey Act, which regulates interstate commerce ("trafficking"). It also details the terms of his penalty beyond prison time, and notes that the State of Alaska assisted USFWS enforcement agents in the investigation. (U.S. Attorney's Office 2011).

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NEWS

**Kake Man Sentenced To Six Months Imprisonment For Illegally Trafficking In Sea Otters**

FOR IMMEDIATE RELEASE July 11, 2011

Anchorage, Alaska – United States Attorney Karen L. Loeffler announced that a Sitka man was sentenced in Ketchikan, Alaska to six months in imprison for illegally selling two tanned sea otter pelts to an undercover officer in violation of the Lacey Act.

On July 8, 2011, Michael E. Smith, 36, a resident of Sitka, Alaska. was sentenced by United States Magistrate Judge Leslie Longenbaugh. Upon completion of his sentence, Smith will serve one year of supervised release. While on supervised release, Smith cannot hunt, or in any way participate in the take, sale or manufacture of marine mammals or marine mammal products. Smith must also forfeit the firearm used in connection with the offense.

According to court documents, Smith, an Alaska Native, who was employed at the Sitka Tribal Tannery, illegally sold two whole sea otter pelts to an undercover agent for $800, in violation of the Marine Mammal Protection Act. The tanned pelts were then shipped outside of Alaska to the undercover agent in violation of the Lacey Act. The investigation is the result of a year and a-half undercover investigation conducted against illegal sea otter hunting and trafficking in Southeast Alaska, Anchorage and Fairbanks. The investigation has documented numerous individuals involved in the illegal activity and to date, two individuals have plead guilty to illegal sea otter commercialization and are serving their sentences in federal prison. With respect to Smith, Magistrate Judge Longenbaugh expressed particular concern that Smith broke the law despite holding the position of a village police officer.

The Alaska State Wildlife Troopers assisted the U.S. Fish and Wildlife Service in this investigation.

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Figure 4.3. Press Release: Kake Man Sentenced to Six Months Imprisonment of Illegally Trafficking in Sea Otters (U.S. Attorney's Office 2011), concerning Mike Smith.

Other tribal members also were critical of the time spent and resources extended by USFWS agents to enforce regulations surrounding the sale of sea otter hides – methods that appeared to them to be coercive. Prior to this incident, Mike Smith stated that he never sold sea otter skins, even to Natives. He had just been providing them to relatives, mainly his mother, for producing handicrafts. . . "I didn't give in [to the uncover agent's proposition] for almost three years, and they spent a lot of money looking into me. Especially sending him [the agent] here to Sitka."

Anthony Christianson, a hunter from Hydaburg was similarly critical of the enforcement culture that developed around sea otters, which he felt was meant to deter tribal members from exercising their legal rights to hunt and use sea otters.

> Anthony Christianson: Of course [the enforcement agents come here] during the 'sting days.' And I called them out on their little crap they pulled in Kake [referring to Mike Smith from Kake but living in Sitka] and on Roger Alexander [from Hydaburg but living in Ketchikan].

I says [jokingly] 'Oh, yeah. We just go out and we have otter slaughters.' You know, and 'Huh?!' And he's like, 'This is all up and up. And we're not here. We're here to be your friend.' 'Ok.' So, three weeks later there was a Fish and Wildlife Service guy here and he was, 'Not law enforcement,' he made sure to say this, 'but I heard this word 'otter slaughter' and I was concerned.' And I was like, 'Well, what concern is it of yours, like, whatever we do with it. It's our right to shoot sea otter . . .' Honestly, [the time is] . . . so right for [reforming] management now that we can change that into our liking as long as … [we don't] like crabs in a bucket. . . just chop our own legs off from under us because we've got territorial disputes that are ten thousand years old.) . . .

[Roger Alexander] was a Hydaburg guy that lived in Ketchikan and he …They did a 'sting' on him and the guy went out hunting with him and assisted him in pulling the otters in and stuff and they got him . . .

And then they got the Kake guy, Mike [Smith]. So, you can look at the numbers and you look into the history of . . . the tagger reports. And then you follow Fish and Wildlife, and then no complaints, no complaints, no complaints, no complaints, Roger and Mike. They did almost a million dollars on those two stings to bust two Natives. Then you go look at the tagging reports, those very same years, we [Natives] were doing like . . . fourteen to fifteen hundred sea otter a year. Following the law, obeying. And then all of the sudden they do that [sting]. Fear overrode all the Natives and everyone said, 'Bullshit.' Hundred, two hundred, hundred, three hundred [otters since]; so, you'll see the tagging fell off. [see Appendix F which shows reported [tagged] sea otter harvest dropping significantly after 2013.]

As part of a plea agreement in 2012, Roger Alexander admitted to killing and transporting 87 otters in 2008 with a partner in Craig and failing to properly report the kills (valued at $30, 000) in violation of MMPA. Through his handicraft business, Soft Gold Furs, which sold blankets and other goods made from sea otter hides. Alexander had previously won awards including a $35,000 grant from an Alaska Marketplace competition for a hunting, sewing, and marketing business. He had planned to use the award partly to train youth in the sea otter subsistence trade (Hopkins, Kyle 2012). Before his conviction, which required he pay a $10,000 fine, forfeit 144 sea otter pelts and serve one-year probation, he provided an account of his experience with enforcement and the sea otter handicraft trade in an undated "To Whom It May Concern" Letter (SHI, pers. comm. 2023), excerpted here:

Roger Alexander: . . . I am of Haida Native descent. For the past twenty years, I have been involved in protecting and fostering our Native heritage in Southeast Alaska. I have felt, and continue to feel, that it is imperative that we as a people take active steps to protect our past and to properly honor our elders, and . . . keep our traditions alive. . .

A number of years ago, I investigated the possibility of making arts and crafts out of sea otter pelts—a long honored tradition of our people, and guaranteed our people under the Marine Mammal Protection Act. I saw this as a win/win proposition—the promotion of our Native heritage while at the same time, the opportunity to run a small, successful business. I researched products, spoke to the elders, purchased equipment including a heavy-duty fur sewing machine, and consulted with the U.S. Fish and Wildlife *to seek their advice*. What I learned was that the employees for the Marine Mammal Protection Act want to be helpful and want to assist. What I also learned is that there really aren't that many rules that govern the taking sea otters, and what rules there are, are simply (arbitrarily?) made up.

In spite of some of the obstacles, my partner and I decided to move forward with this business venture. Our intent has always been to operate our business in full compliance with all rules and regulations. We set up a web site and posted the rules and regulations. We did this so people looking at it would know what we could and could not do. We slowly increased our

variety of products for sale. People loved our products. We won awards for our work. U.S. Fish and Wildlife honored us in one of their news publications. We won an Alaska Marketplace grant to help increase the size of our business.

It was not easy—we succeeded mainly because we persevered. But our progress was not without obstacles. When we tried to make a new product with our pelt scraps to silence the shooting of arrows, we were told this was not "authentic Native handiwork." No one could point to a regulation or statute to support this interpretation—we were just told “No, it isn’t significantly altered!" Then we started getting requests to engage in illegal conduct. People would try to get us to send our handicrafts to Canada—which we knew was illegal. We pointed out that it was illegal. I had people come to our house and ask me to seal several pelts I suspected were illegally taken by non-Natives. I refused. We had non-Natives asking us to sell whole pelts to them, but we said no. We received a request from a "Korean,” who wanted us to sell whole pelts to him, but we said no. This all seemed strange to us that people would be continually asking us to engage in illegal activity. Little did we know that these were U.S. Fish and Wildlife officers trying to entrap us into violating the law. It is so strange/disturbing when you learn that your own government is trying to entice you into violating the law.

Now I am not without some fault here. I was a sealer [i.e., a USFWS designated registerer of legally required harvest data and tagger] of sea otter pelts. This required me to prepare paperwork, which I acknowledge I am not good at. While I was somewhat, lax in this area [, t]he people at the U.S. Fish and Wildlife office who collected the tagging information didn’t seem to mind, because every year they sent me new forms. I acknowledge I should have done a better job, and I don’t ever want to have these responsibilities again. I had no idea that my failure to promptly process paperwork would lead to what I now face.

On October 1, 2008, 7: 00 A.M., I opened the door to 13 law enforcement officers who served me with a search - warrant of my house. This gave them the authority to search my entire house for virtually anything they wanted. They seized all the sea otter pelts in my shop—I estimate close to $50,000 worth. They interviewed and interrogated me for around 5 hours. They tried to get me say that I let non-Natives shoot sea otters. I denied this because it didn’t happen. I told them the truth-non-Native people were in boats when I shot sea otters, but they did not shoot them. My partner left the house and spoke with an attorney. She came back to our house, but they would not let her back in. She wanted to tell me that she had hired an attorney for me. They refused to allow her to do so.

I am now the subject of a federal criminal investigation by U.S. Fish and Wildlife. Their case against me is based, in part, upon statements by non-Natives regarding their involvement in taking sea otters. Law enforcement tells me that I can’t have non-Natives in my boat looking for sea otters, they tell me I can't have non-Natives operating the boat, and they tell me that they cannot help me drag the sea otters into the boat. Nowhere do federal statutes and regulations prohibit this activity—this is simply their interpretation of the language in the Marine Mammal Protection Act. In spite of this, I am being threatened with severe fines, a significant jail sentence, and forfeiture of my property. My partner is also at risk—again because of their interpretation of the law.

Why am I here? I am here because I need your help. I need your help in getting out the message that what has happened is not fair. It is not fair for U.S. Fish ad and Wildlife to enforce vague laws as they see fit. How the MMPA laws are interpreted should be accomplished by open and clear communication between U.S. Fish and Wildlife and our Native groups. I need your help because U.S. Fish and Wildlife says that what I do with sea otters is not supported by my Native brethren. I need letters demonstrating that I do have your support and that I have sought to preserve our Native heritage by my work. I need your help because I am facing the weight of the U.S justice system with little or no financial support. I

need your help because unless we stand up to this persecution, these federal agents will take away our way of life.

How'aa, thank you,

As a result of the fallout from the 2008 USFWS sting operation, cooperation from the Alaska State Troopers and other state entities became more limited. SHI and other pro subsistence and hunting organizations lobbied legislators, including Senator Bert Steadman, to limit collaboration with USFWS enforcement in cases of sea otter hunting, because of their negative impacts on Alaska Native hunters.

> Lee Kadinger: Because . . . the Fish and Wildlife Service were using the State Troopers' boats in those communities for observation and access and watching what people are doing. And so, we understood that part of this kind of operation, with these undercover people, they also were using State resources to go out and observe hunters; watch, you know different areas for people doing things wrong. It was just causing even more concern amongst hunters. Like, 'Oh, my gosh. I don't think I'm doing anything wrong but being watched.' Senator Steadman addressed this concern by "inserting some language into the operating budget that disallowed the troopers from working with the Fish and Wildlife Service for the purposes of sea otter enforcement.

As Steve Johnson observes, for all the investment in enforcement operations, "I only know a handful of people that have been convicted of violation of the Marine Mammal Protection Act [including Mike Smith]. You know, there was a guy down in Craig . . . [the Roger Alexander case] was a pretty big and visible one. And he had sold skins to somebody that wasn't an Alaska Native. . . That's about it."

Even with limited convictions, however, the enforcement actions, including USFWS agents' high profile sting operation and interrogation of the Sitka Tribe's tannery employees and Alaska Native sea otter hunters and sewers negatively impacted nearly every facet of the production of sea otter hides because hunters and handicrafters behaving legally were being threatened with sanctions. Consequently, some participants in the tradition chose to withdraw rather than risk being threatened with citations or even jail time. Ultimately this resulted in a decline in sea otter production for the subsistence economy. In 2008, the year of the USFWS sting operation, reported otter harvests dropped 42% from the previous year (2007), according to tagging records, before rebounding in 2009 (see Appendix F, harvest table).

**The Indigenous People's Council on Marine Mammals (IPCoMM) and Clarifying "Significantly Altered" and other issues in MMPA (2010-2013)**

With numerous high-profile enforcement acts and courts cases having developed around USFWS interpretations of "significantly altered" in the MMPA, hunters, handicrafters and their representative organizations became increasingly vocal and pro-active regarding the need to clarify the concept. SHI was among those organizations, as the ambiguities around "significantly altered" and the status of Native participants ("living on the coast," blood quantum) were issues of consequence to their "Sustainable Arts" participants.

> Lee Kadinger (SHI): When we went through the regulatory process to change the definition of 'significantly altered,' I want to say there was like 130,000 comments, [nearly] all from

environmentalists. You know, they send out those cards that's like, 'Here, this is what you say. Send that in.' So, ninety-nine percent of those were all just . . . mass form letters or whatever. . .ungodly amounts. Oh yeah [saying] 'This is going to lead to the slaughter of sea otters,' and stuff like that. . . I weeded through [it]. There was some kind of handwritten stuff, and there was quite a few that were supportive of [the effort], quite a few that wanted more [hunting and handicrafts]. There was a push early on to want to have the sale of green hides, claiming that – a 'green hide,' is untanned – claiming that once you shoot a sea otter it's 'significantly altered.' And so, you should be able to sell a raw hide to anyone. . .

So, first thing was, we worked with our delegation to raise and raise the attention on the issue with them. Through pressure from the delegation, US Fish and Wildlife director, Dan Ash came to Juneau to meet with stakeholders. And it was here on the fourth floor of the Sealaska building in the boardroom that we met. And we brought in hunters and skin sewers and everything. And they [FWS] had their like attorneys, and everybody that was there with him, and you know. One of our goals was [to create a display] -- we'd set up a commercial skin sewing machine, and we set up all items that we wanted to be approved, because remember, at this time, there was still a lack of understanding of what 'significantly altered' was. So, we set up a whole [display] – we had blankets, we had pillows, we had scarves, mittens, jackets, we had everything all made out of sea otter, which again, were all legal if they would have been sold to another one-quarter [blood quantum] person. But the question of 'significantly altered' is beyond one-quarter person. So, we had all these items set up in Chris McNeal's [the CEO's] office.

And Rosita [Worl] said something like, 'We need to distract those attorneys that were . . . always with Director Ash. And Rosita wanted to get him aside. And so, by happenstance, she said, 'Oh, I want to show you something,' or something, or something. And I was talking with the attorneys in the room and had their attention, so she draws him out and then they went back to Chris McNeal's office. . . So, it was just Rosita and Director Ash. And she kind of like closes the door a little. I kid you not, one of those attorneys was like 'Where did the Director go?' And then they were like looking for him, trying to find him, and Rosita had that conversation with him in that room with all the stuff, saying, 'See, this is the commercial skin sewing machine we want to use. This, right here, is a scarf that nobody, agents in the past, only say, 'Oh, it's 'likely' – or 'it appears to be [significantly altered],' but nobody will say, 'Yes, this is ok to make.' These are the items, and she went through with him one by one. . . And he said directly to her, 'I see all of these as significantly altered, and I don't know why we're having this issue.' And without having the attorneys there to pull him back and say, 'Oop! Nope! Let's qualify how you say that' or 'Oh!' You know, this or that. So, then, he like came out of that – he came out of that back room, and he then led the meeting of all the hunters and skin sewers and listened to everybody's concerns and things like that.

[H]e went back to DC, and they [FWS] then decided that they're going to [go] through rulemaking to redefine three terms: significantly altered, resides on the coast, and [definition of Alaska Native] . . .

[B]efore the rulemaking, it was decided that they would kick it to IPCOM, and so they . . . Fish and Wildlife gave funding to IPCOM to pull together a stakeholder meeting to come up with a definition of 'significantly altered.'

IPCoMM is the Indigenous People's Council on Marine Mammals, a state-wide coalition of Alaska Native tribes and tribally authorized Alaska Native Organizations (ANOs) established in 1992 (preceding the 20-year re-authorization of MMPA) to address issues of concern and advance cooperative management between these entities and the federal agencies responsible for marine mammals. Working with tribes and tribal organizations statewide, IPCoMM helped address several

key issues arising from the exponential increase in sea otter populations from 1970 to 2010. During this 2010-2013 period, the Commission, chaired by Mike Miller of Sitka, tried to develop a stronger co-management relationship on key issues affecting sea otter subsistence uses. Key issues, beyond clarifying "significantly altered" in MMPA, included:

1) A 2011-2012 Joint Resolution (HRJ-26) arising in the Alaska Legislature calling for active management of the sea otter by "Urging federal agencies to work with the Alaska Department of Fish and Game, Southeast Alaska Native leaders, and other interested parties to establish strategies and plans for the sustainable management of the reintroduced sea otter population of Southeast Alaska." Draft versions of the bill, influenced by commercial dive and crab fishing interests, had referred to an "overpopulation" of the "reintroduced" sea otter and considered very strong management measures, such as: a) instituting bounties sea otter (a pre-MMAA practice in Alaska on harbor seal and Stellar sea lions); and b) opening-up the sale of raw (unaltered) furs to non-Natives. These measures were antithetical to MMPA, however, and would have required amending it, a process which risks other changes that might not be beneficial. Many Alaska Native groups feared such amendments could weaken MMPA as Alaska Native legislation, offering an exclusive exemption from the general ban on hunting sea otter and other marine mammals, for their subsistence uses. IPCoMM worked with entities across the state to temper the language of resolution and focus the "be it resolved" part of the resolution on key sustainability goals for its members, as follows:

   BE IT RESOLVED that the Alaska State Legislature urges the United States Secretary of the Interior and appropriate federal agencies to work with the Alaska Department of Fish and Game, Southeast Alaska's Native leaders, and other interested parties in the state to establish strategies and plans for sustainable management of the reintroduced sea otter population of Southeast Alaska; and be it

   FURTHER RESOLVED that the Alaska State Legislature urges state and federal government authorities, in developing those management plans, actively to consider means of expanding and enhancing small business and broader economic opportunities for residents of Southeast Alaska; and be it

   FURTHER RESOLVED that the Alaska State Legislature urges federal authorities to consider broadening the scope of allowable uses for sea otters taken for subsistence purposes by replacing the references to "authentic" and "traditional" handicrafts in the Marine Mammal Protection Act of 1972 and the regulations adopted under the Act with the "Alaska Native articles of handicraft" and continuing the sale of sea otter pelts consistent with all other provisions of the Marine Mammal Protection Act of 1972.

Although the joint resolution ultimately died in the Senate without passage, it proved to be a constructive exercise towards building a consensus around sea otter management priorities and Alaska Native needs within the state.

2) A 2011 bill in the US House of Representatives (HR-2714) sought to amend MMPA including to allow for the sale of 'unaltered pelts" [a.k.a. "green" or "raw" pelts] to non-Natives to stimulate more hunting and combat the perceived sea otter "overpopulation" threat which was damaging commercial and subsistence shellfisheries. IPCoMM Chair Mike Miller of the Sitka Tribe addressed these issues in testimony before the US House Committee on Natural Resources, Subcommittee on Fisheries, Wildlife, Oceans and Insular Affairs on October 25, 2011 suggesting that the sale of unaltered pelts to non-Natives

would be a ‘short term fix’ at most and have significant unintended consequences including potential overharvest and further restrictions on Alaska Native hunters. Further, he noted that USFWS has no statutory authority to manage sea otter ‘overpopulation’ but rather only populations threatened by declines, which is not the case in Southeast. Instead, he suggested that addressing the main hindrances to Native harvest that USFWS does control, including overzealous enforcement and inconsistent interpretations of ‘significantly altered’ handicrafts, would do more to support the Alaska Native sea otter subsistence economy than opening up the sea otter pelt trade to non-Natives.

IPCoMM Chair, Mike Miller, provided influential testimony on the proposed Federal legislation, reminding lawmakers of the wording and intent of MMPA and the potential deleterious consequences of changing it in the name of short-term goals.

> Mike Miller (2011): One marine mammal that is highly problematic for coastal Native communities right now is the sea otter. The significant increase in the sea otter population in areas of the State of Alaska over recent years has severely impacted the availability of important subsistence shellfish for Native and rural subsistence users. At the same time, its abundance provides an opportunity for economic development in rural communities through the sale of Native handicrafts made from sea otter pelts.
>
> Alaska Natives do have an exemption from the MMPA that allows the harvest of sea otter pelts to create “traditional handicraft.” Unfortunately, the definition of “traditional handicraft” and the enforcement of regulations related to sea otter pelts are overly restrictive, overzealous, and confusing for all involved. . .
>
> We do support the provisions of the H.R. 2714 that assist us in meeting our goals of creating long term economic opportunities for our Tribal members, protect our subsistence resources, and support village economies by protecting commercially viable species to be harvested sustainably. We agree that the laws and regulations as they stand now are overly burdensome and limit the opportunity for traditional, economic, uses of sea otter pelts. . .
>
> We also have a recommendation. HR 2714 as currently drafted does not fully address a major contributor to the existing problems and the limited harvest of sea otters; that being, aggressive, overzealous, inconsistent and possibly illegal law enforcement actions on the part of the Department of Interior, US Fish and Wildlife Service Office of Law Enforcement (O.L.E.). Their actions have made Alaska Natives nervous about exercising their legal right to harvest sea otter and to make and sell handicrafts made from the pelts, despite Congress’ intent in the MMPA to provide that subsistence and economic opportunity. Furthermore, [their] actions . . . can be disturbing as there are many stories and allegations about ‘entrapment’ and ‘harassment’. I hope that we can work together to develop some language that will address this issue to enhance, not hinder, the Alaska Native use of the MMPA exemption. . .
>
> [T]he definition of “Native handicraft” is a large source of the ongoing problems related to the harvest of sea otter, and also with other marine mammals. This is further exacerbated by the lack of consistency between federal agencies. (DOI/U.S. Fish and Wildlife Service for sea otters, polar bears and walrus vs. Department of Commerce's National Marine Fisheries Service with regard to seal, sea lion, and whales). These agencies are enforcing the same language in the MMPA regarding definition of "handicraft", but interpreting them differently. There should be some consistency regardless of the marine mammal involved. . . It is our hope that you will consider amending this legislation to cover all marine mammals under the MMPA.
>
> In terms of management of U.S. Fish and Wildlife Service, Office of Law Enforcement, one additional point we must make is that they do not answer to anyone in our Region. For

> policy guidance, they only go to the Washington, D.C. offices, which are so far removed from the on- the-ground management of marine mammals. I would like to see a strong regional office in Alaska to oversee policy issues related to the enforcement of regulations for the MMPA, which might ensure more consistent application of the laws and regulations.
>
> Additionally, the Fish and Wildlife Service O.L.E. does not share anything about its annual budget with the subsistence users. I would like to recommend that until these troubling issues are resolved, a significant portion of that budget be shifted to Marine Mammals Management, specifically Co-management, which has been funded at less than $30,000 annually in recent years for Statewide Co-Management for Sea Otters. This is not enough to allow for meaningful co-management of this resource.
>
> In closing, we do support the legislation, but would ask that any provision for the sale of unfinished pelts only be considered as part of local Harvest Management Plans as allowed in the MMPA, and be consistent with the existing exemptions of the MMPA related to Alaska Natives. This approach could eliminate the need for geographical divisions as contemplated in H.R. 2714, which addresses only Southeast and South Central Alaska, and the related potential of further confusing enforcement actions. Additionally, we would request that any unaltered pelts that could be sold under this amendment be restricted and prohibited from being made into commercial products by persons who are not exempt under Section 101b of the MMPA.
>
> We would also like to recommend that the Subcommittee consider language changes to address the need for fair and consistent enforcement of the laws and regulations related to marine mammal harvest.
>
> One thing that most parties affected by this issue seem to agree on is that things, as they stand, are not working well at all, if at all. With that in mind, I would like to remind the Subcommittee that unless some vehicle for change is provided, the frustrating, confusing regulatory and enforcement regime will remain the same. (Miller 2011)

The issues raised in this testimony were addressed in the final bill.

IPCoMM then set out to coordinate a major workshop with USFWS, National Oceanic and Atmospheric Administration (NOAA) and Native experts in handicraft production to clarify the interpretation of “significantly altered” so that subsistence users and enforcement agencies could have clearer guidance on what handicrafts met the standard. The workshop took place in early 2012 in Anchorage and marked the first time, according to one former USFWS biologist, that marine mammal managers, enforcement agents, attorneys, regulators, tribes, and local experts had come together to work through major, longstanding issues within the MMPA in a spirit of equity, collaboration and problem-solving.

The result of this historic workshop was a seven-page memorandum, issued by the USFWS Alaska Regional Director, entitled “Guidance: A Clarification of the Phrase “Significantly Altered” as it Pertains to Sea Otter” issued in November 2013 (Appendix E). The memo provides detailed guidance, based on input from the workshop, and clear illustrations of both “significantly altered” and “not significantly altered” sea otter products. The new guidance was generally well-received by the participants and state and federal officials, although some hunters wanted USFWS to go further in broadening the definition. The offices of US Senator Lisa Murkowski and Representative Don Young (2013) issued a joint media statement which welcomed the clarifications on sea otter handicrafts and their implications for enforcement and Alaska Natives freedom to practice their customary subsistence lifeways.

> Murkowski: “I am pleased that as a result of our continued persistence on this issue the U.S. Fish and Wildlife Service has decided to reverse course and provide a clear and concise definition for the use of sea otters in Alaska Native traditional art, clothing, and handicrafts.

> This is a big victory – not only for the artists who have been afraid to continue their customary practices for fear of heavy-handed enforcement operations, but also for the continuation of the traditional practices and way of life in our coastal villages."
>
> Young: "Though a protracted process, I am pleased that the Fish and Wildlife Service has heeded Sen. Murkowski's and my request and is providing the sort of clarity that will ensure Alaska Native artisans can exercise their traditional practices freely and without incident. It's my hope that through this progress, we will see an end to the aggressive law enforcement practices of the past, and the Alaska Native community will feel comfortable in practicing this customary tradition for generations to come."

For victims of past misaligned sea otter regulatory and enforcement efforts, like Lillian Feldpausch, the workshop and new guidance also offered a pathway toward healing.

> Lillian Feldpausch: It took me a long time to be able to say anything. I had been involved with the Marine Mammal Commission. . . About a year and a half later [2012], [Mike Miller] asked me to be a part of this group [to discuss the MMPA's "significantly altered" provision as it applies to marine mammal handicrafts] with Fish and Wildlife, and I went up and participated. . . They said they wanted to redraft [reinterpret?] language and put out a brochure and whatnot. We spent about two days in there. I – you know, I talked to Mike, I said, 'Nobody knows.' Everybody talked about it, but when I got up to take my turn to talk and how the behaviors of Fish and Wildlife and what they do, and you know with sea otter and what my thoughts were was then that I shared our story and what happens. And nobody had known that it was me. That was my family that went through, all of this here. This had rippled through Southeast, and I tell you what, I really was very passionate. I loved working with sea otter. You know, a million hairs per square inch, to be able to take a hide and sit there and figure out what it looked like, what the outcome of it [a skin should be in terms of handicrafting] . . . I can still do it, but that passion isn't there like it used to be.

While most Alaska Native hunters interviewed applauded clarifications in the "significantly altered" language, some felt it does not go far enough and that Alaska Native hunters should play a larger role in co-managing sea otter as their numbers and impacts continue to climb. In Hydaburg, where the impacts to local shellfish beds are keenly felt by residents, this view was articulated by several community leaders who are also sea otter hunters.

> Anthony Christianson: I think 'significantly altered' is when the bullet goes through the brain, and you peel it from the hide [the animal from its hide]. I mean, that's fairly altered to me; you took a life. . . and then you peel the pelt off. . . that's pretty altered. I'm pretty sure that sea otter woke up on the other side and said, 'Damn! Just don't feel the same.' . . .To what extent do you [the federal government] put in culturally appropriate standards that we've always evolved [ourselves]. . . I mean, that's a downright frickin' chisel. . . That's a manipulation tool. [I say] 'Ok, you guys just get the heck out of the way with your management BS and your little criteria that is entrapping people . . . because you think somebody's going to snag a foothold and be[come] some kind of rich person off of this.' . . . I've never seen it happen. That's why we lost fishing industries and logging industries . . . we're not culturally appropriate to be this, [to] amass this potential future generational wealth for somebody else [at the other end of a market] . . . 'No, it's all here. It's a cycle, it's a season, it's a generational pay bank. . . right there [on the land and in the sea] . . .

[T]he sea otter, they need to be managed in the same sense . . . And that's what I always told them [resource managers], is we need to work in concert. Commercial [shellfishing] guys are going to open here, here, and here. Here's your schedule, so let us come in and if you assist us, then we'll take out the sea otter populations in those areas, you know. Call it a tax.

Sid Edenshaw: Mostly the pods are males. Like now, they're – see . . .that little pass there-- That's where our crab are. And a guy just got twenty right on this side of the island [Sukkwan Island]. They're moving in here. Eventually, there's no way we're going to – we try out best to stop them and I think, with a good cooperative agreement with SHI, we might be able to move them back, but they're right here. They're right here. People see them drifting around in front of town and stuff.

They just keep trying to move in. It don't matter [the weather or what time of year] . . . I think the tide; they come in with the tide. They just float in with the tide and then they eat.

You know, with the price of gas and the price of bullets and stuff, people. . . If they're not making any money with, or doing anything with it, you know with all the price gas, the price of fuel, people [hunters] don't really mess with it. It costs a lot of money to go out – and time.

[But hunters have been keeping them out of choice shellfish beds near town].

Yeah, they've been doing ok. . . [TS], him and his wife, for a couple years, have been doing a really good job. They got more than anybody in this town. They're pretty good hunters. . . I know they kept them at bay for us for a while, but...

[T]here's a big process when you get them too and they have to be [skinned and] tagged. And I don't even think at this time we have a tagger in Hydaburg. . .

You know, it's a lot of challenges and [the state] makes it as challenging as they can for the villages, in every way possible. . .it's a form of genocide for certain people. That what they want to see in our villages [is dying]. When I was a young kid, we had about thirty seine boats. And we had about forty to fifty or so trollers – or maybe sixty. It was a lot. And you could see down here [at the harbor], we don't even have one active seine boat. We have two active trollers, my uncle on the wooden one. He's eighty-two or eighty-three. And then Tim Young is in his seventies. And they're both ready to retire. And all the rest – [most] of them are derelict boats here. We have a six-million-dollar dock. And we have nothing. The village used to be a proud fishing village, but we're not a fishing village anymore. . .

And in order for it to move forward, I think that our Native people should be able to sell otter to anybody. We should be able to sell a raw hide to anybody. And then, you know, it will be worthwhile for us.

And they [the tribe] actually – been asking me to go out lately to get some [ otters] . . .

The tribe buys me fuel. But [they're not paying me] . . . We want them on hand for - we're starting to have more cultural doings and more potlatches, and you know, we want to support our artisans. And that's a way for them to make money because tourism's coming to our island. And it's coming fast. You see the cruise ships are starting to come into Klawock, and more people are coming to our island because of the big mess that's happening in the states.

Other Native hunters agree that management should include experiments to control sea otter populations in certain discrete areas; targeting important shellfish beds could change sea otter behavior in ways that would benefit humans and important shellfish habitats.

Kenyatta Bradley: I don't think it would take a lot [or coordination to conserve certain shellfish areas]. Like Krestof Sound would be really cool, but it's – there's not a lot of rocks to get off

> on, so you got to kind of shoot from the boat, and – but if you had like three boats to coordinate and drop people off rocks and make sure they're not shooting towards each other, you could clean out Krestof Sound in a couple of days. I mean, even just knock them down to four or five otters which would be fine. But the way . . . [t]here's a lot of clam beds in there and somebody tried to plant some oysters in there. And there used to be a lot of crab in there, but there's like nothing in there [now]. And there's big otters in there and they're just smart, and they've been hunted a lot, so they know to just avoid [boats].

Significantly, these ideas for managing sea otter impacts on shellfish through local scale hunting are similar to the aboriginal practices reported by experts from Angoon and other communities that enabled co-existence with sea otters for many centuries, if not millennia, prior to the commercial fur trade era.

**Learning and Teaching Sea Otter Handicrafts and Hunting**

Many handicraft producers learn how to hunt and harvest sea otter from their relatives or elders growing up, or are "self-taught," meaning they learned from a variety of chosen sources. However, due to generations of Alaska Natives having grown up essentially without sea otter, Native organizations have recognized the need to educate contemporary hunters and handicrafters about the traditional and contemporary knowledge and skills necessary to be successful in the modern context of sea otters' return. As a result, tribes and other Native organizations have begun to offer a variety of classes and informational resources to bridge this gap. The core focus has been on learning skin sewing, a critical skill for handicrafters, but such courses typically include other lectures or modules covering topics such as cultural history, contemporary legal requirements, and basic business skills.

In total over 100 sewing classes have been taught in Native communities. focusing especially on sea otter since 2004. Sitka and Kake tribes were among the earliest to offer courses like these. There has been no shortage of students either, with many enrolling in multiple courses, or even the same course multiple times, to master the requisite skills and complete handicraft projects before going out on their own.

A key prerequisite for course enrollment is eligibility. If students are to receive tanned but not "significantly altered" sea otter skins to learn sewing, they must meet Alaska Native eligibility requirements. Although MMPA does not define eligibility by blood-quantum, the Code of Federal Regulation developed separately (by NOAA) defines eligibility by blood quantum with one quarter Alaska Native "blood" being a minimum. (One must also reside in a coastal community, though this has been broadly interpreted to include any Alaska Native originating a hunt from a defined coastal community.) Inevitably, mixed marriages and out-marriages create a trajectory of blood quantum "dilution," and a shrinking pool of eligible hunters. For this and other reasons, the blood quantum model has been the subject of scrutiny and criticism among Indigenous tribes because it seen as a relic of colonialism and ultimately a recipe for ethnocide.

Alaska Native tribes regard the right to determine their own membership and identity as a foundation of tribal sovereignty, but tribes do not all agree with doing away with blood quantum as an eligibility criterion for marine mammal hunting. Blood quantum and subsistence eligibility under MMPA is now a subject of concern (cf. Langdon 2021 and discussion below), in recent solicitors' opinions and tribal consultations by federal agencies managing marine mammals under MMPA in Alaska (USFWS for sea otter, polar bear, and walrus; NOAA fisheries for seals, sea lions, dolphins, porpoises, and whales).

Lillian Feldpausch: It's like they [in the federal government] don't want us, as Alaska Natives, to be successful, to be able to do things. They want to be able to tell us, and dictate, how we need to be able to do this. We have to go and – to be able to change language, you know, there's a lot of other limitations of what people understand. If we go in and we open up the [federal laws, like MMPA] to be able to change that language, the CFRs [Code of Federal Regulations], it's going to go US-wide, everybody's going to have a say on what you can and can't do. And to me, I'd love to open it up to, you know, I've been on a couple different committees afterwards, but it's really hard to be able to – once you open it up, you're opening it up to a lot more harm than good. And everybody will have that, you know, during that comment period about what can, can and can't happen. And not understanding our way of life. . .

Sitka Tribe of Alaska determines eligibility according to an individual's CIB card (or CDIB card, Certificate of Degree of Indian or Alaska Native Blood) as issued by the federal Bureau of Indian Affairs. This is considered the safest way to avoid running afoul of MMPA eligibility requirements, though it is not required to be displayed by USFWS. Sealaska Heritage Institute also uses this criterion for its education programs (discussed in the next section).

Sitka Tribe's early skin sewing courses were taught by Lillian Feldpausch, who has also served on STA's tribal council.

Lillian Feldpausch: [I'm] originally from Kake. I have been in Sitka since 2004, when we first moved here. Our family moved, relocated, as I was with the Postal Service. When the boys got involved with football, they wanted to be able to, you know, explore that and it was fairly expensive, so I had learned how to sew with sea otter. And I did [handicrafts] on consignment with, you know, local shops, just trying to figure out how I was going to earn some extra income to be able to help them along with their trips and whatnot, their per diem and their fees.

But it kind of took a life of itself, I guess you could say. I really enjoyed . . . working with sea otter; learned a lot about what you can and you can't do, the crafts and you know, working to have a supple sea otter hide that you can work with to be able to have a finished product. I had been doing that and was working on teddy bears and consigning them locally. And . . . I started creating my own designs. When I worked on my designs, I would go to thrift stores, find used items and tear them apart and try to figure out how I wanted my bears to look. And more or less, you know, kind of start working to be self-taught. I created my own mittens, headbands, scarves, you know the keyhole neck scarves which are very popular with everyone today. I had started that.

I think it was 2005, Jeff had garnered interest with the tannery. So, you know, he was working. They were trying to figure out how they were going to start that and whatnot. As time went on. . .I worked to expand all the things that I've done. Worked by hand, sought out a nice Bonis sewing machine, to be able to help me along with the stitching; but the majority of the time, I did hand-stitching. . .

As the tannery started getting going, we kind of started working together. . .I gave my ideas and what I like and how I can – what I can work with as a hide, for me specifically how I wanted them. And then the tannery kind of grew and . . . I taught a couple classes, locally with the tribe. . . making teddy bears. And then worked to develop a curriculum with the tannery over at University of Alaska, Southeast. So, I taught a couple classes over there [for credit]. [They didn't limit the class to Alaska Natives], so if we have individuals who. . . didn't have enough for the blood quantum [i.e., were less than ¼ Alaska Native by blood quantum], then I was able to adapt and use beaver [for them] . . .

[The classes filled]. I was surprised. It was a lot of fun. Sometimes they [the students] want your – just your pattern, but I wouldn't – you know, those were my patterns. I shared with them what they needed to do and how they needed to do it. And to be able to work and devise their own ones. Because it took a lot just to be able to, for the measurements, and to get everything right, how I like my bears to be able to look, more of a signature for me. I did that and started to really get into using my Bonis sewing machine. Word of mouth and you know, the bears and my items, I, you know, started selling locally at the market. Tried it out to see how I would do, and they were actually in . . . fairly good demand, but you have to be able to know what you're doing and what you can and can't do, and sharing that education and that information. I even went to the holiday art market in New York [in] December. . . Yeah, it was at the Native American museum (National Museum of the American Indian)] – it was right downtown there . . . So, that was kind of cool. Did that for a bit. . . brought all my stuff. Worked with them to be able to – you know, because we had concerns about, oh... PETA [People for the Ethical Treatment of Animals], and everyone else along that way, and how they were trying to work with me to be able to – how to best, how would you say it [take]… security measures. So, in case – we didn't have any issues. . . it was very, very fun and to be able to share and educate and provide knowledge and to share our culture with everyone that we encountered. We did it for like, about three days. . . It was a good experience. . .

I've always done regalia, different types of mediums. You know, I've done cedar hats, cedar weaving and Chilkat, you know, and sea otter was by far. . .the most easy to work with and it was a lot of fun. . .I always liked the older sea otter because they had a blonde tinge. And I never – I didn't like the guard hairs to come off. Throughout the life of the tannery, they went through different styles of management; some would just cut the guard hairs off, or you know, create issues where they weren't responsible. . . It wasn't very good customer service. So, there was, you know, kind of see those highs and lows within that. But it was – I still love working with sea otter, but just not as much. . . [In addition to teddy bears, a signature item, she also made mittens, headbands, scarves, and pillows and other small-scale items –i.e., not big blankets or robes, etc.]

I was calculating, trying to figure out the value. The hard part was trying to find the value. I know some people talked about the market. The market was there, it's just finding out – you know, it's really hard to put a value on your way of life, in a sense. So, it's like, you look at all the differences, and try to find to figure out who's selling for what and how much and why? And the market. . . how well they're made, and the product. [You can produce a teddy bear from one the fur of one sea otter fur.] A teddy bear can go from seven hundred to eight hundred dollars. And I was working with the Tripp family [owners of well-known tourist craft/souvenir shops in Juneau]. I think I gave them maybe eight or ten, eight to ten. . . I would sell them for what I was asking, and they would sell whatever they had [at their retail price] and then make their money back. [I still do this] occasionally. Just not as passionate as I used to be [as a result of enforcement actions which targeted her family on October 1, 2008] . . .

Markets are something that you need the exposure to because along with that is educating and understanding you know, for the user groups. And to be able to move forward and to have somebody who's not just crafting something on the back side, and you know, saying it's theirs, type thing. It's a – they're unique opportunities to be able to own, to be able to have. I know there are people who are dedicated hunters for individuals. You know, they make blankets and blankets and, but you can only sell so many blankets and for that amount of money, and that's where you know, I was trying to figure out, you know, that my headbands were two-fifty, the bears range from seven hundred to eight hundred, scarves were, you know, four hundred and up. Mittens were, I think was three hundred and up. And it's having that, the quality, and that was something I work hard for.

Other artists, such as Boyd Didrickson, Diana Reidel, Ilegvak (Peter Williams), Christy Ruby had individual mentors or were mainly self-taught.

Boyd Didrickson, discussed above, is an example of Sitka hunter and handicrafter who was largely self-taught and innovated numerous handicraft products and sewing techniques. He also sought to expand markets and supply networks for marine mammal products beyond Southeast by traveling to communities throughout northern Alaska to engage in barter, trade, especially in Northwest Alaska. In addition, he reached tourists and other visitors to Sitka by opening a successful gallery with fellow artists in a high traffic area of downtown Sitka.

Most sea otter hunters interviewed for this study had previous experience with other marine mammal hunting, especially for harbor seal, the basic skills for which transferred well to sea otter, although hunters stress that "sea otter are different" as a prey in some important ways.

> Louise Kadinger: I think that's really how I stumbled upon it [sea otter hunting] as well, because I love seal, and I'm always hunting. I like to hunt seal, and make sea otter and stuff, or make seal grease and seal meat, and not very many people still eat it, but I love it, and I know there's a bunch of elders that do, so I always I have a list of people that I go around and drop stuff off to.

Although the majority of students in skin sewing classes tend to be females with particular interests in sewing, often males who take the classes, as well as some females, come from a hunting background. Classes help hunters expand their skills to handicrafting, while learning broader context of subsistence uses of sea otter in classes. These classes may also work the other way, by inspiring sewers to take up sea otter hunting. The respondents below reflect on these dynamics of learning both sides of the economy (hunting and producing handicrafts exchange).

> Diana Reidel: I'm Athabaskan from Kaltag, is where my grandma is from. And my grandpa was from Cordova and Eyak, from Cordova. My family has been commercial fishermen forever, and then they had a fox farm.
>
> I didn't start [sea otter] hunting until recently. I've mostly always used a hunter. I've been out hunting. I've been involved in the bio-sampling program with harbor seals since I was really young, but I'd say I started hunting my own sea otters probably only five years ago . . . I've been working with sea otters, doing handicrafts, since I was seven. [M]om [Monica Reidel] had the business before me, and so she's been doing it since before I was born. The business is Dineega Furs. . .been around since I was born [1982] . . . She was [active on sea otter issues] and [chaired] the Harbor Seal Commission as well. . .
>
> I lived in Sitka. . .for, I think, three years. Started seventeen years ago [c. 2006-2009]. So, I haven't been there for the last like ten to fifteen years, but I still get a lot of my furs out of there. Mostly because I have a really good relationship with a really professional hunter down there. And I was in the Sitka Tribe for those three years that I lived there, and I was co-chair, Vice-Chair for the Sitka Marine Mammal Commission while I was there. And then I also started herring seining for a little bit out of there. But then I was able to move back home, and – so I've been here.
>
> My hunter in Sitka [Wade Martin] he gets [and skins] them raw, and he gets them tagged and then he sends them directly to my tannery for me. I've been using Arctic Wolf lately. I used to use Sitka Tribe's tribal tannery, but I think it switched management, and I moved to Arctic Wolf. . . [Also] I have one hunter in Cordova, and I've been getting some of my own furs and now my daughter has been getting furs too.

I think in, during that time, I was probably going through thirty to forty [furs] a year. . .just sea otters. [In addition] I would probably throw in about four sea lions, four to five sea lions a year and fifteen to twenty seals a year. . .I've grown up commercial fishing. So, I mostly – I run my fur business from about September through March, and then I'm normally on the water for the whole summer [commercial fishing and subsistence mainly but also observing marine mammals]. And then – well, in March, I was doing a little bit of herring seining, and if not herring seining, at least subsistence herring fishing.

Reidel noted that taking classes can be hard for someone with an irregular schedule or young kids, or who likes to set their own hours for "being creative." She also stressed the importance of learning and teaching in both formal and informal settings and gatherings with kin.

Diana Reidel: Sometimes it's fun to do the shows and hear other peoples' ideas or what they'd like to see you make. I like being around other artists. . . I'm not a very good teacher. My mom is an excellent teacher, but I have worked with some of my cousins, and it's fun to do craft nights with them in small teaching parties.

Ilegvak (Peter Williams) had mentors in hunting and handicrafting and has been a mentor, teacher, and peer to others learning the skills. He emphasizes that learning fur sewing is not just about the physical skills; it also can be healing for those that have suffered cultural or other trauma.

Ilegvak (Peter Williams): I'm really grateful for the Tlingit community for . . . how they've welcomed me in and taught me about having relationship with place and food systems and the importance of culture and the importance of elders; and in particular the Littlefield family with Dog Point Fish Camp and how that was really, really formative for me. And recently, I don't know if you're going to talk with Steve Johnson who's a Tlingit sea otter hunter and sewer, but he was recently helping me move things to the dump as I'm moving out, and I traded him some traps and a pressure washer and things like that for his help. And we were talking – we were reflecting about our time at Dog Point and he said – . . . something along the lines of how it really kind of indoctrinated us, or instilled within us, a subsistence mentality that we have – everyone who attended that camp has walked with that for the rest of our, kind of our lives. And that is something that is – yeah – been really important to me. And those things also being very interwoven and to my relationship with hunting marine mammals; that Dog Point Fish Camp was the first time I worked on a seal hide. I think I was like eight (laughs). You know and going out seal hunting and trying. . .

[Regarding mentorship in sewing] a little bit. . .[with] Evelyn Johnson… I could be getting that name a little bit wrong, but she was an elder involved in the tribal program of teaching - kind of apprentice with sewing. And that helped me with some moccasins. I didn't go through the – fully with the program in part too because they had me do a lot of – she had me do a lot of beading for the moccasin, and that's not what I was interested in – or good at (laughs).

Then I was also in New York for a bit after that. But those things kind of got me into – yeah. More into the sewing and the introduction and it might have been 2008 that I did my first – made my first sea otter pillow – like handicraft. Which is something that I hear from a lot of people, that it takes them a while to cut into their hides (laughs) because they're nervous of kind of messing that up. But I also think it's such a powerful cultural thing and there's also a lot of… I took what X'unei [Lance Twitchell] said about learning an Indigenous language, that the hardest part about learning your indigenous language is having to confront colonialism, the pain of colonialism.

And I find that within my work, when I teach folks fur sewing, it's just not Alaska Natives, but we use beaver fur, whatever, for also non-Alaska Natives. And there's usually one or two students that can't do it. Not because they can't physically do it, or intellectually do it, it's because they're struggling with it emotionally. And it's quite clear to me that they're just shutting down because of some trauma related to this that brings up. And for me, working with marine mammals and sewing with them heals most of that trauma. You know, like, it's a way for me to celebrate. . .

I guess I would liken it [sea otter handicrafting] to other human aspects that we all experience like laughing, storytelling, sharing food around a fire, dancing, these things that make us very human and that have these deep roots – storytelling. These things that have very deep-seated roots into who we are as these spiritual beings and our cultures and how we survived through numerous things and what deeply resonates with us. And there's something that is just a visceral experience for me, with marine mammals. And that buddy that I was [mentioning] – we would go out and kind of teaching each other (laughs), learning from each other, how to hunt. And we would talk to experts around town. I'm sure you're going to talk to some of them you know – had blessings to be mentored. . . like Wade Martin taught me so much.

But [this close friend] was visiting in town, he had moved away, and I got a seal because that's what I was kind of doing for work, professionally for a while. Like I'd go out two to three times a week, week after week, month after month, year after year. And that connected me and gave me something – a way that I really did not experience in other forms. The closest I can equate it to is psychedelics, is having that deep rooted connection with spirit and place. Which, yeah – makes sense (laughs). But we were hanging out and I was processing the seal and took off some of the raw fat and I ate it and gave him some. And he was just like, 'Yeah, you know, a lot of people, they just don't know.' . . .[H]e was talking about his work environment in tech, and he's like 'They have no idea that I can be comfortable here in the city sitting next to them on this computer, and just as comfortable sitting next to a seal that's being processed' (laughs).

So, I think that that was really big for me to find that. And I also found that for the most part, when you find someone who really loves to do something and they have this knowledge – and especially in these kinds of terms of fur, and these terms of like an ancient trade that are almost non-existent, and you find them and you talk to them, and you listen to them about this thing that they care about and what they know, they tend to want to be able to pass that on: that knowledge and gift. And not only were they gracious with their time and their knowledge for me, but often they would give me things: material, tools to start. And that was massive for me.

Definitely, [there were other sources of learning too]., like… Secrets of 'that E word' [Eskimo] Skin Sewing [Wilder 1976], that book, which I imagine you're familiar with. That one was pretty massive for me to do. And then I would talk to non-Native furriers. And that was a really big one. And so one of them, which I was actually like texting today, they're still very much in my life, they just want to stay anonymous, and so I respect that. But they really taught me a lot and then Marcus [Hernandez] here at Sitka Fur Gallery, also gave me a lot of time and things and advice. And so that was also part of going to them because that's a bit of the realm that I wanted to kind of be in, right, and to have these kind of high standards. And when I spent time on the East coast studying with furriers for a bit. And they were trying to teach me how to use a fur sewing machine, and I just got – it was just so hard. And they actually had their own furriers. It wasn't really them that were creating this stuff right there. They had a crew of people. And I was talking to this woman who was just this – really just expert at it who was teaching me. I go 'How long did it take you to be comfortable in this?' She goes, 'A year.' And I kind of felt like I didn't have that kind of time, and I didn't have a

fur sewing machine. And those were things that I kind of could have accessed, but it was harder to get at that time period.

And I just loved hand-sewing. So, I decided that I would hand-sew until I could learn how to use a fur sewing machine. And then I was just like 'You know what? I actually just want to a hand-sew, and that's going to be my thing.' (laughs)

I think [hand-sewing provides] more a sense of kind of freedom. It's something that I could go – I throw my sewing projects in my backpack and go ride my bike over to my grandparents and watch football with my grandfather and then sew a project there. . . I was finishing a seal and sea otter fur vest as we were flying into New York City for when I was doing a fashion presentation. So, there's this kind of sense of freedom that I think I also like and like in terms of how I kind of work with things and do things traditionally.

I recently read this book called 'Peak.' . . . I think the concept overall is interesting, but like, the book itself – but it was kind of about this idea of like practice and doing the right kind of practice …' And so, I think that's something too, that helped me in my process is [not only practice] but is not being so afraid to experiment.

Certainly, I confronted those – had to confront those fears of the unknown with various aspects of what I did with sea otter and seal. But for whatever reason, I have an ability to be pretty experimental and willing to take kind of this level of risk into try something different, which was also something that I noticed with other folks at that – around that time period who are still actively in the industry, but who were in there for a while and kind of breaking barriers were people that were comfortable with kind of being alone. And also comfortable with doing something outside of the norm. And I saw that – also like, noticed a lot of hunters – a lot of skin sewers were hunters.

Kenyatta Bradley is another hunter and handicrafter who learned sewing skills from his aunt, who herself had taken a course in fur sewing from SHI, an example of the cascading impacts that courses can have on a population, as the students become teachers and mentors to their kin and others.

Kenyatta Bradley: [I received instruction] from my Aunt Claire [who took a class from SHI; [Started by hand and then got the machine]. I have a machine upstairs, but I don't have a needle for it. And I just haven't had the time in the last five years, but…

I made like a sea otter muff, which I had never seen anybody do, and I made a really nice one and that kind of… Once I get back into it, I want to make a bunch of [hand] muffs. That'd be my niche.

Kenyatta's wife took local hunter and handicrafter Rob Miller's class on sea otter sewing a number of years ago.

Kenyatta Bradley: She makes a lot more earrings. She hasn't been into a lot of fur [sewing] but [mainly beaded earrings in which she] . . . has incorporated fur. . . People get into it [after they take the classes]

Christy Ruby is another self-taught hunter and skin sewer, though she had an arts background in graphic design. She notes that finding highly skilled mentors to learn the finer points of professional garment sewing was not easy, especially when it comes to tanning.

Christy Ruby [Kaagwaantaan, Tlingit]: I'm an Alaska Native Tlingit award-winning, fashion fur designer. I work with seal and sea otter. I've sold my – I'm actually in the works of selling one of my pieces to the Denver Art Museum, Colorado. I've sold two other pieces to museums.

I've won numerous awards for my sea otter and seal work. And I'm self-sustaining with an online shop. And working with sea otter and seal, [which] if it's tanned properly, is an extremely viable business, with the right training, if you can find somebody to train you advanced skills, which is almost nonexistent . . . So, if I decide to build this tannery [a vision of hers], I will have all that. . .

I've been hunting since I was six years old, for moose and caribou and squirrels and all kinds of stuff, since I was six. My uncle taught me how to shoot guns and stuff like that. But so, hunting's been in my life and blood but I didn't, I just recently started doing seals and sea otters about fifteen years ago. And that was by trial and error, by learning what works best. . . I listened to all the tanneries and took their advice to learn how to prep and store [skins] . . . so I could get the best product. You have to learn. You have to continuously learn. . .

I started hunting seals first, and just started selling seal hides to the Native ladies for a better price than what was initially out there which I thought was a monopolized business. And the ladies couldn't afford the seal skins. So, I made it affordable for them.. . I did quite a few seals and stuff and so I kind of started doing some purses, small purses, and people really like my work and then it just bloomed and blossomed; people kept coming to me and asking me if I could do some mittens and stuff. And I don't make mittens, I don't make anything but purses because I didn't want to, but they liked my quality. And so, the quality kept going, customers kept pushing me to this day to make things that I've never heard of before. So, custom orders are my thing, I say. . .

Hunting side, I trained myself. I just – I'm very observant, so – and I take everything that I see and apply it. And I learned the hunting myself. I did have a couple really close mentors that got me the right gun, that introduced me to bullet loading, that encouraged me a lot to go out and get them because it's a lot of work for even a woman. And those people were great, and they pushed me forward. And the reason was, they just said, 'There's too many sea otters, you got to go out and get them. We'll help you.' (laughs) I'm like, 'Ok.' . . .

As far as fur fashion and handicrafts, I actually had one lady that opened her heart to train me. Because I went to New York three times to try to find somebody to train fur sewing, and they would never teach you. They – it's trade secrets. So, they think your competition as being a small person up in Alaska.  and a lot of them are actually, don't speak English, they're mostly Greek.

And the women are really cool, but they don't – they're not allowed to talk while they're working. So, I sat in one time in a fur shop that was no bigger than my tiny little room and watched a guy sew on a fur machine, who had hair on his back because he had been sitting there for so long, the hair just was attached to him (laughs).

And then I sat with the ladies and watched them sew, and they're amazing how they sewed stuff, and I just couldn't get enough of it, and yet they weren't allowed to speak to me. But they really wanted to teach me, but the boss-man said, 'No, you got work to do.' He yelled at them all the time when they even spoke one word to me. So, I sat there for an hour watching them and I was just enthralled with how much you need to know in order to build up a coat. There's so much more under a fur coat other than just the fur.

And a lot of people don't know that. That – the reason why the fur coats are expensive is because, not because of the fur, it's just all this simple sewing and all the complex stitches that you have to put in to putting the pieces together.

So, this is the funny part: So, I went to go find the sweatshop, where is where the furs are made, basically. The fashion shop is downtown on 7th Avenue, and it's all – the stores are all the same lined up, and they're all in the same place. I went to their sweatshop, which happened to move to a seventh floor in a 7th Avenue building. And the floor was loaded with fur shops, sweatshops.

Property is a premium, and then you split the rent up on that whole floor, and they both all get a room. And so then, you can just go knock on each door and there's a name of the place; so, each store has a place on the same floor. So, I just knocked on everybody's door and said, 'Do you have time to teach me anything?' And they go, 'No, go away.' 'I came all the way from Alaska.' 'Go back home.' . . .

For five years, while I was starting to do sewing, I sought out anybody. I emailed all the fur shops everywhere to see if they had any type of training programs, or anybody willing to share their information, and I got nothing for four years. I mean, I worked hard. I would be able to do this if I knew exactly what I was supposed to do. There's a form, you know, and standards that go with constructing these type of things, and if you don't do it right, it looks terrible. So, there are tricks. You just can't hem a piece of fur like you do on a sewing machine. It takes specialized equipment. It takes machinery that can do seam sewing. There's no patterns anywhere. You go find a pattern for any fur thing and good luck! You Google 'patterns for fur,' and you'll find fake fur stuff that they just stitch on a machine, but you can't do it that way.

But I found one lady that was willing to teach me more of the work, and I went all the way to Baltimore to spend a week with her at her house, which was crazy (laughs) so. But that's what it takes. There's nobody that knows this stuff, it's a dying trade. . . . I don't discriminate between whoever wants to teach me.

So, this lady answered… One guy, I emailed this guy in Baltimore and asked him if he had anybody that could train me, and then he went ahead and forwarded my name and phone number to this lady. And she called me and said, 'I don't know what this is about, but I'm supposed to call you and talk to you about sewing? Is this right? I mean, I don't know. My boss told me to call you, and I have no idea what you're doing. But – I, you know, and I don't train people, you know, unless they're working for us.' And I'm like - I didn't know what to say. I was just kind of dumbfounded and happy she called, but I was – 'Alright, don't hang up. Please listen to me first. I am very desperate to learn from anybody the techniques of build-up.' They call it build-up in the fur coat. 'Build-up, like cuffs and collars. They're all tricky to make. You can get them wrong real easy and they turn out terrible. And I don't want to sew bad. So, could you please, just look at my website, look at my stuff, and just see if I'm worthy of your teachings.' And then she hung up on me.

I kind of almost cried because I was so close. Because I got to talk to a person that knew how to do this stuff and was possibly willing to teach. I was so excited that I just screwed up the whole phone call. And I had been looking for so long, and it was so heartbreaking to try to so hard and run into walls. I get tired of running into walls a lot and this job is a wall buster.

So, fifteen minutes later, she calls me up, answers the phone, and I'm going, 'Hello?' And she goes, 'Girlfriend, I looked at your stuff. You're awesome! You have really cool shit! I want – you know what? I'm going to train you. You're going to be my grasshopper.' I'm like, 'Ok. Alright. I'll do that.' 'Ok, Grasshopper. Now, first lesson you're going to have to do is, what the hell is that thing that you're talking about. You kill these sea otters? How can you do that? They're cute little animals!' And I'm like, 'You work with mink and wolf and all kinds of beaver stuff. You think those animals aren't cute?' 'Well, not really, but I don't kill them!' One thing led to another, and we were talking and we got along just smashingly.

So, she was very difficult to work with sometimes, but I just, you know, bit my tongue and held my breath and asked questions. And I taxed her out pretty good sometimes with some of the stuff I did. But I made her brain hurt because I asked so many – 'What happens to that stich on this side?' And 'How do you reduce it from that side?' (laughs) 'Don't ask me that!' [she would say] (laughs).

It was just very difficult to find somebody to train you and so, she's still in my life. She had some health issues but she's still there. And I have also another guy in Manchester, Europe, England.

And I get pointers on how to do things like that. There's also a guy in Victoria, Vancouver, and he lives on an island, and he is teaching how to lay out furs and sew furs. But he's not teaching the coat part yet, and I need him to teach the coat part. So, he's offering classes now in Canada to learn how to sew furs or put furs together, sew holes together, match furs, let out – they call, 'let out,' which is stitching a bunch of stuff together to make it longer; thousands of stitches to put a mink coat together, thousands and thousands.

So, yeah. It's been an uphill battle . . .

Upscale artists working with sea otter skins also draw inspiration from high-end fashion designers and consider all aspects of the manufacturing process including tanning:

Christy Ruby: I really, really loved Fendi, when I first saw their stuff. And Fendi is a hat furrier, and they did a lot of crazy little things that cost a lot of money because of the word 'Fendi,' the brand. I was all about branding, and learning. I'm a commercial artist by trade. . . I've been a commercial artist, paid, since I was sixteen in high school. I did big jobs that got a lot of money, so… And then I was a coin designer with Alaska Mint for fifteen years, so I sculpted coins. And all that stuff, been a fly fisherman – a fly fisherwoman – and tying flies and all that stuff kind of conglomerated into one [set of skills for artistic skills, design, and innovation]. So, I pulled from every place to gain more skills, and then it all just equals to – and I try to master everything. . .

I'm also beginning to tan. So, I'm starting tanning because there's no good quality tanners out there. I do know how to tan. I was taught by the master tanner of seventy years in Anchorage [Frontier Tanning] . . . Ralph Ring. . .He was ninety-two [when I went up there]. He was still going. He had the body of a thirty-year-old. He would jump up and down on equipment at ninety-two and throw hides; sometimes he'd throw hides just to impress me . . . He did mainly seals. . . I trained with him for three weeks, got all his recipes, got all the video documentation so that I can keep that with me and use it when I need it – and now, we need it. And so, I'm just saying, none of the sea otter stuff that you talk about is going to matter if we can't get a good quality hide, because they're not really producing good quality.

And you know what's really sad, is nobody knows what good quality is. They've never seen the hide that I've gotten from a company that is a garment, a professional garment tanner of sixty years. It is so different, night and day, compared to what we're – people are used to getting. The finest fur in the world, if it's tanned like crap, it's not going to be a 'finest fur in the world.'

[Tanning is limited in Alaska]. There's one in Kake, but he's hit and miss on whether you get your product back. And there's one in Anchorage I just got done going to last week, dropping off hides, and they seem to be stuck in their same story all the time with no growth. . .

My old tanner [Ralph Ring] . . . tried to take it [his knowledge] to his grave too, but I – it took me three years to bug him continuously in order to train me. And then, finally, just to shut me up he said, 'Get your ass up here. Two weeks, we're going to work your ass off.'. . .

After we got done, he called me up a week later and said, 'What you doing?' I'm like 'What do you want? You don't call me.' 'I just wanted to know what you're doing.' 'I'm working.' 'Do you miss me?' 'No, I wouldn't say that.' He missed me being in the shop helping him work on stuff (laughs). We grew really close, and we did the kicker dance, and we had music, finally, in the shop. It took me only a week to do that! [Otherwise] He wouldn't let anybody in that shop. He's real stingy.

> Part of the tannery [I envision] I wanted to name--, because he was so iconic and all the ladies that he provides seal skin to, everybody knows who he was in the seal skin world—I wanted to name [it] Seal *Ring* Tannery.

**Sealaska Heritage Institute's (SHI's) Sustainable Arts Program and other Training Programs**

While the Sitka Tribe and a few other tribes offered sea otter hunter and handicraft education courses prior to 2010 to promote the revitalization and development of this economy, Sealaska Heritage Institute (SHI), a regional tribal organization, has developed a curriculum and faculty to teach both hand sewing and machine sewing of sea otter and seal skins throughout Southeast Native communities. The aim of this program is to support Indigenous subsistence economies, especially in rural or underserved communities, where economic opportunities may be limited but marine mammals are abundant.

SHI is a regional, non-profit, Native heritage organization for Southeast Alaska. It was spawned by the 1971 Alaska Native Claims Settlement Act regional for-profit corporation, Sealaska, in 1980. Its mission is to preserve and promote the cultures of the Tlingit, Haida, and Tsimshian peoples of region. The idea for SHI (originally known as Sealaska Heritage Foundation) came from clan leaders, traditional knowledge holders, and others that were concerned that their heritage needed to be celebrated and passed on, or it risked being 'lost' in the quest for modernization and development.

SHI's programs include the following:

- Sustainable Northwest Coast Arts
- Language revitalization
- Childhood literacy
- Subsistence living classes
- Research on Alaska Native culture and history
- Scholarship programs for Southeast Native students
- Culturally based curriculum development
- Repatriation of Native cultural property

SHI is governed by a Board of Trustees supported by a Council of Traditional Scholars, A Native Artists Committee, and a Southeast Regional Language Committee (SHI 2024)

Celebration, a biennial festival typically held the first Wednesday to Saturday in June, is the organization's largest event, attended by thousands of Natives and non-Natives from Southeast Alaska and beyond. Celebration showcases Southeast Native arts and cultures and features dance performances, traditional oratory, feasting and traditional foods, a juried art show, a Native foods contest, demonstrations, an art market, and, in recent years, an Indigenous fashion show. At Celebration 2024, the "Everyday Indigenous Fashion Show" featured a number of innovative sea otter products and from Southeast Native designers, from robes and vests, to hats, headbands, footwear, accessories and trim. The exhibition helps to support and recognize innovation and excellence in fur sewing and Indigenous design.

Christy Ruby, a sea otter hunter, artist, and designer and owner of C. Ruby Designs from Ketchikan is a regular participant in this and other fashion shows and often wins awards at juried exhibitions. Jeremiah James, a hunter and handicrafter from Yakutat, who trained in the SHI sewing courses, is also a regular at the SHI fashion show. Both were among the more than a half a dozen

artists who featured sea otter products at concession tables at Celebration 2024's marketplace on the plaza of the Sealaska arts campus. While these two artists were making full garments, most others artists were using sea otter fur especially for trim or smaller accessories (like scarves, headbands, or earrings), which are considerably less expensive to produce and more widely marketable. Products sold at "marketplaces" like this represent artists' own designs, which are typically innovative, though culturally inspired, and often pitched to particular markets, based on their aesthetic, practical (sea otter fur is very warm to wear), and price values. Like a lot of artists, Christy Ruby sees her work as a reflection of both her individual expression and skill as an artist/designer and her cultural heritage. Each garment is unique rather than a replica of a cultural product. This approach is widely endorsed in the Alaska Native community as an appropriate way to develop the sea otter subsistence economy in an entrepreneurial way.

SHI's launched its ambitious, multi-dimensional Sustainable Arts Program for sea otter in 2012. It was not SHI's first effort to support cultural and economic sustainability in Southeast communities, based on local subsistence resources and traditional skills. However, unlike previous Native arts development, focused on revitalizing spruce root basket weaving and moccasin sewing through instructional courses (dating back to 2003), the sea otter program was more comprehensive in scope and sought to develop a regional base of experts, funding, and infrastructure to train and support Alaska Native artists interested in sea otter skin-sewing and handicraft production. The central objective was to create opportunities for subsistence hunters and sewers in communities where economic opportunities were lacking, but skilled hunters and sewers were present who could capitalize on growing sea otter populations that in some cases were threatening valued local shellfish supplies. This new (or revitalized) niche for sea otter hunting and handicraft production, in turn, could become a source for the sustainable development of a Southeast marine mammal handicraft economy that would complement other renowned Northwest Coast arts, such as weaving and carving.

> Rosita Worl (SHI President): We used to have subsistence phone calls, and I was hearing you know, from all parts of the region that the sea otter population was eating subsistence food. And at the same time, I was on the Sealaska Board, and a concern that I had was in rural economies. And you know, I saw …there's no way we're going to develop economies in our communities because we had a lack of infrastructure, the high cost, and whatnot else. And so I think the very first time that I had the idea of sustainable arts was with the spruce root basketry in Hoonah, and … it was a couple of years before I started … the sea otter [sustainable arts program]. And I thought …'well there's natural resources in the villages, they don't have to pay for that. They can stay in the villages and do arts and crafts and earn some money. And I think a lot of that came from, you know, my understanding about subsistence and dual [mixed cash and subsistence] economies.'

The framework for the program was tied explicitly to the MMPA exemption for Alaska Natives and thus also served to clarify for participants the specific laws and regulations governing subsistence hunting and uses of sea otter. This was important because, as documented in this report, an atmosphere of confusing official interpretations of what was 'legal' and periodic overzealous enforcement campaigns against subsistence hunters and handicrafts by USFWS had discouraged many Natives from participating. Extirpation of sea otters in Southeast during the commercial fur trade had radically diminished opportunities to utilize sea otter, but through training and support of sea otter handicrafts, SHI sought to revitalize this proud cultural tradition.

Figure 4.4. Sealaska Heritage Institute's Celebration 2024 Fashion Show, Centennial Hall, Juneau. This photo features designs by Christy Ruby (back row, left), which include seal and sea otter garments, with sea otter also used for trim and accessories. (Photo: T. Thornton)

Figure 4.5. Christy Ruby (center) at the Sealaska Celebration 2024 Arts Market. About a dozen artists with sea otter products had stands at Celebration's Arts Market, hosted by Sealaska Heritage Institute at its new arts campus and plaza in downtown Juneau. In the foreground is an award-winning vest crafted by Ruby, utilizing dyed sea otter fur, an innovation she helped pioneer. This is a high-end commissioned piece for display and not expected to be sold at the market. Customers around her table, meanwhile, handle some of her other products, including sea otter scarves, which sell for several hundred dollars and are popular and practical for Southeast weather (i.e., not too warm to wear). (Photo: T. Thornton)

SHI received several sources of support to develop their sea otter hand and machine sewing classes beginning in 2012 as part of their Sustainable Arts Project. This support included a major

award from the State of Alaska, which was eager to promote more hunting of sea otters in the wake of complaints about their impacts on both the subsistence and commercial shellfish economies, and having going so far as to consider putting bounties on them (as existed with harbor seals prior to MMPA) Representative Bill Thomas, a Tlingit from Klukwan, is credited with helping to get the arts funding into the State's operating budget.

> Lee Kadinger (SHI): "It was supposed to be three [years of funding, but the] State budgets year-to-year. So, we got two years funded. And that's why we called it the 'Sustainable Arts Project,' rather than 'Sea Otter Harvest' [Program]. Felt it was a little bit [easier to pass, given the controversies over proposed bounties, etc.] . . .
>
> [Also] there was a push early on to want to have the sale of green [untanned] hides. . . claiming that once you shoot a sea otter it's 'significantly altered.' And so, you should be able to sell a raw hide to anyone.

Due to the cost and other issues, such as variable quality and time delays, with hide tanning, it was also thought that a market for green hides would increase sea otter hunting production and thus more effectively "control" expanding otter populations (a concern of the legislature and other interests). However, Native leaders recognized that this would require amending the MMPA, which was not their goal, and thus opposed such changes.

With funding in hand, SHI piloted its sustainable sea otter curriculum in Juneau before rolling it out regionally beginning in 2012-2013. Between 2013 and mid-2024, SHI offered 78 classes in 17 Native communities (see Table 4.2), including Anchorage and Seattle, which are not rural but historically underserved in terms of cultural connections to Southeast marine mammal subsistence uses. Some of the early students in the program, such as Jeremiah James of Yakutat, later became successful instructors.

Table 4.2. Sealaska Heritage Institute (SHI) Sea Otter Sewing Classes (2013-2024)

| **Place** | **Hand-Sewing Classes (2013-24)** | **Machine** | **Instructors (2013-2024)** |
|---|---|---|---|
| Angoon | 2021 | | |
| Sitka | 2013, 2019, 2021, 2023, 2024 | | Jeremiah James; Robert Miller |
| Haines/Klukwan | 2014, 2018, 2021, 2022, 2023 (2) | | Tim Ackerman, Jeremiah James, Scott Jackson |
| Hoonah | 2013, 2018,2021, 2023 | | Shaadoo'tlaa, Louise Kadinger |
| Hydaburg | 2018, 2021, 2023, 2024 | | Jeremiah James, Louise Kadinger |
| Juneau | 2013, 2017, 2018, 2021, 2023 (3) | 2013-24 (15-hybrid) | Louise Kadinger, Shaadoo'tlaa, Jeremiah James, Robert Miller |
| Kake | 2013, 2019, 2021, 2023 | | Shaadoo'tlaa, Scott Jackson |
| Klawock/Craig | 2013, 2019, 2021, 2023, 2024 | | Deborah Head, Marcus Gho, Louise Kadinger |
| Ketchikan | 2014, 2018, 2019, 2021, 2022 | | Louise Kadinger, Shaadoo'tlaa, |
| Metlakatla | 2023 | | Deborah Head |
| Petersburg | 2018, 2021 (Zoom), 2023 | | Marcus Gho, Robert Miller, Louise Kadinger |
| Wrangell | 2014, 2015, 2016, 2018, 2022, 2024 | | Jeremiah James, |
| Yakutat | 2014, 2016, 2018, 2021, 2023 | | Jeremiah James, Jennie Wheeler |
| Anchorage | 2014, 2019, 2021, 2022 | | Jeremiah James, Louise Kadinger & Bobby Itta |
| Seattle | 2023 | | Louise Kadinger & Jeremiah James |
| Virtual | 2024 | Hybrid since2015 | Robert Miler |
| **18 Venues** | **62 classes; 852 students** | **16 classes; 77 students** | **11 Instructors** |

Demand has remained consistent since the program's inception with nearly a thousand students enrolled in SHI sea otter sewing courses since 2013. Hand-sewing classes tend to fill their enrollment caps, usually around 15 students, but depending on venue capacity. Machine classes are limited by the availability of appropriate heavy-duty fur-sewing machines, of which SHI has purchased a small core for their Juneau arts campus from the Bonis company, a respected manufacturer that is no longer making machines but continues to service (and resell) existing ones. Machine sewing students typically have either taken the hand-sewing class, which is targeted for novices (but hosts more advanced sewers as well), or have otherwise mastered those skills. In a 2014 presentation on their sustainable sea otter project, SHI envisioned that a single craftsperson, working primarily in the winter months (to allow for seasonal employment in spring and summer especially), and with reliable retail outlets for their products, could earn $35,000 a year based on the following price points:

Blanket: $5000-15,000
Gloves: $125
Hat: $300-500
Pillow: $200-300
Scarf: $300-400

In the interest of cultural and economic sustainability, SHI's sea otter sewing class curriculum goes beyond teaching the practical skills of materials acquisition, design and patternmaking, skin

sewing and other crafting techniques. It also incorporates lessons on the historical cultural, ecological, and legal/regulatory context of sea otter hunting and subsistence uses in Alaska, including eligibility, harvest, and tagging requirements, what constitutes a legal handicraft under MMPA, and related topics. In addition, courses introduce basic skills for running a small handicraft business. SHI reported in 2014 (SHI 2014) that 6 of the 13 students that had taken the machine sewing classes in the first two years had already started their own handcraft businesses.

Most students taking the courses are female and focused on handicraft production more than hunting, though some students, female and male, are already hunters or aspire to do both. Evaluations from 2023-2024 students reveal that while only 28 of 170 (16%) of enrolled students were sea otter hunters, another 113 (66%) were interested in hunting. Students typically make keyhole scarves, trapper or pillbox hats, or pillows (Figure 4.6) from established instructional materials, but have the option to choose to create other products (headbands, purses, hair-ties, etc.).


Figure 4.6. Robin Thomas of Klawock holds up a pillow she made after taking SHI classes in fur sewing in Klawock. She was making multiple pillows to sell in order to raise money for a planned memorial party (ku.éex') and stated that she would like to see more classes taught in rural communities like Klawock, where sea otters are plentiful and hunting is practiced. (Photo: T. Thornton)

Acquiring quality tanned skins in a timely manner for the courses eventually became a supply chain issue for SHI, so they began acquiring sea otter skins from tanners not only in Alaska but around the country.

> Lee Kadinger: [In] 2016, we [began working] with a company called Tubari. . . We had been trying to work with USA Fox and Fur, Wayne Nemury was his name, to shear and dye hides, but then they ended up getting out of the sea otter business because remember you got to be a registered agent. And Tubari was interested. Wayne introduced me to Mark [Tubari] . . . in [Passaic] New Jersey, and . . .they got set up as a [registered sea otter] tannery.

> And the key thing with that was then they could shear hides, which if you've ever had sheared beaver you know, same thing with sea otter, it's phenomenal. So, they could shear hides and then they could also dye them. And that was a huge thing that we wanted was the potential to have dyed fur, because then artists have all this – you know, more paint in your paint wheel. And so, in 2017, they became a registered agent. That was right about the time as kind of lost any grant funding for this program and it kind of died down, so they just sat there as a registered agent. We didn't really do much with them for a couple years [2017-2019] until about 2019 when we got some [funding] – a grant again.
>
> And you'll probably see that when you look at the harvest levels. You may see a dip [in hunting] when some of our programing stopped just because you know, the nature of that [supply and demand] [see Appendix F, harvest table]. But individuals were still doing it on their own [i.e., hunting and selling the raw pelts or having them tanned and selling or otherwise using or distributing them].

The extent to which demand for sea otter pelts from newly taught skin-sewers might drive more hunting is not clear from the existing data. Significantly, harvest data (Appendix F) for Southeast Alaska indicate that the highest harvests of sea otters since the MMPA was passed in 1972 occurred from 2013-2015 (1497, 1407, 1214 kills, respectively), precisely when SHI rolled out its first three years of hand and machine sewing courses, enrolling over 200 students across the region. Although that trajectory of increased harvest has not been sustained, in part, as Lee Kadinger suggests, because of a lull in SHI skin sewing classes, annual sea otter harvests from 2015 until 2020 (when the COVID epidemic had set in) remained consistently above pre-2010 levels, averaging 919 otters a year.

At the same time, as new handicrafters continued to complete the sea-otter sewing program, among the students' biggest concerns, according to SHI's 2023-2024 course evaluations, was the availability and cost of tanned skins. Some students specifically requested further support from SHI in facilitating access to tanned sea otter skins along with a desire to continue their instruction in handicraft production. Significantly, the problems with obtaining sea otter skins seem to be related not to a shortage of otters, but rather to the distribution of active, trained hunters (which communities also identify as a sustainability issue) and skins across communities. Active hunters are harvesting below the Potential Biological Removal of otters for the region according to USFWS data (see Chapter V), but a greater issue seems to be distribution—that is connecting hides to skin sewers in need. Beyond this, sewers' desire to reduce the often-prolonged waiting period and up-front costs of tanning may have factored in this feedback from students. Students appreciated that SHI took care of these "start-up" costs/obstacles by providing tanned skins for the courses, but would like to see SHI, or perhaps other entities, continue to be reliable suppliers (or a source for supplies) of tanned skins at affordable prices without long wait times. For its initial phase of sustainable sea otter program (to 2014), SHI reported that it paid 32 hunters in seven communities (Hoonah, Kake, three Prince of Wales Island communities, Sitka, and Yakutat) $28,785 to harvest sea otter and $30,000 to Alaska tanneries to obtain an initial supply of tanned skins for their first two years of sewing classes. By 2016 SHI was reaching beyond Southeast to Tubari Furs in New Jersey to fulfill demand for high quality tanned furs that included shearing and dyeing. Tubari closed its business recently however, and fur tanning remains a bottleneck.

Among the barriers to expanding sustainable arts production and sales, according to SHI (2014) were the following

- Federal limitations—especially MMPA regulatory language on "significantly altered"
- Reports of overzealous USFWS law enforcement
- Imported reproductions (esp. wood carvings) displacing Alaska Native crafts
- State law prohibiting training funds for arts and crafts

- Limited marketing opportunities for handicrafts
- Quality of skin sewing
- Equipment to shear sea otter hides [to achieve garment weight]

While some of these issues have been addressed, particularly clarification of "significantly altered" (discussed above) and education in "quality sewing" with machines and sheared hides, and overzealous law enforcement appears to be in remission, other obstacles remain to be tackled. Among the most important of these, marketing opportunities, was to be a third phase of SHI's cultural and economic sustainability plan for sea otter subsistence uses, but it is currently still in development.

SHI's most experienced sea otter skin sewing instructor (and also a hunter), sees clear evidence for the impact of SHI's classes in stimulating more participation in both handicrafting and hunting.

> Louise Kadinger: Oh, yeah, definitely. . .My son's best friend [JH]. He's now a sea otter hunter, and he goes over to hunt on his boat, him and his family . . .They got - they got eight. . . just [recently]. . .I think that's the biggest thing is like just knowing his father-in-law is a hunter and fisherman in there. So, he's like, 'You need to come and take care of some of these sea otters.' And that's really just - I think that's really how I stumbled upon it as well. . .
>
> I think the biggest thing that I really appreciate is the fact that people are being able to make a living in our villages because they have this ability now to make stuff and sell it because there's such a high rate of unemployment in our in our villages; it's nice to have something that they've learned that they can make stuff and sell stuff with these [skills]. . .

She also sees markets for sea otter products growing as result of events like Celebration.

> Louise Kadinger: It's growing in popularity. And it's nice because you see as different things get revitalized. . .You really notice it at Celebration when, like 15 years ago when [the production of] . . . cedar hats [became revitalized]. You start seeing more of them at Celebration. And I've had a couple of my blankets dance through it--Celebration. And you have so many people asking me, 'Can I buy one? Can I – can I get this?' You know, so most of them want to trade, which is something I have no problem doing. It's generally how I get a lot of my own art . . . [Artists] like TJ Young and David Boxley, they all they, want to, you know, have this exchange. And they're amazing artists. . .
>
> Even just in the last two years, you see a whole lot of more sea otter headbands and sea otter accents to blankets dancing at a Celebration. Like the accents I do on just like regular blankets. . . I actually [just made a] white deer hide [blanket] . . . and then I put a five-inch border of sea otter around it, and then a turquoise backing, and it just like popped! And she [the recipient] loves it. . .It's not that easy, but you can do it.

While interest in handicraft production and hunting is growing, and some segments of the market are expanding, sustainability issues remain which are further analyzed in the discussion section below.

Courses on Hunting

Sitka Tribe was an early experimenter with courses on sea otter hunting (see above) and handicrafts, in 2005-2006 but has not continued to offer them. Recently, the Central Council of Tlingit and Haida Tribes of Alaska partnered with tribes in developing courses on both sea otter hunting and handicrafting through its cultural heritage program. One took place in the fall of 2024 in Hydaburg,

involving the local tribe and sea otter hunting experts. Anthony Christenson was one of the instructors involved:

> Anthony Christenson: Marita Tolson. She has the Cultural Heritage program [at Central Council of Tlingit and Tlingit and Haida Tribes of Alaska, which runs classes on sea otter hunting and skin sewing]. They seek out [local experts], like she hired Tony [Sanderson, an experienced hunter] to be the instructor to teach hunting. And then my uncle was hired to assist them. And I was there as Tlingit and Haida Nutritional Food Security member, and I'm trained in wilderness [skills], and I run the boat [1 of 2 boats] and . . .
> I had three on my boat and they [the other boat] had four or five.
>
> We go out and show them how to track otter, shoot them, harvest them, all that stuff.
>
> [And my] Uncle Jeff [is there] . . . he just loves to be there [and] you got to have that [additional] labor.
>
> [After butchering and skinning, done out on the land], Tony sends them [the skins] off and gets them tanned, gets them back. And he just got a batch back like yesterday . . . nine or ten [pelts].
>
> Some people used Kake and some are enjoying Anchorage tanneries. Anchorage people like because you get a quick turnaround. You know, he's pretty fairly reliable. . . Alpha Furs [Alpha Fur Dressers].
>
> They had it so that the class got to hunt them and then [the course sponsors] pay to tan it because it's like if they're going to host anything, you have to pay for it. It's a hundred and twenty bucks to tan [a sea otter hide]. Then they give it to the artist. [Artists then] can. . . quadruple that [value], right [by turning it into a handicraft].
>
> This is their wellness. . . It's okay, just pay to have the hide [tanned] and give it back to the very same people. And then they learn and then they acclimate to this product; they see the value of it, then we manage it. So, I always think management is a relationship with the creature, not a piece of paper, right?
>
> I told them a long time ago when I became [a member] on the federal board [Federal Subsistence Board, which he currently chairs]. I said, 'I hiked around a lot of these mountains, looked at a lot of deer, not one of them had a label on it that said 'state,' or 'federal.' Every single one of them had my name on it. Period, right? Sovereignty is an activity, you know, this 'manage yourself.' I'm trying to tell our tribes we got to step into that role. It's not co-manager-- that is our right created by law. These other people were tasked with telling us how to manage ourselves. We are very much efficient in that, on some levels. . . I mean, we need to get over our grassroots efforts to get behind that kind of concept. . .
>
> Like I said, there's a dying social [aspect to community, especially since COVID] – but there's also resurgence in these younger kids I see come up that love what we do. A bunch of us that hunt, share, bring them out, bringing up – you know, so we bring deer to school. I'm on a traveling traditional foods [program]. We even went to Elders and Youth [a pre-AFN convention event in October 2024]: we hung up – we skinned a sea otter at Elders and Youth on stage. So, we froze a whole otter and brought it up to the Elders and Youth in Anchorage on live TV, we skinned it for the elders and youth of Alaska. . . promoting our way of life . . .
>
> And that was [a result of] teaching kids how to hunt. That wasn't, you know, that wasn't – so Tony [Sanderson] and I went out on two boats and our objective was to get sea otters. . .[maybe] twenty per boat wouldn't be out of the question. And we had teaching that day, we got eleven. . . with the youth and teaching; letting them shoot. . . [They've got to learn].

We're not the same program that's the one doing the cultural classes. It's a whole other program that we just happen to live in the town and linked our program objective on a few projects. One of them was sea otter because we have a boat and skillset.

[We hunted in] fall but. . . all-year, keep your gun, shoot at 'em – you know, keep the pressure on. So, that's kind of where we're… I drive them all day. . . Fish and Wildlife came here one day and then oh, the state trooper, and we were out here doing what I said, managing the sea otter; so, they caught wind of it. . .

Yeah, there's a song that we have for hunting sea otter [sings a portion of the sea otter song]. They have such a big part of our history, we have songs and… It also was a two-sided part of our history. The wealth made the Haidas the scourge of the coast. A big part of our negative reputation with the neighboring tribes was based off the sea otter trade and the hunger it – pursuit of the potlatch and personal pride, right? That's a hundred-year history that was turned into a nightmare for the Pacific west coast. [But also have peace through trade]

. . .Oh, I'm a hundred percent live off the land. . . I work quite a bit, but I've been trying to make [social media] content lately [as a way] to entice [and educate] kids to hunt. . . I use that kind of concept of being very aware of your environment and using those old-time, honored things like that. I don't know why but I'm fortunate I was raised in my grandfather's house like he was my father. That was like a deal. . . these things are just innate now. . . I just always have had that intimate relationship with the animals. . .

But the grant [and fall 2024 course] was about just us, you know, using it [sea otter] for arts and crafts, managing them, you know, take them out of our 'high-use areas,' protecting the shellfish, crabbing grounds, and you know, basically prioritizing the closest home range [for our traditional foods] . . .and then trying to manifest an action linked to those areas [to keep sea otters in check] . We created a board [commission?] and then ultimately now Prince of Wales has like a mission. So, there is a Sea Otter Commission. That was all borne out of this office. And then, you know, we created that awareness and then all of a sudden it – NRCS [Natural Resource Conservation Service, through US Department of Agriculture's Tribal Conservation District Program]--grabbed ahold of it. So there's a [Tribal] Conservation District here on POW. Dennis Nickerson is the head of that.

. . . The older I get; I'm hunting because my granddaughter needs deer meat now. You know, my kids, they love it, but their need was like this. Now, I have another granddaughter; our needs went up. She eats only what I harvest now and she… And she could see the growth between her and the other kids. So, for me the lifestyle is a sense of pride. Her brain capacity, her development, you know, it supersedes the surroundings. And I'm like, 'Well, that's why our family was that way. That's how we were raised.' It was like, 'you eat this off the land,' you know 'and you do these things and it feeds you. If you process these ways because it pulls those nutrients your body needs to be strong and vibrant and push,' you know. It's a tough environment. . .

[Is there any use of the meat?] I heard somebody say they ate it but, no [generally]. . . [T]hey'll use it for shrimp bait here once in a while. Yeah, I mean, it's not a preferred bait because they're kind of greasy and the shrimp take on the [smell] of the otter. . .

[Regarding what is discarded in field butchering] birds eat it. Bullheads eat it. The kids go fishing right down there, right where we throw it. Just rich environment goes out here and feeds the crab that they're [the sea otters are] killing. So, they end up crab bait (laughs). Greater part of the ecosystems. Our culture is just returning it where it came from. . .– not trying to make a trophy.

Tlingit and Haida future generation program, they're buying a boat, they're going to train hunters and they're going to have us bring them up. We're going to be the guys who are going to be training them . . . and showing this is an actual way of life…

> [Y]ou see, most of the class when this happened the last couple years they've been doing it, it brings the [people with] pandemic-frazzled brains. You know, it [the pandemic lockdown] just frazzled the social construct of the community. And so, these are ways to rebuild that [community], right? Like, to get people back into social gatherings, handicrafting, you know, and just breaking that [cycle of social disconnection].

**Other Issues Affecting Sustainability: Eligibility, Skills, Capital, Markets, and Value**

Eligibility and Blood Quantum

Eligibility to hunt sea otters and other marine mammals under MMPA is seen as a looming crises by many Alaska Natives, due the history of marine mammal regulation and enforcement, which has relied on blood quantum to determine who is qualified to hunt. The determination of Alaska Native Status under MMPA and the federal regulations used to implement it is complex because of the legal-historical context of concepts such as "Alaska Native," federal "Indian Tribes" and "Blood Quantum," none of which are Indigenous or scientific concepts. Rather they are legal-political inventions enacted and operationalized by the federal government which Indigenous tribes must reckon with to negotiate and maintain their legal, political, and economic status, including marine mammal hunting rights.

For sea otter hunting in Southeast Alaska, as this section details, there are three major concerns to highlight: First, the Code of Federal Regulations (CFRs) governing Alaska Native hunting eligibility according to the ¼ Indian blood quantum rule, are, by demographic trends (of "blood dilution") increasingly excluding new generations of younger hunters and handicrafters who fail to meet the ¼ threshold. This restriction can divide and terminate cultural transmission in nuclear families, wherein a ¼ Alaska Native parent could be legally unable to teach their 1/8 blood quantum son or daughter to hunt or use sea otter materials under current regulations. A second major consideration is that any attempt to change regulations or amend MMPA could "open up" hunting to wider array of participants and/or bring other changes that "dilute" the subsistence rights of those eligible to hunt under current eligibility standard. This is particularly sensitive in a context where many Alaska marine mammal populations (though not sea otter) are limited or in decline and may become subject to increasing conservation measures in the future (such as hunting quotas).

Anthropologist Steve Langdon (2021) was commissioned by Sealaska Heritage Institute to investigate and report on the context for determination of Alaska Native status under MMPA and considerations for how issues surrounding eligibility might be addressed. Among his findings are:

a. The number of Alaska Native people falling below the 1/4 blood quantum to be legally eligible for marine mammal hunting is increasing to greater than 30-60% of the Alaska Native population, especially in the Gulf of Alaska region (Chugach, Cook Inlet, Koniag, Sealaska)
b. To date, neither USFWS or NOAA have defined a means for Alaska Natives unable to demonstrate ¼ blood quantum to utilize the alternative language in MMPA (and ANCSA) to be considered eligible to hunt marine mammals if their parents were "regarded as" Alaska Natives by their community of residence. While this avenue is in theory available given the lack of reference to blood quantum in MMPA, the Code of Federal Regulations enacted to implement the MMPA, which specifies ¼ blood quantum for eligibility, would have to be changed to enable this outcome.
c. Alaska Natives, whose descendants may be criminalized for engaging in marine mammal cultural traditions under the ¼ blood quantum rule deeply resent the situation.

d. USFWS and NOAA enforcement officials affirm that they use the ¼ blood quantum standard to define Alaska Native status under the MMPA. However, hunters are not required to carry documentation of their status when hunting or having their skins tagged. Enforcement actions against subsistence users 'regarded as' Alaska Natives but not being able to show ¼ blood quantum (e.g., through a CDIB card) is little to none (no cases in the last 16 years).
e. A number of alternative criteria for regulating subsistence eligibility under the MMPA have been proposed, most of which (other than reducing blood quantum (e.g., to 1/8$^{th}$ in the Code of Federal Regulations) could be legally and administratively complex in their ramifications and thus require statutory amendment of the MMPA or other significant action. For example, simply using a CDIB (without blood quantum) may be problematic because CDIB cards do not list tribal membership or "coastal Alaska Native" status.

Some of these issues are reflected and elaborated upon our interviewee's comments below. However, ongoing tribal consultations will likely raise more issues regarding this important but sensitive (and potentially contentious) matter. Even the question of how tribes should decide and/or administer the question of hunter eligibility (given a current lack of consensus on the eligibility matter and overlaps in regional and village tribal membership, jurisdiction, focus, etc.) could become complex.

> Jeff Feldpausch: The big issue right now and probably where it's leading is blood quantum. Right now, the Sitka Marine Mammal Commission hasn't changed their stance. They don't want to lower that blood quantum because they can see a lot of issues that will come out of it. And at some point, you know, if you overharvest it [to the point the stock changes status to "strategic" as a result of depletion], Fish and Wildlife Service is obligated to come in and regulate the harvest [to conserve the species].
>
> Diana Reidel: [Along with tanneries, blood quantum] is another big obstacle for being able to pass this down. It's a big dilemma, I feel.
>
> Kenyatta Bradley: I also think blood quantum is a problem. the law says, 'Alaska Native residing on the coast,' so if somebody comes from Fairbanks… I don't think that's fair. I think they should be able to hunt; just be an Alaska Native. It's already such a small population. I have to make sure I have a Native wife so my son can go out hunting with me. . . So, the blood quantum thing is significant. I mean, they kind of – it's assumed to just run out after this next generation . . .I should be [determined] by [tribal] enrollment.
>
> An Alaska Native should be able to take a White guy out on a hunt as a charter, I think. I think that would be cool. Less racist. Kind of tamp down the animosity. Because at this point, the White guy is just blaming the Natives on crab populations crash[ing due to the overabundance of sea otter] or whatever. But if we could work with each other. . .
>
> They'd have to have an Alaska Native on the boat. And they can hunt with them. Like, I'd like to do charters. Like to do hunting charters. I really want to do it for my Native people, but if I want to make money out of it, I'd probably have to take White people out…It's pretty significant [challenge], the people like to shoot, and it's like one of the hardest – you could be shooting 300 yards with waves and wind and he's moving around and stuff. It's very challenging.

Any initiative that seeks to increase sea otter hunting and handicraft production and exchange will have to deal with the eligibility issues, especially the ¼ blood quantum requirement in the USFWS

implementing CFRs of the MMPA. One issue not emphasized in the literature to date but important to some hunters is what might be termed 'cultural competence,' which is learned rather than a function of blood quantum. Cultural understandings of sea mammals in general and sea otter in particular has been an element of SHI and other hunter and handicraft training programs. However, it is not a prerequisite for hunting. One hunter (Tom Gamble) suggested that policies promoting cultural competence, including Indigenous knowledge of sea otters and their traditional uses and values, should be a standard for participation in the Indigenous sea otter economy.

Markets: Limited but Expanding in Some Areas with Innovation

As the overall market for sea otter trade continues to grow, it has become segmented in a number of ways. Developing large or highly adorned sea otter products, like blankets and major articles of clothing, is time consuming and expensive. As such, the market may be limited mainly to "high-end" buyers. These buyers typically are not found in Alaska Native villages but are acquired outside of the region, through advertising and display at fashion or art shows or premium galleries or shops, or at retail shops within Alaska that cater to high-end visitors, such as elite tourists, looking to buy authentic Native crafts. Success in this market can be demanding in terms of having to produce high quality and unique products which may incorporate expensive materials (beyond the skins themselves), take many hours to manufacture and a long time to sell through travel to art shows and other venues, if not done on commission. For many part-time or beginning artists these expenses may be beyond their budget or time constraints, especially if the items are not guaranteed to sell. Thus, they may have to seek another niche.

How to be competitive without underpricing yourself as an artist is also an issue. Currently, competition and underpricing in non-elite markets has the effect of making sea otter handicraft production economically marginal, if not unsustainable, according to some hunters.

> Kenyatta Bradley: For what we should be charging for what we have, we have the corner on the world's market of sea otter fur, the finest fur there is, and a hat should cost $1800 bucks, but they sell for like $450. And it's something you can't get anywhere else. It's a quality handicraft and very practical.

Perceiving that local markets are too competitive and limited, some hunters suggest that opening things up to international buyers should be encouraged:

> Kenyatta Bradley: We should be able to sell to Russia and China because they would pay top dollar for it. At this point, a lot of us are just selling to each other [a limited market in terms of both demand and price point]. Nobody's really opened up much of a market except for Rob [Miller] with his website and everything.

In addition to international markets, which are currently off limits to shipping (without a Convention on International Trade in Endangered Species (CITES) permit), some hunters, as we have seen, think that selling (raw or tanned) skins to non-Natives is another market that could be tapped to sustain harvests and engage more hunters. However, this is controversial, in part because it would require changes to MMPA but also because of what it could lead to, including inexpensive and inauthentic sea otter crafts being produced overseas, or by mass production, in ways inconsistent with subsistence uses under MMPA. Inauthentic reproductions could, as evident with wood carvings, crowd out and undercut markets for authentic Alaska Native sea otter handicrafts. For example, Asian made masks, emulating Northwest Coast style design are found at tourist shops at a price of around $100,

whereas a authentic, Alaskan Native versions of similar style could sell for five to ten-times more, depending on the size, level of detail, materials used and reputation of the artist. Others suggest that there are ways to ensure that sea otter skins sold to non-Natives do not come back as reproductions that undercut authentic Alaska Native handicrafts, including certification programs like the Silver Hand Program of the Alaska State Council on the Arts. If this could be done, as Hydaburg hunters suggested, it would likely attract more hunters to get involved and help sustain sea otter hunting as part of rural subsistence economies in Southeast Alaska.

Markets are also segmenting in other ways, as evidenced in the Celebration 2024 Fashion Show which featured a wide variety of sea otter clothing from vests, jackets, tunics, and hats, to innovative uses of sea otter as trim on clothing made predominantly made from other material and for accessories (headbands, hair-ties, purses, scarves, leggings, bracelets, earrings, etc.). Many of the smaller, less expensive items incorporating sea otter seem to be selling at the marketplace, among a largely Southeast regional crowd. Fashion shows like SHI's Celebration can be effective in showcasing new designs and innovative products and ensembles, stimulating not only new demand for these handmade products, but also other handicrafters' imaginations and motivations to develop new designs and products.

Reaching higher-end market segments takes strategic marketing and quality goods. You need "to put yourself out there" several handicrafters stated, and that can be a challenge. Artists like Robert Miller (Miller 2025) and Christy Ruby (Ruby 2025a) have well-developed websites that highlight their own storylines in becoming hunters and artists, as well as the quality and style of the products they feature.

> Robert Miller (2025): <u>In the Ancient Tlingit Way.</u> Sitka Native Alaskan, Robert Miller, was solidly into adulthood when he decided to become more active in the 10,000-year-old culture of his Tlingit heritage and learn some of the ancient techniques of his ancestors. Nearly one year later and with zero experience, he had not yet named the business he dreamed of starting, much less created a logo or a motto. So, on December 8, 2013, he dove in headfirst by loading up his boat, launching it into Sitka Sound, and harvesting three wild sea otters. As luck would have it—or some might even call it destiny—another Alaskan Native was skinning an otter in the parking lot when he returned, and so began his very first lesson in the process of refining fur. . .
>
> Christy Ruby (2025a): <u>Alaska Native Innovative Designer</u>. My work takes me back to my ancestral roots. The sea otter fur has a familiar sensation that meant life or death to my people and its value has not changed for thousands of years. Using skills taught to us from the past will insure we will never go hungry and we can always clothe ourselves. But we didn't just hunt; we strove for individual expression in the creation of beautiful clan art. It's with this sentimental pallet that I create modern looks with glimpses from the past. My creations are inspired from skills passed down to me by my grandfather: a very talented man from Klukwan who carved totem poles and toured the world as a Chilkat dancer. I strive to be as proud of my work as I am of my heritage.
>
> I am Christy Ruby, an Alaskan Native Tlingit Eagle from the Keet Gooshi Hit House, Killer Whale Dorsal Fin.


Figure 4.7. Innovator Award “Taboo Kusax’an (love) Birds” Sea Otter Capelet, by Christy Ruby. “This capelet is made up of 40 individual pieces of sea otter, beaded deer leather and lace. This is the first time in the U.S. that sea otter has been colored and used in a garment. Because I harvest the sea otter myself, I can pick the best hides for natural color and any small or lesser quality hides for brilliant coloring. There are only 3 tanneries left in the U.S. that are registered with the federal government qualified to tan sea otters” (Ruby 2025b).

Ilegvak (Peter Williams) (2025), is an example of artist who has explored the medium of sea otter in producing unique pieces for fashion and display, all “inspired by connection,” as he puts it, through his business, Shaman Furs. A piece he made with an American-style flag design with sea otter fur stripes is featured on the current *American Indian Arts and Crafts* brochure on furs (see Figure 4.5 below)

> Ilegvak (2025): Ilegvak is Peter Williams Yup’ik name and preferred name. Ilegvak is a culture bearer, artist, designer, filmmaker, writer, activist and educator originally from his family’s village of Akiaq, now based in Sheet'ká. His hand-sewn works repurpose skin from self-harvested traditional foods, bridging worlds of Indigenous art and subsistence. The deeply holistic nature of his Alaska Native culture not only informs his art but is why he creates it. . .

> Sea otter fur is historically prized as one of the rarest furs in the world. In 1968, Neiman-Marcus purchased four pelts at $2,300 apiece. After a history of foreign exploitation, Alaska Native tribal groups now have exclusive rights to hunt for and work with the fur. Because of traditional Native hunting practices and conservation efforts, Alaska sea otter is no longer listed as an endangered species. The luxuriously warm, soft and durable fur contains up to one million hairs per square inch, making it the densest in the World. Shaman Furs is the first label to bring seal and sea otter fur back into American high fashion since the 1970's. An exemption in the Marine Mammal Protection Act of 1972 grants Alaska Native tribal groups exclusive rights to hunt and work with the fur. In Southeast Alaska, where Shaman Furs harvests for food and fur, the animals are not listed as an endangered species. Ranging in shade from white to gold with energetic patterns and a sleek texture, seal fur is an ideal material for one-of-a-kind looks. Shaman Furs does not ship outside the United States due to regulations under the Marine Mammal Protection Act and CITES [Convention on International Trade of Endangered Species]

Despite having his sea otter clothing designs reach the most elite fashion runways, and with press coverage in major publications like *The Guardian* and *The New York Times*, Ilegvak still felt that his path was blocked by market saturation and the way the system has evolved.

> Ilegvak (Peter Williams): The [market] saturation is a huge factor. And I would go to craft fairs and look around and people would deliberately be undercutting each other. And I would just be like 'Ok, I gotta get out of this. There's something else I've got to do because you know, this isn't sustainable.' And it's the reason, too, why I got into high end fashion, not for the undercutting because that wasn't happening at the time – but looking at elders selling stuff at craft fairs for the price of a pizza. And so, that's like where I went into high end fashion and then also kind of the frustration of just like seeing the so-called competition like, deliberately underpricing and that's their business strategy. And [I'm] just like, 'Look, we have this control over the best fur in the world. Why are we devaluing it. We should be pushing that up.' But I also understand, you know, people are under pressure and they're trying to make money. And, or they buy a hide, and they have this material and at least recover something on it.. .
>
> [In addition, there was a feeling of having accomplished what I could]. I feel like it was that period of wanting to move on because I felt like I couldn't take it any farther than I wanted to. And I was recently talking to a non-Native artist friend who's [an exhibitor] at Santa Fe [Indian Market] and he does completely different work, but he was talking about that, for himself, and I like the way he phrased it because it's something I've worked on phrasing, talking about it. . .: 'I did this thing. I said what I had to say. I took it as far as I could, as far as getting the support. And you know, I got support, but didn't get enough to sustain myself, to continue to do it. So, now, I'm no longer doing it.' And I thought that was a very succinct way of describing it. Now, for me, that process took many years to come to the realization of that, and to grips of that, and was very painful to accept that. And a lot of that was because it was realizing that I couldn't do these things because of reasons – realizing I couldn't do these things in part because the system's designed to not have Natives make money. The system's like designed to control us and to limit. The system is designed to not have it be questioned about life and death and reexamining commercial components and how we do commercial business. And realizing too, that part of what I'm . . . going from the fur work, or the fashion fur work, to be like, 'Ok, what about museum and doing these art pieces and wall pieces.' So, I tried that. And I felt like it was still the same kind of thing, and then I tried it with fish skin (laughs). And I felt it was the same kind of thing. And so now, I'm trying it with writing. And so, we'll see – and then also education . . .

And so, more about like writing about these issues, and then also doing an educational component. So, we've been working on this project, *Harvest: Quyurciq* (2025) for like ten plus years now. The film is shown around – it was actually I think like this guy, Emmitt, he was talking with Sealaska Heritage a few years ago about trying to create a documentary film. And I don't know if they ended up doing it, about harvesting sea otters and I'm like, 'Oh yeah.' And he's like 'I thought I'd talk to you because...' And I'm like, 'Yes, this is this film, and I'll show you this link.' And we created this film specifically to do that because I realized that most people didn't know that it's happening, that it's legal. They don't understand the cultural and respectful components of it. . .

[To educate people] I created this film as a producer and featured in it, and then we created an educational curriculum that I've taught at a few colleges. And we're putting that online. So, we're – and we're actually going to need to do something and adapt the lesson because we have a lesson on blood quantum. So, as soon as our meeting over I'm going to email my partner on the project and be like, 'Hey, guess what?' Because that was a very specific one lesson, you know. So – and that, like talking at museum spaces, talking at colleges, things like that, doing the educational component has been kind of like more open for my work instead of a retail or fashion runway, or kind of museum spaces. I mean, I could do it. Right, like could sell pieces at craft markets again, but that is such a grind. And it's so much money. It could cost like two thousand to get a booth and travel and all that and then maybe you do four thousand in sales, you know. And then just like all that time. . .

I could probably keep selling stuff like that. And I feel like [it was] a highlight – I mean, I lived a dream and that's important. And having those moments of going to some fashion events in New York, and someone looking at my vest and being like blown away and wanting to talk to me about it, and I share the story and them being like 'Wow! That's amazing.' And that was really cool. That was really special, but it didn't really take off. . .

And so, having my models lined up, music being queued before going on the runway, that feeling and just looking at them wearing all these things that I talked to the animals and hand-sewed and have this relationship in this culture. Doing that, that was a super high, right? And same with, like, being profiled in the New York Times, was a super high and I got some business off of that. But I think what I was trying to do, I realized I just kind of wasn't going to be able to kind of accomplish in that way. And so, it took a while, you know, because I dedicated ten years to that, and it was really heartbreaking and hard to kind of do that. But it was important. I think just as getting involved in it was an important transition for me to change and grow as a person, also shifting out of it into these other forms are also important to me. But yeah, there's a lot that I miss about it, but there's a lot that I don't miss, that just grind[ed] on me. It's so difficult and a lot of that is the – kind of the settler mentality and the view around it.


Figure 4.8. Ilegvak (Peter Williams') flag piece (right), "Why Did I Cry Making This Symbol" is featured in "Sustainable Tradition: The Beauty of Norther Sea Otter in Alaska Native Art" a brochure published by the Department of Interior Indian Arts & Crafts Board, which also provides information on the regulations governing Alaska Native sea otter handicrafts. The cover of the brochure features a sea otter headband and cape fashioned (left) by Diana Riedel and also displays pieces by Christy Ruby and Jennie Wheeler from Southeast Alaska (DOI 2021).

In addition to these individual efforts, another strategy to further develop and market the sea otter subsistence economy, would be for tribes and regional Native organizations like Sitka Tribe and SHI with retail outlets or connections to retail networks to carry more sea otter goods, or to establish a cooperative. A co-op could potentially help address a number of issues, such as up-front costs, supply chain bottlenecks (esp. with hides in tanning), regulatory, and marketing, that continue to hinder the development and sustainability of the sector.

Value(s)-Added

New values and products for sea otter are being created with the revitalization of the sea otter economy in Southeast Alaska as a cultural economy of the arts. Cultural connections not only figure in the storylines of individual artists but in the values and of institutions. Both the Sitka Tribal and Monarch tanneries in Sitka and the Rocky Pass Tannery in Kake evolved to service the growing demand for sea otter skin tanning in these affected communities. Regional art markets, fur sewing and other skills training, and fashion shows, such as hosted by SHI at its arts campus and biennial Celebration in Juneau, are highlighting the cultural values, connections, sustainability, and economic boost that marine mammal arts and handicrafts provide. State funding for arts and crafts, however, has traditionally not been oriented towards developing "a workforce" in this sector; rather it has typically invested in individual artists or arts education and exhibitions as part of the humanities. Southeast Alaska Native's investments in their own artistic values and handicraft products, in contrast, emphasize a different view: that training in subsistence uses, like sea otter art and fashion, can create jobs and other economic values while at the same time reinvigorating traditional cultural-environment relationships, skills, and values in their communities.

A few interviewees were concerned that the cultural value of objects, such as sea otter blankets, not become diluted or appropriated through mass production. The separation between a subsistence uses and commercial enterprise can be blurry.

> Tom Gamble: If you're stitching ten [sea otter hides] together. . . maybe twelve of them together to make a blanket. And if you're doing that ten times a year, that's now mass production. You diluted the value of a blanket so much. [And] you can't even wear one in ceremony and know the difference between a ceremonial robe and blanket for the bed.

One way of dealing with potential appropriation or ignorance of cultural values related to the production of clan regalia versus other handicraft products not classified as cultural property is through education. Another approach is to use existing Indigenous protocols of design and investiture to put sea otter regalia, like robes, on appropriate kin group members to validate their status as cultural property (at.óow).

This process is already occurring in the sea otter restoration era. Among the earliest examples of this took place in Sitka when a newly sewn and beaded sea otter robe created by fur-sewer Maria Guthrie (Fig. 4.9) was placed on Kaagwaantaan clan leader Herman Kitka Sr. in 2004 at a ku.éex' in which he was given a new title (and the name Kusataan) as leader of the Sitka Kaagwaantaan clan. Mr. Kitka's nephews helped to harvest the approximately one dozen sea otters used to sew the robe, and the beadwork took "a long time to do—much longer than the fur-sewing", according to Maria Guthrie's nephew, Harvey Kitka (pers. comm. 2025). This robe is now housed at Sitka National Historical Park for conservation and exhibition (see Figure 4.9)

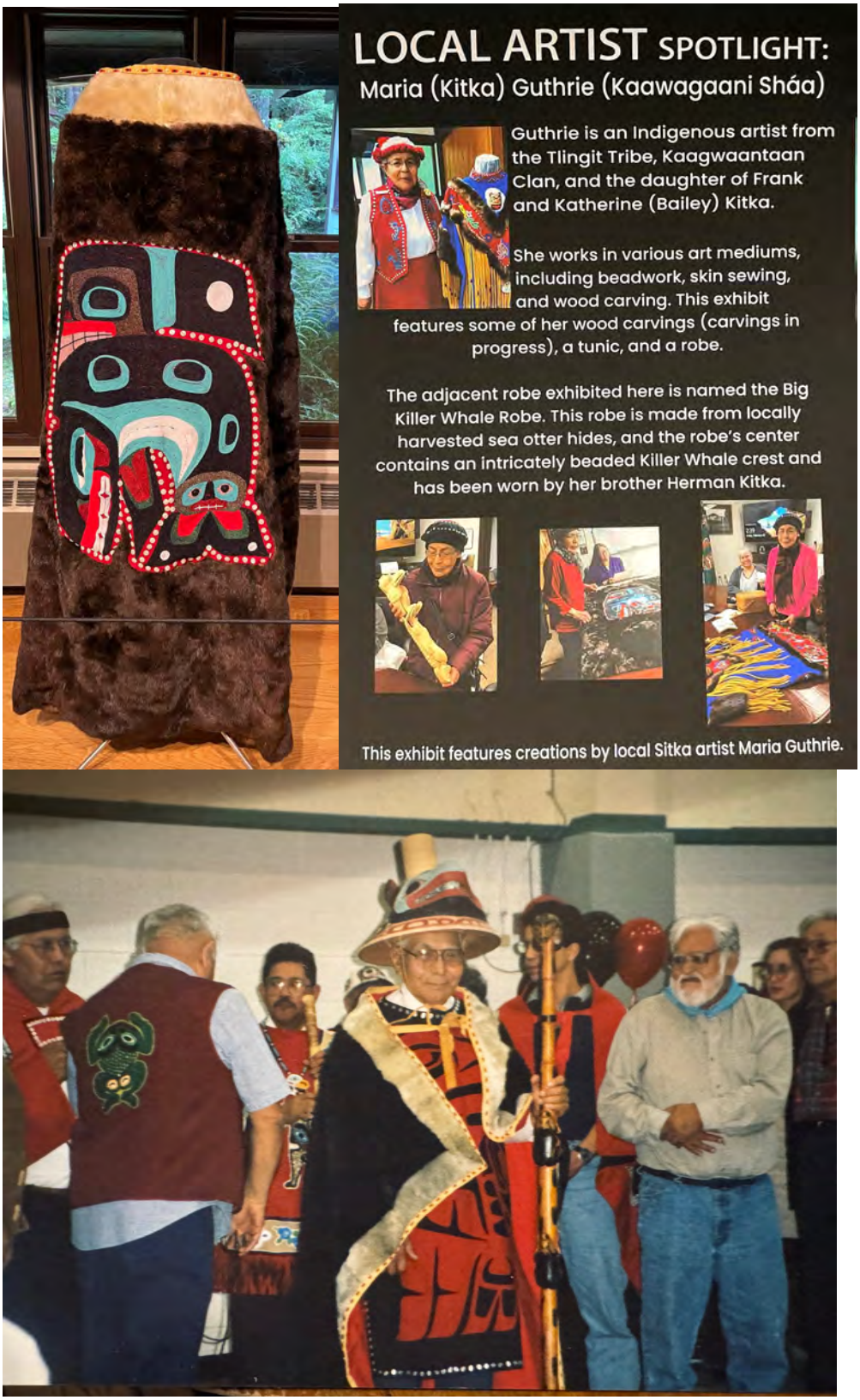



Figure 4.9. Kaagwaantaan Killer Whale Robe by Marie (Kitka) Guthrie, sewn from approximately 12 sea-otter furs and featuring a large, beaded killer whale design on the back (top). As the killer whale emblem is a crest of the Kaagwaantaan, this robe was consecrated as at.óow (clan property) at a 2004 ku.éex' (potlatch) ceremony, where it was placed on Sitka Kaagwaantaan leader, Herman Kitka, Sr.

(1914-2009) (bottom). The robe is conserved at the Sitka National Historical Park and brought out for display at ceremonial occasions, including a recent (October 2024) ku.éex', hosted by the Kaagwaantaan (photos courtesy of Anna Niechcicki (top) and Harvey Kitka (bottom)).

Figure 4.10. Sea Otter and Seal Skin Robe by Louise Kadinger. This robe was brought out at the L'uknax.ádi memorial for her son in October 2023. The coho salmon and white frog are crests of the L'uknax.ádi clan (photo courtesy of Chuck Smythe, SHI).

Similarly, Louise Kadinger produced sea otter robe for her son's memorial ku.éex' which has become L'uknax.ádi clan regalia. Utilizing existing cultural systems of owned crests (at.óow) and design, validated through ceremonies like the ku.éex' (memorial parties or "potlatches") can distinguish these regalia from market-oriented handcrafts made for sale without clan designs or cultural validation. However, the culture investiture procedure itself can be expensive, involving both the artist's time and expenses, and gifts to guests (of the opposite side of the social structure, or moiety) to authenticate the status of the new regalia as clan property. Consequently, in the past this process of investiture was largely reserved for nobles or elites.

## Anti-Fur Values

Those who "put themselves out there," be it on websites or fashion and art shows, also have to confront anti-fur values.

Diana Reidel: Yeah, I started to [put myself out there], but you kind of have to have thick skin when you're doing stuff like that because you get a lot of hate letters. . . The more I was marketed, the more hate emails I got. Yeah, I started to, but you kind of have to have thick skin when you're doing stuff like that because you get a lot of hate letters. I get – like, I used – when the board did, and the more I was marketed, the more hate emails I got. [high-end]

And I've been kicked off of Etsy, eBay – even though what I'm doing is completely legal they, Friends of the Sea Otter tags me, and I've been blocked. I'm not even allowed to buy things off of Etsy anymore.

I mean, it is really hard. . . I've taken a step back since 2020 from sewing a lot and I'm not as actively marketing and I do a lot more hats and I have a lot of repeat clients that I do, but when I was actively marketing, it was hard. It was a lot of work.

. . .Sometimes it used to be like . . . I'm going to educate this person on sustainability. And I'm going to educate this person on Alaska Native culture. And I'm going to educate them on how warm a sea otter fur is, and how, like how much more biodegradable it is, how much better for the environment using this fur is than going out and buying plastic fake fur. That used to be fun for me sometimes (laughs) but not all the time.

Yeah, I think my Etsy ones are probably the best [examples of hate letters].

Christy Ruby: The PETAs (People for the Ethical Treatment of Animals and related organizations) are nuts themselves. . . I think PETA's gotten a bad rap about all kinds of stuff. You don't hear them out in the open that much anymore. And now's an ok time because the Alaska "reality shows" have shown so many people that we just don't live in igloos and we have a dog team. . . that we're actually subsistence hunters and what we do is very difficult, to live where we live. And that's admired by so many people. If it was a problem to where I would have the numbers coming in, which I've tested the theory, you know, I've tested all this stuff because this is what I do. I do exactly this, and I get – and I put myself out there sometimes, and I do get a little bit of few people [protesting the killing of otters], but those people wear leather shoes and still bitch about all the cows being killed.

One approach that some hunters and handicrafter use is to face the issue head on by emphasizing the Alaska Native traditions, skills, and rights to hunt and utilize sea otter and how it is done with respect and in a way that is sustainable and in conservation of local populations.

# V. SITKA AND REGIONAL SEA OTTER POPULATION TRENDS AND HUNTING PATTERNS SINCE RECOVERY (1988-)

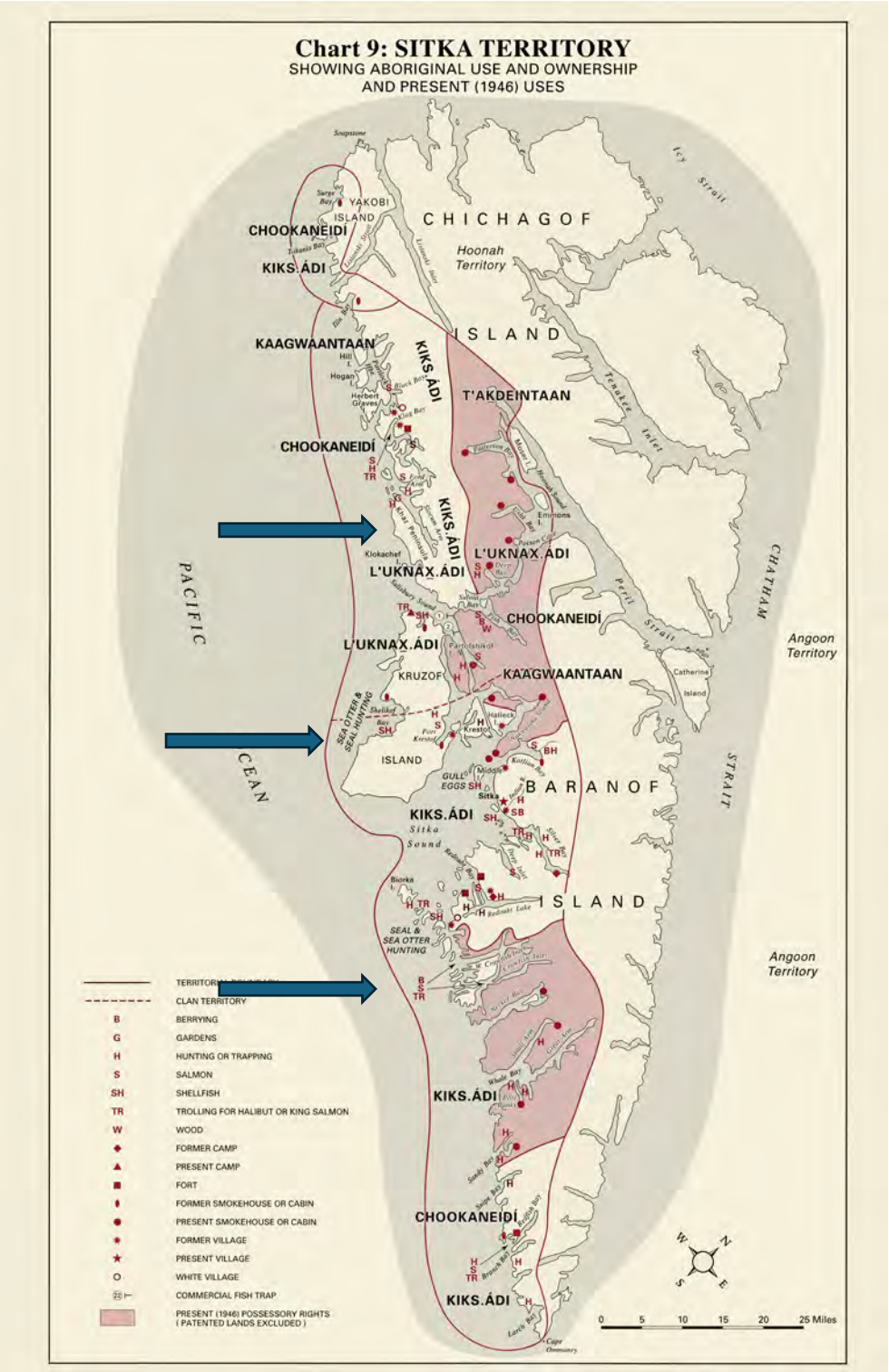
Through translocation and conservation efforts, Southeast Alaska's population of sea otters has made a remarkable recovery over the past 50 years from the colonial fur trade extirpation, and the greater Sitka Sound subpopulation has been among the fastest growing since 2000. In Sitka Tribe's traditional territory, and throughout the region, the recovery has been so successful that there are now growing concerns that sea otter are becoming "overpopulated." What does this mean? Certainly, otter have been increasing in their distribution and abundance and are having well-documented impacts on high value subsistence and commercial shellfish with their metabolic imperative to eat roughly 25-30% of their body weight each day. Since the 1980's Indigenous communities have been sentinels in reporting on the impacts of intensive sea otter foraging on their abalone, gumboot, clam, and crab harvest areas, documenting colonies of otters "cleaning out" whole bays before moving on to others. Along with scientists, they have asked: How sustainable is this and what can be done to mitigate the stress on our shellfish?

The answer to the first part of the question is that the pattern of initial foraging when reoccupying an area not inhabited since the fur trade era, is not sustainable. This is why, after initial (re)establishment of an area—say a bay—and applying a broad foraging strategy, sea otters tend to deplete their high choice prey and then focus, even specialize, on smaller scale resources that are most accessible, e.g., mussels (has been to try to hunt more sea otter, as in Southeast Alaska, they have few other major predators in Sitka and in most parts of Southeast Alaska besides humans (but see Roffler *et al* 2023 for a review of recent findings, especially on significant wolf predation on sea otter in the vicinity of Gustavus and Glacier Bay). However, hunting is largely self-managed under MMPA, with federal regulations not specifying when (seasonality), which kind (selectivity), or how many (bag limits) otters can be harvested, but rather only who is eligible to hunt (Alaska Natives with ¼ blood quantum) and why (for subsistence uses). Yet, brakes have been put on the development of hunting and handicraft uses, as we have also seen, because of up-front costs to hunters, the need to train new hunters and handicrafters, the lack of timely and quality tanning, shaving, and shearing services, limited access to fur-sewing machines, overzealous enforcement, and issues with markets and marketing.

Sitka has experienced and attempted to respond to all these issues. It was the first Southeast Community to face sea otter extirpation in the Russian-America era and was also the first tribe to invest significantly in reinvigorating hunting, tanning, and handicraft skills. In addition, Sitka supports the largest rural tribe and subsistence community (as of 2024) in Southeast Alaska and has evolved and sustained the highest levels of sea otter hunting in the region. Thus, in the discussion of contemporary sea hunting otter that follows we focus on Sitka Sound with comparative reference to other sea otter hunting communities in Southeast.

## Modern Geography of Hunting in Sitka Sound and Southeast Alaska

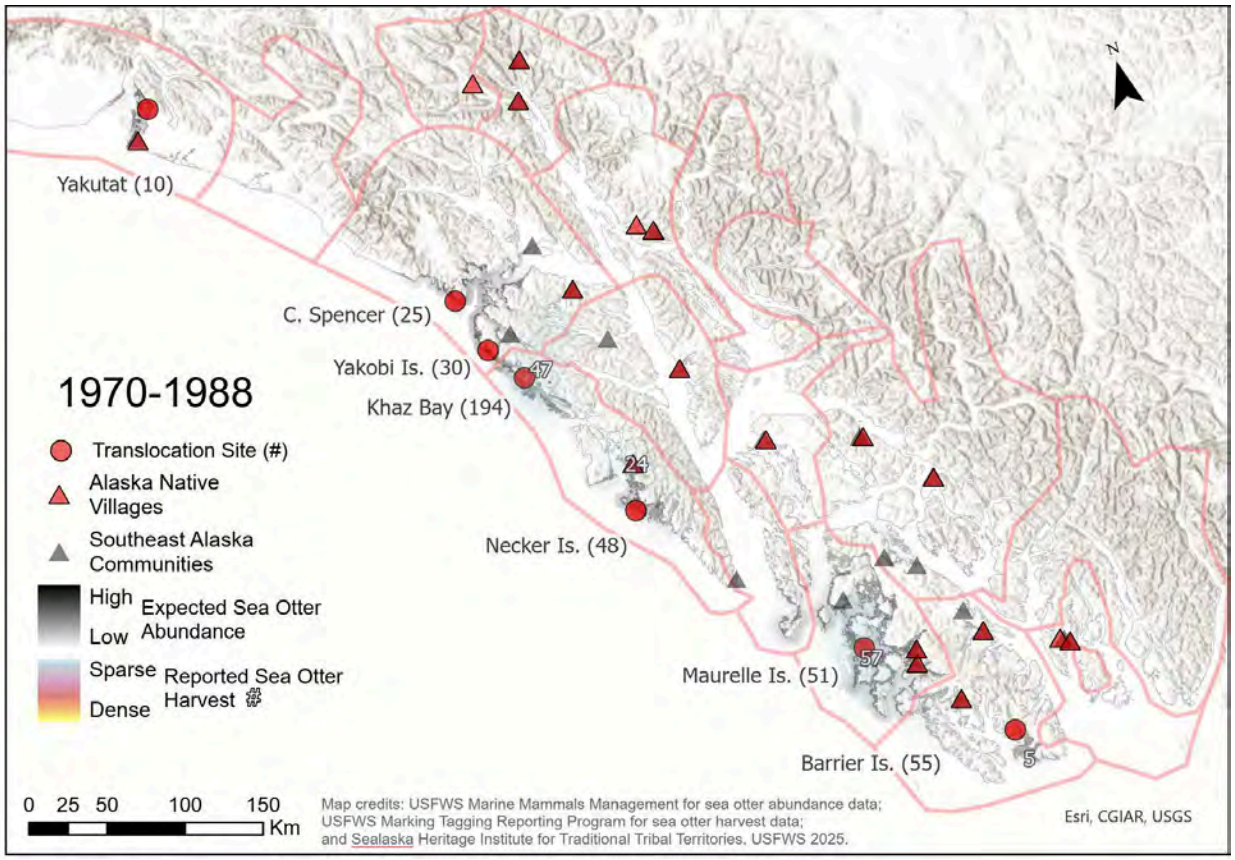
Our knowledge of the modern geography of sea otter hunting in Sitka Tribes customary and traditional use areas begins with Goldschmidt and Haas's (1998) study of Tlingit and Haida land rights and use. This study bridges the first-hand experiences (c. 1880-1946) and oral historical memories of Sitka Tribe witnesses interviewed in 1946 (and also quoted above). The chart below (Map 5.1) provides a mapped overview of the details provided by the six witnesses interviewed.




Map 5.1. Sitka Tlingit (Sheet'ká Kwáan) Aboriginal Use and Ownership and Present (1946) Uses by Tlingit Clan and Resource Area. This map is based on interviews by Goldschmidt and Haas (1998 [1946]) with Native witnesses in Sitka. Blue arrows (added) indicate aboriginal sea otter hunting areas. Significantly, the inside of Sitka Sound is not identified with sea otter hunting, perhaps due to active efforts by local Tlingit hunters to keep them out of the community "breadbasket" for seafood gathering and otters' ultimately adapting to that pressure by concentrating their foraging primarily in outside waters. The main historical sea otter hunting areas were thus south of Biorka Island (later a

translocation site) and along the outer coasts of Kruzof Island and Chichagof Island (also a translocation site).

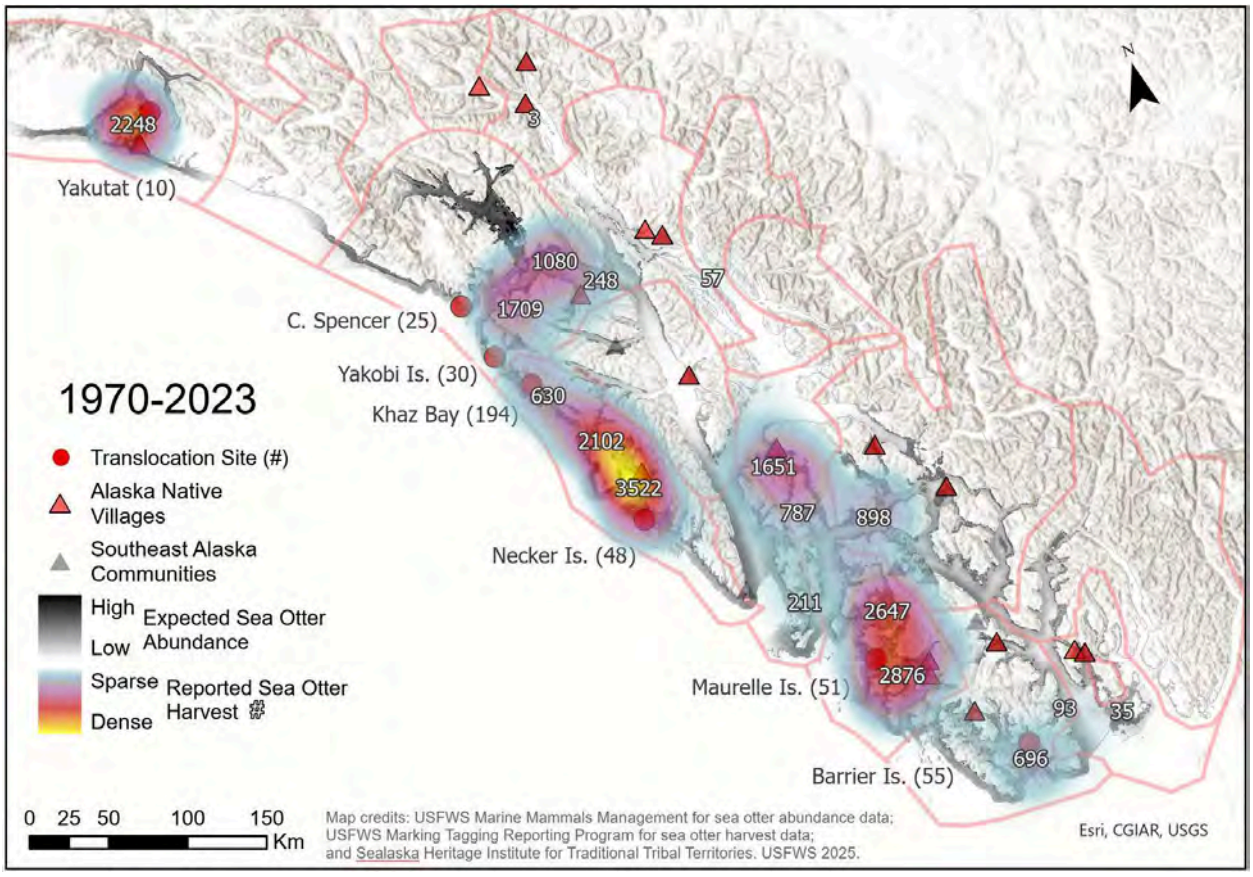
The next two maps show the evolution of sea otter hunting in relation to the species' abundance and distribution: first between 1970, after sea otter translocations to Southeast Alaska were carried out and as the 1972 MMPA (with provision for Alaska Native subsistence uses) was being worked out, and 1988 when sea otter populations had significantly recovered on the outer coast but not within Sitka Sound (Map 5.2); and second between 1970 and 2023, showing the full evolution to date of sea otter harvests (based on tagging records) in relation to expected sea otter abundance (based on periodic surveys). The pink polygons represent aboriginal territories (e.g., Sheet'ká Kwáan) as outlined by Goldschmidt and Haas in 1946.




Map 5.2. Sea Otter Hunting in SEAK, 1970-1988 versus expected abundance. This map shows the first decades of recovery for sea otters in Southeast, when otters began fanning out from their translocation sites, and harvest was just beginning in Southeast Native communities mostly on along the outer coast. Hunting in Sitka Sound was limited because otters were just beginning to repopulate the area. Instead, hunting in Sitka's traditional territory was centered in the areas of sea otter translocation (see Table 4.1), including Khaz Bay-Yakobi Island and Biorka Island-Necker Islands (USFWS 2025a).

Sea otter translocation sites were chosen purposefully not to be close to contemporary human settlements. The closest site to Sitka, Biorka Island, was among the slowest to develop, perhaps because the otters moved elsewhere, including to the nearby Necker Islands and up north toward the larger relocated band at Khaz Bay. As a result, hunters had to go some distance to access larger concentrations of otters, which was likely a disincentive –a brake---on the early development of hunting.

As Map 5.3 illustrates, however, by the 1990s, sea otters had repopulated much of the habitable outer coast of Southeast Alaska, including Sitka Sound (Sitka Tribe use areas), Yakutat Bay (Yakutat Tribe use areas), Cross Sound and Icy Strait (Hoonah Tribe use areas ), western Prince of Wales Island (Craig, Klawock, and Hydaburg tribes use areas), and Chatham, Sumner, and Keku straits (Kake/Kuiu tribe use areas). This recolonization allowed for hunters to take more otters near their communities, requiring less time, fuel, and other travel risks/costs. Hunting closer to town also enabled hunters to focus on select geographic populations, such as those near favored landing and shooting sites, or those threatening important abalone, clam, and crab harvest areas near the community.



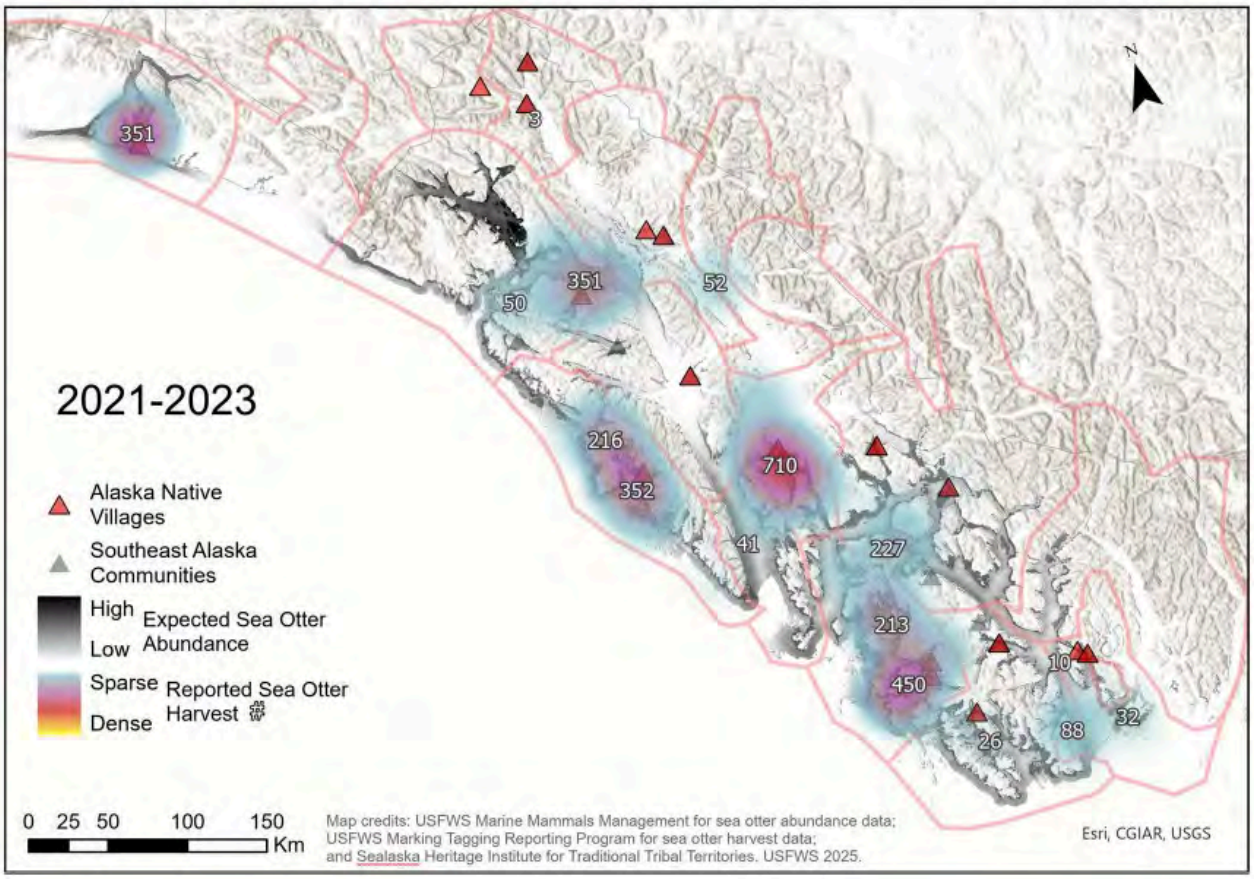

Map 5.3. Sea Otter Harvests in SEAK, 1970-2023, versus Expected Abundance. This map shows the evolution of hunting in relation to sea otter abundance since otters were re-introduced into Southeast Alaska and the MMPA was passed in 1972. By 2023 hunting has shifted away from the original 1968-1969 translocation sites, as otters have recolonized large parts of their pre-fur trade range. Instead, sea otter hunting and kills (also summed up for the 53 year period by subregion- e.g., 2102 sea otter harvests in northern Sitka Sound and 3522 in southern Sitka Sound) becomes centered in densely populated sea otter areas near Alaska Native communities, especially Sitka, Klawock/Craig, Yakutat, Hoonah, and Kake. Sitka Sound (large yellow patch) is now the most heavily hunted area but still supporting a high density of otters and thus sustainable according to the estimated Potential Biological Removal (PBR), although the latter is calculated for the entire Southeast stock (USFWS 2025b). Raymond *et al* (2021) examined local harvest in relation to local sea otter populations in the Sitka areas and estimated that Sitka could be stable to declining due to harvest levels, especially between 2010-2018 (the peak of Sitka's sea otter harvest, which has since declined).

Cumulatively between 1970 and 2023, Map 5.3 shows harvests intensifying in the vicinity of Alaska Native communities, particularly on or near the outer coast, such as Yakutat, Sitka, Prince of Wales (Klawock/Craig and Hydaburg) and Hoonah and Kake (including Kooyú area whose permanent residents largely moved to Kake by 20th century). These are the traditionally high harvesting communities, according to the ethnographic record (Goldschmidt and Haas 1998 [1946]; de Laguna 1960, 1972; Emmons 1991). It is also significant that Angoon (the only village on Admiralty Island, northeast of Sitka) shows little sea otter inhabitation in the vicinity of the village and virtually no hunting, although some Angoon hunters are said to still harvest sea otters in Salisbury Sound and Shelikov Bay, where the Teikweidí clan maintained sea otter hunting rights and camps on northern Kruzof Island, after migrating to Angoon, perhaps after the Battle of Sitka in 1804 (de Laguna 1960:144; and noted above).

Hydaburg is interesting because it is less commented upon in the historical record as a major sea otter hunting community and it may be that otters were not common in the vicinity of the village at the time of the Haida migration to this locale. Intensive harvest activity in Cordova Bay area (696 otters), was remarked upon by hunters, as an early place where sea otters concentrated near the community:

> Sid Edenshaw: When I first started, I'd get ten. And then when – I brought some people out on my boat to the Barrier Islands, to try pay for some fuel [i.e., share the cost]. And I'd go out and get – I think we got like twenty. And then the next time we got forty. I would anchor the boat down toward Cordova Bay. And that's where we would do our hunting is down in Cordova Bay. I'd anchor my seine boat.

More recently, sea otters have penetrated closer to Hydaburg and, consequently, more are taken closer to the community. This is evident in Map 5.4. More broadly however, it seems that hunting is spreading out more among communities like Sitka, which have been harvesting consistently "close to town" since otters returned to those areas with significant density. Does this change in hunting patterns reflect a change in sea otter behavior?




Map 5.4. Sea Otter Harvests in SEAK, 2021-2023, versus Expected Abundance. This map shows a decline in the intensity of hunting in Sitka Sound vis-à-vis other areas and the period from 2012-2015, especially near Kake, Klawock/Craig, Yakutat, and Hoonah. The distribution of sea otter kills also continues to extend into inside waters (USFWS 2025c.)

Map 5.4, displaying the same sea otter harvest versus abundance relationship over the latest three years of data (2021-2023), signals a shift away from localized hunts in the vicinity Sitka and other Native communities on or with access to the outer coast, in contrast to Map 5.3 (i.e., the yellow-shaded or dense harvest areas near Sitka are now diminishing). From the annual harvest (see Appendix F) and tagging records, it appears that this shift back towards hunting otters in more distant areas began around 2016.

Lee Kadinger, who has assisted SHI to acquire hides from Southeast hunters for its Sustainable Arts Program since its inception, reports:

> The more areas are hunted, the [more] times that otters see a boat, they realize that it's a potential threat. And they hadn't had that for many years. This is especially true of popular hunting areas near towns [like Sitka], and hunters comment on this in places like Yakutat. . .Yeah, comments I get from them are, 'It's hard to get sea otters, now.' You know, they're still around, but it's hard[er] to get them. You got to go way further away. It's not as easy as it used to be. And [one of the SHI instructors] Jeremiah was one of our large hunters out of Yakutat.
>
> So, those are the two areas off the top of my head that, right now, I would phrase is that have 'stabilized,' and I think . . . [that is] directly related to sea otter harvesting [rather than food supply].

Sitka Sea otter hunters also comment on this trend:

Mike Miller (Sitka): [in the 1990s I went] a couple times at the entrance of Khaz Bay. That was pre-tannery, [that's] just where were [i.e., near the largest translocation site], eventually shifting [closer to town] to Hayward Straits, Krestof Sound. Then Bieli Rocks to Makhnati Island--you know, end of the causeway hunt. And then actually like Gavanski [islands] right out the ferry terminal. . .they [the otters] kind of moved in a little bit [toward town by the early 2000s].

Yeah. And then, like Samsing [Cove, south of town] to Baranof Point [Cape Burunof] timeframe, a little bit later – and then down to Redoubt [Bay, further south], you know, in the 2010s … when the big hunts were going on. . .

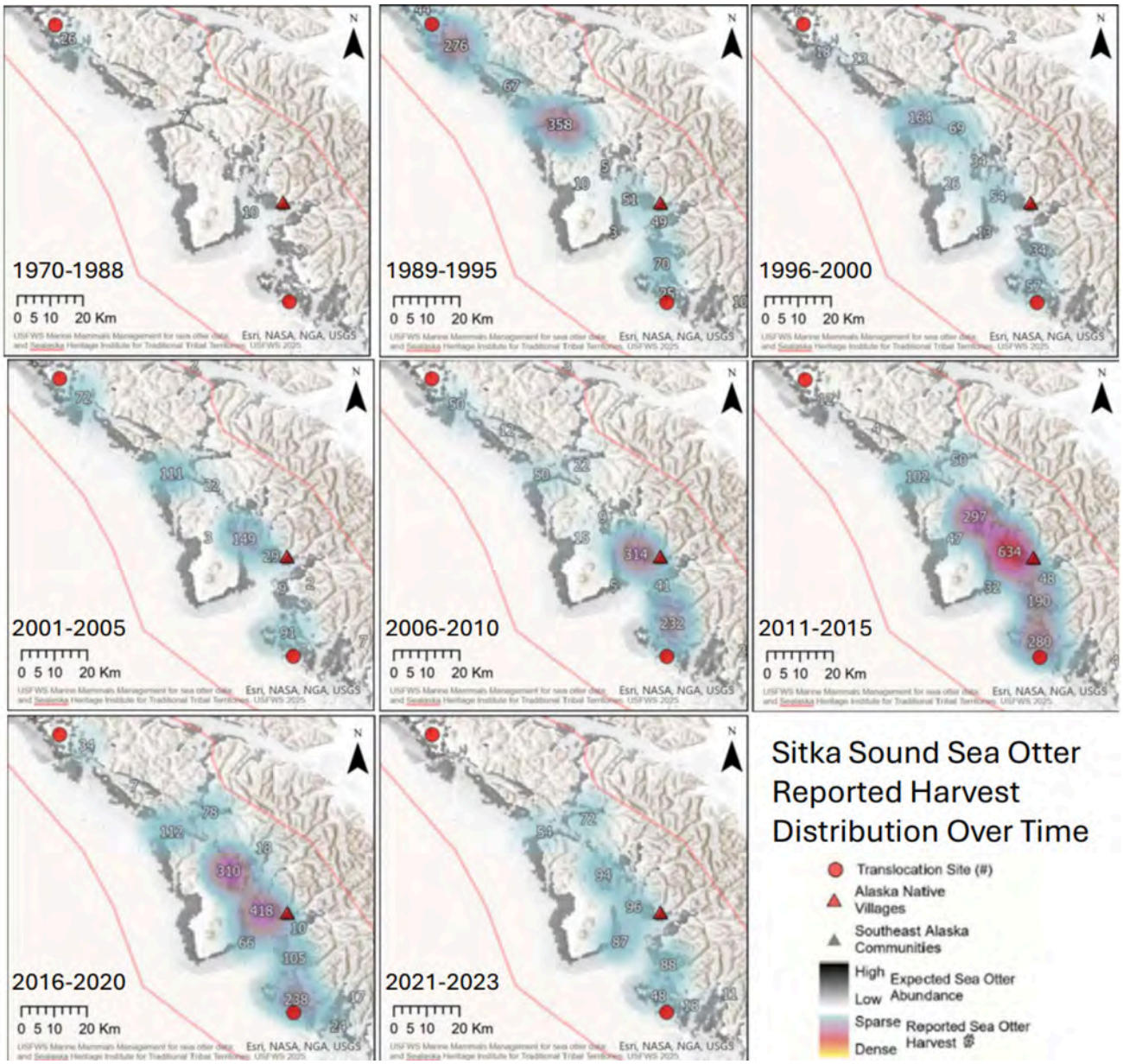
It's just that the people that were hunting by that point, most of them were down there [oriented south of town for their subsistence hunting, etc.].

[And he noticed that after the large hunts, c. 2013-2017, some of the abalone, urchins, gumboots, clam and other choice prey populations have started to come back in Sitka Sound]. But that's just where I pick, and since I'm able to get them and not actually go too [far, probably check with others, but] they [the recovering invertebrate populations] are further [out from town] than where I go to [gather abalone, gumboots, clams, etc.].

Ilegvak (Peter Williams) (Sitka): I think it's in part, people going to hunt further because there's more, larger populations farther [away from Sitka, now]. And then also they're less interacting, like they have less interaction with people [so easier to get close to]. That's my take on it. It's also similar to just a lot of people here, you know. . . they like to get off the trail; they like to kind of go farther out of town to do deer hunting or their halibut fishing. And so, I kind of equate it to that.

Yeah, [close to town you are more on display as a hunter, too]. I've had the police called on me.

Map 5.5 overlays the same data but parsed over a more fine-grained spatial and temporal scale, focused on Sitka Sound.




Map 5.5. Sitka Sound Sea Otter Reported Harvest Distribution over Time (1970-2023). This map series highlights increased harvests in Sitka Sound between 2001 and 2015 (second row maps). Prior to this time, comparatively few otters were taken in Sitka Sound, but as translocated otters began moving into the Sound and competing for shellfish resources, hunting pressure on them increased, resulting in peak otter harvests during the 2011-2015 period, followed by a waning trend between 2016 and 2023 (third row maps). Correspondingly, Indigenous hunters and shellfish harvesters interviewed for this study and scientists (White and Ramondi 2024) report that some shellfish populations that were significantly reduced with initial sea otter reestablishment in Sitka Sound in the 1990s are now rebounding in areas near Sitka where intensified human harvest of otters occurred from 2001-2016.

The harvest maps above, with underlying shading signifying expected density of sea otter sub-populations in the area, represent the best attempts by USFWS to analyze hunting in relation to distribution and abundance of sea otters. The perspectives of Native sea otter hunters help to further illuminate the causes and consequences of these trends.

## Age, Sex, and Seasonality

Hunters recognize sea otters by age and sex, and taggers also document the sex of animals and take a tooth and skull measurements for age analysis, along with other data (e.g., data of kill, size of pod, etc.; see Fig. 5.1). Hunters generally classify otters into one of three categories of age or maturity: "babies/pups", juveniles or young/sub adults, and mature adults (especially males). As a practical matter, more fine-grained age distinctions (e.g. by year) are difficult to make when pursuing otters on the hunt (or even for taggers by visual inspection). In contrast, distinguishing sea otters by sex is easier, according to hunters, because of dimorphic traits (males can be 50% larger at full maturity, with a more pronounced sagittal crest than females, for example) and otter social behavior, including juvenile male curiosity and male spatial segregation into bachelor groups after the age of sexual maturity. Females, except for the very young, aggregate in smaller groups within exclusive territories defended by dominant males (Bodkin 2003, Estes and Bodkin 2002).

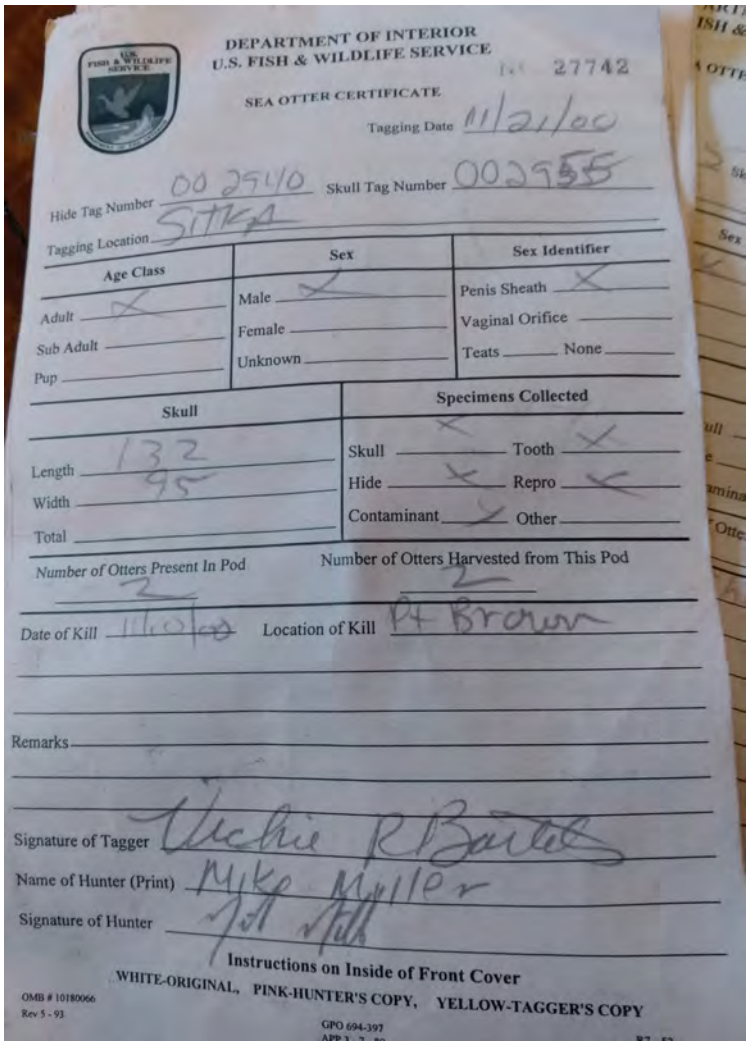

DEPARTMENT OF INTERIOR
U.S. FISH & WILDLIFE SERVICE
27742
SEA OTTER CERTIFICATE
Tagging Date 11/21/00
Hide Tag Number 00 2940 Skull Tag Number 002955
Tagging Location SITKA
Age Class: Adult X; Sub Adult; Pup
Sex: Male X; Female; Unknown
Sex Identifier: Penis Sheath X; Vaginal Orifice; Teats None
Skull: Length 132 95; Width; Total
Specimens Collected: Skull X; Tooth X; Hide X; Repro X; Contaminant X; Other
Number of Otters Present In Pod 2
Number of Otters Harvested from This Pod 2
Date of Kill 11/20/00 Location of Kill Pt Brown
Remarks
Signature of Tagger Richie R Bartlett
Name of Hunter (Print) Mike Miller
Signature of Hunter
Instructions on Inside of Front Cover
WHITE-ORIGINAL, PINK-HUNTER'S COPY, YELLOW-TAGGER'S COPY
OMB # 10180066
Rev 5 - 93
GPO 694-397

Figure 5.1. Sea Otter Certificate (Tag) from November 2000, including information on age, sex, harvest location, grouping, and other data collected by USFWS (courtesy of Mike Miller).

Hunter selectivity of otters by sex (preferring males and avoidance of females with pups) and seasonality (hunting primarily in the fall, winter, and early-to-mid spring), is also evident from tagging records (see Fig 5.1) and hunters report favoring different seasons and different otters for different reasons. An important skill to learn as a hunter is where to hunt and how to hunt selectively for conservation of the species and the quality of the fur. Several hunters reported targeting young males for their fur and grouping.

> Diana Reidel (Cordova and Sitka): Because . . .a lot of the times the females and the babies hang out in one area and then the juvenile males group-up and hang out together, and so it's way easier to go after and target the juvenile males and to stay away from the females and the babies. . . I'm not as familiar with hunting around Sitka, and it's a lot bigger of an area. At least for Cordova, there's like certain areas where the males hang out, and so that's where we go to hunt. . .
>
> I don't ever, like, target them, or ask for them [from hunters], but I have gotten a few [pups] in the past. And surprisingly. . .The babies actually have the densest fur. You know, when they're little, they can't even really like to swim down because they're so fluffy, and so, they're fur is quite a bit thicker.

> Sid Edenshaw (Hydaburg): But I've noticed over the years, because I was hunting them since the early '80s. I was hunting with friends and I would go down, and at first, we would go down and ride around on the boat and just shoot from the boat. And then what I started doing was I would let some of my friends off on a rock and then I would go outside the otter, and I'd circle around, I'd make a 'U' by them. And they would – must hear the engine underwater or something because they start going in the opposite direction, and then what they would do is start going back towards the rock. And then the hunters would shoot them. And we were able to get more like that instead of bouncing around and wasting a lot of shells. But they're fast.
>
> What I've noticed over the years, since I've been hunting, is once in a while I go back to the Barriers where they were originally transplanted—Barrier Islands, towards Cape Chacon. And every single time I go back there, I see all females with babies on them. The females somehow stay there and when you run into a pod away from the Barrier Islands, if you run into a pod of anywhere from fifty to a hundred, you could see them taking off and they're porpoising. And when you shoot like five or six of them, they're all small [juvenile] males. They're all like – you must be a year, a couple years old. And you don't shoot no females. But if you want females, they're all right back at the Barrier Islands. It's weird. I mean, I ran into different pods all over and they're all like pods of smaller males.

Roughly two-thirds of the otters taken are males by hunter selection for larger otters and the avoidance of females with pups. The ratio has remained fairly consistent throughout the recorded hunting period (since 1989; Fig. 5.2) and is also consistent with traditional knowledge and practices which discouraged hunting females with pups in areas where otters were valued (e.g., for their fur, as evidenced in discussions of Yakutat fur hunting off Cape Yakataga above) with limited or no exclusion of females in areas where otters were seen as a direct threat to key food resources for the Native community (as in the case of Angoon's attempts, even prior to the fur trade, to exclude otters from Kootznoowoo Inlet and other important shellfish harvest areas near their community). Arguably, a significant number of female otters must be taken in order to have a demonstrable impact on the local population and allow for increases in preferred prey, like shellfish, in areas where females are dominant. consuming them, and reproducing. The removal of males from bachelor groups by itself would do little to encourage increases in prey, except perhaps in the immediate vicinity of the bachelor

group (J. Bodkin, pers. comm., cf. Davis and Pagano 2021, Larson *et al* 2015, Bodkin *et al* 2000, Monson, *et al* 2000).

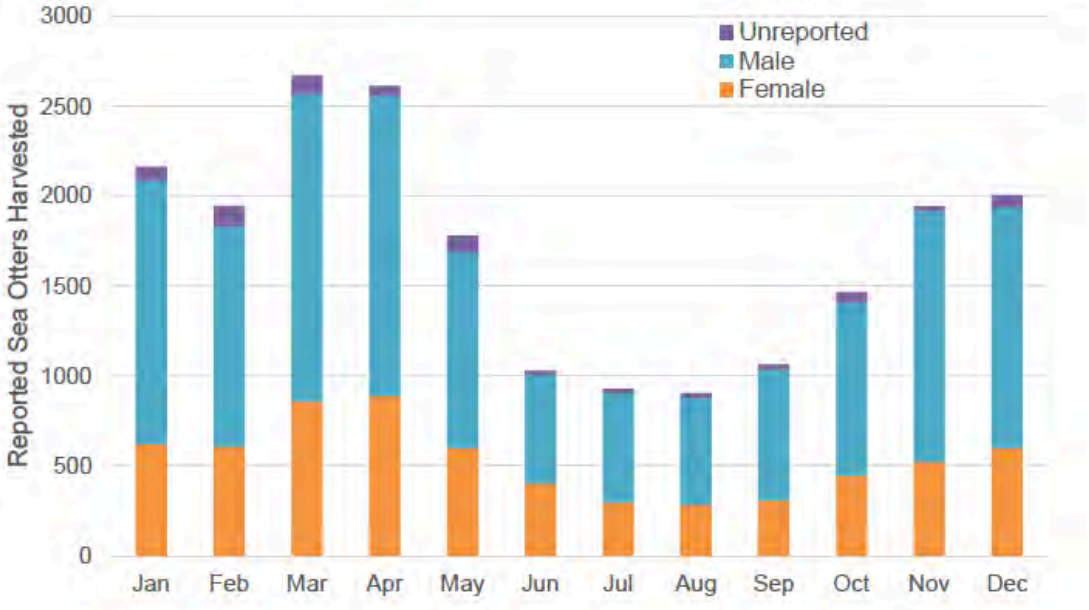



Figure 5.2. Barplot of Sea Otter Harvest Summed over Time (1989-2023) by Month and Sex: Females (orange), males (blue), and unreported (purple); as reported to USFWS-MTRP 1989-2023. (USFWS 2024). Females consistently represent a minority of sea otter harvests throughout the year. Size (females are smaller) and avoidance of females (among some hunters) or females with pups (all hunters) are the primary reasons for this.

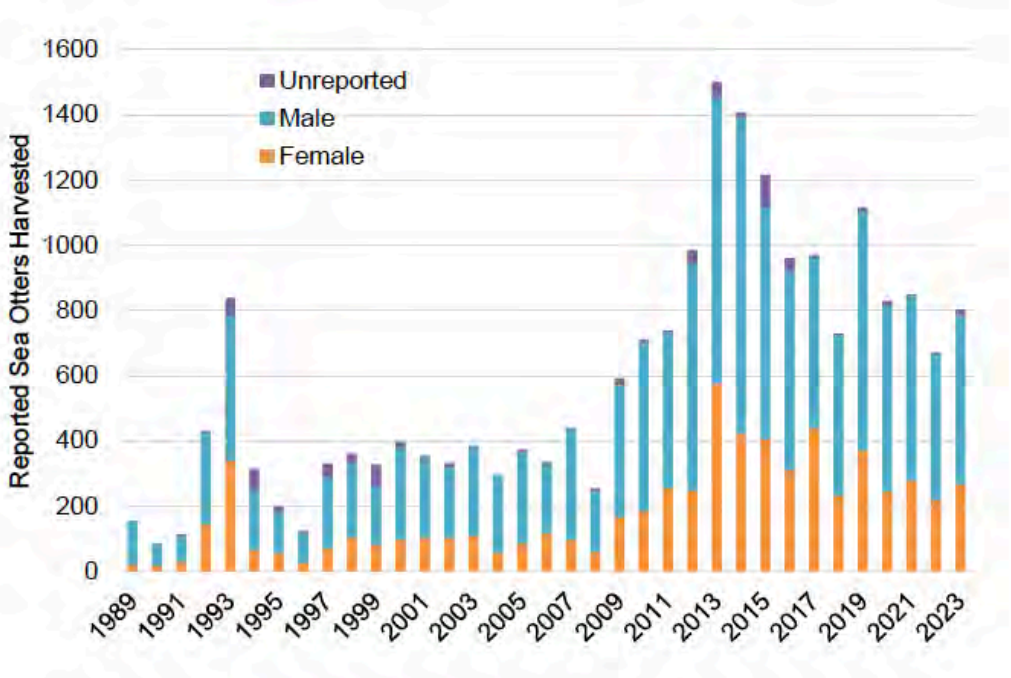


Figure 5.3. Barplot of Sea Otter Harvest by Sex (1989-2023): Females (orange), males (blue), and unreported (purple); as reported to USFWS-MTRP 1989-2023. (USFWS 2024)

Mike Miller (Sitka): Until I started sewing, I shot the biggest ones I could see. When I started sewing my own things-- after 2007, '08, I preferred to shoot juvenile males.

If you shoot in the mass [juveniles can be hard to identify], but if you watch them behaviorally, they act different. And typically, they will still be hanging around the big pods, but typical teenage males, they'll be the first ones that will separate from the pod to come check you out. And if you can get them to swim a hundred feet away from the pod with a quiet rifle, you can shoot them, and nobody knows. And so, you can oftentimes put a little pressure on the group, and it won't really move, but if you back off a little, the juvenile males will come out and check you out. And rarely do the females do that. . .

Oftentimes, I didn't, I just didn't like to scare the whole pod and freak them all out you know. And so, a lot of times I just got in my mind, that I'll get three at a time, you know, and you just do it three times and figure 'Well, that's good to work with right now.' But I'm not, you know, like I say, it was just for my own sewing. I wasn't trying to get furs for other people at that point, and that was just good [a good strategy] for me. . .

[Juvenile males also have] thinner skin which is good to work with. And they don't have the variances of white hairs and stuff [of older males], so when you're [sewing] blankets or any product, as you're joining pieces, if they're drastically different in the hair pattern, color pattern, it just looks weird. And when you get a sub-adult, it's consistent – all, the whole animal, so you can use kind of the whole skin. You don't have to – for the tannery, it's not that hard to shave them because they're really thin-skinned anyway. So, it's just so much easier to sew to with and… And when you're hand-sewing a thick skin, you can look at peoples' thumbs as they're hand-sewing and tell if they're sewing a heavy skinned or thin-skinned animal. So, it's just [preferrable for me]. Because I [prefer hand-sewing]. I'm not a volume person. It's more therapeutic almost, you know. And it just – it's comfortable for me. So, but, you know, if I was going to do it to try to make a living, no way would I work that way. I'd use a machine.

Females with pups [I won't hunt]. It's the just way I was taught, for any animal, to not do that – with the exception of sometimes the unborn, you know, big spring seal. Because, although people wanted the unborn seals [on occasion], even the guys, you know, that hunt early– they would act different when they were dealing with it. It was pretty solemn dealing with that. Because actually, usually, you get the mom, but the unborn pup is still alive.

Wade Martin: I've noticed these juveniles. . .they're just young adults; they're medium size. But what I like about them is they don't have that white head, they're just perfectly dark from head to toe. And if I was going to make something out of – you know, if I was an artisan and I wanted to make something, that's what I'd want the consistent color, so you've got more useable… And then, like this time of year, when it's cold and like this and they have that winter coat on, they're just – they're just like this. They're just real dark, real pretty.

The winter coats are darker, thicker. In the summer, they're a little more – they're more brown, [i.e.,] lighter [perhaps because of increased exposure to sunlight or a change in diet?].

Ilegvak (Peter Williams): What I personally like working with [in terms of sea otter furs] and it was also what Boyd [Didrickson] liked to work with, . . .[is] the subadult, the teenager. Their fur is nicer, right, just kind of in general. As we get older, get a little rougher (laughs). A little less flexible.

Others favored larger otters because they provide more fur to work with and cost the same to tan, but still avoided females with pups, regardless of size.

> Mike Douville: [In the early days] we'd see quite a few otter, but you also have to have a use for them. So, I used to get a few. Some of them are the biggest, prettiest otter you've ever seen. I mean, like hundred-pounders, you know. I didn't bother the little ones because it costs as much to tan a little one. . .
>
> What we've noticed, really local here is that we have harvested a lot of the bigger ones. So, we don't harvest any [females] with pups or juveniles. It's just unethical to do that.

> Robert Miller: [The females] all got pups all the time [i.e., pups can be found amid the female sea otter groups either in gestation or lactating year-round]. I know that. And if you don't shoot the pups, you don't shoot the mamas with the pups, you're always going to have a sustainable population in my eyes. . .Even at the high-harvest years we were good. I think that, you know, I can still go out and spot seventy, or eighty, or a hundred sea otters in a day, you know, and chances are we're probably – if we saw a hundred sea otters, we might get ten or eleven of them, you know. That's not because we're not trying to get more, but it's not easy.

Killing a female without noticing that it has a pup in its proximity happens occasionally and can be a jarring experience. Pups will often cry out plaintively for long periods of time in the vicinity of the dead mother. It was noted by one hunter that this crying behavior on the part of otter pups will often draw in other adults to investigate, which a hunter might take advantage of. This can be a tragic situation as the pup is unlikely to survive. Under these circumstances, some hunters will also take the pup.

Hunters may be opportunistic and prepare for a portfolio of hunting-fishing-and gathering activities and be selective based on what appears when they go out on their boats. Yet even opportunists are less inclined to pursue sea otters or seals in the summer.

> Wade Martin**:** Yeah, I'm a real opportunist. Like, right now [early February], I got my boat, I put my troll gear on there. Yesterday I was out there; two different rifles, long range, short range. I figured, you know, whatever's going to [present itself], like we've got river otters running the beach, seals, sea otter. If there's some seagulls around, I'm going trolling, you know? You can just tell when there's bait fish around, and right now, the herring are starting to school up in the sound. See a big biomass on the bottom yesterday in Eastern Bay already. Just see just a blanket on the bottom and whales are diving around in there. . . The biggest thing to me is -- I'm not a rich man and when I go out, I'm ready to do, or take multiple things. . .
>
> [T]here's times when I've just, like, 'This is what I'm going after,' and then something else presents itself. I was, 'Well, we're switching gears.' (laughs). . Oh yeah, like sea otter, seal you know, if I get a real calm day, I'll run out to Vitskari Island and they're both right there. When I get the weather, there's places where I go where I can't. Because I just hunt out of a sixteen-foot Alumaweld and you know, limited too [by] weather. . .
>
> [But summer is not ideal]. And just for seal, in the summertime, in the springtime they molt. And they have that summer coat on until [fall]– I don't hunt them until about October first, make sure they're through with the molting; they've got a good winter coat on them. So, the summer months about the only thing I hunt in the summer, just otters. But I really don't care for the color [because it's too light], but if somebody [e.g., a sewer from up north] wants them, I'll go get them.

Steve Johnson: You know, the other thing in the colder winter months too, is you don't have to worry about flies, and you don't have to worry about the fur slipping as much from heat and bacteria buildup. And so, it was generally a cleaner operation.
If you do them in like the summer, then… You know, if I hunt otters in the off-season, then there's a reason for it. Usually, that reason is that some organization is doing a class and they need 'x' amount of otter skins by this amount of time. And they don't particularly care that they're of lower quality, they just want the product.

Some hunters will arrange a trip to go farther up the coast or even to Cross Sound in Hoonah area, but this usually requires harvesting multiple species to make it worthwhile economically.

Steve Johnson: Yeah, you got to budget a few days on it. It's nice if you can combine it with some other economic effort, you know. Like trapping beavers. Or fishing, you know winter Kings, or shrimp, or something. And you got to really look at the economics of it and you got to kind of pencil it out. And you know, you need to produce a certain volume of product to make the economics of it worthwhile. And if you spend like, two months just poking around here there everywhere, looking for individual otters, then you're not going to make any money, you're going to expend a lot of energy, and you're going to endure a lot of physical hardship to do it for a very low return of volume of product. So, you really need to harvest like twenty otters at a time to make it feasible. And it's always a substantial cash outlay. And it doesn't matter where you're hunting, you're going to spend a lot of money to do it if that's – if economics is your goal. And you won't see a return on that for two years, so, being able to… And the return is not great, you know. You get somewhere around, net positive thirty percent recovery.

Such trips are usually made outside of the summer season. Hunters are often busy with fishing and other commercial or subsistence activities in summer, affording less time to hunt sea otters. Other reasons to limit sea otter harvests in summer are potential conflicts with tourists, who may be on whale-watching or wildlife cruises, or in private boats seeking to spot marine mammals. Generally, hunters avoid areas where wildlife viewing trips or recreational boating are common. And both local hunters and local tourist operators, such as Allen Marine, report few conflicts, though some wildlife viewers do not take kindly to marine mammal hunting, and occasionally a tour boat will come upon an active hunting area unknowingly.

Wade Martin: They're trying to show the tourists the otters, show them the pod of seals, show them the whales, and I'm sure I'm not one of their favorite people. I was down there in Redoubt one day on the rocks, had my boat right up in a nice little cove and I hiked over. And I was using my .204 Ruger just for that one specific area because it's long shooting, it's like 180–200-yard shots and that .204 is perfect for that. I had probably about a dozen otters floating around up there with their face down and backs up and they're floating around, and here comes Allen Marine. And they pull up in there---and they go racing over there [towards the otters]. They could see the otters, then they were like, 'Something ain't right about these things. They're not looking at us anymore.' And I'm looking at them through the scope and there's ladies in there looking, 'Oh my god! They're dead.' And then they're all up there whining. I was like, 'Holy moly!' Then I got to go – and then they're out there trying to figure out what to do with them. I was like, I got to go to the boat. I hike back, get my boat, go out there and…'Hold on! Don't do nothing with them. I'm shooting here. I'm hunting here. You just rolled up on me.' And then being called everything from a 'savage,' to a 'murderer.' And

oh my god. I just start telling – I went out and I told those captains, 'You see this boat? Go the other way!'

**Struck and Lost Sea Otter**

Both managers and hunters are concerned about otters that may be struck by hunters but lost because they are only wounded and flee (perhaps to die later), or they are not recovered. Two hunters estimated that this happens only a small fraction of the time, with perhaps 10% (maximum) or less of wounded otters not recovered. This figure is lower than seals or sea lions which tend to sink if they are not shot in a way that conserves the air in their respiratory system. In contrast, otters may float for an extended period after being killed, due to their relative lightness in terms of body mass and the fact that their guard hairs help to trap air near their skin which aids buoyancy. Weather and ocean conditions, as they affect visibility and navigation, can also contribute to otters not being recovered, as can hunter inexperience or impairment.

**Changing Otter Behavior and Resilience in Response to Hunting**

Many hunters discussed how sea otters may alter their behavior in response to hunters, noting that they are getting smarter at avoiding their main predators

Mike Douville: They're very smart. . . . [once they adjust to humans]. They get smart. You can't predict – maybe with fifty percent accuracy which direction they might go when they dive. . . Especially if you're after them. I mean, you get kind of better at it as you do it a lot. These guys are tricky, you know. They know that they can go underneath you and go the other way. And if you don't see them the first time they come up, they're too far to see them the next time because they can really go. They can go a couple hundred yards or even more before they have to take a breath and if you miss that, then they're gone, you know.

Otters, it seems, can also recognize a prototypical hunter's approach--for example in a smaller boat with an outboard, slowing down to assess them-- and have learned to respond by taking evasive action. Mike Baines, a sea otter hunter who also pilots tour boats for Allen Marine in Sitka Sound, describes this learned behavior.

Mike Baines: Well, one thing we noticed in the tour boats is they're really wary of small boats that come by. Like, we'd come by with our big diesel power boats, they don't really get worried about us, because they know we're not going to shoot at them. . . I think that's the theory, anyway, the smaller – the hunters typically use a small boat with an outboard and this – and some of our boats at Allen Marine were small boats with outboards and they were real wary of those kind of boats (laughs) [but not the large passenger vessels with inboard diesel engines].

Robert Miller (R): [T]hey [local sea otters] do know the difference between my boat and one of those tourist boats. I'm serious. . . I always thought, ''Oh, I need to get on an Allen Marine boat and go hunt off those…' Just kill it! [i.e., it would be easier] (laughs).

Sea otter groups may be more or less cautious depending on the experience and disposition of what one hunter described as their "first male." This is perhaps, what one sea otter biologist (Bodkin, pers. comm. 2025) termed the "territory holder," or male that acts as a lead sentinel and excludes other non-pup males from joining its group.

> Steve Johnson: But a lot of those guys [hunters around Sitka], you know, they educated the otters a bit, so. The otters around here too, are a little bit more gun-shy. You know, you go by them, as soon as you slow down, they're like . . . [ 'Is that Steve's boat?' (jokingly)]. And they do [get to know you].
>
> I used to paint my boat a different color every year because they do learn your boat, and they do learn to be afraid of it. And so, I would do something different. The other little trick, too, is the first male I would shoot is, you can tie him to the outside of the boat and then they don't view your boat as a threat . . . They rely on him [the lead male] for everything, for all the decisions, for where to go, what to do, and you know, if you just tie him up next to your boat, and he's just kind of floating there, and the others are just, 'There's Fred. He's not afraid,' you know, 'he's not going anywhere, he's not doing anything.' It takes them a little while to figure out, 'What a minute. He's dead.'

In Sitka especially, it seems otters are less concentrated close to town than they once were, except perhaps during storms, when they might seek refuge en mass in protected waters closer to town. Otherwise, it appears that they are choosing to co-exist with humans by giving the latter more space to avoid confrontation.

At the same time, in areas not close to towns that may be hunted heavily, otters will reoccupy the area, provided the habitat and food supplies are still suitable. An example of this is the south Lemesurier Island and Idaho Inlet area in Cross Sound, not far from the Yakobi Island translocation site. According to Louise Kadinger this has been a place where hunters have gone since legalized Alaska Native harvest of sea otters was reestablished: "My Grandpa Jack used to tell me about the sea otters being up in . . . Idaho Inlet and Lemesurier area, where they went fishing. . . And then he'd bring them in, and grandma would use them, dry them off and tan them." She selected this area to hunt for the otter furs needed to make the robe she planned to bring out at her son's memorial *ku.éex'* in part to honor this connection.

Other hunters, from as far away as Sitka, remark on the resilience of the otter population in this area as well, despite consistent hunting pressure.

> Steve Johnson: And the area that I look at like, the most is like, Lemesurier, and Idaho Inlet. And I mean, you know those Huna guys hit that area really hard and I've hit that area really hard [hunting sea otters], but it keeps repopulating, and almost yearly. I mean, it's just kind of a good, a good zone, and because it's got a lot of current and a lot of traffic, and so otters will just kind of swim through there. You know, otters will travel a great distance to find good habitat, you know. They're not afraid to swim up and down the coast and you know, particularly young otters. You might see a young [male] otter swimming offshore, just looking for a new home, particularly if he can't compete with males in the area. You know, otters are driven by food and mating. They're like teenagers (laughs).

The Maurelle Islands area is another resilient place for supporting otters despite hunting pressure, according to Prince of Wales hunter Mike Douville. The resilience of key sea otter habitats or shared sea otter-human habitats in the context of a regionally expanding sea otter population is a topic upon which Local Indigenous hunter's knowledge and observations can shed considerable light.

**Contemporary Stock Assessments**

The harvest maps above, with underlying shading signifying expected density of sea otter subpopulations in the area, represent the best attempts to date by USFWS to analyze hunting in relation to distribution and abundance of sea otters. Stock Assessments are carried out at the regional level, but can be analyzed at the subregional level, by community or traditional tribal territory, as we've seen.

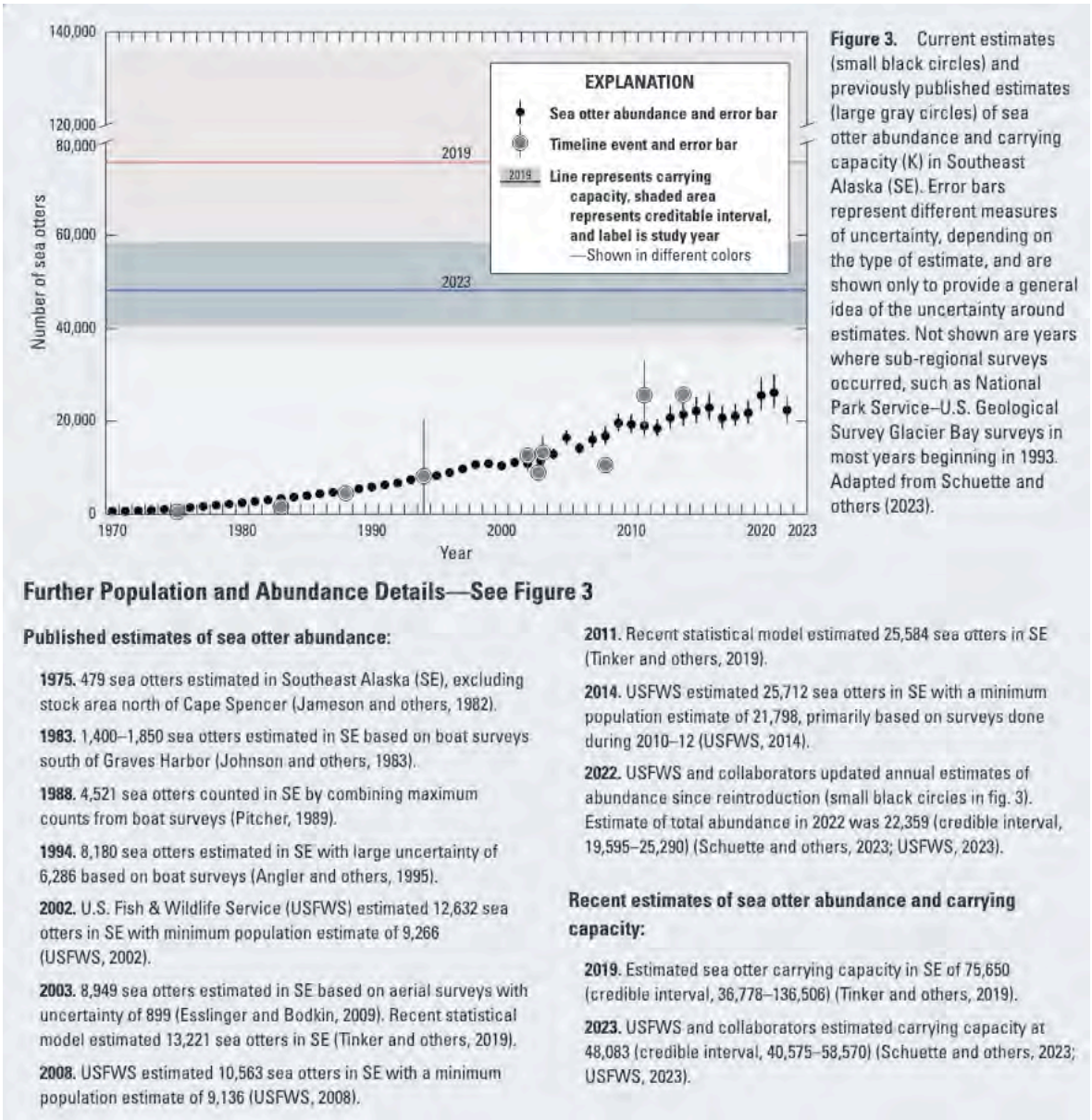



**Figure 3.** Current estimates (small black circles) and previously published estimates (large gray circles) of sea otter abundance and carrying capacity (K) in Southeast Alaska (SE). Error bars represent different measures of uncertainty, depending on the type of estimate, and are shown only to provide a general idea of the uncertainty around estimates. Not shown are years where sub-regional surveys occurred, such as National Park Service–U.S. Geological Survey Glacier Bay surveys in most years beginning in 1993. Adapted from Schuette and others (2023).

**Further Population and Abundance Details—See Figure 3**

**Published estimates of sea otter abundance:**

**1975.** 479 sea otters estimated in Southeast Alaska (SE), excluding stock area north of Cape Spencer (Jameson and others, 1982).

**1983.** 1,400–1,850 sea otters estimated in SE based on boat surveys south of Graves Harbor (Johnson and others, 1983).

**1988.** 4,521 sea otters counted in SE by combining maximum counts from boat surveys (Pitcher, 1989).

**1994.** 8,180 sea otters estimated in SE with large uncertainty of 6,286 based on boat surveys (Angler and others, 1995).

**2002.** U.S. Fish & Wildlife Service (USFWS) estimated 12,632 sea otters in SE with minimum population estimate of 9,266 (USFWS, 2002).

**2003.** 8,949 sea otters estimated in SE based on aerial surveys with uncertainty of 899 (Esslinger and Bodkin, 2009). Recent statistical model estimated 13,221 sea otters in SE (Tinker and others, 2019).

**2008.** USFWS estimated 10,563 sea otters in SE with a minimum population estimate of 9,136 (USFWS, 2008).

**2011.** Recent statistical model estimated 25,584 sea otters in SE (Tinker and others, 2019).

**2014.** USFWS estimated 25,712 sea otters in SE with a minimum population estimate of 21,798, primarily based on surveys done during 2010–12 (USFWS, 2014).

**2022.** USFWS and collaborators updated annual estimates of abundance since reintroduction (small black circles in fig. 3). Estimate of total abundance in 2022 was 22,359 (credible interval, 19,595–25,290) (Schuette and others, 2023; USFWS, 2023).

**Recent estimates of sea otter abundance and carrying capacity:**

**2019.** Estimated sea otter carrying capacity in SE of 75,650 (credible interval, 36,778–136,506) (Tinker and others, 2019).

**2023.** USFWS and collaborators estimated carrying capacity at 48,083 (credible interval, 40,575–58,570) (Schuette and others, 2023; USFWS, 2023).

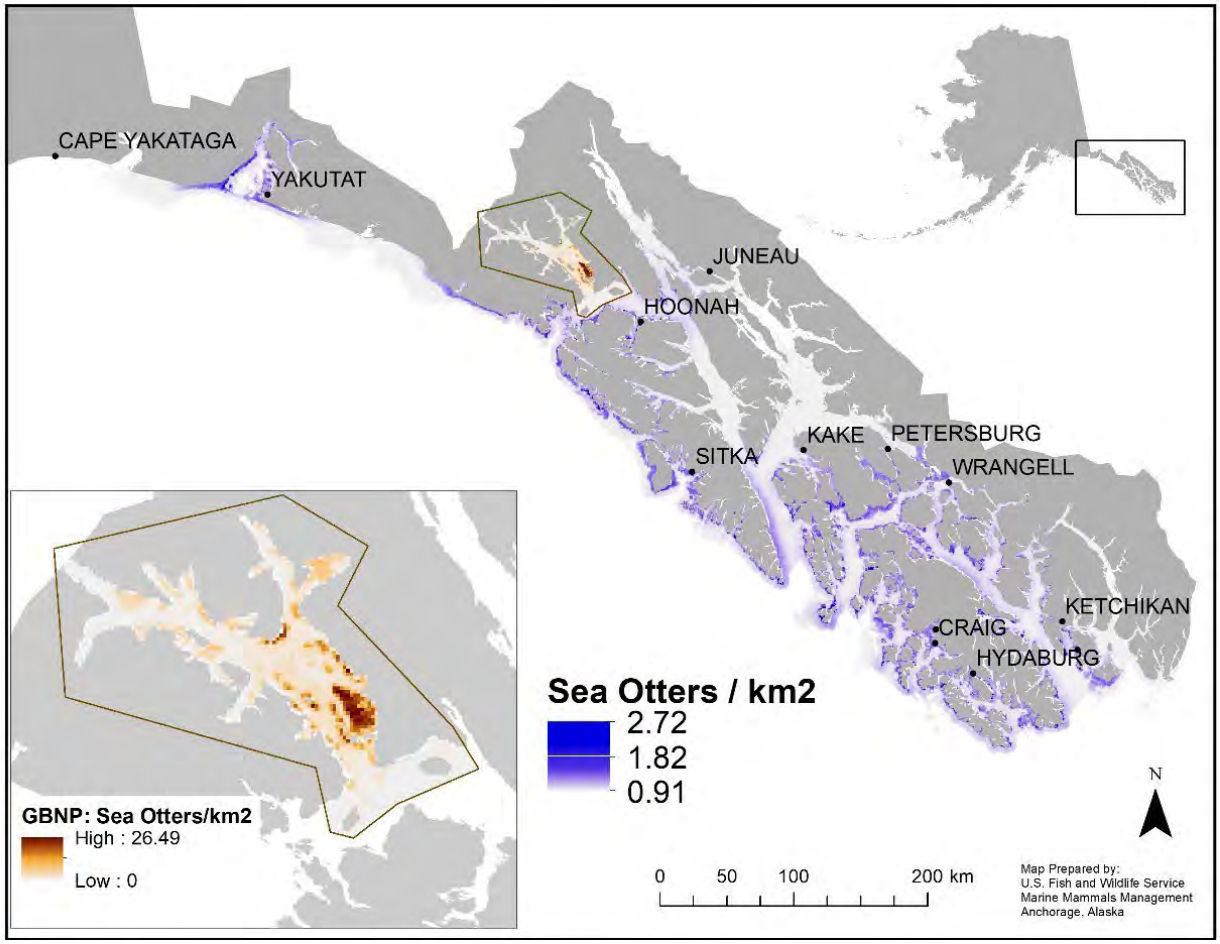
Figure 5.4. Sea Otter Population and Abundance Details since Reintroduction to Southeast Alaska. (USGS 2024): Website: https://pubs.usgs.gov/fs/2024/3007/fs20243007.pdf

The graph in Figure 5.4 shows that the Southeast regional sea otter population has grown steadily since 1970, despite occasional dips and leveling off periods and changing sea otter distributions and hunting patterns in subregions, like Sitka Sound.

Noteworthy is the 2014 Stock Assessment (USFWS 2014:6-7), during the peak period of hunting, which reported continued expansion of sea otter populations but with some new trends. Among these was the reduction in population growth rates for the Northern Southeast Region (NSE), where harvest was highest, as compared to Southern Southeast (SSE).

> When compared to SSE, the sea otter population has also not appreciably expanded its range in NSE outside of GBNP since 2002 (Esslinger and Bodkin 2009, Gill and Burn unpublished data). However, otters have occupied appreciable new habitat in SSE since 2003 (Esslinger and Bodkin 2009, Gill and Burn unpublished data). There appear to be two major areas of expansion in SSE; otters have moved in large numbers along the northwest coast of Kuiu Island up into Keku Strait and then animals from this area have crossed Frederick Sound to the southern tip of Admiralty Island, and finally otters have expanded northward from the Barrier Islands through Tlevak Strait.
>
> Sea otter abundance in Yakutat Bay has also increased, by an estimated 14.6% per year, over the last decade, likely through reproduction, although some amount of immigration cannot be ruled out (Gill and Burn 2007). During this process, otters appear to have expanded their range to include the western shores of Yakutat Bay.
>
> Based on this information the current population trend for the Southeast Alaska stock is increasing.

This is evident in Map 5.6 which shows recent (2022) estimated sea otter density across Southeast Alaska. Density is increasing especially in the greater Prince of Wales region and Southern Southeast Alaska. The only comparable area of population growth is Glacier Bay, which is protected from sea otter hunting as a National Park.




Map 5.6. Estimated Sea Otter Density in 2022 across Southeast Alaska. Based on the posterior mean from the mechanistic spatiotemporal model (from Schuette, *et al* 2023:26), this map shows high sea otter densities along the outer coast, save for the sandy areas of the Gulf Coast encompassing the greater Dry Bay region from just south of Yakutat Bay to just north of Lituya Bay. Sea otter densities are greatest (26.5/km$^2$) in lower Glacier Bay, likely a function of high-quality habitat, abundant and diverse food sources, and a prohibition on hunting and commercial fishing in Glacier Bay National Park.

This accords with the observations and trends detailed by hunters and other experts interviewed for this study. However, the picture is more nuanced within subpopulations of sea otters and hunters, especially in Sitka and Craig/Klawock areas where hunting activity has been the most concentrated over time. Glacier Bay, where hunting is not permitted, is an anomaly in northern Southeast.

**Some Issues with Carrying Capacity (K)**

Carrying Capacity (K) is a theoretical maximum load of a species that an environment can sustain. In biology it has often been calculated as the equilibrium value of the logistic model of population growth (Odum 1959). It was originally developed with assumptions of a stable environment. In such a "constant" setting, carrying capacity (K) could be predicted as the point when habitat capacity for a particular species or population, like sea otter, might be reached, after which food or other requisite

resources become stressed, causing a population decline. In practice, however, carrying capacity can be hard to pinpoint, especially in a situation where the multiple components of the social-ecological system are undergoing significant change. Some perennial challenges in determining K include:

1. Dynamic nature of ecosystems: Environments are not static; populations and resources can fluctuate significantly due to major events, changes, or cycles, making it challenging to quantify a definitive a limit like "carrying capacity".
2. Complexity in systems and difficulty in measuring multiple factors: Relations between various species within an ecosystem, such as sea otters, shellfish, seaweed beds, and humans can be complex and difficult to measure, due to the wide variety of biological, ecological, and sociocultural factors that can influence them.
3. Difficulty in measurement: Determining a singular carrying capacity of a region requires assumptions and consideration of a range of variables beyond population dynamics, which themselves can be complex or anomalous (especially in a recolonization phase for otters and a hunting revitalization phase for Natives), including levels of prey, predation, disease, and other ecological conditions.
4. Oversimplification of limiting factors: The concept often focuses on a single limiting factor, like habitat capability, when there may be multiple limiting factors and complex interactions between them that affect population dynamics.
5. Carrying capacity to what end? Ultimately carrying capacity is quantified at a certain scale as management tool. However, given the complexity and contingencies outlined above, which can affect the calculation of K at any scale, developing management strategies based on it can be problematic. What may matter more to sea otter sustainability is their density and interactions in particular areas.

The assumptions and methodologies to calculate carrying capacity can lead to very different populations ranges. For example. Tinker *et al* (2019) arrived at K calculation of 75,650 (credible interval, 36,778-136,506), nearly double that of Schuette *et al* (2023) at 48,083 (with a 95% Bayesian credible interval of 40,575 to 58, 570), though with wide error bars (that could accommodate Schuette *et al's* best estimate). The differing estimates were due largely to the amount of data included in the two different models (per points 2 and 3 above). The assumptions of carrying capacity (based on environment) were quite similar, but Schuette *et al* used an Integrated Population Model that included all available survey data from Southeast Alaska, rather than just four abundance surveys of the region. Tinker's estimate was higher than expected, and beyond the range of error in the Integrated model. The IPM is advantageous because it can calculate a dynamic carrying capacity, if the data are available, using modern Bayesian statistics.

Carrying capacity, thus, has limitations as both an ecological concept and as a practical calculation. Moreover, it is only one tool for identifying thresholds of resilience and sustainability of the target species and the ecosystems upon which they and other constituent members, including humans, kelp, and shellfish, are dependent. Nevertheless, if we use Schuette *et al's* more conservative K figure of 48, 083 sea otters and measure it against the average annual harvest rate of 788 otters annually in Southeast Alaska (since 2020, see Appendix F), then only 1.6% of the theoretical maximum population (K), and 3.5% % of the current estimated 22,359 sea otters (as of 2022 and continuing to rise, if more slowly in places like Sitka Sound) are being harvested. Both levels of harvest would be considered sustainable at the region-wide level. But the modeling would have to go further (á la Raymond *et al* 2018) to understand the dynamics of sea otter populations and hunting pressure at the level of the tribal use area or kwáan.

Alternative perspectives to a singular focus on carrying capacity include an emphasis on:

- Resilience: Instead of focusing on a fixed carrying capacity, analyze an ecosystem's resilience--its ability to adapt to changing conditions and recover from disturbances. Sea otters have thus far proved resilient in their recovery, as far as expanding their range and population, even while hunting has risen significantly, particularly in the last 25 years.
- Sustainability: Advocates for this approach emphasize a focus on achieving sustainable practices that aim to maintain a balance between human needs and environmental limits, rather than managing to a theoretical carrying capacity. Arguably, this was the Southeast Native approach to hunting sea otter prior to colonization, based on a system of territoriality, tenure, and stewardship led by the respected lead hunters of the matrilineal groups (clans and houses in Tlingit), who regulated hunting through deep knowledge of the sea otters and their habitats and effective control of their territory and prohibitions and prescriptions on hunting.

The historical ecological analysis presented here suggests that a sustainability approach was successful in limiting sea otter populations and predation patterns in areas of interest, such as bays with important shellfish beds.

Significantly, the estimated density shows high concentrations of sea otters at sites mentioned in Deep Time stories including the outer shores of Kruzof Island and the Icy Point/Cape Fairweather area. The density maps also support a statement made by Craig hunter, Mike Douville, about the greater habitat capacity of Prince of Wales Island and its satellites, based on the greater amount of shoreline and coastal margin habitat (<300 feet) than Baranof and Chichagof islands.

> Mike Douville: You look at the chart and Sitka doesn't have the carrying capacity that we do. Most of that country up there is steep drop-offs. You don' have as many otter living there for extended period of time because there's simply – the food belt is much narrower. . .
>
> And here [Prince of Wales archipelago], we have thousands of acres of shallow, clam producing… They eat a lot of geoducks, butter clams. Yeah, and eat crab – a lot of our crab areas are less than forty fathoms, they're all depleted. . .
>
> [They translocated the to the Maurelle Islands in the 1960s] out around Hole-in-the-Wall--and there's still a lot of them there. [But they spread]
>
> [At first] I wasn't too worried because they plotted them out there, and ok, you know, everything I knew about them was they like the ocean but in reality, they like everywhere there's food. No place in southeast Alaska is safe from sea otter.
>
> Absolutely, they're everywhere. And they clean up some places and they don't – you know, you don't see as many, but some places seem to hold them even still after many years. So, they're down digging clams mostly. . . .
>
> I don't commercial fish shellfish. I did years back, but I don't anymore– but I do eat crab. And we have to go down to like – just a little over forty fathoms to catch crab.
>
> Like, the big ones [large adult otters] I think can go to fifty [fathoms] or perhaps even more, but I think the younger ones can't do that. That's how far we have to go to get crab. And my daughter and I, she's an artisan and we harvest a lot of otter. And she's quite skilled in the taking care of them and making things. So, we've been harvesting the last few years, quite a few.
>
> What we've noticed, really local here is that. . . they've been so destructive to our shellfish. The last bucket of clams that I was able to dig was in 2010. And I know this country really well. I know where all the clams live. I know where the abalone used to live, the urchins, sea cucumbers; all those are gone. I mean, seriously gone. So, I could go try to dig in some of those. I might get one or two or three clams, where you could get a bucketful easy [before].

These guys [sea otters] are really specialized. They just don't go to a clam bed and start digging and hope to find one. They go there when the tide's in and they can see those little neck sticking up and they dig that clam. So, you see these little holes here and there? They're after a clam. They're not just digging for the fun of it hoping to get one, they know they're going to get one. Anyway, all of our urchins – we had millions of pounds of urchins here and they're all gone. [At]. . . one of the islands out here on the south shore, the west end of the – we're starting to get little – like this [small, last year]. And I thought there was little hope . . . And this year, I went back and there was very few of those. An otter came by and even ate those, you know, so. . .

They eat a lot of geoducks, butter clams. Yeah, and eat crab – a lot of our crab areas are less than forty fathoms, they're all depleted.

You know, what we do [the last couple of years is we also document their stomach contents. I'm sure the Fish and Wildlife would love to have that information. . . But they eat more shrimp than I realized.

Very little abalone. Some small ones. . .

So, there was areas here that had – bottom was covered for acres and acres with sea urchins and abalone. Probably clams down there too, but… it took them two or three years to clean all those up. And when you go by downwind of these, two hundred 'rafts' I call them, of otter, you can, all you could smell in the air was urchin smell. I mean, the air was just… There was no mistaking what they were eating (laughs).

All of my real close to town [areas]– most of them [the abalone] are, you know, they're not big enough to harvest. Everything on the outside, away from town is – they're all gone. . . This was rich abalone country.

I've seen where indications where they [abalone and other shellfish] would come back if they [sea otters] weren't there, but like I told you. . . about that island there, they cleaned that up again. [But] it has the capability to come back. But abalone are so slow growing you know, it'd take years.

We have to go to the other side [east side] of the island, but they're starting [to] move into like places like Kasaan now. A lot of that's crab country and stuff. That won't go away. Gravina Island didn't have much, that abalone there of – Annette Island and that country didn't have otter, but they're starting to show up there. So, you know, its pretty rich country, they'll eat it all. Just because it get dark at night doesn't mean they stop eating. They do it twenty-four, seven. When we're anchored up at night, you can hear them banging on clams and stuff all night. They can see at night and under water.

From a behavioral, ecological, and managerial standpoint, if not a genetic one, the notion of a subpopulation, which may specialize in certain prey rather than general foraging, has shown its utility in furthering our understanding of how sea otters are responding to the dynamic conditions, including localized hunting, in the diverse geographies they inhabit.

**Sea Otters Hunting and Shellfish Populations in Sitka Sound (2012-)**

According to USFWS tagging records (B. Benter and B. Weitzman, USFWS, pers. comms. 2024-2025), during the peak period of hunting in Southeast Alaska, between 2012-2017, approximately 1000-1500 sea otters were taken each year. Roughly one third of the regional harvest (300-500 otters) coming from Sitka territory, mainly greater Sitka Sound (Appendix F, harvest table). What effect did this concentrated hunting have on sea otter abundance and distribution in Sitka territory, especially in relation to valued shellfish in greater Sitka Sound?

To address the shellfish issue, questions were posed to hunters regarding local changes in sea otter abundance and distribution and their impacts on valued shellfish populations and other species in greater Sitka Sound. Hunters were also asked how they responded to environmental changes linked to sea otter distribution and consumption patterns, such as declines in subsistence shellfish in subsistence or commercial use areas. Sea otter processors and handicrafters who observed sea otter populations and/or harvested shellfish in areas inhabited by sea otters also were invited to address questions about the impacts of otters, either negative or positive on residents' livelihoods (see Appendix C, especially questions 6-12). Given the existing sea otter tagging data (which maps kill sites over time) and population survey data (which plots sea otter densities over space and time), summarized for Sitka in Fig. 5.5 and Appendix F, the project methodology did not seek to systematically map individual hunters' observations and hunting activities in a time series. Instead, respondents were invited to comment on significant events and trends in local sea otter populations and their activities and behavior in relation to the availability of valued shellfish, other notable species, and observed environmental changes.

Overall, sea otter impacts on local macroinvertebrate populations, as emphasized above, were perceived as predominantly negative, and often as catastrophic to commercial harvesters. Aggressive foraging by otters, especially as they colonize new areas of value to marine invertebrate harvesters, led many to believe that these areas were being "cleaned out" (though never completely or permanently, the literature suggests), of culturally important invertebrates, including abalone, clams, cockles, crabs, gumboots/chitons, octopus, sea urchins, and other species.

In Sitka Sound, however, this has generally not been the case. After an intense broad based foraging strategy, targeting a wide range of shellfish, sea otters often dispersed, and those who remained in or recolonized the areas heavily preyed upon changed their foraging strategies, often specializing on certain species, such as abalone or clams, rather exhibiting generalized predation on the breadth of shellfish types. This has led to the revitalization of shellfish species, like abalone, where they had become especially sparse or seemingly "cleaned out".

Perhaps not coincidently, this shellfish rebound, occurred after the ramping up of sea otter hunting in Sitka Sound from 2012-2017, and has persisted since. This would appear to a good news for the coexistence of sea otters, sea otter hunting, and communities dependent on shellfish for their livelihoods. Some important observation from interviewed experts include the following:

> Mike Miller: [Abalone] came back in after the big harvest of otters in the 2011, '12, '13, '14 timeframe. I was taking some divers out [researching abalone] because in some of the herring egg areas around 2016 timeframe, you know, for fifteen years we hadn't even looked for abalone. And I was pulling in the herring eggs . . . it was good set so . . . while I was pulling the line which had herring eggs on it, it also had an abalone on it. And I was like, 'What the heck?' you know, and so I started looking. And pretty soon, see another one and another one, and then started looking at some of the old sites later on that year and there was abalone showing back up. They were small, but they were still showing up you know. And I went to show some divers that summer that you know, we're surprised to start seeing them come back.
>
> [Then the divers] wanted to go out and get some gooseneck barnacles to eat and just look at that very outer rocks here, out towards Vitskari [Rocks], and so I went and took them . . .And they came back up and said the rocks are covered with abalone, like two-year old abalone. . . They said there's young abalone everywhere. . . It was probably '16 [2016]. . .that intensive harvest ended around 2013. . .But they were two-year old abalone, you know. And so, there's got to be some correlation.
> [Interviewer: "And those otters that had been there, where did they move, most likely? Did they move [or]…?]

[Mike Miller:] To the tannery. . .
We'd taken 1500 out in three years. . .They were really trimmed down. . . They won't fully abandon [the area] because there are still some around there, but it was just no volume. And we did get, when we increased the harvest, like the tourism companies…started complaining because they weren't seeing so many otters in the Sound proper.

It [the hunting] had to have helped [the recovery of abalone], you know, unless it's the world's biggest coincidence. I think there's a bunch of other factors probably that played a part in there, but… just the sheer volume that they eat, even if a fraction of those otters were eating the abalone, then that would have been [impactful]… The one thing also that helped though, is since the abalone were gone, people weren't looking for them. And so nobody was out picking them in spite of them being on the rocks. So, that's the issue now is people are back [picking abalone in recovering areas].

Mike Baines: in Silver Bay there's been a lot of sea otters, but interestingly enough, they stopped getting the abalone. So, you can actually get abalone there you know, pretty easily snorkeling. . . I helped a friend get some [recently].

Robert Miller: Well, the people getting abalone on the front beach here in Sitka now--You know, that didn't happen five years ago, or six years ago, and I think some of that might have to do with hunting pressure, because we really, honestly do try to keep the [sea otter] population down close to town so people do have that subsistence resource. But this is a huge coastline. . . We're not affecting the overall population if we're keeping the harvest levels down within a seven or eight-mile radius of town. That is not affecting the overall population.

Shawn Chandler: But you know, when we do hunt in the area and we actually keep them out of the area, like Silver Bay. You know, mussels come back, abalone, everything; everything comes back. And it doesn't take that long to destroy that. And so, keeping pressure on them and our favorite areas to go set crab pots or whatever, you know, it really helps the ecosystem out.

Wade Martin made a similar observation regarding abalone: "Abalone seems to be on the increase. There's more around; they're more abundant. It's definitely coming back."

On gumboots/chitons, early on hunters found evidence that sea otters were targeting gumboots along with other shellfish. Evidence for this could be found in sea otters' digestive systems, as the chiton backbone was hard to digest and would often still be readily identifiable in the digestive tract of harvested otters.

Mike Miller: Early on they were big on gumboots, I know that, because when you're cleaning them, that was – they [otters] have a super-fast metabolism but the skeleton in the gumboot shells, they would always take a long time for them to get past those, and so there'd always be lots of that, you know. So, we knew they were eating that. Everything I was always amazed if you'd see maybe sea cucumbers or something like that and then open up their stomach and there'd – it would – there wouldn't be anything there. You know, it's really kind of weird [how quickly they digest most foods].

Urchins [too]. . . We'd see the shells and stuff [in their digestive tracts]. But I've seen them eat [many things] . . . I've had friends that watched them eat puffin, just a broad mix of stuff when they first were here [recolonizing]. And I think that's what scared people; it's like they eat everything when they first get here.

However, some hunters who harvest gumboots suggested that, although significantly exploited by otters, they were still available in areas around Sitka, and that some customary harvest areas had not been severely affected by otter predation.

Sea otter hunters and clam harvesters interviewed also reported significant otter predation on clams (e.g., butter and razor clams) and cockles. However, enough of these are in shallow and inshore estuarine areas that otters have been slow to exploit; consequently, harvesters can still find them in customary and traditional use areas. Larger clams inhabiting in deeper water (from the zero tide line and below), such as geoducks, on the other hand have been significantly exploited by otters, as well as by commercial fisheries. As a result, geoduck fisheries have become limited throughout Southeast Alaska, especially where sea otters are abundant, and commercial geoduck fisheries in Sitka Sound have remained closed for many years.

Urchin also have become significantly less abundant because of sea otter predation.

> Wade Martin: One thing I don't see a lot of still is urchins. Years ago, you'd go out and just about anywhere you go you see those big urchins. Now they're pretty damn rare. All you see is the little green ones. But I remember [20 years ago] those big purple and pink ones were all over the place and just about as big as the palm of your hands. They haven't recovered.

One benefit for subsistence users of fewer sea urchins is the proliferation of kelp, especially Macrocystis kelp, which has expanded with the sea otter recolonization of Sitka Sound.

> Mike Baines: I noticed there's more kelp in the – after [sea otter have] been in the area because they eat the sea urchins which kind of kill all the kelp. [Now we find kelp] just about everywhere, yeah, but Macrocystis [giant kelp] especially. . .
> One thing I notice is its way better for getting herring eggs on the kelp. . .
> Before, we had to go harvest some kelp where there's a lot of kelp and move it to where the herring are spawning. Now there's – that kelp's everywhere it seems.

> Wade Martin: [In recent years with the rise of sea otter and increased herring spawning activity around Kruzof Island] something I've noticed. . .when you can get out there [notwithstanding often rough weather during spring herring spawning] the heaviest spawn I've ever seen on kelp is out there.

Crabs are another key subsistence species that have been impacted, especially Dungeness crab, which people in Sitka fish both commercially and for subsistence uses. A typical pattern of otter predation on Dungeness crabs is to exploit them in shallower areas (3-10 fathoms) first and later in areas up to 30 or more fathoms deep.

> Mike Miller: People weren't [complaining about sea otter predation on crab early on]– again that was more of the inshore areas, estuaries and stuff where the otters really hadn't been yet. So, at the time, people – it just wasn't [a big issue … [But] the commercial guys were starting to get really worried based on what happened in other parts of the Southeast [e.g., Cross Sound]. But the areas like Peril Straits and stuff, the otters weren't there. A few of them were showing up, but they never really moved in there. But the thing is, it's visible when an otter is eating a crab. . . So you assume that's all they do, right? And then if crab start disappearing, then 'Well, it's got to be the otter.'
>
> You know, it's interesting talking to some of the crab fishermen here now, because when otters moved into some of the crab areas, where there's a couple otters, the thinking at

the time was that the crab will be extinct. And people that had crab permits made career choices to either leave Sitka and move to like Kake or Petersburg or someplace, or sold their permits. And in the last few years, I've been talking to some crab fishermen who are saying it turns out it wasn't otters, it was increasing numbers of pots and competition… And so, it's interesting retrospective for the people who were actually so worried about otters that they moved away, or sold their business. . . That's just the power of, you know, the hype sometimes.

Wade Martin: That's why now I hunt [otter] up at Fish Bay [to limit sea otter impacts on crab]. Those things are always up in the shallow water, up at the head of the bay getting the Dungies [Dungeness crab] off the bottom. . . Yeah, those guys prey on the crab pretty heavy up at Fish Bay. I was talking to those guys [commercial crabbers] up there last year, and they say they were having better luck crabbing deeper, and that's probably because those otters don't want to go that deep [30+ fathoms] for them.

It was pretty much the same thing in Krestof Sound. Years ago, they used to put a lot of [crab] pots in Krestof Sound. But I haven't seen anybody put a pot in there in decades. When they [otters] first move into a place, they get all the easy access stuff, and by the time they're ready to leave they're eating starfish and starving to death. And then they move into a new place and start all over again. . .It's like a candy store effect: when they first move in they're eatin' all the goodies, and then by the time they're leaving they're eating spinach and not liking it, and then they move [laughs]. . .I'll run them out of areas, and then you think you are doing pretty good, and then you go back in there and they're back again, a big pod of them, and they're eating again.

But in Krestof they've [the crab have] never come back because they can't get those damn otter out of there . . . [especially the shallow spots] where they can just kind of hover over their food there.

This evidence shows that Alaska Native hunters in Sitka are concerned about limiting sea otter predation of favored macroinvertebrates, such as abalone and crab, and on occasion have targeted localized populations of otter preying (perhaps too) heavily on favored shellfish beds, especially to protect areas that have been reliable and accessible for subsistence production, and in some cases (e.g., Dungeness crab) commercial production as well. However, such hunting decisions are made and carried out according to individual hunters' discretion rather than collectively. And there is no formal or informal "sea otter control program," as it were, in Sitka. Rather, the decisions are "economically driven" (Mike Miller). Hunters targeting sea otter may choose to harvest closer to town, where they think it might be beneficial to shellfish harvesters in the community, if the opportunity arises in their reconnaissance. Similarly, hunters gathering shellfish or surveying shellfish areas (i.e., not specifically targeting sea otters, but opportunistically keeping a rifle in the boat) who encounter otters in the vicinity community shellfish areas may also choose to harvest them with the notion that this could be beneficial to conserving shellfish in those favored areas. Generally, however, hunters are not going out of their way to hunt otters in shell fishing areas in Sitka Sound with a notion of keeping otters completely out of community shell fishing areas in contrast to what was noted in Hydaburg, for instance, where hunters actively try to keep otters out of the key community crab harvesting spot closest to town. An exception to this may may be emerging in Sitka, with at least one hunter's focused hunting of sea otter in Fish Bay, where conflicts between crabbers and sea otter are emerging, especially in shallower areas of the bay. Yet even such focused efforts cannot be considered systematic or comprehensive and formal coordination rarely extends beyond the level a hunting party.

The evidence also suggests that the combination of commercial exploitation and heavy sea otter predation in an area, as on some crab, urchins, and abalone populations in Sitka Sound, is the

pattern most likely to produce major shellfish depletion. This is one reason why commercial crabbers and dive fisheries have been especially vocal about the need to control sea otters. Subsistence shellfish harvesters have been affected too, and some have encouraged sea otter hunters, or sea otter hunters have taken it upon themselves, to hunt otters in areas where subsistence shell fishing has been compromised. When probed as to whether there is a need for greater coordination among hunters to limit sea otter impacts on valuable shellfish areas, hunters did not see a need for any formal program of otter control. Yet, some believed that more Alaska Natives would need to take up sea otter hunting (or existing hunters would have to take many more otters as occurred from 2012-2017) to have an enduring controlling effect on local sea otter populations. Others, however, maintained that sea otters in Sitka Sound were already changing their behavior in response to human hunting patterns and other factors such as prey availability.

Other recent studies carried out in Southeast Alaska on the relationships between sea otter and subsistence and commercial users of key shellfish resources provide additional insights into the dynamics of co-existence.

Taylor White and Peter Raimondi's recent project, entitled "Diverse knowledge systems for the examination of localized dynamics of sea otters and abalone populations in Sitka Sound, Alaska" (2024:36-37), also features a significant Indigenous Knowledge component in collaboration with the Sitka Tribe of Alaska. They consider several hypotheses regarding the dynamics between sea otter foraging behavior, sea otter hunting patterns, abalone harvesting, and abalone populations in the greater Sitka Sound area. They conclude that these dynamics are complex and vary at local scales, but also that Alaska Native sea otter harvests could be a factor in the resurgence of abalone in Sitka Sound, based on hunting patterns and local observations of sea otter-abalone interactions and broader otter foraging patterns in recent decades. Specifically,

> The initial reintroduction of sea otters to Sitka Sound coincided with a notable decrease in abalone numbers, yet ongoing otter influences on abalone populations are much less clear and direct. Conversely, the direct local effects of human harvesting were emphasized in more accessible areas following historical and recent increases in abalone harvest pressure. Abalone and sea otters currently and historically vary across local scales most important to harvesters. Observations at the local scale suggest that various factors contribute to changes in abalone abundance, including potential consequences of otter presence, such as their consumption of urchins. The broader depiction of interactions and histories of the marine and local communities of Sitka Sound highlights the need for nuanced approaches to managing interactions with sea otter and abalone populations. (White and Raimondi 2024:93)

This point is further illustrated in a graphic from White's dissertation (2024:146; reproduced below), which plots the interaction trends of abalone density, macro-algal cover, and urchin biomass against a baseline of sea otter influence through predation. The graph shows that the relationships are non-linear. Specifically, "abalone maintained non-linear relationships with sea otter and sea urchin measures, with the highest abalone densities (1.34/m2) at locations with moderate otter influence and moderate urchin biomasses (3.18kg/m2). As predicted, urchin biomass had an inverse relationship with macroalgal cover and sea otter influence across regions."

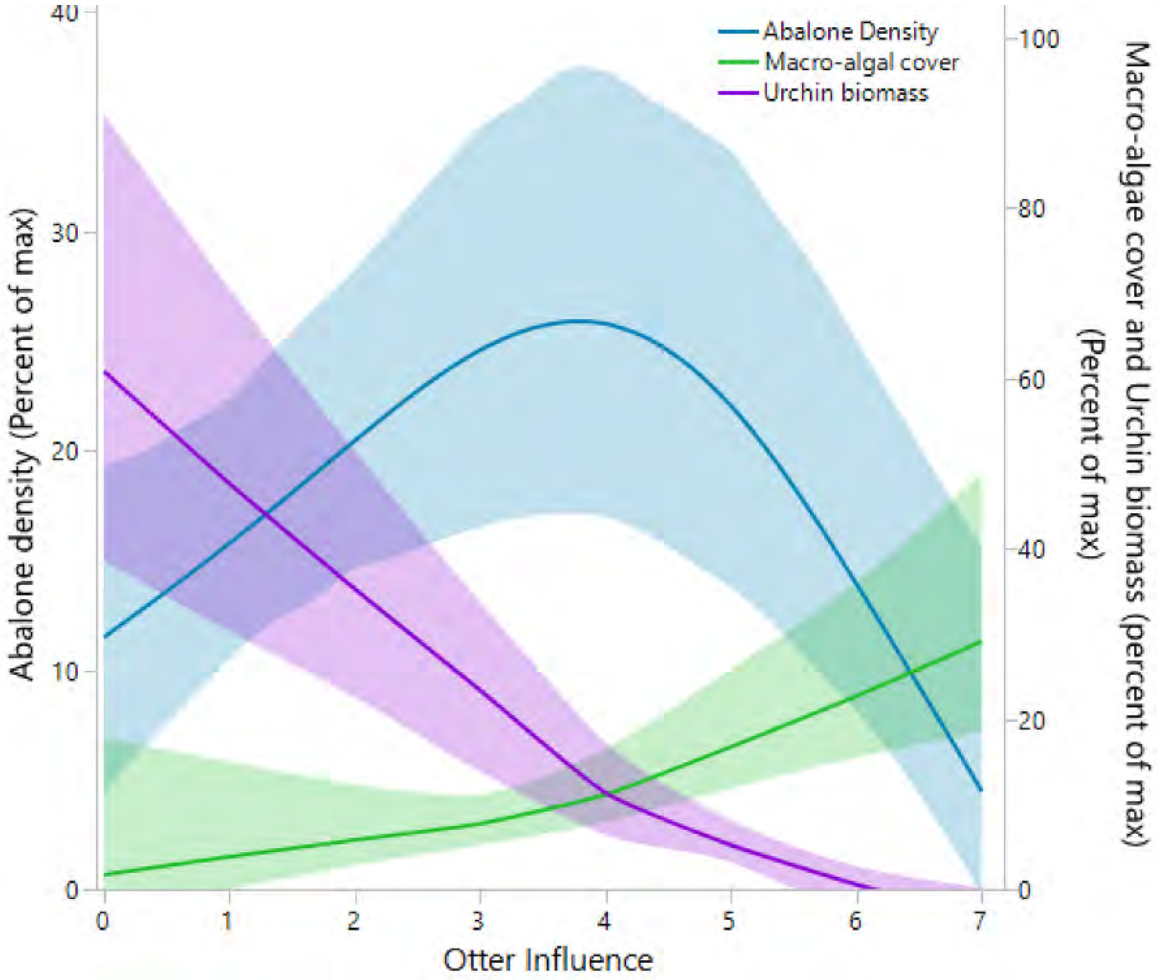



Figure 5.5. Interaction Trends between Abalone Density, Macro-algal Cover, and Urchin Biomass against a Baseline of Sea Otter Influence across Southeast Alaska. Although one would predict that abalone might best thrive (in terms of density) at the lowest (zero) otter influence, the graph shows that they thrive best when both sea urchin biomass and otter influence are moderate (between 3-5 on the base axis). The shaded areas represent confidence intervals for each trend. (from White 2024:146)

Given the complexity of these relationships and the fact that sea otter predation does not always result in the prototypical trophic cascades and marine community restructuring first documented by Estes and others (cf. Estes and Palmisano 1974, Konar 2008, Leach *et al* 2024), there is a need to understand these phenomena on a subregional scale over time. Historical ecological analysis and Indigenous knowledge, especially that of sea otter hunters and other users of areas that sea otters have inhabited, can contribute foundationally to understanding subregional marine ecosystem dynamics over time. While this study has shown that harvests of sea otters around local shellfish grounds can have a positive impact on conserving the abundance and productivity of local subsistence shellfish beds that otherwise might be severely impacted, if not "cleaned out" for significant periods of time by otters, this is, too, is not a simple linear relationship. Increased sea otter harvests may (but do not always) lead to a reduction of the overall sea otter populations or local predation, but the more significant ecological impact, it seems, is the redistribution of animals in relation to localized shellfish resource areas and alterations in otter foraging strategies in response significant human predation.

The differential selection of resources and habitats by species foraging in the same locales is a hallmark of adaptation for co-existence. Recent studies of sea otter foraging in Alaska identify

multiple factors that contribute to these selective habitat and resource use patterns, including habitat diversity and suitability, prey qualities, and predation risks. Among prey qualities, abundance, size, and potential energy density may be important to sea otter foraging patterns in addition to a range of habitat characteristics from depth to complexity to exposure to severe weather (Stewart 2021). A recent multifactor study on sea otter prey selection in Glacier Bay found that

> local sea otter diet changed substantially as the population established, shifting away from large urchins, crabs, and clams to *Modiolus* mussels and small urchins, and lastly to small clams and *Mytilus* mussels. We also found that sea otter diet at newly occupied sites changed as otters spread over the main channel and into the arms of Glacier Bay. Further, by 2019, sea otters across the bay were primarily foraging on small prey, regardless of the local occupancy history. The absence of a spatial gradient in the size of prey captured late in the study suggests that feedbacks between the top-down effects of sea otter foraging, sea otter dispersal processes, and local variation in habitat productivity may have homogenized the size structure of available prey across Glacier Bay. (Leach *et al* 2024:1)

Sea otters are protected from hunting in Glacier Bay, however, so the dynamic of human predation on sea otters is missing from the analysis of otter foraging behavior over time.

An attempt to incorporate the role of human predation into cycles of otter-urchin-kelp trophic cascades was carried out by Gorra and colleagues (Gorra *et al* 2021), building on an earlier effort by Raymond *et al.* (2019). The study focuses on comparative time series data over three decades in Sitka Sound, where sea otters recolonized in the 1990s and 2000s and were hunted at high rates beginning in the early 2000s, and Torch Bay, a remote outer coast bay between Cape Spencer and Icy Point in Hoonah traditional territory, with a similar recolonization pattern but minimal contemporary hunting. Their findings highlight the role of sea otter hunting in potentially promoting variation and patchiness in otter-kelp-urchin cascades and community structure within a given subregion like Sitka Sound, where otter harvests, especially closer to Sitka, expanded significantly in response to recolonization:

> We found the sites with the fewest urchins were farther from the town of Sitka, whereas the sites with the least kelp were closest to the town—although there was some important variability in this relationship. . . In particular, we found some intermediate states (with some urchins and low kelp density) scattered throughout the region. While it is unclear whether the intermediate states are at equilibria, or in the process of changing states, the overall patchiness in the density of urchins and kelp in 2018 indicates that both ecosystem states can co-occur when the presence or relative density of otters is patchy. (Gorra *et al* 2021:6-7)

The authors posit that this patchiness adheres due the limited lifetime home ranges of female otters (10-25 km of coast) “with limited movements of reproductive individuals between adjacent habitats” and how otters respond to variations in the risk landscape, including from top predators, such as human harvesters. The investigators conclude that:

> Understanding how spatially varying mortality risk for sea otters can translate into patchiness in community structure may help explain archaeological evidence that indigenous people in the Pacific Northwest apparently had access to areas of both abundant shellfish and abundant sea otters [10,11,38]. Given previous research on the alternative stable states associated with the sea otter–urchin–kelp trophic cascade, we suggest that management actions promoting patchiness in sea otter occupancy seem feasible and may be important for maintaining both kelp ecosystem services and shellfisheries in regions with abundant otters. (Gorra *et al* 2021:7)

Sonia Ibarra's Ph.D. dissertation (2021), entitled "Addressing a Complex Resource Conflict: Humans, Sea Otters, and Shellfish in Southeast Alaska," considered these complex relationships in the traditional territories of the Tlingit and Haida people of Southeast Alaska, concentrating in the rural communities, Kake, Klawock, Craig, and Hydaburg. Her methodology included a strong participatory and co-production approach to research design and knowledge-sharing between scientific and Indigenous sources:

> With Tribal leaders and harvest experts, my collaborators and I used a participatory framework that became a formal partnership to co-develop study goals, objectives, and methodology. Through a multiple evidence-based approach, I co-conducted semidirected and site visit interviews, structured questionnaires, mapping exercises, and participant observation in all four communities, and intertidal bivalve (shellfish) surveys in Hydaburg and Kake.

Her team's mixed qualitative and quantitative approach revealed Indigenous Knowledge about sea otter effects on the abundance and distribution of subsistence shellfish resources and local community harvesting patterns. Insights "included declines in availability and spatial extent of shellfish harvests and shifts in shellfish harvest hotspots." Ibarra also identified collective responses and recommendations which echo responses and insights offered by hunters and shellfish harvesters consulted for this study, including barriers affecting the sustainability of sea otter subsistence hunting and uses.

> Community adaptive strategies to observed shellfish declines include shifting harvest locations away from sea otter presence. Community management recommendations about restoring balance with sea otters include increasing sea otter hunting locally using spatially explicit techniques. Financial subsidies for sea otter hunters, creating local tanneries, legal changes to the Marine Mammal Protection Act, and market creation and development for sea otter handicrafts were noted as solutions to barriers of local implementation to management recommendations. (Ibarra 2021: iii-iv)

Like White, Ibarra also finds that "Commercial and charter fisheries are other factors that have contributed to shellfish declines." Specifically, "[b]utter clam (Saxidomus gigantea) size and density declined with increased distance to community and increased sea otter activity near Hydaburg, demonstrating the influence of sea otters and human harvests on bivalve population dynamics." She concludes that the application of these insights concerning "Indigenous knowledge, management, and governance systems to sea otter management in Alaska could create a more inclusive, equitable and community-driven management approach" for sea otters (2021: iv). Although Ibarra does not suggest specific reforms to the current MMPA framework, her findings are important because they include site specific investigations of sea otter subsistence hunting, commercial, sport, and subsistence shellfish harvest activities, and sea otter foraging behavior at the local seascape scale with implications for management. Discussion of management approaches inclusive of Indigenous Knowledge is taken up further in the next section.

An important implication of these recent studies highlighting the complexities and variability of sea otter foraging in relation to sea otter hunting and macroinvertebrate populations is that expectations of commercial shellfish harvesters may need to be tempered within the emerging paradigm of co-existence and non-linear dynamics. It appears that the abundance of shellfish available during the late and post sea otter "extirpation era" was an "artificial high" or "shifted baseline" (Pauly 1995) from the pre-fur trade era, wherein both otters and humans were keystone species and apex predators in coastal marine ecosystems. The industrial fur trade era eliminated the sea otter and its apex role in Southeast Alaska kelp ecosystems, and their restoration has been met by the restoration of

sea otter hunting at significant levels. While the dynamics are still playing out, it is clear that early sea otter impacts on local shellfish populations are not being sustained in the face of increased hunting of sea otters with targeted efforts by hunters to limit their proliferation in well-used shellfish harvest areas in Sitka Sound. This dynamic, alongside commercial crab and dive fishery restrictions, have enabled abalone and other macroinvertebrate populations to recover somewhat in Sitka Sound, though, due to the complexity of the marine ecosystems and multiplicity of factors and changes affecting them, it is not clear that this trend will result in a stable balance between the two apex predators and the populations of prey species they both consume.

# VI. DISCUSSION: IS A SUSTAINABLE SEA OTTER ECONOMY EVOLVING?

Results of this study have shown that there is a strong basis for building on Indigenous Knowledge and hunting of northern sea otters, in conjunction with contemporary ecosystem science, to better understand and respond to sea otter populations' foraging dynamics and their impacts on key shellfish areas and other aspects of local marine ecosystems. This basis for balanced co-existence between sea otters and humans is built on the following findings:

1. Sea otter and kelp ecosystems are intimately linked in Tlingit oral history, dating to Deep Time narratives of when Raven escaped the great Flood, settled on a kelp patch and, with the help of Sea Otter, rebuilt the world. Later Raven reeled in the great "Ark" or "Food Repository" near Dry Bay in order to feed the people; this repository was in reality a giant "kelp coil," inhabited and regulated by Sea Otter.
2. Aboriginal sea otter hunting practices (prior to the industrial fur trade era) were well developed and managed to reduce sea otter impacts on local shellfish beds through targeted hunting in those areas. Targeted hunting was practiced historically in places like Angoon, Sitka, and Yakutat, and continues today in communities whose local shellfish beaches are threatened by sea otter predation. This practice had the effect of redistributing sea otters away from important community harvest areas. At the same time, Tlingit leaders also limited hunting in areas favored for sea otter harvesting, including even during the industrial fur trade era, to allow for co-existence and reliable, sustainable access to these important sources of fur and other resources.
3. Sea otter meat was utilized as food, but likely never constituted a significant part of Southeast Alaska Native diets; it was also used to feed dogs and for bait, especially for shrimp and crab.
4. Sea otter fur was highly valued. However, due to the labor involved in acquiring and producing sea otter products, and its heavy weight and warmth, its use as everyday clothing was limited. Robes and major garments were worn mainly by elites or nobles, especially for ceremonial occasions. Pelts were valued as sleeping pads and blankets, and fur was also used as trim and in accessories.
5. The industrial fur trade hit the Southeast Alaska regional sea otter population early (c.1780) and hard, with many hundreds of otters taken a day, in some cases, by Russian-supervised Aleut hunting parties in places like Sitka Sound, Lituya Bay, and Yakutat Bay. By the early 19$^{th}$ century Sitka Sound was nearly hunted out. At the end of the 19th century only a small population of sea otters remained in the region, largely on the Gulf Coast, especially off Icy Bay and Cape Yakataga, with Tlingits and Tsimshian (from British Columbia) competing for the last of the "soft gold," before an international treaty banning most sea otter hunting was implemented in 1911.
6. Translocation of northern sea otters from the Aleutian Islands (ahead of nuclear bomb testing on. Amchitka) and Prince William Sound to Southeast Alaska in the late 1960s and 1970 has led to a rapid recovery of the population, as food and space were plentiful and predators few. Today, the Southeast Alaska sea otter population has more limiting factors, including food and space in some areas and increased predation, yet still continues to grow and remains well below (about 50% of) the estimated carrying capacity. Southeast Alaska Natives have been concerned and responsive to the rising abundance of sea otter and their impacts on local shellfish harvesting areas since the mid 1980s, with many documenting that otters were "cleaning out" abalone, clams, crab, geoducks, gumboots, sea urchins and other choice prey in their traditional use areas. Commercial fishers began portraying sea otter as "rats of the sea" by the early 1990s and hired a firm to calculate their negative economic impacts on commercial crab and dive fisheries, which was estimated at $28 million (McDowell 2011). Various benefits of increased sea otter presence, including increased kelp forests that provide habitat for valued fish and shellfish and other ecosystem services, have also been identified but not neatly quantified and dollar-valued for the Southeast region.

7. Growing concerns about sea otter impacts on valued shellfish led to a significant increase in sea otter hunting and handicraft production between the 1990 and 2015, especially in Sitka Sound. Due to generations of sea otter absence, Southeast Alaska Natives had to (re)learn hunting, butchering, and skinning skills to harvest and process them--although some of these skills were transferrable from seal hunting, which never ceased--and handicrafters had to (re)learn how to make crafts from their uniquely dense and layered fur.
8. By 2010, the State of Alaska and commercial shellfish and dive fisheries were citing the sea otter "overpopulation crisis" to raise calls for more aggressive management, including through bounties and other predator control measures, accompanied by calls for sea otter management to be put under state control. These proposals have not advanced yet, as they would require major revisions of the MMPA. Alternatively, Sealaska Heritage Institute (SHI 2014) was assessing the sustainability and economic benefits of advancing Indigenous sea otter hunting and handicraft production through education and investments in training sea otter skin sewers. In 2012 the state awarded a major grant to Sealaska Heritage Institute to train new Native fur sewers to boost employment and trade opportunities in the expanding sea otter handicraft sector.
9. Beginning in the early 2000s, Southeast tribes, especially the Sitka Tribe (STA) and tribal organizations (especially SHI) also moved to support the revitalization and development of a sustainable sea otter hunting and handicraft economy consistent with traditional cultural values and practices. These investments and those of individual Indigenous entrepreneurs, like Boyd Didrickson, Robert Miller, and Ilegvak (Peter Williams) in Sitka, and Christy Ruby in Ketchikan, stimulated innovations in sea otter hunting, fur processing, handicraft products and design, and markets. Sea otter handicrafts penetrated the world of high fashion and art.
10. These advances were undermined, however, by ambiguity and inconsistency in interpretations of "authentic" and "significantly altered" by the USFWS under MMPA guidance and regulations. Exacerbated by overzealous enforcement, this led to legal conflicts between USFWS enforcement and sea otter hunters and handicrafters. These tensions discouraged some hunters and handicrafters from participating in the developing sea otter subsistence economy for fear of running afoul of the law.
11. A positive step toward reducing these tensions came in 2012, when a workshop to clarify "significantly altered" was held with Federal managers, enforcement officials, attorneys, and tribal hunters and handicrafters and other stakeholders. This meeting, stimulated by IPCoMM, was followed by an illustrated memo from USFWS clarifying the meaning of "significantly altered" based on the results of the workshop (Appendix E). The clarification was followed by an immediate jump in annual sea otter harvests from 2012-2015.
12. After 2015 sea otter harvests in Sitka Sound and regionally dropped somewhat. Reasons for this are multiple but include rising up-front costs to hunt and tan otters, quality control issues and long wait periods with tanners, limited markets for sea otter products, declining "eligibility" (by the ¼ blood quantum criterion) in the Alaska hunter demographic, and others. These issues are currently being addressed in a variety of ways by tribes and management organizations, but they are not fully resolved.
13. In Sitka Sound, while the initial reestablishment of sea otters produced a regime shift with profound negative impacts on many choice species of macroinvertebrates, including: abalone, clams, crabs, geoducks, gumboots (chitons), mussels, razor clams, sea cucumbers, and sea urchins, these impacts appear to have been mitigated, at least in part, by an increase in hunting--with some hunters targeting otters in areas favored by the community for shellfish harvesting--combined with adjustments in sea otter foraging behavior, including switching prey and foraging sites before ever completely depleting areas of macroinvertebrates. Human shellfish harvesters also adapted by switching gathering areas and prey.

14. Consequently, since about 2019 sea otters in Sitka territory have become less concentrated in areas close to town, and shellfish are appearing again in harvest areas in Sitka Sound that once appeared to be “cleaned out” by sea otters. It is too early to tell if this marks a new stage of relative stability and co-existence in human-sea otter-shellfish co-evolution, or part of larger cycle or set of dynamics still not fully understood or played out. It is encouraging that these patterns seemingly are also playing out in areas around some other Southeast communities, such as Hydaburg, Kake, and Yakutat, if on a smaller scale. This demonstrates that Indigenous Knowledge and practices, which have both endured and adapted to colonial impacts of the fur trade and subsequent development and conservation efforts, can make a constructive, material contribution to sea otter management and ecosystem stewardship in the present era of rising sea otter populations and increased competition for valued macroinvertebrates.
15. As of 2025, Kiks.ádi elder Isabella Brady’s highly-ranked goal, introduced at a Sitka Tribe strategic planning session some 30 years ago, that tribal citizens be able to “harvest abalone again” in Sitka Sound is gradually becoming a reality as a result of STA’s, hunters’, handicrafters’, and others’ efforts to restore balance between sea otters and shellfish in their most important seafood gathering areas.

In sum, the revitalization of sea otter hunting and handicraft production in response to expanding sea otter populations and their impacts on valued wild food resources has been one of mutual adaptation and the beginnings of a restoration of Indigenous stewardship of marine mammals in key tribal subsistence areas. As sea otters continue to adapt and expand their territory in Southeast Alaska, adaptive human responses will need to continue, too, through a process of continuous monitoring, learning, adjustment, and innovation. In short, sea otter management must adopt an adaptive co-stewardship approach to sea otters and marine social-ecological systems in the region. Alaska Native tribes, subsistence organizations, and hunters, tanners, handicrafters, retailers are necessary critical partners, along with federal and state resource managers and researchers, in any collaborative stewardship approach. At present such an approach does not exist. Despite investment in organizations, such as IPCoMM and the Alaska Sea Otter and Steller Sea Lion Commission (TASSC), to promote co-management and sustainability of Alaska Native sea otter traditions, a more robust framework is requisite, given the cascading impacts of sea otters and the need for continuous monitoring and responses at both the regional and sub-regional scales. The remainder of this section outlines what this might look like, based on principles of adaptive co-management and co-stewardship within a broader, equitable framework of co-production of knowledge to guide decision-making and the implementation of co-stewardship strategies at the marine seascape and ecosystem scales.

As a preface to this, it is important to recognize that Alaska Native systems of knowledge, practice, and stewardship have been attenuated by colonization, dispossession, and trauma, including disease, discrimination, and the extirpation of keystone species like the northern sea otter from their traditional territories and livelihood portfolios. On top of this came extinguishment of their aboriginal hunting and fishing rights with the passage of the Alaska Native Claims Settlement Act of 1971. Today, with only limited restoration of those rights, including an exemption from the MMPA ban on marine mammal hunting, and strengthened, federally recognized tribes and tribal organizations, Alaska Natives are in a stronger position to co-steward their homeland ecosystems and co-manage species of cultural significance, like sea otters. Similarly, federal agencies like USFWS are broadening their approaches and evolving their capacities in collaborative management, co-production of knowledge, and co-stewardship of complex ecosystems through consultation with sovereign tribes and tribally endorsed organizations like IPCoMM and TASSC.

This report has documented both Indigenous self-management initiatives, such as increased hunting and handicraft production, and tribal leadership in collaborative initiatives with USFWS and other entities to revitalize sustainable hunting and handicraft practices and improve sea otter

subsistence management, for example by clarifying "significantly altered" (led by IPCoMM) and seeking consultations on Alaska Native eligibility vis-à-vis the problematic ¼ blood quantum criterion (led by tribes).

Significantly, it is the autonomous individual and collective Alaska Native responses to sea otters' expanding repopulation of Southeast waters that have had the most impact in advancing adaptive management. These responses have included an increase in sea otter hunting and handicraft production, aided by tribally led projects and programs to develop a sustainable sea otter economy based on the revitalization and adaptation of hunting, fur tanning, and handicraft production to meet contemporary needs, guided by evidence-based and culturally grounded management plans. Sitka Tribe has been a leader in these endeavors, developing the first Sea Otter Commission (now the Sitka Marine Mammal Commission) in the region in the 1980s, forging ordinances on the taking of marine mammals by mid 1990s, and pulling together full-scale management plans by the early 2000s. These achievements form a solid basis on which to build a distributed, polycentric adaptive management model for sustainable sea otter subsistence economy as part of a broader marine ecosystem co-stewardship framework for Southeast Alaska.

Table 6.1 examines the adaptive needs of the current social-ecological system for sea otter management according to key components and roles that have developed since the late 20th restoration of sea otter and sea otter hunting and handicrafting in Southeast Alaska.

Table 6.1. Adaptive Management Needs for Sea Otter in Southeast Alaska

| Adaptive Needs | Response to date | Partners | Next Steps | Issues |
|---|---|---|---|---|
| Hunters | Revitalization of hunting; training new hunters; | Kin networks; tribe sponsored courses | Increased support for hunters<br>Broaden eligibility? | Can broader eligibility be responsive to otter population dynamics, including stabilization or declines? |
| Tanners | Tannery development | Tribes + economic partners | Distributed network for finishing skins | Specialize in marine mammals?<br>Distributed model? |
| Handicrafters | Training classes (sewing); product innovations | State/Federal grant funds | Address supply chain issues (furs) | Micro-lending for small business equipment, start-up.<br>Other skills beyond sewing? |
| Buyers (Market development) | Alaska Native marketplaces; retail contacts | e.g., AFN Marketplace; SHI Celebration; Fashion retailers; fur galleries | New products? (meat, bones?) | Sustainable markets and supply?<br>Cultural vs. retail products?<br>Diversified products for market segments?<br>Cooperative to connect artists with buyers? |
| Monitoring | Informal observations of sea otter behavior, impacts; limited studies | Hunters, tribes, researchers | Sea otter monitoring network? | Training and funding to systematically record observations (e.g. on an App)? |

| | | | | |
|---|---|---|---|---|
| Research | Academically driven with collaborative approaches | Universities and tribes. | Co-production of knowledge design: from research questions to results, outputs | Experiments with hunting sea otter populations-- tied to research questions and monitoring. |
| Management | Increased Native hunting and handicraft production; clarifying regulations; overzealous enforcement | USFWS, tribes, hunters, handicrafters | Developing a polycentric management model | Stronger Co-management/stewardship framework and support needed? |
| Co-Stewardship | Establishing a balance between sea otters and prey/other predators; valuing kelp ecosystem services. | USFWS; tribes and tribal organizations; universities and schools | Developing a collaborative, polycentric approach based on regional populations and hunting communities (tribes) | Defining sustainability beyond sea otter population models and carrying capacity. Ecosystem stewardship at the multiple levels of effective control (e.g., regional, tribal territorial, etc.). |

While each of these adaptive needs has received attention from various constituencies, in many cases there has been a lack of partnerships or uneven responses to meet the needs. For example, USFWS was aware of the emerging conflicts between shellfish harvesters and sea otters as early as the 1980s and meeting with tribes to dialog about their hunting interests and opportunities under the law, but no adaptive strategy was developed with Alaska Natives to address the issues surrounding sea otter impacts on key shellfish resources. Moreover, USFWS continued to preserve vague and "moving target" interpretations of its regulations on subsistence hunting and uses of sea otter. Such misalignment, combined with occasions of overzealous enforcement, served to limit Alaska hunters' and handicrafters' production, especially before 2012, when the phrase "significantly altered" was finally clarified through a collaborative process between hunters, handicrafters, Indigenous tribes and organizations, and federal agencies. Collaborative, consensus-based problem-solving approaches to other adaptive needs identified in Table 6.1 would be a productive way to further build trust, reduce conflicts, diversify and enlarge perspectives and evidence-bases, and build collaborative capacity towards an equitable and adaptive co-stewardship model for sea otters and their marine social-ecological systems across Southeast Alaska.

Apropos to this, researchers and collaborating Indigenous communities from British Columbia (Kyuquot/Chekleset) and Alaska (Sugpiaq: Nanwalek, Port Graham) recently concluded that human-otter coexistence can be enabled by strengthening Indigenous governance authority and establishing locally designed, adaptive co-management plans for sea otters (Burt *et al* 2020). A key finding of this study is that

> communities differed in their relative rankings of adaptation-enabling conditions; however, the following four broad strategies were perceived as critical to improving coexistence with sea otters: (a) strengthening Indigenous governance and decision-making authority; (b) promoting adaptive co-management; (c) weaving Indigenous knowledge and Western science into

> management plans and (d) establishing learning platforms. Both communities also identified that increased livelihood options and financial assistance would not compensate for lost food security. (2020:557)

This is consistent with the findings of this report, including the recognition that communities may have diverse capacities and priorities when it comes to responding to sea otter impacts through hunting, handcrafting, or other management. Consequently, a polycentric adaptive co-management framework would need to work from the level of the hunter/handicrafter, and tribal community through to the regional, state, and federal levels. To support the engagement and empowerment of Indigenous communities, institutional considerations and rights regimes are important to consider in reimagining resource and ecosystem governance, as recent studies in fisheries make clear (Armitage *et al* 2019, Silver *et al* 2022; Thornton and Moss 2021). An important difference between the Canadian and US contexts, for example, is the fact that only Alaska Natives currently have sea otter hunting rights (through the MMPA exemption), which were identified by both groups as an important tool for achieving human-sea otter co-existence. Other Canadian studies also identify Indigenous sea otter hunting rights as critical for achieving Indigenous food security and food sovereignty (Popken *et al* 2023).

Figure 6.1 considers how the key elements of adaptive co-existence with sea otters might be developed within a formalized but flexible co-stewardship model. It eschews a steady-state or equilibrium perspective, anchored by a singular notion of carrying capacity, in favor of a dynamic sustainability approach. The latter framework assumes dynamic, complex, and changing systems, due not only to the behavior of top predators (like humans and sea otters), prey levels, or other keystone or foundation species, but also to broader environmental changes, such as in climate and oceanic conditions. In this adaptive model, it is necessary to have both the critical domains represented by the outer boxes in the figure and the ongoing and evolving action processes identified in the inner boxes to respond effectively to changes in social-ecological system dynamics.

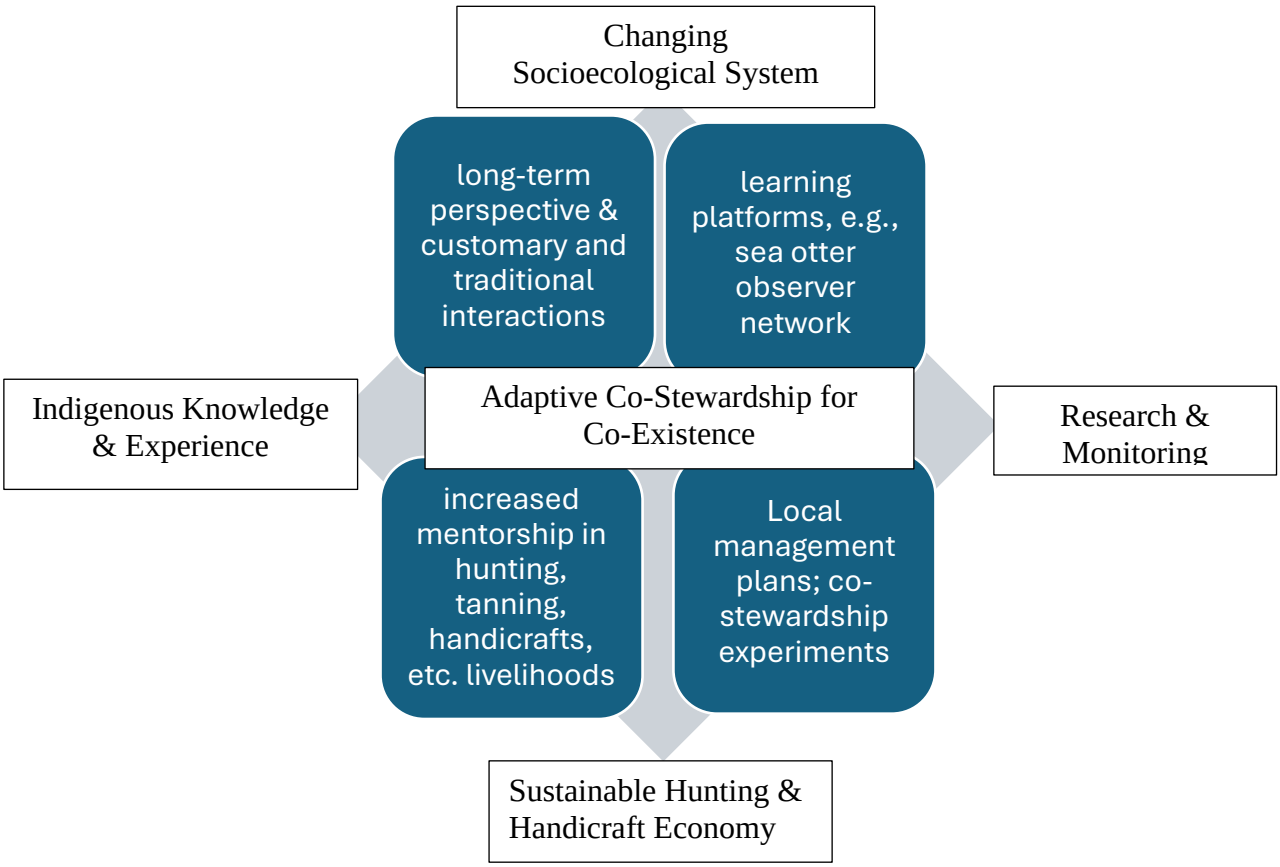



Figure 6.1. Adaptive Co-Stewardship for Co-Existence of Sea Otter and Humans. The outer boxes of the figure show critical domains of the system, including social-ecological change, The shaded inner boxes offer examples of complementary continuing processes that could be implemented to refine the adaptive co-stewardship scheme when the sustainability of the social-ecological system is threatened by overexploitation or other changes.

# VII. CONCLUSIONS

In light of the original objectives of the study and previous recommendations for making the sea otter subsistence uses economy more sustainable we have:

1. Conducted primary and secondary research to document the ecological effects on sea otter populations and certain subsistence marine resources in the Sitka Sound area resulting from increased sea otter hunting and Indigenous handicraft production.

   The results of this study show clearly that sea otter have significantly impacted key shellfish and other invertebrates especially valued by subsistence, sport, and commercial fisheries, including abalone, butter clams, chitons, crabs, geoducks, razor clams, octopus, and sea urchins. The impacts are not uniform however, even with discrete areas such as Sitka Sound, and in some areas have been mitigated or ameliorated in part through increased sea otter hunting effort.

2. Documented Alaska Native-led initiatives and programs pertaining to the localized development of Indigenous sea otter subsistence hunting, tanning, handicraft production and related activities in the Sitka Sound and greater Southeast region and their implications for collaborative, adaptive resource management under the MMPA.

   This study has highlighted a wide range of efforts, especially at the tribe and tribal organization level, to develop initiatives and programs pertaining to the localized development of Indigenous sea otter management activities in Sitka Sound. These include Sitka Tribe initiatives to develop courses to train sea otter hunters and handicrafters and to operate a tannery specializing in finishing sea otter furs for handicraft producers. These efforts ran for more than a decade, beginning in 2005 and coinciding with (and likely stimulating) rising participation in the sea otter economy, including the highest of years of subsistence harvest in Sitka area and the Southeast between 2012-2015.

3. Developed a comprehensive written report describing the historical context, chronology, and observed impacts of Indigenous sea otter management practices at the local level in Sitka Sound.

   This investigation carried out a historical ecological analysis showing that sea otter have been a key species in Tlingit and other Southeast Alaska and Pacific Northwest Indigenous cultures since long before contact with Europeans. The analysis shows that, while sea otter were highly valued for their pelts, and to a lesser extent their meat and other products, they were also considered as a potential stressor on key macroinvertebrate resources like abalone, clams, crabs, and chitons. Thus, sea otters were strategically hunted to prevent depletion of critical shellfish resources in areas proximal and highly utilized by Indigenous groups. In general, however, Southeast Alaska Natives did not, per se, see themselves so much as “managers” of sea otters, but rather as fellow apex predators in the system, whose communities would suffer if sea otter populations came to dominate macroinvertebrate habitats. Consequently, Native hunters have sought to balance sea otter competition by limiting otter presence in important

areas--especially those accessible to Native settlements--where both humans and otters prey on resident shellfish populations. In the contemporary era, such responses to sea otter competition have largely been at the discretion of individual hunters, hunting parties or small networks, without higher level coordination. This finding suggests potential for Indigenous co-management and co-stewardship with federal managers to balance sea otter expansion with subsistence and other human needs. At the same time, the report also concludes that this will take time, due to the impacts of the commercial sea otter fur trade and subsequent colonization, including some potential loss of Indigenous Knowledge concerning sea otters and the limited capacity of many contemporary federally-recognized tribes (relatively newfound institutions) to "manage" marine mammals according to human-derived models (of ecosystems, carrying-capacity, etc.) developed from without rather than the "continuous adaptation for co-existence model" that has evolved historically and sustainably between humans and otters in specific marine environments over time. Based on the analysis of the historical ecology and current situation, this study proposes an adaptive co-existence framework, based on the Sitka case study, which could support co-stewardship of a sustainable sea otter subsistence economy and healthy social-ecological systems for humans and sea otters in Southeast Alaska.

4. Synthesized and complemented other current/ongoing research by documenting previously unrecognized or not fully understood activities and initiatives by Alaska Native stakeholders.

   This study has provided an in-depth analysis, for the first time, of how Alaska Native hunters, handicrafters, and select tribal organizations have actively sought to develop a sustainable sea otter subsistence economy and consistently have identified bottlenecks and barriers which have hindered that effort, as well as autonomous and collaborative activities that have advanced adaptive co-existence and the potential for Alaska Native-federal agency co-stewardship marine social-ecological systems in which both humans and sea otters are recognized as keystone species. Especially important to consider are the lessons learned from ongoing experiments and initiatives with sea otter tanning, handicraft instruction and production, and development-- among Southeast Native tribes, organizations, hunters, tanners, and handicrafters--of integrated visions of the principles, paradigms, policies, assets, and skills needed to build a sustainable and balanced sea otter population and blue economy for the future.

5. Spurred new and vital research questions and with an aim toward enhanced collaborative management activities and initiatives in Southeast Alaska and a potential model for other regions of Alaska.

   The framework for building adaptive co-stewardship for co-existence with sea otters includes suggestions for how to develop research questions and learning experiments, based on Indigenous Knowledge and practices that could aid in balancing sea otter and human needs for the future with attention to place-based values and dynamics in particular marine social-ecological systems. The report and framework also highlight how adaptive co-stewardship for co-existence, including, for example, collaborative governance and economic cooperatives, could boost the economic viability and sustainability of the Indigenous sea otter economy, including hunting, tanning, handicrafting, marketing, and sales, while also supporting, enhancing, and conserving important cultural values associated with sea otter and sea otter products.

6. Furthered the understanding – and perhaps future replication – of the Sitka Sound "model" in other communities as an applied local sea otter harvest management strategy.

   This report has shown that in the Sitka Sound case, Sitka Tribe and local hunters and handicrafters have often been the first responders, innovators, and adapters to the rapid reestablishment of sea otter populations in their traditional use areas. They have innovated and adapted by developing hunting expertise, optimizing harvests (when capacity needs are met), and stimulating a tanning and handicraft industry through individual initiatives, tribe-led programs, and working with regional (e.g., SHI) and state-wide organizations (e.g., IPCoMM) and federal and state authorities (including Alaska officials, USFWS managers and enforcement officials, and even federal judicial rulings) to address strategic opportunities and threats to sustainable sea otter harvesting and handicraft production. Limited interviews with hunters and handicrafters in other communities (Cordova, Craig, Juneau, Hydaburg, and Ketchikan) suggest that community approaches to understanding and responding to sea otter expansion and recolonization are similar at a high level, for example regarding the need to revitalize hunting and handicrafts to keep sea otters in check and to develop sustainable rural economic opportunities that support sea otter subsistence uses in the context of other economic activities and individuals' livelihood portfolios. However, priorities and approaches to adaptive management and co-stewardship also may differ across communities and subregions. Thus, more consultation, and perhaps research, is needed to assess how well the Sitka Sound case applies to other coastal communities, and at what level the emergent Sitka model for co-existence with sea otters might be optimal, replicable, or constructively built upon in other settings. Similarly, any regional-level co-stewardship model would have to remain adaptive and attentive to local cultures and social-ecological conditions.

Building a better scientific understanding of the potential application of the Sitka model would be advisable, based on its successes in balancing sea otter and shellfish populations, and the Tribe's experiments and initiatives in developing a tannery, training young hunters, and offering skin sewing classes (the latter in conjunction with SHI and other entities). Analysis of the failures or shortcomings in these experiments, such as the inability to sustain a tannery or to develop and support a sizeable new generation of hunters, is also instructive, as key lessons can be learned, including the need for a strategic and coordinated multi-level co-stewardship approach to sea otter conservation and sustainable Alaska Native subsistence and handicraft uses of the species. This harkens back to some of the recommendations made at the 2019 Southeast stakeholder meeting, namely:

1. Increase state funding for artisan training and the marketing of Native handicrafts
2. Improve communication amongst managers, user groups and stakeholders
3. Conduct a new population survey
4. Update the species conservation plan
5. Create a working group with stakeholders
6. Evaluate resources for data collection

Increased state funding for artisan training and marketing of Native handicrafts, the #1 priority coming out of the 2019 workshop, has not been fully realized, given tightening state budgets. However, an important first step was achieved by reclassifying sea otter hunting and handicrafting as sectoral "work", the arts having previously not been considered a legitimate economic sector. With this redefinition, spurred by SHI, skin sewing and potentially other training courses can now be applied for under the umbrella of workforce development programs. Interestingly, discussions of sea otter product markets and marketing did emerge in this study, and some handicrafters who branched into high

fashion or higher-end products (like coats and blankets), often found markets there to be limited or fickle. Those with up-to-date websites that "put themselves out there," as artisans, not only in advertising their sea otter products, but also telling their personal stories and reasons for pursing sea otter hunting and handicrafts, have generally been successful, although having suffered at least some backlash from scrollers (e.g., from PETA or other anti-fur constituencies) or temporary suspensions from social media and commerce sites (that flagged their products as potential contraband, etc.). Sitka hunter and sewer Robert Miller, who has found success in marketing his sea otter handicrafts and garnering commissions through his reputation and website, makes his case for sustainability directly to buyers with both words and pictures (Figure 7.1) as do others, like Christy Ruby and Diana Reidel.

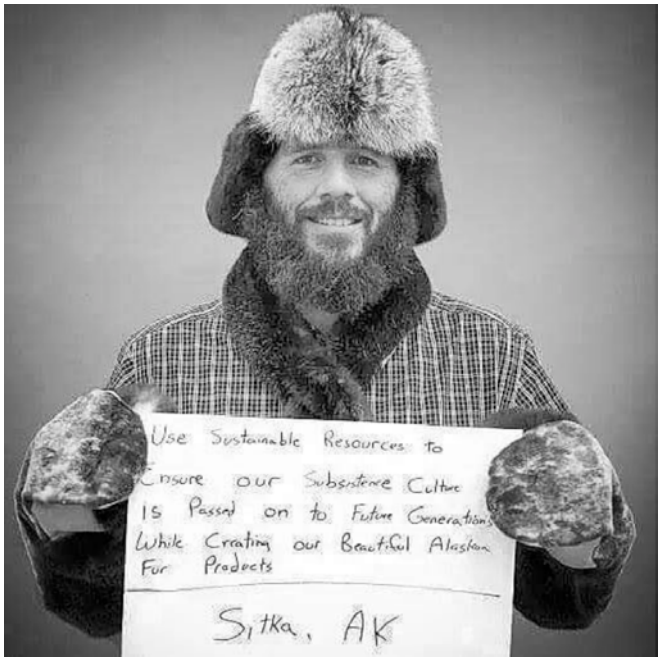



Figure 7.1. Robert Miller, Decked Out in His Fur Products, makes a case for a sustainable sea otter hunting and subsistence uses of fur. Products of his Sea Fur Sewing cottage business include a sea otter hat, scarf, and trimmed mittens (courtesy of his website: https://www.seafursewing.com/my-story).

Improved communication amongst managers, user groups and stakeholders—Recommendation #4--was highly endorsed by participants in this study. The vagaries, inconsistent interpretations, and contentious court cases, surrounding concepts like "significantly altered" as applied in practice took years to work out, and in hindsight could have been easily worked out through direct engagement with handicrafters and other stakeholders decades before a such workshop was organized in 2012. Communication needs to be continuous and two-way to support "Two-eyed Seeing," and regular meetings with Indigenous rightsholders need to be co-designed to develop agendas that reflect shared priorities and pathways for decision-making. Further, there may be a need to have more structured ongoing interactions between sea otter hunters and scientists, such that they become co-invested in a collaborative research agenda that addresses Indigenous concerns alongside those of researchers, managers, and others. A number of suggestions emerged from our interviews that could build a better research and monitoring partnership agenda for addressing the sustainability, co-existence, and co-stewardship of sea otters and humans and their mutual prey.

Regarding #3, improving new population surveys, we suggest with Schuette *et al* (2023) that "smaller scale, more frequent populations surveys" would benefit the development of an adaptive co-stewardship model for sea otter especially if they "could be conducted by community members and

other partners, and in general, help build collaboration and partnership across the broader Southeast region." Our participants also agree that it is important that populations surveys be better designed "to improve our understanding of the sea otter population in areas of high interest to Southeast stakeholders" and, especially, Indigenous rightsholders. USFWS efforts to increase survey coverage around population centers, including Native population centers at Hoonah, Hydaburg, Juneau, Kake, Ketchikan, Klawock, Metlakatla, Petersburg, Sitka, Wrangell, and Yakutat are a good first step. We also suggest developing a formal co-production process for designing population surveys and interpreting their results in light of other trends in Southeast Indigenous communities and territories (social-ecological systems), including issues in developing sustainable marine mammal subsistence economies under the MMPA.

Recommendations #4-6 are straightforward and easy to agree upon in principle but need to be significantly fleshed out and scaled appropriately to address the objective realities and developing concerns of sea otter hunters and handicrafters in different communities throughout Southeast Alaska. In terms of subpopulations, it would be useful to consider traditional tribal territories (kwáan), which generally have large overlap with contemporary marine mammal hunting and marine subsistence use areas, as a starting point for subpopulation analysis and investigations, and then further subdivide them as needed, as our analysis of Sitka Sound versus Sheet'ká Kwáan did, for example. In short, the existing Tlingit tribe/kwáan system and boundaries provide an excellent base for developing more fine-grained zonal management of sea otters at a meaningful scale, as seas otters, based on what has been learned of their life histories of dwelling and foraging, maintain a similar geography and spatial structuring. Large scale species surveys that average across local territories, or social-ecological systems, may end up masking local differences that are important to species conservation and the sustainability of Indigenous subsistence economies.

For all of these recommendations, development of an adaptive co-stewardship models, such as outlined above, could help address the issues in way that improves Indigenous livelihoods, scientific understanding of and management responses to sea otter populations, and future directions for research, monitoring, and policy.

In the final analysis, the case of sea otters and sea otter hunting in Sitka Sound is a good news story, one of emerging co-existence and mutual adaptation by two keystone species to accommodate each other in a shared social-ecological system. It illustrates key values of Tlingit culture (Sealaska 2025) and other Southeast Alaska Natives, especially Át yaa awuné (Respect for all things), including: 1) Haa Aaní ([Caring for] Our Land/Sea/Country); 2) Haa Latseen (Strength of Body and Mind [in hunting, handicrafting, etc.]); 3) Haa Shuká (Our Ancestors and Future Generations); and 4) Wooch Yáx (Social-Ecological Balance). New knowledge and attitudes towards sea otter are being generated through Indigenous and scientific knowledge and public media channels in a rapidly evolving and dynamic period of species recovery, human response, and environmental change. An adaptive co-stewardship framework that supports respect for all things and effectively synergizes the expertise of Indigenous hunters and scientists is likely the best hope for achieving the delicate balance between sea otters, humans, and other constituents of North Pacific marine ecosystems that is requisite for sustainability and thriving communities.

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# APPENDICES

## Appendix A. Consent Form for Study Participants

You are invited to participate in a study sponsored by the Sealaska Heritage Institute (SHI), entitled "*Documentation and Analysis of the Indigenous Management Practices of Sea Otters in Sitka Sound*." This research project is being carried out by Dr. Thomas F. Thornton.

The purpose of the study is to document Indigenous interactions with and understanding and uses of sea otter in the Sitka Sound area in relation to cultural, legal, and other regimes that govern sea otter hunting and use in Alaska and beyond. Sea otters are a culturally and ecologically significant species the harvest, processing, and distribution of which requires significant investment and skills but also creates significant benefits which are currently not fully understood.

Thank you for agreeing to participate in this study. We would like to ask you questions about how you have hunted and utilized sea otter in recent decades, and the ways in human-sea otter relations are evolving in Sitka and neighboring communities. As a gesture of appreciation for your contribution to this project, you will be offered $250.00 per hour for up to two hours of interview ($500. maximum).

We would like to record the interview with your consent.

By signing below I agree to the following:

1. I voluntarily consent to provide information to Sealaska Heritage Institute for this project and to allow the interview to be recorded through written notes, photography, tape recording, video-taping or other appropriate means.
2. I agree that the recordings shall be placed with Sealaska Heritage Institute for purposes of future research and preservation. Dr. Thornton will also maintain a copy of all recordings.
3. I understand that the information that I provide may be used for a variety of purposes including written reports, presentations and publications.
4. I understand that my name may appear in the final products unless I choose to be anonymous.
5. I also understand that the information in the interview may be made available to researchers and/or the general public for use in other projects.

If you have questions about the study, please contact Tom Thornton (Phone: 240-869-0414; email: t.fox.thornton@gmail.com) or Chuck Smythe at Sealaska Heritage Institute (907-463-4844, or chuck.smythe@sealaska.com).

_____ _____

*Participant signature* *Date*

_____

**Print Name and Contact details (phone or email)**

____ *I would like to receive a copy of my interview transcript.*

____ *I would like to receive a copy of the final report.*

**Appendix B. List of Expert Participants**

| Interviewee | Community | Hunter | Other Roles |
|---|---|---|---|
| | | | |
| Baines, Mike | Sitka | Y | Tourism |
| Bradley, Kenyatta | Sitka | Y | Sewer, Tannery |
| Chandler, Shawn | Sitka | Y | Sewer |
| Christenson, Tony | Hydaburg | Y | Instructor |
| Douville, Mike | Craig | Y | SEAK RAC |
| Edenshaw, Sid | Hydaburg | Y | SHI |
| Feldpausch, Jeff | Sitka | N | Tannery |
| Feldpausch, Lillian | Sitka | N | Sewer, Instructor |
| Gamble, Tom | Sitka | Y | Tanning |
| Jackson, Scott | Kake | Y | Tanner, Sewer, Instructor |
| Johnson, Steve | Sitka | Y | Sewer |
| Kadinger, Lee | Juneau | N | SHI |
| Kadinger, Louise | Sitka | Y | Sewer, SHI Instructor |
| Martin, Wade | Sitka | Y | Sewer |
| Miller, Mike | Sitka | Y | Sewer, MMC |
| Miller, Robert | Sitka | Y | Sewer, Instructor |
| Peterson, Reg | Sitka | Y | Artist, MMC |
| Reidel, Diana | Sitka, Cordova | Y | Sewer, MMC |
| Robi Erikson | Sitka (formerly) | N | SHI, STA |
| Ruby, Christy | Ketchikan | Y | Sewer, Designer |
| Smith, Mike | Sitka | Y | Tannery, STA |
| Williams, Peter (Ilegvak) | Sitka | Y | Sewer, Designer |
| Worl, Rosita | Juneau | N | SHI |

**Appendix C. Interview Topics & Questions for Sea Otter Hunters, Processors, Handicrafters**

Sitka Sound Case Study within the Context of Sea Otter Extirpation and Recovery across SE Alaska

**Interviewer/Date/Place_____**

| Name(s) | DOB | Contact Info | Tribe Affiliation | Hunter (since) | Processor (since) | Handicraft (since) |
|---|---|---|---|---|---|---|
| | | | | | | |

1. Please tell me about when and why you got into SO hunting/processing/handcraft production.
2. Who taught you about SO? What did you learn about nature of SOs? About the history of SO populations, hunting and use in Sitka, and SEAK?
3. What observations about SO behavior have you made over the years? [areas of population density, seasonality of population size and locations, fluctuations in population size and distribution, patterns of reproduction, impacts on subsistence/commercial resources?]
4. What is their prey/diet? Has this changed over the years you have been hunting?
5. What observations about environmental changes have you noticed after harvesting in SS? Are there environmental benefits of hunting SO in the SS area?
6. Were there traditional techniques, rules and ethics for hunting SO? Explain.
7. When do you choose to hunt and why (e.g., orders to fill, compatibility w/other activities, environmental conditions, SO population or prey conditions, etc.)?
8. Where do you hunt (mapping question)? What motivates your choice of areas (proximity, calm waters, etc.)? Have your hunting areas changed over the years? If so, explain how your hunting has changed and why (environmental change/SO populations)? Are there areas you avoid routinely, why?
9. Please share observations about population changes in SO prey due to hunting and benefits to subsistence harvesters (and locations). Are such changes a motivation for hunting for you? Can these patterns be maintained in balance? How best to do so?
10. How do you select animals to harvest (e.g., age, sex, size, fur attributes, proximity, in areas of high subsistence/commercial value, etc.)? Are there types of SO that you generally don't hunt (e.g., pups). Has your selection change(d) over the years--why?
11. What do you consider a healthy population of SO in the SS Area?
12. Are/Should SO be controlled or kept out of certain areas through hunting? How?
13. To what extent do you communicate with other hunters or producers?
14. Do you or does anyone you know eat SO meat or make any other use of SO (feeding dogs, etc.)? Do you consider meat not used to be "wasted"?
15. How do you combine SO hunting/processing/handicraft production with other fishing-gathering-hunting livelihood activities?
16. To what extent do you collaborate with others in Sitka your subsistence harvest/production (hire hunters, processors, etc.)? Did you use the STA tannery (when?) Other local individuals/enterprises?
17. What are the most challenging aspects of making a living from SO subsistence harvests? What are the main benefits/rewards?
18. Have you ever had enforcement actions against you for SO or MM hunting? Describe. Are you aware of enforcement actions against others? Has this affected your (and others that you know) participation in the SO subsistence economy?
19. Do you have any concerns/suggestions on how the Indigenous SO subsistence economy is/could be better regulated or supported? (e.g., Are there too many or not enough hunters/taggers)?

20. Any other comments?

Producers/Artists

1. What skills does it take to work with SO (furs)? How do these differ from working with other MM?
2. How were you trained to work on them and what products do you make? (SHI courses?)
3. How are the skins (& other materials) you use processed (tanned, etc.)?
4. If not a hunter, where do you source your furs? Are there any issues with supply? Other materials?
5. Have you ever had enforcement actions against you? Describe? Are you aware of enforcement actions against others? How has this affected your handicraft making?
6. What are the most challenging aspects of making a living from SO subsistence harvests? What are the main benefits/rewards?
7. Do you have any concerns/suggestions on how the Indigenous SO subsistence economy is/could be better regulated or supported? (e.g., Are there too many or not enough hunters/taggers)?
8. Any other comments?

## Appendix D. Sitka Tribe of Alaska: Ordinance 95-10 Governing the Taking of Marine Mammals

*Sitka Tribe of Alaska*
*Ordinance Governing Take of Marine Mammals*
*(02.06)*
SITKA TRIBE OF ALASKA

ORDINANCE 95-10
GOVERNING THE TAKE OF MARINE MAMMALS

WHEREAS, the Sitka Tribe of Alaska wishes to conserve and protect marine mammal species; and

WHEREAS, the Sitka Tribe of Alaska's traditional territory reflects the lands and waters historically and presently the stewardship responsibility of the Sheet'ka Kwaan and as such are composed of the western side of Baranof Island, the greater reaches of Peril Strait, southwestern portions of Chicagof Island and the myriad of islands as well as the waters between these locations; and

WHEREAS, the Sitka Tribe of Alaska wishes to ensure the regulation of marine mammals by its citizens is consistent with the Tribe's customs and traditions; and

WHEREAS, the Sitka Tribe of Alaska believes that this ordinance will best accomplish the goals set forth above; and

WHEREAS, the Sitka Tribe of Alaska exercises its inherent sovereign authority to establish regulations governing the take of marine mammals and other resources from time immemorial through customs and traditions passed from generation to generation;

NOW, THEREFORE BE IT RESOLVED THAT the Sitka Tribe of Alaska DOES HEREBY ORDAIN AND ENACT THE FOLLOWING TRIBAL ORDINANCE.

SECTION 1 FINDINGS

The Sitka Tribe of Alaska finds that:

(a) The citizens of the Sitka Tribe of Alaska have forever relied upon marine mammals for nutritional and other domestic needs and continue to rely upon such resources today, as they will for generations to come; and

(b) The social organization and Native culture of the Sitka Tribe of Alaska depend heavily upon the taking and use of traditional marine resources; and

(c) Survival of both the marine mammal populations and the citizens of the Sitka Tribe of Alaska have depended upon community cooperation and sharing in the harvest of marine mammals; and

(d) The marine resources relied upon by the citizens of the Sitka Tribe of Alaska have survived the ages due to careful management and prudent use by the Alaska Native residents of Sitka; and

(e) The citizens of the Sitka Tribe of Alaska have regulated the take of marine mammals and other resources from time immemorial through customs and traditions passed from generation to generation; and

(f) These customs and traditions require the take of marine mammals to done in a non-wasteful manner; and

(g) Such customs and traditions continue to guide the citizens of the Sitka Tribe of Alaska as they will for generations yet to come.

## SECTION 2 PURPOSES

The Sitka Tribe of Alaska shall:

(a) Document the use of marine mammals in the customary and traditional territory of Sitka Tribe;

(b) Develop and implement a formal management system governing the harvest of marine mammals by Alaska Natives within the customary and traditional territory of the Sitka Tribe;

(c) Establish and enforce local tribal laws and regulations that govern the harvest of marine mammals within the customary and traditional territory of Sitka Tribe;

(d) Ensure that the harvest guidelines preserve the marine mammal stocks for customary and traditional uses by future generations of the Sitka Tribe;

(e) Cooperate with other governments to ensure that the Sitka Tribe will continue to manage marine mammals in its customary and traditional territory;

(f) Ensure that all concerned parties are made aware of the local tribal laws governing the harvest of marine mammals in the customary and traditional territory of the Sitka Tribe;

(g) Cooperate with all concerned parties whose resource management philosophy is consistent with the customs and traditions of Sitka Tribe.

SECTION 3 DEFINITIONS

(a) The term "harvest monitors" means the persons appointed by the Sitka Tribe of Alaska to carry out functions set forth in Section 6 (g) of this Ordinance. Harvest monitors shall report directly to the Sitka Marine Mammal Commission.

(b) The term "marine mammal" means any mammal which is morphologically and biologically adapted to the marine environment including, but not limited to, sea otters, harbor seals, and sea lions.

(c) The term "marine mammal product" means any item which consists, or is composed in whole of part, of any marine mammal.

(d) The term "take" means to harvest or kill any marine mammal.

(e) The term "tribal officer" means the person appointed by the Sitka Tribe Council to carry out the duties set forth in Section 8 of this Ordinance.

(f) The term "Alaska Native" means a person who has at least ¼ Alaska Native blood.

(g) The term "customary and traditional territory of the Sitka Tribe of Alaska" means the areas including the greater part of Peril Straits, the Southern and Southwestern sides of Chichagof, the Northern and Western sides of Baranof Islands, and the myriad of adjacent islands.

(h) The term "general membership of the Sitka Marine Mammal Commission" means all Alaska Natives (Aleuts, Eskimos, and Indians) who reside within the customary and traditional territory of the Sitka Tribe of Alaska.

SECTION 4 SCOPE

(a) This Ordinance governs any take of marine mammals by any Alaska Native within the customary and traditional territory of the Sitka Tribe of Alaska.

(b) A Tribe or Native Village, other than the Sitka Tribe of Alaska, may, out of necessity and/or geographic closeness wish to become party to this ordinance. This may be done by the Amendment procedures in Section 11. All areas within the customary and traditional territory of any added Tribe or Native Village will automatically become part of this Ordinance and its citizens shall be considered as part of the "general membership."

## SECTION 5 TAKE OF MARINE MAMMALS

(a) Marine Mammals may be taken within the customary and traditional territory of the Sitka Tribe provided that the person taking the marine mammal:

1. that person is an Alaskan Native residing on the coast of Alaska;
2. takes no more than is needed for customary and traditional purposes; and
3. Salvages all parts of the animal which custom and tradition require (unless the animal is found to be diseased, decomposed or otherwise not suitable for human consumption); and
4. does not otherwise take marine mammals in a wasteful manner; and
5. does not otherwise violate the Marine Mammal Protection Act of 1972 as amended; and
6. abides by this Ordinance and regulations as adopted by the Sitka Marine Mammal Commission.

## SECTION 6 SITKA MARINE MAMMAL COMMISSION

(a) There shall be established a Sitka Marine Mammal Commission composed of 9 (nine) members which shall represent a diverse cross-section of the general membership. The commissioners shall be nominated and elected from and by the general membership of the Sitka Marine Mammal Commission for three year terms. The terms of the commissioners shall for three years and rotate with three years and rotate with three seats open each year.

(b) The Commission shall meet at least once every three months. Depending on the circumstances, the Commission can choose to meet more often than the minimum. The Commission meetings shall be open to the general membership of the Sitka Marine Mammal Commission. The Commission shall also hold a well-publicized annual meeting during the month of October.

(c) All Commission decisions shall be effective by consensus of the Commission. Consensus shall be defined by the Commission.

(d) The Commission shall appoint a Chair and Vice Chair from the Commission members. The Commission shall also appoint a Secretary and Treasurer from the Commission members or appoint one Commission member to the position of Secretary/Treasurer.

(e) Regulations adopted by the Commission may not be more lenient than the provisions of Section 5.

(f) The Commission shall use the following procedures:

1. The Commission shall develop proposed regulations, which shall then be posted for at least 30 days at the main Sitka Tribal government offices. These proposed regulations shall also be posted for at least 30 days at City Post Offices and Office Buildings and the Alaska Department of Fish & Game, and the Fish & Wildlife Protection Office. During this time, notice of the proposed regulations shall be published at least three times in a local newspaper.

2. No less than 30 days after the posting of the proposed regulations the Commission shall hold a public meeting for comments. After the public meetings the Commission shall hold at least one meeting at which the Commission will consider comments made by the public and adopt final regulations, which shall then be posted and kept on file for public inspection at the main Sitka Tribal government. These final regulations shall also be posted at City Post Offices and Office Buildings, and the Fish & Wildlife Protection Office. During this time, notice of the final regulations shall be published at least three times as legal notices in a local newspaper.

(g) The Sitka Marine Mammal Commission shall appoint at least one qualified Alaska Native resident of Sitka to the position of harvest monitor. The harvest monitor shall monitor the take of marine mammals and shall report to and be responsible to the Commission. The harvest monitor will keep records of the numbers of each species of marine mammals taken in the customary and traditional territory of the Sitka Tribe of Alaska and shall record other data as appropriate.

(h) The information gathered by the [illegible] monitor and the information recorded under the permit system is to be used by the Commission for making management decisions to prevent a marine mammal species from becoming deleted.

(i) The Commission shall have authority to enact emergency regulations as are necessary to prevent a species from becoming depleted.

## SECTION 7 SANCTIONS

(a) Violations of any provisions of this Ordinance or regulations of the Sitka Marine Mammal Commission shall be referred to the Sitka Tribal Court. Possible sanctions include, but are not limited to printing the offender's name in newspapers, newsletters, and other media, fines, and other penalties, loss of hunting privileges, and confiscation of boats, rifles, and animals or pelts.

(b) Tribal Officers shall cooperate with federal or state officials and may notify the cognizant agencies of non-Natives or Natives who may have violated any provision of the Marine Mammal Protection Act (16 U.S.C. 1361 et.seq.) or any applicable law.

## SECTION 8 ENFORCEMENT

(a) The Sitka Marine Mammal Commission shall seek to appoint a qualified Alaska Native resident to the position of Tribal Officer. The Tribal Officer shall enforce this Ordinance and regulations of the Commission. Violations shall be reported to the Sitka Tribal Court.

(b) All hunters within the customary and traditional territory of the Sitka Tribe of Alaska and the general membership of the Sitka Mammal Commission have the responsibility to be on watch to ensure compliance with this Ordinance, and the Commission's regulations.

(c) The Tribal Officer shall report any violation in the name of the Sitka Tribe of Alaska. The action shall be commenced by filing a complaint in the Sitka Tribal Court. The complaint shall state the name of the person charged and describe the conduct alleged to be in violation of this Ordinance or Commission regulations. The person charged shall be given a copy of the complaint and have 15 (fifteen) days from receipt of the complaint to prepare for the initial hearing in

the Sitka Tribal Court. The accused shall have the rights set forth in 25 U.S.C. 1302 and shall receive notice of those rights when served with the complaint.

## SECTION 9 SEVERABILITY

If any portion of this Ordinance is determined by a Court of competent jurisdiction to be unconstitutional, or otherwise invalid, that portion may be stricken, but the remaining provisions shall remain effective.

## SECTION 10 CIVIL RIGHTS

All proceedings conducted pursuant to this Ordinance shall be subjected to the provisions of 25 U.S.C. 1302, and any other applicable law.

## SECTION 11 AMENDMENTS

(a) Proposals for amendments, including making other Tribes or Villages a party to this Ordinance, may be taken from the Commission or IRA Councils which are parties.

(b) The Commission must pass the proposed amendment by a majority vote of those present at a duly convened meeting at which a quorum is present. When a proposed Amendment is passed by the Commission, then it must then be presented, by Resolution, to the Tribal Council of the Sitka Tribe. The Tribal Council must then agree, by majority vote at a duly convened Council meeting at which a quorum is present, to approve the proposed Amendment before an Amendment becomes a part of this Ordinance. The Amendment shall then be posted for at least 30 days at the main Sitka Tribal government offices. The Amendment shall also be posted for at least 30 days at City Post Offices and Office Buildings and the Alaska Department of Fish & Game, and the Fish & Wildlife Protection Office. During this time, notice of the Amendment shall be published at least three times as legal notices in a local newspaper.

## SECTION 12 RESERVED SECTION

This section is being reserved for any future need or problem that may arise concerning the issues addressed by this Ordinance.

# GUIDANCE

## Clarification of the Phrase "Significantly Altered" as it Pertains to Items made from Sea Otter

1. The purpose of this guidance is to clarify the phrase "significantly altered" as applied to handicrafts and clothing made from sea otters. This guidance represents the U.S. Fish and Wildlife Service's (Service) interpretation of the Marine Mammal Protection Act (MMPA) of 1972, as amended (16 U.S.C. 1361−1423) and the implementing regulations (50 C.F.R Part 18). This guidance does not change the existing regulations, but is merely a non-binding clarification of the term "significantly altered."

2. The overall intent of the MMPA is the protection and conservation of marine mammals and their habitats, however Congress also provided an exception for Alaska Native peoples to take marine mammals for the purpose of subsistence or for creating and selling authentic Native articles of handicrafts and clothing.[1] Congress recognized that ongoing take of marine mammals by Alaska Native peoples is consistent with the overall intent of the MMPA if the take is not wasteful and if the harvested marine mammal species or stocks are not depleted [16 U.SC. 1371(b)].

3. Since 1974, the Service has defined the phrase authentic native articles of handicrafts and clothing as items made by Alaska Native peoples that are composed wholly or in some significant respect of natural materials and are ***significantly altered*** from their natural form and are produced, decorated, or fashioned in the exercise of traditional native handicrafts.[2]

4. The requirement that items made from sea otter be significantly altered from their natural form applies only to items which are sold or transferred to non-native people. It does not apply to items sold or traded between Alaska Native peoples [50 C.F.R. 18.23 (b)]. The primary consideration in determining whether an article of clothing or a handicraft is significantly altered involves an evaluation of the extent and relative permanence of the physical alteration.

[1]Congress created an exemption for the taking of any marine mammal by any Indian, Aleut, or Eskimo who resides in Alaska and who dwells on the coast of the North Pacific Ocean or the Arctic Ocean if such taking —(1) is for subsistence purposes; or (2) is done for purposes of creating and selling authentic native articles of handicrafts and clothing….Traditional native handicrafts include, but are not limited to weaving, carving, stitching, sewing, lacing, beading, drawing, and painting; and (3) in each case, is not accomplished in a wasteful manner.

[2] Regulations at 50 C.F.R. Section 18.3 further state that "traditional native handicrafts include, but are not limited to, weaving, carving, stitching, sewing, lacing, beading, drawing, and painting…"

5. The following guidance is provided regarding how the phrase "**significantly altered**" from their natural form applies to handicrafts made from sea otter. The guidance is based upon input received during an October 2012 workshop[3] jointly sponsored by the Indigenous Peoples Commission on Marine Mammals (IPCoMM) and the Service, as well as public input received on a draft document[4] entitled *Request for Public Comments on Select Terms Under the Marine Mammals Protection Act in Regard to Sea Otters*. Examples of items discussed at the workshop that meet the intent of this guidance are shown in Appendix.

   A sea otter will be considered "significantly altered" when it is no longer recognizable as a whole sea otter hide, and has been made into a handicraft or article of clothing as is identified below:

   1. A tanned, dried, cured, or preserved sea otter hide, devoid of the head, feet, and tail (i.e., blocked) that is substantially changed by any of the following, but is not limited to: weaving, carving, stitching, sewing, lacing, beading, drawing, painting, other decorative fashions, or made into another material or medium; and cannot be easily converted back to an unaltered hide or piece of hide.

   2. Tanned, dried, cured, or preserved sea otter head, tail, or feet, or other parts devoid of the remainder of the hide which includes any of the following, but is not limited to: weaving, carving, stitching, sewing, lacing, beading, drawing, or painting, other decorative fashions, or made into another material or medium.

6. While it is the intent of this guidance to help people comply with the Service's regulations, this document does not remove the ability of the Service to make a compliance determination based on specific facts.

/S/ Geoffrey L. Haskett

REGIONAL DIRECTOR
Geoffrey L. Haskett, Alaska Region

[3] Sea Otter Co-Management Workshop was held from Oct. 10-12, 2013, as per Cooperative Agreement No. F12 AC00909 between IPCoMM and the Service. Agenda and list of attendees available from IPCoMM.

[4] Public input was sought on the draft document from March 1, 2013, through August 6, 2013.

The following items were examined and discussed at the October 2012 workshop.

**SIGNIFICANTLY ALTERED:** The types of alterations below are generally considered to result in items that are <u>significantly altered</u> from their natural form.

**Slippers with sea otter trim**—made from a sea otter pelt that has been cut into small pieces and sewn.

**SIGNIFICANTLY ALTERED**

Photo: USFWS

**Hat**—made from a pelt that has been cut into small pieces and sewn.
The hat brim is natural fur; the top part of hat is shaved fur.

**SIGNIFICANTLY ALTERED**

**Gloves**—made from a sea otter pelt that has been cut into pieces and sewn.

**SIGNIFICANTLY ALTERED**

**Purse**—made from a sea otter pelt that has been cut into small pieces and sewn.

**SIGNIFICANTLY ALTERED**

**Pillow**—made from a sea otter pelt that has been cut and stitched on all edges.

**SIGNIFICANTLY ALTERED**

**Scarf**—made from a sea otter pelt that has been cut, lined, and sewn on all edges.

**SIGNIFICANTLY ALTERED**

Photo: USFWS

**Blanket** —made from a sea otter hide that has been blocked, lined, and stitched on all edges.

Photo: USFWS

**SIGNIFICANTLY ALTERED**

**NOT SIGNIFICANTLY ALTERED:** The types of alterations below are generally considered to result in items that are not significantly altered from their natural form.

**Scarf / neck roll**—made from sea otter pelt that has been cut, but has not been stitched or lined.

**NOT SIGNIFICANTLY ALTERED**

Photo: USFWS

**Drawing**—made from a sea otter pelt that has not been blocked, and has not been stitched or lined.

**NOT SIGNIFICANTLY ALTERED**

**Cape**—made from a sea otter pelt that has not been blocked, and has not been stitched or lined. Minimal alterations include a single button closure.

**NOT SIGNIFICANTLY ALTERED**

Photo: USFWS

**Appendix F. Sea Otter Harvest by SE Native Territory, Highlighting Sitka (1989-2023)**

Reported Sea Otters Harvested by Traditional Territory

| Kwáan | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sheetká | 34 | 47 | 40 | 174 | 419 | 180 | 64 | 66 | 66 | 119 | 70 | 145 | 118 | 100 | 93 | 80 | 98 | 103 | 207 | 109 | 144 | 217 | 200 | 285 | 543 | 346 | 321 | 369 | 309 | 166 | 228 | 87 | 133 | 127 | 185 | 6043 |
| Hinyaa | 36 | 9 | 23 | 83 | 131 | 20 | 60 | 19 | 112 | 120 | 157 | 85 | 128 | 84 | 131 | 80 | 111 | 122 | 103 | 29 | 248 | 168 | 197 | 180 | 242 | 419 | 259 | 184 | 220 | 185 | 372 | 235 | 174 | 141 | 264 | 5221 |
| Xunáa | | 27 | | 62 | 128 | 93 | 21 | 12 | 13 | 87 | 43 | 70 | 23 | 62 | 90 | 64 | 75 | 42 | 33 | 72 | 63 | 112 | 40 | 136 | 167 | 178 | 291 | 166 | 114 | 118 | 161 | 129 | 93 | 55 | 103 | 2572 |
| Yaakwdáat | | | | | 14 | 13 | 15 | 6 | 13 | 31 | 2 | 27 | 10 | 55 | 28 | 21 | 60 | 60 | 39 | 6 | 117 | 88 | 148 | 121 | 203 | 271 | 160 | 88 | 108 | 57 | 50 | 85 | 59 | 100 | 80 | 2155 |
| Kéex' | | | | | | | | | | | | 1 | 6 | 4 | 10 | | | | | 1 | 1 | 30 | 30 | 115 | 215 | 124 | 62 | 81 | 79 | 94 | 143 | 187 | 178 | 177 | 2 | 1540 |
| Shtax'héen | | | | | 36 | | | | | | 1 | | | 3 | 1 | | 3 | 2 | 1 | 6 | 18 | 74 | 66 | 76 | 62 | 74 | 33 | 55 | 27 | 72 | 92 | 44 | 37 | 35 | 51 | 673 |
| K'ay'k'aanil | 17 | | | 1 | 47 | 7 | 3 | 16 | 45 | 4 | 13 | 103 | 50 | 15 | 21 | 23 | | 4 | | | | 2 | 23 | 34 | 35 | 25 | 72 | 8 | 58 | 4 | 57 | 36 | 40 | 21 | 8 | 787 |
| Kooyú | 5 | 1 | 51 | 116 | 63 | 2 | 32 | 9 | 58 | | 41 | 22 | 17 | 19 | 3 | 20 | 20 | | 46 | 26 | 2 | 1 | | 35 | 15 | 14 | 16 | 7 | 23 | 11 | 12 | 2 | 69 | 1 | | 751 |
| Taant'a (including Metlakatla) | | | | | | | 1 | | | | | | | | | | | | | | | | | | 7 | 1 | | 11 | | 1 | 10 | 24 | 64 | 1 | 6 | 126 |
| Xutsnoowú | 1 | 1 | | 4 | 1 | | | | 4 | | 1 | | 1 | 1 | 4 | | | 1 | 2 | 2 | | | | | 7 | 15 | 2 | 3 | 31 | 18 | | | | | | | 98 |
| Aak'w | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 7 | | 1 | 1 | 5 | 14 | 28 |
| T'ask'ú | | | | | | | | | | | | | | | | 4 | | | | | | | | | 1 | | | | | | | | | | | 5 |
| Jilkoot/Jilkáat | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | 3 |
| Galyáx | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Grand Total | 153 | 85 | 114 | 450 | 839 | 318 | 195 | 125 | 331 | 381 | 329 | 397 | 353 | 330 | 361 | 288 | 373 | 335 | 437 | 255 | 591 | 712 | 730 | 935 | 1407 | 1407 | 1216 | 961 | 968 | 799 | 1115 | 830 | 849 | 672 | 803 | 20511 |